Changes to section Introduction

ISO/IEC 29500 specifies a family of XML schemas, collectively called *Office Open XML*, which define the XML vocabularies for word-processing, spreadsheet, and presentation documents, as well as the packaging of documents that conform to these schemas.

The goal is to enable the implementation of the Office Open XML formats by the widest set of tools and platforms, fostering interoperability across office productivity applications and line-of-business systems, as well as to support and strengthen document archival and preservation, all in a way that is fully compatible with the existing corpus of ~~Microsoft~~Microsoft® Office documents.

The following organizations have participated in the creation of ISO/IEC 29500 and their contributions are gratefully acknowledged:

Apple, Barclays Capital, BP, The British Library, Essilor, Intel, ~~Microsoft~~Microsoft®, NextPage, Novell, Statoil, Toshiba, and the United States Library of Congress

Changes to section 1. Scope

ISO/IEC 29500 defines a set of XML vocabularies for representing word-processing documents, spreadsheets and presentations. On the one hand, the goal of ISO/IEC 29500 is to be capable of faithfully representing the pre-existing corpus of word-processing documents, spreadsheets and presentations that had been produced by the ~~Microsoft~~Microsoft® Office applications (from ~~Microsoft~~Microsoft® Office 97 to ~~Microsoft~~Microsoft® Office 2008, inclusive) at the date of the creation of ISO/IEC 29500. It also specifies requirements for Office Open XML consumers and producers. On the other hand, the goal is to facilitate extensibility and interoperability by enabling implementations by multiple vendors and on multiple platforms.

This Part of ISO/IEC29500 specifies concepts for documents and applications of both strict and transitional conformance.

Changes to section 15.2.9 Embedded Control Persistence Part

Content Type:	Any supported control type. [*Note*: There are a number of possible control types. One example of a potential control type would be an Active X control, which would use the following content type: `application/vnd.ms-office.activeX+xml`. *end note*]
Root Namespace:	not applicable
Source Relationship:	http://purl.oclc.org/ooxml/officeDocument/relationships/control

An instance of this part contains information about an embedded control in the package. This information is provided by the specified control when asked to persist. [*Example*: An application might utilize the embedded object server technology KParts or Bonobo to store an embedded object using this part. *end example*]

A package is permitted to contain one or more Embedded Control Persistence parts, and each such part shall be the target of an explicit relationship in an Endnotes (§**Error! Reference source not found.**), Footer (§**Error! Reference source not found.**), Footnotes (§**Error! Reference source not found.**), Header (§**Error! Reference source not found.**), or Main Document (§**Error! Reference source not found.**) part-relationship item in a WordprocessingML package; a Worksheet part (§**Error! Reference source not found.**) in a SpreadsheetML package; or a Handout Master (§**Error! Reference source not found.**), Notes Slide (§**Error! Reference source not found.**), Notes Master (§**Error! Reference source not found.**), Slide (§**Error! Reference source not found.**), Slide Layout (§**Error! Reference source not found.**), Slide Master (§**Error! Reference source not found.**) part-relationship item in a PresentationML package.

The content type of this part shall determine the format and contents of the embedded control.

[*Example*: The following example shows the persistence that could be used for an embedded control which is a Java applet within a WordprocessingML document (the drawing object which provides a static image representation of the control, used when the Java applet itself is unavailable, has been omitted for brevity):

```
<w:p>
  <w:r w:rsidR="005810E1">
    <w:object w:dxaOrig="1440" w:dyaOrig="1440">
      <w:drawing>
        …
      </w:drawing>
      <w:control r:id="rId5" w:name="CommandButton1" w:shapeid="1027" />
    </w:object>
  </w:r>
</w:p>
```

The relationship type for rId5 is:
`http://purl.oclc.org/ooxml/officeDocument/relationships/control`

The XML content of the part referenced by rId5 could be:

```
<applet xlink:href="../../../../Program%20Files/Application"
xlink:type="simple" xlink:show="embed" xlink:actuate="onLoad"
code="CalculateApplet.class" may-script="false"/>
```

end example]

[*Example*: The following example shows the persistence that could be used for an embedded control which is an ~~ActiveX~~ActiveX® control within a WordprocessingML document(the drawing object which provides a static image representation of the control, used when the ~~ActiveX~~ActiveX® control itself is unavailable, has been omitted for brevity):

```
<w:p>
  <w:r w:rsidR="005810E1">
    <w:object w:dxaOrig="1440" w:dyaOrig="1440">
      <w:drawing>
        …
      </w:drawing>
      <w:control r:id="rId5" w:name="CommandButton1" w:shapeid="1027" />
    </w:object>
  </w:r>
</w:p>
```

The relationship type for rId5 is:
`http://purl.oclc.org/ooxml/officeDocument/relationships/control`

The content type of the part referenced by rId5 could be: `application/vnd.ms-office.activeX+xml`

The XML content of the part referenced by rId5 could be:

```
<ax:ocx ax:classid="{D7053240-CE69-11CD-A777-00DD01143C57}"
    ax:persistence="persistPropertyBag"
    xmlns:ax="http://schemas.microsoft.com/office/2006/activeX">
  <ax:ocxPr ax:name="Caption" ax:value="CommandButton1" />
  <ax:ocxPr ax:name="Size" ax:value="2540;847" />
  <ax:ocxPr ax:name="FontName" ax:value="Calibri" />
  <ax:ocxPr ax:name="FontHeight" ax:value="225" />
  <ax:ocxPr ax:name="FontCharSet" ax:value="0" />
  <ax:ocxPr ax:name="FontPitchAndFamily" ax:value="2" />
  <ax:ocxPr ax:name="ParagraphAlign" ax:value="3" />
</ax:ocx>
```

end example]

An Embedded Control Persistence part shall be located within the package containing the relationships part (expressed syntactically, the TargetMode attribute of the Relationship element shall be `Internal`).

An Embedded Control Persistence part shall not have any implicit or explicit relationships to other parts defined by ISO/IEC 29500.

Changes to section 15.2.13 Font Part

Content Type:	application/x-fontdata application/x-font-ttf application/vnd.openxmlformats-officedocument.obfuscatedFont
Root Namespace:	not applicable
Source Relationship:	http://purl.oclc.org/ooxml/officeDocument/relationships/font

An instance of this part type contains a given font embedded directly into the document. (This is useful when using custom fonts or fonts that are not widely distributed.)

Fonts stored in a Font part can be stored in one of the following formats, identified by the associated content type:

- `application/x-fontdata` specifies that the font shall be stored in the Embedded ~~OpenType~~OpenType® Format of http://www.w3.org/Submission/2008/SUBM-EOT-20080305
- `application/x-font-ttf` specifies that the font shall be stored in a format conforming to Open Font Structure defined in ISO/IEC 14496-22:2008 §3.5. [*Note*: The TrueType Collection format defined in ISO/IEC 14496-22:2008 §3.6 cannot be used. *end note*]
- application/vnd.openxmlformats officedocument.obfuscatedFont specifies that the font is obfuscated using the algorithm specified by Font Embedding (§17.8.1). The source font shall be stored in a format conforming to Open Font Structure defined in ISO/IEC 14496-22:2008 §3.5. [*Note*: The TrueType Collection format defined in ISO/IEC 14496-22:2008 §3.6 cannot be used. *end note*] Only packages of type WordprocessingML are permitted to reference this content type.

If a font is stored in the ISO/IEC 14496-22:2007 format, it shall only be used when stored as an individual font. [*Note:* Font collections should be converted into individual fonts before they are embedded using this part. *end note*]

A package shall contain zero or more Font parts, and for each that exists, that part shall be the target of an explicit relationship in the Font Table (§**Error! Reference source not found.**), or Presentation (§**Error! Reference source not found.**) part.

A Font part shall be located within the package containing the relationships part (expressed syntactically, the TargetMode attribute of the Relationship element shall be `Internal`).

A Font part shall not have implicit or explicit relationships to other parts defined by ISO/IEC 29500.

Changes to section 15.2.15 Printer Settings Part

Content Type:	application/vnd.openxmlformats-officedocument.spreadsheetml.printerSettings (in SpreadsheetML documents) application/vnd.openxmlformats-officedocument.wordprocessingml.printerSettings (in WordprocessingML documents) application/vnd.openxmlformats-officedocument.presentationml.printerSettings (in PresentationML documents)
Root Namespace:	not applicable
Source Relationship:	http://purl.oclc.org/ooxml/officeDocument/relationships/printerSettings

An instance of this part type contains information about the initialization and environment of a printer or a display device. The layout of this information is application-defined.

[*Note*: It is recommended that a Printer Settings Part contain well documented XML content for improved interoperability; however, there is no requirement on the format of the content contained in a Printer Settings Part. *end note*]

[*Example*: An Office Open XML producer on ~~Windows~~Windows® might store the DEVMODE structure defined here: http://msdn.microsoft.com/library/default.asp?url=/library/en-us/gdi/prntspol_8nle.asp, while an application on the Mac OS might choose to store the print record defined here: http://developer.apple.com/documentation/Printing/index.html. *end example*]

A SpreadsheetML package is permitted to contain at most one Printer Settings part per Chartsheet, Dialogsheet, or Worksheet part, and that part shall be the target of an implicit relationship from a Chartsheet (§**Error! Reference source not found.**), Dialogsheet (§**Error! Reference source not found.**), or Worksheet (§**Error! Reference source not found.**) part. A WordprocessingML package is permitted to contain zero or more Printer Settings parts, one per sectPr element, each a target of an explicit relationship from a Main Document (§**Error! Reference source not found.**) or Glossary Document (§**Error! Reference source not found.**) part. A PresentationML package is permitted to contain at most one Printer Settings part, and that part shall be the target of an implicit relationship from a Presentation (§**Error! Reference source not found.**) part.

[*Example*: The following SpreadsheetML Worksheet part-relationship item contains a relationship to a Printer Settings part, which is stored in the ZIP item ../printerSettings/printerSettings1.xml:

```
<Relationships xmlns="…">
  <Relationship Id="rId4"
    Type="http://…/printerSettings"
    Target="../printerSettings/printerSettings1.xml"/>
</Relationships>
```

where the contents of PrinterSettings1.xml contains the following XML:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<PrinterSettings xmlns="…">
    <PrinterSetting name="PropertyName" value="PropertyValue" />
</PrinterSettings>
```

end example]

A Printer Settings part shall be located within the package containing the relationships part (expressed syntactically, the TargetMode attribute of the Relationship element shall be `Internal`).

A Printer Settings part shall not have implicit or explicit relationships to any other part defined by ISO/IEC 29500.

Changes to section 17.3.3.30 sym (Symbol Character)

This element specifies the presence of a symbol character at the current location in the run's content. A *symbol character* is a special character within a run's content which does not use any of the run fonts specified in the rFonts element (§**Error! Reference source not found.**) (or by the style hierarchy).

Instead, this character shall be determined by pulling the character with the hexadecimal value specified in the char attribute from the font specified in the font attribute.

[*Example*: Consider a run containing the following run content:

```
This is a symbol character:💻
```

The last character in that run is a symbol character from the ~~Wingdings~~Wingdings® font, and the run is specified as follows:

```
<w:r>
  <w:rPr>
    <w:rFonts w:ascii="Courier New" w:hAnsi="Courier New" />
  </w:rPr>
  <w:t>This is a symbol character:</w:t>
  <w:sym w:font="Wingdings" w:char="F03A" />
</w:r>
```

The resulting symbol is the specified using the sym element, and consists of character code 003A formatted as ~~Wingdings~~Wingdings®, even though the run properties specify the Courier New font. *end example*]

Attributes	Description
char (Symbol Character Code)	Specifies the hexadecimal code for the Unicode character value of the symbol. When this value is stored in the char attribute, it can be stored in either of the following two formats: Directly in its Unicode character value from the font glyph In a Unicode character value created by adding F000 to the actual character value, shifting the character value of this character into the Unicode private use area. [*Note*: The use of the latter syntax allows for interoperability with legacy word processing formats, as they used this technique to store the fact that a particular character or set of characters came from a font which was not Unicode compliant, and therefore any font matching performed on this range (if the specified font was not present) would be undesirable, as the resulting glyphs and their appearance could not be predicted. *end note*] [*Example*: Consider a run with a single symbol character defined as follows: `<w:r>`

Attributes	Description
	<w:rPr> <w:rFonts w:ascii="Arial Black" w:hAnsi="Arial Black" /> </w:rPr> <w:sym w:font="Wingdings" w:char="F045" /> </w:r> The symbol character must use the font defined in its font attribute and hence use the ~~Wingdings~~Wingdings® font. The character value for the character to be used from this font is obtained by removing the F000 value from the value in the char attribute, and therefore is the character at hexadecimal position 0045 in that font. *end example*] The possible values for this attribute are defined by the ST_ShortHexNumber simple type (§**Error! Reference source not found.**).
font (Symbol Character Font)	Specifies a font which shall be used to format this symbol character. [*Example*: Consider a run with a single symbol character defined as follows: <w:r> <w:rPr> <w:rFonts w:ascii="Arial Black" w:hAnsi="Arial Black" /> </w:rPr> <w:sym w:font="Wingdings" w:char="F045" /> </w:r> Although the run specifies that its contents must use the Arial Black font, the symbol character must use the font defined in its font attribute and hence use the ~~Wingdings~~Wingdings® font. *end example*] The possible values for this attribute are defined by the ST_String simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_Sym) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 17.4.67 tcFitText (Fit Text Within Cell)

This element specifies that the contents of the current cell shall have their inter-character spacing increased or reduced as necessary to fit the width of the text extents of the current cell. This setting shall behave identically to placing the contents of this paragraph in a run and using the fitText element (§**Error! Reference source not found.**), if the width provided on that element matched the width of the current cell.

If this element is omitted, then the text in this cell shall not be fit to the current cell extents.

[*Example*: Consider a 2 row by two column table, in which the contents of the two cells in the first row have both have the fit text property set, as follows:

```
<w:tcPr>
  <w:tcFitText w:val="true"/>
</w:tcPr>
```

The resulting table cells must have their contents fit to the extents of the parent table cell, as follows:

S a m p l e t e x t i n R 1 C 1 .	And this table cell instead contains a very very long string of sample text in R2C2.
R2C1	R2C2

end example]

This element's content model is defined by the common boolean property definition in §**Error! Reference source not found.**.

Changes to section 17.8.3.1 altName (Alternate Names for Font)

This element specifies a set of alternative names which can be used to locate the font specified by the parent element. This set of alternative names is stored in a comma-delimited list, with all adjacent commas ignored (i.e. a value of `Name A, Name B` is equivalent to `Name A,,,,,,,,, Name B`).

When an application cannot locate a font using the primary name stored on the font attribute of the font element (§**Error! Reference source not found.**), it should use each alternate name in term to attempt to locate the font, and use the first font for which is locates a match.

Font names stored using this element shall be specified in the encoding specified by the Fonts part in its XML declaration; the name of the font will be interpreted by the XML parser. [*Note:* UTF-8 is not supported for font names within ~~OpenType~~OpenType® fonts, and is not always supported for file names in file systems. For example, older Japanese versions of ~~Microsoft~~Microsoft® ~~Windows~~Windows® use ~~Windows~~Windows®-31J for filenames. To use extant font names in the values of this attribute, they should be converted to the character encoding appropriate for this standard and copying raw byte sequences from font files should be avoided. *end note*]

If this element is omitted, then no alternate names are present for the parent font.

[*Example*: Consider the following information stored for a single font:

```
<w:font w:name="SimSun">
  <w:altName w:val="Arial Unicode MS" />
  …
</w:font>
```

The altName element specifies that when no font with a name of SimSun (the primary font name) can be located, that applications should attempt to locate a font with the name Arial Unicode MS before doing substitution based on the font metrics. *end example*]

Attributes	Description

val (String Value)	Specifies that its contents contain a string.
	
	The contents of this string are interpreted based on the context of the parent XML element.
	
	[*Example*: Consider the following WordprocessingML fragment:
	
	`<w:pPr>`
	`  <w:pStyle w:val="Heading1" />`
	`</w:pPr>`
	
	The value of the val attribute is the ID of the associated paragraph style's styleId.
	
	However, consider the following fragment:
	
	`<w:sdtPr>`
	`  <w:alias w:val="SDT Title Example" />`
	`  …`
	`</w:sdtPr>`
	
	In this case, the decimal number in the val attribute is the caption of the nearest ancestor structured document tag. In each case, the value is interpreted in the context of the parent element. *end example*]
	
	The possible values for this attribute are defined by the ST_String simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_String) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 17.16.5.61 SYMBOL

Syntax:

SYMBOL *field-argument* [*switches*]

Description: Retrieves the character whose code point value is specified in decimal or hexadecimal (by using a leading 0x or 0X) by *text* in *field-argument*. The formatting switches over ride any formatting applied directly to the result.

The XML generated for a complex field implementation shall not have the optional field value stored.

Field Value: The specified character.

Switches: Zero or more of the following *field-specific-switches*.

\a	Interprets *text* in *field-argument* as the value of an ANSI character.
\f *field-argument*	Interprets *text* in the switch's *field-argument* as the name of the font from which the character whose value is specified by *text* in the field's *field-argument*. By default, the font used is that for the current text run.
\h	Inserts the symbol without affecting the line spacing of the paragraph. If large symbols are inserted with this switch, text above the symbol might be overwritten.
\j	Interprets *text* in *field-argument* as the value of a ~~Windows~~Windows®-31J character.
\s *field-argument*	Interprets *text* in the switch's *field-argument* as the integral font size in points.
\u	Interprets *text* in *field-argument* as the value of a Unicode character.

[*Example*: Consider the case in which the following fields are updated:

```
SYMBOL 65
SYMBOL 66 \a
SYMBOL 67 \u
SYMBOL 0x20ac \u
SYMBOL 68
SYMBOL 68 \f Symbol
SYMBOL 40 \f Wingdings \s 24
```

the results are:

A
B
C
€
D
Δ
☎

end example]

Changes to section 18.3.1.3 brk (Break)

Individual row or column breaks

Attributes	Description
id (Id)	Zero-based row or column Id of the page break. Breaks occur above the specified row and left of the specified column. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
man (Manual Page Break)	Manual Break flag. 1 means the break is a manually inserted break. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
max (Maximum)	Zero-based index of end row or column of the break. For row breaks, specifies column index; for column breaks, specifies row index. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
min (Minimum)	Zero-based index of start row or column of the break. For row breaks, specifies column index; for column breaks, specifies row index. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
pt (Pivot-Created Page Break)	Flag indicating that a ~~PivotTable~~PivotTable™ created this break. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Break) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.3.1.13 col (Column Width & Formatting)

Defines column width and column formatting for one or more columns of the worksheet.

[*Example*: This example shows that column 5 (E) has width and style information applied.

```
<col min="5" max="5" width="9.140625" style="3"/>
```

end example]

Attributes	Description
bestFit (Best Fit Column Width)	Flag indicating if the specified column(s) is set to 'best fit'. 'Best fit' is set to `true` under these conditions: • The column width has never been manually set by the user, AND • The column width is not the default width • • 'Best fit' means that when numbers are typed into a cell contained in a

Attributes	Description
	'best fit' column, the column width should automatically resize to display the number. [*Note*: In best fit cases, column width must not be made smaller, only larger. *end note*] The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
collapsed (Collapsed)	Flag indicating if the outlining of the affected column(s) is in the collapsed state. See description of row collapsed and outlinePr element's summaryBelow and summaryRight attributes for detailed information. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
customWidth (Custom Width)	Flag indicating that the column width for the affected column(s) is different from the default or has been manually set. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
hidden (Hidden Columns)	Flag indicating if the affected column(s) are hidden on this worksheet. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
max (Maximum Column)	Last column affected by this 'column info' record. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
min (Minimum Column)	First column affected by this 'column info' record. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
outlineLevel (Outline Level)	Outline level of affected column(s). Range is 0 to 7. See description of outlinePr element's summaryBelow and summaryRight attributes for detailed information. The possible values for this attribute are defined by the W3C XML Schema unsignedByte datatype.
phonetic (Show Phonetic Information)	Flag indicating if the phonetic information should be displayed by default for the affected column(s) of the worksheet. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
style (Style)	Default style for the affected column(s). Affects cells not yet allocated in the column(s). In other words, this style applies to new columns. The possible values for this attribute are defined by the W3C XML Schema

Attributes	Description
	unsignedInt datatype.
width (Column Width)	Column width measured as the number of characters of the maximum digit width of the numbers 0, 1, 2, …, 9 as rendered in the normal style's font. There are 4 pixels of margin padding (two on each side), plus 1 pixel padding for the gridlines. width = Truncate([{Number of Characters} * {Maximum Digit Width} + {5 pixel padding}]/{Maximum Digit Width}*256)/256 [*Example*: Using the ~~Calibri~~Calibri® font as an example, the maximum digit width of 11 point font size is 7 pixels (at 96 dpi). In fact, each digit is the same width for this font. Therefore, if the cell width is 8 characters wide, the value of this attribute must be Truncate([8*7+5]/7*256)/256 = 8.7109375. *end example*] To translate the value of width in the file into the column width value at runtime (expressed in terms of pixels), use this calculation: =Truncate(((256 * {width} + Truncate(128/{Maximum Digit Width}))/256)*{Maximum Digit Width}) [*Example*: Using the same example as above, the calculation would be Truncate(((256*8.7109375+Truncate(128/7))/256)*7) = 61 pixels. *end example*] To translate from pixels to character width, use this calculation: =Truncate(({pixels}-5)/{Maximum Digit Width} * 100+0.5)/100 [*Example*: Using the example above, the calculation would be Truncate((61-5)/7*100+0.5)/100 = 8 characters. *end example*] [*Note*: when wide borders are applied, part of the left/right border must overlap with the 2 pixel padding on each side. Wide borders do not affect the width calculation of the column. *end note*] [*Note*: When the sheet is in the mode to view formulas instead of values, the pixel width of the column is doubled. *end note*] The possible values for this attribute are defined by the W3C XML Schema double datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Col) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.3.1.18 conditionalFormatting (Conditional Formatting)

A Conditional Format is a format, such as cell shading or font color, that a spreadsheet application can automatically apply to cells if a specified condition is true. This collection expresses conditional formatting rules applied to a particular cell or range.

[*Example*: This example applies a 'top10' rule to the cells C3:C8. The `@dxfId` references the formatting (defined in the styles part) to be applied to cells that match the criteria.

```
<conditionalFormatting sqref="C3:C8">
  <cfRule type="top10" dxfId="1" priority="3" rank="2"/>
</conditionalFormatting>
```

end example]

Attributes	Description
pivot (PivotTable Conditional Formatting)	Flag indicating if this is conditional formatting associated with a ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
sqref (Sequence of Refernces)	Range over which these conditional formatting rules apply. The possible values for this attribute are defined by the ST_Sqref simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_ConditionalFormatting) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.3.1.68 pivotArea (Pivot Area)

Rule describing a ~~PivotTable~~PivotTable™ selection.

Attributes	Description
axis (Axis)	The region of the ~~PivotTable~~PivotTable™ to which this rule applies. The possible values for this attribute are defined by the ST_Axis simple type (§0).
cacheIndex (Cache Index)	Flag indicating whether any indexes refer to fields or items in the Pivot cache and not the view. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
collapsedLevelsAreSubtotals (Collapsed Levels	Flag indicating if collapsed levels/dimensions are considered subtotals. The possible values for this attribute are defined by the W3C XML Schema boolean

Attributes	Description
Are Subtotals)	datatype.
dataOnly (Data Only)	Flag indicating whether only the data values (in the data area of the view) for an item selection are selected and does not include the item labels. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
field (Field Index)	Index of the field that this selection rule refers to. The possible values for this attribute are defined by the W3C XML Schema int datatype.
fieldPosition (Field Position)	Position of the field within the axis to which this rule applies. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
grandCol (Include Column Grand Total)	Flag indicating whether the column grand total is included. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
grandRow (Include Row Grand Total)	Flag indicating whether the row grand total is included. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
labelOnly (Labels Only)	Flag indicating whether only the item labels for an item selection are selected and does not include the data values (in the data area of the view). The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
offset (Offset Reference)	A Reference that specifies a subset of the selection area. Points are relative to the top left of the selection area. The possible values for this attribute are defined by the ST_Ref simple type (§**Error! Reference source not found.**).
outline (Outline)	Flag indicating whether the rule refers to an area that is in outline mode. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
type (Rule Type)	Indicates the type of selection rule. The possible values for this attribute are defined by the ST_PivotAreaType simple type (§0).

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotArea) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.3.1.69 pivotSelection (~~PivotTable~~PivotTable™ Selection)

A collection of ~~PivotTable~~PivotTable™ structure selections. A ~~PivotTable~~PivotTable™ structure selection is a way of specifying what cells in the ~~PivotTable~~PivotTable™ are selected. Instead of specifying cell addresses in a sqref, a particular area or structure within the ~~PivotTable~~PivotTable™ is specified. In this way there is semantic meaning regarding what is selected, rather than simply a list of cell or ranges contained in the selection. Typically fields on the row or column axis are selected.

[*Example*: For example, the innermost field (Product SubCategory) is selected in this ~~PivotTable~~PivotTable™:

	A	B	C
1			
2		State	(All)
3		City	(All)
4			
5			Column Labels
6			2001
7			3
8			July
9		Row Labels	Sum of Sales Amount
10		Bikes	209652.9046
11		Mountain Bikes	64424.81
12		Mountain-100 Black, 38	3374.99
13		Mountain-100 Black, 42	3374.99
14		Mountain-100 Black, 44	13499.96
15		Mountain-100 Black, 48	3374.99
16		Mountain-100 Silver, 38	6799.98
17		Mountain-100 Silver, 42	6799.98
18		Mountain-100 Silver, 44	16999.95
19		Mountain-100 Silver, 48	10199.97
20		Road Bikes	145228.0946
21		Road-150 Red, 44	25047.89
22		Road-150 Red, 48	42939.24
23		Road-150 Red, 52	21469.62
24		Road-150 Red, 56	25047.89
25		Road-150 Red, 62	28626.16
26		Road-650 Black, 44	699.0982
27		Road-650 Black, 52	
28		Road-650 Black, 62	699.0982
29		Road-650 Red, 44	699.0982
30		Road-650 Red, 48	
31		Road-650 Red, 52	
32		Road-650 Red, 58	
33		Road-650 Red, 60	
34		Grand Total	209652.9046

The corresponding pivotSelection XML should look like this:

```
<pivotSelection pane="bottomRight" showHeader="1" axis="axisRow"
dimension="2"
  activeRow="11" activeCol="1" previousRow="11" previousCol="1" click="1"
  r:id="rId1">
```

```
    <pivotArea dataOnly="0" labelOnly="1" fieldPosition="0">
      <references count="1">
        <reference field="9" count="0"/>
      </references>
    </pivotArea>
  </pivotSelection>
```

axis indicates that this selection is on the row axis, dimension indicates the field level within the row axis that is selected (zero-based index), activeCol and activeRow respectively indicate where in the grid the selection is located, and reference field indicates to which particular field the selection corresponds.

end example]

Attributes	Description
activeCol (Active Column)	The column (zero-based) of active cell for structure selection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
activeRow (Active Row)	The row (zero-based) of active cell for structure selection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
axis (Axis)	Axis of the ~~PivotTable~~PivotTable™ on which this selection lies. The possible values for this attribute are defined by the ST_Axis simple type (§0).
click (Click Count)	Number of clicks for this structure selection. For some selection combinations, subsequent clicks on the same target area cycles the actual selection through some variances. Therefore number of clicks on the selection shall be recorded, if it is desirable to restore this state of the selection cycle on load. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
count (Selection Count)	Number of selections for the structure selection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
data (Data Selection)	Flag indicating whether the structure selection is for data only. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dimension (Dimension)	Indicates the field level within the axis that is selected (zero-based index). The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

Attributes	Description
extendable (Extendable)	Flag indicating whether the structure selection can have additional selections added to it. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
id (Relationship Id) Namespace: http://purl.oclc.org/ooxml/officeDocument/relationships	Relationship Id pointing to the particular ~~PivotTable~~PivotTable™ Part corresponding to this selection. The possible values for this attribute are defined by the ST_RelationshipId simple type (§**Error! Reference source not found.**).
label (Label)	Flag indicating whether the structure selection is for labels only (e.g., a grand total row is selected). The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
max (Maximum)	The maximum line the structure selection contains. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
min (Minimum)	The minimum line the structure selection contains. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
pane (Pane)	The pane to which this ~~PivotTable~~PivotTable™ structure selection belongs. The possible values for this attribute are defined by the ST_Pane simple type (§**Error! Reference source not found.**).
previousCol (Previous Column Selection)	1-based index to the column immediately left of the structure selection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
previousRow (Previous Row)	1-based index to the row immediately above the structure selection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
showHeader (Show Header)	Flag indicating whether selection toggle from data only to header only to both is enabled. `False` means disabled. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

Attributes	Description
start (Start)	The line the structure selection begins (zero-based). This is the line clicked to initiate the structure selection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotSelection) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.8.23 fonts (Fonts)

This element contains all font definitions for this workbook.

[*Example*: This example expresses two fonts in the workbook. A ~~Calibri~~Calibri® family font, with font size of 11, and an Arial family font, with font size 12. The second font has strikethrough applied.

```
<fonts count="2">
  <font>
    <sz val="11"/>
    <color theme="1"/>
    <name val="Calibri"/>
    <family val="2"/>
    <scheme val="minor"/>
  </font>
  <font>
    <strike/>
    <sz val="12"/>
    <color theme="1"/>
    <name val="Arial"/>
    <family val="2"/>
  </font>
</fonts>
```

end example]

Attributes	Description
count (Font Count)	Count of font elements. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Fonts) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.8.41 tableStyleElement (Table Style)

This element specifies formatting for one area of a table or ~~PivotTable~~PivotTable™. Together the sequence of these elements makes up one entire Table style or ~~PivotTable~~PivotTable™ style definition.

The order in which table style element formatting is applied is as follows:

Table Style Element Order

- Whole Table
- First Column Stripe
- Second Column Stripe
- First Row Stripe
- Second Row Stripe
- Last Column
- First Column
- Header Row
- Total Row
- First Header Cell
- Last Header Cell
- First Total Cell
- Last Total Cell

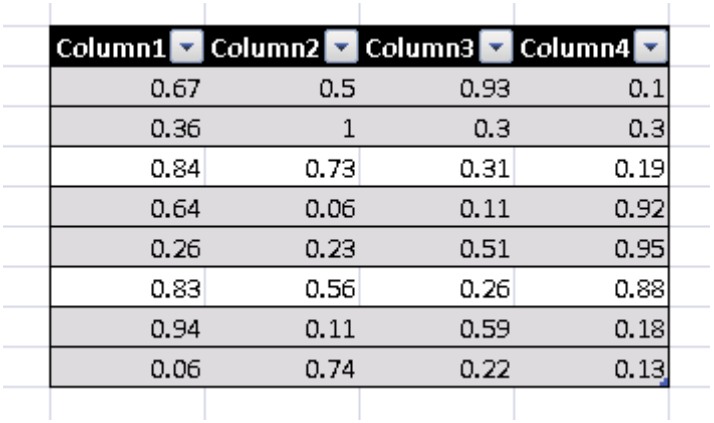
1. For instance, row stripe formatting 'wins' over column stripe formatting, and both 'win' over whole table formatting.

1.

1. ~~PivotTable~~PivotTable™ Style Element Order

- Whole Table
- Page Field Labels
- Page Field Values
- First Column Stripe
- Second Column Stripe
- First Row Stripe
- Second Row Stripe
- First Column
- Header Row
- First Header Cell
- Subtotal Column 1
- Subtotal Column 2

- Subtotal Column 3
- Blank Row
- Subtotal Row 1
- Subtotal Row 2
- Subtotal Row 3
- Column Subheading 1
- Column Subheading 2
- Column Subheading 3
- Row Subheading 1
- Row Subheading 2
- Row Subheading 3
- Grand Total Column
- Grand Total Row

Attributes	Description
dxfId (Formatting Id)	Zero-based index to a dxf record in the dxfs collection, specifying differential formatting to use with this Table or ~~PivotTable~~PivotTable™ style element. The possible values for this attribute are defined by the ST_DxfId simple type (§**Error! Reference source not found.**).
size (Band Size)	Number of rows or columns in a single band of striping. Applies only when type is `firstRowStripe`, `secondRowStripe`, `firstColumnStripe`, or `secondColumnStripe`. [*Example*: In this example, the `firstRowStripe` size is set to `2`, and the `secondRowStripe` size is set to `1`:  *end example*] The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

Column1	Column2	Column3	Column4
0.67	0.5	0.93	0.1
0.36	1	0.3	0.3
0.84	0.73	0.31	0.19
0.64	0.06	0.11	0.92
0.26	0.23	0.51	0.95
0.83	0.56	0.26	0.88
0.94	0.11	0.59	0.18
0.06	0.74	0.22	0.13

Attributes	Description
type (Table Style Type)	Identifies this table style element's type. The possible values for this attribute are defined by the ST_TableStyleType simple type (§0).

[*Note*: The W3C XML Schema definition of this element's content model (CT_TableStyleElement) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.8.42 tableStyles (Table Styles)

This element represents a collection of Table style definitions for Table styles and ~~PivotTable~~PivotTable™ styles used in this workbook. It consists of a sequence of tableStyle records, each defining a single Table style.

A Table style is a collection of formatting that applies to structured regions of a Table or ~~PivotTable~~PivotTable™ [*Example*: make the header row & totals bold face, and apply light gray fill to alternating rows in the data portion of the table to achieve striped or banded rows. *end example*]

See the enumeration values in ST_TableStyleType for a listing of structured Table regions to which formatting can be applied, and which together make up a single Table style definition.

Attributes	Description
count (Table Style Count)	Count of table styles defined in this collection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
defaultPivotStyle (Default Pivot Style)	Name of the default table style to apply to new PivotTables. This can be set by the user interface. The possible values for this attribute are defined by the W3C XML Schema string datatype.
defaultTableStyle (Default Table Style)	Name of default table style to apply to new Tables. This can be set by the user interface. The possible values for this attribute are defined by the W3C XML Schema string datatype.

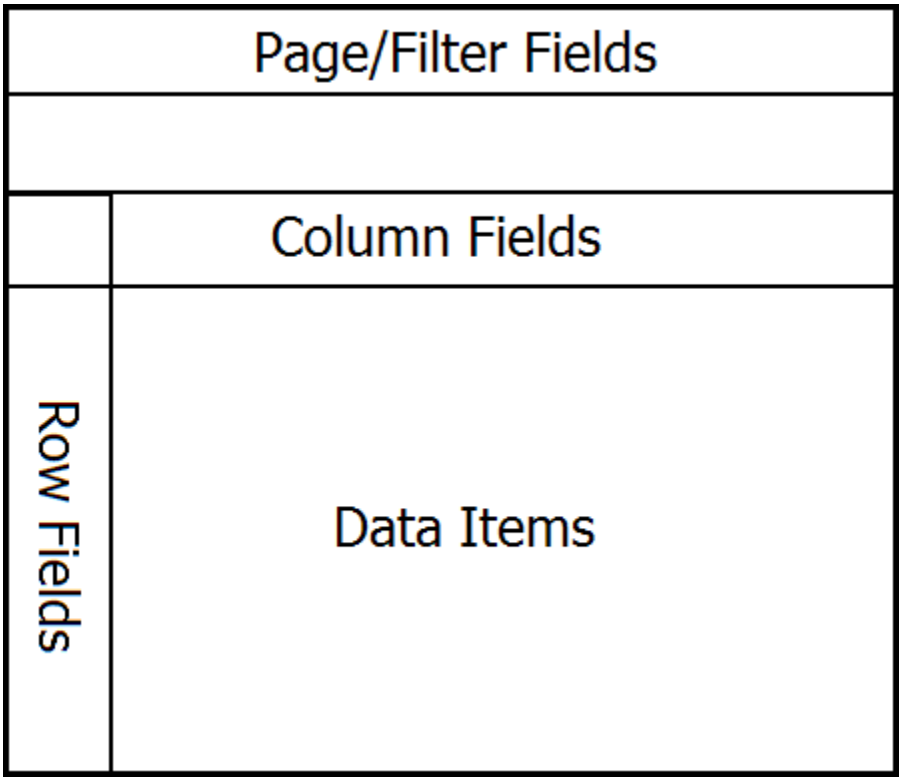
[*Note*: The W3C XML Schema definition of this element's content model (CT_TableStyles) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10 Pivot Tables

PivotTables display aggregated views of data easily and in an understandable layout. Hundreds or thousands of pieces of underlying information can be aggregated on row and column axes, revealing the meanings behind the data. ~~PivotTable~~PivotTable™ reports are used to organize and summarize your data in different ways. Creating a ~~PivotTable~~PivotTable™ report is about moving pieces of information around to see how they fit together. In a few gestures the pivot rows and columns can be moved into different arrangements and layouts.

A ~~PivotTable~~PivotTable™ object has a row axis area, a column axis area, a data area, and a page/report filter area. Additionally, PivotTables have a corresponding field list pane, or similar user interface, that displays all the fields of data that can be placed on one of the ~~PivotTable~~PivotTable™ areas. In SpreadsheetML, each ~~PivotTable~~PivotTable™ area maps to a collection of fields in the PivotTableDefinition that correspond to each area.

The following image shows the layout for the ~~PivotTable~~PivotTable™ areas.



[*Example*:

The following image shows a table of data in a worksheet.

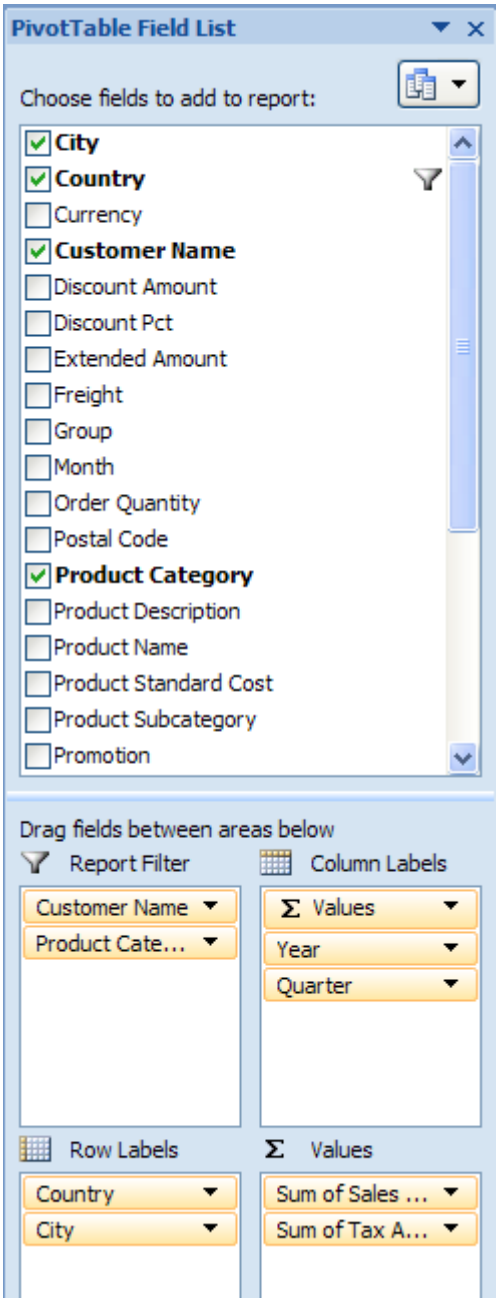
	A	C	F	H	I	O	P	Q	Z	AA	AB
1	Customer Name	Country	City	Product Category	Product Subcategory	Year	Quarter	Month	Sales Amount	Tax Amount	Freight
2	Michele Raman	Australia	Bendigo	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
3	Misty Raji	Australia	Bendigo	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
4	Tabitha E Arthur	Australia	Bendigo	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
5	Clarence D Rai	Australia	Bendigo	Bikes	Mountain Bikes	2001	3	July	3399.99	271.9992	84.9998
6	Jimmy L Moreno	Australia	Bendigo	Bikes	Mountain Bikes	2001	3	July	3399.99	271.9992	84.9998
7	Rob Verhoff	Australia	Bendigo	Bikes	Mountain Bikes	2001	3	July	3374.99	269.9992	84.3748
8	Levi Sai	Australia	Bendigo	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
9	Logan Gonzales	Australia	Brisbane	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
10	Dalton J Lee	Australia	Brisbane	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
11	Jessie J Ortega	Australia	Brisbane	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
12	Paul J. Shakespear	Australia	Caloundra	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
13	Joan R Martin	Australia	Caloundra	Bikes	Road Bikes	2001	3	September	699.0982	55.9279	17.4775
14	Casey Pal	Australia	Caloundra	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
15	Ethan G Coleman	Australia	Caloundra	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
16	Kendra Rubio	Australia	Caloundra	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
17	Bethany G Yuan	Australia	Cloverdal	Bikes	Mountain Bikes	2001	3	August	3399.99	271.9992	84.9998
18	Jasmine Wilson	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
19	Micah Wu	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
20	Warren L Zhang	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	July	699.0982	55.9279	17.4775
21	Ariana Stewart	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
22	Suzanne K Lu	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
23	Randall M Rubio	Australia	Cranbourr	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
24	Deborah K Kumar	Australia	Cranbourr	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
25	Krystal Holt	Australia	Cranbourr	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
26	Patricia T Raman	Australia	Cranbourr	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
27	Wendy Dominguez	Australia	Cranbourr	Bikes	Mountain Bikes	2001	3	August	3374.99	269.9992	84.3748
28	Willie She	Australia	Darlinghu	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
29	Alan Zhu	Australia	Darlinghu	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
30	Dawn R Tang	Australia	Darlinghu	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568

The following image shows a ~~PivotTable~~PivotTable™ summary of the worksheet table data.

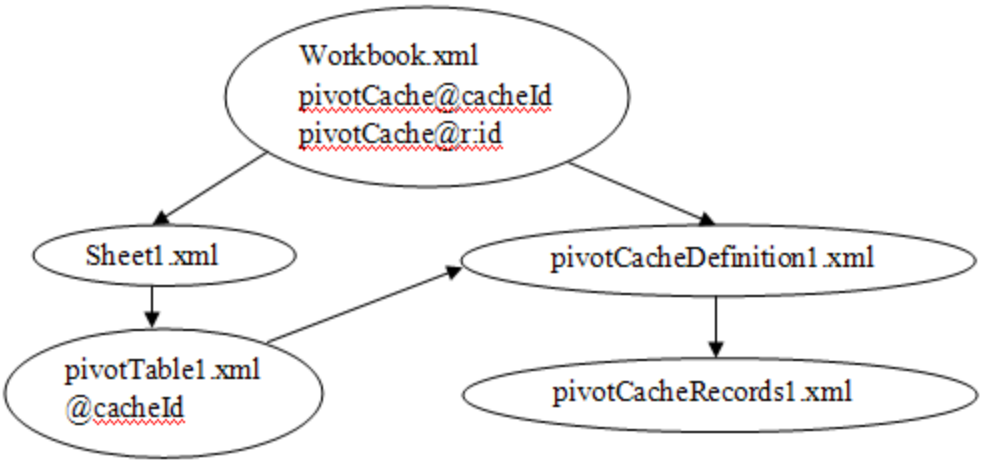
	A	B	C	D	E	F	G
1							
2		Country	(All)				
3		State	(All)				
4		City	(All)				
5							
6		Sum of Sales Amount	Column Labels				
7			2001				2001 Total
8			3			3 Total	
9		Row Labels	July	August	September		
10		Bikes	209652.9046	222538.2892	173993.5128	606184.7066	606184.7066
11		Mountain Bikes	64424.81	60899.82	10174.97	135499.6	135499.6
12		Road Bikes	145228.0946	161638.4692	163818.5428	470685.1066	470685.1066
13		Grand Total	209652.9046	222538.2892	173993.5128	606184.7066	606184.7066

The filter area consists of the "Country", "State", and "City" fields. The row area consists of the "Product Category" and "Product Subcategory" fields. "Bikes" belongs to the "Product Category" field and both "Mountain Bikes" and "Road Bikes" belong to the "Product Subcategory" field. The column consists of the "Year" ("2001"), "Quarter" ("3"), and "Month" ("July", "August", and "September") fields.

The following image shows the field list for the ~~PivotTable~~PivotTable™ in the previous image.



File Structure



The workbook points to (and owns the longevity of) the *pivotCacheDefinition* part, which in turn points to and owns the *pivotCacheRecords* part. The workbook also points to and owns the sheet part, which in turn points to and owns a *pivotTable* part definition, when a ~~PivotTable~~PivotTable™ is on the sheet. There can be multiple PivotTables on a sheet. The *pivotTable* part points to the appropriate *pivotCacheDefinition* which it is using. Since multiple PivotTables can use the same cache, the *pivotTable* part does not own the longevity of the *pivotCacheDefinition*.

The *pivotTable* part describes the particulars of the layout of the ~~PivotTable~~PivotTable™ on the sheet. It indicates what fields are on the row axis, the column axis, report filter, and values areas of the ~~PivotTable~~PivotTable™. It also indicates formatting information about the ~~PivotTable~~PivotTable™. If conditional formatting has been applied to the ~~PivotTable~~PivotTable™, that is also expressed in the *pivotTable* part.

Outline of XML for pivotTableDefinition

```
<pivotTableDefinition>
  <location/>
  <pivotFields/>
  <rowFields/>
  <rowItems/>
  <colFields/>
  <colItems/>
  <pageFields/>
  <dataFields/>
  <conditionalFormats/>
  <pivotTableStyleInfo/>
</pivotTableDefinition>
```

The *pivotCacheRecords* part contains the underlying data to be aggregated. It is a cache of the source data.

Outline of XML for pivotCacheRecords

```
<pivotCacheRecords/>
  <r/>
</pivotCacheRecords>
```

The *pivotCacheDefinition* part defines each field in the *pivotCacheRecords* part, including field name and information about the data contained in the field. The *pivotCacheDefinition* part also defines pivot items that are shared among the *pivotTableDefinition* and *pivotCacheRecords* parts.

Outline of XML for pivotCacheDefinition

```
<pivotCacheDefinition>
  <cacheSource/>
  <cacheFields>
    <cacheField>
      <sharedItems>
        <d/>
      </sharedItems>
      <fieldGroup/>
    </cacheField>
  </cacheFields>
</pivotCacheDefinition>
```

Changes to section 18.10.1.1 autoSortScope (AutoSort Scope)

Represents the sorting scope for the ~~PivotTable~~PivotTable™.

[*Note*: The W3C XML Schema definition of this element's content model (CT_AutoSortScope) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.2 b (Boolean)

Represents a boolean value for an item in the ~~PivotTable~~PivotTable™.

Attributes	Description
c (Caption)	Specifies the caption for the item. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
cp (Member Property Count)	Specifies the number of property values for this item. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
f (Calculated Item)	Specifies a boolean value that indicates whether this item has a calculated value. A value of 1 or `true` indicates the item has a calculated value.

Attributes	Description
	A value of `0` or `false` indicates the item does not have a calculated value. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
u (Unused Item)	Specifies a boolean value that indicates whether this is an unused item. The application marks an item as unused when an item is deleted from the data source. The item and associated metadata are retained in the cache until the threshold for unused items specified in missingItemsLimit is reached. A value of `1` or `true` indicates this item is unused. A value of `0` or `false` indicates this item is used. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
v (Value)	Specifies the value of the item. This attribute is required. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Boolean) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.3 cacheField (PivotCache Field)

Represent a single field in the PivotCache. This definition contains information about the field, such as its source, data type, and location within a level or hierarchy. The sharedItems element stores additional information about the data in this field. If there are no shared items, then values are stored directly in the pivotCacheRecords part.

[*Example*:

```
<cacheField name="Group" numFmtId="0">
  <sharedItems count="3">
    <s v="Pacific"/>
    <s v="North America"/>
    <s v="Europe"/>
  </sharedItems>
</cacheField>
```

end example]

Attributes	Description
caption (PivotCache Field Caption)	Specifies the caption of the cache field. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
databaseField (Database Field)	Specifies a boolean value that indicates whether this field came from the source database rather having been created by the application. A value of `1` or `true` indicates the field is from the source database. A value of `0` or `false` indicates the field was created by the application. [*Note*: This attribute could be used for a defined grouped or calculated field. In this case, source database fields should precede defined grouped or calculated fields. *end note*] The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
formula (Calculated Field Formula)	Specifies the formula for the calculated field. This formula is specified by the end-user. Calculated fields can perform calculations by using the contents of other fields in the ~~PivotTable~~PivotTable™. In formulas you create for calculated fields or calculated items, you can use operators and expressions as you do in other worksheet formulas. You can use constants and refer to data from the ~~PivotTable~~PivotTable™, but you cannot use cell references or defined names. You cannot use worksheet functions that require cell references or defined names as arguments, and you cannot use array functions. Further behaviors and restrictions apply to formulas for calculated fields: • Formulas for calculated fields operate on the sum of the underlying data for any fields in the formula. [*Example*: The formula =Sales * 1.2 multiplies the sum of the sales for each type and region by 1.2; it does not multiply each individual sale by 1.2 and then sum the multiplied amounts. *end example*] • Formulas cannot refer to totals. For more information about formulas see §**Error! Reference source not found.** in Formulas. For more information about defined names see §**Error! Reference source not found.** in Workbook. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
hierarchy (Hierarchy)	Specifies the hierarchy that this field is part of. The possible values for this attribute are defined by the W3C XML Schema int

Attributes	Description
	datatype.
level (Hierarchy Level)	Specifies the hierarchy level that this field is part of. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
mappingCount (Member Property Count)	Specifies the number of property mappings for this field. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
memberPropertyField (Member Property Field)	Specifies a boolean value that indicates whether the field contains OLAP member property information. A value of `1` or `true` indicates this field contains OLAP member property information. A value of `0` or `false` indicates this field does not contain OLAP member property information. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
name (PivotCache Field Name)	Specifies the name of the cache field. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
numFmtId (Number Format Id)	Specifies the number format that is applied to all items in the field. Number formats are written to the styles part. For more information see §**Error! Reference source not found.** in Styles. [*Note*: Formatting information provided by cell table and by ~~PivotTable~~PivotTable™ need not agree. If the two formats differ, the cell-level formatting takes precedence. If you change the layout of the ~~PivotTable~~PivotTable™, the ~~PivotTable~~PivotTable™ formatting will then take precedence. *end note*] The possible values for this attribute are defined by the ST_NumFmtId simple type (§**Error! Reference source not found.**).
propertyName (Property Name)	Specifies the name of the property if this field is an OLAP property field. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
serverField (Server-based Field)	Specifies a boolean value that indicates whether the field is a server-based page field. A value of `1` or `true` indicates this field is a server-based page field.

Attributes	Description
	A value of `0` or `false` indicates this field is not a server-based page field. This attribute applies to ODBC sources only. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
sqlType (SQL Data Type)	Specifies the SQL data type of the field. This attribute stores an ODBC data type and applies to ODBC data sources only. A value is supplied for this attribute only if it is provided to the application. The following are data types supported by ODBC. For a more information, see the ODBC specification. • 0 SQL_UNKNOWN_TYPE • 1 SQL_CHAR • 2 SQL_VARCHAR • -1 SQL_LONGVARCHAR • -8 SQL_WCHAR • -9 SQL_WVARCHAR • -10 SQL_WLONGVARCHAR • 3 SQL_DECIMAL • 2 SQL_NUMERIC • 5 SQL_SMALLINT • 4 SQL_INTEGER • 7 SQL_REAL • 6 SQL_FLOAT • 8 SQL_DOUBLE • -7 SQL_BIT • -6 SQL_TINYINT • -5 SQL_BIGINT • -2 SQL_BINARY • -3 SQL_VARBINARY • -4 SQL_LONGVARBINARY • 9 SQL_TYPE_DATE or SQL_DATE • 10 SQL_TYPE_TIME or SQL_TIME • 11 SQL_TYPE_TIMESTAMP or SQL_TIMESTAMP • 102 SQL_INTERVAL_MONTH • 101 SQL_INTERVAL_YEAR • 107 SQL_INTERVAL_YEAR_TO_MONTH • 103 SQL_INTERVAL_DAY • 104 SQL_INTERVAL_HOUR • 105 SQL_INTERVAL_MINUTE • 106 SQL_INTERVAL_SECOND • 108 SQL_INTERVAL_DAY_TO_HOUR • 109 SQL_INTERVAL_DAY_TO_MINUTE

Attributes	Description
	• 110 SQL_INTERVAL_DAY_TO_SECOND • 111 SQL_INTERVAL_HOUR_TO_MINUTE • 112 SQL_INTERVAL_HOUR_TO_SECOND • 113 SQL_INTERVAL_MINUTE_TO_SECOND • -11 SQL_GUID • -20 SQL_SIGNED_OFFSET • -22 SQL_UNSIGNED_OFFSET The possible values for this attribute are defined by the W3C XML Schema int datatype.
uniqueList (Unique List Retrieved)	Specifies a boolean value that indicates whether the application was able to get a list of unique items for the field. The attribute only applies to PivotTables that use ODBC and is intended to be used in conjunction with optimization features in the application. [*Example*: the application can optimize memory usage when populating PivotCache records if it has a list of unique items for a field before all the records are retrieved from ODBC. *end example*] A value of `1` or `true` indicates the application was able to get a list of unique values for the field. A value of `0` or `false` indicates the application was unable to get a list of unique values for the field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_CacheField) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.7 cacheSource (PivotCache Source Description)

Represents the description of data source whose data is stored in the pivot cache. The data source refers to the underlying rows or database records that provide the data for a ~~PivotTable~~PivotTable™. You can create a ~~PivotTable~~PivotTable™ report from a SpreadsheetML table, an external database (including OLAP cubes), multiple SpreadsheetML worksheets, or another ~~PivotTable~~PivotTable™.

Quarter	Region	Sport	Sales
Qtr1	East	Golf	$5,000
Qtr1	East	Safari	$9,000
Qtr1	East	Tennis	$1,500
Qtr2	East	Golf	$2,000
Qtr2	East	Safari	$6,000
Qtr2	East	Tennis	$500
Qtr1	West	Golf	$3,500
Qtr1	West	Tennis	$6,000
Qtr2	West	Golf	$2,500
Qtr2	West	Tennis	$3,200

Information about the data source is stored in the connection element and is retrieved using the connectionId attribute.

[*Example*:

```
<cacheSource type="external" connectionId="1"/>
```

end example]

OLAP data sources are distinguished from other data sources in SpreadsheetML. OLAP records are not stored in the *pivotCacheRecords* part, whereas all records for non-OLAP data sources are stored in the cache.

Attributes	Description
connectionId (Connection Index)	Specifies the index to the workbook connection. This attribute is used when the cache type is 'External.' See §0 for more information about the connection element. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
type (Cache Type)	Specifies the cache type. The possible values for this attribute are defined by the ST_SourceType simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_CacheSource) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.8 calculatedItem (Calculated Item)

Represents an item within a ~~PivotTable~~PivotTable™ field that uses a formula . The formula is specified in the formula attribute.

Calculations and options available for a ~~PivotTable~~PivotTable™ depend on whether the source data came from an OLAP database or another type of database. This complex type applies to non-OLAP external data or on worksheet data. See calculatedMember for information on calculations on OLAP data sources.

Attributes	Description
field (Field Index)	Specifies the index of the pivotField with which this calculated item is associated. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
formula (Calculated Item	Specifies the formula of the calculated item. In formulas you create for calculated items, you can use operators and expressions as you do in other worksheet

Attributes	Description
Formula)	formulas. You can use constants and refer to data from the ~~PivotTable~~PivotTable™, but you cannot use cell references or defined names. You cannot use worksheet functions that require cell references or defined names as arguments, and you cannot use array functions. Further behaviors and restrictions apply to formulas for `calculatedItems`: • Formulas for calculated items operate on the individual records; the calculated item formula =Dairy *115% multiplies each individual sale of Dairy times 115%, after which the multiplied amounts are summarized together in the data area. • Formulas cannot refer to totals. • You can include the field name in a reference to an item. The item name shall be in square brackets. Use this format to avoid #NAME? errors when two items in two different fields in a report have the same name. • You can refer to an item by its position in the ~~PivotTable~~PivotTable™ as currently sorted and displayed. The item referred to in this way can change whenever the positions of items change or different items are displayed or hidden. Hidden items are not counted in this index. • You can use relative positions to refer to items. The positions are determined relative to the calculated item that contains the formula. If the position you give is before the first item or after the last item in the field, the formula results in a #REF! error. For more information about formulas see §**Error! Reference source not found.** in Formulas. For more information about defined names see §**Error! Reference source not found.** in Workbook. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_CalculatedItem) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.11 calculatedMembers (Calculated Members)

Represents the collection of calculated members in an OLAP ~~PivotTable~~PivotTable™.

[*Example*:

```
<calculatedMembers count="1">
  <calculatedMember name="[Product].[Product Categories].[All
    Products].[Calculated Member]" mdx="'[Product].[Product
Categories].[All
    Products].[Accessories]'" memberName="Calculated Member"
    hierarchy="[Product].[Product Categories]" parent="[Product].[Product
    Categories].[All Products]"/>
</calculatedMembers>
```

end example]

Attributes	Description
count (Calculated Members Count)	Specifies the number of calculated members. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_CalculatedMembers) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.12 chartFormat (PivotChart Format)

Represents the format defined in the PivotChart that is associated with this ~~PivotTable~~PivotTable™.

[*Example*:

```
<sh:pivotTableDefinition xmlns:sh="…" name="PivotTable1" cacheId="0"
  applyNumberFormats="0" applyBorderFormats="0" applyFontFormats="0"
  applyPatternFormats="0" applyAlignmentFormats="0"
applyWidthHeightFormats="1"
  dataCaption="Values" updatedVersion="3" minRefreshableVersion="3"
  showCalcMbrs="0" useAutoFormatting="1" colGrandTotals="0"
itemPrintTitles="1"
  createdVersion="3" indent="0" outline="1" outlineData="1"
  multipleFieldFilters="0" chartFormat="1" fieldListSortAscending="1">
```

end example]

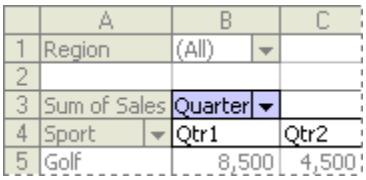
Attributes	Description
chart (Chart Index)	Specifies the index of the chart part to which the formatting applies. For more information see the DrawingML specification for more information on the chart part. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

Attributes	Description
format (Pivot Format Id)	Specifies the index of the pivot format that is currently in use. This index corresponds to a dxf element in the Styles part. For more information see the Styles section (§**Error! Reference source not found.**). The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
series (Series Format)	Specifies a boolean value that indicates whether format applies to a series. A value of `1` or `true` indicates this format applies to a series. A value of `0` or `false` indicates this format applies to a data point. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_ChartFormat) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.14 colFields (Column Fields)

Represents the collection of fields that are on the column axis of the ~~PivotTable~~PivotTable™.



	A	B	C
1	Region	(All)	
2			
3	Sum of Sales	Quarter	
4	Sport	Qtr1	Qtr2
5	Golf	8,500	4,500

In the image above, the blue field is a column field.

[*Example*: In the following SpreadsheetML example, "Year", "Quarter" and "Month" are on the column axis of the ~~PivotTable~~PivotTable™, in that order.

```
<colFields count="3">
  <field x="14"/>
  <field x="15"/>
  <field x="16"/>
</colFields>
```

end example]

Attributes	Description
count (Repeated Items Count)	Specifies the number of items in this collection. The possible values for this attribute are defined by the W3C XML Schema

Attributes	Description
	unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_ColFields) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.15 colHierarchiesUsage (Column OLAP Hierarchy References)

Represents the collection of references to OLAP hierarchies on the column axis of a ~~PivotTable~~PivotTable™.

[*Example*:

```
<sh:colHierarchiesUsage count="2">
  <sh:colHierarchyUsage hierarchyUsage="33"/>
  <sh:colHierarchyUsage hierarchyUsage="-2"/>
</sh:colHierarchiesUsage>
```

end example]

Attributes	Description
count (Items Count)	Specifies the number of items in the collection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_ColHierarchiesUsage) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.16 colHierarchyUsage (Column OLAP Hierarchies)

Represents the collection of references to OLAP Hierarchies on the column axis of a ~~PivotTable~~PivotTable™.

[*Example*:

<sh:colHierarchyUsage hierarchyUsage="33"/>

end example]

Attributes	Description
hierarchyUsage (Hierarchy Usage)	Specifies the reference to an OLAP hierarchy in a ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema int

Attributes	Description
	datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_HierarchyUsage) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.17 colItems (Column Items)

Represents the collection of column items of the ~~PivotTable~~PivotTable™.

[*Example*: In the following SpreadsheetML example the item values are found in cells C6:H8. For example "2001" / "3" / "July" values are in C7:C9. Those are the first column item values and are referenced by the first <i> element below.

```
<colItems count="5">
  <i>
    <x/>
    <x/>
    <x/>
  </i>
  <i r="2">
    <x v="1"/>
  </i>
  <i r="2">
    <x v="2"/>
  </i>
  <i t="default" r="1">
    <x/>
  </i>
  <i t="default">
    <x/>
  </i>
</colItems>
```

end example]

The first <i> collection represents all item values for the first column in the column axis area of the ~~PivotTable~~PivotTable™. The first <x> in the first <i> corresponds to the first field in the columns area of the ~~PivotTable~~PivotTable™, namely "Year". The implied index value of '0' on this <x> indicates that the item value for this first item in the column is the 0th item for this pivotField. The 0th item for this pivotField is itself an index to an item value into this field's shared items collection in the pivotCacheDefinition part, namely "2001".

The item values corresponding to the second and third <x> elements can be found in the same way, arriving at "3" for the second item value, and arriving at "July" for the third item value for this first column.

The second <i> collection expresses all 3 item values for the second column in the column axis area. The @r value of '2' indicates that the first two item values from the previous column is repeated here, which means that the first item value for this second column is "2001" again and the second item value for this second column is "3". The third item value is expressed by the only <x> element under this second <i> element, and without further explanation is understood to reference the item value "August".

Attributes	Description
count (Column Item Count)	Specifies the number of items on the column axis of the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_colItems) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.18 conditionalFormat (Conditional Formatting)

Represents the conditional formatting defined in the ~~PivotTable~~PivotTable™.

Attributes	Description
priority (Priority)	Specifies the priority of ~~PivotTable~~PivotTable™ conditional formatting rule. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
scope (Conditional Formatting Scope)	Specifies the scope of ~~PivotTable~~PivotTable™ conditional formatting rule. The possible values for this attribute are defined by the ST_Scope simple type (§0).
type (Conditional Formatting Rule Type)	Specifies the type of ~~PivotTable~~PivotTable™ conditional formatting rule. See associated simple type definition for details. The possible values for this attribute are defined by the ST_Type simple type (§0).

[*Note*: The W3C XML Schema definition of this element's content model (CT_ConditionalFormat) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.19 conditionalFormats (Conditional Formats)

Represents the collection of conditional formats applied to a ~~PivotTable~~PivotTable™.

[*Example*:

```
<sh:conditionalFormats count="1">
  <sh:conditionalFormat priority="1">
    <sh:pivotAreas count="1">
      <sh:pivotArea type="data" collapsedLevelsAreSubtotals="1">
        <sh:references count="5">
          <sh:reference field="4294967294" count="1" selected="0">
            <sh:x v="0"/>
          </sh:reference>
          <sh:reference field="2" count="1" selected="0">
            <sh:x v="0"/>
          </sh:reference>
          <sh:reference field="14" count="1" selected="0">
            <sh:x v="0"/>
          </sh:reference>
          <sh:reference field="15" count="2" selected="0">
            <sh:x v="2"/>
            <sh:x v="3"/>
          </sh:reference>
        </sh:references>
      </sh:pivotArea>
    </sh:pivotAreas>
  </sh:conditionalFormat>
</sh:conditionalFormats>
```

end example]

Attributes	Description
count (Conditional Format Count)	Specifies the number of conditional formats defined for the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_ConditionalFormats) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.20 consolidation (Consolidation Source)

Represents the description of the PivotCache source using multiple consolidation ranges. This element is used when the source of the ~~PivotTable~~PivotTable™ is a collection of ranges in the workbook. The ranges are specified in the rangeSets collection. The logic for how the application consolidates the data in the ranges is application-defined. [*Example*: the application might consolidate data based on its position in the worksheet that the end-user specifies. *end example*]

Attributes	Description
autoPage (Auto Page)	Specifies a boolean value that indicates whether the application will automatically create one additional page field to describe/qualify the source ranges. A value of `1` or `true` indicates the application will create an additional page field. A value of `0` or `false` indicates will not create an additional page field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Consolidation) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.21 d (Date Time)

Represents a date-time value in the ~~PivotTable~~PivotTable™.

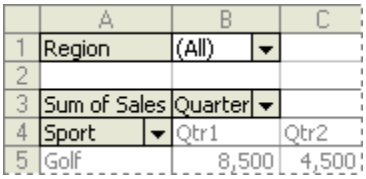
Attributes	Description
c (Caption)	Specifies the caption for the item. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
cp (Member Property Count)	Specifies the number of member property values. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
f (Calculated Item Value)	Specifies a boolean value that indicates whether this is a calculated item value. A value of `1` or `true` indicates this is a calculated item value. A value of `0` or `false` indicates this is not a calculated item value. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
u (Unused Item)	Specifies a boolean value that indicates whether this is an unused item. The application marks an item as unused when an item is deleted from the data

Attributes	Description
	source. The item and associated metadata are retained in the cache until the threshold for unused items specified in missingItemsLimit is reached. A value of 1 or true indicates this is an unused item. A value of 0 or false indicates this item is used. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
v (Value)	Specifies the value of the item. The possible values for this attribute are defined by the W3C XML Schema dateTime datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_DateTime) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.22 dataField (Data Field Item)

Represents a field from a source list, table, or database that contains data that is summarized in a ~~PivotTable~~PivotTable™.



	A	B	C
1	Region	(All)	
2			
3	Sum of Sales	Quarter	
4	Sport	Qtr1	Qtr2
5	Golf	8,500	4,500

A data field represents data that is derived from a field in the source list or database. [*Example*: The Sport field, for example, might come from a column in the source list that is labeled Sport and contains the names of various sports (Golf, Tennis) for which the source list has sales figures. *end example*]

Source data can be taken from an SpreadsheetML list or range, an external database or cube, or another ~~PivotTable~~PivotTable™. Data fields use summary functions to combine values from the underlying source data. You can also use custom calculations to compare data values, or add your own formulas that use elements of the report or other worksheet data.

[*Example*:

```
<dataFields count="1">
  <dataField name="Sum of Sales Amount" fld="25" baseField="0"
baseItem="0"/>
</dataFields>
```

end example]

Attributes	Description
baseField ('Show Data As' Base Field)	Specifies the index to the base field when the ShowDataAs calculation is in use. The possible values for this attribute are defined by the W3C XML Schema int datatype.
baseItem ('Show Data As' Base Setting)	Specifies the index to the base item when the ShowDataAs calculation is in use. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
fld (Field)	Specifies the index to the field (<r>) in the pivotCacheRecords part that this data item summarizes. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
name (Data Field Name)	Specifies the name of the data field. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
numFmtId (Number Format Id)	Specifies the index to the number format applied to this data field. Number formats are written to the styles part. See the Styles section(§**Error! Reference source not found.**) for more information on number formats. Formatting information provided by cell table and by ~~PivotTable~~PivotTable™ need not agree. If the two formats differ, the cell-level formatting takes precedence. If you change the layout the ~~PivotTable~~PivotTable™, the ~~PivotTable~~PivotTable™ formatting will then take precedence. The possible values for this attribute are defined by the ST_NumFmtId simple type (§**Error! Reference source not found.**).
showDataAs (Show Data As Display Format)	Specifies the display format for this data field. Formatting information provided by cell table and by ~~PivotTable~~PivotTable™ need not agree. If the two formats differ, the cell-level formatting takes precedence. If you change the layout the ~~PivotTable~~PivotTable™, the ~~PivotTable~~PivotTable™ formatting will then take precedence. The possible values for this attribute are defined by the ST_ShowDataAs simple type (§0).
subtotal (Subtotal)	Specifies the aggregation function that applies to this data field. The possible values for this attribute are defined by the ST_DataConsolidateFunction simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_DataField) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.23 dataFields (Data Fields)

Represents the collection of items in the data region of the ~~PivotTable~~PivotTable™.

[*Example*:

```
<dataFields count="1">
  <dataField name="Sum of Sales Amount" fld="25" baseField="0"
baseItem="0"/>
</dataFields>
```

end example]

Attributes	Description
count (Data Items Count)	Specifies the number of items in the data region of the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_DataFields) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.24 dimension (OLAP Dimension)

Represents a ~~PivotTable~~PivotTable™ OLAP Dimension. A dimension is a field that organizes a single type of data into a hierarchy with levels of detail. [*Example*: An OLAP database could contain a Time dimension providing data for levels Year, Month, Week, and Day, allowing you to create reports that let you compare day-to-day sales results or view a summary of your sales for an entire year. *end example*]

Attributes	Description
caption (Dimension Display Name)	Specifies the display name of the dimension. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
measure (Measure)	Specifies a boolean value that indicates whether this is a measure dimension. A value of `1` or `true` indicates this dimension is a measure dimension. A value of `0` or `false` indicates this dimension is not a measure dimension. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

Attributes	Description
name (Dimension Name)	Specifies the name of the dimension. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
uniqueName (Dimension Unique Name)	Specifies the unique name of the dimension. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotDimension) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.25 dimensions (OLAP Dimensions)

Represents the collection of ~~PivotTable~~PivotTable™ OLAP dimensions.

[*Example*:

```
<dimensions count="22">
  <dimension name="Account" uniqueName="[Account]" caption="Account"/>
  <dimension name="Customer" uniqueName="[Customer]" caption="Customer"/>
  <dimension name="Date" uniqueName="[Date]" caption="Date"/>
  <dimension name="Delivery Date" uniqueName="[Delivery Date]"
    caption="Delivery Date"/>
  <dimension name="Department" uniqueName="[Department]"
caption="Department"/>
  <dimension name="Destination Currency" uniqueName="[Destination
Currency]"
    caption="Destination Currency"/>
  <dimension name="Employee" uniqueName="[Employee]" caption="Employee"/>
  <dimension name="Geography" uniqueName="[Geography]"
caption="Geography"/>
  <dimension name="Internet Sales Order Details" uniqueName="[Internet
Sales
    Order Details]" caption="Internet Sales Order Details"/>
  <dimension measure="1" name="Measures" uniqueName="[Measures]"
    caption="Measures"/>
  <dimension name="Organization" uniqueName="[Organization]"
    caption="Organization"/>
```

```
  <dimension name="Product" uniqueName="[Product]" caption="Product"/>
  <dimension name="Promotion" uniqueName="[Promotion]"
caption="Promotion"/>
  <dimension name="Reseller" uniqueName="[Reseller]" caption="Reseller"/>
  <dimension name="Reseller Sales Order Details" uniqueName="[Reseller
Sales
    Order Details]" caption="Reseller Sales Order Details"/>
  <dimension name="Sales Channel" uniqueName="[Sales Channel]"
caption="Sales
    Channel"/>
  <dimension name="Sales Reason" uniqueName="[Sales Reason]" caption="Sales
    Reason"/>
  <dimension name="Sales Summary Order Details" uniqueName="[Sales Summary
Order
    Details]" caption="Sales Summary Order Details"/>
  <dimension name="Sales Territory" uniqueName="[Sales Territory]"
    caption="Sales Territory"/>
  <dimension name="Scenario" uniqueName="[Scenario]" caption="Scenario"/>
  <dimension name="Ship Date" uniqueName="[Ship Date]" caption="Ship
Date"/>
  <dimension name="Source Currency" uniqueName="[Source Currency]"
    caption="Source Currency"/>
</dimensions>
```

end example]

Attributes	Description
count (OLAP Dimensions Count)	Specifies the number of OLAP dimensions in the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Dimensions) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.27 e (Error Value)

Represents an error value. The use of this item indicates that an error value is present in the ~~PivotTable~~PivotTable™ source. The error is recorded in the `value` attribute.

Attributes	Description
b (Bold)	Specifies a boolean value that indicates whether the value contains bold formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only.

Attributes	Description
	A value of 1 or true indicates this value contains bold formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
bc (background Color)	Specifies the background color for this value that was provided by the OLAP server. This attribute applies to OLAP-based PivotTables only. The color is specified as a HEX value in RGB space. The possible values for this attribute are defined by the ST_UnsignedIntHex simple type (§**Error! Reference source not found.**).
c (Item Caption)	Specifies the item/member caption The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
cp (Member Property Count)	Specifies the number of member property values. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
f (Calculated Item)	Specifies a boolean value that indicates whether this is a calculated item value. A value of 1 or true indicates value is a calculated item value. A value of 0 or false indicates this value is not a calculated item value. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
fc (Foreground Color)	Specifies the foreground color for this value that was provided by the OLAP server. This attribute applies to OLAP-based PivotTables only. The color is specified as a HEX value in RGB space. The possible values for this attribute are defined by the ST_UnsignedIntHex simple type (§**Error! Reference source not found.**).
i (Italic)	Specifies a boolean value that indicates whether the value contains italic formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of 1 or true indicates this value contains italic formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
in (Format Index)	Specifies the index to the OLAP serverformat element where the format string for this entry is stored.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
st (Strikethrough)	Specifies a boolean value that indicates whether the value contains strikethrough formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of `1` or `true` indicates this value contains strikethrough formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
u (Unused Item)	Specifies a boolean value that indicates whether this is an unused item. The application marks an item as unused when an item is deleted from the data source. The item and associated metadata are retained in the cache until the threshold for unused items specified in missingItemsLimit is reached. A value of `1` or `true` indicates this item is not used. A value of `0` or `false` indicates this item is used. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
un (Underline)	Specifies a boolean value that indicates whether the value contains underline formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of `1` or `true` indicates this value contains underline formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
v (Value)	Specifies the value of the item. This attribute depends on how the application records errors. [*Note*: While the error values are determined by the application, the following are some example error values that could be used: • #DIV/0! • #NAME? • #VALUE! • #NULL! • #NUM! • #REF! • #N/A • #GETTING_DATA *end note*]

Attributes	Description
	The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_Error) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.29 field (Field)

Represents a generic field that can appear either on the column or the row region of the ~~PivotTable~~PivotTable™. There areas many <x> elements as there are item values in any particular column or row.

[*Example*:

```
<sh:field x="2"/>
```

end example]

Attributes	Description
x (Field Index)	Specifies the index to a pivotField item value. There are as many x elements as there are item values in any particular column. Note that these x elements sometimes are not explicitly written, but instead "inherited" from the previous column or i element, via the value of @r. The pivotField items don't list values explicitly, but instead reference a shared item value in the pivotCacheDefinition part. The first instance of x has no attribute value @v associated with it, so the default value for @v is assumed to be "0". The possible values for this attribute are defined by the W3C XML Schema int datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Field) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.33 filter (~~PivotTable~~PivotTable™ Advanced Filter)

Represents a ~~PivotTable~~PivotTable™ advanced filter.

[*Example*:

```
<sh:filter fld="3" type="count" id="1" iMeasureHier="187">
  <sh:autoFilter ref="A1">
    <sh:filterColumn colId="0">
      <sh:top10 val="5"/>
    </sh:filterColumn>
  </sh:autoFilter>
</sh:filter>
```

end example]

Attributes	Description
description (Pivot Filter Description)	Specifies the description of the pivot filter. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
evalOrder (Evaluation Order)	Specifies the evaluation order of the pivot filter. This attribute is zero-based. The possible values for this attribute are defined by the W3C XML Schema int datatype.
fld (Field Index)	Specifies the index of the field to which this pivot filter belongs. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
id (Pivot Filter Id)	Specifies the unique identifier of the pivot filter as assigned by the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
iMeasureFld (Measure Field Index)	Specifies the index of the measure field. This attribute is used only by filters in Relational pivots and specifies on which measure a value filter should apply. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
iMeasureHier (Measure Index)	Specifies the index of the measure cube field. This attribute is used only by filters in OLAP pivots and specifies on which measure a value filter should apply. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
mpFld (Member Property Field Id)	Specifies the index of the field representing the member property field on which this pivot filter is defined. This attribute is used only by label pivot filters. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
name (Pivot Filter	Specifies the name of the pivot filter.

Attributes	Description
Name)	The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
stringValue1 (Label Pivot)	Specifies the string value "1" used by label pivot filters. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
stringValue2 (Label Pivot Filter String Value 2)	Specifies the string value "2" used by label pivot filters. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
type (Pivot Filter Type)	Specifies the type of the pivot filter. The possible values for this attribute are defined by the ST_PivotFilterType simple type (§0).

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotFilter) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.34 filters (Filters)

Represents the collection of filters that apply to this ~~PivotTable~~PivotTable™.

[*Example*:

```
<sh:filters count="1">
  <sh:filter fld="3" type="count" id="1" iMeasureHier="187">
    <sh:autoFilter ref="A1">
      <sh:filterColumn colId="0">
        <sh:top10 val="5"/>
      </sh:filterColumn>
    </sh:autoFilter>
  </sh:filter>
</sh:filters>
```

end example]

Attributes	Description
count (Pivot Filter Count)	Specifies the number of pivot filters in the collection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotFilters) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.35 format (~~PivotTable~~PivotTable™ Format)

Represents the format defined in the ~~PivotTable~~PivotTable™.

Attributes	Description
action (Format Action)	Specifies the formatting behavior for the area indicated in the pivotArea element. The default value for this attribute is "formatting," which indicates that the specified cells have some formatting applied. The format is specified in the dxfId attribute. If the formatting is cleared from the cells, then the value of this attribute becomes "blank." The possible values for this attribute are defined by the ST_FormatAction simple type (§0).
dxfId (Format Id)	Specifies the identifier of the format the application is currently using for the ~~PivotTable~~PivotTable™. Formatting information is written to the styles part. See the Styles section (§**Error! Reference source not found.**) for more information on formats. Formatting information provided by cell table and by ~~PivotTable~~PivotTable™ need not agree. If the two formats differ, the cell-level formatting takes precedence. If you change the layout the ~~PivotTable~~PivotTable™, the ~~PivotTable~~PivotTable™ formatting will then take precedence. The possible values for this attribute are defined by the ST_DxfId simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_Format) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.36 formats (~~PivotTable~~PivotTable™ Formats)

Represents the collection of formats applied to ~~PivotTable~~PivotTable™.

Attributes	Description
count (Formats Count)	Specifies the number of formats in the collection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Formats) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.44 i (Row Items)

Represents the collection of items in the row region of the ~~PivotTable~~PivotTable™.

[*Example*: In this example the item values are found in cells B10:B13. For example "Bikes" is in B10, and corresponds to the first <i> element below.

```
<rowItems count="4">
  <i>
    <x/>
  </i>
  <i r="1">
    <x/>
  </i>
  <i r="1">
    <x v="1"/>
  </i>
  <i t="grand">
    <x/>
  </i>
</rowItems>
```

end example]

Attributes	Description
i (Data Field Index)	Specifies a zero-based index indicating the referenced data item it in a data field with multiple data items. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
r (Repeated Items Count)	Specifies the number of items to repeat from the previous row item. The first item has no @r explicitly written. Since a default of "0" is specified in the schema, for any item whose @r is missing, a default value of "0" is implied. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
t (Item Type)	Specifies the type of the item. Value of 'default' indicates a grand total as the last row item value The possible values for this attribute are defined by the ST_ItemType simple type (§0).

[*Note*: The W3C XML Schema definition of this element's content model (CT_I) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.45 item (~~PivotTable~~PivotTable™ Field Item)

Represents a single item in ~~PivotTable~~PivotTable™ field.

[*Example*:

```
<sh:item x="66"/>
```

end example]

Attributes	Description
c (Child Items)	Specifies a boolean value that indicates whether the approximate number of child items for this item is greater than zero. A value of `1` or `true` indicates the approximate number of child items for this item is greater than zero. A value of `0` or `false` indicates the approximate number of child items for this item is zero. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
d (Expanded)	Specifies a boolean value that indicates whether this item has been expanded in the ~~PivotTable~~PivotTable™ view. A value of `1` or `true` indicates this item has been expanded. A value of `0` or `false` indicates this item is collapsed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
e (Drill Across Attributes)	Specifies a boolean value that indicates whether attribute hierarchies nested next to each other on a ~~PivotTable~~PivotTable™ row or column will offer drilling "across" each other or not. [*Example*: if the application offers drill across for attribute hierarchies and not for user hierarchies, this attribute would only be written when two attribute hierarchies are placed next to each other on an axis. *end example*] A value of `1` or `true` indicates there is a drill across attribute hierarchies positioned next to each other on a pivot axis. A value of `0` or `false` indicates there is not drill across attribute hierarchies. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
f (Calculated Member)	Specifies a boolean value that indicates whether this item is a calculated member. A value of `1` or `true` indicates this item is a calculated member.

Attributes	Description
	A value of `0` or `false` indicates this item is not calculated. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
h (Hidden)	Specifies a boolean value that indicates whether the item is hidden. A value of `1` or `true` indicates item is hidden. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
m (Missing)	Specifies a boolean value that indicate whether the item has a missing value. A value of `1` or `true` indicates the item value is missing. The application should still retain the item settings in case the item reappears during a later refresh. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
n (Item User Caption)	Specifies the user caption of the item. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
s (Character)	Specifies a boolean value that indicates whether the item has a character value. A value of `1` or `true` indicates the item has a string/character value. A value of `0` or `false` indicates item the item has a value of a different type. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
sd (Hide Details)	Specifies a boolean value that indicates whether the details are hidden for this item. A value of `1` or `true` indicates item details are hidden. A value of `0` or `false` indicates item details are shown. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
t (Item Type)	Specifies the type of this item. A value of 'default' indicates the subtotal or total item. The possible values for this attribute are defined by the ST_ItemType simple type (§0).

Attributes	Description

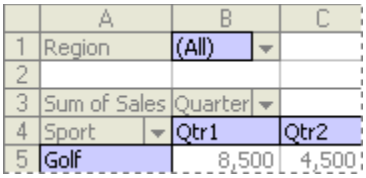
x (Item Index)	Specifies the item index in pivotFields collection in the PivotCache.
	
	[*Example*: In the following example, "Product Category" and "Product Subcategory" are on the row axis of the ~~PivotTable~~PivotTable™, in that order.
	
	`<rowFields count="2">`
	`<field x="7"/>`
	`<x="8"/>`
	`</rowFieldsfield >`
	
	end example]
	
	The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Item) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.46 items (Field Items)

Represents the collection of items in a ~~PivotTable~~PivotTable™ field. The items in the collection are ordered by index. Items represent the unique entries from the field in the source data.

In the following image, the item Golf represents all rows of data in the source list for which the Sport field contains the entry Golf.



The order in which the items are listed is the order they would appear on a particular axis [*Example*: Row or column. *end example*]

[*Example*: In the following SpreadsheetML example, the first field is "Customer Name" and the first item referenced here is <item x="66"/>, which references the value "Adam L Flores" in the pivotCacheDefinition. Therefore, if you added "Customer Name" to the row axis, "Adam L Flores" would be the first row item listed.

```
<pivotFields count="28">
  <pivotField showAll="0" includeNewItemsInFilter="1">
    <items count="8">
      <item x="66"/>
      <item x="133"/>
      <item x="74"/>
      <item x="27"/>
      <item x="118"/>
      <item x="63"/>
      <item x="141"/>
      <item t="default"/>
    </items>
  </pivotField>
  <pivotField showAll="0" includeNewItemsInFilter="1"/>
  <pivotField axis="axisPage" showAll="0" includeNewItemsInFilter="1">
    <items count="2">
      <item x="0"/>
      <item t="default"/>
    </items>
  </pivotField>
<pivotField showAll="0" includeNewItemsInFilter="1"/>
```

end example]

Attributes	Description
count (Field Count)	Specifies the number of fields in the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Items) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.47 kpi (OLAP KPI)

Represents the KPI defined on the OLAP server and stored in the PivotCache.

[*Example*:

```
<kpi uniqueName="Growth in Customer Base" caption="Growth in Customer Base"
  displayFolder="Customer Perspective\Expand Customer Base"
  measureGroup="Internet Sales" value="[Measures].[Growth in Customer
Base]"
  goal="[Measures].[Growth in Customer Base Goal]"
  status="[Measures].[Growth in Customer Base Status]"
  trend="[Measures].[Growth in Customer Base Trend]"/>
```

end example]

Attributes	Description
caption (KPI Display Name)	Specifies the display name of the KPI. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
displayFolder (KPI Display Folder)	Specifies the folder where this KPI is displayed in a list of fields for the ~~PivotTable~~PivotTable™. This attribute depends on how the application exposes a list of fields in the user interface. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
goal (KPI Goal Unique Name)	Specifies the unique name of the KPI goal measure. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
measureGroup (KPI Measure Group Name)	Specifies the name of the measure group to which this KPI belongs. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
parent (Parent KPI)	Specifies the name of the parent KPI for this KPI. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
status (KPI Status Unique Name)	Specifies the unique name of the KPI status measure. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
time (Time Member KPI Unique Name)	Specifies the unique name of the KPI current time member. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
trend (KPI Trend Unique Name)	Specifies the unique name of the KPI trend measure. The possible values for this attribute are defined by the ST_Xstring simple type

Attributes	Description
	(§**Error! Reference source not found.**).
uniqueName (KPI Unique Name)	Specifies the unique name of the KPI. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
value (KPI Value Unique Name)	Specifies the unique name of the KPI value measure. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
weight (KPI Weight Unique Name)	Specifies the unique name of the KPI weight measure. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_PCDKPI) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.49 location (~~PivotTable~~PivotTable™ Location)

Represents location information for the ~~PivotTable~~PivotTable™.

[*Example*:

```
<location ref="B6:G13" firstHeaderRow="1" firstDataRow="4" firstDataCol="1"
  rowPageCount="3" colPageCount="1"/>
```

end example]

Attributes	Description
colPageCount (Columns Per Page)	Specifies the number of columns per page for this ~~PivotTable~~PivotTable™ that the filter area will occupy. By default there is a single column of filter fields per page and the fields occupy as many rows as there are fields. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
firstDataCol (First Data Column)	Specifies the first column of the ~~PivotTable~~PivotTable™ data, relative to the top left cell in the `ref` value. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
firstDataRow (~~PivotTable~~PivotTable™ Data First	Specifies the first row of the ~~PivotTable~~PivotTable™ data, relative to the top left cell in the `ref` value.

Attributes	Description
Row)	The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
firstHeaderRow (First Header Row)	Specifies the first row of the ~~PivotTable~~PivotTable™ header, relative to the top left cell in the ref value. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
ref (Reference)	Specifies the first row of the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the ST_Ref simple type (§**Error! Reference source not found.**).
rowPageCount (Rows Per Page Count)	Specifies the number of rows per page for this ~~PivotTable~~PivotTable™ that the filter area will occupy. By default there is a single column of filter fields per page and the fields occupy as many rows as there are fields. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Location) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.51 map (OLAP Measure Group)

Represents a ~~PivotTable~~PivotTable™ OLAP measure group - Dimension map.

[*Example*:

```
<map measureGroup="0" dimension="2"/>
```

end example]

Attributes	Description
dimension (Dimension Id)	Specifies the identifier for the dimension. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
measureGroup (Measure Group Id)	Specifies the identifier of the measure group. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_MeasureDimensionMap) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.52 maps (OLAP Measure Group)

Represents the ~~PivotTable~~PivotTable™ OLAP measure group - Dimension maps.

[*Example*:

```
<maps count="3">
  <map measureGroup="0" dimension="2"/>
  <map measureGroup="1" dimension="19"/>
  <map measureGroup="2" dimension="8"/>
</maps>
```

end example]

Attributes	Description
count (Measure Group Count)	Specifies the number of measure groups, or dimension maps, in the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_MeasureDimensionMaps) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.53 measureGroup (OLAP Measure Group)

Represents a ~~PivotTable~~PivotTable™ OLAP measure group.

[*Example*:

```
<measureGroup name="Sales Orders" caption="Sales Orders"/>
```

end example]

Attributes	Description
caption (Measure Group Display Name)	Specifies the display name of the measure group. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
name (Measure Group Name)	Specifies the name of the measure group. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_MeasureGroup) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.54 measureGroups (OLAP Measure Groups)

Represents the collection of ~~PivotTable~~PivotTable™ OLAP measure groups.

[*Example*:

```
<measureGroups count="11">
  <measureGroup name="Exchange Rates" caption="Exchange Rates"/>
  <measureGroup name="Financial Reporting" caption="Financial Reporting"/>
  <measureGroup name="Internet Customers" caption="Internet Customers"/>
  <measureGroup name="Internet Orders" caption="Internet Orders"/>
  <measureGroup name="Internet Sales" caption="Internet Sales"/>
  <measureGroup name="Reseller Orders" caption="Reseller Orders"/>
  <measureGroup name="Reseller Sales" caption="Reseller Sales"/>
  <measureGroup name="Sales Orders" caption="Sales Orders"/>
  <measureGroup name="Sales Reasons" caption="Sales Reasons"/>
  <measureGroup name="Sales Summary" caption="Sales Summary"/>
  <measureGroup name="Sales Targets" caption="Sales Targets"/>
</measureGroups>
```

end example]

Attributes	Description
count (Measure Group Count)	Specifies the number of measure groups in the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_MeasureGroups) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.59 mps (OLAP Member Properties)

Represents the collection of OLAP member property. Member properties contain additional information that is available about the items in an OLAP dimension field. [*Example*: If a Geography dimension has property fields Population and Average Income available, you could create a ~~PivotTable~~PivotTable™ report that displays the sales figures for cities where your products are selling well. By displaying and analyzing the population and income figures for these cities, you could target cities with similar demographics for your marketing campaign. *end example*]

[*Example*:

```
<sh:mps count="3">
  <sh:mp field="7"/>
  <sh:mp field="8"/>
  <sh:mp field="9"/>
</sh:mps>
```

end example]

Attributes	Description
count (OLAP Member Properties Count)	Specifies the number of OLAP member properties in the collection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_MemberProperties) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.60 n (Numeric)

Represents a numeric value in the ~~PivotTable~~PivotTable™.

[*Example*:

```
<sharedItems containsSemiMixedTypes="0" containsString="0"
containsNumber="1"
  containsInteger="1" minValue="3" maxValue="3" count="1">
  <n v="3"/>
</sharedItems>
```

end example]

Attributes	Description
b (Bold)	Specifies a boolean value that indicates whether this value contains bold formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of 1 or true indicates this value contains italic formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
bc (Background Color)	Specifies the background color for this value that was provided by the OLAP server. This attribute applies to OLAP-based PivotTables only. The color is specified as a HEX value in RGB space. The possible values for this attribute are defined by the ST_UnsignedIntHex

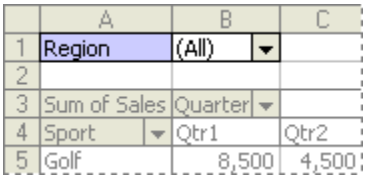
Attributes	Description
	simple type (§**Error! Reference source not found.**).
c (Caption)	Specifies the caption for this item. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
cp (Member Property Count)	Specifies the number of member property values for this item. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
f (Calculated Item)	Specifies a boolean value that indicates whether this is a calculated item value. A value of `1` or `true` indicates this item is a calculated value. A value of `0` or `false` indicates this item is not calculated. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
fc (Foreground Color)	Specifies the foreground color for this value that was provided by the OLAP server. This attribute applies to OLAP-based PivotTables only. The color is specified as a HEX value in RGB space. The possible values for this attribute are defined by the ST_UnsignedIntHex simple type (§**Error! Reference source not found.**).
i (Italic)	Specifies a boolean value that indicates whether the value contains italic formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of `1` or `true` indicates this value contains italic formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
in (Format Index)	Specifies the index to the OLAP serverformat element where the format string for this entry is stored. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
st (Strikethrough)	Specifies a boolean value that indicates whether the value contains strikethrough formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of `1` or `true` indicates this value contains strikethrough formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean

Attributes	Description
	datatype.
u (Unused Item)	Specifies a boolean value that indicates whether this is an unused item. The application marks an item as unused when an item is deleted from the data source. The item and associated metadata are retained in the cache until the threshold for unused items specified in missingItemsLimit is reached. A value of `1` or `true` indicates this item is not used. A value of `0` or `false` indicates this item is used. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
un (Underline)	Specifies a boolean value that indicates whether the value contains underline formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of `1` or `true` indicates this value contains underline formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
v (Value)	Specified the value of this item. The possible values for this attribute are defined by the W3C XML Schema double datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Number) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.62 pageField (Page Field)

Represents a field on the page or report filter of the ~~PivotTable~~PivotTable™.



In the image above, the blue field is a page or report filter field. Page/filter fields allow you to filter the entire ~~PivotTable~~PivotTable™ to display data for a single item or all the items.

[*Example*:

```
<sh:pageField fld="43" hier="103"
  name="[Product].[Product Categories].[All Products]" cap="All Products"/>
```

end example]

Attributes	Description
cap (Hierarchy Display Name)	Specifies the display name of the hierarchy. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
fld (Field)	Specifies the index of the field that appears on the page or filter report area of the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema int datatype.
hier (OLAP Hierarchy Index)	Specifies the index of the OLAP hierarchy to which this item belongs. The possible values for this attribute are defined by the W3C XML Schema int datatype.
item (Item Index)	Specifies the index of the item in the PivotCache. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
name (Hierarchy Unique Name)	Specifies the unique name of the hierarchy. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_PageField) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.63 pageFields (Page Field Items)

Represents the collection of items in the page or report filter region of the ~~PivotTable~~PivotTable™.

[*Example*:

```
<sh:pageFields count="2">
  <sh:pageField fld="43" hier="103"
    name="[Product].[Product Categories].[All Products]" cap="All
Products"/>
  <sh:pageField fld="66" hier="126"
    name="[Promotion].[Promotions].[All Promotions]" cap="All Promotions"/>
</sh:pageFields>
```

end example]

Attributes	Description
count (Page Item Count)	Specifies the number of items in the page region of the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PageFields) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.64 pageItem (Page Item)

Represents an item value for a ~~PivotTable~~PivotTable™ page.

Attributes	Description
name (Page Item Name)	Specifies the name of this page item. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_PageItem) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.66 pivotAreas (Pivot Areas)

Represents the collection of pivot areas that comprise the ~~PivotTable~~PivotTable™ location.

[*Example*:

```
<sh:pivotAreas count="1">
  <sh:pivotArea field="2" dataOnly="0" outline="0"/>
</sh:pivotAreas>
```

end example]

Attributes	Description
count (Pivot Area Count)	Specifies the number of PivotAreas for the ~~PivotTable~~PivotTable™ location. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotAreas) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.68 pivotCacheRecords (PivotCache Records)

Represents the collection of records in the PivotCache. This part stores the underlying source data that the ~~PivotTable~~PivotTable™ aggregates.

[*Example*:

```
<pivotCacheRecords xmlns="…" xmlns:r="…" count="2">
  <r>
    <x v="0"/>
    <s v="Pacific"/>
    <x v="0"/>
    <s v="Australia"/>
    <x v="0"/>
    <x v="0"/>
    <s v="3550"/>
    <x v="0"/>
    <x v="0"/>
    <s v="Road-150 Red, 62"/>
    <s v="This bike is ridden by race winners. Developed with the Adventure
      Works Cycles professional race team, it has a extremely light
      heat-treated aluminum frame, and steering that allows precision
      control."/>
    <s v="No Discount"/>
…
    <n v="89.456800000000001"/>
  </r>
…
```

end example]

Attributes	Description
count (PivotCache Records Count)	Specifies the number of records in the cache. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotCacheRecords) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.69 pivotField (~~PivotTable~~PivotTable™ Field)

Represents a single field in the ~~PivotTable~~PivotTable™. This element contains information about the field, including the collection of items in the field.

[*Example*:

```
<pivotField axis="axisRow" allDrilled="1" showAll="0" measureFilter="1"
  sortType="descending">
  <items count="8">
    <item s="1" c="1" x="0"/>
    <item s="1" c="1" x="1"/>
    <item c="1" x="2"/>
    <item c="1" x="3"/>
    <item c="1" x="4"/>
    <item c="1" x="5"/>
    <item c="1" x="6"/>
    <item t="default"/>
  </items>
  <autoSortScope>
    <pivotArea dataOnly="0" outline="0" fieldPosition="0">
      <references count="2">
        <reference field="4294967294" count="1" selected="0">
          <x v="0"/>
        </reference>
        <reference field="25" count="1" selected="0">
          <x v="0"/>
        </reference>
      </references>
    </pivotArea>
  </autoSortScope>
</pivotField>
```

end example]

Attributes	Description
allDrilled (All Items Expanded)	Specifies a boolean value that indicates whether all items in the field are expanded. Applies only to OLAP PivotTables. A value of `1` or `true` indicates all items in the field are expanded. A value of `0` or `false` indicates all items are not expanded. However some items might be expanded. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
autoShow (Auto Show)	Specifies a boolean value that indicates whether an "AutoShow" filter is applied to this field. This attribute depends on the implementation of filtering in the application.

Attributes	Description
	A value of `1` or `true` indicates an "AutoShow" filter is applied to the field. A value of `0` or `false` indicates an "AutoShow" filter is not applied. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
avgSubtotal (Average)	Specifies a boolean value that indicates whether to apply the 'Average' aggregation function in the subtotal of this field. A value of `1` or `true` indicates the subtotal for this field is 'Average.' A value of `0` or `false` indicates a different aggregation function is applied to the subtotal for this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
axis (Axis)	Specifies the region of the ~~PivotTable~~PivotTable™ that this field is displayed. The possible values for this attribute are defined by the ST_Axis simple type (§0).
compact (Compact)	Specifies a boolean value that indicates whether the application will display fields compactly in the sheet on which this ~~PivotTable~~PivotTable™ resides. A value of `1` or `true` indicates the next field should be displayed in the same column of the sheet. A value of `0` or `false` indicates each pivot field will display in its own column in the sheet. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
countASubtotal (CountA)	Specifies a boolean value that indicates whether to apply the 'countA' aggregation function in the subtotal of this field. A value of `1` or `true` indicates the subtotal for this field is 'countA.' A value of `0` or `false` indicates a different aggregation function is applied to the subtotal for this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
countSubtotal (Count)	Specifies a boolean value that indicates whether to apply the 'count' aggregation function in the subtotal of this field. A value of `1` or `true` indicates the subtotal for this field is 'count.'

Attributes	Description
	A value of `0` or `false` indicates a different aggregation vfunction is applied to the subtotal for this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dataField (Data Field)	Specifies a boolean value that indicates whether this field appears in the data region of the ~~PivotTable~~PivotTable™. A value of `1` or `true` indicates this field appears in the data region of the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates this field appears in another region of the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dataSourceSort (Data Source Sort)	Specifies a boolean value that indicates whether sort is applied to this field in the data source. A value of `1` or `true` indicates this field is sorted in the data source. A value of `0` or `false` indicates this field is not sorted in the data source. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
defaultAttributeDrillState (Drill State)	Specifies a boolean value that indicates the drill state of the attribute hierarchy in an OLAP-based ~~PivotTable~~PivotTable™. A value of `1` or `true` indicates the attribute hierarchy is expanded. A value of `0` or `false` indicates the attribute hierarchy is collapsed. This attribute is designed to allow the application to issue more optimized queries when all items of each field have the same drill state. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
defaultSubtotal (Show Default Subtotal)	Specifies a boolean value that indicates whether the default subtotal aggregation function is displayed for this field. A value of `1` or `true` indicates the default subtotal aggregation function is displayed for this field.

Attributes	Description
	A value of `0` or `false` indicates the default aggregation function is not displayed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dragOff (Drag Off)	Specifies a boolean value that indicates whether the field can be removed from the ~~PivotTable~~PivotTable™. A value of `1` or `true` indicates the field can be removed from the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates the field cannot be removed from the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dragToCol (Drag To Column)	Specifies a boolean value that indicates whether the field can be dragged to the column axis. A value of `1` or `true` indicates the field can be dragged to the column axis. A value of `0` or `false` indicates the field cannot be dragged to the column axis. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dragToData (Field Can Drag to Data)	Specifies a boolean value that indicates whether the field can be dragged to the data region. A value of `1` or `true` indicates the field can be dragged to the data region. A value of `0` or `false` indicates the field cannot be dragged to the data region. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dragToPage (Drag Field to Page)	Specifies a boolean value that indicates whether the field can be dragged to the page region. A value of `1` or `true` indicates the field can be dragged to the page region. A value of `0` or `false` indicates the field cannot be dragged to the page region. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dragToRow (Drag To Row)	Specifies a boolean value that indicates whether the field can be dragged to the row axis.

Attributes	Description
	A value of `1` or `true` indicates the field can be dragged to the row axis. A value of `0` or `false` indicates the field cannot be dragged to the row axis. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
hiddenLevel (Hidden Level)	Specifies a boolean value that indicates whether there is a hidden level in the ~~PivotTable~~PivotTable™. This attribute applies to OLAP-based PivotTables only. A value of `1` or `true` indicates the OLAP ~~PivotTable~~PivotTable™ contains a hidden level. A value of `0` or `false` indicates the OLAP ~~PivotTable~~PivotTable™ does not contain any hidden levels. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
hideNewItems (Hide New Items)	Specifies a boolean value that indicates whether new items that appear after a refresh should be hidden by default. A value of `1` or `true` indicates that items that appear after a refresh should be hidden by default. A value of `0` or `false` indicates that items that appear after a refresh should be shown by default. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
includeNewItemsInFilter (Inclusive Manual Filter)	Specifies a boolean value that indicates whether manual filter is in inclusive mode. A value of `1` or `true` indicates the manual filter is inclusive. A value of `0` or `false` indicates the manual filter is not inclusive. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
insertBlankRow (Insert Blank Row)	Specifies a boolean value that indicates whether to insert a blank row after each item. A value of `1` or `true` indicates that a blank row is inserted after each item. A value of `0` or `false` indicates no additional rows are inserted after each item. The possible values for this attribute are defined by the W3C XML Schema boolean

Attributes	Description
	datatype.
insertPageBreak (Insert Item Page Break)	Specifies a boolean value that indicates whether to insert a page break after each item. A value of `1` or `true` indicates that a page break is inserted after each item. A value of `0` or `false` indicates no page breaks are inserted after items. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
itemPageCount (Items Per Page Count)	Specifies the number of items showed per page in the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
maxSubtotal (Max Subtotal)	Specifies a boolean value that indicates whether to apply the 'max' aggregation function in the subtotal of this field. A value of `1` or `true` indicates that the 'max' aggregation function is applied in the subtotal for this field. A value of `0` or `false` indicates another aggregation function is applied in the subtotal for this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
measureFilter (Measure Filter)	Specifies a boolean value that indicates whether field has a measure based filter. A value of `1` or `true` indicates the field has a measure-based filter. A value of `0` or `false` indicates does not have a measure-based filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
minSubtotal (Min Subtotal)	Specifies a boolean value that indicates whether to apply the 'min' aggregation function in the subtotal of this field. A value of `1` or `true` indicates that the 'min' aggregation function is applied in the subtotal for this field. A value of `0` or `false` indicates another aggregation function is applied in the subtotal for this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

Attributes	Description
multipleItemSelectionAllowed (Multiple Field Filters)	Specifies a boolean value that indicates whether the field can have multiple items selected in the page field. A value of `1` or `true` indicates the ~~PivotTable~~PivotTable™ can have multiple items selected in the page field. A value of `0` or `false` indicates the ~~PivotTable~~PivotTable™ cannot have multiple items selected in the page field. This attribute depends on the application support for selecting multiple items in page fields. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
name (Field Name)	Specifies the name of the field. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
nonAutoSortDefault (Auto Sort)	Specifies a boolean value that indicates whether sort operation that is applied to field should be AutoSort operation or simple data sort operation. A value of `1` or `true` indicates that an AutoSort operation is applied to the field. A value of `0` or `false` indicates a simple data sort operation is applied to the field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
numFmtId (Number Format Id)	Specifies the identifier of the number format to apply to this field. Number formats are written to the styles part. See the Styles section (§**Error! Reference source not found.**) for more information on number formats. Formatting information provided by cell table and by ~~PivotTable~~PivotTable™ need not agree. If the two formats differ, the cell-level formatting takes precedence. If you change the layout the ~~PivotTable~~PivotTable™, the ~~PivotTable~~PivotTable™ formatting will then take precedence. The possible values for this attribute are defined by the ST_NumFmtId simple type (§**Error! Reference source not found.**).
outline (Outline Items)	Specifies a boolean value that indicates whether the items in this field should be shown in Outline form. A value of `1` or `true` indicates the items in this field is shown in Outline form. A value of `0` or `false` indicates the items in this field will not be shown in Outline form. This attribute depends on the application support for displaying items in Outline form.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
productSubtotal (Product Subtotal)	Specifies a boolean value that indicates whether to apply 'product' aggregation function in the subtotal of this field. A value of `1` or `true` indicates that the 'product' aggregation function is applied in the subtotal for this field. A value of `0` or `false` indicates another aggregation function is applied in the subtotal for this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
rankBy (Auto Show Rank By)	Specifies the index of the data field by which AutoShow will rank. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
serverField (Server-based Page Field)	Specifies a boolean value that indicates whether this is a server-based page field. A value of `1` or `true` indicates this is a server-based page field. A value of `0` or `false` indicates this is a local page field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showAll (Show All Items)	Specifies a boolean value that indicates whether to show all items for this field. A value of `1` or `true` indicates that all items be shown. A value of `0` or `false` indicates items be shown according to user specified criteria. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showDropDowns (Show PivotField Header Drop Downs)	Specifies a boolean value that indicates whether to hide drop down buttons on PivotField headers. This attribute depends on the application implementation for filtering in the user interface. A value of `1` or `true` indicates the application will display some mechanism for selecting and applying filters – [*Example*: A dropdown menu *end example*] – in the user interface. A value of `0` or `false` indicates for mechanism for applying a filter is displayed in the user interface.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showPropAsCaption (Show As Caption)	Specifies a boolean value that indicates whether to show the property as a member caption. A value of `1` or `true` indicates the property is shown as a member caption. A value of `0` or `false` indicates the property will not be shown as a member caption. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showPropCell (Show Member Property in Cell)	Specifies a boolean value that indicates whether to show the member property value in a ~~PivotTable~~PivotTable™ cell. A value of `1` or `true` indicates the property value is shown in a ~~PivotTable~~PivotTable™ cell. A value of `0` or `false` indicates the property value will not be shown in a ~~PivotTable~~PivotTable™ cell. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showPropTip (Show Member Property ToolTip)	Specifies a boolean value that indicates whether to show the member property value in a tooltip on the appropriate ~~PivotTable~~PivotTable™ cells. A value of `1` or `true` indicates the property value is shown in a tooltip in the user interface. A value of `0` or `false` indicates the property will not be shown in a tooltip. This attribute depends on whether the application employs tooltips or similar mechanism in the user interface. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
sortType (Auto Sort Type)	Specifies the type of sort that is applied to this field. The possible values for this attribute are defined by the ST_FieldSortType simple type (§0).
stdDevPSubtotal (StdDevP Subtotal)	Specifies a boolean value that indicates whether to apply the 'stdDevP' aggregation function in the subtotal of this field. A value of `1` or `true` indicates that the 'stdDevP' aggregation function is applied in the subtotal for this field.

Attributes	Description
	A value of `0` or `false` indicates another aggregation function is applied in the subtotal for this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
stdDevSubtotal (StdDev Subtotal)	Specifies a boolean value that indicates whether to use 'stdDev' in the subtotal of this field. A value of `1` or `true` indicates that the 'stdDev' aggregation function is applied in the subtotal for this field. A value of `0` or `false` indicates another aggregation function is applied in the subtotal for this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
subtotalCaption (Custom Subtotal Caption)	Specifies the custom text that is displayed for the subtotals label. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
subtotalTop (Subtotals At Top)	Specifies a boolean value that indicates whether to display subtotals at the top of the group. Applies only when `Outline` its true. A value of `1` or `true` indicates a subtotal is display at the top of the group. A value of `0` or `false` indicates subtotal will not be displayed at the top of the group. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
sumSubtotal (Sum Subtotal)	Specifies a boolean value that indicates whether apply the 'sum' aggregation function in the subtotal of this field. A value of `1` or `true` indicates the 'sum' aggregation function is applied in the subtotal of this field. A value of `0` or `false` indicates another aggregation function is applied in the subtotal of this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
topAutoShow (Top Auto Show)	Specifies a boolean value that indicates whether an AutoShow filter applied to this field is set to show the top ranked values.

Attributes	Description
	A value of `1` or `true` indicates whether an AutoShow filter will show top values for this field. A value of `0` or `false` indicates bottom ranked values are shown. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
uniqueMemberProperty (Unique Member Property)	Specifies the unique name of the member property to be used as a caption for the field and field items. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
varPSubtotal (VarP Subtotal)	Specifies a boolean value that indicates whether to apply the 'varP' aggregation function in the subtotal of this field. A value of `1` or `true` indicates the 'varP' aggregation function is applied in the subtotal of this field. A value of `0` or `false` indicates another aggregation function is applied in the subtotal of this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
varSubtotal (Variance Subtotal)	Specifies a boolean value that indicates whether to apply the 'variance' aggregation function in the subtotal of this field. A value of `1` or `true` indicates the 'variance' aggregation function is applied in the subtotal of this field. A value of `0` or `false` indicates another aggregation function is applied in the subtotal of this field. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotField) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.70 pivotFields (~~PivotTable~~PivotTable™ Fields)

Represents the collection of fields that appear on the ~~PivotTable~~PivotTable™.

[*Example*:

```
<pivotFields count="28">
  <pivotField showAll="0" includeNewItemsInFilter="1">
    <items count="8">
      <item x="66"/>
      <item x="133"/>
      <item x="74"/>
      <item x="27"/>
      <item x="118"/>
      <item x="63"/>
      <item x="141"/>
      <item t="default"/>
    </items>
  </pivotField>
  <pivotField showAll="0" includeNewItemsInFilter="1"/>
  <pivotField axis="axisPage" showAll="0" includeNewItemsInFilter="1">
    <items count="2">
      <item x="0"/>
      <item t="default"/>
    </items>
  </pivotField>
<pivotField showAll="0" includeNewItemsInFilter="1"/>
```

end example]

Attributes	Description
count (Field Count)	Specifies the number of fields in the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotFields) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.71 pivotHierarchies (~~PivotTable~~PivotTable™ OLAP Hierarchies)

Represents the collection of OLAP hierarchies associated with the ~~PivotTable~~PivotTable™.

[*Example*:

```
<sh:pivotHierarchies count="3">
  <sh:pivotHierarchy dragToRow="0" dragToCol="0" dragToPage="0"
dragToData="1"/>
  <sh:pivotHierarchy dragToRow="0" dragToCol="0" dragToPage="0"
dragToData="1"/>
  <sh:pivotHierarchy dragToRow="0" dragToCol="0" dragToPage="0"
dragToData="1"/>
  <sh:pivotHierarchy dragToRow="0" dragToCol="0" dragToPage="0"
dragToData="1"/>
</sh:pivotHierarchies>
```

end example]

Attributes	Description
count (OLAP Hierarchy Count)	Specifies the number of OLAP hierarchies in the collection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotHierarchies) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.72 pivotHierarchy (OLAP Hierarchy)

Represents a OLAP hierarchy associated with the ~~PivotTable~~PivotTable™. A hierarchy is a hierarchical representation of related OLAP dimensions. Hierarchies are defined on the OLAP server and cannot be changed in the ~~PivotTable~~PivotTable™. [*Example*: Hierarchy "A" might be defined as follows:

Level 1 Country/Region

Level 2 State\Provence

Level 3 City

end example]

[*Example*:

```
<sh:pivotHierarchy dragToRow="0" dragToCol="0" dragToPage="0"
dragToData="1"/>
```

end example]

Attributes	Description
caption (Hierarchy Caption)	Specifies the user defined caption of the hierarchy.

Attributes	Description
	The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
dragOff (Drag Off)	Specifies a boolean value that indicates whether the user is allowed to remove this hierarchy from the ~~PivotTable~~PivotTable™. A value of `1` or `true` indicates the user can remove this hierarchy from the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates the user cannot remove the hierarchy from the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dragToCol (Drag To Column)	Specifies a boolean value that indicates whether the user is allowed to put this hierarchy into the column area of the ~~PivotTable~~PivotTable™. A value of `1` or `true` indicates the user can put this hierarchy into the column area of the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates the user cannot remove this hierarchy. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dragToData (Drag To Data)	Specifies a boolean value that indicates whether the user is allowed to put this hierarchy into the data area of the view. A value of `1` or `true` indicates A value of `0` or `false` indicates The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dragToPage (Drag to Page)	Specifies a boolean value that indicates whether the user is allowed to put this hierarchy into the page area of the ~~PivotTable~~PivotTable™. A value of `1` or `true` indicates the user can put this hierarchy into the page area of the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates cannot put this hierarchy into the page area. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dragToRow (Drag To Row)	Specifies a boolean value that indicates whether the user is allowed to put this hierarchy into the row area of the ~~PivotTable~~PivotTable™.

Attributes	Description
	A value of `1` or `true` indicates the user can put this hierarchy into the row area of the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates cannot put this hierarchy into the row area. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
includeNewItemsInFilter (Inclusive Manual Filter)	Specifies a boolean value that indicates whether the application will show only the items the user has selected. A value of `1` or `true` indicates the application will show only items the user has selected; all other items are hidden. A value of `0` or `false` indicates the application will show all items. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
multipleItemSelectionAllowed (Multiple Field Filters)	Specifies a boolean value that indicates whether the user can select multiple members when the hierarchy is in the page field area of the view. A value of `1` or `true` indicates the user can select multiple members. A value of `0` or `false` indicates the user cannot select multiple members. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
outline (Outline New Levels)	Specifies a boolean value that indicates whether new levels added to the ~~PivotTable~~PivotTable™ are shown in Outline mode. A value of `1` or `true` indicates new levels are shown in Outline mode. A value of `0` or `false` indicates new items are not shown in Outline mode. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showInFieldList (Show In Field List)	Specifies a boolean value that indicates whether this hierarchy is omitted from the field list. This attribute depends on how the application exposes a list of fields for PivotTables in the user interface. A value of `1` or `true` indicates this hierarchy is show in the field list or similar mechanism in the user interface. A value of `0` or `false` indicates is not shown in the field list.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
subtotalTop (New Levels Subtotals At Top)	Specifies a boolean value that indicates whether new levels added to the view will show their subtotals at the top. A value of `1` or `true` indicates new levels added to the view show their subtotals at the top. A value of `0` or `false` indicates new levels added to the view show their subtotals at the bottom. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotHierarchy) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.73 pivotTableDefinition (~~PivotTable~~PivotTable™ Definition)

Represents the ~~PivotTable~~PivotTable™ root element for non-null PivotTables. There exists one pivotTableDefinition for each PivotTableDefinition part. The ~~PivotTable~~PivotTable™ definition encompasses the following information:

Structure

- Top-level attributes
- Location information
- Collection of fields
- Fields on the row axis
- Items on the row axis (specific values)
- Fields on the column axis
- Items on the column axis (specific values)
- Fields on the report filter region
- Fields in the values region
- Style information

Outline of the XML for a pivotTableDefinition

```
<pivotTableDefinition>
  <location/>
  <pivotFields/>
  <rowFields/>
  <rowItems/>
  <colFields/>
  <colItems/>
  <pageFields/>
  <dataFields/>
  <conditionalFormats/>
  <pivotTableStyleInfo/>
</pivotTableDefinition>
```

Layout

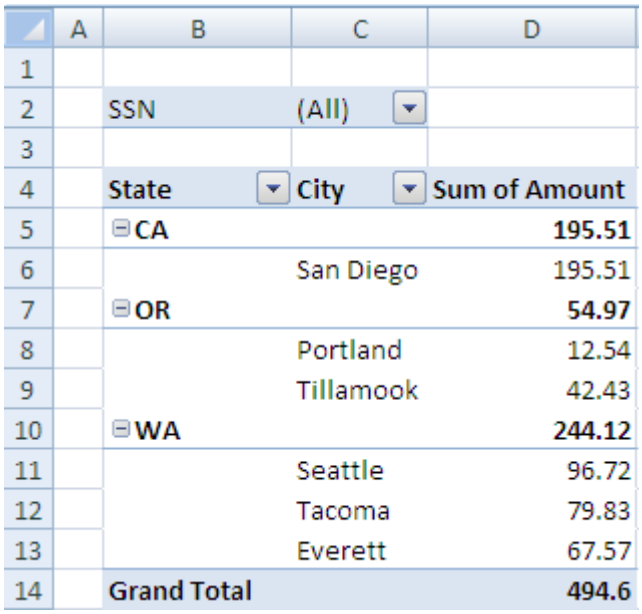
The reference specified in the ref attribute on the location element specifies the location of the ~~PivotTable~~PivotTable™ body. The data area, row, column, and data fields and value items are located in this area. More specifically, the row fields begin below the A1-most cell in the reference, and the column fields begin adjacent to that cell, in the same row, extending out into the ~~PivotTable~~PivotTable™ body away from column A. *[Note:* How far below or across the field labels begin are dependent upon how many row, column, and data fields are shown in the ~~PivotTable~~PivotTable™. More detail is provided below. *end note]*

[*Note*: All layout discussion and examples are given for outline mode layout. There two additional layout modes: compact and tabular. See Other layout modes below for a discussion of how those differ from outline mode. *end note*]

When encountering sheet boundaries, the ~~PivotTable~~PivotTable™ is truncated rather than wrapped, and as much as possible shall be shown.

The graphics given in this section are meant to illustrate layout only, and do not require implementation of any implied controls, like dropdowns or expand/collapse functionality.

Page Field Layout



	A	B	C	D
1				
2		SSN	(All)	
3				
4		State	City	Sum of Amount
5		CA		195.51
6			San Diego	195.51
7		OR		54.97
8			Portland	12.54
9			Tillamook	42.43
10		WA		244.12
11			Seattle	96.72
12			Tacoma	79.83
13			Everett	67.57
14		Grand Total		494.6

In the above picture, SSN is a page field, State and City are row fields, and Amount is a data field. There are no column fields.

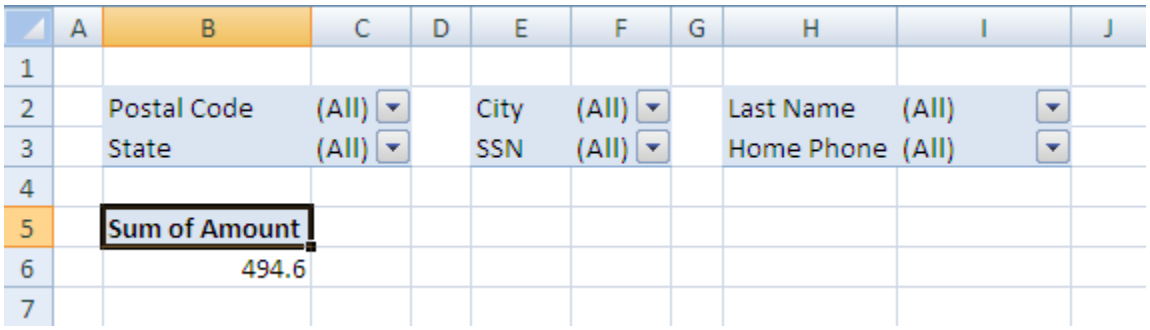
Page fields allow you to filter the entire ~~PivotTable~~PivotTable™ report to display data for a single item or all items.

The page field area always ends (vertically) so that there is always 1 row of space between the page field area and the top row of the ~~PivotTable~~PivotTable™ body, and always begins (horizontally) in the same column as the A1-most column of the ~~PivotTable~~PivotTable™ body. Each page field occupies two cells: the A1-most for displaying the field name, and the next cell over for displaying the selected item values. [*Example*: (see above picture) If the top row in the ~~PivotTable~~PivotTable™ body reference is row 4, then page field layout ends (vertically) in row 2, and if the A1-most column of the ~~PivotTable~~PivotTable™ body is column B, then page field layout begins (horizontally) in column B. *end example*]

Aside from the number of fields in the page field area, there are two attributes of pivotTableDefinition that affect page field layout: pageOverThenDown and pageWrap. pageOverThenDown = 1 specifies that when there is more than 1 page field, lay them out horizontally across the sheet (extending in the direction of the ~~PivotTable~~PivotTable™ body area, away from column A) until the maximum specified in pageWrap is reached, and then begin a new row. If the pageWrap value is high and there are many page fields, then it is possible (and allowed) for page fields to extend beyond the edge of the ~~PivotTable~~PivotTable™ body. When laying out page fields in the same row (side by side), each shall be separated by a single column. However, multiple rows of page fields are not separated by single rows between them. pageOverThenDown = 0 specifies that when there is more than 1 page field, lay them out vertically down the sheet (always keeping 1 row of space between the ~~PivotTable~~PivotTable™ body and page field area) until the maximum specified in pageWrap is reached, and then begin a new column. Again, for multiple page fields, if they shall occupy more than 1 column, then each column of

page fields is separated by a single column, and multiple rows of page fields are not separated by single rows between them.

[*Example:* This example shows a ~~PivotTable~~PivotTable™ body occupying B5:B6 and 6 page fields in the page field area, where pageOverThenDown = 0 and pageWrap = 2. This means that the first column of the page field area contains 2 page fields, and then, because the pageWrap value only allows 2 page fields per column, a new column of page fields is started, and so on until all 6 page fields are shown.



The order of assignment of position within page field layout for this example is:

- Postal Code
- State
- City
- SSN
- Last Name
- Home Phone

Aside from the 6 page fields, the only other field in this ~~PivotTable~~PivotTable™ example is a data field called Amount.

end example]

[*Note:* When the user gestures to add a page field and there are not enough free cells above the ~~PivotTable~~PivotTable™ body area to allow for page fields to be added, the application must determine the best response. The application may decide to shift the ~~PivotTable~~PivotTable™ down some number of rows to make room, or overwrite existing data or features that might be above the ~~PivotTable~~PivotTable™, or simply block the user gesture completely. In any result, however, the application should adhere to the layout principles given above. *end note*]

Row Field Layout

	A	B	C	D
1				
2		SSN	(All)	
3				
4		State	City	Sum of Amount
5		CA		195.51
6			San Diego	195.51
7		OR		54.97
8			Portland	12.54
9			Tillamook	42.43
10		WA		244.12
11			Seattle	96.72
12			Tacoma	79.83
13			Everett	67.57
14		Grand Total		494.6

The **State** and **City** fields are row fields, **SSN** is a page field, there are no column fields, and **Amount** is a data field.

Row fields provide for and specify how the data is summarized, grouped, and viewed as rows in the ~~PivotTable~~PivotTable™.

The row field area always begins in the A1-most column of the ~~PivotTable~~PivotTable™ body area. The layout of page fields does not affect the layout of row fields.

Row Field Layout - 1 Row Field and 0 Column Fields

When there is only 1 row field and 0 column fields,

> the first row field is located in the A1-most cell of the ~~PivotTable~~PivotTable™ body, and the values for that field are expressed in the cells directly under that row field, in the same column.

[*Example:*

State	Sum of Amount
CA	195.51
OR	54.97
WA	244.12
Grand Total	494.6

In this example, there are no page fields, no column fields, **State** is a row field, and **Amount** is a data field. *end example*]

Row Field Layout - 2 or More Row Fields and 0 Column Fields

When there are 2 or more row fields and 0 column fields to be displayed,

- the row field labels are located adjacent to each other and in the same row as the first row field label
- Each corresponding set of values for the row field in question are located in the cells under that row field (same column)
- Innermost row field values (the ones closest to the data summary area) are grouped and organized by values in the next outer row field, in the following fashion: starting with the outermost row field, the first value is listed. For the next innermost row field, starting on the next row and over one column (toward the data summary area), the value list for that field begins. If that is the innermost row field, all values are listed for that row field, and then moving down a row and back to the outer column, the next value for the outermost row field is listed. If there are more inner row fields, the same layout rules apply until the innermost row field is reached.
- In this case of 0 column fields, only the top row of the ~~PivotTable~~PivotTable™ body is used for row field labels.

[*Example:*

	A	B	C	D	E
1					
2					
3					
4		**Postal Co**	**State**	**City**	**Sum of Amount**
5		**09999**			**54.97**
6			**OR**		**54.97**
7				Portland	12.54
8				Tillamook	42.43
9		**12345**			**195.51**
10			**CA**		**195.51**
11				San Diego	195.51
12		**456789**			**244.12**
13			**WA**		**244.12**
14				Seattle	96.72
15				Tacoma	79.83
16				Everett	67.57
17		**Grand Total**			**494.6**

In this example **Postal Code**, **State**, and **City** are row fields and **Amount** is a data field. There are no page fields and no column fields. *end example*]

Row Field Layout - 1 or More Row Fields and 1 or More Column Fields

When there are row fields and 1 or more column fields, the row fields are not located in the topmost row of the ~~PivotTable~~PivotTable™ body. Instead the row fields are located in the n+1st topmost row of the ~~PivotTable~~PivotTable™ body, where n is the number of column fields in the ~~PivotTable~~PivotTable™.

[*Example:*

	A	B	C	D	E
1					
2					
3					
4					
5		**Sum of Amount**	**Postal Code**	**State**	**City**
6			**⊟09999**		
7			**⊟OR**		**OR Total**
8		**Last Name**	**Portland**	**Tillamook**	
9		Cencini	12.54		12.54
10		Freehafer			
11		Giussani			
12		Hellung-Larsen			
13		Kotas		42.43	42.43
14		Neipper			
15		Sergienko			
16		Thorpe			
17		Zare			
18		**Grand Total**	**12.54**	**42.43**	**54.97**

This example shows 3 column fields in the ~~PivotTable~~PivotTable™ (**Postal Code**, **State**, and **City**), a single row field **Last Name**, and a single data field **Amount**. The ~~PivotTable~~PivotTable™ body area begins at B5 and the row field label **Last Name** is located in the 4th row of the ~~PivotTable~~PivotTable™ body area, in row 8 of the spreadsheet, cell B8. Since **Last Name** is the only row field in this example, its row field values begin and are listed directly under the label. *end example*]

Column Field Layout

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5		Sum of Amount	State	City				
6			CA	OR		WA		
7		Last Name	San Diego	Portland	Tillamook	Seattle	Tacoma	Everett
8		Cencini		12.54				
9		Freehafer				53.34		
10		Giussani					79.83	
11		Hellung-Larsen						67.57
12		Kotas			42.43			
13		Neipper	63.67					
14		Sergienko	50.69					
15		Thorpe	81.15					
16		Zare				43.38		

State and **City** are column fields, **Last Name** is a row field, and **Amount** is a data field.

Column fields provide for and specify how the data is summarized, grouped, and viewed horizontally in the ~~PivotTable~~PivotTable™.

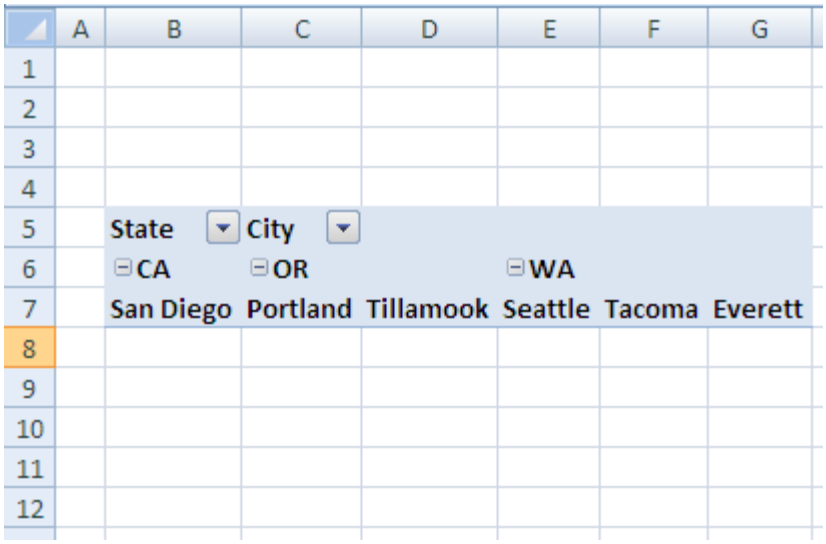
The layout of page fields does not affect the layout of column fields.

The column field label area is always located in the top row of the ~~PivotTable~~PivotTable™ body.

Column Field Layout - 0 Row Fields and 0 Data Fields

- When there are no row fields and no data fields, then the first column field is located in the A1-most column of the ~~PivotTable~~PivotTable™ body.
- When there are multiple column fields
- the labels are located adjacent to each other in the same row as the first column field label.
- Each corresponding set of values for each of the column fields are located in the rows directly below the column field label row and above the data area, one row of values for each column field.
- The first column field's values are located in the row directly under the column field row.
- Column field values are displayed starting directly underneath the first column field label's cell and filling adjacent cells in the same row. The second column field's values are located two rows under the column field label row, and values are again displayed starting directly underneath the first column field label's cell, filling adjacent cells in the same manner as the first set of values. The layout of column field values continues in this way until all column field values are displayed.

Inner column field values (the ones closer to the data summary area) are grouped and organized by values in the next outer column field, similarly to how row field values are grouped. [*Example:*



	A	B	C	D	E	F	G
1							
2							
3							
4							
5		State	City				
6		CA	OR		WA		
7		San Diego	Portland	Tillamook	Seattle	Tacoma	Everett
8							
9							
10							
11							
12							

In this example, **State** and **City** are column fields, and there are no row fields, no page fields, and no data fields. *end example*]

Column Field Layout – 1 or More Column Fields and 1 or More Row Fields

When there are 1 or more column fields and 1 or more row fields in the ~~PivotTable~~PivotTable™, then:

- First, row fields are displayed according to the row field layout described earlier
- The first column field label is located in the top row of the ~~PivotTable~~PivotTable™ body area, and adjacent to any row field labels that are displayed.
- Multiple column fields shall be displayed as described earlier

[*Example:* In this example, **State** and **City** are column fields, **Amount** is a data field, and **Last Name** is a row field.

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5		Sum of Amount	State	City				
6			CA	OR		WA		
7		Last Name	San Diego	Portland	Tillamook	Seattle	Tacoma	Everett
8		Cencini		12.54				
9		Freehafer				53.34		
10		Giussani					79.83	
11		Hellung-Larsen						67.57
12		Kotas			42.43			
13		Neipper	63.67					
14		Sergienko	50.69					
15		Thorpe	81.15					
16		Zare				43.38		

end example]

Data Field Layout

	A	B	C
1			
2			
3			
4			
5		Last Name	Sum of Amount
6		Cencini	12.54
7		Freehafer	53.34
8		Giussani	79.83
9		Hellung-Larsen	67.57
10		Kotas	42.43
11		Neipper	63.67
12		Sergienko	50.69
13		Thorpe	81.15
14		Zare	43.38

Last Name is a row field, Sum of Amount is a data field label, and the data underneath Sum of Amount are the summarized data values.

Data fields specify which fields are summarized in the ~~PivotTable~~PivotTable™ report.

The summarized data always appears below the column field and value area, and any row field values are closer to column A than any of the summarized data. When there are no row fields and no column fields, the summarized data is located directly under the A1-most cell of the ~~PivotTable~~PivotTable™ body. Each cell in the summarized data area represents an aggregation of a set of records. The set of records that a particular cell is summarizing is determined by looking at the row field value(s) and column field value(s) that intersect on that particular cell, and then determining which records in the source data contain all of those row and column field values.

Data Field Layout - 0 Row Fields and 0 Column Fields and 1 Data Field

When there are no row fields and no column fields and only 1 data field being summarized, the data field label is located in the A1-most cell of the ~~PivotTable~~PivotTable™ body.

[*Example:*

	A	B
1		
2		**Sum of Amount**
3		494.6

In this example there is only 1 field in the ~~PivotTable~~PivotTable™, a data field **Amount**. *end example*]

Data Field Layout - More Than 1 Data Field

When there is more than 1 data field being summarized,

- An additional field (in these examples labeled “Values”, but the label can be specified by the user) is added to the field list, located as either a row field label or a column field label (depending on user choice and behaviour as specified by the dataOnRows and dataPosition attributes), and
- each data field being summarized is displayed either in the row area (when the additional field is a row field) as if it were an item value of that row field (see row field layout description above), or in the column area (when the additional field is a column field) as if it were an item value of that column field (see column field layout description above).

[*Example:*

	A	B	C
1			
2		**Values**	
3		**Sum of Amount**	**Sum of Tax**
4		494.6	28.71

In this example there are 2 data fields **Amount** and **Tax**. There are no page fields, no column fields, no row fields, and the additional field labeled Values is placed on the column area.

	A	B	C
1			
2		**Values**	
3		Sum of Amount	494.6
4		Sum of Tax	28.71

Above is the same ~~PivotTable~~PivotTable™, with the Values field placed on the row area.

end example]

Data Field Layout - 0 Row Fields, 1 or More Column Fields, and 1 Data Field

When there are no row fields, 1 or more column fields, and only 1 data field being summarized, the data field label is located in the A1-most column of the ~~PivotTable~~PivotTable™ body, directly under the column field area.

[*Example:*

	A	B	C	D	E
1					
2			**State**		
3			**CA**	**OR**	**WA**
4		Sum of Amount	195.51	54.97	244.12

In this example there is 1 column field **State** and 1 data field **Amount**. There are no row fields or page fields. *end example*]

Data Field Layout - 0 Column Fields, 1 or More Row Fields, and 1 Data Field

When there are no column fields, 1 or more row fields, and only 1 data field being summarized, the data field label is located in the same row as the row field labels, above the data summary area.

[*Example:*

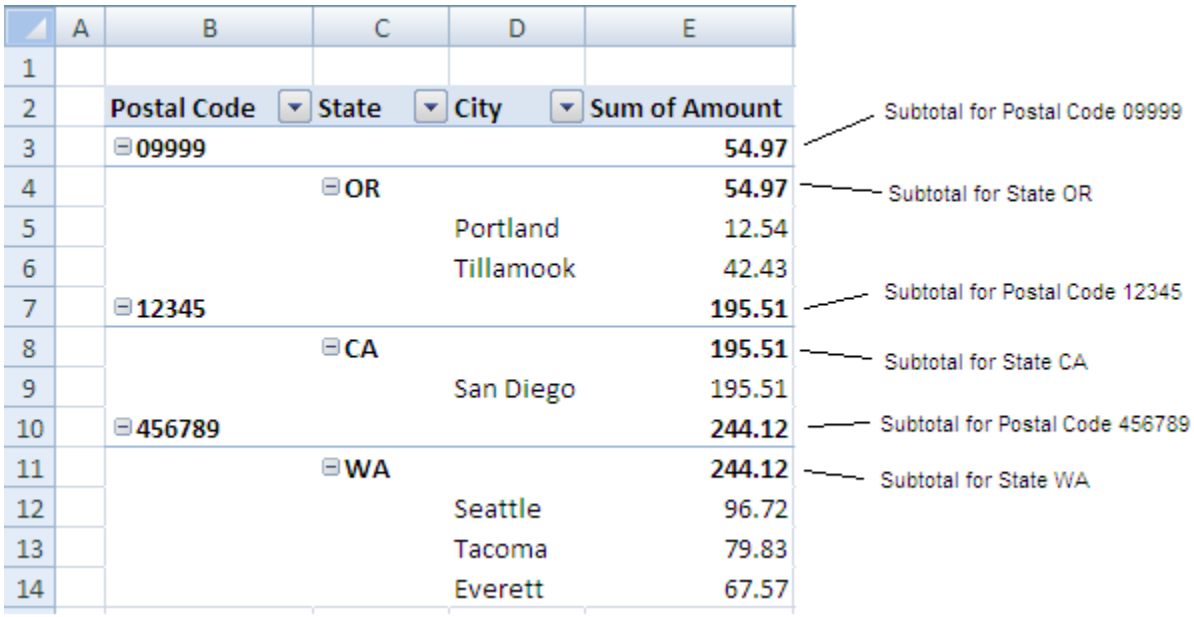
	A	B	C
1			
2		**State**	**Sum of Amount**
3		CA	195.51
4		OR	54.97
5		WA	244.12

In this example there is 1 data field **Amount** and 1 row field **State**. There are no column fields or page fields. *end example*]

Subtotal and grand total layout

If subtotals are *on*, the values for row subtotals are placed at either the top of each group of data being summarized or at the bottom of each group, as indicated by the subtotalTop attribute value on the pivotField element. Row subtotal values appear in the same column as the data being subtotalled. If placed at the top of the group, then the subtotal value for the group appears in the row above the group of values, in the same row as the group's parent row field value. When there is only a single row field, no subtotal is shown.

[*Example:*



In this example, there are 3 row fields (**Postal Code**, **State**, and **City**) and 1 data field **Amount**.

end example]

If row subtotals are placed at the bottom of each data group, then a new row is inserted directly below the data group in question, and a new row field value is inserted, in the same column as the row field in question, whose caption indicates that this row represents a subtotal value.

[*Example:*

	A	B	C	D	E
1					
2		**Postal Code**	**State**	**City**	**Sum of Amount**
3		**09999**			
4			**OR**		
5				Portland	12.54
6				Tillamook	42.43
7			**OR Total**		**54.97**
8		**09999 Total**			**54.97**
9		**12345**			
10			**CA**		
11				San Diego	195.51
12			**CA Total**		**195.51**
13		**12345 Total**			**195.51**
14		**456789**			
15			**WA**		
16				Seattle	96.72
17				Tacoma	79.83
18				Everett	67.57
19			**WA Total**		**244.12**
20		**456789 Total**			**244.12**

Subtotal for State OR

Subtotal for Postal Code 09999

Subtotal for State CA

Subtotal for Postal Code 12345

Subtotal for State WA

Subtotal for Postal Code 456789

In this example, there are 3 row fields (**Postal Code**, **State**, and **City**) and 1 data field **Amount**.

end example]

If subtotals are *on*, for column subtotals a new column is inserted directly after the data group being subtotalled. A new column field value is inserted, in the same row as the column field in question, whose caption indicates that this column represents a subtotal value. When there is only a single column field, no subtotal is shown.

[*Example:*

	A	B	C	D	E	F	G	H	I
1									
2			**Postal Code**	**State**	**City**				
3			**09999**			**09999 Total**	**12345**		**12345 Total**
4			**OR**		**OR Total**		**CA**	**CA Total**	
5			**Portland**	**Tillamook**			**San Diego**		
6		Sum of Amount	12.54	42.43	54.97	54.97	195.51	195.51	195.51

Subtotal for State OR

Subtotal for State CA

Subtotal for Postal Code 09999

Subtotal for Postal Code 12345

In this example, there are 3 column fields (**Postal Code**, **State**, and **City**) and a data field **Amount**. *end example*]

If row grand totals are on and there are column fields, a new column item is inserted at the very edge of the ~~PivotTable~~PivotTable™ body furthest away from column A, in the same row as the outermost column field values. The caption indicates that this is a grand total, and the values total all values across the row. When row grand totals are *on* but there are no column fields, no row grand total is shown.

[*Example:*

	A	B	C	D	E	F
1						
2			State			
3			CA	OR	WA	Grand Total
4		Sum of Amount	195.51	54.97	244.12	494.6

In this example there is 1 column field **State** and 1 data field **Amount**, and row grand totals are on.

end example]

When column grand totals are *on* and there are row fields, a new row item is inserted at the very bottom of the ~~PivotTable~~PivotTable™ body, in the same column as the outermost row field values. The caption indicates that this is a grand total, and the values total all values in the column. When column grand totals are *on* but there are no row fields, no column grand total is shown.

[*Example:*

	A	B	C
1			
2		State	Sum of Amount
3		CA	195.51
4		OR	54.97
5		WA	244.12
6		Grand Total	494.6

In this example there is 1 row field **State** and 1 data field **Amount, and column grand totals are on**.

end example]

Other Layout Modes

A ~~PivotTable~~PivotTable™ can be displayed in Compact, Outline, or Tabular form. In addition, Classic layout can be applied to any of the 3 layout forms.

Outline mode has been discussed in the above sections, and all examples are shown using outline mode with classic layout off (gridDropZones = 0).

For Compact mode, the layout differs from outline mode by:

- Instead of multiple row fields occupying multiple columns, the A1-most column of the ~~PivotTable~~PivotTable™ body contains all row field labels and values. A single label, “Row Labels”, is located where the first (outermost) row label is placed. When there are multiple row fields, the outermost list of values is not indented, then next inner row field values are indented (as specified in the indent attribute), and so on until each set of values for inner row fields are shown.
- Instead of multiple column fields being listed and located across a row, the first column field position is labeled “Column Labels”, and there is only this label, located in the first column field position.

[*Example:*

Outline mode:

	A	B	C	D	E	F	G
1							
2		**Sum of Amount**		**Postal Code**	**Last Name**		
3				**⊟09999**		**⊟12345**	
4		**State**	**City**	**Cencini**	**Kotas**	**Neipper**	**Sergienko**
5		**⊟CA**					
6			San Diego			63.67	50.69
7		**⊟OR**					
8			Portland	12.54			
9			Tillamook		42.43		
10		**⊟WA**					
11			Seattle				
12			Tacoma				
13			Everett				

The above picture shows 2 column fields (**Postal Code** and **Last Name**), 1 data field (**Amount**), and 2 row fields (**State** and **City**). There are no page fields shown.

Same ~~PivotTable~~PivotTable™ in compact mode:

	A	B	C	D	E	F
1						
2		Sum of Amount	Column Labels			
3			09999		12345	
4		Row Labels	Cencini	Kotas	Neipper	Sergienko
5		CA				
6		San Diego			63.67	50.69
7		OR				
8		Portland	12.54			
9		Tillamook		42.43		
10		WA				
11		Seattle				
12		Tacoma				
13		Everett				

The above picture shows all column field labels collapsed into a single label **Column Labels** and all row field labels collapsed into a single label **Row Labels**. There is 1 data field **Amount** and no page fields. *end example*]

For Tabular mode, the layout differs from outline mode by:

> Instead of beginning new inner row field values on the next row down from the outer row field value parent, the first next-inner row field value is located on the same row as the parent value. Row subtotals can only appear at the bottom of a group, not at the top

[*Example:*

Outline mode:

	A	B	C	D	E
1					
2		Postal Code	State	City	Sum of Amount
3		09999			
4			OR		
5				Portland	12.54
6				Tillamook	42.43
7		12345			
8			CA		
9				San Diego	195.51
10		456789			
11			WA		
12				Seattle	96.72
13				Tacoma	79.83
14				Everett	67.57

The above picture shows 3 row fields (**Postal Code**, **State**, and **City**) and 1 data field, **Amount**.

Same ~~PivotTable~~PivotTable™ in tabular mode:

	A	B	C	D	E
1					
2		**Postal Code**	**State**	**City**	**Sum of Amount**
3		**09999**	**OR**	Portland	12.54
4				Tillamook	42.43
5		**12345**	**CA**	San Diego	195.51
6		**456789**	**WA**	Seattle	96.72
7				Tacoma	79.83
8				Everett	67.57

The above picture shows 3 row fields (**Postal Code**, **State**, and **City**) and 1 data field, **Amount**.

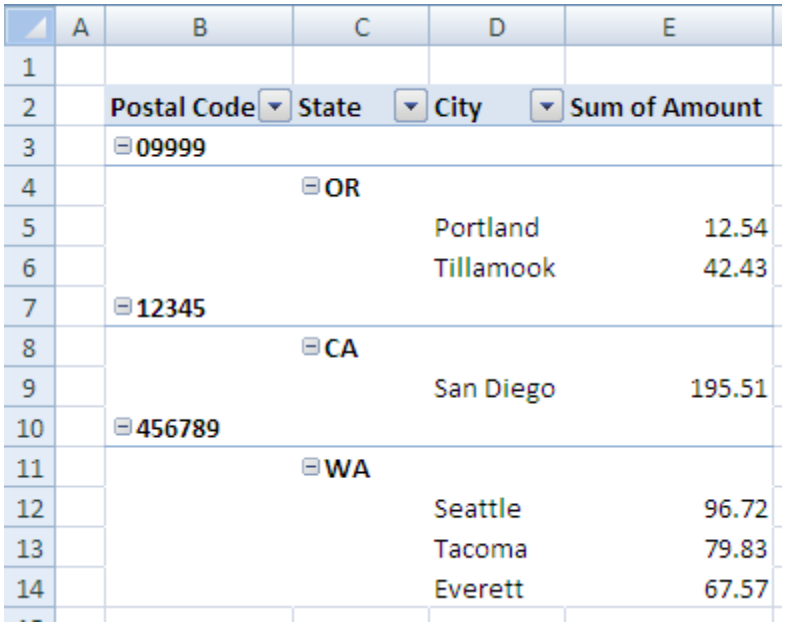
end example]

For Classic layout, the layout differs by:

- When there are row fields, no column fields, and 1 data field, instead of displaying the data field label adjacent to and in the same row as the row field labels, the data field label is located in the A1-most cell of the ~~PivotTable~~PivotTable™ body, and the row directly under this cell contains the row field labels.
- In the exact location where the data field label is located when classic layout is off, a label titled “Total” is displayed when classic layout is on.

[*Example:*

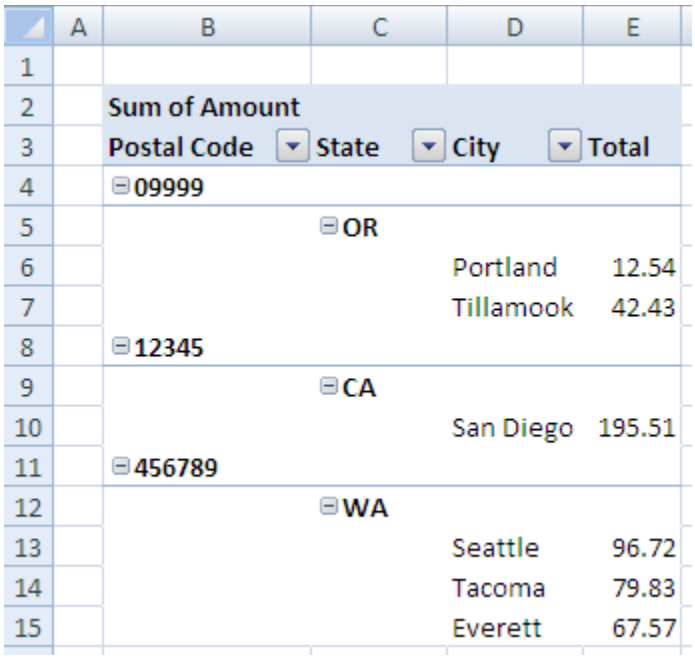
Outline mode, classic layout off:



	A	B	C	D	E
1					
2		Postal Code	State	City	Sum of Amount
3		09999			
4			OR		
5				Portland	12.54
6				Tillamook	42.43
7		12345			
8			CA		
9				San Diego	195.51
10		456789			
11			WA		
12				Seattle	96.72
13				Tacoma	79.83
14				Everett	67.57

The above picture shows 3 row fields (**Postal Code**, **State**, and **City**) and 1 data field, **Amount**.

Same ~~PivotTable~~PivotTable™ in Outline mode, classic layout applied:



	A	B	C	D	E
1					
2		Sum of Amount			
3		Postal Code	State	City	Total
4		09999			
5			OR		
6				Portland	12.54
7				Tillamook	42.43
8		12345			
9			CA		
10				San Diego	195.51
11		456789			
12			WA		
13				Seattle	96.72
14				Tacoma	79.83
15				Everett	67.57

The above picture shows 3 row fields (**Postal Code**, **State**, and **City**) and 1 data field, **Amount**.

end example]

Attributes	Description
applyAlignmentF	If `true` apply legacy table autoformat alignment properties.

Attributes	Description
ormats (Apply Alignment Formats)	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyBorderFormats (Apply Border Formats)	If `true` apply legacy table autoformat border properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyFontFormats (Apply Font Formats)	If `true` apply legacy table autoformat font properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyNumberFormats (Apply Number Formats)	If `true` apply legacy table autoformat number format properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyPatternFormats (Apply Pattern Formats)	If `true` apply legacy table autoformat pattern properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyWidthHeightFormats (Apply Width / Height Formats)	If `true` apply legacy table autoformat width/height properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
asteriskTotals (Asterisk Totals)	Specifies a boolean value that indicates whether an asterisks should be displayed in subtotals and totals when visual totals are not used in OLAP -based PivotTables. A value of `1` or `true` indicates an asterisks are displayed in subtotals and totals for OLAP PivotTables when visual tools are not available. A value of `0` or `false` indicates an asterisk will not be displayed. This attribute depends on the implementation and availability of visual tools in the application user interface. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
autoFormatId (Auto Format Id)	Identifies which legacy table autoformat to apply. Annex D contains a listing of the supported ~~PivotTable~~PivotTable™ AutoFormats, example formatting, and a sample workbook with each of those AutoFormats applied.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
cacheId (PivotCache Definition Id)	Specifies the identifier of the related PivotCache definition. This Id is listed in the pivotCaches collection in the workbook part. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
chartFormat (Chart Format Id)	Specifies the next chart formatting identifier to use on the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
colGrandTotals (Grand Totals On Columns)	Specifies a boolean value that indicates whether grand totals should be displayed for the ~~PivotTable~~PivotTable™ columns. A value of `1` or `true` indicates grand totals should be displayed. A value of `0` or `false` indicates grand totals should not be displayed for ~~PivotTable~~PivotTable™ columns. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
colHeaderCaption (Column Header Caption)	Specifies the string to be displayed in column header in compact mode. This attribute depends on whether the application implements a compact mode for displaying PivotTables in the user interface. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
compact (Compact New Fields)	Specifies a boolean value that indicates whether new fields should have their `compact` flag set to true. A value of `1` or `true` indicates new fields should default to `compact` mode equal to true. A value of `0` or `false` indicates new fields should default to `compact` mode equal to false. This attribute depends on whether the application implements a compact mode in the user interface. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
compactData (Compact Data)	Specifies a boolean value that indicates whether the field next to the data field in the ~~PivotTable~~PivotTable™ should be displayed in the same column of the spreadsheet The possible values for this attribute are defined by the W3C XML Schema boolean

Attributes	Description
	datatype.
createdVersion (PivotCache Created Version)	Specifies the version of the application that created the cache. This attribute is application-dependent. The possible values for this attribute are defined by the W3C XML Schema unsignedByte datatype.
customListSort (Custom List AutoSort)	Specifies a boolean value that indicates whether the "custom lists" option is offered when sorting this ~~PivotTable~~PivotTable™. A value of `1` or `true` indicates custom lists are offered when sorting this ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates custom lists are not offered. This attribute depends on the implementation of sorting features in the application. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dataCaption (Data Field Header Name)	Specifies the name of the value area field header in the ~~PivotTable~~PivotTable™. This caption is shown when the ~~PivotTable~~PivotTable™ when two or more fields are in the values area. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
dataOnRows (Data On Rows)	Specifies a boolean value that indicates whether the field representing multiple fields in the data region is located in the row area or the column area. A value of `1` or `true` indicates that this field is located in the row area. A value of `0` or `false` indicates that this field is located in the column area. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dataPosition (Default Data Field Position)	Specifies the position for the field representing multiple data field in the ~~PivotTable~~PivotTable™, whether that field is located in the row area or column area. Missing attribute indicates this field is last, or innermost in the field list. 0 indicates this field is first, or outermost in the field list. 1 indicates this field is second in the field list. 2 indicates this field is third in the field list, and increasing values follow this pattern.

Attributes	Description
	If this value is higher than the number of fields in the field list, then this field is last, or innermost in the field list. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
disableFieldList (Disable Field List)	Specifies a boolean value that indicates whether to disable the ~~PivotTable~~PivotTable™ field list. A value of `1` or `true` indicates the field list, or similar mechanism for selecting fields in the user interface, is disabled. A value of `0` or `false` indicates the field list is enabled. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
editData (Allow Edit Data)	Specifies a boolean value that indicates whether the user is allowed to edit the cells in the data area of the ~~PivotTable~~PivotTable™. A value of `1` or `true` indicates the user can edit values in the data area. A value of `0` or `false` indicates the cells in the data area are not editable. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
enableDrill (Enable Drill Down)	Specifies a boolean value that indicates whether the user is prevented from drilling down on a PivotItem or aggregate value. A value of `1` or `true` indicates the user can drill down on a pivot item or aggregate value. A value of `0` or `false` indicates the user is prevented from drilling down pivot item. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
enableFieldProperties (Enable Field Properties)	Specifies a boolean value that indicates whether the user is prevented from displaying PivotField properties. A value of `1` or `true` indicates the user can display pivot field properties. A value of `0` or `false` indicates the user cannot display pivot field properties. This attribute depends on how pivot field properties are exposed in the application user interface. The possible values for this attribute are defined by the W3C XML Schema boolean

Attributes	Description
	datatype.
enableWizard (Enable ~~PivotTable~~PivotTable™ Wizard)	Specifies a boolean value that indicates whether the user is prevented from displaying the ~~PivotTable~~PivotTable™ wizard. A value of `1` or `true` indicates the user can display the ~~PivotTable~~PivotTable™ wizard. A value of `0` or `false` indicates the user can not display the ~~PivotTable~~PivotTable™ wizard. This attribute depends on whether the application exposes a wizard or similar mechanism for creating and working with PivotTables in the user interface. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
errorCaption (Error Caption)	Specifies the string to be displayed in cells that contain errors. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
fieldListSortAscending (Default Sort Order)	Specifies a boolean value that indicates whether fields in the ~~PivotTable~~PivotTable™ are sorted in non-default order in the field list. A value of `1` or `true` indicates fields for the ~~PivotTable~~PivotTable™ are sorted in the field list. The sort order from the data source is applied for range-based PivotTables. Alphabetical sorting is applied for external data PivotTables. A value of `0` or `false` indicates fields in the field list are not sorted. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
fieldPrintTitles (Field Print Titles)	Specifies a boolean value that indicates whether the row and column titles from the ~~PivotTable~~PivotTable™ should be printed. A value of `1` or `true` indicates row and column titles should be printed. A value of `0` or `false` indicates row and column titles should not be printed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
grandTotalCaption (Grand Totals Caption)	Specifies the string to be displayed for grand totals. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
gridDropZones (Enable Drop Zones)	Specifies a boolean value that indicates whether the in-grid drop zones should be displayed at runtime, and whether classic layout is applied.

Attributes	Description
	A value of `1` or `true` indicates in-grid drop zones should be displayed and classic layout should be applied to the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates in-grid drop zones should be disabled and classic layout should not be applied. [*Note:* Grid drop zones are optional runtime UI, determined by the application, that indicate to the user the locations of the page, row, column, and data fields in the ~~PivotTable~~PivotTable™ report. See layout discussion under pivotTableDefinition for the precise locations of these areas. *end note*] The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
immersive (Stop Immersive UI)	Specifies a boolean value that indicates whether ~~PivotTable~~PivotTable™ immersive experience user interface should be turned off. A value of `1` or `true` indicates the ~~PivotTable~~PivotTable™ immersive experience should be turned off for this ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates the immersive experience should be left on. This attribute depends on whether the application implements an immersive experience in the user interface. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
indent (Indentation for Compact Axis)	Specifies the indentation increment for compact axis and can be used to set the Report Layout to Compact Form. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
itemPrintTitles (Item Print Titles)	Specifies a boolean value that indicates whether PivotItem names should be repeated at the top of each printed page. A value of `1` or `true` indicates pivot items names should be repeated at the top of each page. A value of `0` or `false` indicates should not be repeated. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
mdxSubqueries (MDX Subqueries Supported)	Specifies a boolean value that indicates whether MDX sub-queries are supported by OLAP data provider for this ~~PivotTable~~PivotTable™. A value of `1` or `true` indicates MDX sub-queries are supported by the OLAP data

Attributes	Description
	provider. A value of `0` or `false` indicates MDX sub-queries are not supported. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
mergeItem (Merge Titles)	Specifies a boolean value that indicates whether row or column titles that span multiple cells should be merged into a single cell. A value of `1` or `true` indicates that titles that span multiple cells are merged into a single cell. A value of `0` or `false` indicates titles are not merged. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
minRefreshableVersion (Minimum Refreshable Version)	Specifies the minimum version of the application required to update this ~~PivotTable~~PivotTable™ view. This attribute is application-dependent. The possible values for this attribute are defined by the W3C XML Schema unsignedByte datatype.
missingCaption (Caption for Missing Values)	Specifies the string to be displayed in cells with no value The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
multipleFieldFilters (Multiple Field Filters)	Specifies a boolean value that indicates whether the fields of a ~~PivotTable~~PivotTable™ can have multiple filters set on them. A value of `1` or `true` indicates the fields of a ~~PivotTable~~PivotTable™ can have multiple filters. A value of `0` or `false` indicates the fields of a ~~PivotTable~~PivotTable™ can only have a simple filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
name (Name)	Specifies the ~~PivotTable~~PivotTable™ name. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
outline (Outline New Fields)	Specifies a boolean value that indicates whether new fields should have their `outline` flag set to true. A value of `1` or `true` indicates new fields are created with `outline` equal to true.

Attributes	Description
	A value of `0` or `false` indicates new fields are created with `outline` equal to false. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
outlineData (Outline Data Fields)	Specifies a boolean value that indicates whether data fields in the ~~PivotTable~~PivotTable™ should be displayed in outline form. A value of `1` or `true` indicates data fields will display in outline form. A value of `0` or `false` indicates data fields will not display in outline form. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
pageOverThenDown (Page Over Then Down)	Specifies a boolean value that indicates how the page fields are laid out when there are multiple PivotFields in the page area. A value of `1` or `true` indicates the fields will display "Over, then down" A value of `0` or `false` indicates the fields will display "down, then Over" The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
pageStyle (Page Header Style Name)	Specifies the name of the style to apply to each of the field item headers in the page area of the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
pageWrap (Page Wrap)	Specifies the number of page fields to display before starting another row or column. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
pivotTableStyle (Table Style Name)	Specifies the name of the style to apply to the main table area of the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
preserveFormatting (Preserve Formatting)	Specifies a boolean value that indicates whether the formatting applied by the user to the ~~PivotTable~~PivotTable™ cells is discarded on refresh. A value of `1` or `true` indicates the formatting applied by the end user is discarded on refresh.

Attributes	Description
	A value of `0` or `false` indicates the end-user formatting is retained on refresh. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
printDrill (Print Drill Indicators)	Specifies a boolean value that indicates whether drill indicators expand collapse buttons should be printed. A value of `1` or `true` indicates that these buttons should be printed. A value of `0` or `false` indicates that these buttons should not be printed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
published (Data Fields Published)	Specifies a boolean value that indicates whether data fields in the ~~PivotTable~~PivotTable™ are published and available for viewing in a server rendering environment. A value of `1` or `true` indicates that the data fields in the ~~PivotTable~~PivotTable™ are published and shall be available for viewing in a server rendering environment. A value of `0` or `false` indicates that the data fields in the ~~PivotTable~~PivotTable™ are not published and shall not be available for viewing in a server rendering environment. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
rowGrandTotals (Row Grand Totals)	Specifies a boolean value that indicates whether grand totals should be displayed for the ~~PivotTable~~PivotTable™ rows. The default value for this attribute is true. A value of `1` or `true` indicates grand totals are displayed for the ~~PivotTable~~PivotTable™ rows. A value of `0` or `false` indicates grand totals will not be displayed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
rowHeaderCaption (Row Header Caption)	Specifies the string to be displayed in row header in `compact` mode. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
showCalcMbrs (Show Calculated Members)	Specifies a boolean value that indicates whether calculated members should be shown in the ~~PivotTable~~PivotTable™ view. This attribute applies to PivotTables from OLAP-sources only.

Attributes	Description
	A value of `1` or `true` indicates that calculated members should be shown. A value of `0` or `false` indicates calculated members should not be shown. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showDataDropDown (Show Drop Down)	Specifies a boolean value that indicates whether the drop-down lists for the fields in the ~~PivotTable~~PivotTable™ should be hidden. This attribute depends on whether the application implements drop down lists or similar mechanism in the user interface. A value of `1` or `true` indicates drop down lists are displayed for fields. A value of `0` or `false` indicates drop down lists will not be displayed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showDataTips (Show ToolTips on Data)	Specifies a boolean value that indicates whether tooltips should be displayed for ~~PivotTable~~PivotTable™ data cells. A value of `1` or `true` indicates tooltips are displayed. A value of `0` or `false` indicates tooltips will not be displayed. This attribute depends on whether the application employs tooltips or similar mechanism in the user interface. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showDrill (Show Expand Collapse)	Specifies a boolean value that indicates whether drill indicators should be hidden. A value of `1` or `true` indicates drill indicators are displayed. A value of `0` or `false` indicates drill indicators will not be displayed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showDropZones (Show Drop Zones)	Specifies a boolean value that indicates whether the ~~PivotTable~~PivotTable™ should display large drop zones when there are no fields in the data region. A value of `1` or `true` indicates a large drop zone is displayed. A value of `0` or `false` indicates a large drop zone will not be displayed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

Attributes	Description
showEmptyCol (Show Empty Column)	Specifies a boolean value that indicates whether to include empty columns in the table. A value of `1` or `true` indicates empty columns are included in the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates empty columns are excluded. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showEmptyRow (Show Empty Row)	Specifies a boolean value that indicates whether to include empty rows in the table. A value of `1` or `true` indicates empty rows are included in the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates empty rows are excluded. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showError (Show Error)	Specifies a boolean value that indicates whether to show error messages in cells. A value of `1` or `true` indicates error messages are shown in cells. A value of `0` or `false` indicates error messages are shown through another mechanism the application provides in the user interface. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showHeaders (Show Field Headers)	Specifies a boolean value that indicates whether to suppress display of pivot field headers. A value of `1` or `true` indicates field headers are shown in the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates field headers are excluded. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showItems (Show Item Names)	Specifies a boolean value that indicates whether to display item names when adding a field onto a ~~PivotTable~~PivotTable™ that has no data fields. A value of `1` or `true` indicates item names are displayed. A value of `0` or `false` indicates item names will not be displayed.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showMemberPropertyTips (Show Member Property ToolTips)	Specifies a boolean value that indicates whether member property information should be omitted from ~~PivotTable~~PivotTable™ tooltips. A value of `1` or `true` indicates member property information is included. A value of `0` or `false` indicates member property information is excluded. This attribute depends on whether the application employs tooltips or similar mechanism in the user interface. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showMissing (Show Missing)	Specifies a boolean value that indicates whether to show a message in cells with no value. A value of `1` or `true` indicates to show a message string in cells without values. A value of `0` or `false` indicates no message string will shown in cells without values. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showMultipleLabel (Show Multiple Labels)	Specifies a boolean value that indicates whether a page field with multiple selected items should display "(multiple items)" instead of "All". This attribute applies only to non-OLAP PivotTables. The messages displayed depend on the application implementation. A value of `1` or `true` indicates a different message string is displayed for a page field with multiple items. A value of `0` or `false` indicates the same message string is displayed for all page fields. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
subtotalHiddenItems (Subtotal Hidden Items)	Specifies a boolean value that indicates whether data for hidden pivotItems for PivotFields in the data area should be included in subtotals. A value of `1` or `true` indicates that data for hidden pivot items in the data area is included in subtotals. A value of `0` or `false` indicates hidden pivot items will not be included in subtotals.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
tag (~~PivotTable~~PivotTable™ Custom String)	Specifies a user-defined string that is associated with this ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
updatedVersion (~~PivotTable~~PivotTable™ Last Updated Version)	Specifies the version of the application that last updated the ~~PivotTable~~PivotTable™ view. This attribute is application-dependent. The possible values for this attribute are defined by the W3C XML Schema unsignedByte datatype.
useAutoFormatting (Auto Formatting)	Specifies a boolean value that indicates whether legacy auto formatting has been applied to the ~~PivotTable~~PivotTable™ view. A value of `1` or `true` indicates that legacy auto formatting has been applied to the ~~PivotTable~~PivotTable™. A value of `0` or `false` indicates that legacy auto formatting has not been applied to the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
vacatedStyle (Vacated Style)	Specifies the name of the style to apply to the cells left blank when a ~~PivotTable~~PivotTable™ shrinks during a refresh operation The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
visualTotals (Total Visual Data)	Specifies a boolean value that indicates whether totals should be based on visible data only. This attribute applies to OLAP PivotTables only. A value of `1` or `true` indicates subtotals are computed on visible data only. A value of `0` or `false` indicates subtotals are computed on all data. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_pivotTableDefinition) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.74 pivotTableStyleInfo (~~PivotTable~~PivotTable™ Style)

Represent information on style applied to the ~~PivotTable~~PivotTable™.

[*Example*:

```
<sh:pivotTableStyleInfo name="PivotStyleLight16" showRowHeaders="1"
  showColHeaders="1" showRowStripes="0" showColStripes="0"
showLastColumn="1"/>
```

end example]

Attributes	Description
name (Table Style Name)	Specifies the name of the table style to use with this table. The possible values for this attribute are defined by the W3C XML Schema string datatype.
showColHeaders (Show Table Style Column Header Formatting)	Specifies a boolean value that indicates whether to show column headers for the table. A value of `1` or `true` indicates column headers are shown. A value of `0` or `false` indicates column headers are omitted. 'True' if table style column header formatting should be displayed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showColStripes (Show Column Stripes)	Specifies a boolean value that indicates whether to show column stripe formatting for the table. A value of `1` or `true` indicates column stripe formatting is shown. A value of `0` or `false` indicates no column formatting is shown. True if table style column stripe formatting should be displayed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showLastColumn (Show Last Column)	Specifies a boolean value that indicates whether to show the last column. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showRowHeaders (Show Row Header Formatting)	Specifies a boolean value that indicates whether to show row headers for the table. A value of `1` or `true` indicates table style formatting is displayed. A value of `0` or `false` indicates table style formatting will not be displayed.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
showRowStripes (Show Row Stripes)	Specifies a boolean value that indicates whether to show row stripe formatting for the table. A value of `1` or `true` indicates row stripe formatting is displayed. A value of `0` or `false` indicates no row formatting is shown. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotTableStyle) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.79 rangeSet (Range Set)

Represents a single range in the rangeSets collection. element is intended to facilitate creating a ~~PivotTable~~PivotTable™ report by consolidating SpreadsheetML ranges that have similar categories of data to be summarized. The simplest layout for the data source is for each rangeSets of data to be in list-like format, with column labels in the first row, row labels in the first column, the rest of the rows having similar items in the same row and column, and no blank rows or columns within the range. A particular rangeSet can consist of a built-in named range that is provided by the application, a user defined named range, a range reference, or a reference to an external workbook.

When multiple ranges are consolidated using this functionality, up to 4 custom report filters (also known as page fields) can be created to help filter the ~~PivotTable~~PivotTable™ report, by specifically enabling one or more of the individual ranges to be selected in the report filter. For each custom page field created, a custom label can be specified and assigned to each range participating in the consolidation range, so that the ~~PivotTable~~PivotTable™ can be filtered by one or more of the ranges being summarized.

[*Example*: Consider a workbook with 6 worksheets. On Sheet1 we have:

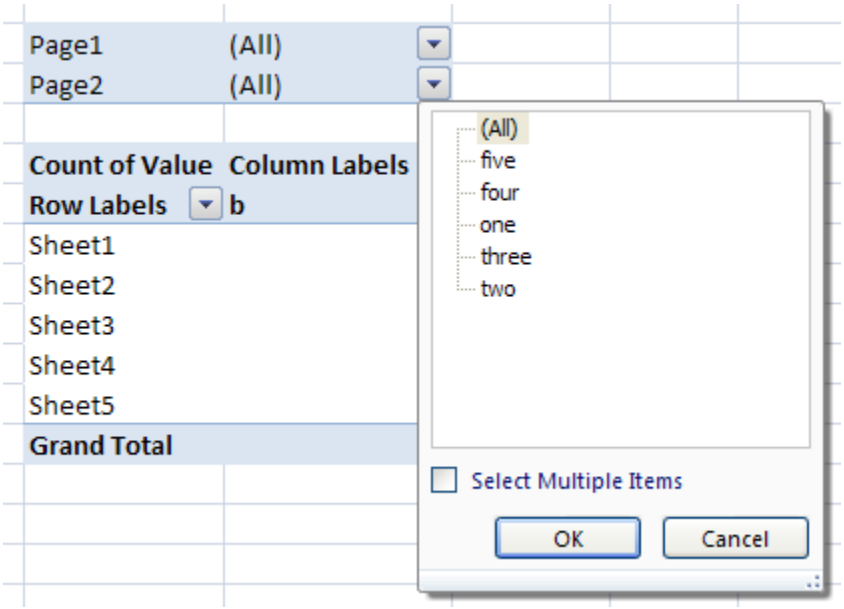
a	b
Sheet1	Sheet1
Sheet1	Sheet1

On Sheet2 we have:

a	b
Sheet2	Sheet2
Sheet2	Sheet2

… and so on up through Sheet5.

On Sheet6, we have the consolidated ranges being summarized by a ~~PivotTable~~PivotTable™, and two page filters exist for the ~~PivotTable~~PivotTable™.



Notice that for the second page filter, the items have been assigned a custom label, "one", "two", …, "five", for each of Sheet1, Sheet2, …, Sheet5 data sources, respectively. Similarly, the items have been assigned a custom label, "1", "2", …, "5" for each of Sheet1, Sheet2, …, Shet5 data sources, respectively.

The XML representing these custom page filters must be like the following:

```
<cacheSource type="consolidation">
  <consolidation autoPage="0">
    <pages count="2">
      <page count="5">
        <pageItem name="1"/>
        <pageItem name="2"/>
        <pageItem name="3"/>
        <pageItem name="4"/>
        <pageItem name="5"/>
      </page>
```

```
        <page count="5">
          <pageItem name="one"/>
          <pageItem name="two"/>
          <pageItem name="three"/>
          <pageItem name="four"/>
          <pageItem name="five"/>
        </page>
      </pages>
      <rangeSets count="5">
        <rangeSet i1="0" i2="0" ref="A1:B3" sheet="Sheet1"/>
        <rangeSet i1="1" i2="1" ref="A1:B3" sheet="Sheet2"/>
        <rangeSet i1="2" i2="2" ref="A1:B3" sheet="Sheet3"/>
        <rangeSet i1="3" i2="3" ref="A1:B3" sheet="Sheet4"/>
        <rangeSet i1="4" i2="4" ref="A1:B3" sheet="Sheet5"/>
      </rangeSets>
    </consolidation>
  </cacheSource>
```

end example]

[*Note*: Attributes i1, i2, i3, and i4 correspond to custom page fields created in the user interface. Spreadsheet ML only supports 4 custom page fields. *end note*]

Attributes	Description
i1 (Field Item Index Page 1)	Specifies the index of a page field item in page filter one. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
i2 (Field Item Index Page 2)	Specifies the index of a page field item in page filter two. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
i3 (Field Item index Page 3)	Specifies the index of a page field item in page filter three. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
i4 (Field Item Index Page 4)	Specifies the index of a page field item in page filter four. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
id (Relationship Id) Namespace:	Specifies the unique identifier of the Workbook part where the range set is stored. See Workbook (§**Error! Reference source not found.**) for more information. The possible values for this attribute are defined by the ST_RelationshipId simple

Attributes	Description
http://purl.oclc.org/ooxml/officeDocument/relationships	type (§**Error! Reference source not found.**).
name (Named Range)	Specifies the named range. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
ref (Reference)	Specifies the cell range. The possible values for this attribute are defined by the ST_Ref simple type (§**Error! Reference source not found.**).
sheet (Sheet Name)	Specifies the sheet name. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_RangeSet) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.81 rowFields (Row Fields)

Represents the collection of row fields for the ~~PivotTable~~PivotTable™.

	A	B	C
1	Region	(All)	
2			
3	Sum of Sales	Quarter	
4	Sport	Qtr1	Qtr2
5	Golf	8,500	4,500

In the image above, the blue field is a row field. A ~~PivotTable~~PivotTable™ report that has more than one row field has one inner row field (Sport, in the example below), the one closest to the data area. Any other row fields are outer row fields (Region, in the example below). Items in the outermost row field are displayed only once, but items in the rest of the row fields are repeated as needed.

[*Example*:

	A	B	C
3	Sum of Sales		Quarter
4	Region	Sport	Qtr1
5	East	Golf	5,000
6		Safari	9,000
7		Tennis	1,500
8	East Total		15,500
9	West	Golf	3,500

In the image above, Region is an outer row field. Sport is an inner row field.

```
<rowFields count="2">
  <field x="7"/>
  <field x="8"/>
</rowFields>
```

end example]

Attributes	Description
count (Repeated Items Count)	Specifies the number of repeated items in the collection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_RowFields) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.82 rowHierarchiesUsage (Row OLAP Hierarchy References)

Represents the collection of references to OLAP hierarchies on the row axis of a ~~PivotTable~~PivotTable™.

[*Example*:

```
<sh:rowHierarchiesUsage count="1">
  <sh:rowHierarchyUsage hierarchyUsage="9"/>
</sh:rowHierarchiesUsage>
```

end example]

Attributes	Description
count (Item Count)	Specifies the number of items in the collection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_RowHierarchiesUsage) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.83 rowHierarchyUsage (Row OLAP Hierarchies)

Represents a references to an OLAP Hierarchy on the row axis of a ~~PivotTable~~PivotTable™.

[*Example*:

```
<sh:rowHierarchyUsage hierarchyUsage="9"/>
```

end example]

Attributes	Description
hierarchyUsage (Hierarchy Usage)	Specifies the reference to an OLAP hierarchy in a ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema int datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_HierarchyUsage) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.84 rowItems (Row Items)

Represents the collection of items in row axis of the ~~PivotTable~~PivotTable™.

[*Example*: In the SpreadsheetML example below, the item values are found in cells B10:B13. For example "Bikes" is in B10, and corresponds to the first `<i>` element below.

```
<rowItems count="4">
  <i>
    <x/>
  </i>
  <i r="1">
    <x/>
  </i>
  <i r="1">
    <x v="1"/>
  </i>
  <i t="grand">
    <x/>
  </i>
</rowItems>
```

Looking at the layout of the ~~PivotTable~~PivotTable™ in this example, "Bikes" is the first (and only) item value in the first row, in cell B10. In the XML defining the ~~PivotTable~~PivotTable™ row item values, the first `<i>` element corresponds to the first row. There is a single index element `<x>`. The first (and only) `<x>` element corresponds to the first field on the row axis, namely "Product Category", and an index value of "0" indicates that the 0th item in the items collection for that `pivotField` definition is how to obtain the item value. Note that "Bikes" isn't explicitly listed as a value here, but instead the 0th item is an index to this field's shared items collection in the pivotCacheDefinition part.

For the second row there are two item values, one item value (Bikes) from the first field in that row (Product Category) and one item value (Mountain Bikes) from the second field in that row (Product Subcategory). In the ~~PivotTable~~PivotTable™, the first item value "Bikes" is hidden from view. In the XML

for this example, the second <i> element expresses both item values for this row. The first item value "Bikes" is expressed implicitly, because the value of @r on the second <i> element is '1', indicating that the first item value from the previous row is reused again as the first item value for the current row. The second item value is expressed explicitly via the <x> element under the second <i> element. The index of '0' indicates that the 0th item in the <pivotField> element for that field is how to obtain the item value. Note again that the 0th item is itself an index into this field's shared items collection in the pivotCacheDefinition part.

The item values for the third row can be discovered in a similar way. *end example*]

Attributes	Description
count (Items in a Row Count)	Specifies the number of items in the row axis of the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_rowItems) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.85 s (Character Value)

Represents a character value in a ~~PivotTable~~PivotTable™.

[*Example*:

```
<sharedItems count="2">
  <s v="7527 Brook Way"/>
  <s v="3310 Harvey Way"/>
</sharedItems>
```

end example]

Attributes	Description
b (Bold)	Specifies a boolean value that indicates whether this value contains bold formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of 1 or true indicates this value contains bold formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
bc (Background Color)	Specifies the background color for this value that was provided by the OLAP server. This attribute applies to OLAP-based PivotTables only. The color is specified as a HEX value in RGB space.

Attributes	Description
	The possible values for this attribute are defined by the ST_UnsignedIntHex simple type (§**Error! Reference source not found.**).
c (Item Caption)	Specifies the caption for the this item. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
cp (Member Property Count)	Specifies the number of member property values. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
f (Calculated Item)	Specifies a boolean value that indicates whether this is a calculated item value. A value of `1` or `true` indicates this item is a calculated value. A value of `0` or `false` indicates this item is not a calculated value. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
fc (Foreground Color)	Specifies the foreground color for this value that was provided by the OLAP server. This attribute applies to OLAP-based PivotTables only. The color is specified as a HEX value in RGB space. The possible values for this attribute are defined by the ST_UnsignedIntHex simple type (§**Error! Reference source not found.**).
i (Italic)	Specifies a boolean value that indicates whether the value contains italic formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of `1` or `true` indicates this value contains italic formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
in (Format Index)	Specifies the index to the OLAP serverformat element where the format string for this entry is stored. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
st (Strikethrough)	Specifies a boolean value that indicates whether the value contains strikethrough formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of `1` or `true` indicates this value contains strikethrough formatting on the server.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
u (Unused Item)	Specifies a boolean value that indicates whether this is an unused item. The application marks an item as unused when an item is deleted from the data source. The item and associated metadata are retained in the cache until the threshold for unused items specified in missingItemsLimit is reached. A value of `1` or `true` indicates this item is unused. A value of `0` or `false` indicates this item is used. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
un (Underline)	Specifies a boolean value that indicates whether the value contains underline formatting on the OLAP server. This attribute applies to OLAP-based PivotTables only. A value of `1` or `true` indicates this value contains underline formatting on the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
v (Value)	Specifies the value of the item. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_String) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.1.90 sharedItems (Shared Items)

Represents the collection of unique items for a field in the PivotCacheDefinition. The sharedItems complex type stores data type and formatting information about the data in a field. Items in the PivotCacheDefinition can be shared in order to reduce the redundancy of those values that are referenced in multiple places across all the ~~PivotTable~~PivotTable™ parts. [*Example*: A value might be part of a filter, it might appear on a row or column axis, and will appear in the pivotCacheRecords definition as well. However, because of the performance cost of creating the optimized shared items, items are only shared if they are actually in use in the ~~PivotTable~~PivotTable™. Therefore, depending on user actions on the ~~PivotTable~~PivotTable™ layout, the pivotCacheDefinition and underlying PivotCacheRecords part can be updated. *end example*]

If there are no shared items, then field values are stored directly in the pivotCacheRecords part.

[*Example*:

```
<sharedItems count="1">
  <s v="[Customer].[Customer Geography].[Country].&amp;[United States]"
    c="United States"/>
</sharedItems>
```

end example]

The following attributes are not required or used if there are no items in sharedItems.

Changes to section 18.10.2 Shared Pivot Table Data

This section defines the part where shared ~~PivotTable~~PivotTable™ data is stored.

Changes to section 18.10.2.1 reference (Reference)

Represents a set of selected fields and selected items within those fields.

[*Example*:

```
<sh:reference field="4294967294" count="1" selected="0">
  <sh:x v="0"/>
</sh:reference>
```

end example]

Attributes	Description
avgSubtotal (Include Average Filter)	Specifies a boolean value that indicates whether the 'average' aggregate function is included in the filter. A value of `1` or `true` indicates the average aggregation function is included in the filter. A value of `0` or `false` indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
byPosition (Positional Reference)	Specifies a boolean value that indicates whether the item is referred to by position rather than item index. A value of `1` or `true` indicates the item is referred to by position. A value of `0` or `false` indicates the item is referred to by index. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

Attributes	Description
count (Item Index Count)	Specifies the number of item indexes in the collection of indexes (x tags). The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
countASubtotal (Include CountA Filter)	Specifies a boolean value that indicates whether the 'countA' subtotal is included in the filter. A value of `1` or `true` indicates the count aggregation function is included in the filter. A value of `0` or `false` indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
countSubtotal (Include Count Subtotal)	Specifies a boolean value that indicates whether the count aggregate function is included in the filter. A value of `1` or `true` indicates the count aggregation function is included in the filter. A value of `0` or `false` indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
defaultSubtotal (Include Default Filter)	Specifies a boolean value that indicates whether the default subtotal is included in the filter. A value of `1` or `true` indicates the default subtotal is included in the filter. The default is to display the total or the grand total. A value of `0` or `false` indicates another subtotal or aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
field (Field Index)	Specifies the index of the field to which this filter refers. A value of -2 indicates the 'data' field. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
maxSubtotal (Include Maximum	Specifies a boolean value that indicates whether the 'maximum' aggregate function is included in the filter.

Attributes	Description
Filter)	A value of 1 or true indicates the maximum aggregation function is included in the filter. A value of 0 or false indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
minSubtotal (Include Minimum Filter)	Specifies a boolean value that indicates whether the 'minimum' aggregate function is included in the filter. A value of 1 or true indicates the minimum aggregation function is included in the filter. A value of 0 or false indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
productSubtotal (Include Product Filter)	Specifies a boolean value that indicates whether the 'product' aggregate function is included in the filter. A value of 1 or true indicates the product aggregation function is included in the filter. A value of 0 or false indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
relative (Relative Reference)	Specifies a boolean value that indicates whether the item is referred to by a relative reference rather than an absolute reference. This attribute is used if posRef is set to true. A value of 1 or true indicates the item is referred to by a relative reference. A value of 0 or false indicates the item is referred to by an absolute reference. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
selected (Selected)	Specifies a boolean value that indicates whether this field has selection. This attribute is used when the ~~PivotTable~~PivotTable™ is in Outline view. It is also used when both header and data cells have selection.

Attributes	Description
	A value of `1` or `true` indicates the field has selection. A value of `0` or `false` indicates the field does not have selection. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
stdDevPSubtotal (Include StdDevP Filter)	Specifies a boolean value that indicates whether the population standard deviation aggregate function is included in the filter. A value of `1` or `true` indicates the population standard deviation aggregation function is included in the filter. A value of `0` or `false` indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
stdDevSubtotal (Include StdDev Filter)	Specifies a boolean value that indicates whether the standard deviation aggregate function is included in the filter. A value of `1` or `true` indicates the standard deviation aggregation function is included in the filter. A value of `0` or `false` indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
sumSubtotal (Include Sum Filter)	Specifies a boolean value that indicates whether the sum aggregate function is included in the filter. A value of `1` or `true` indicates the sum aggregation function is included in the filter. A value of `0` or `false` indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
varPSubtotal (Include VarP Filter)	Specifies a boolean value that indicates whether the population variance aggregate function is included in the filter. A value of `1` or `true` indicates the population variance aggregation function is included in the filter. A value of `0` or `false` indicates another aggregation function is included in the

Attributes	Description
	filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
varSubtotal (Include Var Filter)	Specifies a boolean value that indicates whether the variance aggregate function is included in the filter. A value of `1` or `true` indicates the variance aggregation function is included in the filter. A value of `0` or `false` indicates another aggregation function is included in the filter. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotAreaReference) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.10.2.2 references (References)

Represents the set of selected fields and the selected items within those fields.

[*Example*:

```
<sh:references count="5">
  <sh:reference field="4294967294" count="1" selected="0">
    <sh:x v="0"/>
  </sh:reference>
  <sh:reference field="2" count="1" selected="0">
    <sh:x v="0"/>
  </sh:reference>
  <sh:reference field="14" count="1" selected="0">
    <sh:x v="0"/>
  </sh:reference>
  <sh:reference field="15" count="2" selected="0">
    <sh:x v="2"/>
    <sh:x v="3"/>
  </sh:reference>
</sh:references>
```

end example]

Attributes	Description
count (Pivot Filter Count)	Specifies the number of filtered records available in the ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_PivotAreaReferences) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.11.1.8 raf (Revision AutoFormat)

This element represents a revision record of auto formatting change information for a table.

Attributes	Description
applyAlignmentFormats (Apply Alignment Formats)	If `true` apply legacy table autoformat alignment properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyBorderFormats (Apply Border Formats)	If `true` apply legacy table autoformat border properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyFontFormats (Apply Font Formats)	If `true` apply legacy table autoformat font properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyNumberFormats (Apply Number Formats)	If `true` apply legacy table autoformat number format properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyPatternFormats (Apply Pattern Formats)	If `true` apply legacy table autoformat pattern properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyWidthHeightFormats (Apply Width / Height Formats)	If `true` apply legacy table autoformat width/height properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
autoFormatId (Auto Format Id)	Identifies which legacy table autoformat to apply. Annex D contains a listing of the supported ~~PivotTable~~PivotTable™ AutoFormats, example formatting, and a sample workbook with each of those AutoFormats applied.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
ref (Reference)	A-1 style reference to the location where the formatting was applied The possible values for this attribute are defined by the ST_Ref simple type (§**Error! Reference source not found.**).
sheetId (Sheet Id)	An integer representing the internal id of the sheet on which the revision occurred. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_RevisionAutoFormatting) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.11.1.25 undo (Undo)

This element represents undo information for row/column deletion when there are functions in the spreadsheet that reference the deleted rows/columns. This element is not applicable for insert revisions.

Attributes	Description
array (Array Formula)	Flag indicating that the affected formula is an array formula. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
cs (Cross Sheet Move)	A Boolean flag indicating this was a cross-sheet move. True if it was a cross sheet move, false otherwise. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
dn (Defined Name)	Identifies the named range that referenced the deleted cell range. Mutually exclusive with the cell reference attribute. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
dr (Range)	The range which was deleted that is referenced by the affected formula. The possible values for this attribute are defined by the ST_RefA simple type (§**Error! Reference source not found.**).

Attributes	Description
exp (~~Expression~~Expression®)	Identifies the expression that should be adjusted in the corresponding formula. The possible values for this attribute are defined by the ST_FormulaExpression simple type (§**Error! Reference source not found.**).
index (Index)	Index of the expression within the corresponding formula that was affected by this change. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
nf (Defined Name Formula)	A Boolean flag indicating that the corresponding formula is part of a defined name. True if this formula is part of a defined name, false otherwise. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
r (Cell Reference)	Location of the cell whose formula referenced the deleted cell range. Mutually exclusive with the defined name attribute The possible values for this attribute are defined by the ST_CellRef simple type (§**Error! Reference source not found.**).
ref3D (Reference 3D)	A Boolean flag indicating that the expression contained the sheet name in addition to the cell reference. True if it contained the sheet name, false otherwise. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
sId (Sheet Id)	Internal Id of the worksheet that contained the formula that referenced the deleted cell range. Mutually exclusive with the defined name attribute. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
v (Value Needed)	A Boolean flag indicating the formula needs the actual value of the cell(s) it's referencing. True if the formula requires the value of the cell it references, false otherwise. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_UndoInfo) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.12.2 queryTable (Query Table)

This element specifies all the relevant properties for a query table, one query table element is stored for each query table object in the spreadsheetML document.

Attributes	Description
adjustColumnWidth (Adjust Column Width On Refresh)	Specifies whether to automatically adjust column widths on refresh to fit the data retrieved. `true` if column widths should be adjusted. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyAlignmentFormats (Apply Alignment Formats)	If `true` apply legacy table autoformat alignment properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyBorderFormats (Apply Border Formats)	If `true` apply legacy table autoformat border properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyFontFormats (Apply Font Formats)	If `true` apply legacy table autoformat font properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyNumberFormats (Apply Number Formats)	If `true` apply legacy table autoformat number format properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyPatternFormats (Apply Pattern Formats)	If `true` apply legacy table autoformat pattern properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
applyWidthHeightFormats (Apply Width / Height Formats)	If `true` apply legacy table autoformat width/height properties. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
autoFormatId (Auto Format Id)	Identifies which legacy table autoformat to apply. Annex D contains a listing of the supported ~~PivotTable~~PivotTable™ AutoFormats, example formatting, and a sample workbook with each of those AutoFormats applied. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
backgroundRefresh (Background Refresh)	Specifies whether or not the query table shall try to refresh data in the background.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
connectionId (Connection Id)	Specifies the ID number of the external data connection to use to refresh data in the query table. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
disableEdit (Disable Edit)	Specifies whether the connection element used with this query table shall be editable. If `true`, then the connection is not editable. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
disableRefresh (Disable Refresh)	Specifies whether the query table shall be refreshable. If `true`, then then query table is not refreshable. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
fillFormulas (Fill Adjacent Formulas)	Specifies whether or not formulas in columns adjacent to the query table should be filled down whenever the query table is refreshed. This is helpful since the number of rows returned by a query table refresh operation can vary. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
firstBackgroundRefresh (First Background Refresh)	Specifies whether or not data has ever been refreshed for this query table. If the very first background data refresh had not completed at the time the file was saved, this attribute is set to `true`. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
growShrinkType (Grow Shrink Type)	Specifies the type of behavior expected for dealing with a variable number of rows of data in the query table between refresh operations. The meaning of the possible values of this attribute {`insertClear`, `insertDelete`, `overwriteClear`} are explained in detail in the definition of the simple type. The possible values for this attribute are defined by the ST_GrowShrinkType simple type (§**Error! Reference source not found.**).
headers (First Row Column Titles)	Specifies whether or not the query table has first row with column titles. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
intermediate	Specifies whether this query table is in an intermediate state, having been defined

Attributes	Description
(Intermediate)	but not fully formed and populated with data. In this state, fields and ranges of the query table can be unknown. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
name (QueryTable Name)	Specifies the name of the query table. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
preserveFormatting (Preserve Formatting On Refresh)	Specifies whether the application should try to preserve formatting in the query table and copy this formatting to any new rows of data. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
refreshOnLoad (Refresh On Load)	Specifies whether the query table shall refresh its data automatically when the spreadsheetML document is loaded or opened. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
removeDataOnSave (Remove Data On Save)	Specifies whether the query table shall remove all data from the worksheet before the spreadsheetML document is saved. This is very helpful for situations where people who have different permissions to view data want to share the same spreadsheetML document. All data from the last user is removed, and new users re-query the external data sources with their own credentials. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
rowNumbers (Row Numbers)	Specifies whether the query table shall include a first column of row numbers. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_QueryTable) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.13.1 connection (Connection)

This element contains both the definition of how to get at an external data source as well as information describing how the connection is used within the workbook. Specific constructs in a worksheet, such as

OLAP formulas, QueryTables, or PivotTables make use of information in the connection to retrieve or refresh data based on default events or the user's explicit request.

Attributes	Description
background (Background Refresh)	Indicates whether the connection can be refreshed in the background (asynchronously). `true` if preferred usage of the connection is to refresh asynchronously in the background; `false` if preferred usage of the connection is to refresh synchronously in the foreground. This flag should be intentionally ignored in specific cases. [*Example*: An example of when the flag would be ignored is in the case of a connection to OLAP data on ~~Microsoft~~Microsoft® ~~SQL Server~~SQL Server® Analysis Services, where the connection is used by both a ~~PivotTable~~PivotTable™ and also by CUBE functions within the workbook. That connection will always be refreshed synchronously by the ~~PivotTable~~PivotTable™ and will always be refreshed asynchronously by the CUBE functions. *end example*] The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
credentials (Reconnection Method)	Specifies the authentication method to be used when establishing (or re-establishing) the connection. The possible values for this attribute are defined by the ST_CredMethod simple type (§**Error! Reference source not found.**).
deleted (Deleted Connection)	Indicates whether the associated workbook connection has been deleted. `true` if the connection has been deleted; otherwise, `false`. Deleted connections contain only the attributes name and deleted=`true`, all other information is removed from the SpreadsheetML file. If a new connection is created with the same name as a deleted connection, then the deleted connection is overwritten by the new connection. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
description (Connection Description)	Specifies the user description for this connection. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
id (Connection Id)	Specifies The unique identifier of this connection. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
interval	Specifies the number of minutes between automatic refreshes of the connection.

Attributes	Description
(Automatic Refresh Interval)	When this attribute is not present, the connection is not automatically refreshed. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
keepAlive (Keep Connection Open)	`true` when the spreadsheet application should make efforts to keep the connection open. When `false`, the application should close the connection after retrieving the information. This corresponds to the MaintainConnection property of a PivotCache object. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
minRefreshableVersion (Minimum Version Required for Refresh)	For compatibility with legacy spreadsheet applications. This represents the minimum version # that is required to be able to correctly refresh the data connection. This attribute applies to connections that are used by a QueryTable. The possible values for this attribute are defined by the W3C XML Schema unsignedByte datatype.
name (Connection Name)	Specifies the name of the connection. Each connection shall have a unique name. When a connection has been marked as deleted and then a new connection is added with the same name, the deleted connection is replaced with the new connection. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
new (New Connection)	`true` if the connection has not been refreshed for the first time; otherwise, `false`. This state can happen when the user saves the file before a query has finished returning. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
odcFile (Connection File)	Specifies the full path to external connection file from which this connection was created. If a connection fails during an attempt to refresh data, and reconnectionMethod=1, then the spreadsheet application will try again using information from the external connection file instead of the connection object embedded within the workbook. This is a benefit for data source and spreadsheetML document manageability. If the definition in the external connection file is changed (e.g., because of a database server name change), then the workbooks that made use of that connection will fail to connect with their internal connection information, and reload the new connection information from this file.

Attributes	Description
	This attribute is cleared by the spreadsheet application when the user manually edits the connection definition within the workbook. Can be expressed in URI or system-specific file path notation. [*Note*: Applications can decide what forms of URI they support, and whether system-specific file path notations are supported. *end note*] The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
onlyUseConnectionFile (Only Use Connection File)	Indicates whether the spreadsheet application should always and only use the connection information in the external connection file indicated by the odcFile attribute when the connection is refreshed. If `false`, then the spreadsheet application should follow the procedure indicated by the reconnectionMethod attribute described below. Applies to ODBC connections, and may be applied to custom data connections. This attribute is ignored for other types of connections. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
reconnectionMethod (Reconnection Method)	Specifies what the spreadsheet application should do when a connection fails. The values are as follows: `1 = As required`: On refresh use the existing connection information. If the existing information cannot be used to establish a connection, get updated connection information, if available from the external connection file. `2 = Always`: On every refresh get updated connection information from the external connection file, if available, and use that instead of the existing connection information. In this case the data refresh will fail if the external connection file is unavailable. `3 = Never`: Never get updated connection information from the external connection file even if it is available and even if the existing connection information cannot be used. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
refreshedVersion (Last Refresh Version)	For backward compatibility purposes, this attribute indicates the version of the spreadsheet application that last refreshed the connection. This attribute applies to connections that are used by a query table.

Attributes	Description
	The possible values for this attribute are defined by the W3C XML Schema unsignedByte datatype.
refreshOnLoad (Refresh on Open)	`true` if this connection should be refreshed when opening the file; otherwise, `false`. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
saveData (Save Data)	`true` if the external data fetched over the connection to populate a table is to be saved with the workbook; otherwise, `false`. This exists for data security purposes - if no external data is saved in (or "cached") in the workbook, then current user credentials can be required every time to retrieve the relevant data, and people won't see the data the workbook author had last been using before saving the file. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
savePassword (Save Password)	`true` if the password is to be saved as part of the connection string; otherwise, False. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
singleSignOnId (SSO Id)	Identifier for Single Sign On (SSO) used for authentication between an intermediate spreadsheetML server and the external data source. [*Note*: Data connectivity can use a number of different technologies. One example of potential values stored in this attribute can be found at: http://msdn.microsoft.com/library/default.asp?url=/library/en-us/spptsdk/html/cSSOReturnCodes_SV01001109.asp *end note*] The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
sourceFile (Source Database File)	Used when the external data source is file-based. When a connection to such a data source fails, the spreadsheet application attempts to connect directly to this file. Can be expressed in URI or system-specific file path notation. [*Note*: Applications can decide what forms of URI they support, and whether system-specific file path notations are supported. *end note*] The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
type (Database Source Type)	Specifies the data source type.

Attributes	Description
	Values are as follows: 1. ODBC-based source 2. DAO-based source 3. File based database source 4. Web query 5. Custom data connection source 6. Text-based source 7. ADO record set 8. DSP Custom data connection source represents an application-defined connection technology. [*Note*: For example, ~~Microsoft~~Microsoft® Office uses this value to represent OLE DB connections. *end note*] The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_Connection) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.13.3 dbPr (Database Properties)

This element stores all properties associated with an ODBC or OLE DB external data connection.

[*Example*:

Data connectivity can use a number of different technologies. The following is one example XML fragment defining an OLE DB connection and the associated dbPr element:

```
<connection id="2"
  odcFile="C:\My Documents\My Data Sources\Northwind Orders.odc"
keepAlive="1"
  name="Northwind Orders" description="northwind" type="5"
refreshedVersion="3">
  <dbPr connection="Provider=SQLOLEDB.1;Persist
    Security Info=True;Initial Catalog=Northwind;Data
Source=dataserver1;Use
    Procedure for Prepare=1;Auto Translate=True;Packet
Size=4096;Workstation
    ID=LOCAL_MACHINE_NAME;Use Encryption for Data=False;Tag with column
    collation when possible=False"
    command="&amp;quot;Northwind&amp;quot;.&amp;quot;dbo&amp;quot;.&amp;quot;Orders&amp;quot;"
    commandType="3"/>
</connection>
```

end example]

Attributes	Description

command (Command Text)	The string containing the database command to pass to the data provider API that will interact with the external source in order to retrieve data. These strings can be constructed in a variety of ways (from simple UIs built into the spreadsheet application for browsing and choosing tables and fields, to external applications providing user interface to build up complex queries, to advanced users editing text queries). The spreadsheetML application need not understand the command syntax; it can simply pass the command string to the data provider API in order to retrieve the latest external data.
	
	[*Example*:
	Data connectivity can use a number of different technologies. The following is one example of an ODBC command string of commandType=2 (for a ~~Microsoft~~Microsoft® ~~SQL Server~~SQL Server® database):
	
	`command="SELECT Orders.OrderID, Orders.OrderDate, Orders.ShipName, Orders.ShipAddress, Orders.ShipCity, Orders.ShipRegion, Orders.ShipPostalCode, Orders.ShipCountry_x000d__x000a_FROM Northwind.dbo.Orders Orders_x000d__x000a_WHERE (Orders.ShipCountry=?)"`
	
	Some characters in this string have been escaped - for more information on the escaping scheme, please refer to the ST_Xstring simple type definition. *end example*]
	
	[*Note*: the "?" syntax in the string is something that the ODBC data provider is aware of and might replace with a parameter before execution. *end note*]
	
	[*Example*:
	Data connectivity can use a number of different technologies. The following is one example of an OLE DB command string of commandType=3 (for an Oracle database):
	
	`command=""TESTDB"."ShippersTable""`
	
	end example]
	
	[*Note*: Data connectivity can use a number of different technologies. A few examples of potential values stored in this attribute can be found at:
	• http://msdn.microsoft.com/library/default.asp?url=/library/en-us/odbc/htm/odbcsql_statements.asp
	• http://msdn.microsoft.com/library/default.asp?url=/library/en-us/odbc/htm/odbcsql_minimum_grammar.asp
	• http://msdn.microsoft.com/library/default.asp?url=/library/en-us/oledb/htm/oledbusing_commands.asp

Attributes	Description
	end note] The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
commandType (custom data source Command Type)	Specifies the custom data source command type. Values are passed to the custom data source provider. [*Example*: For the OLE DB custom data source provider, valid values are as follows: 1. Query specifies a cube name 2. Query specifies a SQL statement 3. Query specifies a table name 4. Query specifies that default information has been given, and it is up to the provider how to interpret. 5. Query is against a web based List Data Provider. *end example*] The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.

connection (Connection String)	The connection string is used to make contact with an ODBC or custom data source. These can be constructed in a variety of ways (from UI wizards built into the data provider code, to external query applications, to advanced users editing text files). The spreadsheetML application need not understand the connection syntax at all; it can simply pass the command string to the data provider API in order to re-establish a connection with the external data source.
	
	[*Example*: ODBC connection string to a database:
	
	`connection="DRIVER=SQL Server;SERVER=example_server;UID=example_useralias;APP=Microsoft Office 2007;WSID=user_alias;Trusted_Connection=Yes"`
	
	end example]
	
	[*Example*: of an OLE DB connection string to an Oracle database:
	
	`connection="Provider=OraOLEDB.Oracle.1;Password=example_password;Persist Security Info=True;User ID=example_useralias;Data Source=example_server;Extended Properties="""`
	
	end example]
	
	[*Note*: Data connectivity can use a number of different technologies. A few examples of potential values stored in this attribute can be found at:
	• http://msdn.microsoft.com/library/default.asp?url=/library/en-us/odbc/htm/dasdkodbcoverview.asp

Attributes	Description
	• http://msdn.microsoft.com/library/default.asp?url=/library/en-us/odbcsql/od_odbc_d_4x4k.asp • http://msdn.microsoft.com/library/default.asp?url=/library/en-us/ado270/htm/mdreforacleprovspec.asp *end note*] Connection strings syntaxes are specific to individual ODBC or custom data provider drivers. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
serverCommand (Command Text)	Specifies a second command text string that is persisted when ~~PivotTable~~PivotTable™ server-based page fields are in use. For ODBC connections, serverCommand is usually a broader query than command (no WHERE clause is present in the former). Based on these 2 commands, parameter UI can be populated and parameterized queries can be constructed. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_DbPr) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.13.5 olapPr (OLAP Properties)

This element contains all the properties needed for an OLAP data connection. OLAP connections contain both the dbPr and olapPr child elements.

[*Example*:

Data connectivity can use a number of different technologies. The following is an example of a connection to an SAP BW OLAP data source:

```
<connection id="1" odcFile="C:\My Documents\My Data Sources\$INFOCUBE.odc"
  keepAlive="1" name="SAP demo cube" description="SAP DemoCube" type="5"
  refreshedVersion="3" background="1">
  <dbPr connection="Provider=MDrmSap.2;Data Source=BI2;User
    ID=TESTUSER;Location=TESTSERVERNAME;Cache Authentication=False;Encrypt
    Password=False;Integrated Security=&quot;&quot;;Mask
Password=False;Persist
    Encrypted=False;Persist Security Info=True;Impersonation
    Level=Anonymous;Mode=Read;Protection Level=None;Extended
    Properties=&quot;SFC_CLIENT=800;&quot;;Initial Catalog=$INFOCUBE"
    command="$0D_DECU" commandType="1"/>
  <olapPr sendLocale="1" rowDrillCount="1000" serverFill="0"
    serverNumberFormat="0" serverFont="0" serverFontColor="0"/>
</connection>
```

end example]

[*Example*:

Data connectivity can use a number of different technologies. The following is an example of a connection to a ~~Microsoft~~Microsoft® ~~SQL Server~~SQL Server® Analysis Services OLAP data source:

```
<connection id="1"
  odcFile="C:\My Documents\My Data Sources\Adventure Works DW.odc"
keepAlive="1"
  name="Adventure Works DW" type="5" refreshedVersion="3" background="1">
  <dbPr connection="Provider=MSOLAP.3;Cache Authentication=False;Persist
Security Info=True;Initial Catalog=Adventure Works
    DW;Data Source=DATASERVER1;Impersonation
    Level=Impersonate;Mode=ReadWrite;Protection Level=Pkt Privacy;Auto
Synch
    Period=20000;Default Isolation Mode=0;Default MDX Visual Mode=0;MDX
    Compatibility=1;MDX Unique Name Style=0;Non Empty
    Threshold=0;SQLQueryMode=Calculated;Safety Options=2;Secured Cell
    Value=0;SOURCE_DSN_SUFFIX=&quot;Prompt=CompleteRequired;Window
    Handle=0x6A903CC;&quot;;SQL Compatibility=0;Compression Level=0;Real
Time
    Olap=False;Packet Size=4096" command="Adventure Works"
commandType="1"/>
  <olapPr sendLocale="1" rowDrillCount="1000"/>
</connection>
```

end example]

[*Note*: Data connectivity can use a number of different technologies. One example of potential values stored in this attribute can be found at http://msdn.microsoft.com/library/default.asp?url=/library/en-us/oledb/htm/dasdkoledboverview.asp *end note*]

Attributes	Description
local (Local Cube)	Flag indicating whether we should get data from the local cube on refresh versus the original data source. `true` if a local cube has been created for OLAP data, and it should be used instead of the server. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
localConnection (Local Cube Connection)	Specifies a connection string to use when a local cube is available. This is used when local is set to `true`. [*Example*: `<olapPr local="true" localConnection="OLEDB;Provider=MSOLAP;Data Source=C:\Data\DataCube.cub" >` *end example*] The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
localRefresh (Local Refresh)	Flag indicating whether we should refresh the local cube from the original data source. When `true`, the original OLAP data source is queried each time the user explicitly refreshes the data in the application, and a new local cube is constructed from this query. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
rowDrillCount (Drill Through Count)	Maximum number of drill-through rows to return when the user drills through an aggregate value in a ~~PivotTable~~PivotTable™. The possible values for this attribute are defined by the W3C XML Schema unsignedInt datatype.
sendLocale (Send Locale to OLAP)	When `true`, the spreadsheetML app should send the user interface locale ID to the OLAP provider to retrieve localized member names and properties, etc. When `false`, no locale ID is expected. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
serverFill (OLAP Fill Formatting)	When `true` a ~~PivotTable~~PivotTable™ based on an OLAP source should format the data and aggregate cells in the ~~PivotTable~~PivotTable™ view using the background

Attributes	Description
	color from the OLAP source if this information is available. When `false`, OLAP server background fill colors are ignored, and standard formatting rules within the worksheet are followed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
serverFont (OLAP Server Font)	When `true`, a ~~PivotTable~~PivotTable™ based on OLAP source should format the data and aggregate cells in the ~~PivotTable~~PivotTable™ view using the font from the OLAP source (e.g., Arial or ~~Tahoma~~Tahoma®). When `false`, OLAP server fonts are ignored, and standard formatting rules within the worksheet are followed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
serverFontColor (OLAP Font Formatting)	When `true` a ~~PivotTable~~PivotTable™ based on OLAP source should format the data and aggregate cells in the ~~PivotTable~~PivotTable™ view using the font color from the OLAP source. When `false`, OLAP server font colors are ignored, and standard formatting rules within the worksheet are followed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
serverNumberFormat (OLAP Number Format)	When `true`, a ~~PivotTable~~PivotTable™ based on OLAP source should format the data and aggregate cells in the ~~PivotTable~~PivotTable™ view using the number format from the OLAP source. When `false`, OLAP server number formats are ignored, and standard formatting rules within the worksheet are followed. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_OlapPr) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.13.6 parameter (Parameter Properties)

This element stores properties about any parameters used with external data connections. Parameters are used to change the query executed externally and cause different data to be retrieved into the workbook. The type of parameter used – see ST_parameterType (§**Error! Reference source not found.**) – determines whether the user is prompted for a value before data is refreshed, or the value is pulled from a cell in the workbook, or whether the same value should be used until explicitly changed in the data connection. Parameters are permitted for ODBC and web queries.

[*Example*:

Data connectivity can use a number of different technologies. The following is an example of XML defining a connection to a ~~Microsoft~~Microsoft® ~~Access~~Access® database, with a parameter based on the value in cell C1 on the first sheet.

```
<connection id="1" name="Connection" type="1" refreshedVersion="2"
  background="1" saveData="1">
  <dbPr connection="DSN=MS Access

Database;DBQ=C:\Desktop\db1.mdb;DefaultDir=C:\Desktop;DriverId=25;FIL=MS
    Access;MaxBufferSize=2048;PageTimeout=5;" command="SELECT
Table1.Field1,
    Table1.Field2_x000d__x000a_FROM `C:\Desktop\db1`.Table1
    Table1_x000d__x000a_WHERE (Table1.Field2=?)"/>
  <parameters count="1">
    <parameter name="user specified value" sqlType="4" parameterType="cell"
      cell="Sheet1!$C$1"/>
  </parameters>
</connection>
```

end example]

Note that the command string in the dbPr element contains a "?" character. This character serves as a parameter marker.

[*Note*: Data connectivity can use a number of different technologies. One example of potential values stored in this attribute can be found at: http://msdn.microsoft.com/library/default.asp?url=/library/en-us/odbc/htm/odbcstatement_parameters.asp *end note*]

Attributes	Description
boolean (Boolean)	Boolean value to use as the query parameter. Used only when parameterType = value. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
cell (Cell Reference)	Cell reference indicating which cell's value to use for the query parameter. Used only when parameterType = cell. [*Example*: `<Parameter parameterType="cell" cell="Sheet1!$C$1">` *end example*] The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

Attributes	Description
double (Double)	Non-integer numeric value to use as the query parameter. Used only when parameterType = value. The possible values for this attribute are defined by the W3C XML Schema double datatype.
integer (Integer)	Integer value to use as the query parameter. Used when parameterType = value. The possible values for this attribute are defined by the W3C XML Schema int datatype.
name (Parameter Name)	The name of the parameter. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
parameterType (Parameter Type)	Type of parameter used. If the parameterType=`value`, then the value from boolean, double, integer, or string are used. In this case, it is expected that only one of {boolean, double, integer, or string} is specified. The possible values for this attribute are defined by the ST_ParameterType simple type (§**Error! Reference source not found.**).
prompt (Parameter Prompt String)	Prompt string for the parameter. Presented to the spreadsheet user along with input UI to collect the parameter value before refreshing the external data. Used only when parameterType = prompt. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
refreshOnChange (Refresh on Change)	Flag indicating whether the query should automatically refresh when the contents of a cell that provides the parameter value changes. If `true`, then external data is refreshed using the new parameter value every time there's a change. If `false`, then external data is only refreshed when requested by the user, or some other event triggers refresh (e.g., workbook opened). The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
sqlType (SQL Data Type)	SQL data type of the parameter. Only supported for ODBC sources. Supported values include:

-22	SQL_UNSIGNED_OFFSET
-20	SQL_SIGNED_OFFSET
-11	SQL_GUID
-10	SQL_WLONGVARCHAR
-9	SQL_WVARCHAR

Attributes	Description

-8	SQL_WCHAR
-7	SQL_BIT
-6	SQL_TINYINT
-5	SQL_BIGINT
-4	SQL_LONGVARBINARY
-3	SQL_VARBINARY
-2	SQL_BINARY
-1	SQL_LONGVARCHAR
0	SQL_UNKNOWN_TYPE
1	SQL_CHAR
2	SQL_NUMERIC
3	SQL_DECIMAL
4	SQL_INTEGER
5	SQL_SMALLINT
6	SQL_FLOAT
7	SQL_REAL
8	SQL_DOUBLE
9	SQL_TYPE_DATE or SQL_DATE
10	SQL_TYPE_TIME or SQL_TIME
11	SQL_TYPE_TIMESTAMP or SQL_TIMESTAMP
12	SQL_VARCHAR
101	SQL_INTERVAL_YEAR
102	SQL_INTERVAL_MONTH
103	SQL_INTERVAL_DAY
104	SQL_INTERVAL_HOUR
105	SQL_INTERVAL_MINUTE
106	SQL_INTERVAL_SECOND
107	SQL_INTERVAL_YEAR_TO_MONTH
108	SQL_INTERVAL_DAY_TO_HOUR
109	SQL_INTERVAL_DAY_TO_MINUTE
110	SQL_INTERVAL_DAY_TO_SECOND

Attributes	Description
	<table><tr><td>111</td><td>SQL_INTERVAL_HOUR_TO_MINUTE</td></tr><tr><td>112</td><td>SQL_INTERVAL_HOUR_TO_SECOND</td></tr><tr><td>113</td><td>SQL_INTERVAL_MINUTE_TO_SECOND</td></tr></table> The possible values for this attribute are defined by the W3C XML Schema int datatype.
string (String)	String value to use as the query parameter. Used only when parameterType = value. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_Parameter) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.13.13 webPr (Web Query Properties)

This element specifies the properties for a web query source. A web query will retrieve data from HTML tables, and can also supply HTTP "Get" parameters to be processed by the web server in generating the HTML by including the parameters and parameter elements.

Here's an example of a web query connection:

[*Example*:

```
<connection id="1" name="Connection" type="4" refreshedVersion="0"
  background="1" saveData="1">
  <webPr sourceData="1" parsePre="1" consecutive="1"
    url="http://ServerName/Image%20Library/Forms/AllItems.aspx"
htmlTables="1">
    <tables count="1">
      <s v="contentthumbnail"/>
    </tables>
  </webPr>
</connection>
```

end example]

Attributes	Description
consecutive (Consecutive	Flag indicating whether consecutive delimiters should be treated as just one delimiter.

Attributes	Description
Delimiters)	The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
editPage (Edit Query URL)	The URL of the user-facing web page showing the web query data. This URL is persisted in the case that sourceData="true" and url has been redirected to reference an XML file. Then the user-facing page can be shown in the UI, and the XML data can be retrieved behind the scenes. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
firstRow (Use First Row)	Flag indicating whether to parse all tables inside a PRE block with the same width settings as the first row. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
htmlFormat (HTML Formatting Handling)	How to handle formatting from the HTML source when bringing web query data into the worksheet. Relevant when sourceData is True. Values are as follows: 1. None - no formatting at all 2. RTF - honor just rich text formatting 3. All - honor all html formatting. The possible values for this attribute are defined by the ST_HtmlFmt simple type (§**Error! Reference source not found.**).
htmlTables (HTML Tables Only)	Flag indicating whether web queries should only work on HTML tables. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
parsePre (Parse PRE)	Flag indicating whether data contained within HTML <PRE> tags in the web page is parsed into columns when you import the page into a query table. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
post (Web Post)	Returns or sets the string used with the post method of inputting data into a web server to return data from a web query. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
sourceData (Import XML Source Data)	Flag indicating that XML source data should be imported instead of the HTML table itself. Used when a web query exists to an HTML table with the following attribute.

Attributes	Description
	<TABLE … o:WebQuerySourceHRef="http://…" … > … </TABLE> The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
textDates (Dates as Text)	Flag indicating whether dates should be imported into cells in the worksheet as text rather than dates. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
url (URL)	URL to use to refresh external data. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
xl2000 (Refreshed in ~~Excel~~Excel® 2000)	This flag exists for backward compatibility with older existing spreadsheet files, and is set to `true` if this web query was refreshed in a spreadsheet application newer than or equal to ~~Microsoft~~Microsoft® ~~Excel~~Excel® 2000. This is an optional attribute that can be ignored. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
xl97 (Created in ~~Excel~~Excel® 97)	This flag exists for backward compatibility with older existing spreadhseet files, and is set to `true` if this web query was created in ~~Microsoft~~Microsoft® ~~Excel~~Excel® 97. This is an optional attribute that can be ignored. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.
xml (XML Source)	`true` if the web query source is XML (versus HTML), otherwise `false`. The possible values for this attribute are defined by the W3C XML Schema boolean datatype.

[*Note*: The W3C XML Schema definition of this element's content model (CT_WebPr) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.14.4 ddeLink (DDE Connection)

This element represents a connection to an external Dynamic Data Exchange (DDE) server. DDE is a method of sending data between applications using ~~Windows~~Windows® messages according to a documented protocol that has been stable since about 1990.

The hierarchy of names defined by a DDE server is Application, Topics, and Items. Topics often correspond to units such as files or documents or database names, and Items refer to subsets of the data such as cell ranges, rows, fields, columns. DDE items can have multiple values as well.

[*Example*:

Data connectivity can use a number of different technologies.The following is just one example of a spreadsheetML fragment describing the product ~~Microsoft~~Microsoft® ~~Excel~~Excel® being used as a DDE server to provide data to the current spreadsheet document:

```
<ddeLink xmlns:r="…" ddeService="excel" ddeTopic="[ddesource.xls]Sheet1">
  <ddeItems>
    <ddeItem name="R1C1" advise="1"/>
    <ddeItem name="StdDocumentName" ole="1" advise="1"/>
  </ddeItems>
</ddeLink>
```

end example]

Attributes	Description
ddeService (Service name)	Service name (i.e., application name) for the DDE connection. This is a required attribute. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).
ddeTopic (Topic for DDE server)	Describes something for the DDE application to which the channel pertains—usually a document of that application. This is a required attribute. The possible values for this attribute are defined by the ST_Xstring simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_DdeLink) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.17.7.137 GETPIVOTDATA

Syntax:

```
GETPIVOTDATA ( data-field , pivot-table , field-1 , item-1
    [ , field-2 , item-2 [ , … ] ] )
```

Description: Retrieves data stored in a ~~PivotTable~~PivotTable™ report. Calculated fields or items and custom calculations are included in GETPIVOTDATA calculations.

Arguments:

Name	Type	Description
data-field	text	The name of the data field that contains the data to be retrieved.
pivot-table	reference to any cell,	This information is used to determine which

Name	Type	Description
	range of cells, or named range of cells in a ~~PivotTable~~PivotTable™ report	~~PivotTable~~PivotTable™ report contains the data to be retrieved. If *pivot-table* is a range that includes two or more ~~PivotTable~~PivotTable™ reports, data shall be retrieved from whichever report was created most recently in the range.
field-1 through *field-n*	text	Argument pairs *field-1* and *item-1*, *field-2* and *item-2* through *field-n* and *item-n* are field names and item names that describe the data to be retrieved. The pairs can be in any order. Field names and names for items other than dates/times (which shall be expressed as numbers) and numbers shall be enclosed in quotation marks. For OLAP ~~PivotTable~~PivotTable™ reports, items can contain the source name of the dimension as well as the source name of the item. [*Example*: A field and item pair for an OLAP ~~PivotTable~~PivotTable™ might look like this: `"[Product]","[Product].[All Products].[Foods].[Baked Goods]"` *end example*] If the field and item arguments describe a single cell, the value of that cell is returned regardless of its value.
item-1 through *item-n*	text	

Return Type and Value: any – The data stored in a ~~PivotTable~~PivotTable™ report.

However, if

- *pivot-table* is not a range in which a ~~PivotTable~~PivotTable™ report is found, the return value is unspecified.
- The arguments do not describe a visible field, the return value is unspecified.
- The arguments include a page field that is not displayed, the return value is unspecified.

[*Example*: Given the following data:

	A	B	C	D	E
2	Region	North			
3					
4	Sum of Sales		Product		
5	Month	Salesperson	Beverages	Produce	Grand Total
6	March	Buchanan	$ 3,522	$ 10,201	$ 13,723
7		Davolio	$ 8,725	$ 7,889	$ 16,614
8	March Total		$ 12,247	$ 18,090	$ 30,337
9	April	Buchanan	$ 5,594	$ 7,265	$ 12,859
10		Davolio	$ 5,461	$ 668	$ 6,129
11	April Total		$ 11,055	$ 7,933	$ 18,988
12	Grand Total		$ 23,302	$ 26,023	$ 49,325

`GETPIVOTDATA("Sales",$A$4)` returns the grand total of the Sales field, `$49,325`.

`GETPIVOTDATA("Sum of Sales",$A$4)` also returns the grand total of the Sales field, `$49,325`; the field name can be entered exactly as it looks on the sheet, or as its root (without "Sum of," "Count of," and so forth).

`GETPIVOTDATA("Sales",$A$4,"Month","March")` returns the grand total for March, `$30,337`.

`GETPIVOTDATA("Sales",$A$4,"Month","March","Product","Produce","Salesperson","Buchanan")` returns `$10,201`.

`GETPIVOTDATA("Sales",$A$4,"Region","South")` is unspecified because the South region data is not visible.

`GETPIVOTDATA("Sales",$A$4,"Product","Beverages","Salesperson","Davolio")` is unspecified because there is no total value of beverage sales for Davolio.

end example]

Changes to section 18.18.1 ST_Axis (~~PivotTable~~PivotTable™ Axis)

This simple type defines the axes for a ~~PivotTable~~PivotTable™ selection.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
axisCol (Column Axis)	Column axis
axisPage (Include Count Filter)	Page axis
axisRow (Row Axis)	Row axis
axisValues (Values Axis)	Values axis

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_Axis) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.28 ST_FieldSortType (Field Sort Type)

This simple type defines the sort orders that can be applied to fields in a ~~PivotTable~~PivotTable™.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
ascending (Ascending)	Indicates the field is sorted in ascending order.
descending (Descending)	Indicates the field is sorted in descending order.
manual (Manual Sort)	Indicates the field is sorted manually.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_FieldSortType) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.29 ST_FileType (File Type)

The file type being used for text import.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
dos (DOS)	DOS (PC-8).
lin (Linux)	Linux
mac (Macintosh)	Macintosh.
other (Other Non-Specified Values)	Other non-specified values at the time of writing.
win (~~Windows~~Windows® (ANSI))	~~Windows~~Windows® (ANSI).

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_FileType) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.34 ST_FormatAction (~~PivotTable~~PivotTable™ Format Types)

This simple type defines the type of formats that can be applied to PivotTables.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
blank (Blank)	Indicates no format is applied to the ~~PivotTable~~PivotTable™. This value is used when formatting is cleared from already formatted cells in the ~~PivotTable~~PivotTable™.
drill (Drill Type)	Indicates the ~~PivotTable~~PivotTable™ has drill-through format.
formatting (Formatting)	Indicates the ~~PivotTable~~PivotTable™ has formatting.
formula (Formula Type)	Indicates the ~~PivotTable~~PivotTable™ has formulas.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_FormatAction) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.38 ST_GroupBy (Values Group By)

This simple type defines types of data grouping that can be performed on a ~~PivotTable~~PivotTable™.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
days (Days)	Indicates a grouping on "days" for date values.
hours (Hours)	Indicates a grouping on "hours" for date values.
minutes (Minutes)	Indicates a grouping on "minutes" for date values.
months (Months)	Indicates a grouping on "months" for date values.
quarters (Quarters)	Indicates a grouping on "quarters" for date values.
range (Group By Numeric Ranges)	Indicates a grouping by numeric ranges for numeric values.
seconds (Seconds)	Indicates a grouping on "seconds" for date values.
years (Years)	Indicates a grouping on "years" for date values.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_GroupBy) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.43 ST_ItemType (PivotItem Type)

This simple type defines the pivot type for a pivotItem.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
avg (Average)	Indicates the pivot item represents an "average" aggregate function.
blank (Blank Pivot Item)	Indicates the pivot item represents a blank line.
count (Count)	Indicates the pivot item represents custom the "count" aggregate."
countA (CountA)	Indicates the pivot item represents the "count numbers" aggregate function.
data (Data)	Indicate the pivot item represents data.
default (Default)	Indicates the pivot item represents the default type for this ~~PivotTable~~PivotTable™. The default

Enumeration Value	Description
	pivot item type is the "total" aggregate function.
grand (Grand Total Item)	Indicates the pivot items represents the grand total line.
max (Max)	Indicates the pivot item represents the "maximum" aggregate function.
min (Min)	Indicates the pivot item represents the "minimum" aggregate function.
product (Product)	Indicates the pivot item represents the "product" function.
stdDev (stdDev)	Indicates the pivot item represents the "standard deviation" aggregate function.
stdDevP (StdDevP)	Indicates the pivot item represents the "standard deviation population" aggregate function.
sum (Sum)	Indicates the pivot item represents the "sum" aggregate value.
var (Var)	Indicates the pivot item represents the "variance" aggregate value.
varP (VarP)	Indicates the pivot item represents the "variance population" aggregate value.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_ItemType) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.58 ST_PivotAreaType (Rule Type)

Indicates the type of rule being used to describe an area or aspect of the ~~PivotTable~~PivotTable™.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
all (All)	Refers to the whole ~~PivotTable~~PivotTable™.
button (Field Button)	Refers to a field button.
data (Data)	Refers to something in the data area.
none (None)	Refers to no Pivot area.
normal (Normal)	Refers to a header or item.
origin (Origin)	Refers to the blank cells at the top-left of the ~~PivotTable~~PivotTable™ (top-left to LTR sheets, top-right for RTL sheets).

Enumeration Value	Description
topEnd (Top End)	Refers to the blank cells at the top of the ~~PivotTable~~PivotTable™, on its trailing edge (top-right for LTR sheets, top-left for RTL sheets).

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_PivotAreaType) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.59 ST_PivotFilterType (Pivot Filter Types)

This simple type defines filters that can be applied to PivotTables.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
captionBeginsWith (Caption Begins With)	Indicates the "begins with" filter for field captions.
captionBetween (Caption Is Between)	Indicates the "is between" filter for field captions.
captionContains (Caption Contains)	Indicates the "contains" filter for field captions.
captionEndsWith (Caption Ends With)	Indicates the "ends with" filter for field captions.
captionEqual (Caption Equals)	Indicates the "equal" filter for field captions.
captionGreaterThan (Caption Is Greater Than)	Indicates the "is greater than" filter for field captions.
captionGreaterThanOrEqual (Caption Is Greater Than Or Equal To)	Indicates the "is greater than or equal to" filter for field captions.
captionLessThan (Caption Is Less Than)	Indicates the "is less than" filter for field captions.
captionLessThanOrEqual (Caption Is Less Than Or Equal To)	Indicates the "is less than or equal to" filter for field captions.
captionNotBeginsWith (Caption Does Not Begin With)	Indicates the "does not begin with" filter for field captions.
captionNotBetween (Caption Is Not Between)	Indicates the "is not between" filter for field captions.
captionNotContains (Caption Does Not Contain)	Indicates the "does not contain" filter for field captions.
captionNotEndsWith (Caption Does Not End With)	Indicates the "does not end with" filter for field captions.
captionNotEqual (Caption Not Equal)	Indicates the "not equal" filter for field captions.
count (Count)	Indicates the "count" filter.
dateBetween (Date Between)	Indicates the "between" filter for date values.
dateEqual (Date Equals)	Indicates the "equals" filter for date values.

Enumeration Value	Description
dateNewerThan (Date Newer Than)	Indicates the "newer than" filter for date values.
dateNewerThanOrEqual (Date Newer Than or Equal To)	Indicates the "newer than or equal to" filter for date values.
dateNotBetween (Date Not Between)	Indicates the "not between" filter for date values.
dateNotEqual (Date Does Not Equal)	Indicates the "does not equal" filter for date values.
dateOlderThan (Date Older Than)	Indicates the "older than" filter for date values.
dateOlderThanOrEqual (Date Older Than Or Equal)	Indicates the "older than or equal to" filter for date values.
lastMonth (Last Month)	Indicates the "last month" filter for date values.
lastQuarter (Last Quarter)	Indicates the "last quarter" filter for date values.
lastWeek (Last Week)	Indicates the "last week" filter for date values.
lastYear (Last Year)	Indicates the "last year" filter for date values.
M1 (January)	Indicates the "January" filter for date values.
M10 (Dates in October)	Indicates the "October" filter for date values.
M11 (Dates in November)	Indicates the "November" filter for date values.
M12 (Dates in December)	Indicates the "December" filter for date values.
M2 (Dates in February)	Indicates the "February" filter for date values.
M3 (Dates in March)	Indicates the "March" filter for date values.
M4 (Dates in April)	Indicates the "April" filter for date values.
M5 (Dates in May)	Indicates the "May" filter for date values.
M6 (Dates in June)	Indicates the "June" filter for date values.
M7 (Dates in July)	Indicates the "July" filter for date values.
M8 (Dates in August)	Indicates the "August" filter for date values.
M9 (Dates in September)	Indicates the "September" filter for date values.
nextMonth (Next Month)	Indicates the "next month" filter for date values.
nextQuarter (Next Quarter)	Indicates the "next quarter" for date values.
nextWeek (Next Week)	Indicates the "next week" for date values.
nextYear (Next Year)	Indicates the "next year" filter for date values.
percent (Percent)	Indicates the "percent" filter for numeric values.
Q1 (First Quarter)	Indicates the "first quarter" filter for date values.
Q2 (Second Quarter)	Indicates the "second quarter" filter for date values.
Q3 (Third Quarter)	Indicates the "third quarter" filter for date values.
Q4 (Fourth Quarter)	Indicates the "fourth quarter" filter for date

Enumeration Value	Description
	values.
sum (Sum)	Indicates the "sum" filter for numeric values.
thisMonth (This Month)	Indicates the "this month" filter for date values.
thisQuarter (This Quarter)	Indicates the "this quarter" filter for date values.
thisWeek (This Week)	Indicates the "this week" filter for date values.
thisYear (This Year)	Indicate the "this year" filter for date values.
today (Today)	Indicates the "today" filter for date values.
tomorrow (Tomorrow)	Indicates the "tomorrow" filter for date values.
unknown (Unknown)	Indicates the ~~PivotTable~~PivotTable™ filter is unknown to the application.
valueBetween (Value Between)	Indicates the "Value between" filter for text and numeric values.
valueEqual (Value Equal)	Indicates the "value equal" filter for text and numeric values.
valueGreaterThan (Value Greater Than)	Indicates the "value greater than" filter for text and numeric values.
valueGreaterThanOrEqual (Value Greater Than Or Equal To)	Indicates the "value greater than or equal to" filter for text and numeric values.
valueLessThan (Value Less Than)	Indicates the "value less than" filter for text and numeric values.
valueLessThanOrEqual (Value Less Than Or Equal To)	Indicates the "value less than or equal to" filter for text and numeric values
valueNotBetween (Value Not Between)	Indicates the "value not between" filter for text and numeric values.
valueNotEqual (Value Not Equal)	Indicates the "value not equal" filter for text and numeric values.
yearToDate (Year-To-Date)	Indicates the "year-to-date" filter for date values.
yesterday (Yesterday)	Indicates the "yesterday" filter for date values.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_PivotFilterType) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.67 ST_Scope (Conditional Formatting Scope)

This simple type defines the scope of conditional formatting applied in the ~~PivotTable~~PivotTable™.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
data (Data Fields)	Indicates that conditional formatting is applied to the selected data fields.
field (Field Intersections)	Indicates that conditional formatting is applied to the selected ~~PivotTable~~PivotTable™ field intersections.
selection (Selection)	Indicates that conditional formatting is applied to the selected cells.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_Scope) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.70 ST_ShowDataAs (Show Data As)

This simple type defines the data formats for a field in the ~~PivotTable~~PivotTable™.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
difference (Difference)	Indicates the field is shown as the "difference from" a value.
index (Index)	Indicates the field is shown as the "index.
normal (Normal Data Type)	Indicates that the field is shown as its normal data type.
percent (Percentage Of)	Indicates the field is show as the "percentage of
percentDiff (Percentage Difference)	Indicates the field is shown as the "percentage difference from" a value.
percentOfCol (Percent of Column)	Indicates the field is shown as the percentage of column.
percentOfRow (Percentage of Row)	Indicates the field is shown as the percentage of row
percentOfTotal (Percentage of Total)	Indicates the field is shown as percentage of total.
runTotal (Running Total)	Indicates the field is shown as running total in the table.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_ShowDataAs) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.74 ST_SortType (Set Sort Order)

This simple type defines the possible sort order for the ~~PivotTable~~PivotTable™.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

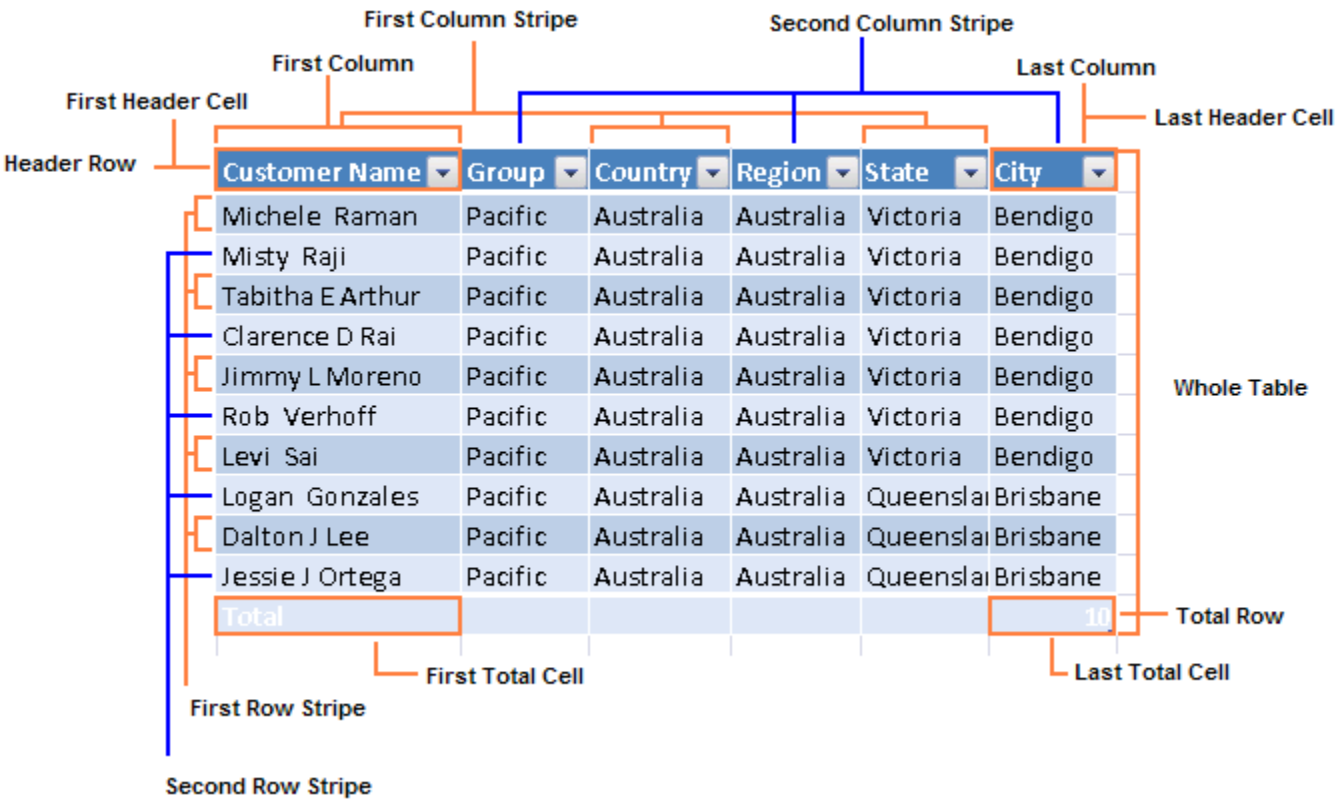
Enumeration Value	Description
ascending (Ascending)	Indicates that the ~~PivotTable~~PivotTable™ data is sorted in ascending order.
ascendingAlpha (Ascending Alpha)	Indicates that the ~~PivotTable~~PivotTable™ data is sorted in alphabetic order with ascending values.
ascendingNatural (Ascending Natural)	Indicates that the ~~PivotTable~~PivotTable™ data is sorted in natural order with ascending.
descending (Descending)	Indicates that the ~~PivotTable~~PivotTable™ data is sorted in descending.
descendingAlpha (Alphabetic Order Descending)	Indicates that the ~~PivotTable~~PivotTable™ data is sorted in alphabetic order with descending values.
descendingNatural (Natural Order Descending)	Indicates that the ~~PivotTable~~PivotTable™ data is sorted in natural order with descending values.
none (None)	Indicates that the ~~PivotTable~~PivotTable™ data is not sorted.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_SortType) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.77 ST_TableStyleType (Table Style Type)

Enumeration of the different structured regions of a Table or ~~PivotTable~~PivotTable™ which can be formatted. Specifies which region is being formatted by this table style element.

Table Regions



~~PivotTable~~PivotTable™ Regions

Blank Row

Only applies when "Insert blank row after each item" is ON.

Country	(All)	
Sum of Sales Amount	Column Labels	
	2001	
	3	
	July	July Total
Row Labels	No Discount	
New South Wales	75625.4664	75625.4664
Coffs Harbour	699.0982	699.0982
Bikes	699.0982	699.0982
Road Bikes	699.0982	699.0982
Road-150 Red, 48		
Road-150 Red, 52		
Road-150 Red, 62		
Road-650 Red, 44	699.0982	699.0982
Darlinghurst	3578.27	3578.27
Bikes	3578.27	3578.27
Road Bikes	3578.27	3578.27
Road-150 Red, 48		
Road-150 Red, 56	3578.27	3578.27
Road-150 Red, 62		
Goulburn	18412.1682	18412.1682
Bikes	18412.1682	18412.1682
Mountain Bikes	3399.99	3399.99
Mountain-100 Silver, 44	3399.99	3399.99
Road Bikes	15012.1782	15012.1782

Whole Table

Country	(All)	
Sum of Sales Amount	Column Labels	
	2001	
	3	
	July	July Total
Row Labels	No Discount	
New South Wales	75625.4664	75625.4664
Coffs Harbour	699.0982	699.0982
Bikes	699.0982	699.0982
Road Bikes	699.0982	699.0982
Road-150 Red, 48		
Road-150 Red, 52		
Road-150 Red, 62		
Road-650 Red, 44	699.0982	699.0982
Darlinghurst	3578.27	3578.27
Bikes	3578.27	3578.27
Road Bikes	3578.27	3578.27
Road-150 Red, 48		
Road-150 Red, 56	3578.27	3578.27
Road-150 Red, 62		

Page Field Labels

Country	(All)	
Sum of Sales Amount	Column Labels	
	2001	
	3	
	July	July Total
Row Labels	No Discount	
New South Wales	75625.4664	75625.4664
Coffs Harbour	699.0982	699.0982
Bikes	699.0982	699.0982
Road Bikes	699.0982	699.0982

Page Field Values

Country	(All)	
Sum of Sales Amount	Column Labels	
	2001	
	3	
	July	July Total
Row Labels	No Discount	
New South Wales	75625.4664	75625.4664
Coffs Harbour	699.0982	699.0982
Bikes	699.0982	699.0982
Road Bikes	699.0982	699.0982

First Column Stripe

Country	(All)				
Sum of Sales Amount	Column Labels				
	2001				
	3				
	July	July Total	August	August Total	September
Row Labels	No Discount		No Discount		No Discount
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064
Coffs Harbour	699.0982	699.0982	7156.54	7156.54	7156.54
Bikes	699.0982	699.0982	7156.54	7156.54	7156.54
Road Bikes	699.0982	699.0982	7156.54	7156.54	7156.54
Road-150 Red, 48					3578.27
Road-150 Red, 52			3578.27	3578.27	3578.27
Road-150 Red, 62			3578.27	3578.27	

Second Column Stripe

Country	(All)				
Sum of Sales Amount	Column Labels				
	2001				
	3				
	July	July Total	August	August Total	September
Row Labels	No Discount		No Discount		No Discount
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064
Coffs Harbour	699.0982	699.0982	7156.54	7156.54	7156.54
Bikes	699.0982	699.0982	7156.54	7156.54	7156.54
Road Bikes	699.0982	699.0982	7156.54	7156.54	7156.54
Road-150 Red, 48					3578.27
Road-150 Red, 52			3578.27	3578.27	3578.27
Road-150 Red, 62			3578.27	3578.27	
Road-650 Red, 44	699.0982	699.0982			
Darlinghurst	3578.27	3578.27	3578.27	3578.27	7156.54
Bikes	3578.27	3578.27	3578.27	3578.27	7156.54
Road Bikes	3578.27	3578.27	3578.27	3578.27	7156.54
Road-150 Red, 48			3578.27	3578.27	
Road-150 Red, 56	3578.27	3578.27			3578.27
Road-150 Red, 62					3578.27

First Row Stripe

Country	(All)			
Sum of Sales Amount	Column Labels			
	2001			
	3			
	July	July Total	August	August Total
Row Labels	No Discount		No Discount	
New South Wales	75625.4664	75625.4664	119823.881	119823.881
Coffs Harbour	699.0982	699.0982	7156.54	7156.54
Bikes	699.0982	699.0982	7156.54	7156.54
Road Bikes	699.0982	699.0982	7156.54	7156.54
Road-150 Red, 48				
Road-150 Red, 52			3578.27	3578.27
Road-150 Red, 62			3578.27	3578.27
Road-650 Red, 44	699.0982	699.0982		
Darlinghurst	3578.27	3578.27	3578.27	3578.27
Bikes	3578.27	3578.27	3578.27	3578.27
Road Bikes	3578.27	3578.27	3578.27	3578.27
Road-150 Red, 48			3578.27	3578.27
Road-150 Red, 56	3578.27	3578.27		
Road-150 Red, 62				

Second Row Stripe

Country	(All)			
Sum of Sales Amount	Column Labels			
	2001			
	3			
	July	July Total	August	August Total
Row Labels	No Discount		No Discount	
New South Wales	75625.4664	75625.4664	119823.881	119823.881
Coffs Harbour	699.0982	699.0982	7156.54	7156.54
Bikes	699.0982	699.0982	7156.54	7156.54
Road Bikes	699.0982	699.0982	7156.54	7156.54
Road-150 Red, 48				
Road-150 Red, 52			3578.27	3578.27
Road-150 Red, 62			3578.27	3578.27
Road-650 Red, 44	699.0982	699.0982		
Darlinghurst	3578.27	3578.27	3578.27	3578.27
Bikes	3578.27	3578.27	3578.27	3578.27
Road Bikes	3578.27	3578.27	3578.27	3578.27
Road-150 Red, 48			3578.27	3578.27
Road-150 Red, 56	3578.27	3578.27		
Road-150 Red, 62				

First Column

Country	(All)		
Sum of Sales Amount	Column Labels		
	2001		
		3	
	July	July Total	August
Row Labels	No Discount		No Discount
New South Wales	75625.4664	75625.4664	119823.881
Coffs Harbour	699.0982	699.0982	7156.54
Bikes	699.0982	699.0982	7156.54
Road Bikes	699.0982	699.0982	7156.54
Road-150 Red, 48			
Road-150 Red, 52			3578.27
Road-150 Red, 62			3578.27
Road-650 Red, 44	699.0982	699.0982	
Darlinghurst	3578.27	3578.27	3578.27
Bikes	3578.27	3578.27	3578.27
Road Bikes	3578.27	3578.27	3578.27
Road-150 Red, 48			3578.27
Road-150 Red, 56	3578.27	3578.27	
Road-150 Red, 62			

Header Row

Country	(All)		
Sum of Sales Amount	Column Labels		
	2001		
		3	
	July	July Total	August
Row Labels	No Discount		No Discount
New South Wales	75625.4664	75625.4664	119823.881
Coffs Harbour	699.0982	699.0982	7156.54
Bikes	699.0982	699.0982	7156.54
Road Bikes	699.0982	699.0982	7156.54
Road-150 Red, 48			
Road-150 Red, 52			3578.27
Road-150 Red, 62			3578.27
Road-650 Red, 44	699.0982	699.0982	

First Header Cell

Country	(All)		
Sum of Sales Amount	Column Labels		
	2001		
	3		
	July	July Total	August
Row Labels	No Discount		No Discount
New South Wales	75625.4664	75625.4664	119823.881
Coffs Harbour	699.0982	699.0982	7156.54
Bikes	699.0982	699.0982	7156.54
Road Bikes	699.0982	699.0982	7156.54
Road-150 Red, 48			
Road-150 Red, 52			3578.27
Road-150 Red, 62			3578.27
Road-650 Red, 44	699.0982	699.0982	

Subtotal Column 1

Country	(All)							
Sum of Sales Amount	Column Labels							
	2001							2001 Total
	3						3 Total	
	July	July Total	August	August Total	September	September Total		
Row Labels	No Discount		No Discount		No Discount			
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064	83698.4064	279147.7538	279147.7538
Coffs Harbour	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Road Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Road-150 Red, 48					3578.27	3578.27	3578.27	3578.27
Road-150 Red, 52			3578.27	3578.27	3578.27	3578.27	7156.54	7156.54
Road-150 Red, 62			3578.27	3578.27			3578.27	3578.27
Road-650 Red, 44	699.0982	699.0982					699.0982	699.0982

Subtotal Column 2

Country	(All)							
Sum of Sales Amount	Column Labels							
	2001							2001 Total
	3						3 Total	
	July	July Total	August	August Total	September	September Total		
Row Labels	No Discount		No Discount		No Discount			
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064	83698.4064	279147.7538	279147.7538
Coffs Harbour	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Road Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Road-150 Red, 48					3578.27	3578.27	3578.27	3578.27
Road-150 Red, 52			3578.27	3578.27	3578.27	3578.27	7156.54	7156.54
Road-150 Red, 62			3578.27	3578.27			3578.27	3578.27
Road-650 Red, 44	699.0982	699.0982					699.0982	699.0982

Subtotal Column 3

Country	(All)							
Sum of Sales Amount	Column Labels							
	2001							2001 Total
	3						3 Total	
	July	July Total	August	August Total	September	September Total		
Row Labels	No Discount		No Discount		No Discount			
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064	83698.4064	279147.7538	279147.7538
Coffs Harbour	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Road Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Road-150 Red, 48					3578.27	3578.27	3578.27	3578.27
Road-150 Red, 52			3578.27	3578.27	3578.27	3578.27	7156.54	7156.54
Road-150 Red, 62			3578.27	3578.27			3578.27	3578.27
Road-650 Red, 44	699.0982	699.0982					699.0982	699.0982

Subtotal Row 1

Country	(All)				
Sum of Sales Amount	Column Labels				
	2001				
	3				
	July	July Total	August	August Total	September
Row Labels	No Discount		No Discount		No Discount
Bendigo					
Mountain Bikes					
Mountain-100 Black, 38	3374.99	3374.99			
Mountain-100 Silver, 42	3399.99	3399.99			
Mountain-100 Silver, 48	3399.99	3399.99			
Mountain Bikes Total	10174.97	10174.97			
Road Bikes					
Road-150 Red, 44	3578.27	3578.27			
Road-150 Red, 52	3578.27	3578.27			
Road-150 Red, 62	3578.27	3578.27			3578.27
Road Bikes Total	10734.81	10734.81			3578.27
Bendigo Total	20909.78	20909.78			3578.27
Brisbane					
Road Bikes					
Road-150 Red, 44	3578.27	3578.27	3578.27	3578.27	
Road-150 Red, 62			3578.27	3578.27	
Road Bikes Total	3578.27	3578.27	7156.54	7156.54	
Brisbane Total	3578.27	3578.27	7156.54	7156.54	

Subtotal Row 2

Country	(All)				
Sum of Sales Amount	Column Labels				
	2001				
	3				
	July	July Total	August	August Total	September
Row Labels	No Discount		No Discount		No Discount
Bendigo					
Mountain Bikes					
Mountain-100 Black, 38	3374.99	3374.99			
Mountain-100 Silver, 42	3399.99	3399.99			
Mountain-100 Silver, 48	3399.99	3399.99			
Mountain Bikes Total	10174.97	10174.97			
Road Bikes					
Road-150 Red, 44	3578.27	3578.27			
Road-150 Red, 52	3578.27	3578.27			
Road-150 Red, 62	3578.27	3578.27			3578.27
Road Bikes Total	10734.81	10734.81			3578.27
Bendigo Total	20909.78	20909.78			3578.27
Brisbane					
Road Bikes					
Road-150 Red, 44	3578.27	3578.27	3578.27	3578.27	
Road-150 Red, 62			3578.27	3578.27	
Road Bikes Total	3578.27	3578.27	7156.54	7156.54	

Subtotal Row 3

Country	(All)					
Sum of Sales Amount	Column Labels					
	2001					
		3				
	July		July Total	August	August Total	September
Row Labels	No Discount			No Discount		No Discount
New South Wales						
Coffs Harbour						
Road Bikes						
Road-150 Red, 48						3578.27
Road-150 Red, 52				3578.27	3578.27	3578.27
Road-150 Red, 62				3578.27	3578.27	
Road-650 Red, 44	699.0982		699.0982			
Road Bikes Total	699.0982		699.0982	7156.54	7156.54	7156.54
Coffs Harbour Total	699.0982		699.0982	7156.54	7156.54	7156.54
Darlinghurst						
Road Bikes						
Road-150 Red, 48				3578.27	3578.27	
Road-150 Red, 56	3578.27		3578.27			3578.27
Road-150 Red, 62						3578.27
Road Bikes Total	3578.27		3578.27	3578.27	3578.27	7156.54
Darlinghurst Total	3578.27		3578.27	3578.27	3578.27	7156.54

Column Subheading 1

Country	(All)							
Sum of Sales Amount	Column Labels							
	2001							2001 Total
	3						3 Total	
	July	July Total	August	August Total	September	September Total		
Row Labels	No Discount		No Discount		No Discount			
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064	83698.4064	279147.7538	279147.7538
Coffs Harbour	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782
Road Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782

Column Subheading 2

Country	(All)							
Sum of Sales Amount	Column Labels							
	2001							
	3							3 Total
	July	July Total	August	August Total	September	September Total		
Row Labels	No Discount		No Discount		No Discount			
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064	83698.4064	279147.7538	
Coffs Harbour	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	
Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	
Road Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	

Column Subheading 3

Country	(All)								
Sum of Sales Amount	Column Labels								
	2001								2001 Total
	3							3 Total	
	July	July Total	August	August Total	September	September Total			
Row Labels	No Discount		No Discount		No Discount				
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064	83698.4064	279147.7538	279147.7538	
Coffs Harbour	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782	
Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782	
Road Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782	

Row Subheading 1

Country	(All)				
Sum of Sales Amount	Column Labels				
	2001				
	3				
	July	July Total	August	August Total	September
Row Labels	No Discount		No Discount		No Discount
New South Wales					
Coffs Harbour					
Road Bikes					
Road-150 Red, 48					3578.27
Road-150 Red, 52			3578.27	3578.27	3578.27
Road-150 Red, 62			3578.27	3578.27	
Road-650 Red, 44	699.0982	699.0982			
Road Bikes Total	699.0982	699.0982	7156.54	7156.54	7156.54
Coffs Harbour Total	699.0982	699.0982	7156.54	7156.54	7156.54

Row Subheading 2

Country	(All)				
Sum of Sales Amount	Column Labels				
	2001				
	3				
	July	July Total	August	August Total	September
Row Labels	No Discount		No Discount		No Discount
New South Wales					
Coffs Harbour					
Road Bikes					
Road-150 Red, 48					3578.27
Road-150 Red, 52			3578.27	3578.27	3578.27
Road-150 Red, 62			3578.27	3578.27	
Road-650 Red, 44	699.0982	699.0982			
Road Bikes Total	699.0982	699.0982	7156.54	7156.54	7156.54
Coffs Harbour Total	699.0982	699.0982	7156.54	7156.54	7156.54
Darlinghurst					
Road Bikes					
Road-150 Red, 48			3578.27	3578.27	
Road-150 Red, 56	3578.27	3578.27			3578.27
Road-150 Red, 62					3578.27
Road Bikes Total	3578.27	3578.27	3578.27	3578.27	7156.54
Darlinghurst Total	3578.27	3578.27	3578.27	3578.27	7156.54
Goulburn					
Mountain Bikes					
Mountain-100 Silver, 44	3399.99	3399.99			

Row Subheading 3

Country	(All)					
Sum of Sales Amount	Column Labels					
	2001					
	3					
	July	July Total	August	August Total	September	
Row Labels	No Discount		No Discount		No Discount	
New South Wales						
Coffs Harbour						
Road Bikes						
Road-150 Red, 48					3578.27	
Road-150 Red, 52			3578.27	3578.27	3578.27	
Road-150 Red, 62			3578.27	3578.27		
Road-650 Red, 44	699.0982	699.0982				
Road Bikes Total	699.0982	699.0982	7156.54	7156.54	7156.54	
Coffs Harbour Total	699.0982	699.0982	7156.54	7156.54	7156.54	
Darlinghurst						
Road Bikes						
Road-150 Red, 48			3578.27	3578.27		
Road-150 Red, 56	3578.27	3578.27			3578.27	
Road-150 Red, 62					3578.27	
Road Bikes Total	3578.27	3578.27	3578.27	3578.27	7156.54	
Darlinghurst Total	3578.27	3578.27	3578.27	3578.27	7156.54	
Goulburn						
Mountain Bikes						
Mountain-100 Silver, 44	3399.99	3399.99				

Grand Total Column

Country	(All)								
Sum of Sales Amount	Column Labels								
	2001							2001 Total	Grand Total
	3						3 Total		
	July	July Total	August	August Total	September	September Total			
Row Labels	No Discount		No Discount		No Discount				
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064	83698.4064	279147.7538	279147.7538	279147.7538
Coffs Harbour	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782	15012.1782
Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782	15012.1782
Road Bikes	699.0982	699.0982	7156.54	7156.54	7156.54	7156.54	15012.1782	15012.1782	15012.1782
Road-150 Red, 48					3578.27	3578.27	3578.27	3578.27	3578.27
Road-150 Red, 52			3578.27	3578.27	3578.27	3578.27	7156.54	7156.54	7156.54
Road-150 Red, 62			3578.27	3578.27			3578.27	3578.27	3578.27
Road-650 Red, 44	699.0982	699.0982					699.0982	699.0982	699.0982

Grand Total Row

Country	(All)								
Sum of Sales Amount	Column Labels								
	2001							2001 Total	Grand Total
	3						3 Total		
	July	July Total	August	August Total	September	September Total			
Row Labels	No Discount		No Discount		No Discount				
New South Wales	75625.4664	75625.4664	119823.881	119823.881	83698.4064	83698.4064	279147.7538	279147.7538	279147.7538
Queensland	53228.4682	53228.4682	35376.14	35376.14	29821.0764	29821.0764	118425.6846	118425.6846	118425.6846
South Australia	7156.54	7156.54	11255.6282	11255.6282	6978.26	6978.26	25390.4282	25390.4282	25390.4282
Tasmania	6978.26	6978.26	10531.53	10531.53	3578.27	3578.27	21088.06	21088.06	21088.06
Victoria	66664.17	66664.17	45551.11	45551.11	49917.5	49917.5	162132.78	162132.78	162132.78
Grand Total	209652.9046	209652.9046	222538.2892	222538.2892	173993.5128	173993.5128	606184.7066	606184.7066	606184.7066

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
blankRow (Blank Row Style)	Table style element that applies to ~~PivotTable~~PivotTable™'s blank rows.
firstColumn (First Column Style)	Table style element that applies to table's first column.
firstColumnStripe (First Column Stripe Style)	Table style element that applies to table's first column stripes.
firstColumnSubheading (First Column Subheading Style)	Table style element that applies to ~~PivotTable~~PivotTable™'s first column subheading.
firstHeaderCell (First Header Row Style)	Table style element that applies to table's first header row cell.
firstRowStripe (First Row Stripe Style)	Table style element that applies to table's first row stripes.
firstRowSubheading (First Row Subheading Style)	Table style element that applies to ~~PivotTable~~PivotTable™'s first row subheading.
firstSubtotalColumn (First Subtotal Column Style)	Table style element that applies to ~~PivotTable~~PivotTable™'s first subtotal column.
firstSubtotalRow (First Subtotal Row Style)	Table style element that applies to pivot table's first subtotal row.
firstTotalCell (First Total Row Style)	Table style element that applies to table's first

Enumeration Value	Description
	total row cell.
headerRow (Header Row Style)	Table style element that applies to table's header row.
lastColumn (Last Column Style)	Table style element that applies to table's last column.
lastHeaderCell (Last Header Style)	Table style element that applies to table's last header row cell.
lastTotalCell (Last Total Row Style)	Table style element that applies to table's last total row cell.
pageFieldLabels (Page Field Labels Style)	Table style element that applies to pivot table's page field labels.
pageFieldValues (Page Field Values Style)	Table style element that applies to pivot table's page field values.
secondColumnStripe (Second Column Stipe Style)	Table style element that applies to table's second column stripes.
secondColumnSubheading (Second Column Subheading Style)	Table style element that applies to pivot table's second column subheading.
secondRowStripe (Second Row Stripe Style)	Table style element that applies to table's second row stripes.
secondRowSubheading (Second Row Subheading Style)	Table style element that applies to pivot table's second row subheading.
secondSubtotalColumn (Second Subtotal Column Style)	Table style element that applies to ~~PivotTable~~PivotTable™'s second subtotal column.
secondSubtotalRow (Second Subtotal Row Style)	Table style element that applies to ~~PivotTable~~PivotTable™'s second subtotal row.
thirdColumnSubheading (Third Column Subheading Style)	Table style element that applies to ~~PivotTable~~PivotTable™'s third column subheading.
thirdRowSubheading (Third Row Subheading Style)	Table style element that applies to ~~PivotTable~~PivotTable™'s third row subheading.
thirdSubtotalColumn (Third Subtotal Column Style)	Table style element that applies to pivot table's third subtotal column.
thirdSubtotalRow (Third Subtotal Row Style)	Table style element that applies to ~~PivotTable~~PivotTable™'s third subtotal row.
totalRow (Total Row Style)	Table style element that applies to table's total row.
wholeTable (Whole Table Style)	Table style element that applies to table's entire content.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_TableStyleType) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.84 ST_Type (Top N Evaluation Type)

This simple type defines the values for the Top N conditional formatting evaluation for the ~~PivotTable~~PivotTable™. For more information on Top N conditional formatting, see the Sheet (§**Error! Reference source not found.**) reference material.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
all (All)	Indicates that Top N conditional formatting is evaluated across the entire scope range.
column (Column Top N)	Indicates that Top N conditional formatting is evaluated for each column.
none (Top N None)	Indicates that Top N conditional formatting is not evaluated
row (Row Top N)	Indicates that Top N conditional formatting is evaluated for each row.

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_Type) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 18.18.92 ST_WebSourceType (Web Source Type)

This is an enumeration of types of objects which can be selected from the workbook to be published as HTML. For example, the entire sheet can be published, or a narrower set of objects on the sheet can be published, like a chart or a range.

This simple type's contents are a restriction of the W3C XML Schema string datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
autoFilter (AutoFilter)	Auto filter
chart (Chart)	Chart
label (Label)	Label
pivotTable (~~PivotTable~~PivotTable™)	~~PivotTable~~PivotTable™
printArea (Print Area)	Print area
query (QueryTable)	Query Table
range (Range)	Range of cells

Enumeration Value	Description
sheet (All Sheet Content)	All content of a sheet

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_WebSourceType) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 20.1.10.50 ST_PresetPatternVal (Preset Pattern Value)

This simple type indicates a preset type of pattern fill. The description of each value contains an illustration of the fill type.

[*Note*: These presets correspond to members of the HatchStyle enumeration in the ~~Microsoft~~Microsoft® .NET Framework. A reference for this type can be found at http://msdn2.microsoft.com/en-us/library/system.drawing.drawing2d.hatchstyle.aspx. *end note*]

This simple type's contents are a restriction of the W3C XML Schema token datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
cross (Cross)	
dashDnDiag (Dashed Downward Diagonal)	
dashHorz (Dashed Horizontal)	
dashUpDiag (Dashed Upward DIagonal)	
dashVert (Dashed Vertical)	
diagBrick (Diagonal Brick)	
diagCross (Diagonal Cross)	
divot (Divot)	
dkDnDiag (Dark Downward Diagonal)	
dkHorz (Dark Horizontal)	
dkUpDiag (Dark Upward Diagonal)	
dkVert (Dark Vertical)	

Enumeration Value	Description
dnDiag (Downward Diagonal)	
dotDmnd (Dotted Diamond)	
dotGrid (Dotted Grid)	
horz (Horizontal)	
horzBrick (Horizontal Brick)	
lgCheck (Large Checker Board)	
lgConfetti (Large Confetti)	
lgGrid (Large Grid)	
ltDnDiag (Light Downward Diagonal)	
ltHorz (Light Horizontal)	
ltUpDiag (Light Upward Diagonal)	
ltVert (Light Vertical)	
narHorz (Narrow Horizontal)	
narVert (Narrow Vertical)	
openDmnd (Open Diamond)	
pct10 (10%)	
pct20 (20%)	
pct25 (25%)	
pct30 (30%)	
pct40 (40%)	

Enumeration Value	Description
pct5 (5%)	
pct50 (50%)	
pct60 (60%)	
pct70 (70%)	
pct75 (75%)	
pct80 (80%)	
pct90 (90%)	
plaid (Plaid)	
shingle (Shingle)	
smCheck (Small Checker Board)	
smConfetti (Small Confetti)	
smGrid (Small Grid)	
solidDmnd (Solid Diamond)	
sphere (Sphere)	
trellis (Trellis)	
upDiag (Upward Diagonal)	
vert (Vertical)	
wave (Wave)	
wdDnDiag (Wide Downward Diagonal)	
wdUpDiag (Wide Upward Diagonal)	

Enumeration Value	Description
weave (Weave)	
zigZag (Zig Zag)	

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_PresetPatternVal) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 20.1.10.60 ST_TextAutonumberScheme (Text Auto-number Schemes)

This simple type specifies a list of automatic numbering schemes.

This simple type's contents are a restriction of the W3C XML Schema token datatype.

This simple type is restricted to the values listed in the following table:

Enumeration Value	Description
alphaLcParenBoth (Autonumber Enum (alphaLcParenBoth))	(a), (b), (c), …
alphaLcParenR (Autonumbering Enum (alphaLcParenR))	a), b), c), …
alphaLcPeriod (Autonumbering Enum (alphaLcPeriod))	a., b., c., …
alphaUcParenBoth (Autonumbering Enum (alphaUcParenBoth))	(A), (B), (C), …
alphaUcParenR (Autonumbering Enum (alphaUcParenR))	A), B), C), …
alphaUcPeriod (Autonumbering Enum (alphaUcPeriod))	A., B., C., …
arabic1Minus (Autonumbering Enum (arabic1Minus))	Bidi Arabic 1 (AraAlpha) with ANSI minus symbol
arabic2Minus (Autonumbering Enum (arabic2Minus))	Bidi Arabic 2 (AraAbjad) with ANSI minus symbol
arabicDbPeriod (Autonumbering Enum (arabicDbPeriod))	Dbl-byte Arabic numbers w/ double-byte period
arabicDbPlain (Autonumbering Enum (arabicDbPlain))	Dbl-byte Arabic numbers
arabicParenBoth (Autonumbering Enum (arabicParenBoth))	(1), (2), (3), …
arabicParenR (Autonumbering Enum (	1), 2), 3), …

Enumeration Value	Description
arabicParenR))	
arabicPeriod (Autonumbering Enum (arabicPeriod))	1., 2., 3., …
arabicPlain (Autonumbering Enum (arabicPlain))	1, 2, 3, …
circleNumDbPlain (Autonumbering Enum (circleNumDbPlain))	Dbl-byte circle numbers (1-10 circle[0x2460-], 11-arabic numbers)
circleNumWdBlackPlain (Autonumbering Enum (circleNumWdBlackPlain))	~~Wingdings~~Wingdings® black circle numbers
circleNumWdWhitePlain (Autonumbering Enum (circleNumWdWhitePlain))	~~Wingdings~~Wingdings® white circle numbers (0-10 circle[0x0080-], 11- arabic numbers)
ea1ChsPeriod (Autonumbering Enum (ea1ChsPeriod))	EA: Simplified Chinese w/ single-byte period
ea1ChsPlain (Autonumbering Enum (ea1ChsPlain))	EA: Simplified Chinese (TypeA 1-99, TypeC 100-)
ea1ChtPeriod (Autonumbering Enum (ea1ChtPeriod))	EA: Traditional Chinese w/ single-byte period
ea1ChtPlain (Autonumbering Enum (ea1ChtPlain))	EA: Traditional Chinese (TypeA 1-19, TypeC 20-)
ea1JpnChsDbPeriod (Autonumbering Enum (ea1JpnChsDbPeriod))	EA: Japanese w/ double-byte period
ea1JpnKorPeriod (Autonumbering Enum (ea1JpnKorPeriod))	EA: Japanese/Korean w/ single-byte period
ea1JpnKorPlain (Autonumbering Enum (ea1JpnKorPlain))	EA: Japanese/Korean (TypeC 1-)
hebrew2Minus (Autonumbering Enum (hebrew2Minus))	Bidi Hebrew 2 with ANSI minus symbol
hindiAlpha1Period (Autonumbering Enum (hindiAlpha1Period))	Hindi alphabet period - consonants
hindiAlphaPeriod (Autonumbering Enum (hindiAlphaPeriod))	Hindi alphabet period - vowels
hindiNumParenR (Autonumbering Enum (hindiNumParenR))	Hindi numerical parentheses - right
hindiNumPeriod (Autonumbering Enum (hindiNumPeriod))	Hindi numerical period
romanLcParenBoth (Autonumbering Enum (romanLcParenBoth))	(i), (ii), (iii), …
romanLcParenR (Autonumbering Enum (romanLcParenR))	i), ii), iii), …
romanLcPeriod (Autonumbering Enum (	i., ii., iii., …

Enumeration Value	Description
romanLcPeriod))	
romanUcParenBoth (Autonumbering Enum (romanUcParenBoth))	(I), (II), (III), …
romanUcParenR (Autonumbering Enum (romanUcParenR))	I), II), III), …
romanUcPeriod (Autonumbering Enum (romanUcPeriod))	I., II., III., …
thaiAlphaParenBoth (Autonumbering Enum (thaiAlphaParenBoth))	Thai alphabet parentheses - both
thaiAlphaParenR (Autonumbering Enum (thaiAlphaParenR))	Thai alphabet parentheses - right
thaiAlphaPeriod (Autonumbering Enum (thaiAlphaPeriod))	Thai alphabet period
thaiNumParenBoth (Autonumbering Enum (thaiNumParenBoth))	Thai numerical parentheses - both
thaiNumParenR (Autonumbering Enum (thaiNumParenR))	Thai numerical parentheses - right
thaiNumPeriod (Autonumbering Enum (thaiNumPeriod))	Thai numerical period

[*Note*: The W3C XML Schema definition of this simple type's content model (ST_TextAutonumberScheme) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 21.1.2.2 Paragraph Formatting

This level of formatting allows for more granular control of text within a shape. Properties here apply to all text residing within the corresponding paragraph. This intermediate property level allows freedom to assign what would seem like lower level properties to a larger group of text. Along with this the paragraph property level also allows what would seem like larger group properties to a more granular set of text. This makes for a property level that is quite versatile in its ability to define formatting on text within a shape.

[*Example*: For instance consider the case where a paragraph of text would need to have bullets applied to it. At first one might think that this formatting must be done at the text run level as it can seem run specific. Much to the contrary this is a paragraph level property and is applied to multiple runs of text. As an example we have once again our three paragraphs with the second having bullets applied to it.

```
<a:p>
…
</a:p>
```

```
<a:p>
  <a:pPr>
    <a:buFont typeface="Wingdings"/>
    <a:buChar typeface="ü"/>
  <a:pPr>
  <a:r>
    <a:rPr lang="en-US" dirty="0" smtClean="0"/>
    <a:t>This Paragraph of Text Will Have a Bullet.</a:t>
  </a:r>
</a:p>
<a:p>
…
</a:p>
```

Here we see that the paragraph is formatted to have character bullets for each new line of text that is encountered. In particular this paragraph has the "ü" character applied which in the "~~Wingdings~~Wingdings®" font is the checkmark character. The other paragraphs are not effected by this paragraph's bullet formatting and should have their text remain unformatted.

end example]

Changes to section 22.1.2.23 ctrlPr (Control Properties)

This element specifies properties on control characters; that is, object characters that cannot be selected. Examples of control characters are n-ary operators (excluding their limits and bases), fraction bars (excluding the numerator and denominator), and grouping characters (excluding the base). ctrlPr allows formatting properties to be stored on these control characters. The control character inherits its formatting from the paragraph formatting; ctrlPr contains the formatting differences between the control character and the paragraph formatting.

If this element is omitted, the character properties of the first control character are the same as the first character in the math object.

[*Example*: The example below shows that the control character is of font ~~Cambria~~Cambria® Math. All other formatting, such as text size and color, are the same as the paragraph.

```
<m:ctrlPr>
  <w:rPr>
    <w:rFonts w:ascii="Cambria Math" w:hAnsi="Cambria Math"/>
  </w:rPr>
</m:ctrlPr>
```

end example]

CtrlPr is also used to save properties on characters used in the built-down form of an instance of mathematical text that are not displayed in Professional form. For example, the mathematical text (in

linear form) ∫_0^1 might have color on the _ or ^. Though these characters are not displayed in Professional form, their formatting is stored such that their formatting will roundtrip through build up and build down.

[*Note*: The W3C XML Schema definition of this element's content model (CT_CtrlPr) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 22.1.2.61 mathFont (Math Font)

This element specifies the default math font to be used in the document. If this element is omitted, font substitution (§**Error! Reference source not found.**) should be used to determine the most appropriate font for use throughout the document. [*Example*: The XML containing this property is:

```
<m:mathPr>
  <m:mathFont m:val="Cambria Math"/>
  <m:brkBin m:val="before"/>
  <m:brkBinSub m:val="--"/>
  <m:smallFrac m:val="0"/>
  <m:dispDef/>
  <m:lMargin m:val="1440"/>
  <m:rMargin m:val="0"/>
  <m:defJc m:val="centerGroup"/>
  <m:wrapIndent m:val="1440"/>
  <m:intLim m:val="subSup"/>
  <m:naryLim m:val="undOvr"/>
</m:mathPr>
```

end example]

[*Example*:

Given the following equation:

$a + b = c$

and the following XML:

```
<m:mathFont m:val="Cambria Math"/>
```

Because the document option for Math font is set to the mathematically enabled font ~~Cambria~~Cambria® Math, Math is formatted with that font.

end example]

Attributes	Description
val (value)	Specifies the default math font to be used in the document.

Attributes	Description
	The possible values for this attribute are defined by the ST_String simple type (§**Error! Reference source not found.**).

[*Note*: The W3C XML Schema definition of this element's content model (CT_String) is located in §**Error! Reference source not found.**. *end note*]

Changes to section 22.7.2.2 characteristic (Single Characteristic)

This element specifies a single characteristic. The type of characteristic is defined by the name attribute.

[*Example:* A producer can inform the consumer that the computations used to calculate the stored numbers in the formulas belong to a value space expressed by ranges of the binary mantissa and exponent. A consumer can optionally check those characteristics to determine whether, for example, the values should be recalculated. The XML for this would be:

```
<additionalCharacteristics>
  <characteristic name='precisionMantissa' relation='gt'
     val='-9007199254740992'/>
  <characteristic name='precisionMantissa' relation='lt'
     val='9007199254740992'/>
  <characteristic name='precisionExponent' relation='ge' val='-1075'/>
  <characteristic name='precisionExponent' relation='le' val='970'/>
</additionalCharacteristics>
```

end example]

Attributes	Description
name (Name of Characteristic)	Specifies the name of the characteristic. There are no constraints on the value of the name attribute, but each name shall be associated with a specific vocabulary via the vocabulary attribute. The values defined by ISO/IEC 29500 shall be associated with a null vocabulary value, and are as follows: **Name Value** / **Property Specified** `numColumns` — Number of Columns supported by the spreadsheet producer. `numRows` — Number of Rows supported by the spreadsheet producer. `functionVersion` — Version of the function specification used `precisionMantissa` — Allowed values of the mantissa of numbers within spreadsheet cells/formulas when expressed in base

<table>
<tr><th>Attributes</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><td></td><td>2.</td></tr>
<tr><td>precisionExponent</td><td>Allowed values of the exponent of numbers within spreadsheet cells/formulas when expressed in base 2.</td></tr>
<tr><td>numWorkbookColors</td><td>Number of Workbook colors</td></tr>
<tr><td>numConditionalFormatConditions</td><td>Number of condition format conditions on a workbook cell</td></tr>
<tr><td>nummaxSortLevels</td><td>Number of level of sorting on a range or table</td></tr>
<tr><td>numAutoFilterItems</td><td>Number of items shown in the Auto-filter dropdown</td></tr>
<tr><td>numDisplayCellChars</td><td>Number of characters that can display in a cell</td></tr>
<tr><td>numPrintCellChars</td><td>Number of characters per cell that ~~Excel~~Excel® can print</td></tr>
<tr><td>numUnqiueCellStyles</td><td>Number of unique cell styles in a workbook (combinations of all cell formatting)</td></tr>
<tr><td>numFormulaLengthChars</td><td>Length of formulas in characters</td></tr>
<tr><td>numFormulaNestingLevel</td><td>Number of levels of formula nesting</td></tr>
<tr><td>numFunctionArguments</td><td>Number of arguments to a function</td></tr>
<tr><td>numPivotTableRows</td><td>Number of rows in a pivot table</td></tr>
<tr><td>numPivotTableColumns</td><td>Number of columns in a pivot table</td></tr>
<tr><td>numUniquePivotFieldItems</td><td>Number of unique items in a pivot field</td></tr>
<tr><td>numPivotTableMDXNameChars</td><td>Number of characters in a MDX name for a pivot table item</td></tr>
<tr><td>numPivotTableRelationChars</td><td>String length for a relationship pivot table</td></tr>
<tr><td>numPivotTableFieldLabelChars</td><td>Length of field labels in ~~PivotTable~~PivotTable™ including caption length limitations</td></tr>
<tr><td>numPivotTableFields</td><td>Number of fields in a pivot table</td></tr>
<tr><td>numSheetXRefArrayFormulas</td><td>The number of array formulas in a worksheet that can refer to another (given) worksheet</td></tr>
</table>
The possible values for this attribute are defined by the W3C XML Schema string datatype.
</td></tr>
<tr><td>relation</td><td>Specifies how the contents of the value attribute should be interpreted in the</td></tr>
</table>

Attributes	Description

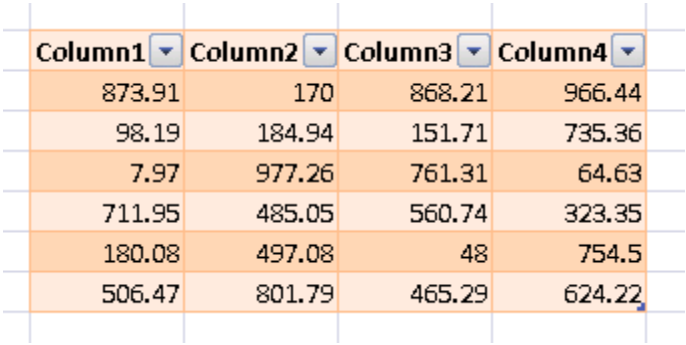
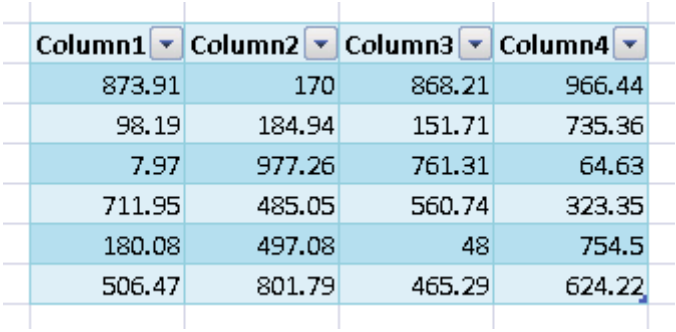
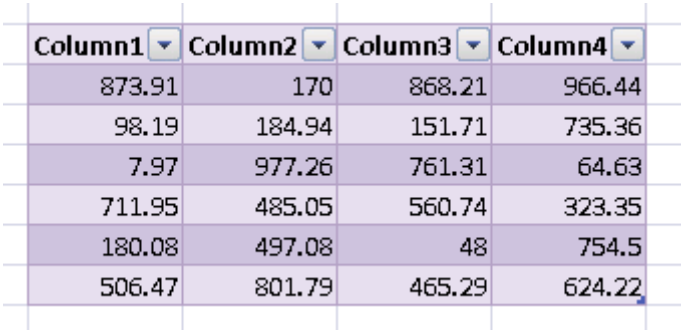
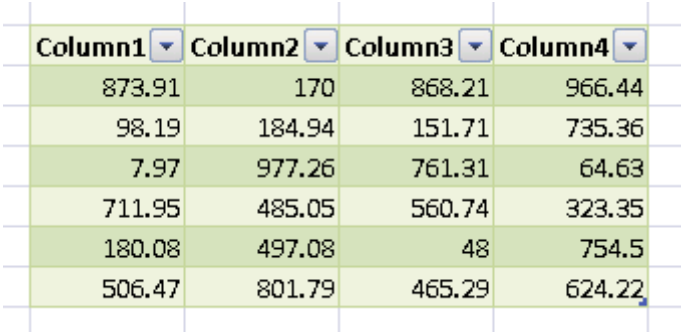
(Relationship of Value to Name)	context of this characteristic.
	
	[*Example:* The following would specify that the application supports from 0 to 10,000 columns, and that column ranges should be interpreted accordingly:
	
	`<additionalCharacteristics>`
	`<characteristic name="numColumns" relation="le" val="10000"/>`
	`<characteristic name="numColumns" relation="ge" val="0"/>`
	`</additionalCharacteristics>`
	
	end example]
	
	The possible values for this attribute are defined by the ST_Relation simple type (§**Error! Reference source not found.**).

val (Characteristic Value)	Specifies the value of the characteristic. The possible values for this attribute are defined by the W3C XML Schema string datatype.
vocabulary (Characteristic Grammar)	Specifies a URI defining the characteristic grammar with which the name attribute value shall be interpreted. If this attribute is omitted, then the default grammar (as defined above) shall be used. The possible values for this attribute are defined by the W3C XML Schema anyURI datatype.

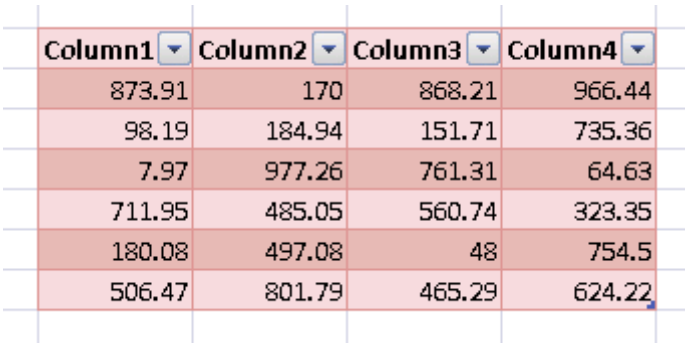
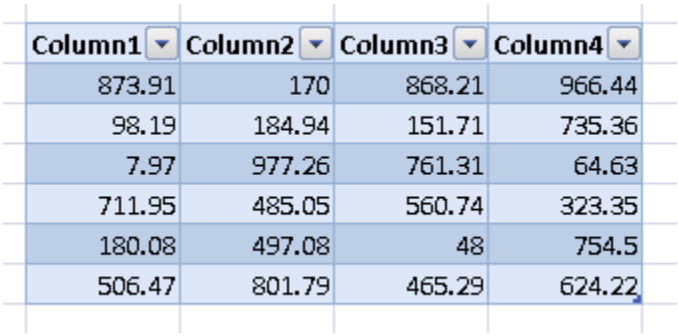
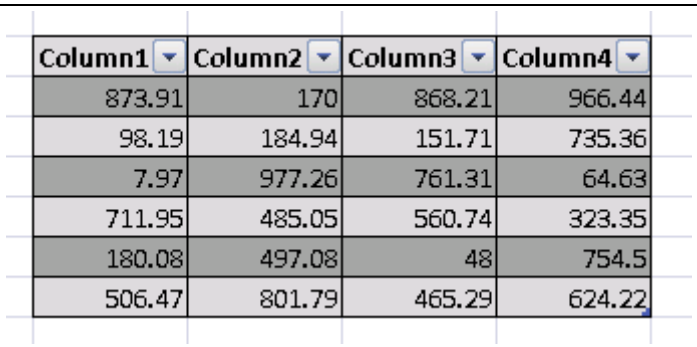
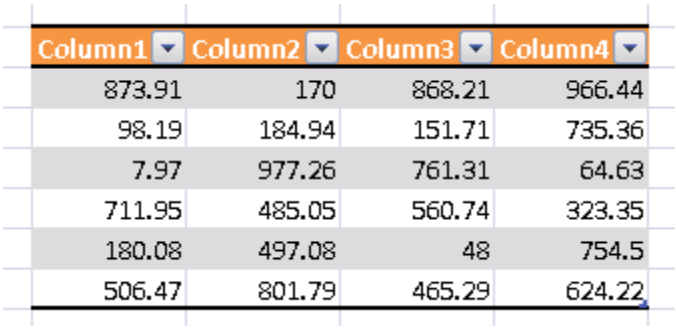
[*Note*: The W3C XML Schema definition of this element's content model (CT_Characteristic) is located in §**Error! Reference source not found.**. *end note*]

Changes to section G.1 Built-in Table Styles

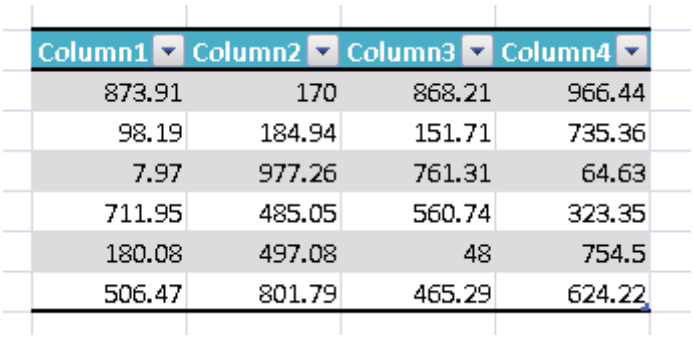
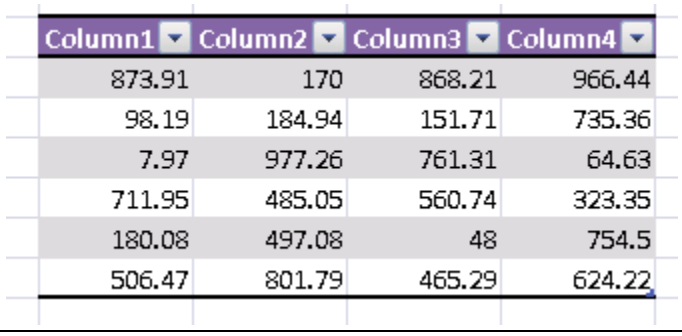
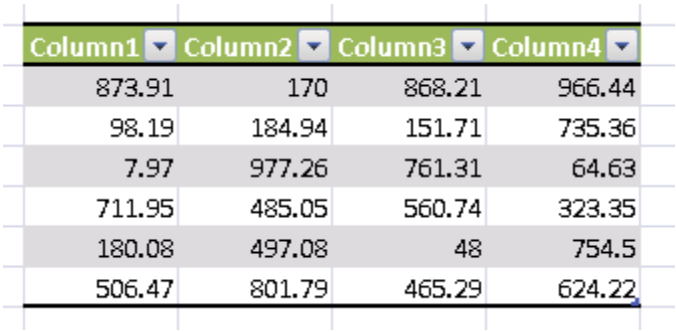
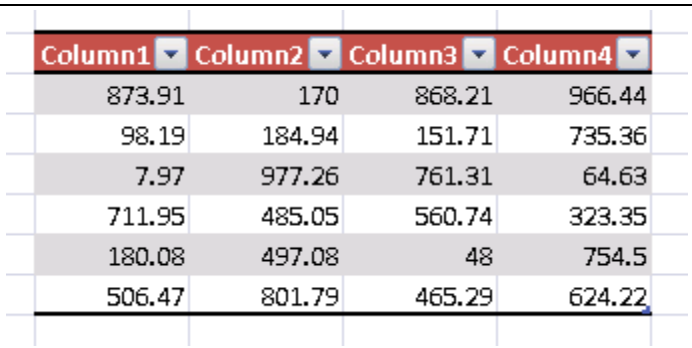
Following is a table of the built-in table style names and informative example of formatting. These style names shall be supported by applications implementing table styles.

Table Style	[*Example*: (informative)
TableStyleMedium28	
TableStyleMedium27	
TableStyleMedium26	
TableStyleMedium25	

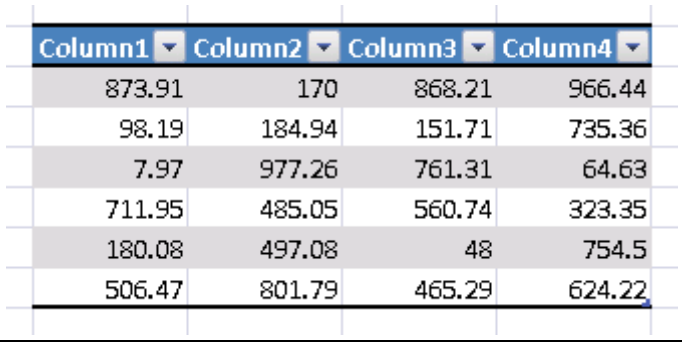
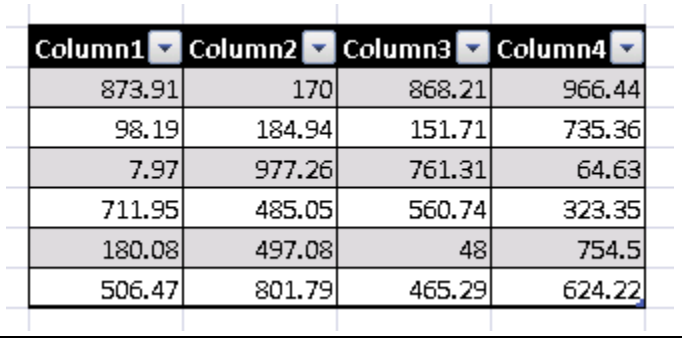
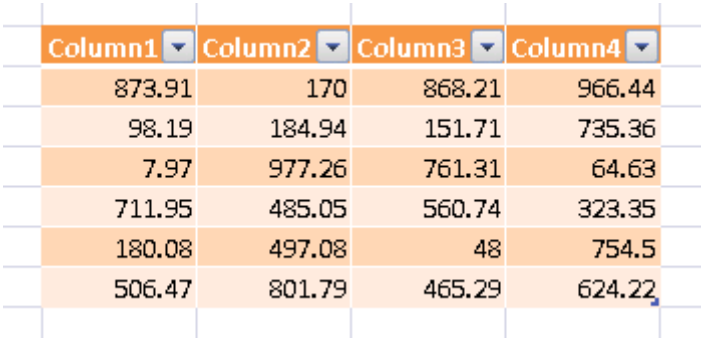
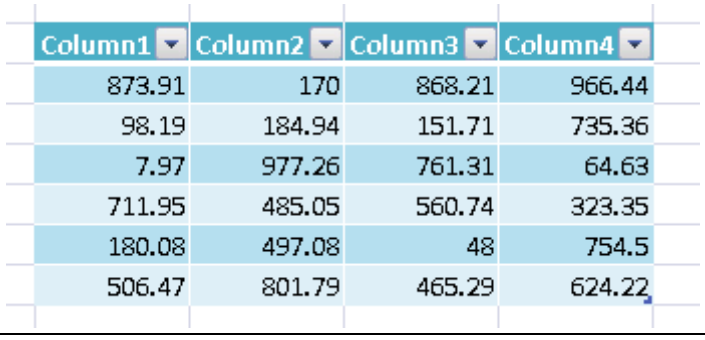
Column1	Column2	Column3	Column4
873.91	170	868.21	966.44
98.19	184.94	151.71	735.36
7.97	977.26	761.31	64.63
711.95	485.05	560.74	323.35
180.08	497.08	48	754.5
506.47	801.79	465.29	624.22

Table Style	[*Example*: (informative)
TableStyleMedium24	
TableStyleMedium23	
TableStyleMedium22	
TableStyleMedium21	

Column1	Column2	Column3	Column4
873.91	170	868.21	966.44
98.19	184.94	151.71	735.36
7.97	977.26	761.31	64.63
711.95	485.05	560.74	323.35
180.08	497.08	48	754.5
506.47	801.79	465.29	624.22

Table Style	[*Example*: (informative)
TableStyleMedium20	
TableStyleMedium19	
TableStyleMedium18	
TableStyleMedium17	

Column1	Column2	Column3	Column4
873.91	170	868.21	966.44
98.19	184.94	151.71	735.36
7.97	977.26	761.31	64.63
711.95	485.05	560.74	323.35
180.08	497.08	48	754.5
506.47	801.79	465.29	624.22

Table Style	[*Example*: (informative)
TableStyleMedium16	
TableStyleMedium15	
TableStyleMedium14	
TableStyleMedium13	

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873.91	170	868.21	966.44
98.19	184.94	151.71	735.36
7.97	977.26	761.31	64.63
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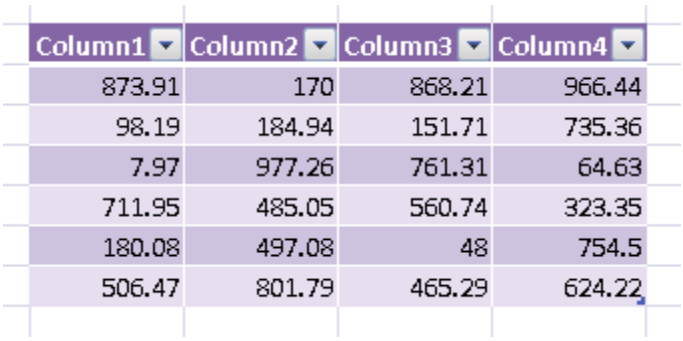
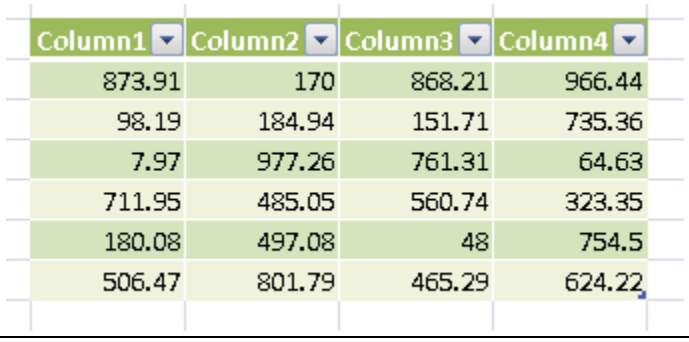
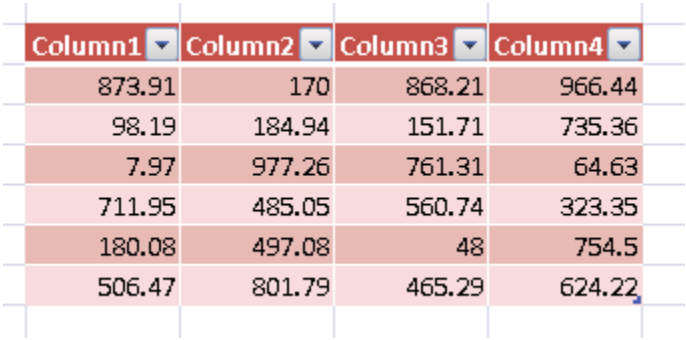
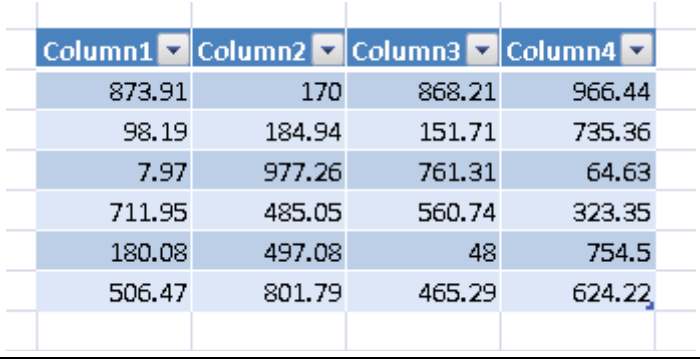
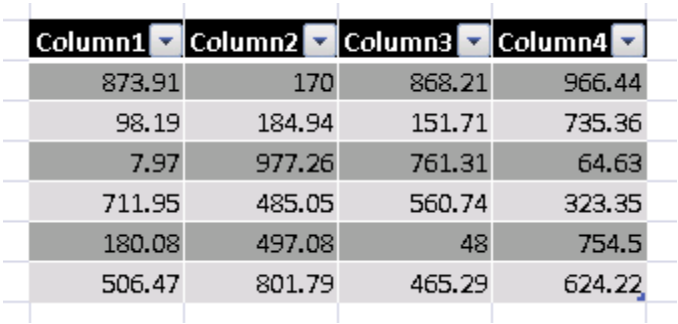
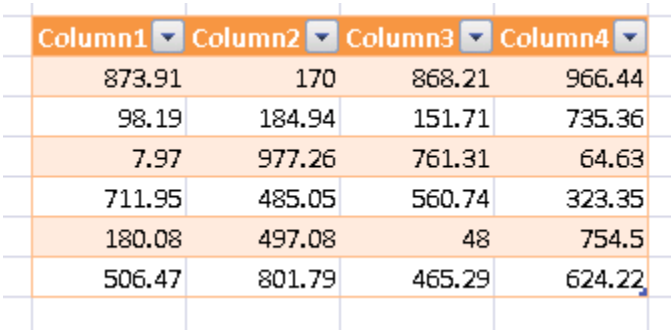
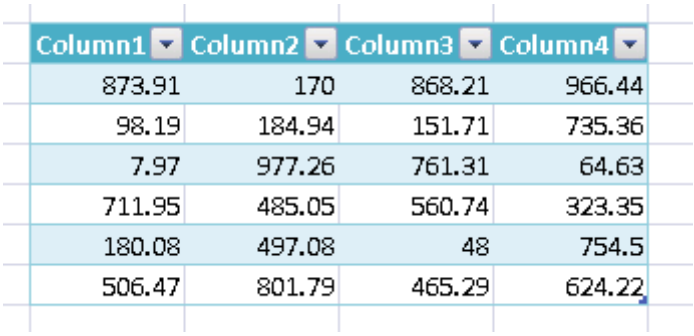
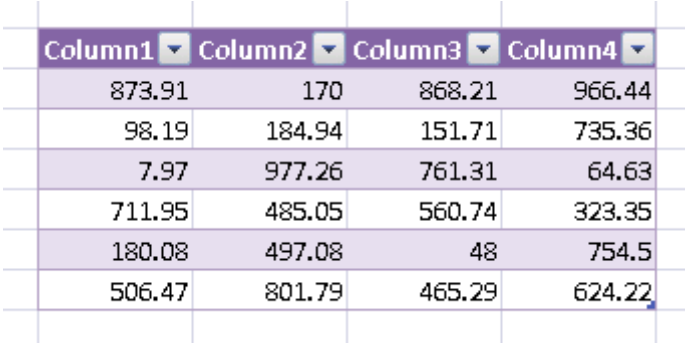
Table Style	[*Example*: (informative)
TableStyleMedium12	
TableStyleMedium11	
TableStyleMedium10	
TableStyleMedium9	

Table Style	[*Example*: (informative)
TableStyleMedium8	
TableStyleMedium7	
TableStyleMedium6	
TableStyleMedium5	

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873.91	170	868.21	966.44
98.19	184.94	151.71	735.36
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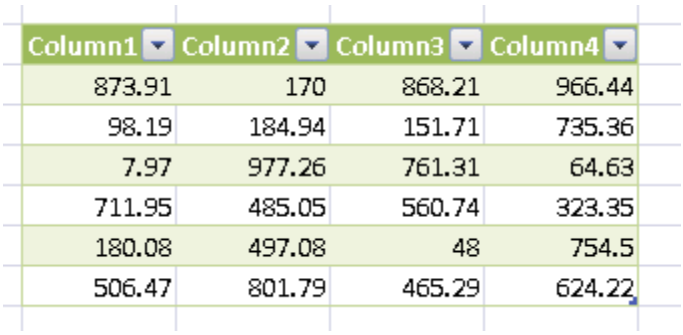
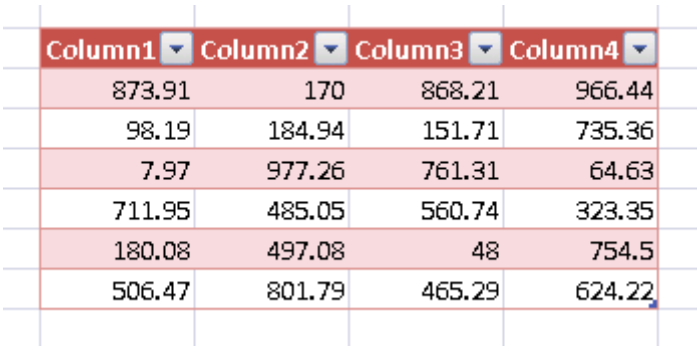
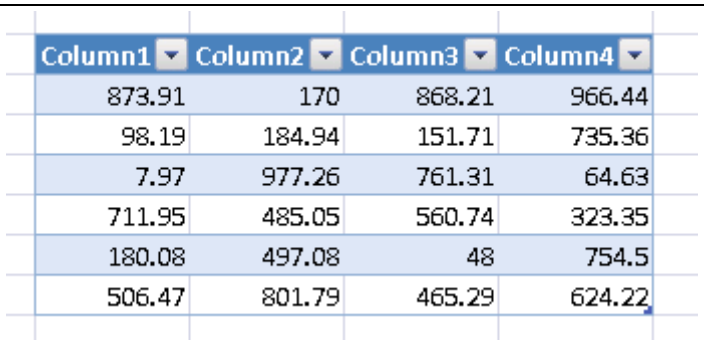
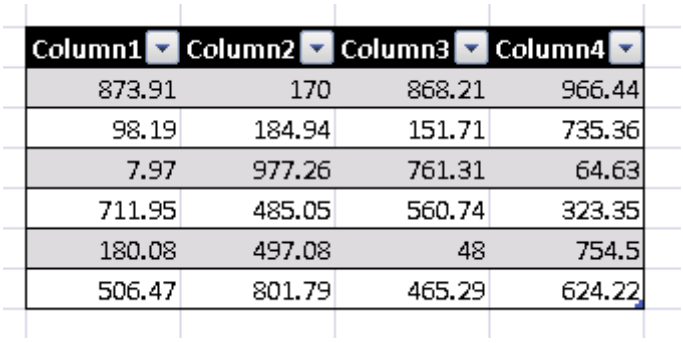
Table Style	[*Example*: (informative)
TableStyleMedium4	
TableStyleMedium3	
TableStyleMedium2	
TableStyleMedium1	

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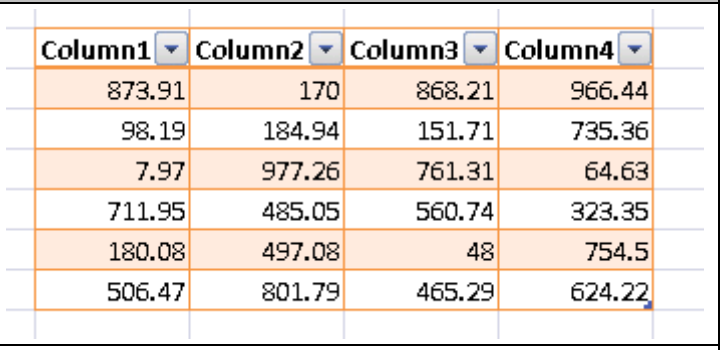
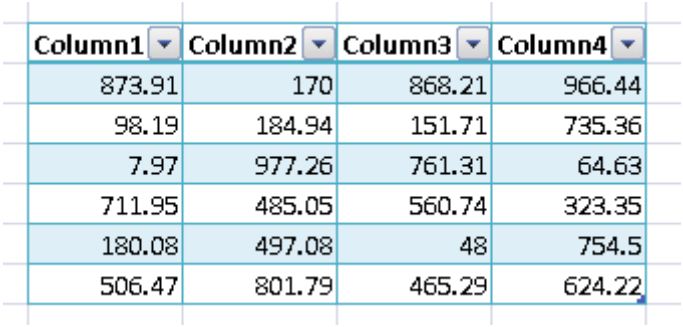
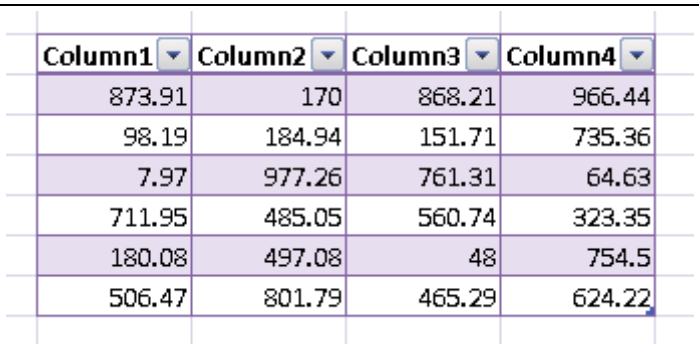
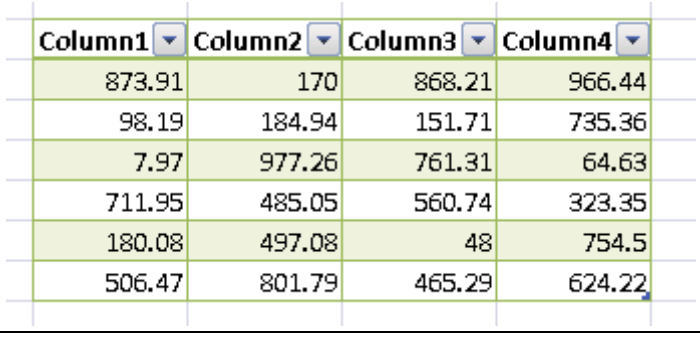
TableStyleLight21	
TableStyleLight20	
TableStyleLight19	
TableStyleLight18	

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873.91	170	868.21	966.44
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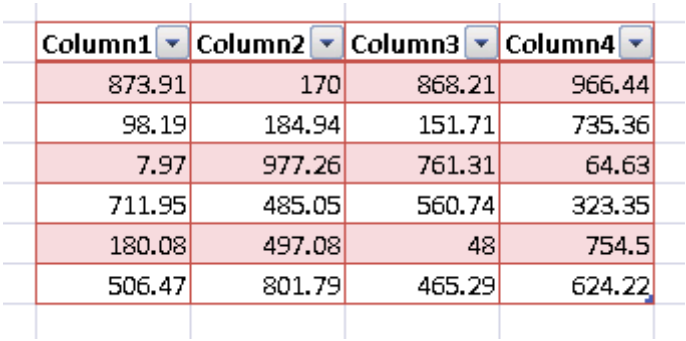
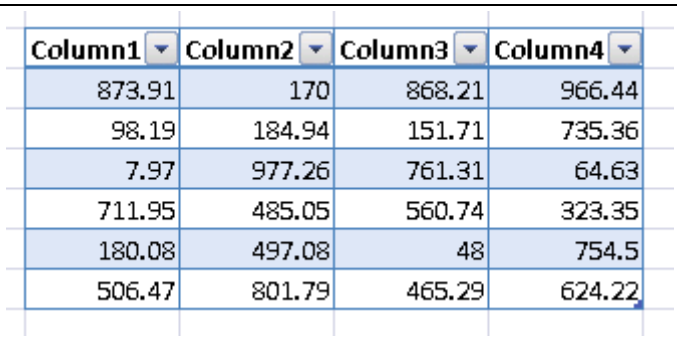
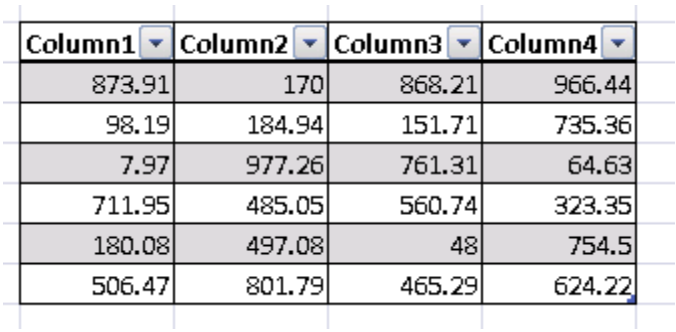
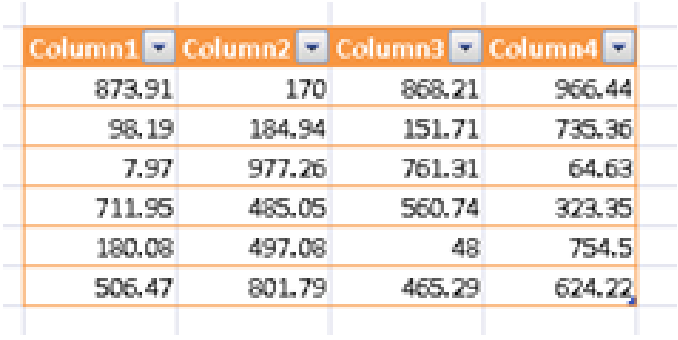
Table Style	[*Example*: (informative)
TableStyleLight17	
TableStyleLight16	
TableStyleLight15	
TableStyleLight14	

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873.91	170	868.21	966.44
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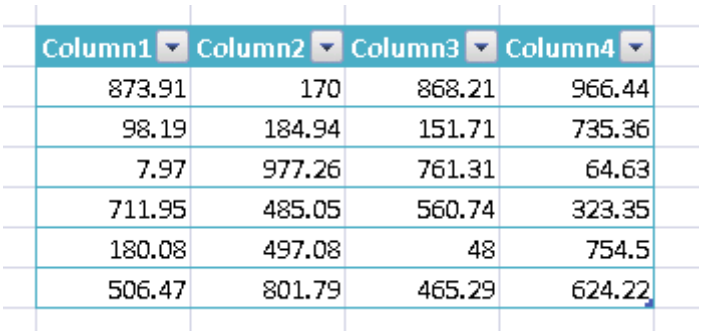
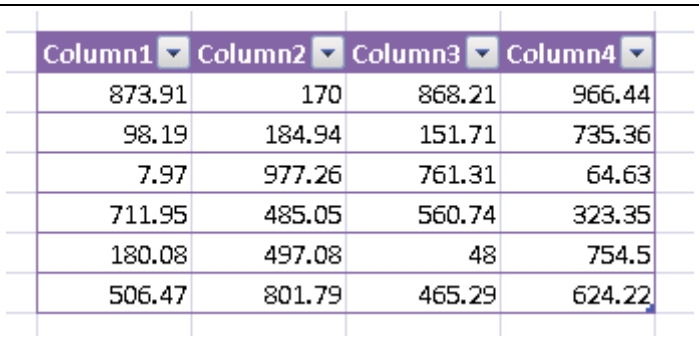
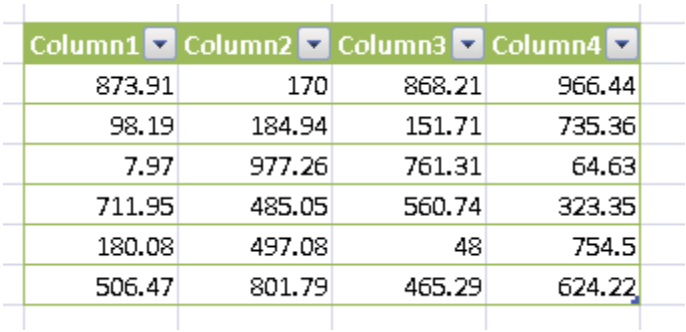
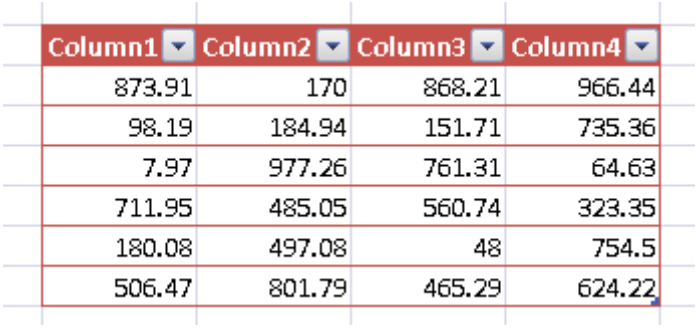
Table Style	[*Example*: (informative)
TableStyleLight13	
TableStyleLight12	
TableStyleLight11	
TableStyleLight10	

Column1	Column2	Column3	Column4
873.91	170	868.21	966.44
98.19	184.94	151.71	735.36
7.97	977.26	761.31	64.63
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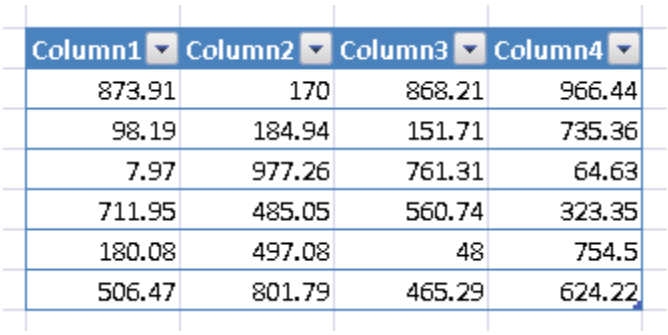
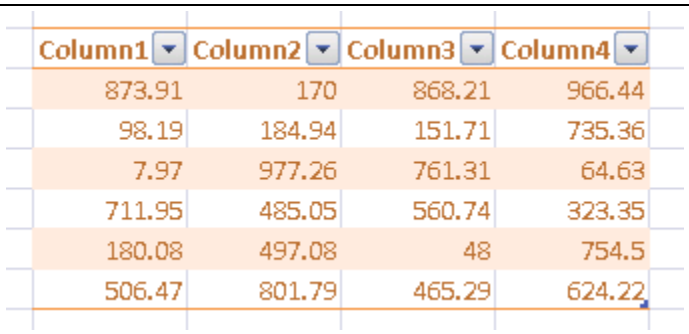
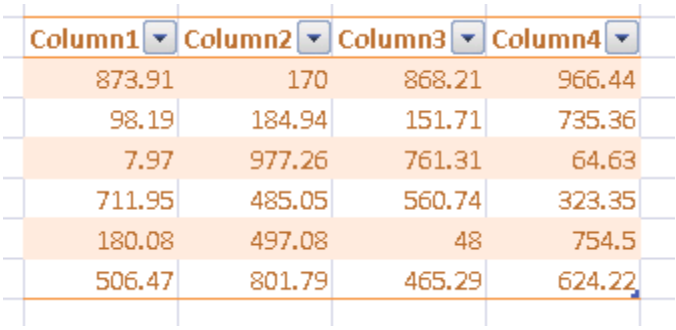
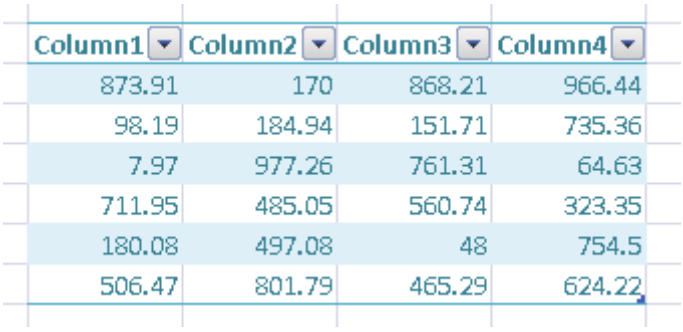
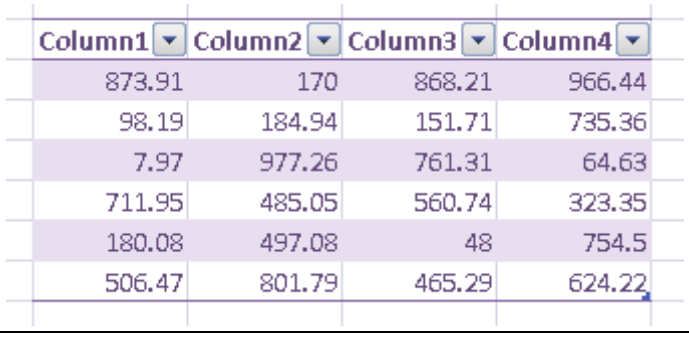
Table Style	[*Example*: (informative)
TableStyleLight9	
TableStyleLight8	
TableStyleLight7	
TableStyleLight6	
TableStyleLight5	

Column1	Column2	Column3	Column4
873.91	170	868.21	966.44
98.19	184.94	151.71	735.36
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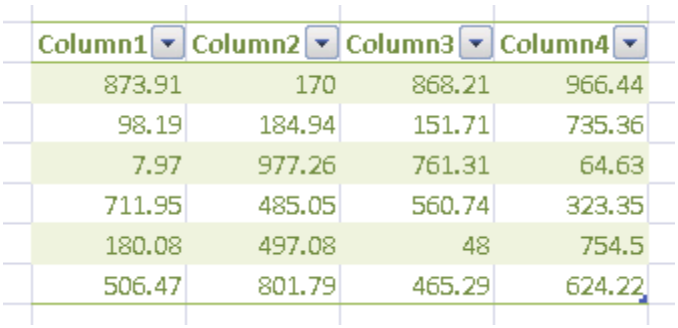
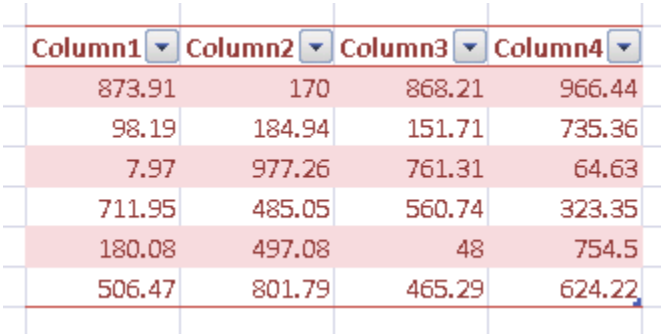
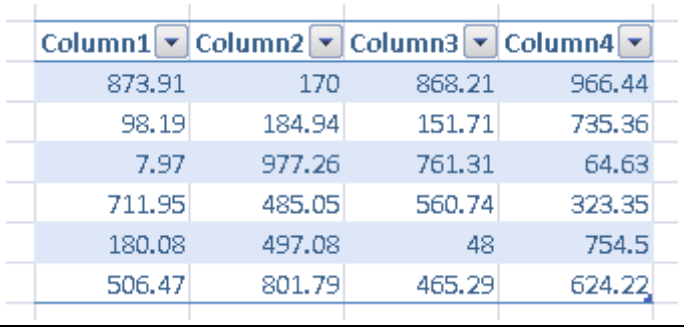
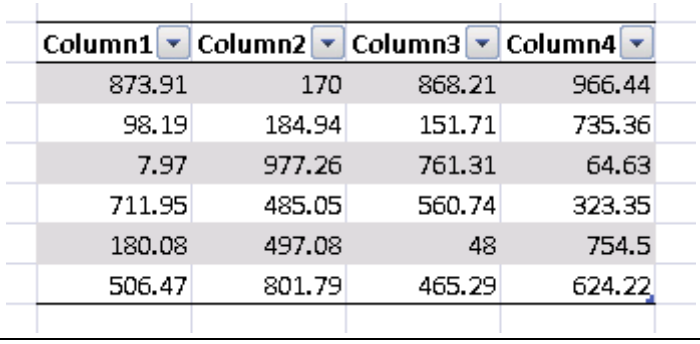
Table Style	[*Example*: (informative)
TableStyleLight4	
TableStyleLight3	
TableStyleLight2	
TableStyleLight1	

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873.91	170	868.21	966.44
98.19	184.94	151.71	735.36
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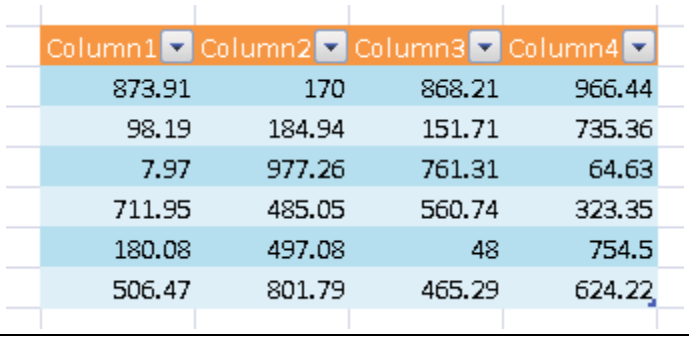
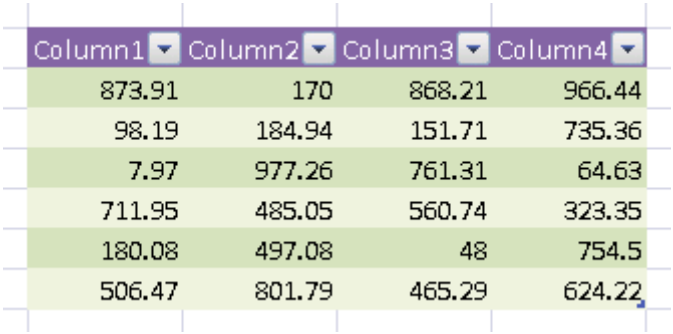
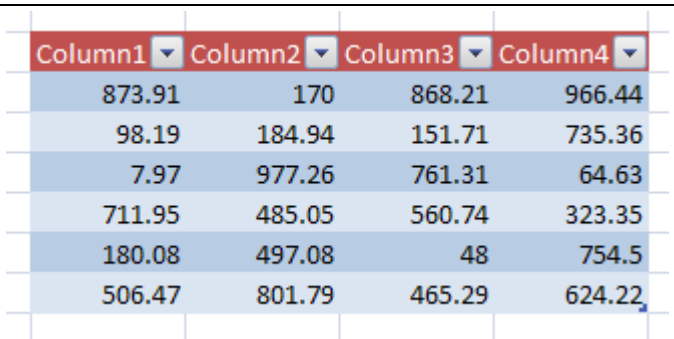
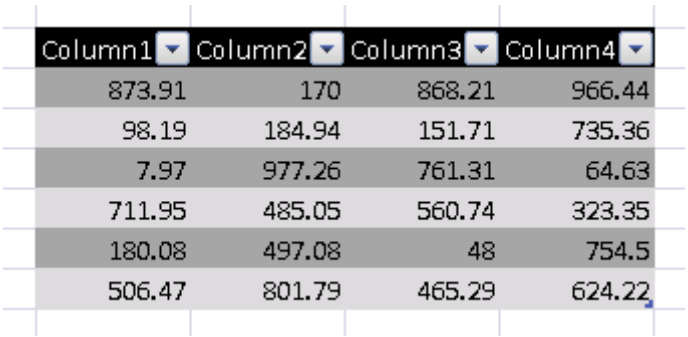
Table Style	[*Example*: (informative)
TableStyleDark11	
TableStyleDark10	
TableStyleDark9	
ableStyleDark8	

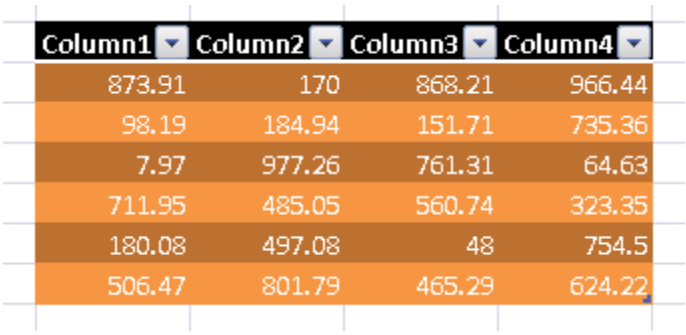
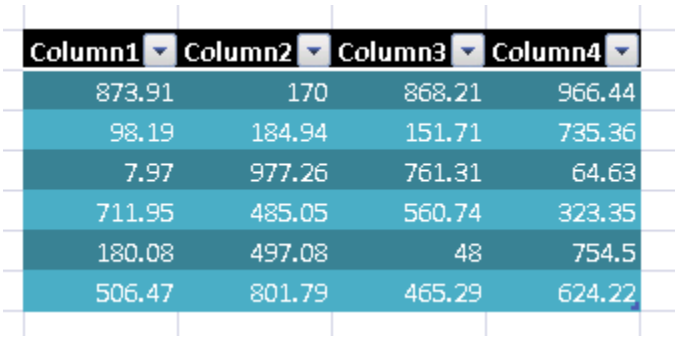
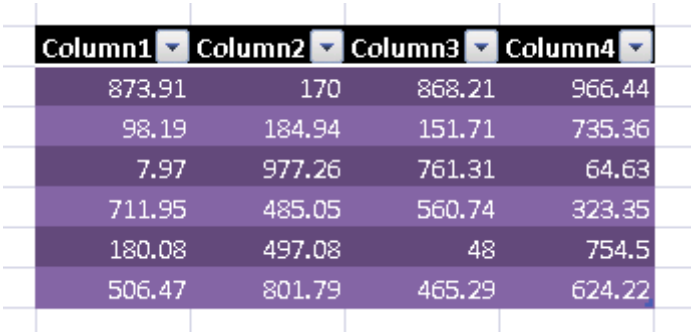
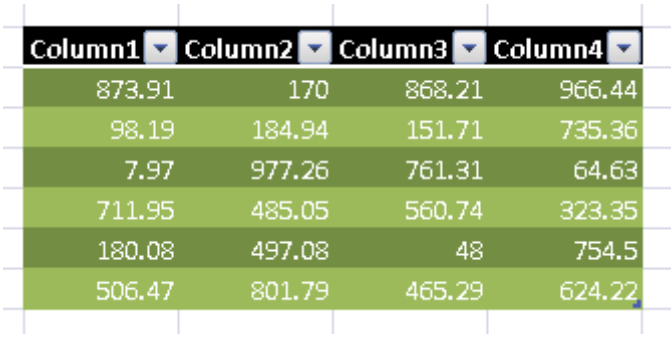
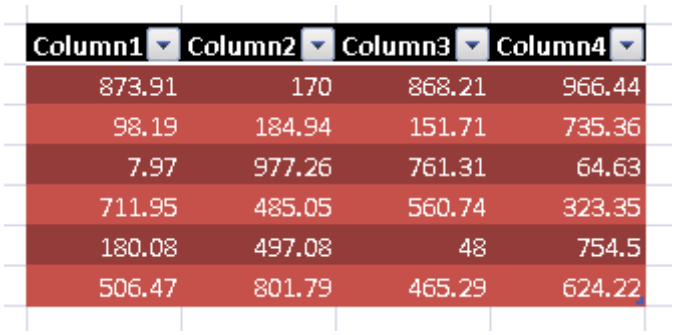
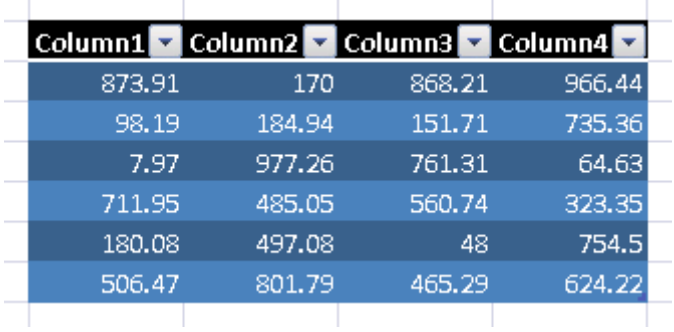
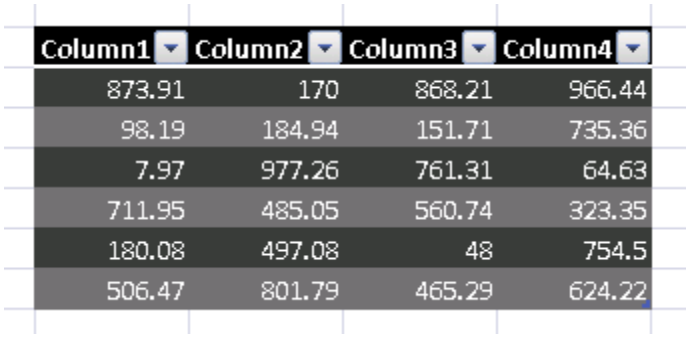
Table Style	[*Example*: (informative)
TableStyleDark7	
TableStyleDark6	
TableStyleDark5	
TableStyleDark4	

Table Style	[*Example*: (informative)
TableStyleDark3	
TableStyleDark2	
TableStyleDark1	

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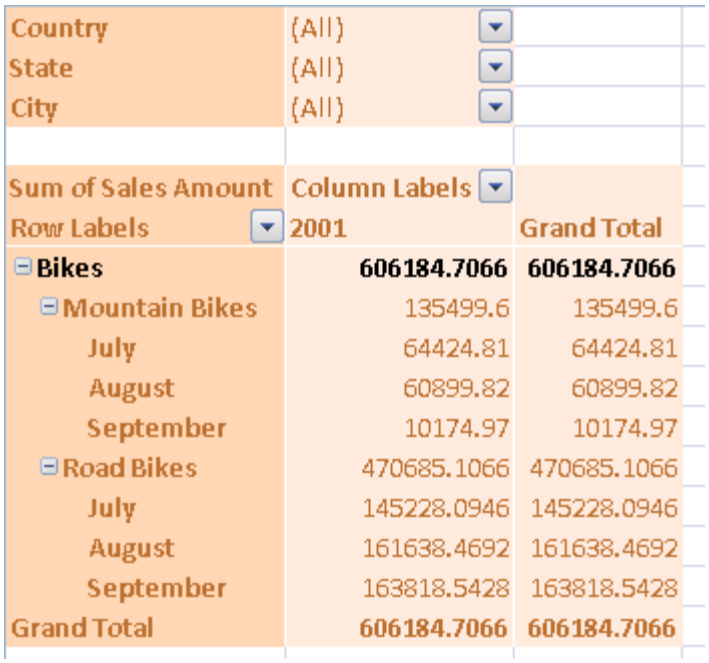
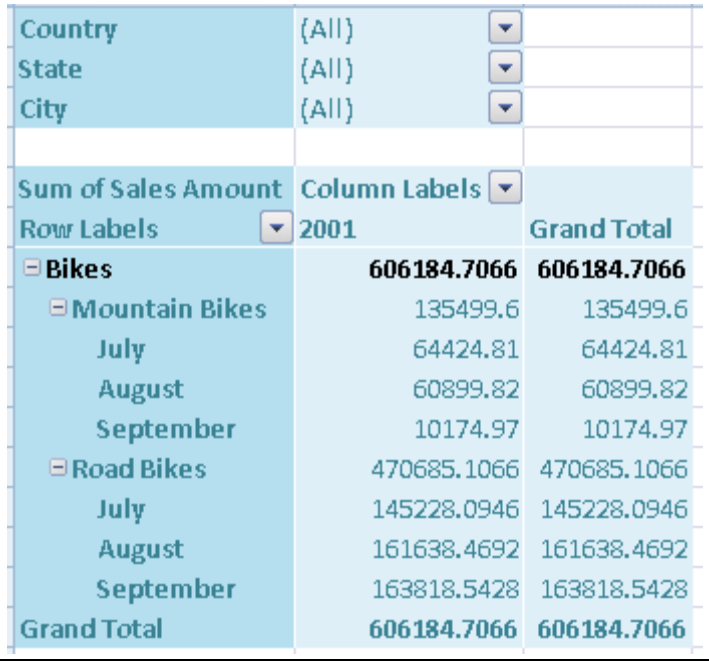
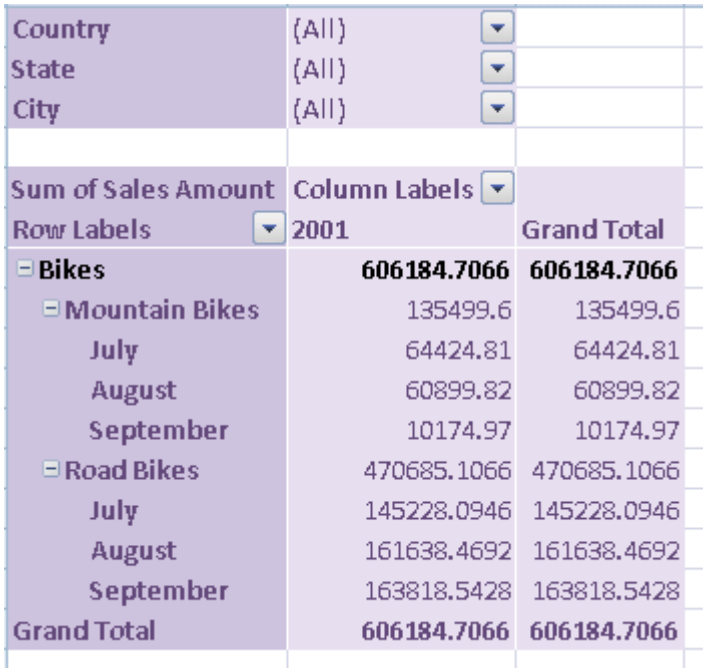
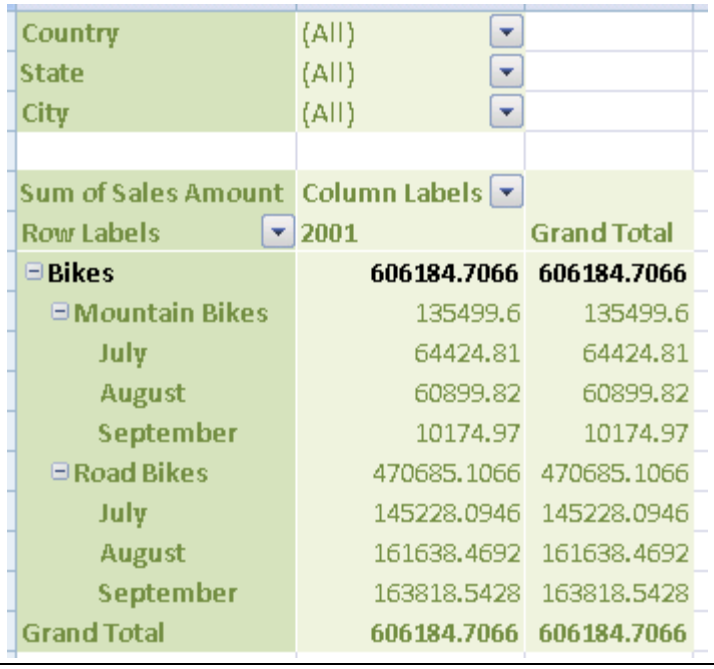
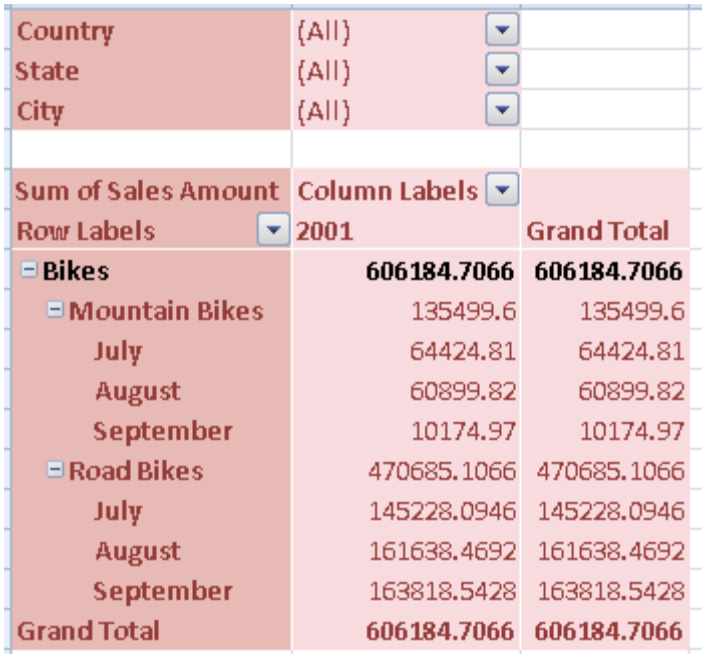
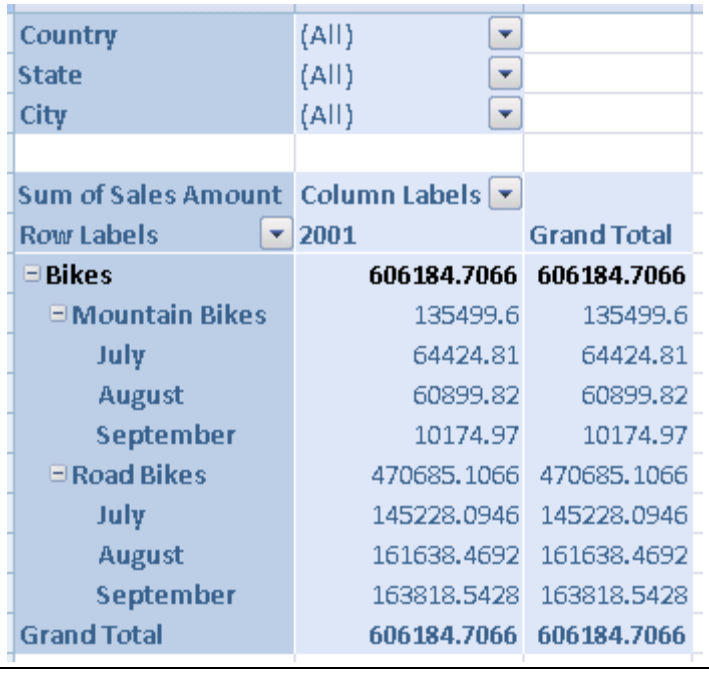
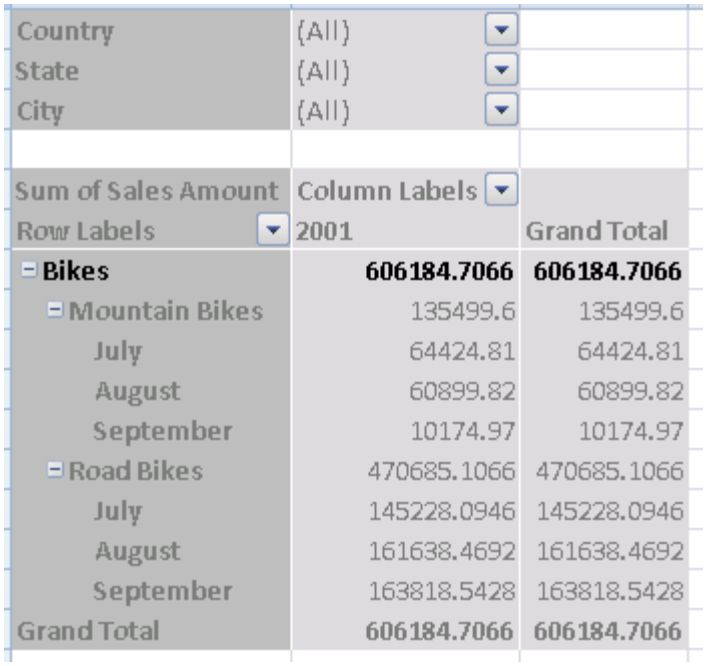
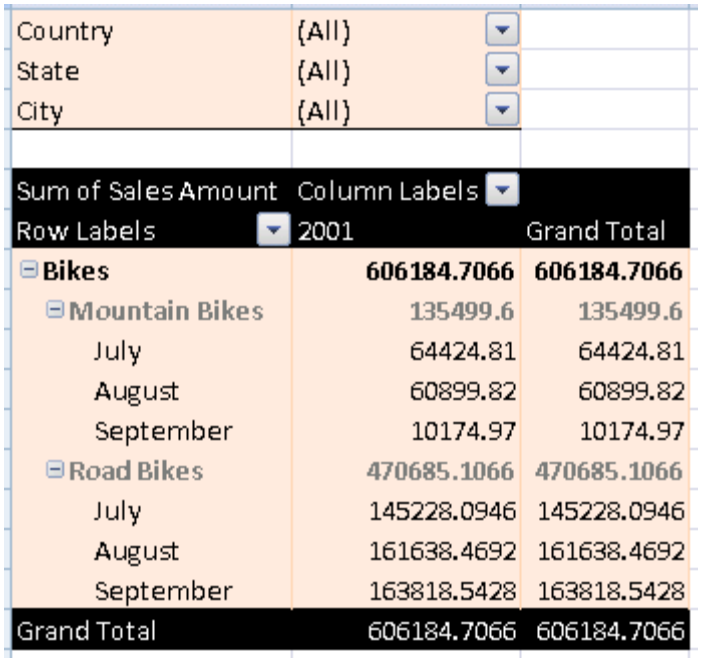
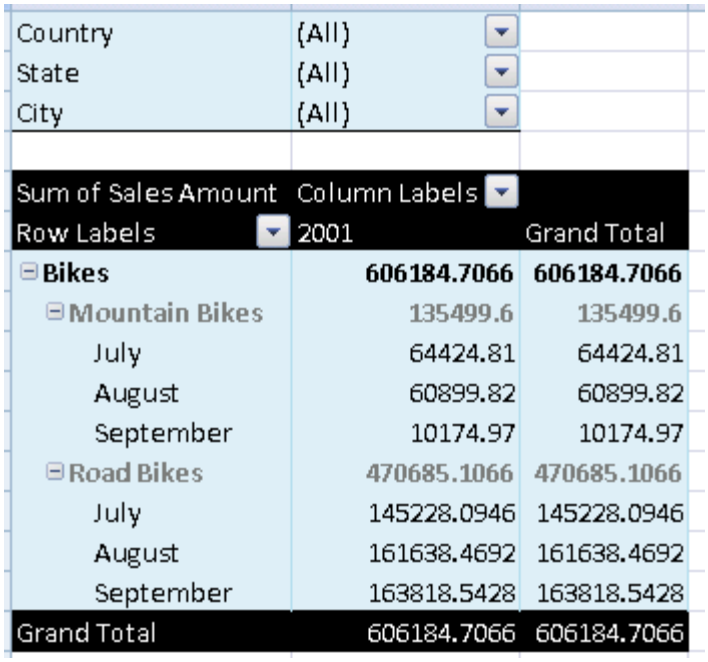
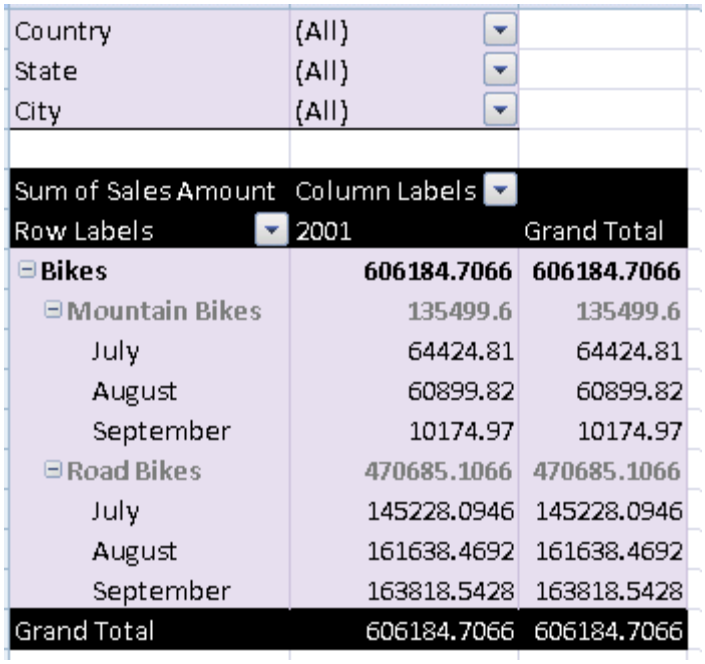
PivotStyleMedium28	
PivotStyleMedium27	

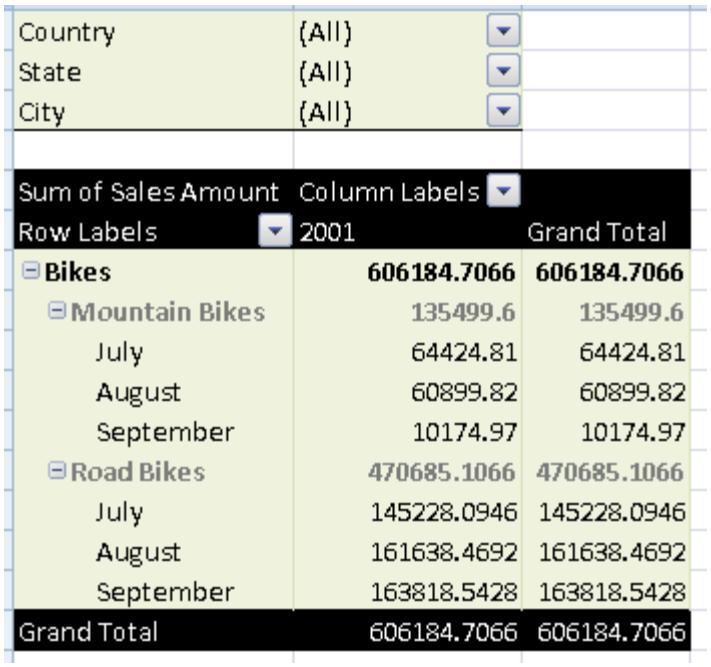
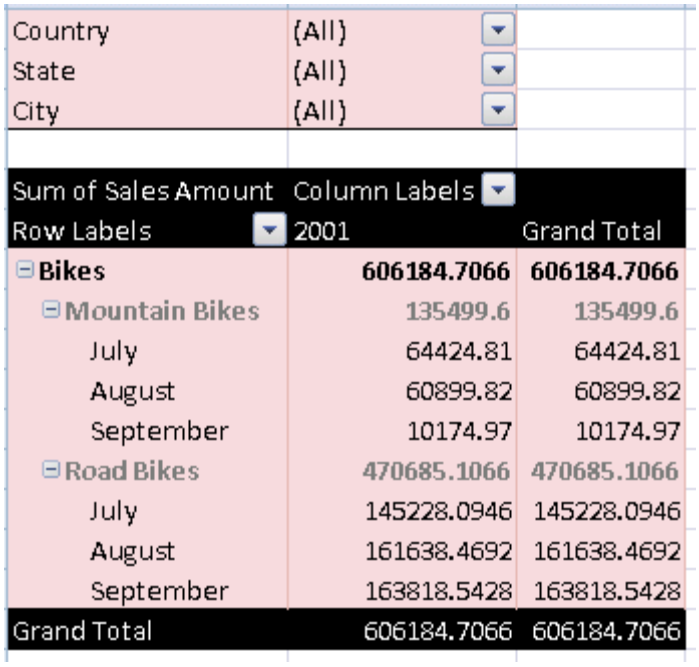
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium26	
PivotStyleMedium25	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium24	
PivotStyleMedium23	

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

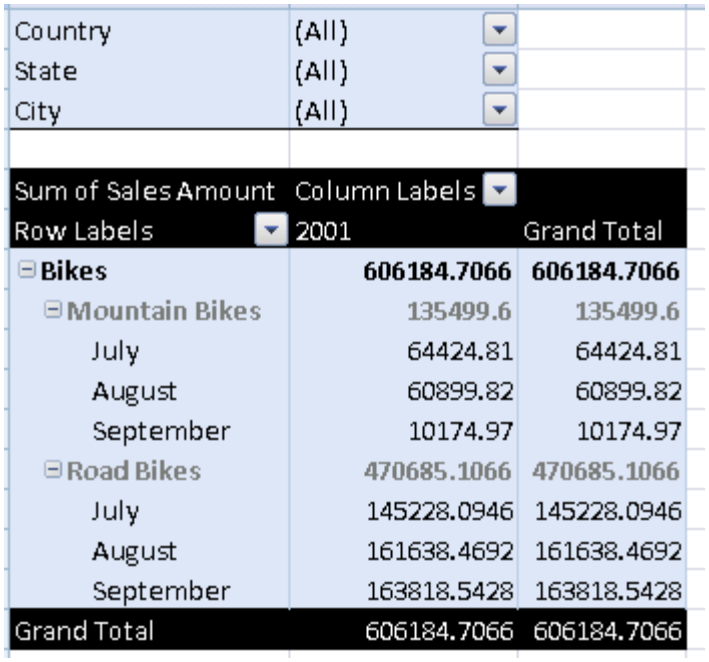
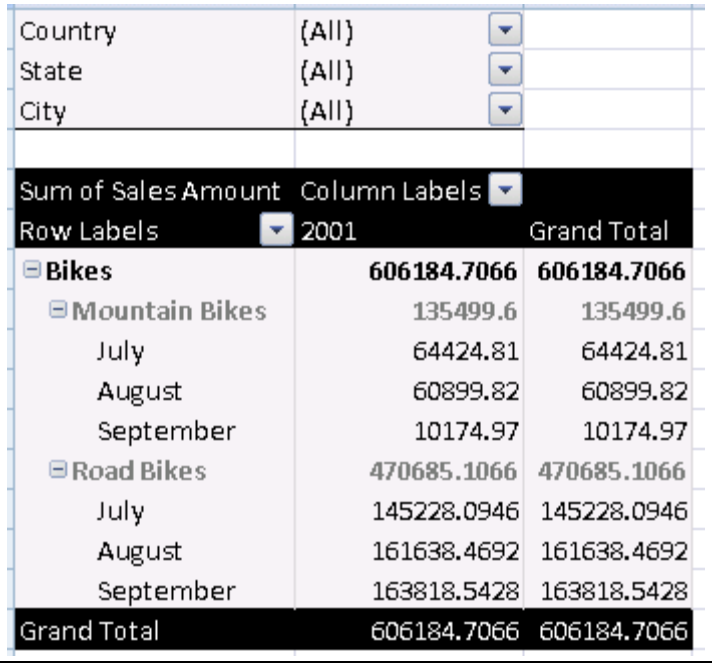
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium22	
PivotStyleMedium21	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium20	
PivotStyleMedium19	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium18	
PivotStyleMedium17	

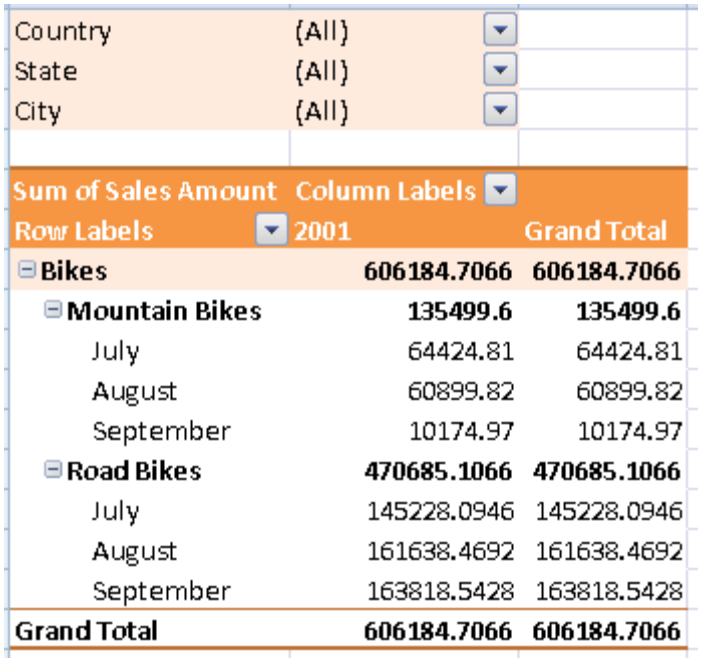
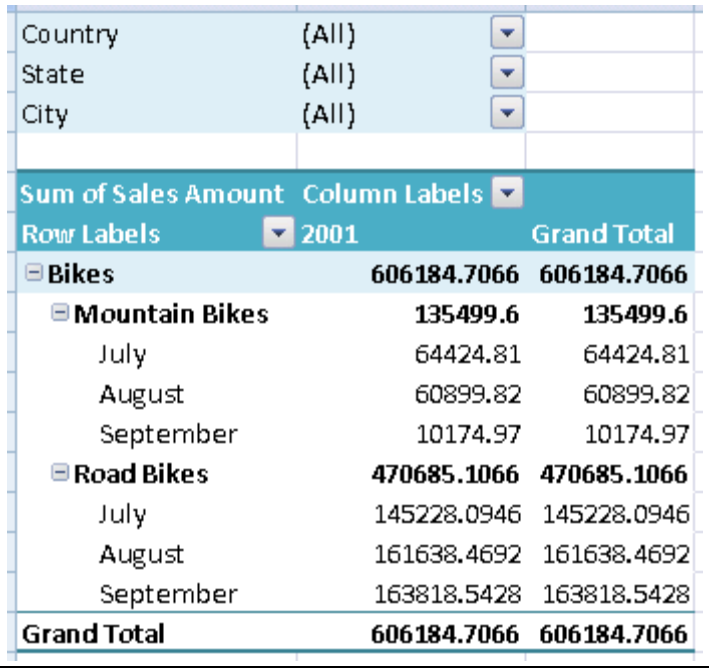
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

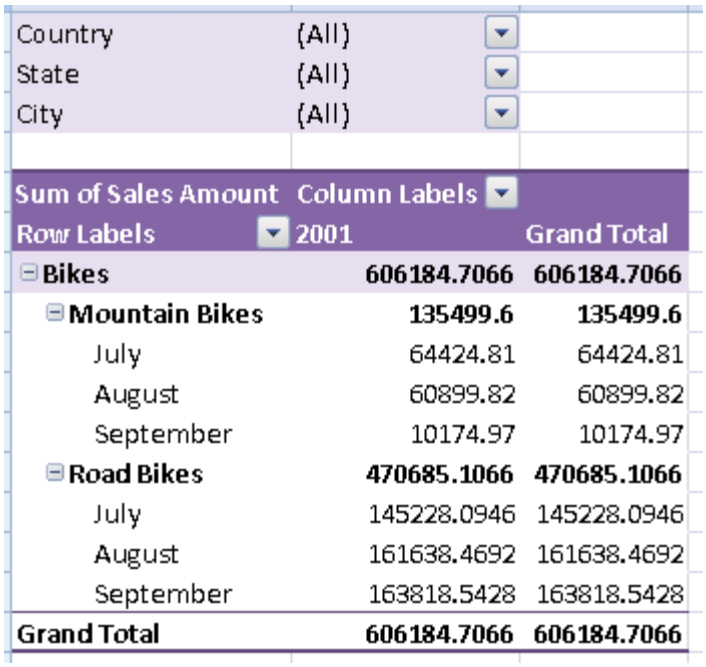
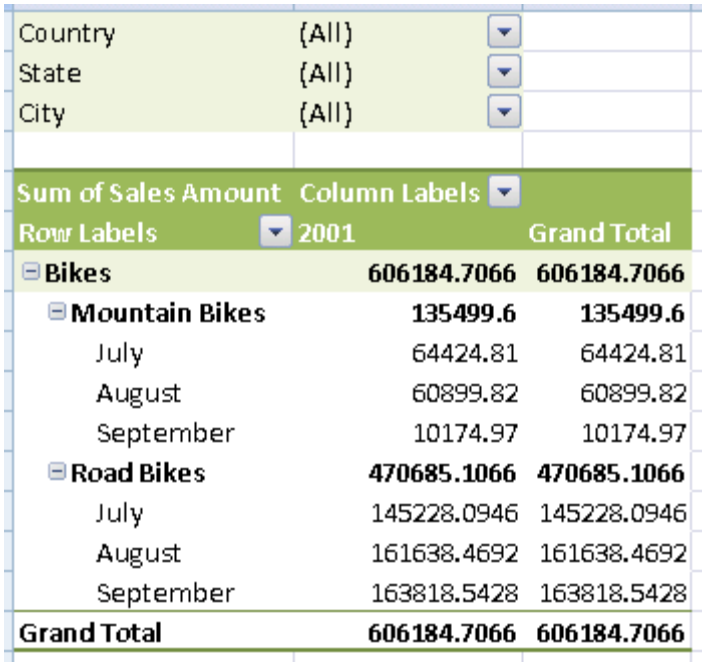
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

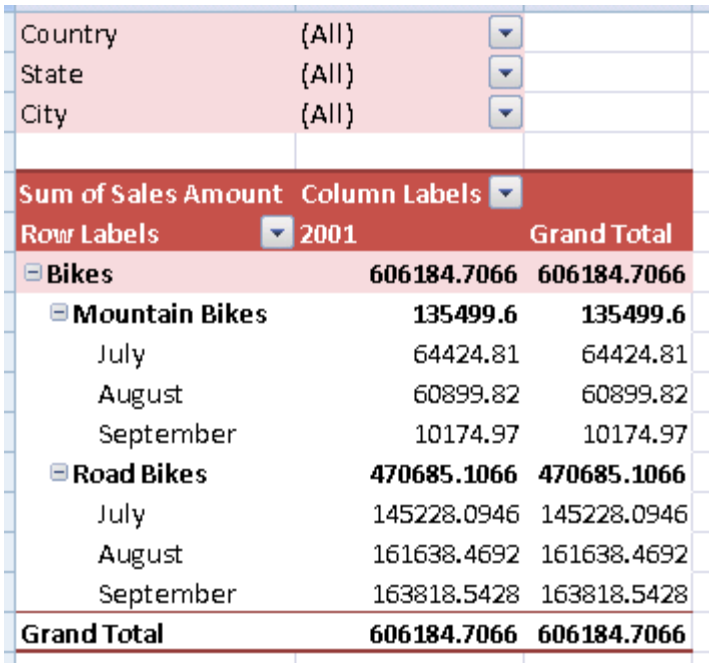
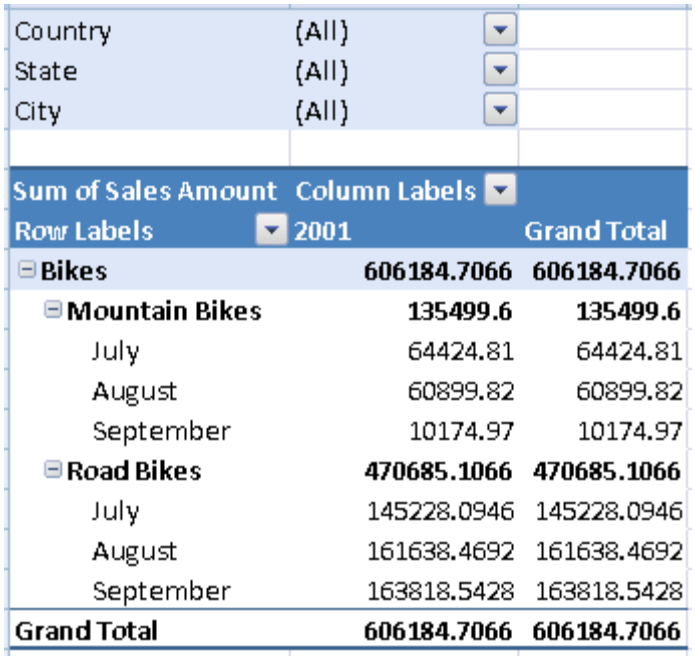
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium16	
PivotStyleMedium15	

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

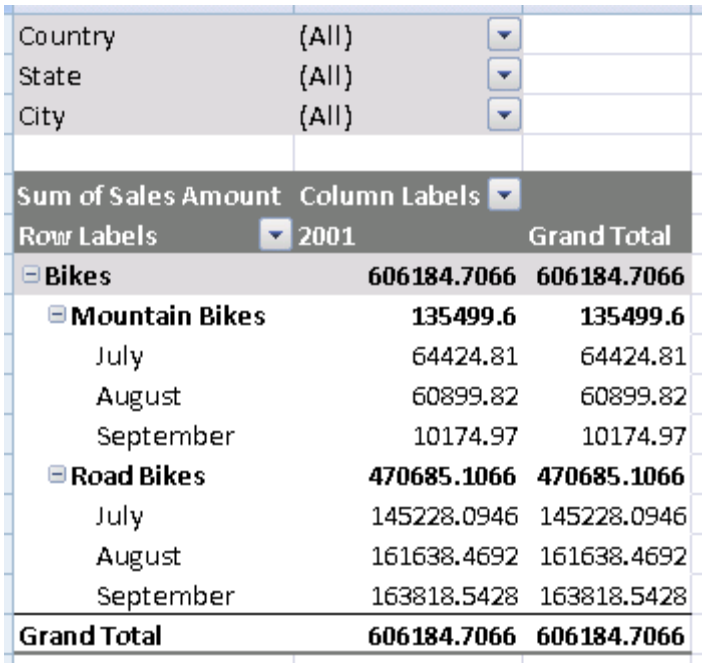
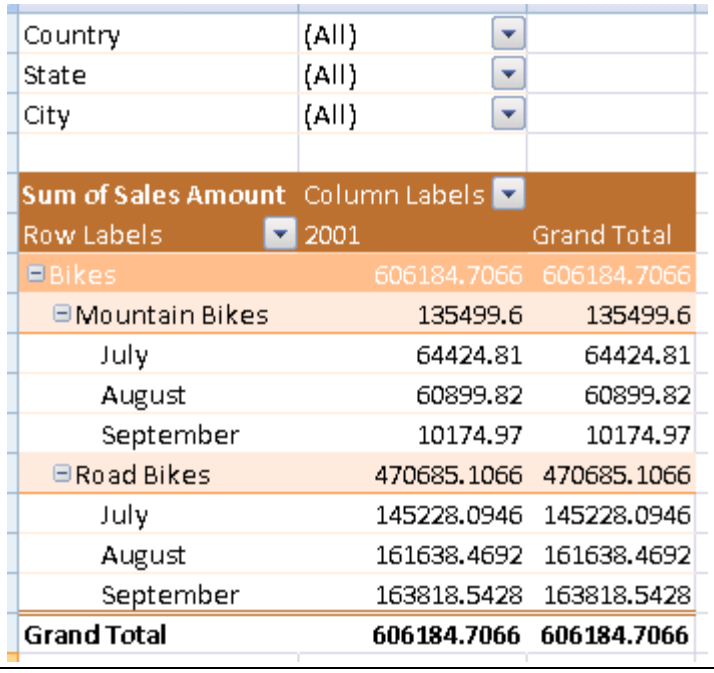
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium14	
PivotStyleMedium13	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium12	
PivotStyleMedium11	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium10	
PivotStyleMedium9	

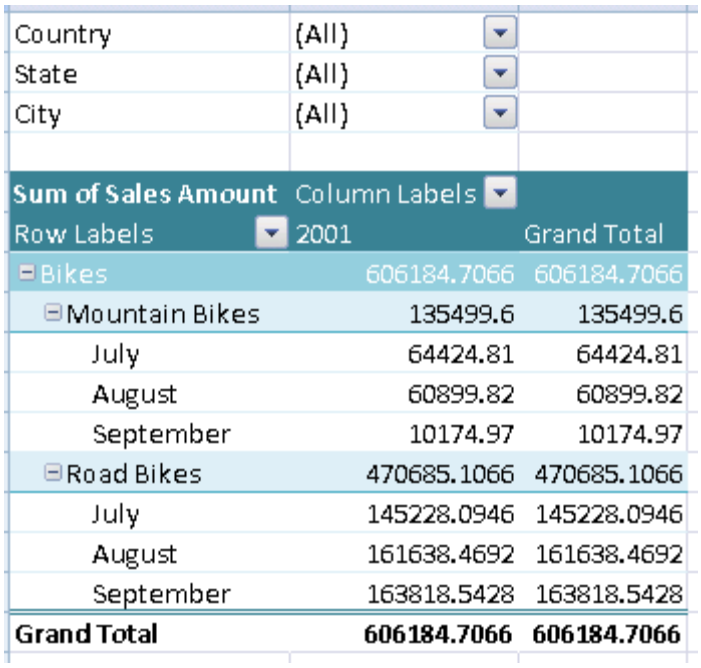
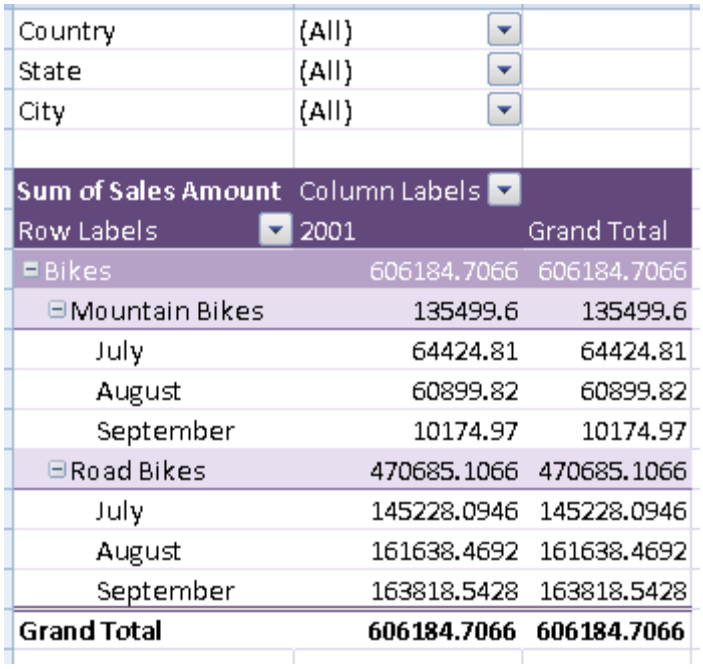
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	**Column Labels**	
Row Labels	**2001**	**Grand Total**
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	**Column Labels**	
Row Labels	**2001**	**Grand Total**
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium8	
PivotStyleMedium7	

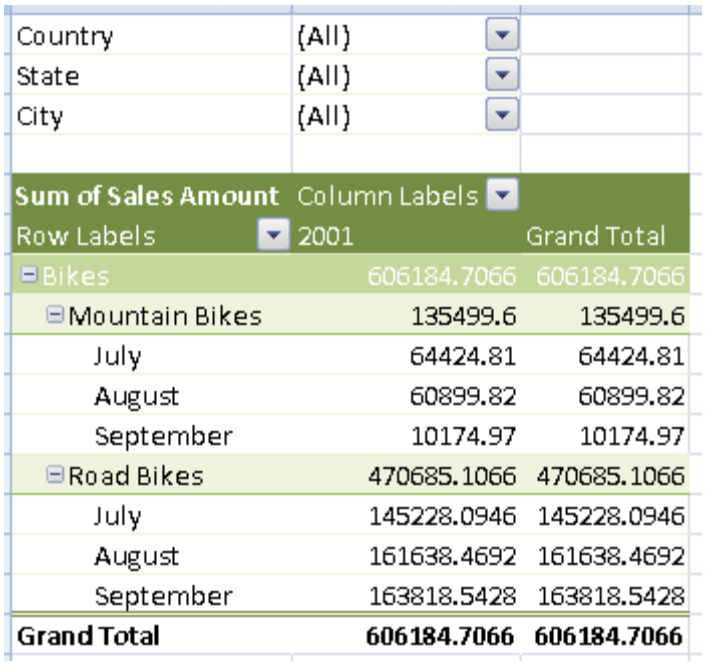
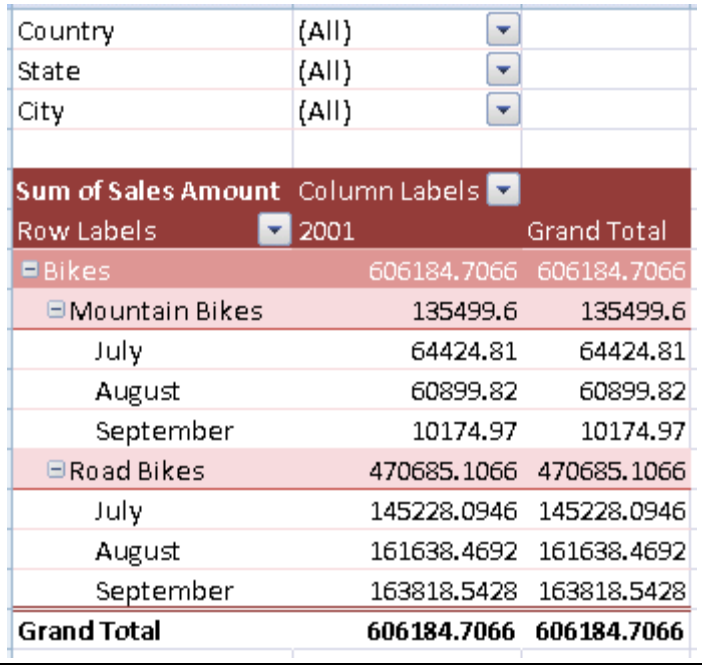
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium6	
PivotStyleMedium5	

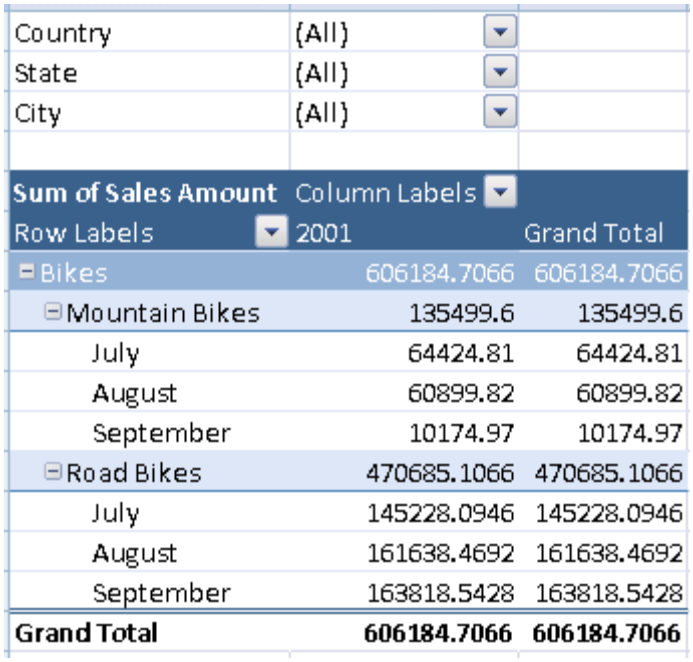
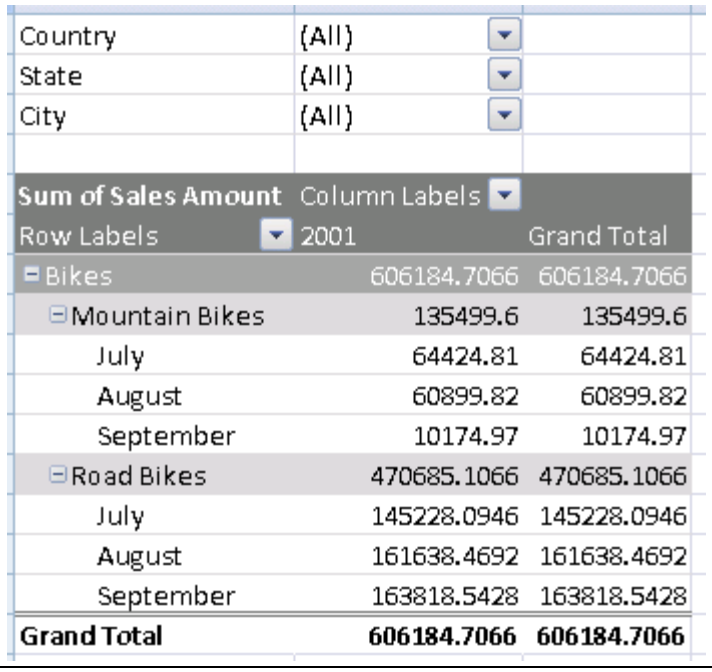
Country (All)
State (All)
City (All)

Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium4	
PivotStyleMedium3	

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

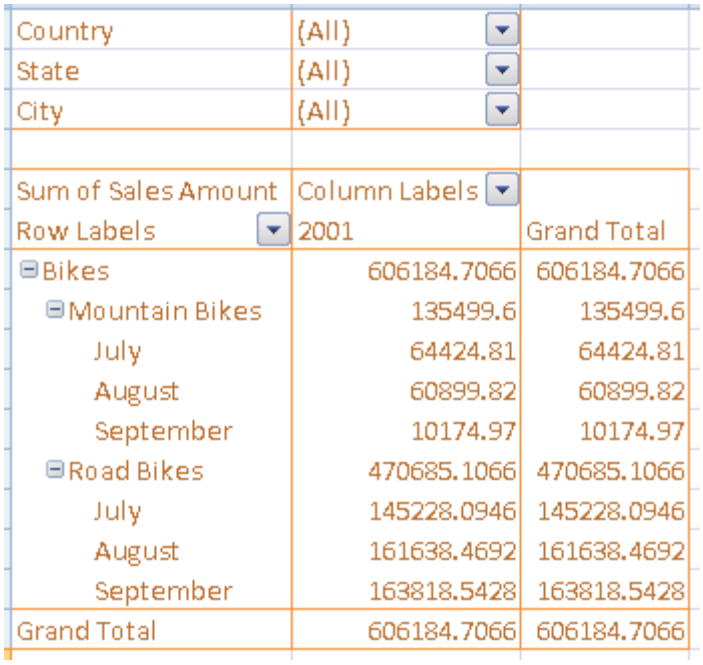
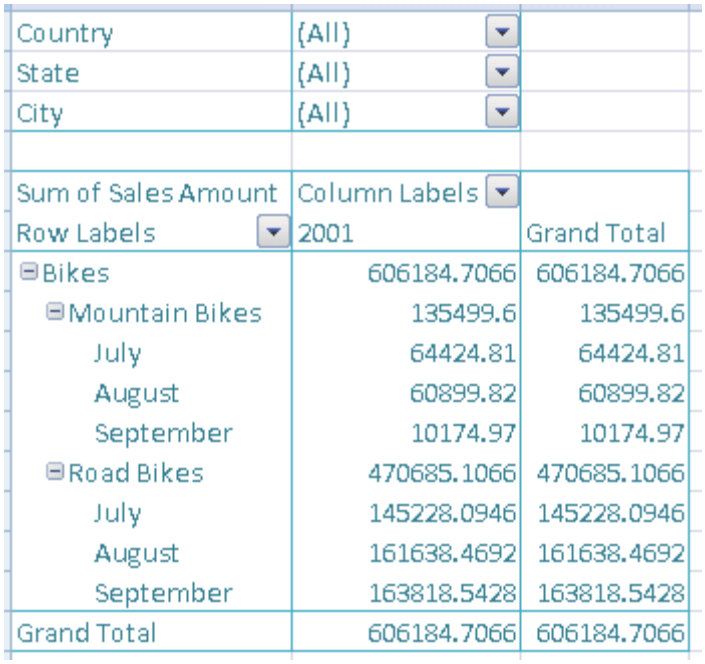
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleMedium2	
PivotStyleMedium1	

Country (All)
State (All)
City (All)

Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

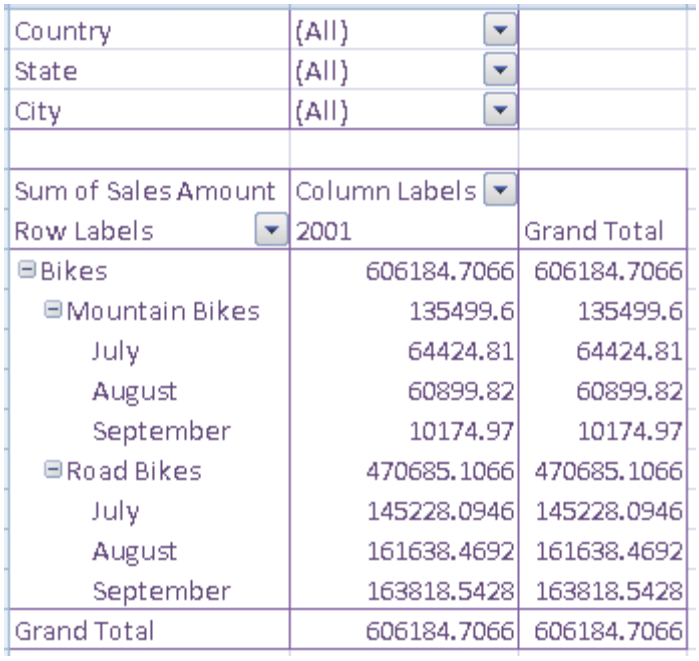
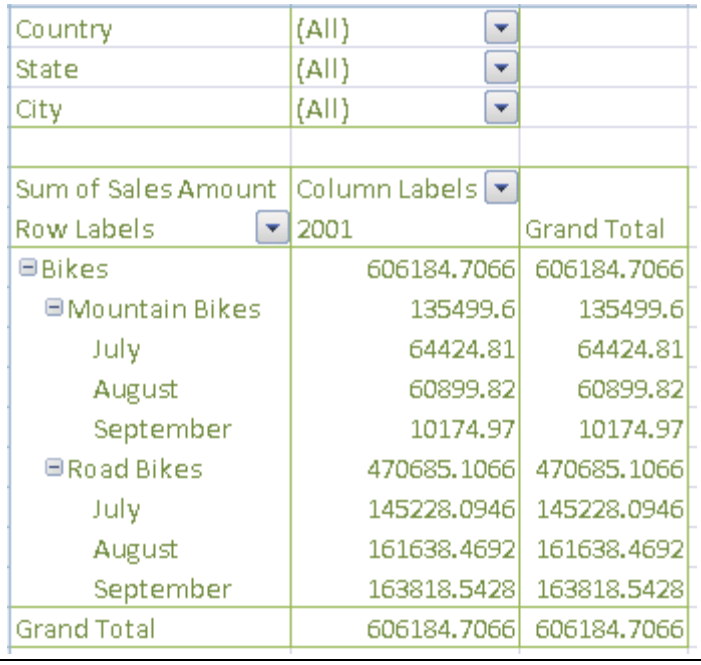
Country (All)
State (All)
City (All)

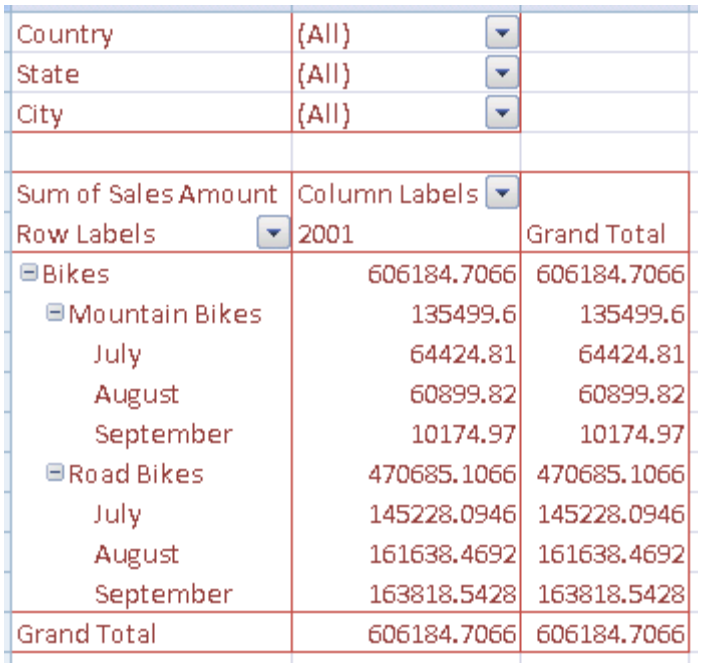
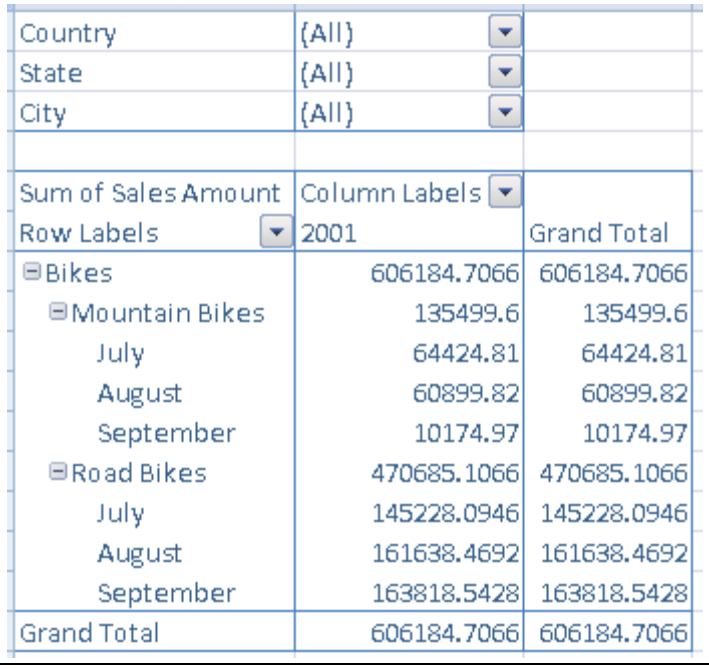
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight28	
PivotStyleLight27	

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

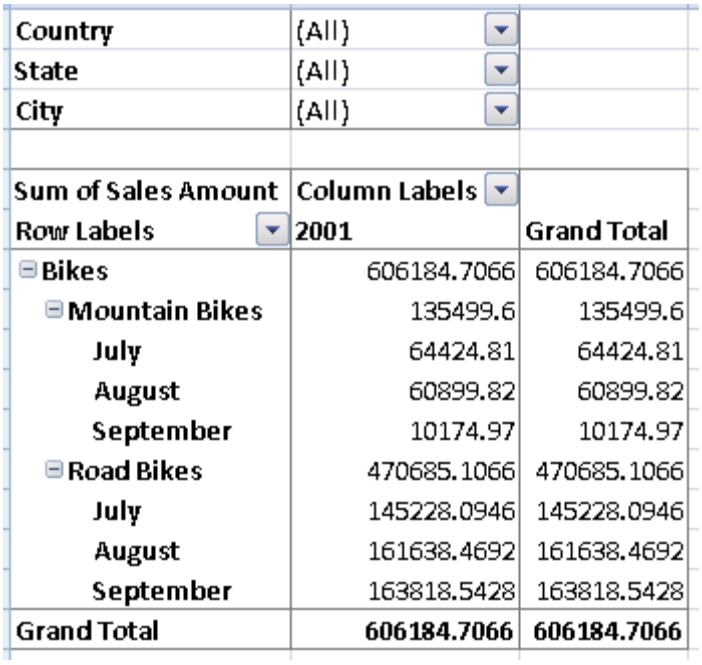
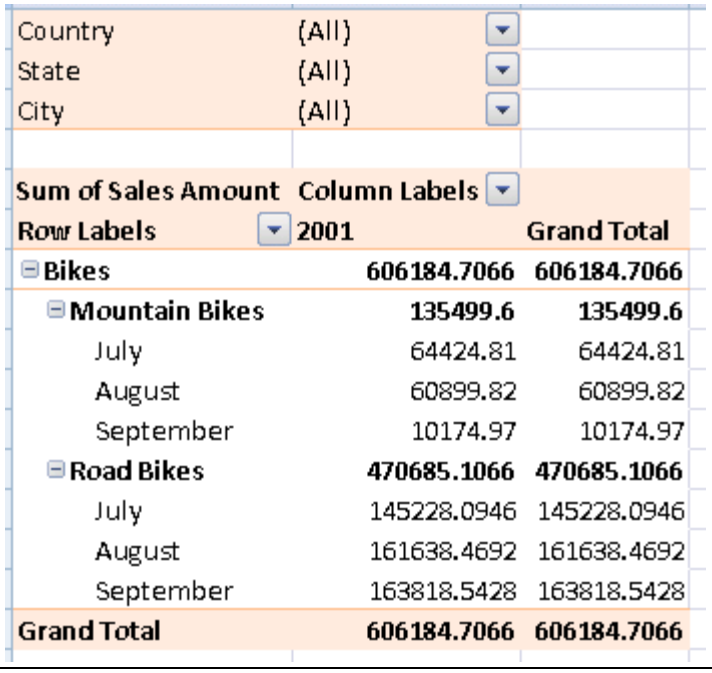
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight26	
PivotStyleLight25	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight24	
PivotStyleLight23	

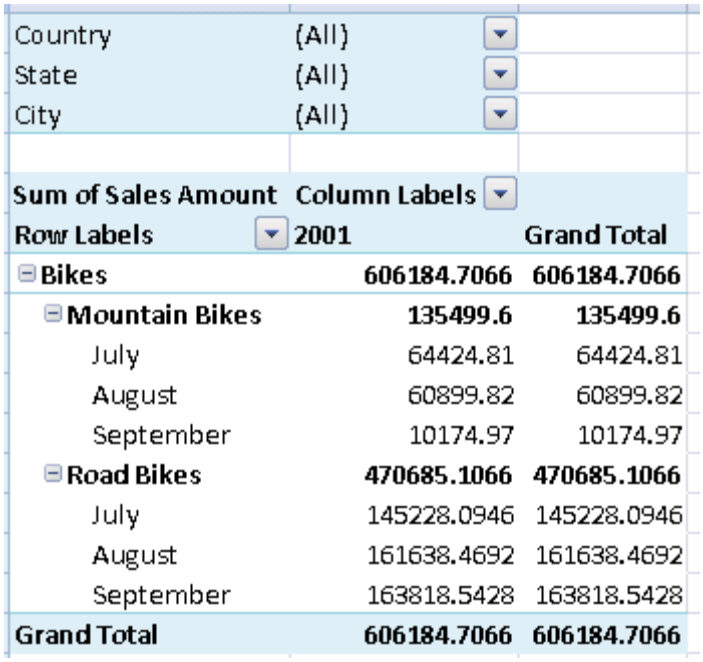
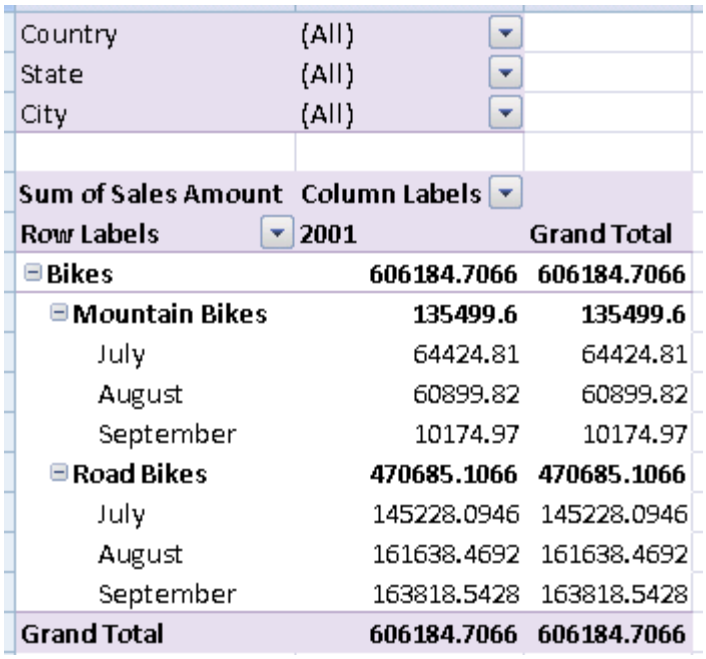
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight22	
PivotStyleLight21	

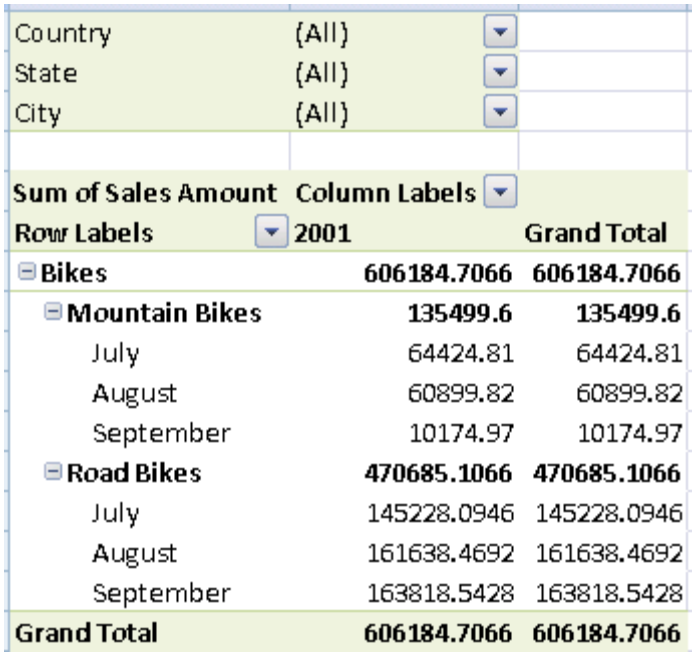
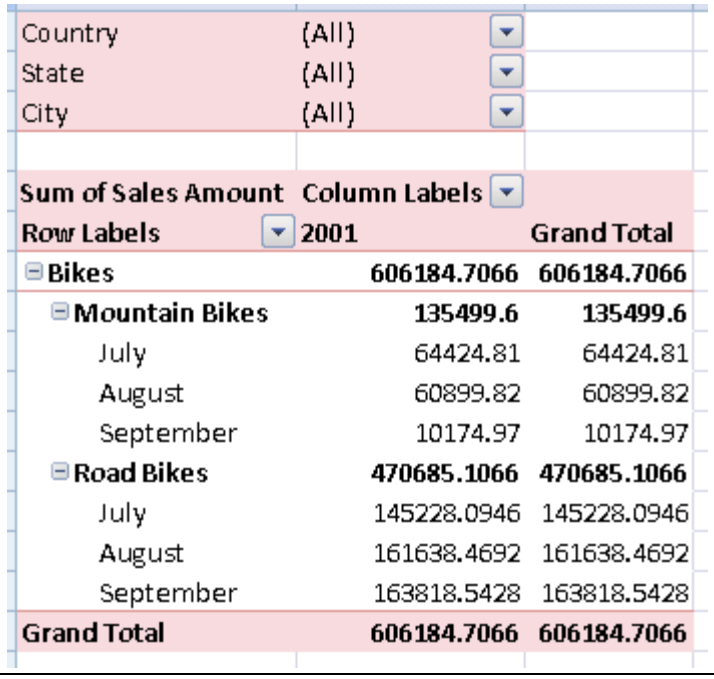
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

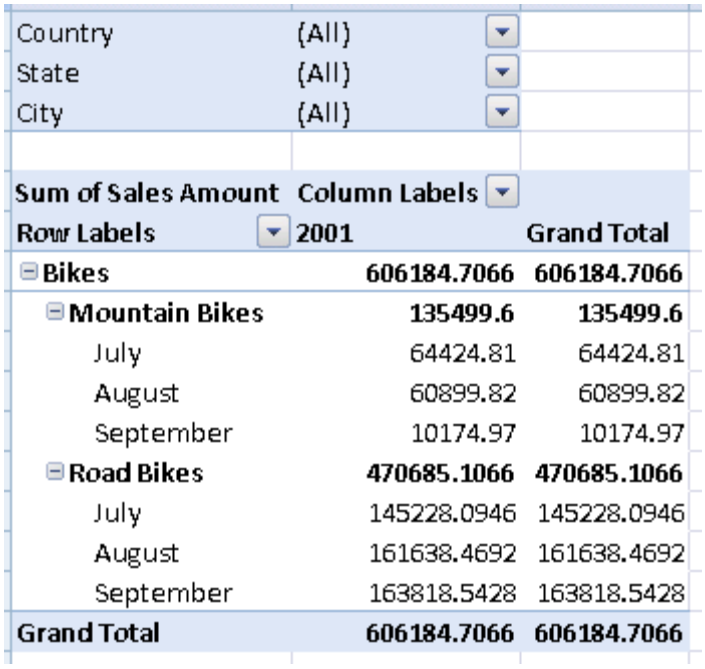
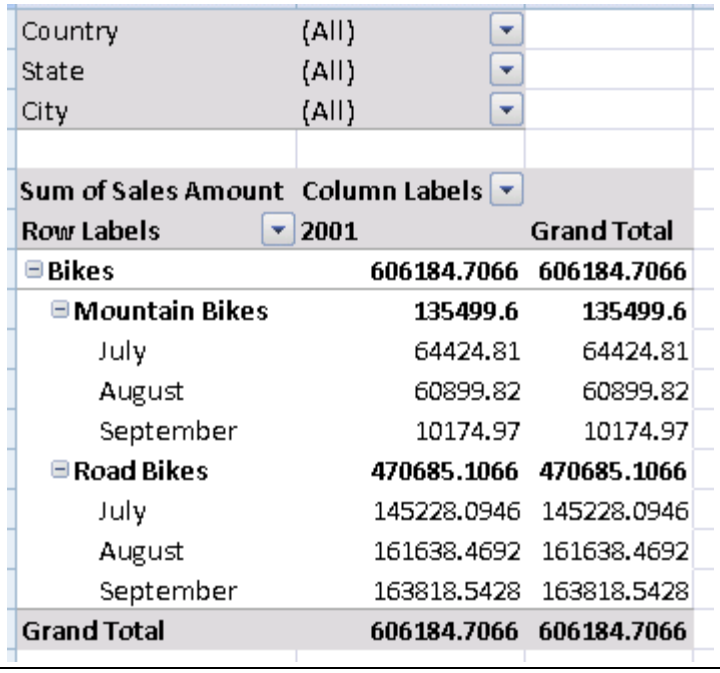
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight20	
PivotStyleLight19	

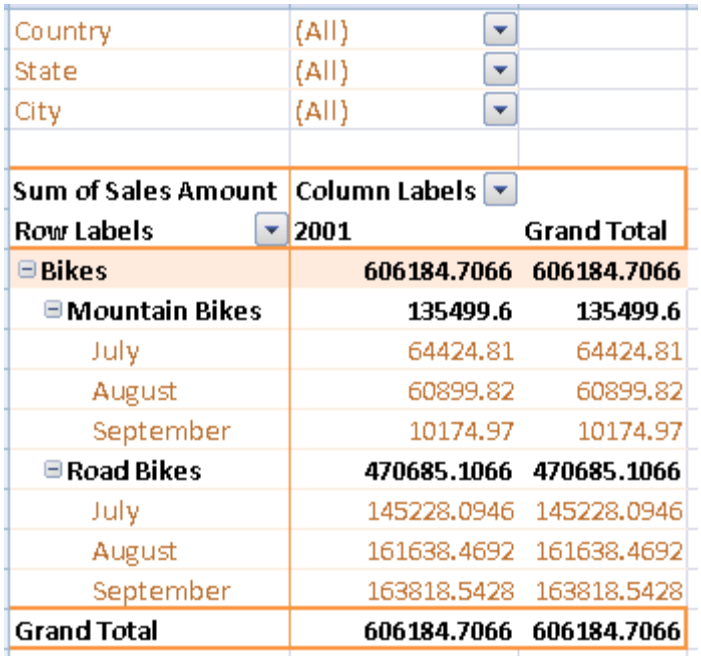
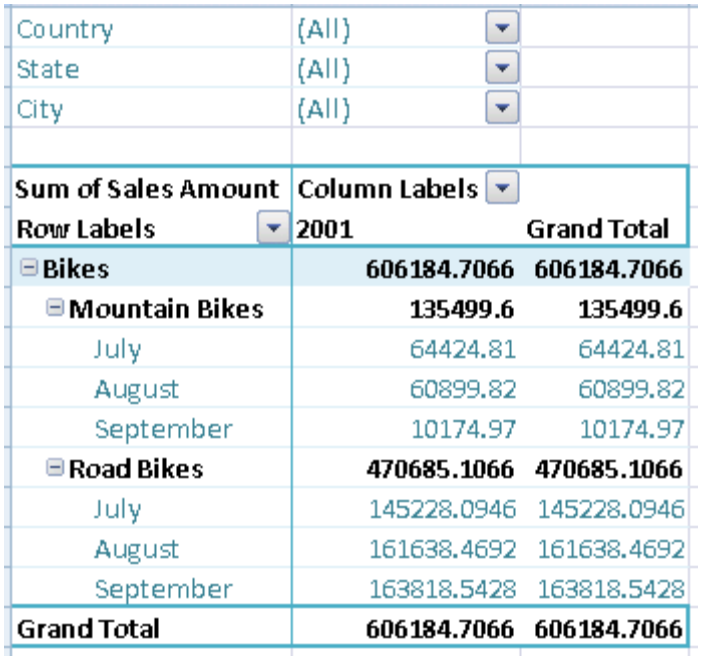
Country (All)
State (All)
City (All)

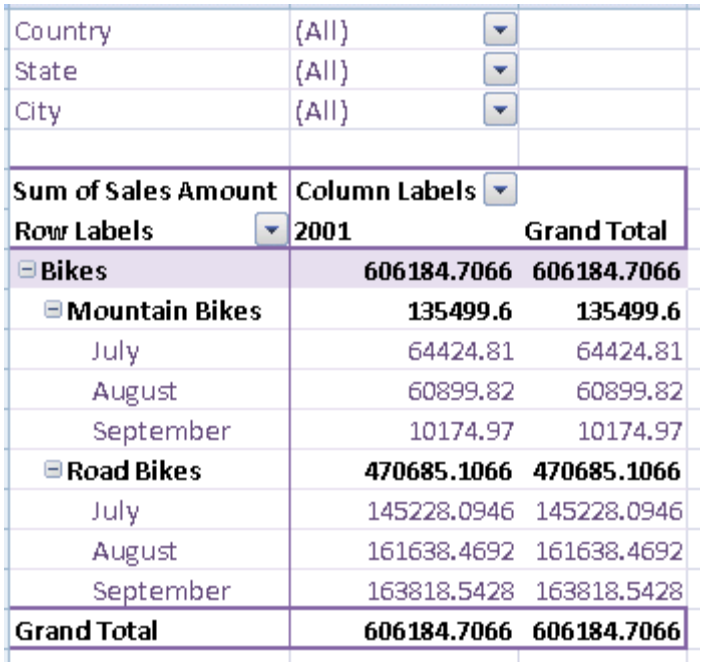
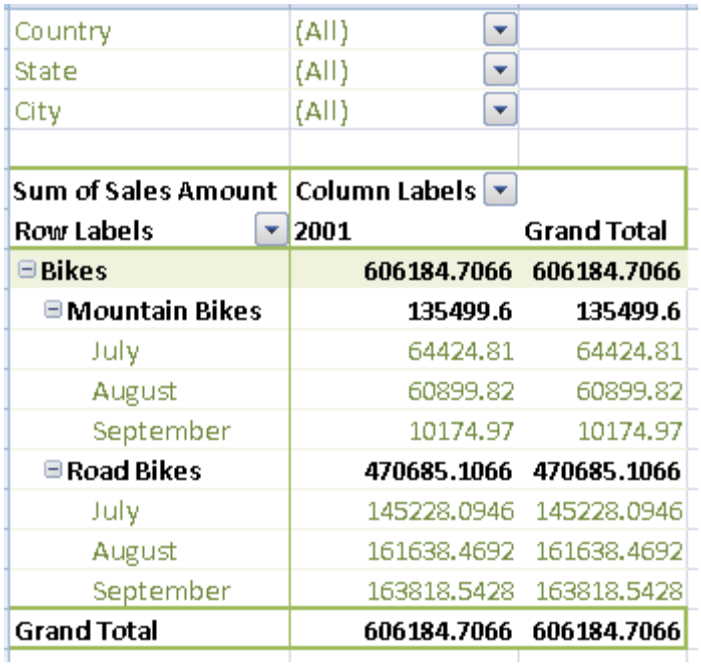
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

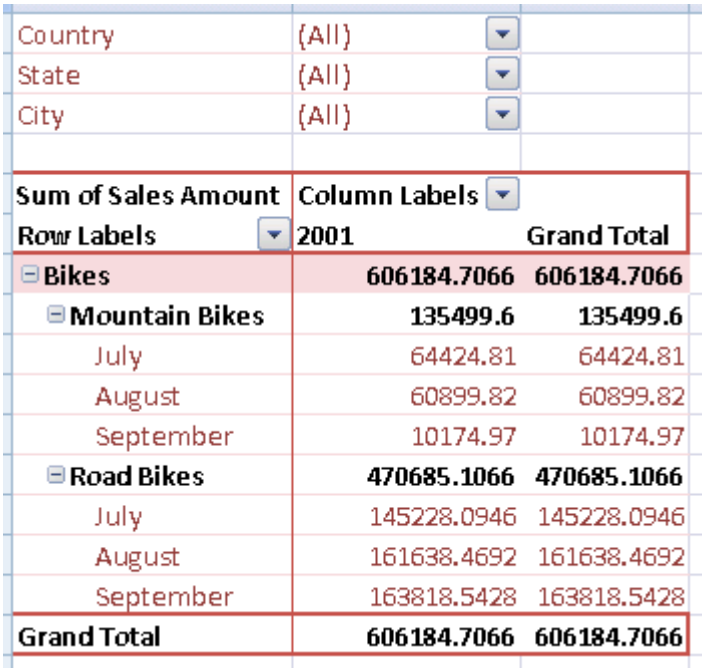
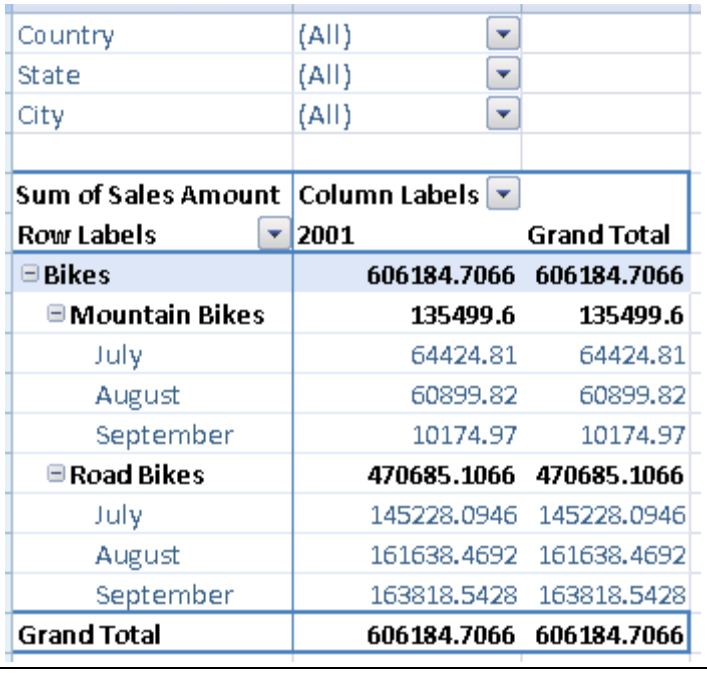
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight18	
PivotStyleLight17	

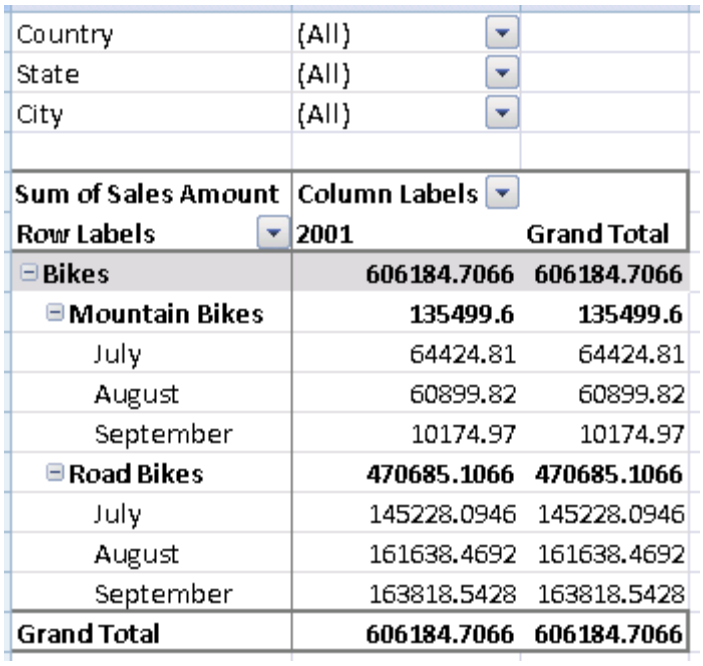
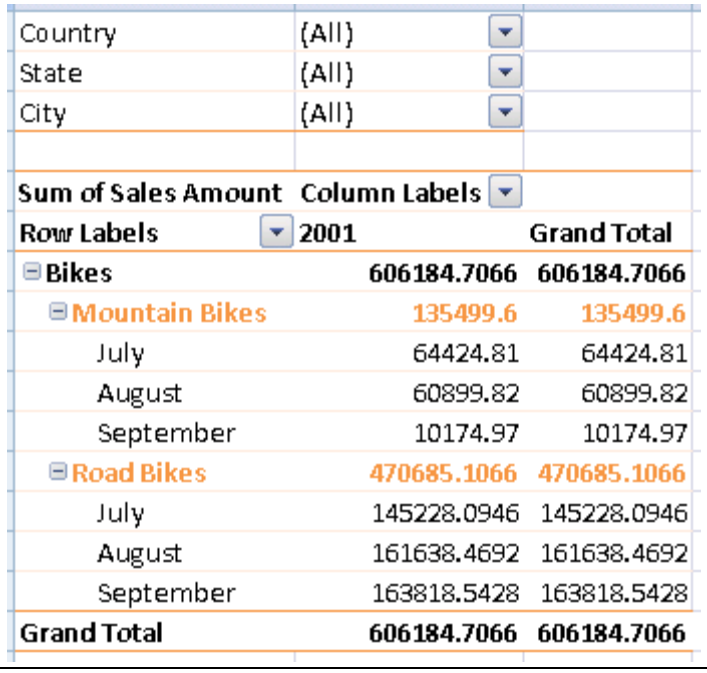
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight16	
PivotStyleLight15	

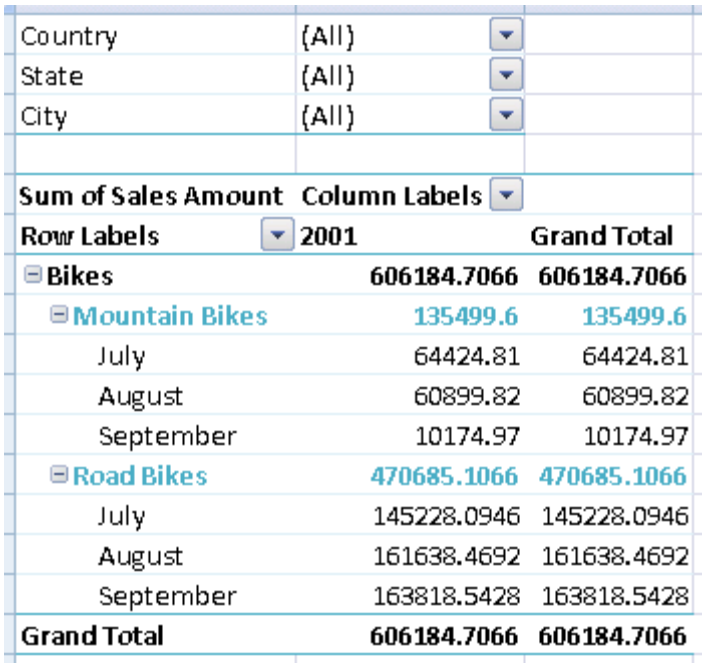
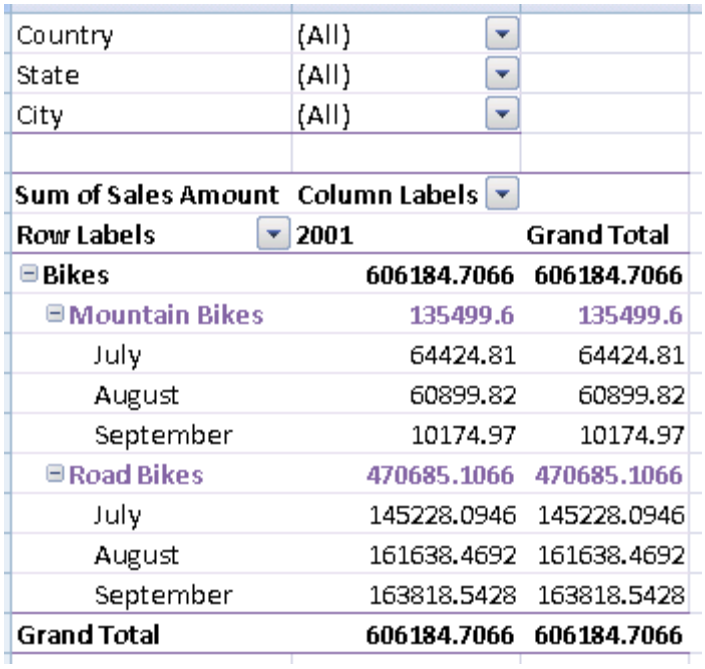
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	**Column Labels**	
Row Labels	**2001**	**Grand Total**
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight14	
PivotStyleLight13	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight12	
PivotStyleLight11	

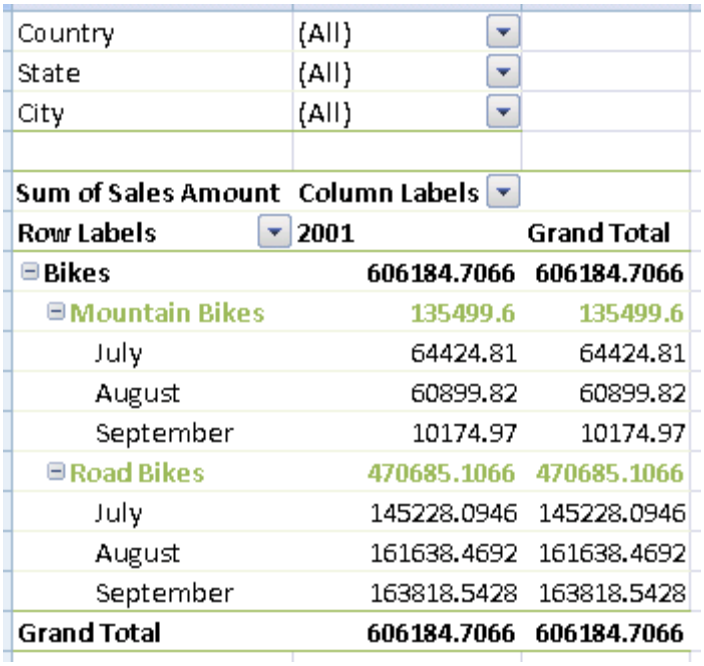
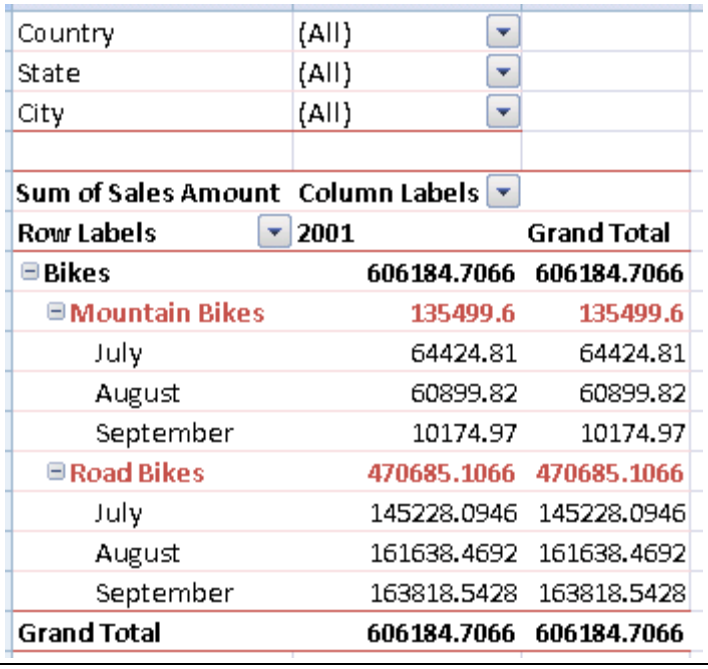
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight10	
PivotStyleLight9	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight8	
PivotStyleLight7	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight6	
PivotStyleLight5	

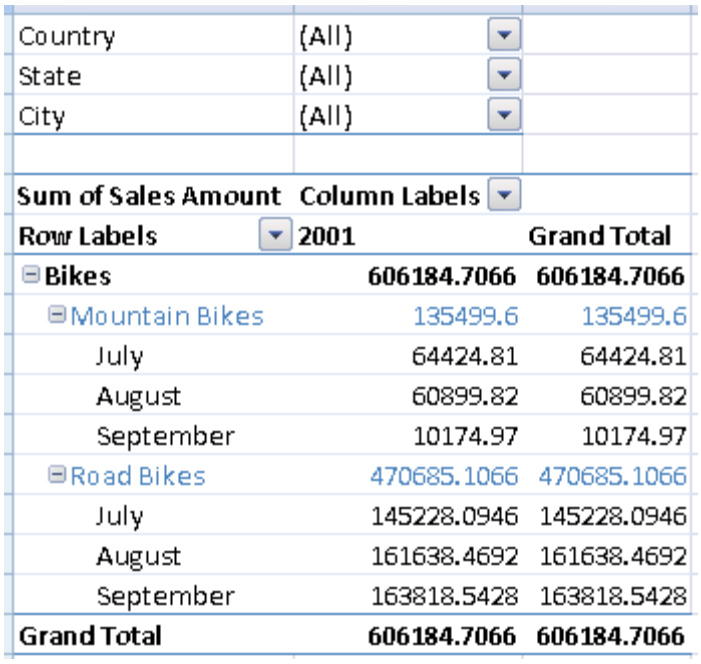
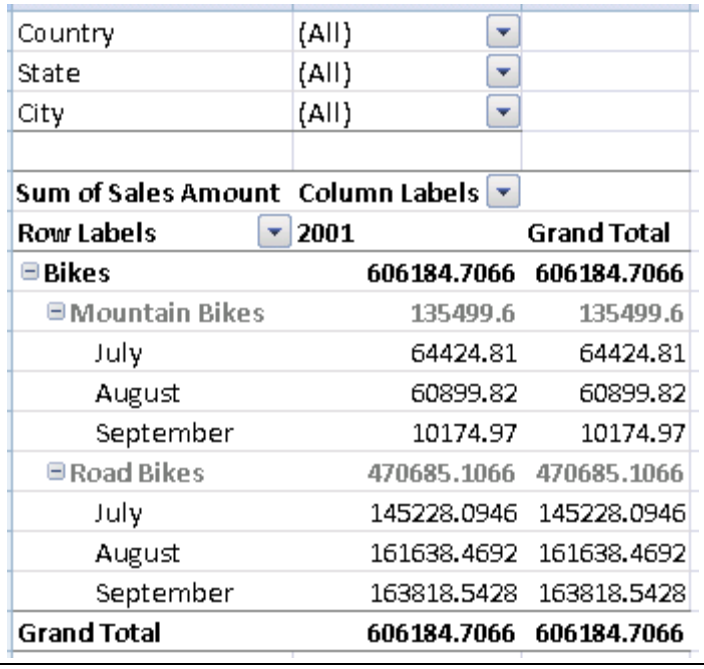
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	**Column Labels**	
Row Labels	**2001**	**Grand Total**
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

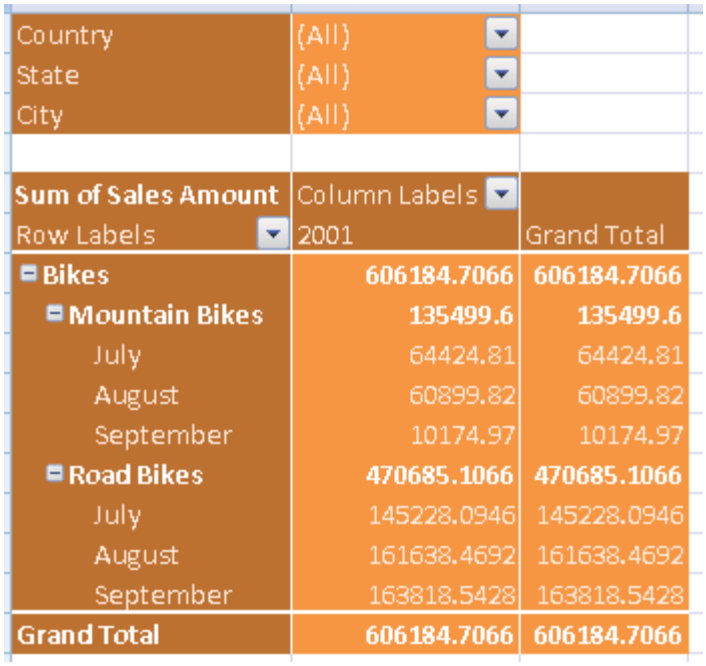
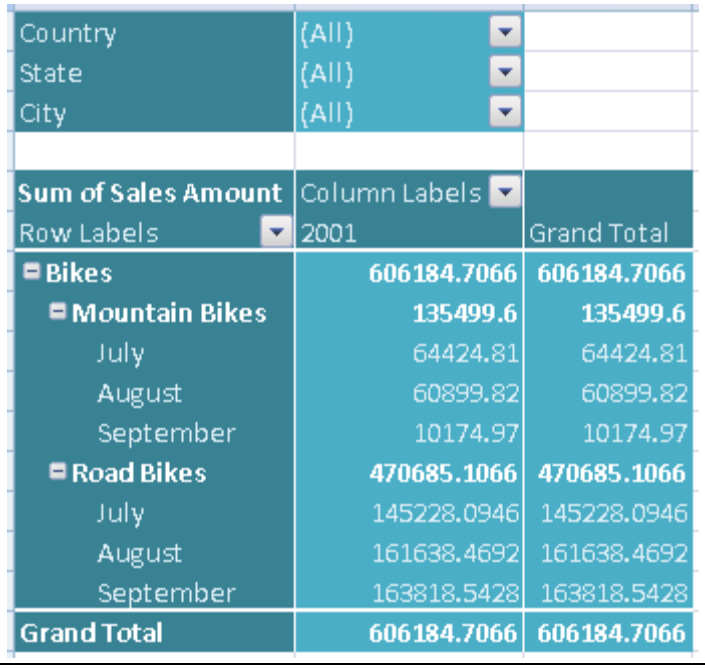
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	**Column Labels**	
Row Labels	**2001**	**Grand Total**
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

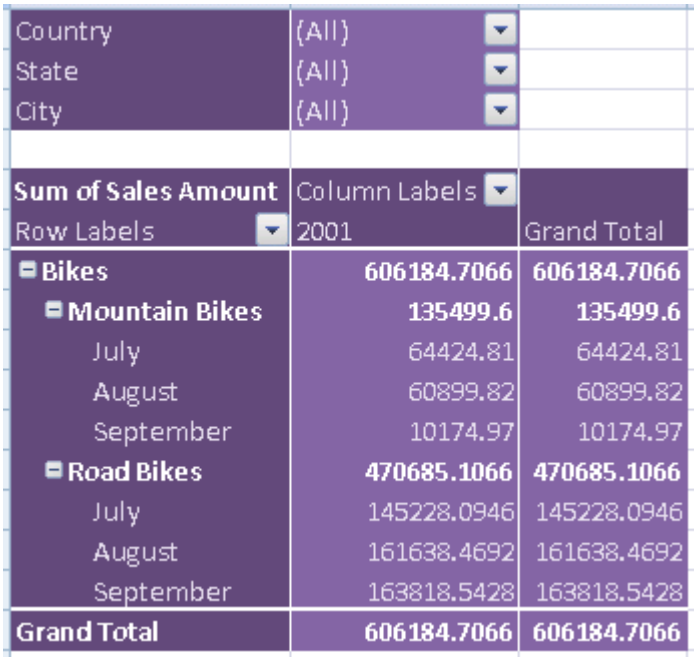
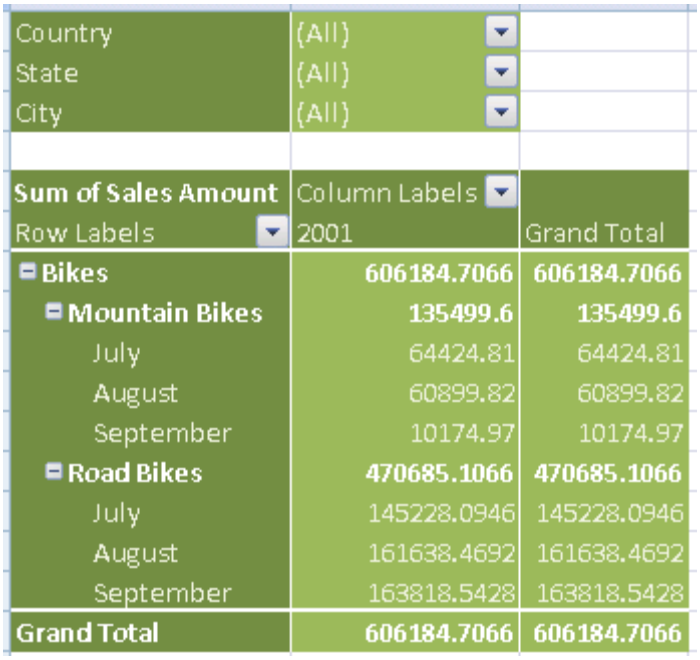
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight4	
PivotStyleLight3	

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	**Column Labels**	
Row Labels	**2001**	**Grand Total**
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

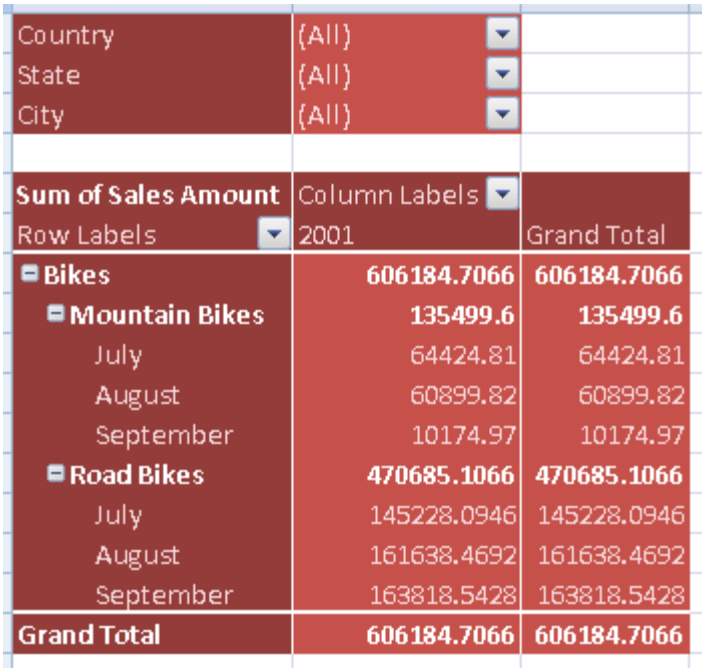
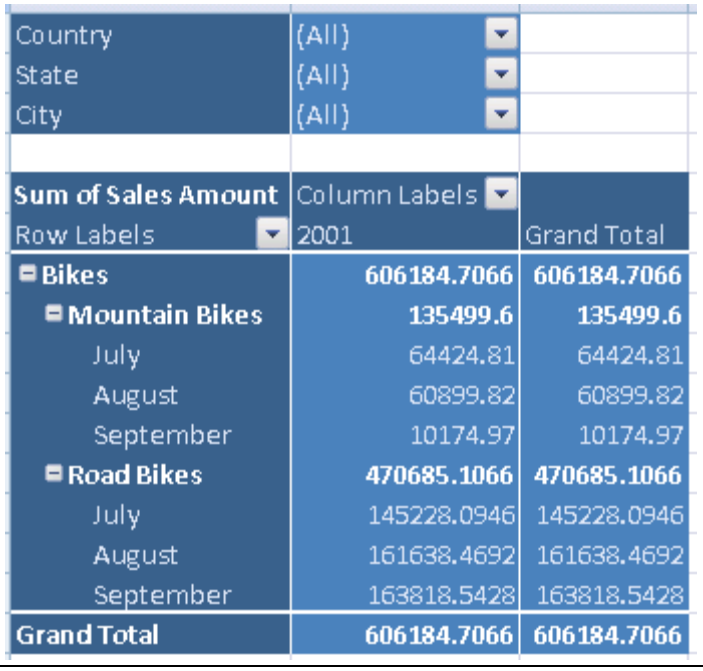
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	**Column Labels**	
Row Labels	**2001**	**Grand Total**
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

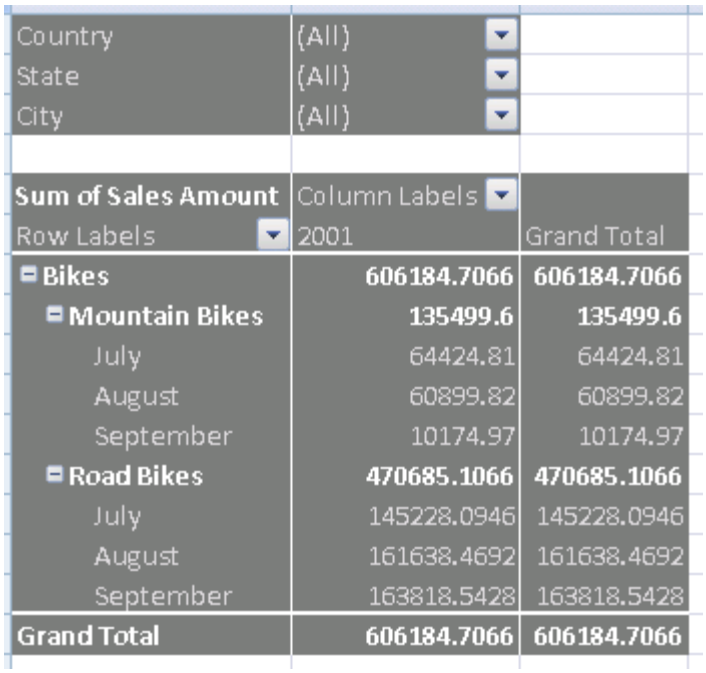
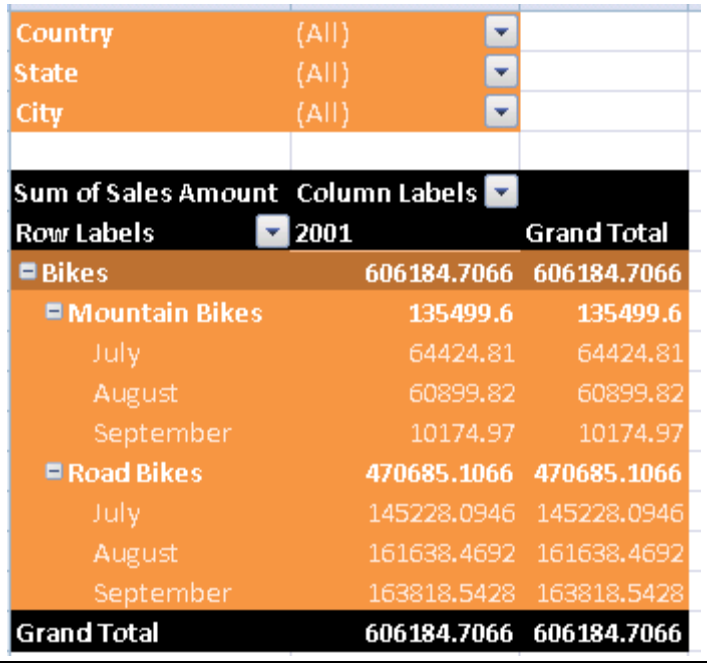
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleLight2	
PivotStyleLight1	

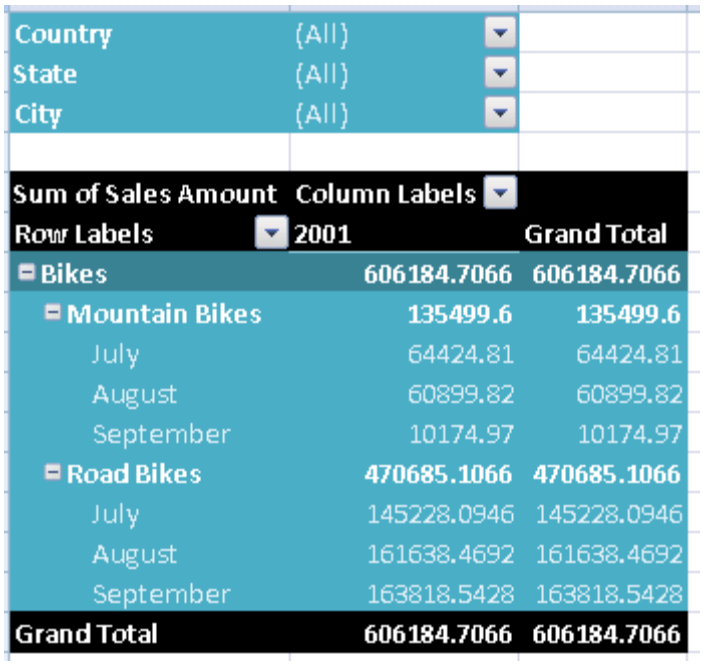
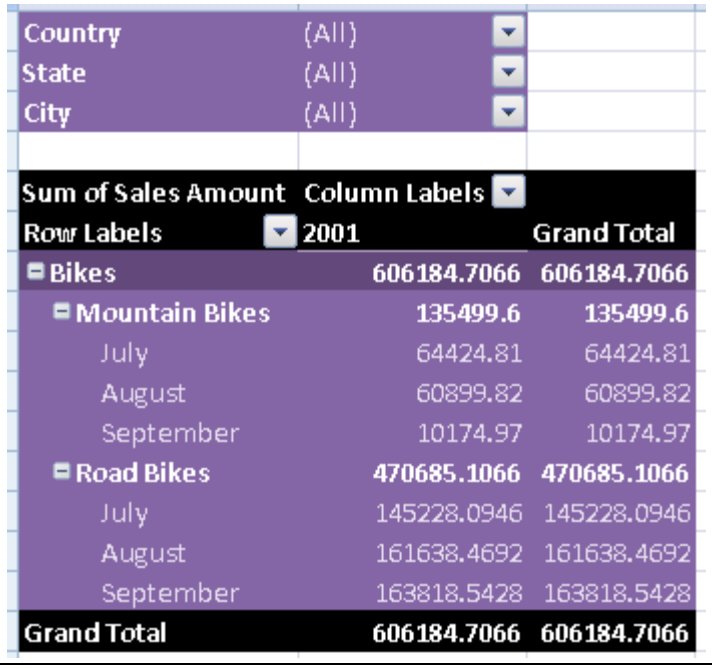
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark28	
PivotStyleDark27	

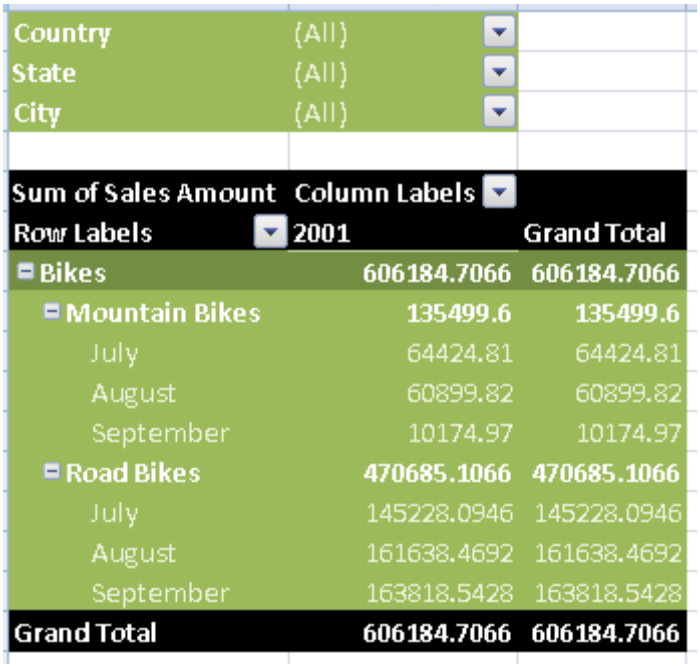
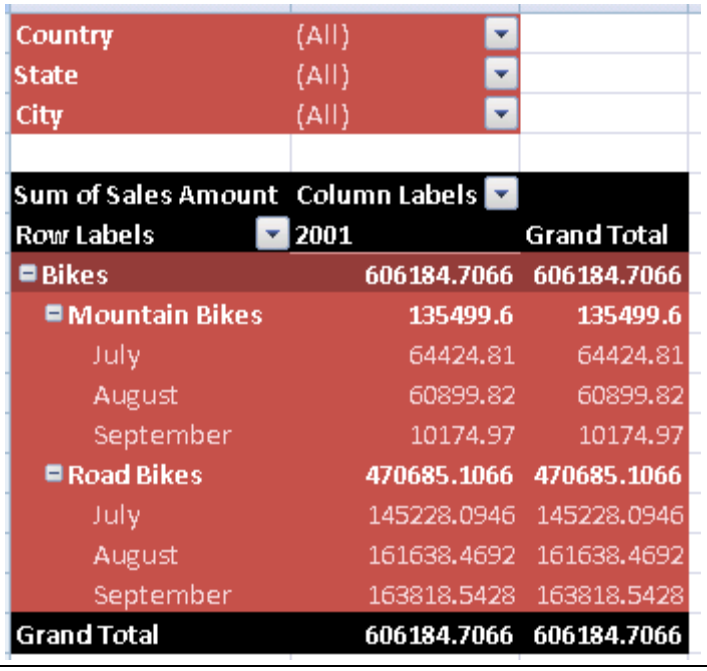
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark26	
PivotStyleDark25	

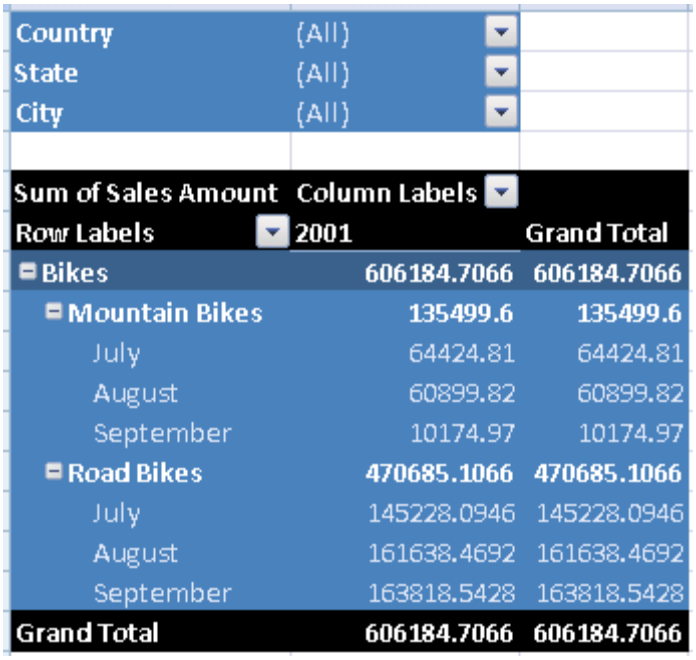
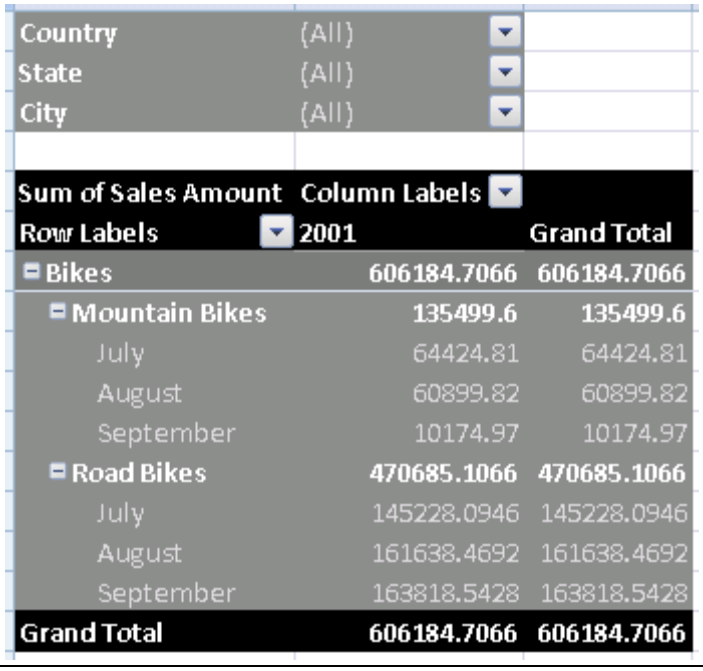
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

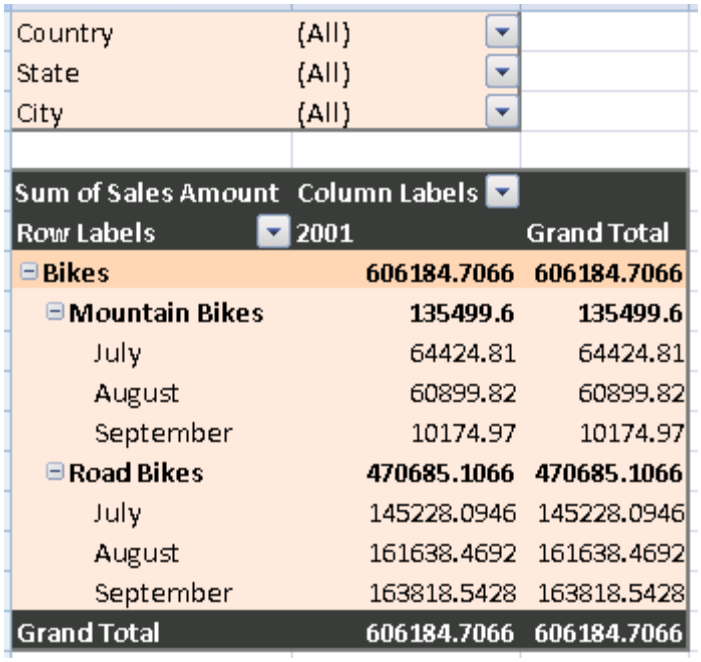
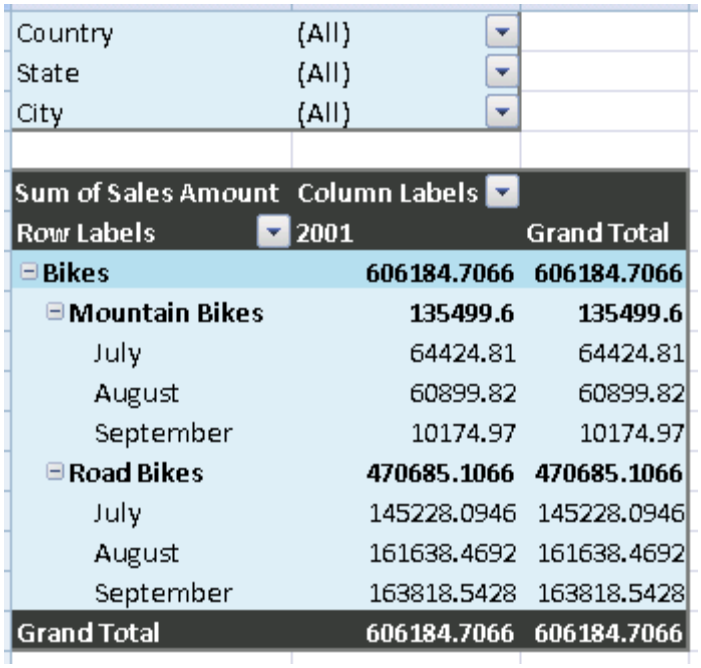
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark24	
PivotStyleDark23	

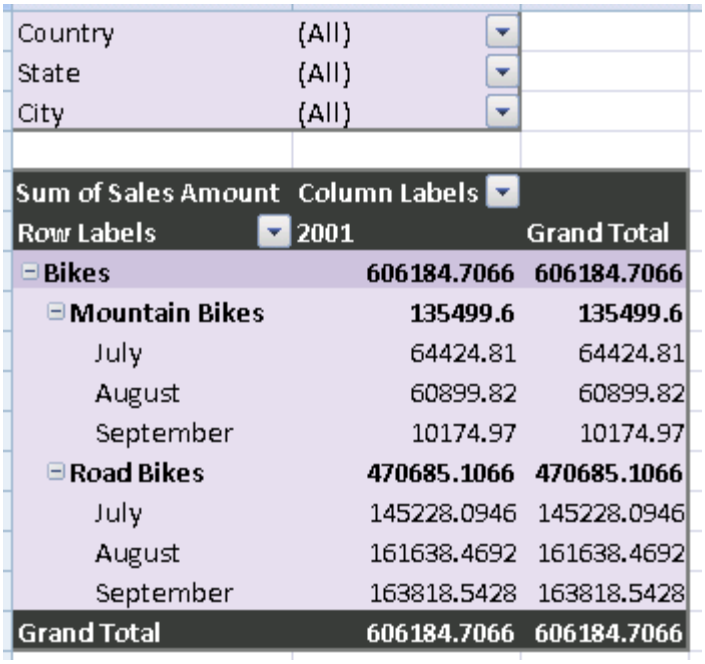
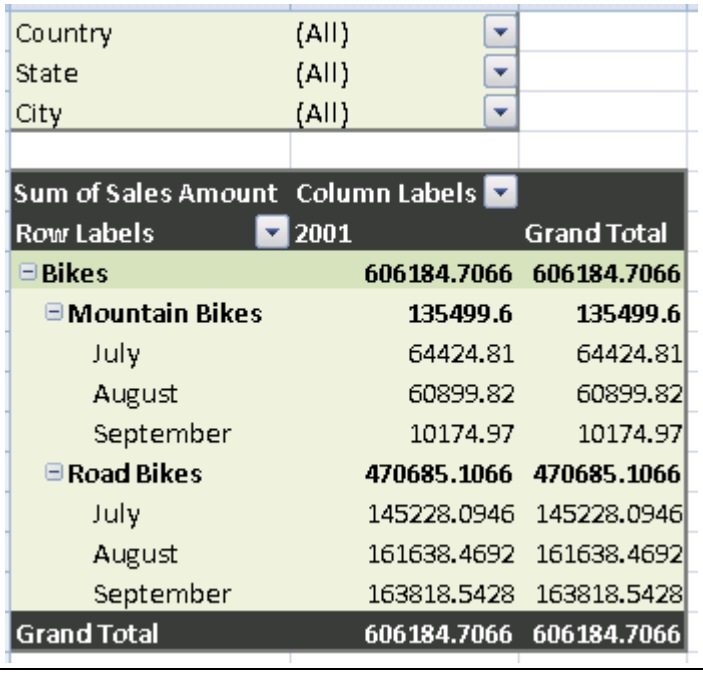
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark22	
PivotStyleDark21	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark20	
PivotStyleDark19	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark18	
PivotStyleDark17	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark16	
PivotStyleDark15	

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark14	
PivotStyleDark13	

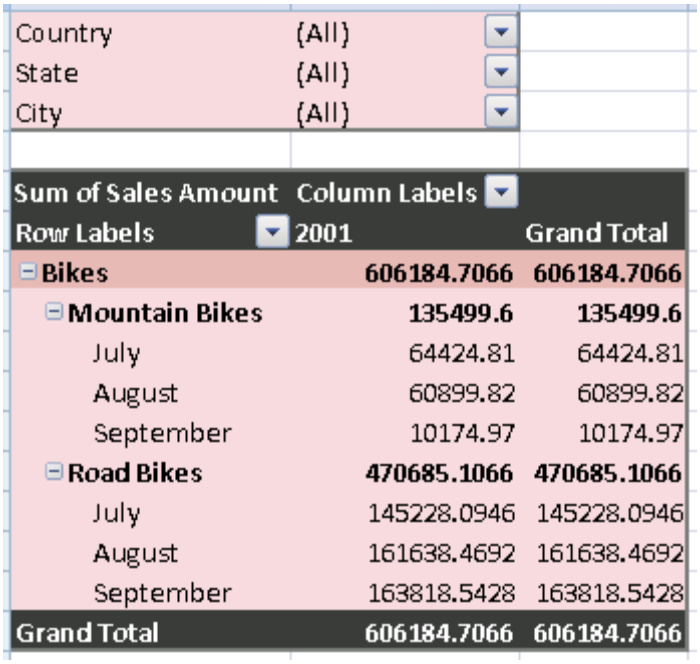
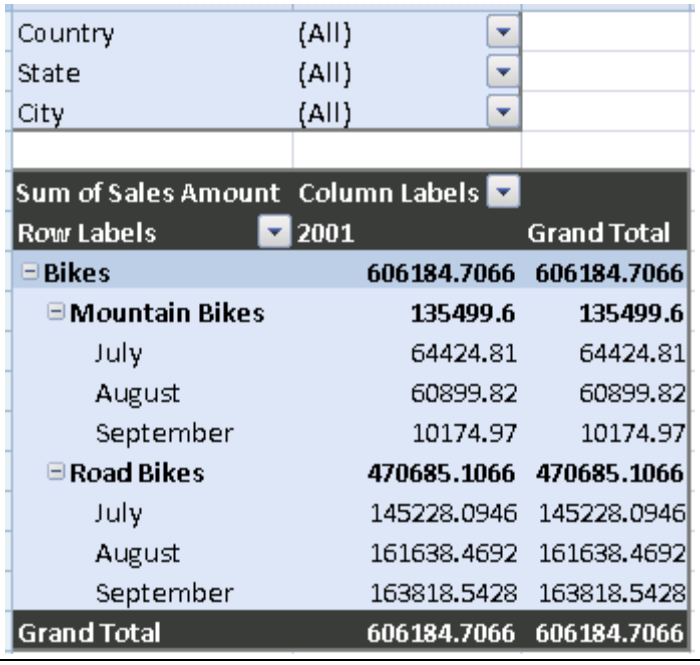
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark12	
PivotStyleDark11	

Country	(All)
State	(All)
City	(All)

Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

Country	(All)
State	(All)
City	(All)

Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

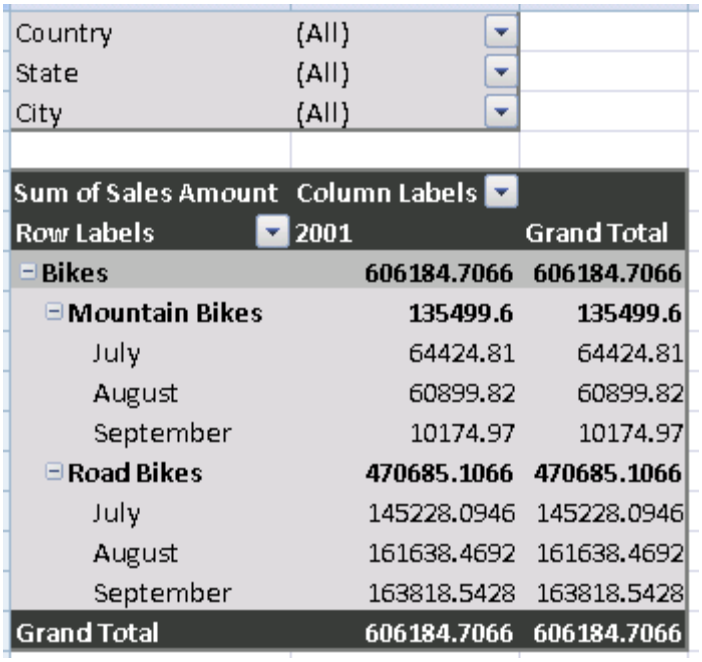
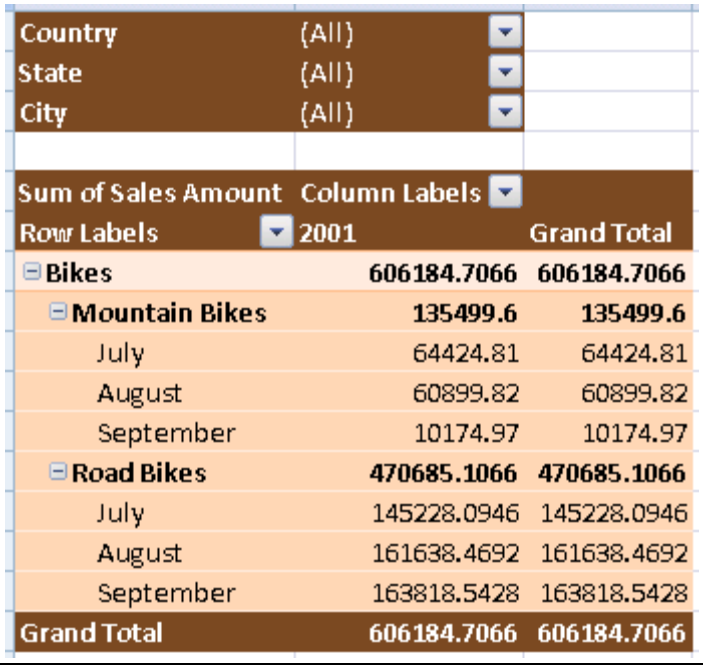
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark10	
PivotStyleDark9	

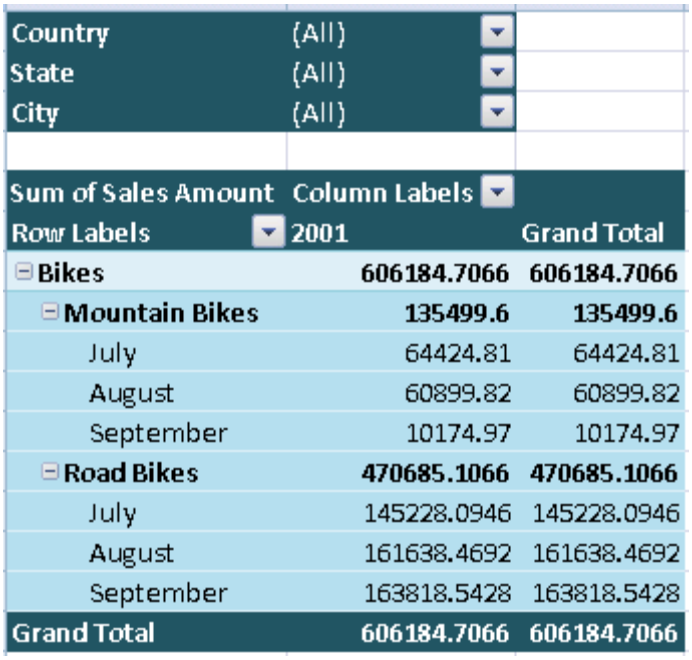
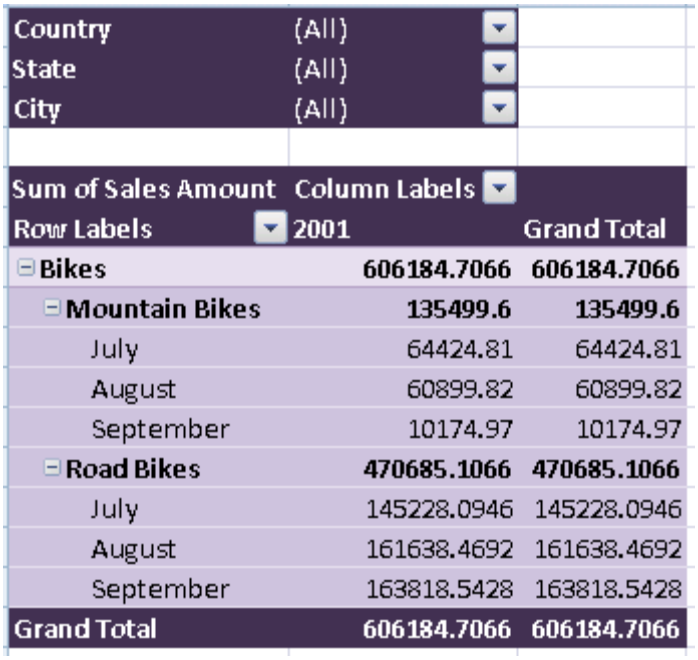
Country	(All)
State	(All)
City	(All)

Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

Country	(All)
State	(All)
City	(All)

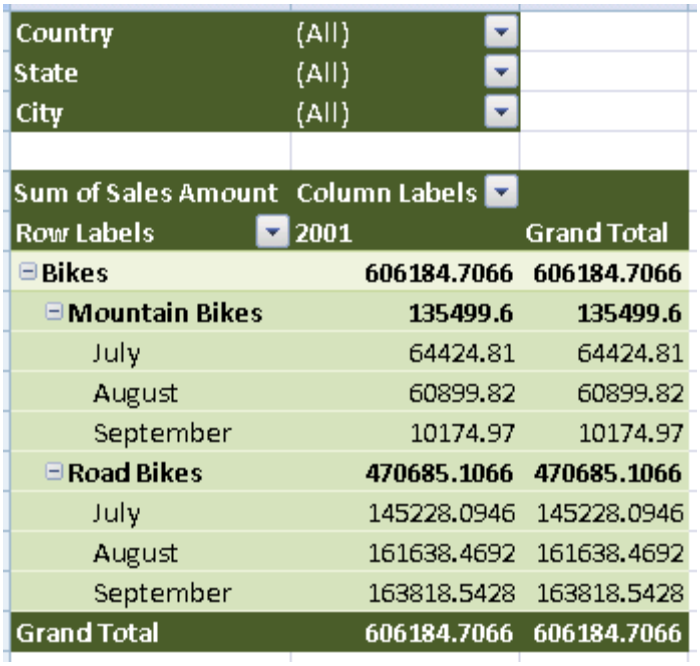
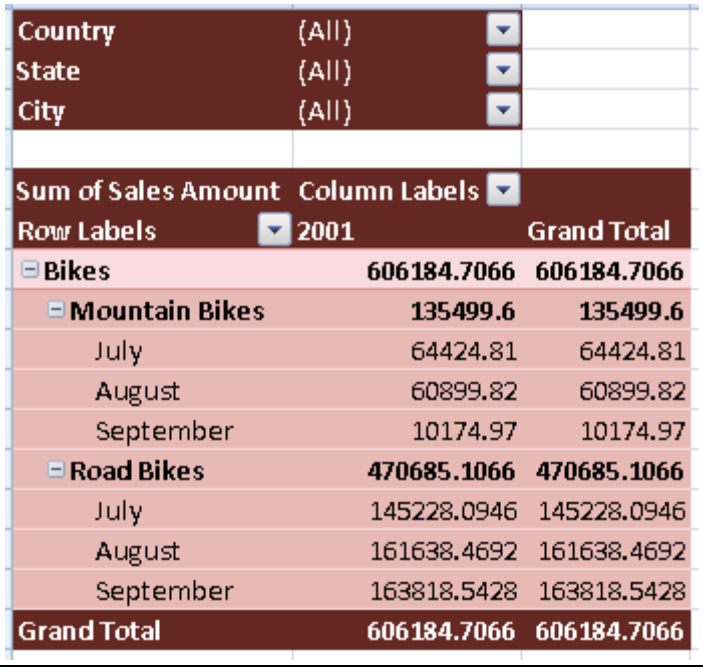
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	**606184.7066**	**606184.7066**
Mountain Bikes	**135499.6**	**135499.6**
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	**470685.1066**	**470685.1066**
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	**606184.7066**	**606184.7066**

~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark8	
PivotStyleDark7	

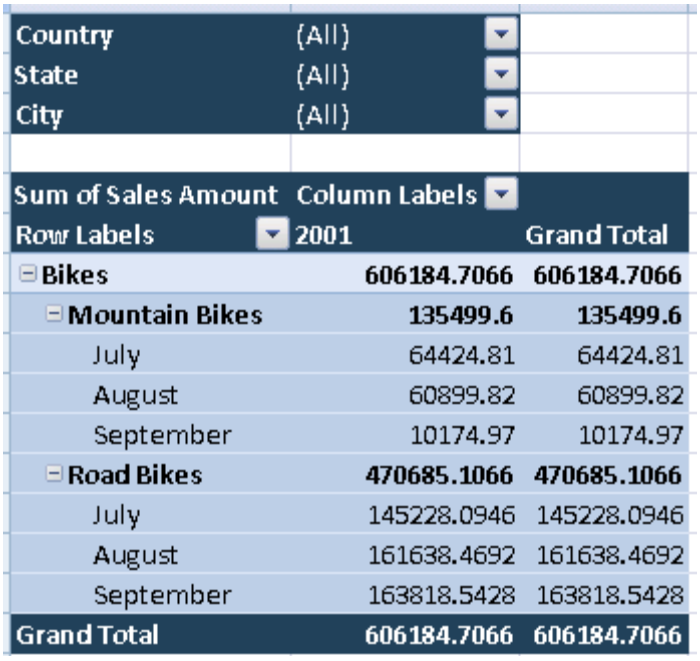
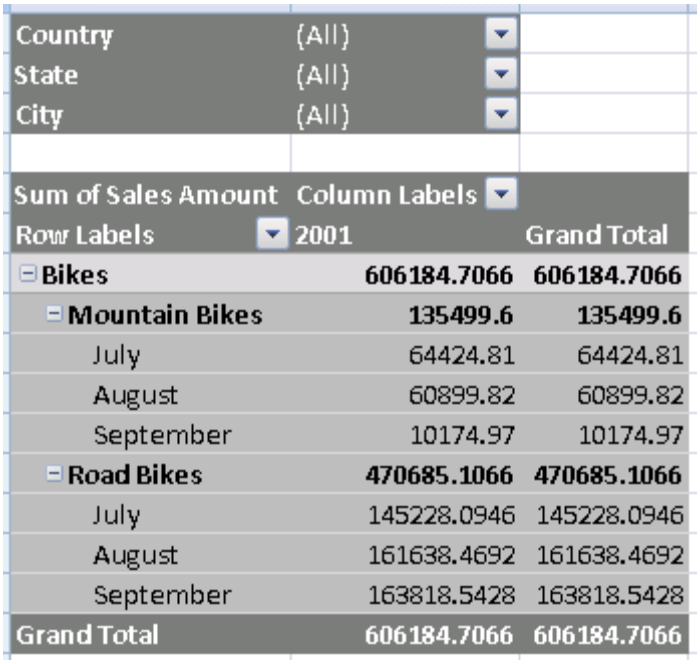
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark6	
PivotStyleDark5	

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

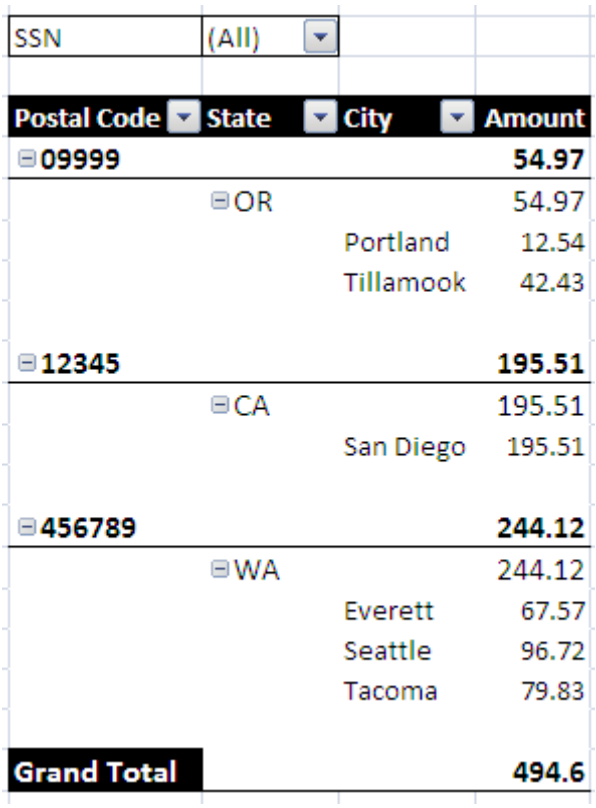
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark4	
PivotStyleDark3	

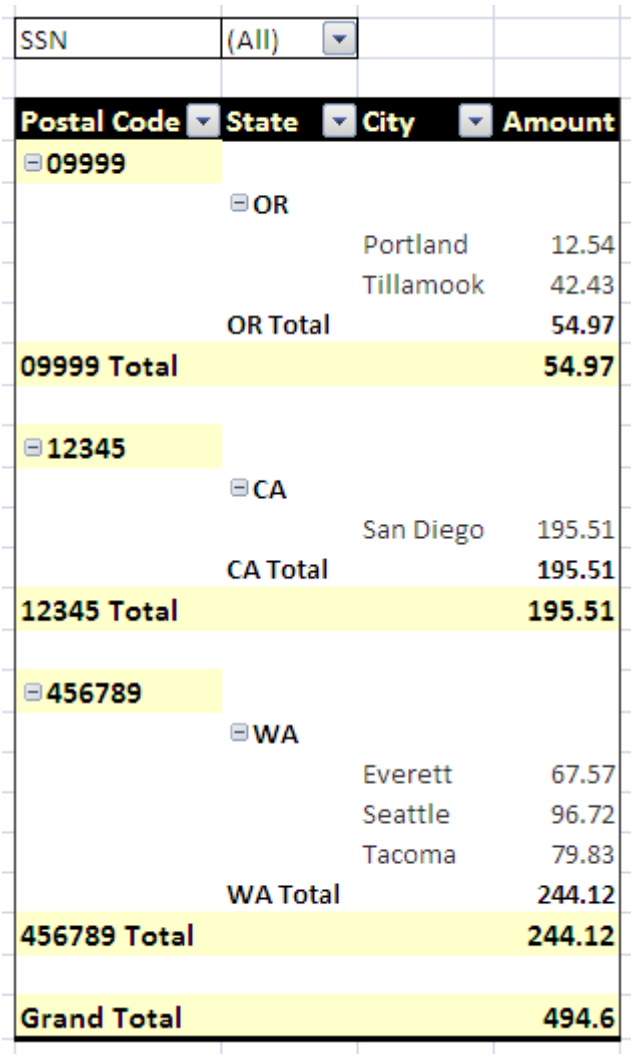
Country	(All)	
State	(All)	
City	(All)	
Sum of Sales Amount	Column Labels	
Row Labels	2001	Grand Total
Bikes	606184.7066	606184.7066
Mountain Bikes	135499.6	135499.6
July	64424.81	64424.81
August	60899.82	60899.82
September	10174.97	10174.97
Road Bikes	470685.1066	470685.1066
July	145228.0946	145228.0946
August	161638.4692	161638.4692
September	163818.5428	163818.5428
Grand Total	606184.7066	606184.7066

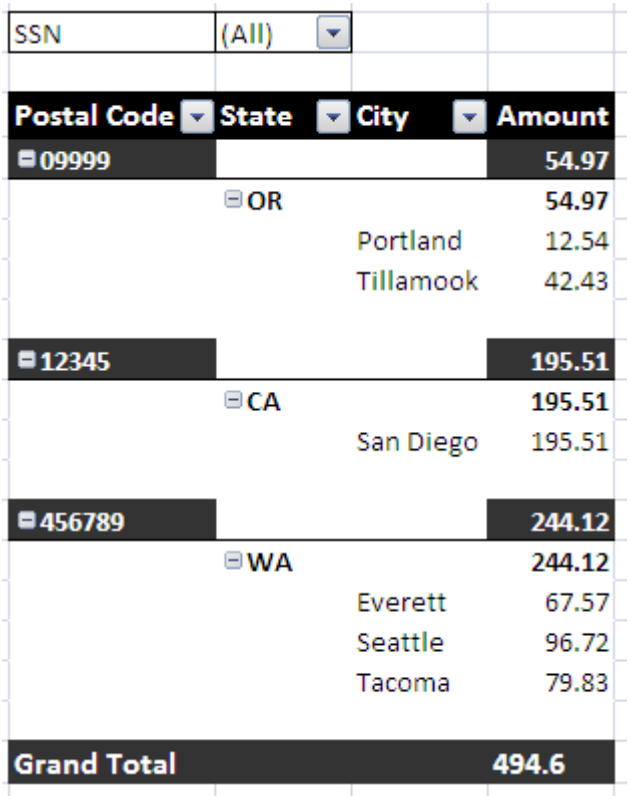
~~PivotTable~~PivotTable™ Style	[*Example*: (informative)
PivotStyleDark2	
PivotStyleDark1	

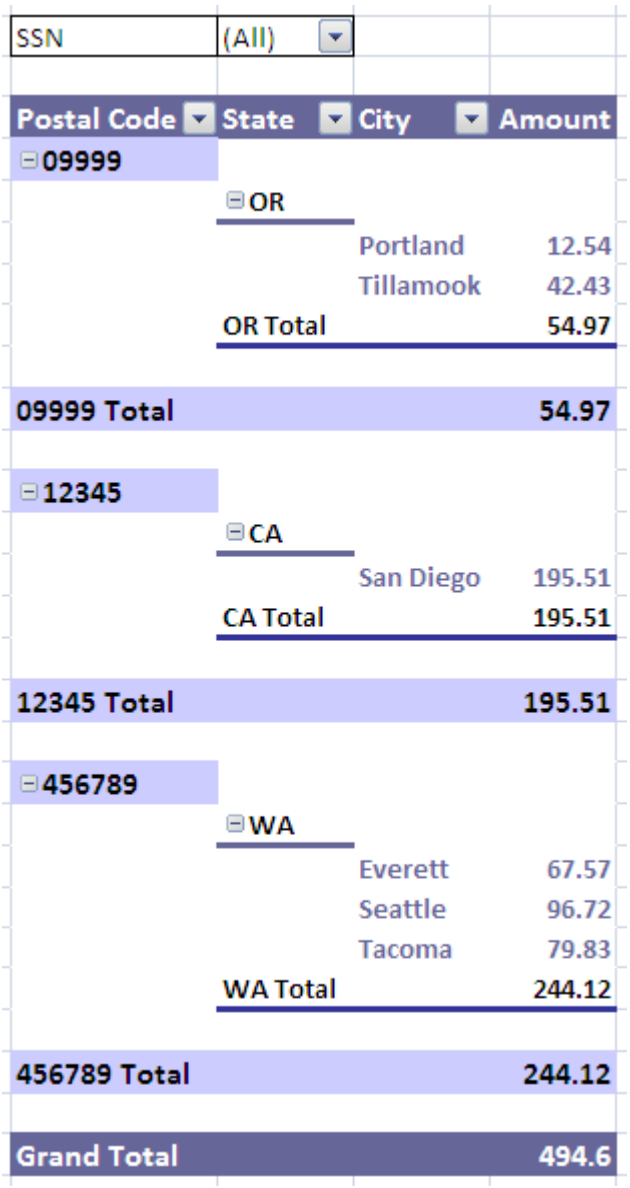
Changes to section G.3 Built-in ~~PivotTable~~PivotTable™ AutoFormats

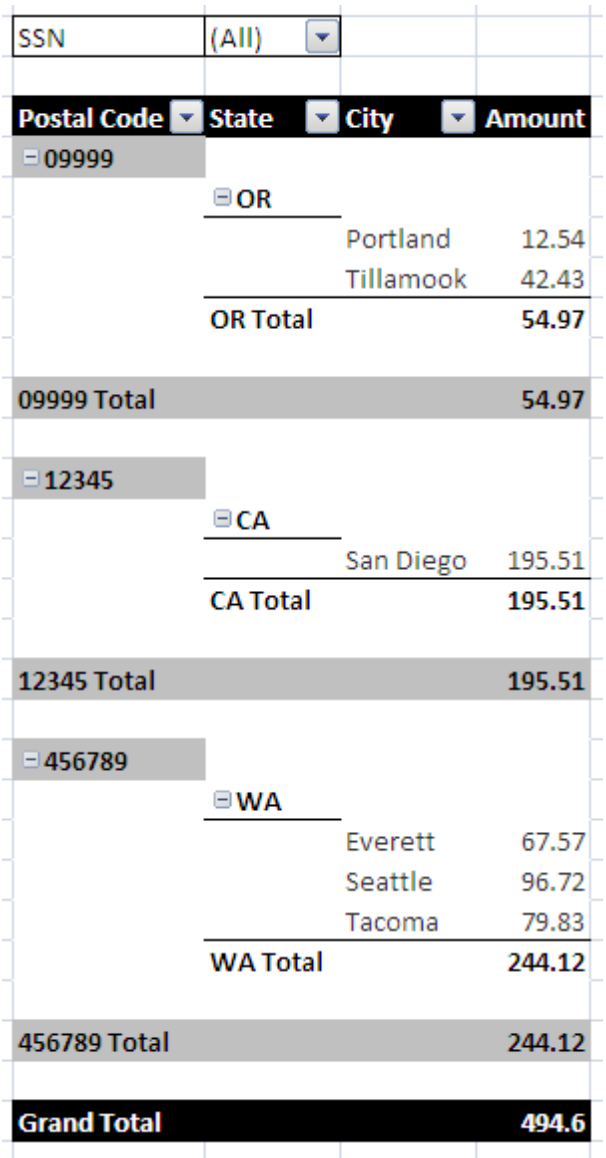
Following is a table of the built-in ~~PivotTable~~PivotTable™ AutoFormats and informative examples of formatting.

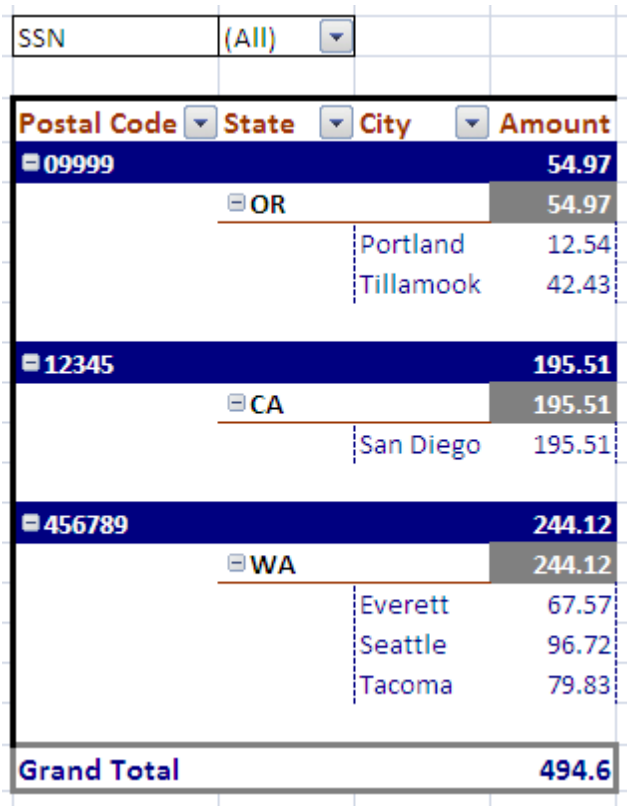
autoFormatId	Description
4096	

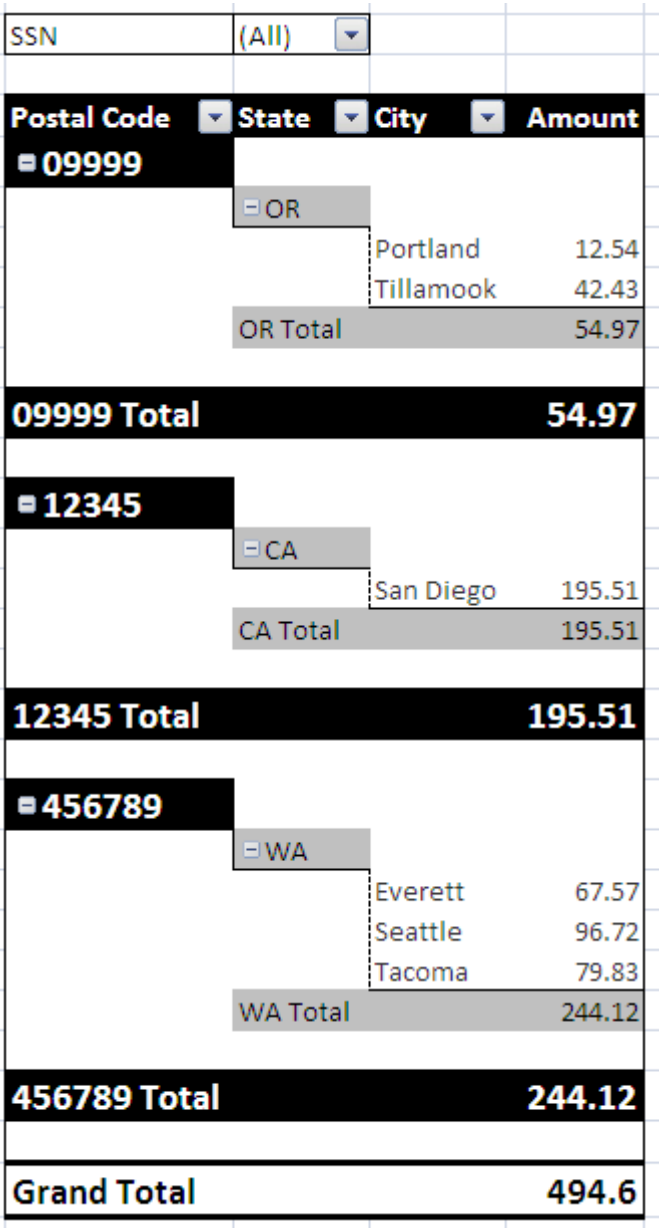
autoFormatId	Description
4097	

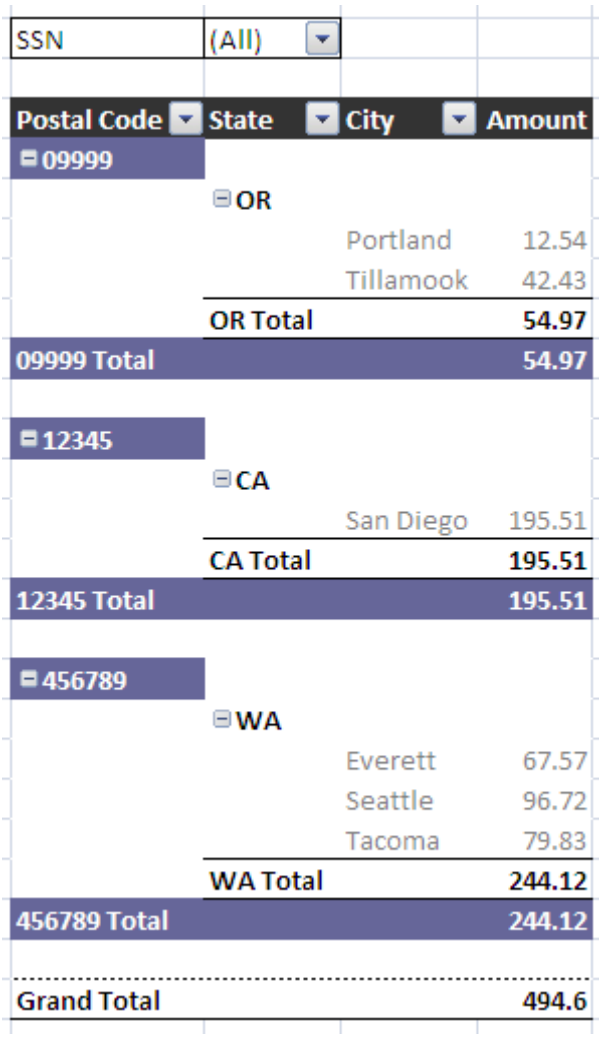
autoFormatId	Description
4098	

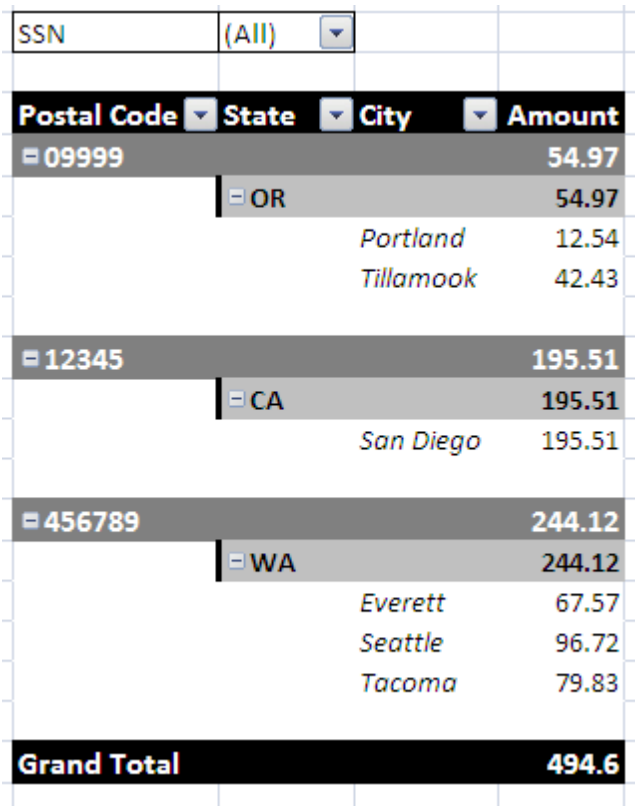
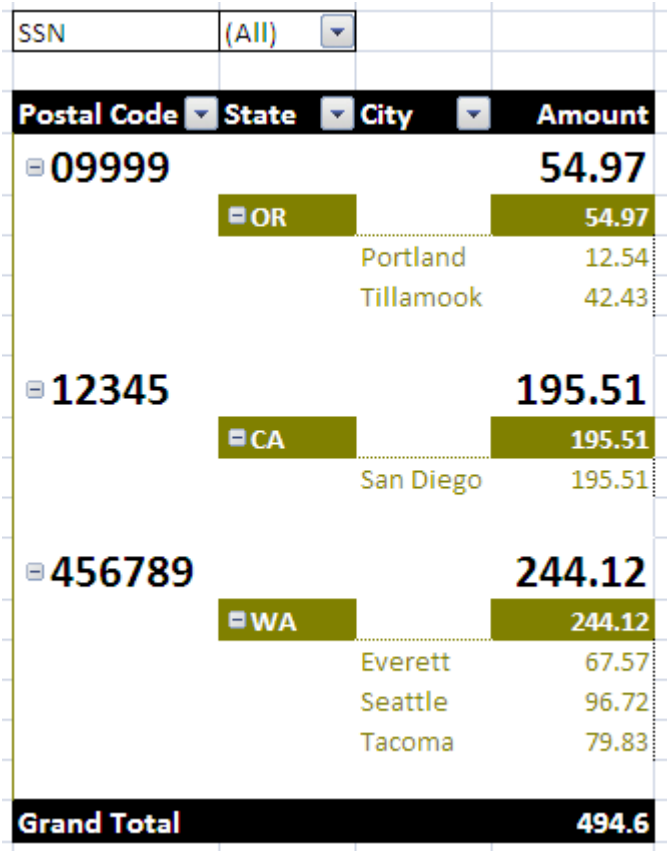
autoFormatId	Description
4099	

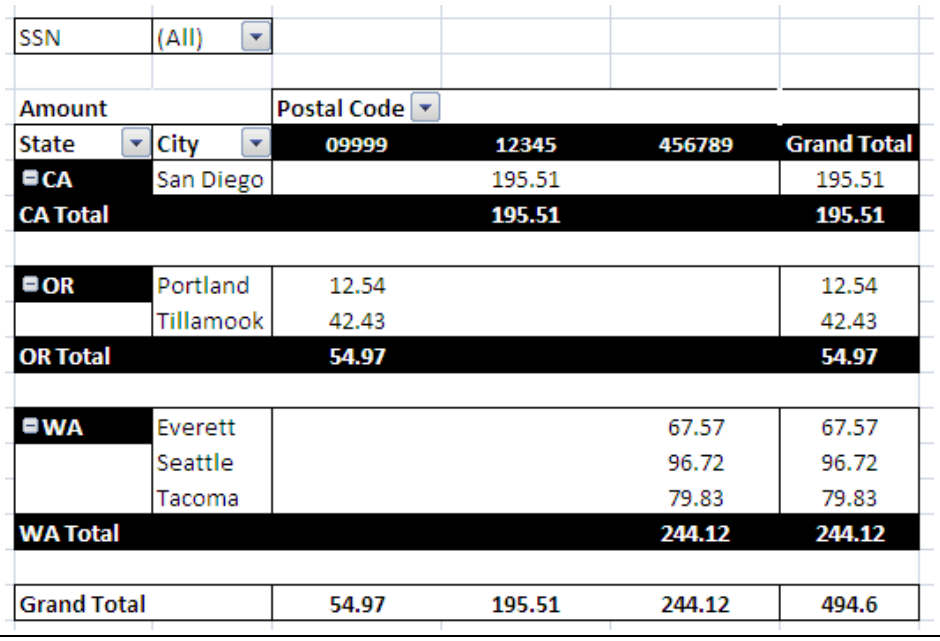
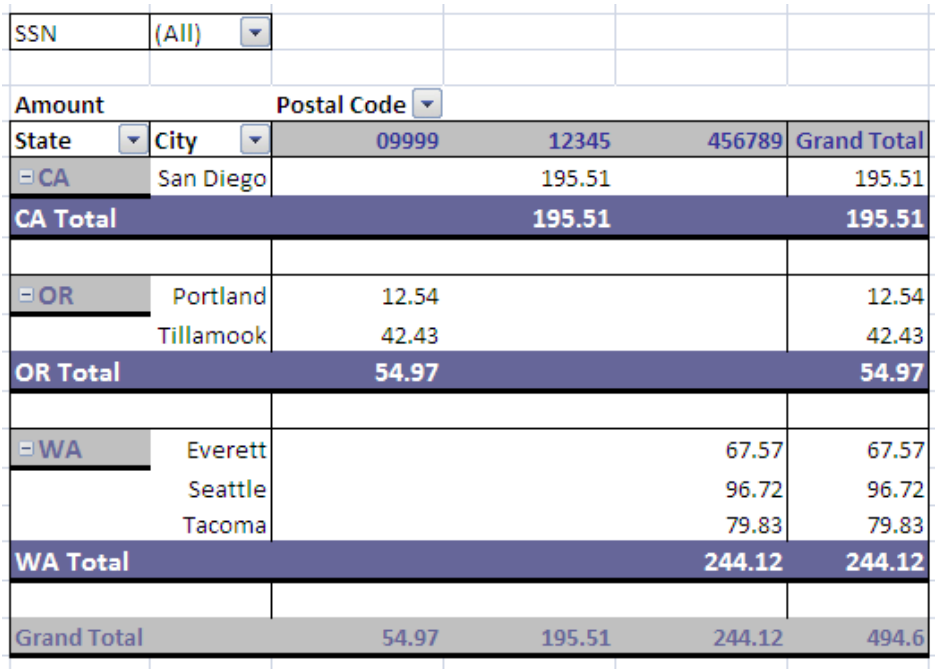
autoFormatId	Description
4100	

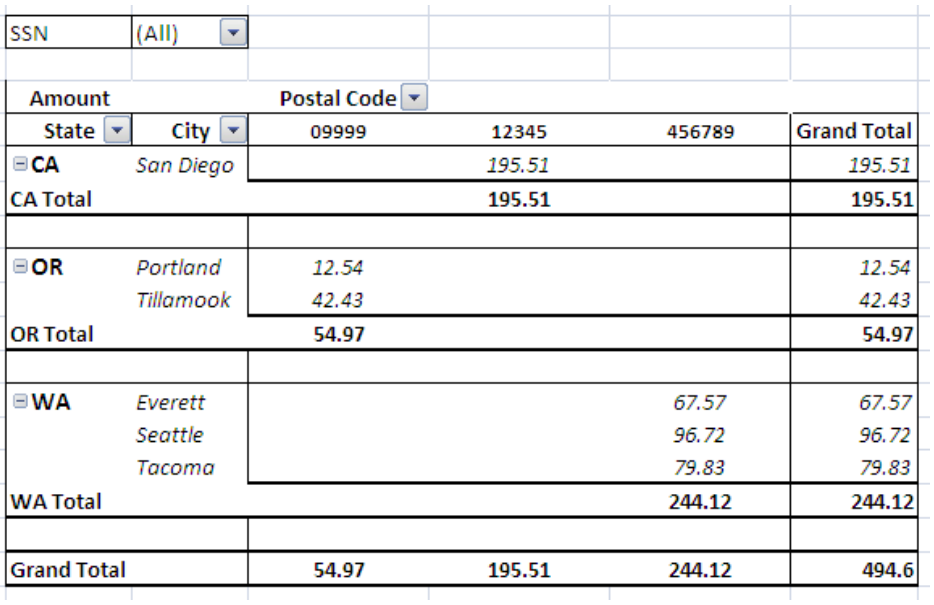
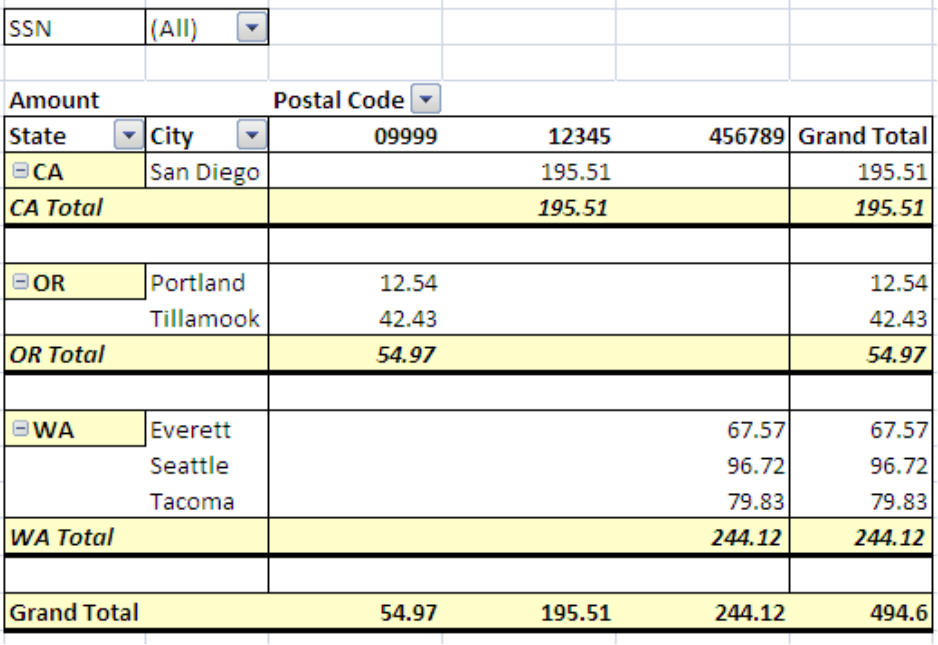
autoFormatId	Description
4101	

autoFormatId	Description
4102	

autoFormatId	Description
4103	

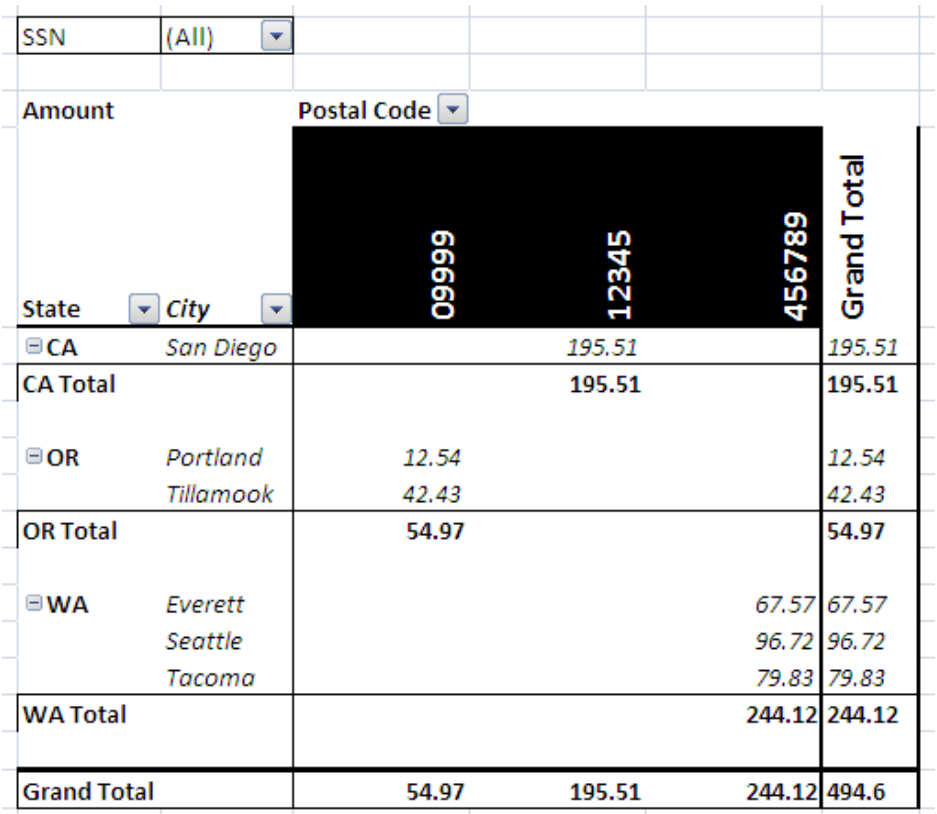
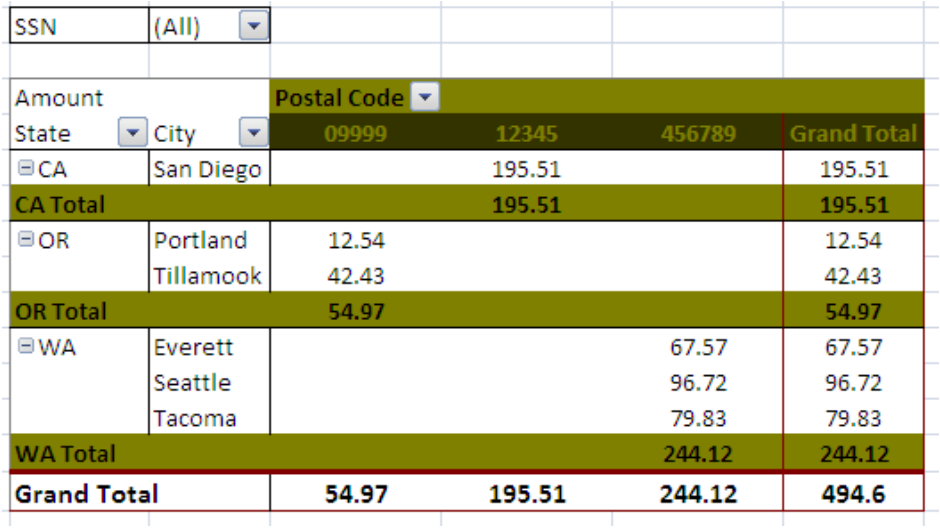
autoFormatId	Description
4104	
4105	

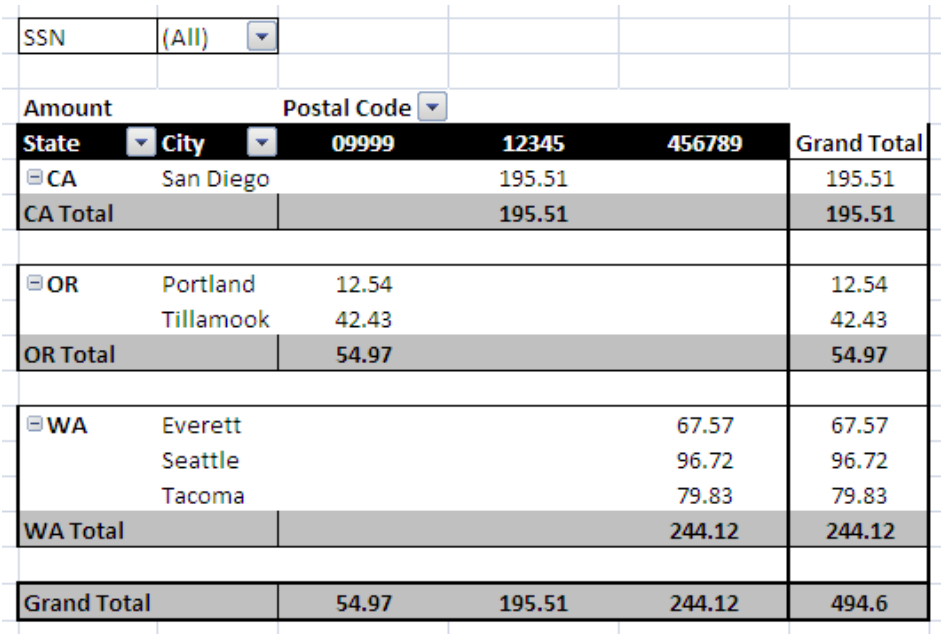
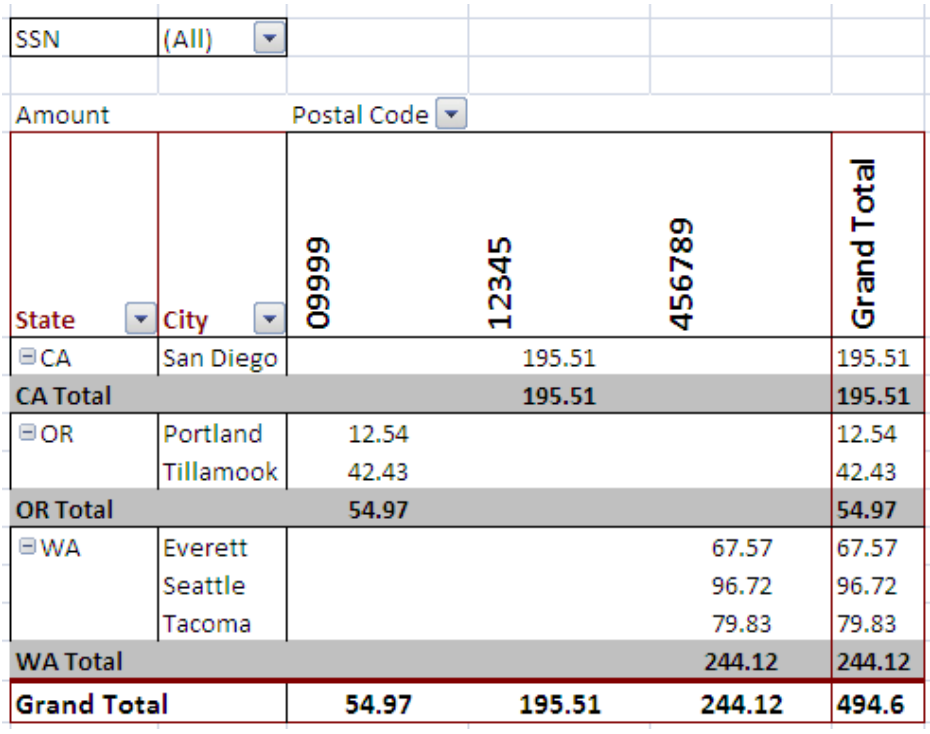
autoFormatId	Description
4106	
4107	

autoFormatId	Description
4108	
4109	

SSN	(All)				
Amount		Postal Code			
State	City	09999	12345	456789	Grand Total
CA	San Diego		195.51		195.51
CA Total			195.51		195.51
OR	Portland	12.54			12.54
	Tillamook	42.43			42.43
OR Total		54.97			54.97
WA	Everett			67.57	67.57
	Seattle			96.72	96.72
	Tacoma			79.83	79.83
WA Total				244.12	244.12
Grand Total		54.97	195.51	244.12	494.6

SSN	(All)				
Amount		Postal Code			
State	City	09999	12345	456789	Grand Total
CA	San Diego		195.51		195.51
CA Total			195.51		195.51
OR	Portland	12.54			12.54
	Tillamook	42.43			42.43
OR Total		54.97			54.97
WA	Everett			67.57	67.57
	Seattle			96.72	96.72
	Tacoma			79.83	79.83
WA Total				244.12	244.12
Grand Total		54.97	195.51	244.12	494.6

autoFormatId	Description
4110	
4111	

autoFormatId	Description
4112	
4113	

SSN (All)

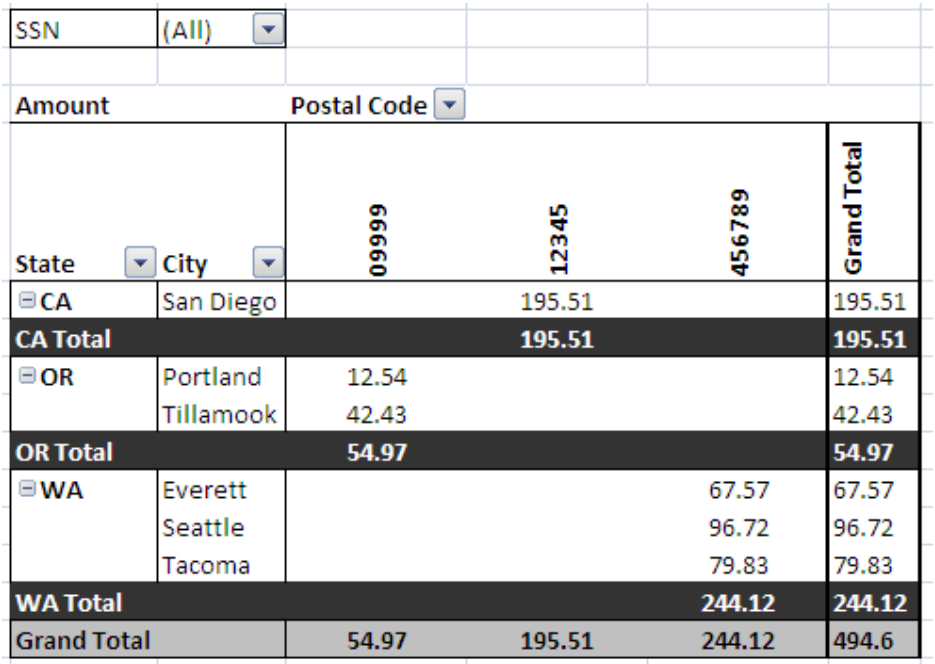
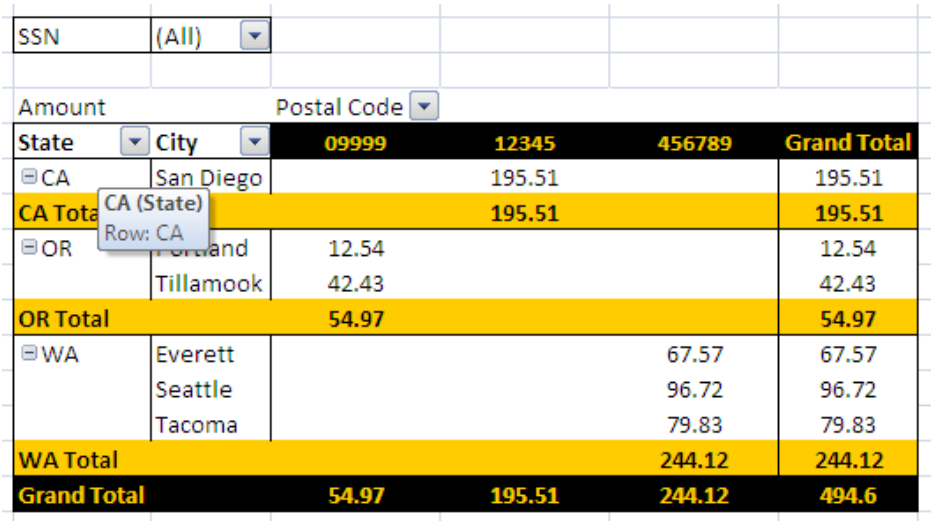
Amount — Postal Code

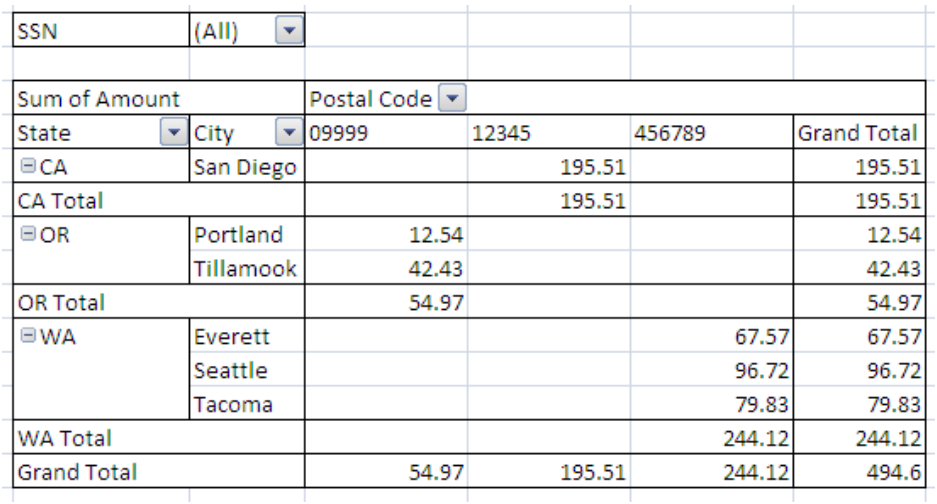
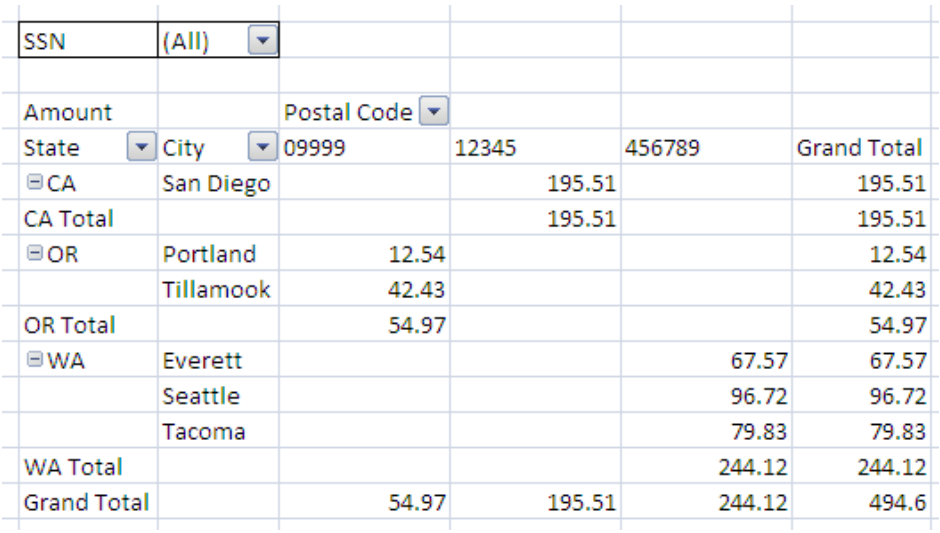
State	City	09999	12345	456789	Grand Total
CA	San Diego		195.51		195.51
CA Total			195.51		195.51
OR	Portland	12.54			12.54
	Tillamook	42.43			42.43
OR Total		54.97			54.97
WA	Everett			67.57	67.57
	Seattle			96.72	96.72
	Tacoma			79.83	79.83
WA Total				244.12	244.12
Grand Total		54.97	195.51	244.12	494.6

SSN (All)

Amount — Postal Code

State	City	09999	12345	456789	Grand Total
CA	San Diego		195.51		195.51
CA Total			195.51		195.51
OR	Portland	12.54			12.54
	Tillamook	42.43			42.43
OR Total		54.97			54.97
WA	Everett			67.57	67.57
	Seattle			96.72	96.72
	Tacoma			79.83	79.83
WA Total				244.12	244.12
Grand Total		54.97	195.51	244.12	494.6

autoFormatId	Description
4114	
4115	

autoFormatId	Description
4116	
4117	

SSN	(All)				
Sum of Amount		Postal Code			
State	City	09999	12345	456789	Grand Total
CA	San Diego		195.51		195.51
CA Total			195.51		195.51
OR	Portland	12.54			12.54
	Tillamook	42.43			42.43
OR Total		54.97			54.97
WA	Everett			67.57	67.57
	Seattle			96.72	96.72
	Tacoma			79.83	79.83
WA Total				244.12	244.12
Grand Total		54.97	195.51	244.12	494.6

SSN	(All)				
Amount		Postal Code			
State	City	09999	12345	456789	Grand Total
CA	San Diego		195.51		195.51
CA Total			195.51		195.51
OR	Portland	12.54			12.54
	Tillamook	42.43			42.43
OR Total		54.97			54.97
WA	Everett			67.57	67.57
	Seattle			96.72	96.72
	Tacoma			79.83	79.83
WA Total				244.12	244.12
Grand Total		54.97	195.51	244.12	494.6

These formats are also provided in electronic form in the accompanying SpreadsheetML document ~~PivotTable~~PivotTable™_Autoformat.xlsx.

Changes to section J.3.4 Existing Navigation Guidelines

An accessible Office Open XML implementation should follow the keystroke guidelines provided by the OS on which the application is built. Guidelines exist for most major operating systems including ~~Windows~~Windows®, Macintosh, and Linux.

Changes to section J.3.6.1 Programmatic Access

A programmatic accessibility technology is fundamentally a method of providing information to the AT through some publically defined API (or set of API's). Assistive Technologies should be able to identify and manipulate the elements of an application's user interface. The standard mechanisms of an application should ensure that AT has access to any content presented textually or through other visual representations on the screen. An accessible Office Open XML implantation should do this by:

1. Providing programmatic access through one of the many accessibility frameworks available through operating systems. An example of this would be UI Automation. UI Automation provides programmatic access to most user interface (UI) elements on the desktop, enabling assistive technology products such as screen readers to provide information about the UI to end users and to manipulate the UI by means other than standard input. UI Automation also allows automated test scripts to interact with the UI. UI Automation client applications can be written with the assurance that they will work on multiple frameworks. The UI Automation core masks any differences in the frameworks that underlie various pieces of UI. [*Example*: The Content property of a WPF button, the Caption property of a ~~Win32~~Win32® button, and the ALT property of an HTML image are all mapped to a single property, Name, in the UI Automation view. *end example*]
2. Other methods such as the use of a document object model (DOM). A DOM can be defined as the document-level information source. [*Example*: The Document Object Model (DOM) as implemented in MSXML provides a programmatic representation of XML documents, fragments, nodes, or node-sets. It also provides an application programming interface for working with XML data. As an XML representation, it conforms to the W3C DOM specification. As a set of APIs, XML DOM objects are COM objects that implement interfaces and can be used in XML applications written in programming languages such as C/C++, ~~Visual Basic~~Visual Basic®, VBScript, and ~~JScript~~JScript®. *end example*]

Changes to section L.2.7.1 Overview

There are several ways to express formatting applied to objects in a worksheet. SpreadsheetML supports the concepts of Styles, Themes, and Direct Formatting applied to cell ranges, Tables, PivotTables, Charts, and Shapes.

A *Style* is a named collection of formatting elements. A *cell style* can specify number format, cell alignment, font information, cell border specifications, colors, and background / foreground fills. *Table styles* specify formatting elements for the regions of a table (e.g. make the header row & totals bold face, and apply light gray fill to alternating rows in the data portion of the table to achieve striped or banded rows). ~~*PivotTable*~~*PivotTable™ styles* specify formatting elements for the regions of a ~~PivotTable~~PivotTable™ (e.g. 1st & 2nd level subtotals, row axis, column axis, and page fields).

A *Style* can specify color, fonts, and shape effects directly, or these elements can be referenced indirectly by referring to a *Theme* definition. Using *styles* allows for quicker application of formatting and more consistently stylized documents.

Themes define a set of colors, font information, and effects on shapes (including Charts). If a style or formatting element defines its color, font, or effect by referencing a theme, then picking a new theme switches all the colors, fonts, and effects for that formatting element.

Applying *Direct Formatting* means that particular elements of formatting (e.g. a bold font face or a number format) have been applied, but the elements of formatting have been chosen individually

instead of collectively by choosing a named *Style*. Note that when applying direct formatting, themes can still be referenced, causing those elements to change as the theme is changed.

Changes to section L.2.7.3.8 Differential Formatting Records

"Differential formatting" enables subsets of formatting to be specified, without overriding other elements of formatting. For example, if it is desired to express "add bold face to whatever formatting is already there", then a <dxf> definition can be used. <dxf> definitions are used to express additional (or "differential") formatting that is applied via Table styles or ~~PivotTable~~PivotTable™ styles. <dxf> definitions are referenced by index (dxfId) from a <tableStyleElement>. The formatting elements used in a <dxf> definition are subsets of formatting collections described above.

A dxf record is referenced by zero-based index, meaning the numerical order in which the dxf appears under dxfs.

```
<dxfs count="1">
    <dxf>
          <font>
                <b/>
                <color theme="0"/>
          </font>
          <fill>
                <patternFill patternType="solid">
                      <fgColor theme="5"/>
                      <bgColor theme="5"/>
                </patternFill>
          </fill>
    </dxf>
</dxfs>
```

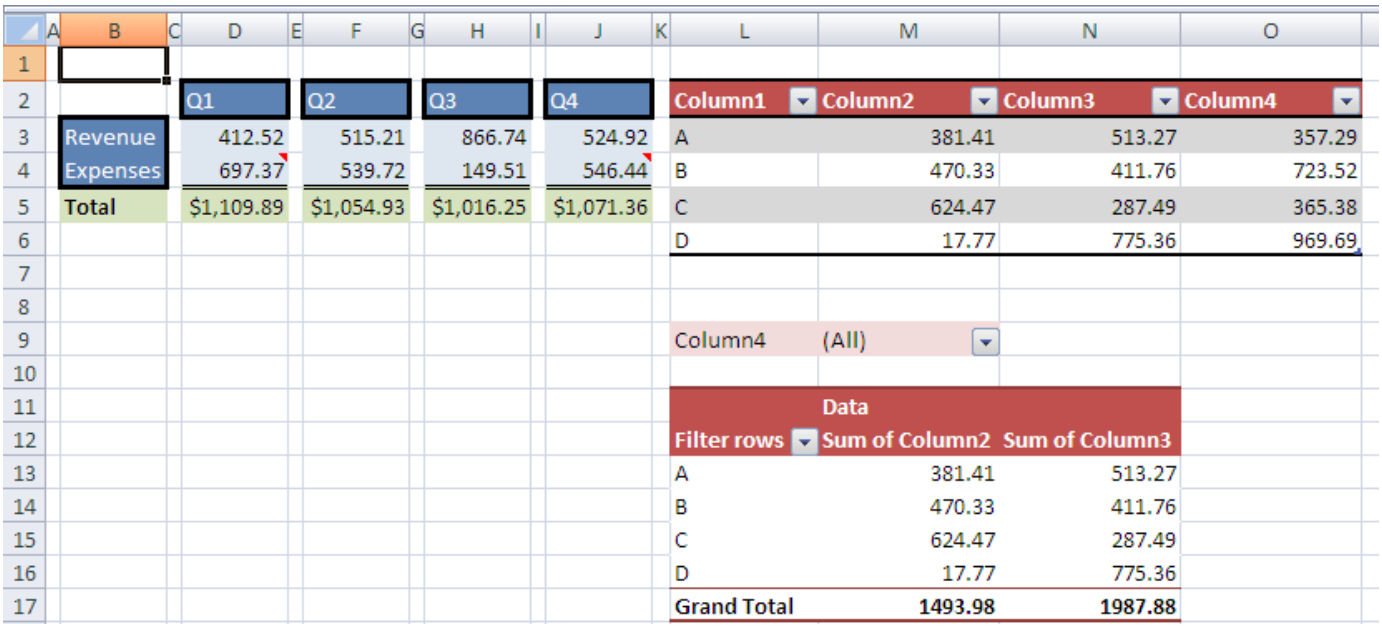
Changes to section L.2.7.3.9 Custom Table Style Definitions

Built-in Table and ~~PivotTable~~PivotTable™ styles are not saved out, only custom-defined styles are saved out. In this example, a custom table style defines formatting for an element of a table, the "whole table" region.

```
<tableStyles count="1" defaultTableStyle="TableStyleMedium9"
defaultPivotStyle="PivotStyleLight16">
    <tableStyle name="TableStyleMedium10 - Custom" pivot="0" count="1">
          <tableStyleElement type="wholeTable" dxfId="6"/>
    </tableStyle>
</tableStyles>
```

Changes to section L.2.7.4.1 Illustration

For this example, consider this graphic representation of a worksheet:



	Q1	Q2	Q3	Q4
Revenue	412.52	515.21	866.74	524.92
Expenses	697.37	539.72	149.51	546.44
Total	$1,109.89	$1,054.93	$1,016.25	$1,071.36

Column1	Column2	Column3	Column4
A	381.41	513.27	357.29
B	470.33	411.76	723.52
C	624.47	287.49	365.38
D	17.77	775.36	969.69

Column4 (All)

	Data	
Filter rows	Sum of Column2	Sum of Column3
A	381.41	513.27
B	470.33	411.76
C	624.47	287.49
D	17.77	775.36
Grand Total	1493.98	1987.88

Looking at the top left region of the illustration, cells D2, F2, H2, J2, and B3:B4 have the cell style "Accent1" applied to them. "Accent1" is a theme-driven style, and results in a blue cell fill and white / ~~Calibri~~Calibri® font formatting. Additionally these cells have direct border formatting applied which isn't specified as part of the "Accent1" cell style.

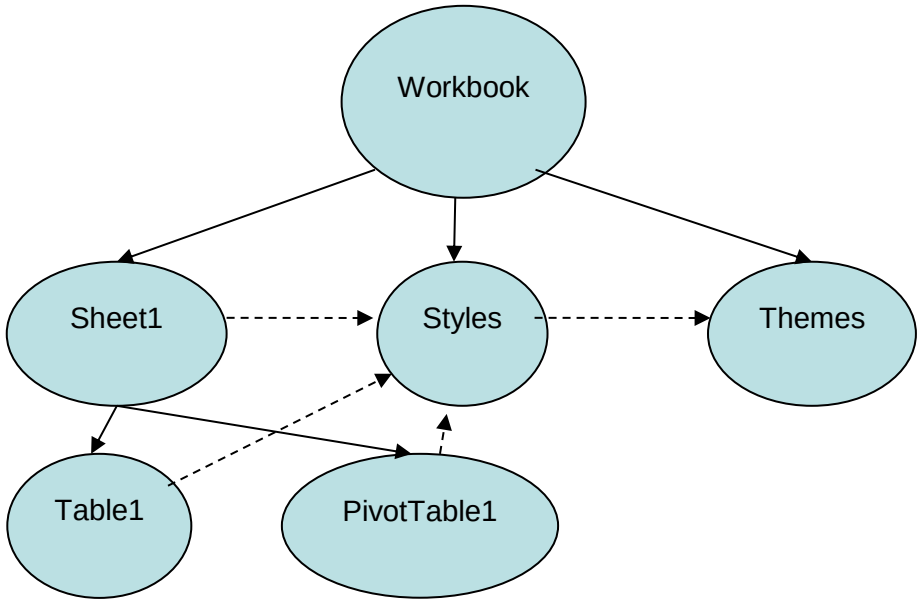
Cells D3:D4, F3:F4, H3:H4, and J3:J4 have a light blue cell fill applied. The light blue color is part of a themed color scheme, and updates when a new theme is selected.

Cells D5, F5, H5, and J5 have a currency number format applied as well as a green cell fill. While the cell fill is a themed color, the number format is fixed and does not vary or change if a new theme is selected.

The table in L2:O6 has a table style applied, called "TableStyleMedium10", which specifies formatting for the header row, row striping, and total row (even though the total row isn't shown in this example).

The ~~PivotTable~~PivotTable™ in L9:N17 has a ~~PivotTable~~PivotTable™ style applied, called "PivotStyleMedium10", which specifies formatting for the regions of a ~~PivotTable~~PivotTable™, including the page field area in L9:M9, the header row area in L11:N12, the totals row in L17:N17, and the body of data in L13:N16.

Changes to section L.2.7.4.2 File Architecture



All of the cells illustrated are defined in the "Sheet1" part in this example. The table is defined in the "Table1" part and the ~~PivotTable~~PivotTable™ is defined in the part named "PivotTable1". Each of the formatted objects refers to a set of formatting definitions which are expressed in the "Styles" part. If the formatting element is part of a themed set, the element references a theme element defined in the "Themes" part. The solid arrows represent relationships among the parts, the dotted arrows represent references by Id or index to various elements in the target part.

Changes to section L.2.9.1 Feature Overview

PivotTables display aggregated views of data easily and in an understandable layout. Hundreds or thousands of pieces of underlying information can be aggregated on row & column axes, revealing the meanings behind the data. ~~PivotTable~~PivotTable™ reports are used to organize and summarize your data in different ways. Creating a ~~PivotTable~~PivotTable™ report is about moving pieces of information around to see how they fit together. In a few gestures the pivot rows and columns can be moved into different arrangements and layouts.

A ~~PivotTable~~PivotTable™ object has a row axis area, a column axis area, a values area, and a report filter area. Additionally, PivotTables have a corresponding field list pane displaying all the fields of data which can be placed on one of the ~~PivotTable~~PivotTable™ areas.

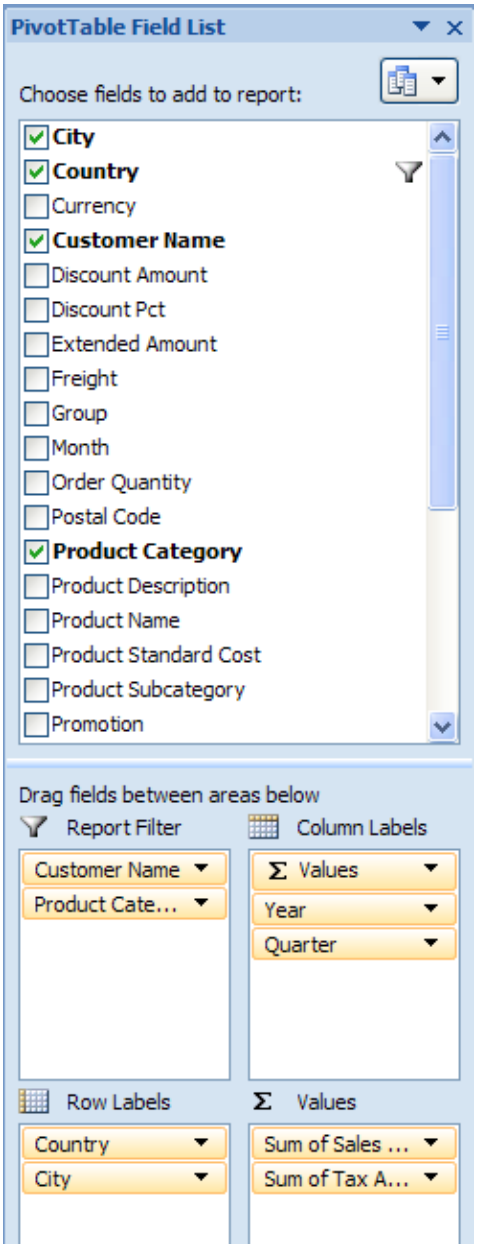
Consider this source data:

	A	C	F	H	I	O	P	Q	Z	AA	AB
1	Customer Name	Country	City	Product Category	Product Subcategory	Year	Quarter	Month	Sales Amount	Tax Amount	Freight
2	Michele Raman	Australia	Bendigo	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
3	Misty Raji	Australia	Bendigo	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
4	Tabitha E Arthur	Australia	Bendigo	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
5	Clarence D Rai	Australia	Bendigo	Bikes	Mountain Bikes	2001	3	July	3399.99	271.9992	84.9998
6	Jimmy L Moreno	Australia	Bendigo	Bikes	Mountain Bikes	2001	3	July	3399.99	271.9992	84.9998
7	Rob Verhoff	Australia	Bendigo	Bikes	Mountain Bikes	2001	3	July	3374.99	269.9992	84.3748
8	Levi Sai	Australia	Bendigo	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
9	Logan Gonzales	Australia	Brisbane	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
10	Dalton J Lee	Australia	Brisbane	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
11	Jessie J Ortega	Australia	Brisbane	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
12	Paul J. Shakespear	Australia	Caloundra	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
13	Joan R Martin	Australia	Caloundra	Bikes	Road Bikes	2001	3	September	699.0982	55.9279	17.4775
14	Casey Pal	Australia	Caloundra	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
15	Ethan G Coleman	Australia	Caloundra	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
16	Kendra Rubio	Australia	Caloundra	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
17	Bethany G Yuan	Australia	Cloverdal	Bikes	Mountain Bikes	2001	3	August	3399.99	271.9992	84.9998
18	Jasmine Wilson	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
19	Micah Wu	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
20	Warren L Zhang	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	July	699.0982	55.9279	17.4775
21	Ariana Stewart	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
22	Suzanne K Lu	Australia	Coffs Hart	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
23	Randall M Rubio	Australia	Cranbourr	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
24	Deborah K Kumar	Australia	Cranbourr	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
25	Krystal Holt	Australia	Cranbourr	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568
26	Patricia T Raman	Australia	Cranbourr	Bikes	Road Bikes	2001	3	August	3578.27	286.2616	89.4568
27	Wendy Dominguez	Australia	Cranbourr	Bikes	Mountain Bikes	2001	3	August	3374.99	269.9992	84.3748
28	Willie She	Australia	Darlinghu	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
29	Alan Zhu	Australia	Darlinghu	Bikes	Road Bikes	2001	3	September	3578.27	286.2616	89.4568
30	Dawn R Tang	Australia	Darlinghu	Bikes	Road Bikes	2001	3	July	3578.27	286.2616	89.4568

This data can be consolidated and summarized in a ~~PivotTable~~PivotTable™. One way to organize the information would look like this:

	A	B	C	D	E	F	G	H
1								
2		Customer Name	(All)					
3		Product Category	(All)					
4								
5			Column Labels					
6			Sum of Sales Amount			Sum of Tax Amount		
7			2001		2001 Total	2001		2001 Total
8		Row Labels	3	4		3	4	
9		Australia	606184.7066	702862.4912	1309047.198	48494.7771	56229	104723.7771
10		Goulburn	40580.8864	25047.89	65628.7764	3246.471	2003.8312	5250.3022
11		Warrnambool	28091.32	27863.04	55954.36	2247.3056	2229.0432	4476.3488
12		Port Macquarie	25746.9882	24463.05	50210.0382	2059.7591	1957.044	4016.8031
13		Wollongong	24691.33	25390.4282	50081.7582	1975.3064	2031.2343	4006.5407
14		Bendigo	24488.05	17484.79	41972.84	1959.044	1398.7832	3357.8272
15		Geelong	21113.06	21088.06	42201.12	1689.0448	1687.0448	3376.0896
16		Hobart	21088.06	6953.26	28041.32	1687.0448	556.2608	2243.3056
17		Lavender Bay	21063.06	21965.4382	43028.4982	1685.0448	1757.2351	3442.2799
18		Matraville	20909.78	6799.98	27709.76	1672.7824	543.9984	2216.7808

Here is the corresponding ~~PivotTable~~PivotTable™ field list:



Changes to section L.2.9.2 File Architecture

The workbook points to (and owns the longevity of) the pivotCacheDefinition part, which in turn points to and owns the pivotCacheRecords part. The workbook also points to and owns the sheet part, which in turn points to and owns a pivotTable part definition, when a ~~PivotTable~~PivotTable™ is on the sheet (there can be multiple PivotTables on a sheet). The pivotTable part points to the appropriate pivotCacheDefinition which it is using. Since multiple PivotTables can use the same cache, the pivotTable part does not own the longevity of the pivotCacheDefinition.

The pivotTable part describes the particulars of the layout of the ~~PivotTable~~PivotTable™ on the sheet. It indicates what fields are on the row axis, the column axis, report filter, and values areas of the ~~PivotTable~~PivotTable™. It also indicates formatting information about the ~~PivotTable~~PivotTable™. If

conditional formatting has been applied to the ~~PivotTable~~PivotTable™, that is also expressed in the pivotTable part.

The pivotCacheRecords part contains the underlying data to be aggregated. It is a cache of the source data. The pivotCacheDefinition part defines each field in the pivotCacheRecords part, including field name and information about the data contained in the field. The pivotCacheDefinition part also defines pivot items that are shared among the pivotTable and pivotRecords parts.

Changes to section L.2.9.3.1 Illustration

Consider the source data pictured in the overview section. There are 28 fields of data in total (some aren't shown). A corresponding ~~PivotTable~~PivotTable™ summary of the data can look like this:

	A	B	C	D	E	F	G
1							
2		Country	(All)				
3		State	(All)				
4		City	(All)				
5							
6		Sum of Sales Amount	Column Labels				
7			2001				2001 Total
8			3			3 Total	
9		Row Labels	July	August	September		
10		Bikes	209652.9046	222538.2892	173993.5128	606184.7066	606184.7066
11		Mountain Bikes	64424.81	60899.82	10174.97	135499.6	135499.6
12		Road Bikes	145228.0946	161638.4692	163818.5428	470685.1066	470685.1066
13		Grand Total	209652.9046	222538.2892	173993.5128	606184.7066	606184.7066

Regarding the layout of the ~~PivotTable~~PivotTable™, notice that "Country", "State", and "City" are in the report filter area of the ~~PivotTable~~PivotTable™. "Product Category" and "Product Subcategory" are on the row axis ("Bikes" belongs to the "Product Category" field and both "Mountain Bikes" and "Road Bikes" belong to the "Product Subcategory" field). On the column axis are "Year" ("2001"), "Quarter" ("3"), and "Month" ("July", "August", and "September") fields.

Row Grand Totals are turned on, and column Subtotals are turned on for Quarter and Year (if there was more than 1 quarter in the source data the Year Subtotal would be more interesting).

Changes to section L.2.9.3.2 XML - pivotCacheDefinition part

The pivotCacheDefinition part defines each field in the source data, including the name, the string resources of the instance data (for shared items), and information about the type of data appearing in the field. Note: some of the "Customer Name" and "City" values have been removed to improve readability and reduce length.

```
<pivotCacheDefinition xmlns:r="…" r:id="rId1" refreshedBy="AnonUser"
  refreshedDateIso="2006-05-22T10:07:16" createdVersion="3"
  refreshedVersion="3" minRefreshableVersion="3" recordCount="182">
  <cacheSource type="worksheet">
    <worksheetSource name="Table1"/>
  </cacheSource>
  <cacheFields count="28">
    <cacheField name="Customer Name" numFmtId="0">
      <sharedItems count="7">
        <s v="Michele  Raman"/>
        <s v="Misty  Raji"/>
        <s v="Tabitha E Arthur"/>
        <s v="Clarence D Rai"/>
        <s v="Jimmy L Moreno"/>
        <s v="Rob  Verhoff"/>
        <s v="Levi  Sai"/>
      </sharedItems>
    </cacheField>
    <cacheField name="Group" numFmtId="0">
      <sharedItems/>
    </cacheField>
    <cacheField name="Country" numFmtId="0">
      <sharedItems count="1">
        <s v="Australia"/>
      </sharedItems>
    </cacheField>
    <cacheField name="Region" numFmtId="0">
      <sharedItems/>
    </cacheField>
    <cacheField name="State" numFmtId="0">
      <sharedItems count="5">
        <s v="Victoria"/>
        <s v="Queensland"/>
        <s v="South Australia"/>
        <s v="New South Wales"/>
        <s v="Tasmania"/>
      </sharedItems>
    </cacheField>
```

```
<cacheField name="City" numFmtId="0">
  <sharedItems count="7">
    <s v="Bendigo"/>
    <s v="Brisbane"/>
    <s v="Caloundra"/>
    <s v="Cloverdale"/>
    <s v="Coffs Harbour"/>
    <s v="Cranbourne"/>
    <s v="Darlinghurst"/>
  </sharedItems>
</cacheField>
<cacheField name="Postal Code" numFmtId="0">
  <sharedItems/>
</cacheField>
<cacheField name="Product Category" numFmtId="0">
  <sharedItems count="1">
    <s v="Bikes"/>
  </sharedItems>
</cacheField>
<cacheField name="Product Subcategory" numFmtId="0">
  <sharedItems count="2">
    <s v="Road Bikes"/>
    <s v="Mountain Bikes"/>
  </sharedItems>
</cacheField>
<cacheField name="Product Name" numFmtId="0">
  <sharedItems/>
</cacheField>
<cacheField name="Product Description" numFmtId="0">
  <sharedItems/>
</cacheField>
<cacheField name="Promotion Category" numFmtId="0">
  <sharedItems/>
</cacheField>
<cacheField name="Promotion" numFmtId="0">
  <sharedItems/>
</cacheField>
<cacheField name="Promotion Type" numFmtId="0">
  <sharedItems/>
</cacheField>
```

```
<cacheField name="Year" numFmtId="0">
  <sharedItems count="1">
    <s v="2001"/>
  </sharedItems>
</cacheField>
<cacheField name="Quarter" numFmtId="0">
  <sharedItems containsSemiMixedTypes="0" containsString="0"
    containsNumber="1" containsInteger="1" minValue="3" maxValue="3"
    count="1">
    <n v="3"/>
  </sharedItems>
</cacheField>
<cacheField name="Month" numFmtId="0">
  <sharedItems count="3">
    <s v="September"/>
    <s v="July"/>
    <s v="August"/>
  </sharedItems>
</cacheField>
<cacheField name="Currency" numFmtId="0">
  <sharedItems/>
</cacheField>
<cacheField name="Order Quantity" numFmtId="0">
  <sharedItems containsSemiMixedTypes="0" containsString="0"
    containsNumber="1" containsInteger="1" minValue="1"
    maxValue="1"/>
</cacheField>
<cacheField name="Unit Price" numFmtId="0">
  <sharedItems containsSemiMixedTypes="0" containsString="0"
    containsNumber="1" minValue="699.09820000000002"
    maxValue="3578.27"/>
</cacheField>
<cacheField name="Extended Amount" numFmtId="0">
  <sharedItems containsSemiMixedTypes="0" containsString="0"
    containsNumber="1" minValue="699.09820000000002"
    maxValue="3578.27"/>
</cacheField>
<cacheField name="Discount Pct" numFmtId="0">
  <sharedItems containsSemiMixedTypes="0" containsString="0"
    containsNumber="1" containsInteger="1" minValue="0"
    maxValue="0"/>
</cacheField>
```

```
      <cacheField name="Discount Amount" numFmtId="0">
        <sharedItems containsSemiMixedTypes="0" containsString="0"
          containsNumber="1" containsInteger="1" minValue="0"
          maxValue="0"/>
      </cacheField>
      <cacheField name="Product Standard Cost" numFmtId="0">
        <sharedItems containsSemiMixedTypes="0" containsString="0"
          containsNumber="1" minValue="413.1463"
          maxValue="2171.2941999999998"/>
      </cacheField>
      <cacheField name="Total Product Cost" numFmtId="0">
        <sharedItems containsSemiMixedTypes="0" containsString="0"
          containsNumber="1" minValue="413.1463"
          maxValue="2171.2941999999998"/>
      </cacheField>
      <cacheField name="Sales Amount" numFmtId="0">
        <sharedItems containsSemiMixedTypes="0" containsString="0"
          containsNumber="1" minValue="699.09820000000002"
          maxValue="3578.27"/>
      </cacheField>
      <cacheField name="Tax Amount" numFmtId="0">
        <sharedItems containsSemiMixedTypes="0" containsString="0"
          containsNumber="1"
          minValue="55.927900000000001" maxValue="286.26159999999999"/>
      </cacheField>
      <cacheField name="Freight" numFmtId="0">
        <sharedItems containsSemiMixedTypes="0" containsString="0"
          containsNumber="1" minValue="17.477499999999999"
          maxValue="89.456800000000001"/>
      </cacheField>
    </cacheFields>
  </pivotCacheDefinition>
```

In the context of pivotCacheDefinition:

- r:id indicates the relationship id pointing to the corresponding pivotCacheRecords part.
- refreshedBy indicates the username of whomever last refreshed the PivotCache.
- refreshedDateIso indicates when the PivotCache was last refreshed.
- createdVersion indicates the version of the producer which created the PivotCache.
- refreshedVersion indicates the version of the producer which last refreshed the PivotCache.
- minRefreshableVersion indicates the minimum version of the producer required to be able to refresh this PivotCache.

In the context of cacheSource:

- type indicates that data in a worksheet is the source for this PivotCache.
- worksheetSource identifies the particular location of the source data. In this case, it is a named range whose name is "Table1".

In the context of cacheFields, which is a collection of all the field definitions in the source data:

- cacheField indicates the name of the field and provides number format information.

In the context of cacheField:

- sharedItems indicates various flags about the data in this field. Child elements express the values of the shared items.

In the context of sharedItems:

- containsSemiMixedTypes "1" indicates that this field contains text values possibly mixed with other types of values, this can contain blanks. In this example the value is "0".
- containsString value of "1" indicates that this field contains a text value. In this example, the value is "0".
- containsNumber value of "1" indicates that this field contains numeric values.
- containsInteger indicates that this field contains integer values.
- minValue indicates that this field's minimum value is "3".
- maxValue indicates that this field's maximum value is "3".
- s indicates string content for this item value (expressed in v).
- n indicates the numeric content for this item value (expressed in v).

If there are no shared items expressed for a particular field, then the values are expressed directly in the pivotCacheRecords part.

Items in the PivotCacheDefinition can be shared, in order to reduce the redundancy of those values, since they're referenced in multiple places across all the ~~PivotTable~~PivotTable™ parts. For example, a value might be part of a filter, it might appear on a row or column axis, and appears in the pivotCacheRecords definition as well. However, because of the performance cost of creating the optimized shared items, items are only shared if they are actually in use in the ~~PivotTable~~PivotTable™. Therefore, depending on user actions on the ~~PivotTable~~PivotTable™ layout, the pivotCacheDefinition and underlying PivotCacheRecords part can be updated.

Changes to section L.2.9.3.3 XML - pivotCacheRecords part

This part expresses the underlying source data that the ~~PivotTable~~PivotTable™ is aggregating. (Note that the data has been trimmed down to two records to increase readability.)

```
<pivotCacheRecords … xmlns:r="…" count="2">
  <r>
    <x v="0"/>
    <s v="Pacific"/>
```



```
    <x v="0"/>
    <s v="Australia"/>
    <x v="0"/>
    <x v="0"/>
    <s v="3550"/>
    <x v="0"/>
    <x v="0"/>
    <s v="Road-150 Red, 62"/>
    <s v="This bike is ridden by race winners. Developed with the Adventure
Works Cycles professional race team, it has a extremely light heat-treated
aluminum frame, and steering that allows precision control."/>
    <s v="No Discount"/>
    <s v="No Discount"/>
    <s v="No Discount"/>
    <x v="0"/>
    <x v="0"/>
    <x v="0"/>
    <s v="Australian Dollar"/>
    <n v="1"/>
    <n v="3578.27"/>
    <n v="3578.27"/>
    <n v="0"/>
    <n v="0"/>
    <n v="2171.2941999999998"/>
    <n v="2171.2941999999998"/>
    <n v="3578.27"/>
    <n v="286.26159999999999"/>
    <n v="89.456800000000001"/>
  </r>
  <r>
    <x v="1"/>
    <s v="Pacific"/>
    <x v="0"/>
    <s v="Australia"/>
    <x v="0"/>
    <x v="0"/>
    <s v="3550"/>
    <x v="0"/>
    <x v="0"/>
    <s v="Road-150 Red, 44"/>
    <s v="This bike is ridden by race winners. Developed with the Adventure
Works Cycles professional race team, it has a extremely light heat-treated
aluminum frame, and steering that allows precision control."/>
```

```
      <s v="No Discount"/>
      <s v="No Discount"/>
      <s v="No Discount"/>
      <x v="0"/>
      <x v="0"/>
      <x v="1"/>
      <s v="Australian Dollar"/>
      <n v="1"/>
      <n v="3578.27"/>
      <n v="3578.27"/>
      <n v="0"/>
      <n v="0"/>
      <n v="2171.2941999999998"/>
      <n v="2171.2941999999998"/>
      <n v="3578.27"/>
      <n v="286.26159999999999"/>
      <n v="89.456800000000001"/>
    </r>
  </pivotCacheRecords>
```

In the context of pivotCacheRecords:

- r contains one record.

In the context of r:

- x is an index value referencing an item for this field, as defined in the pivotCacheDefinition part.
- s indicates that a value is being expressed inline in this record, and it is a string value.
- n indicates that a value is being expressed inline in this record, and it is a numeric value.

Changes to section L.2.9.3.4.1 Attributes on pivotTableDefinition

```
<pivotTableDefinition xmlns:sh="…" name="PivotTable2" cacheId="5"
  applyNumberFormats="0" applyBorderFormats="0" applyFontFormats="0"
  applyPatternFormats="0" applyAlignmentFormats="0"
  applyWidthHeightFormats="1"
  dataCaption="Values" updatedVersion="3" minRefreshableVersion="3"
  showCalcMbrs="0" useAutoFormatting="1" colGrandTotals="0"
  itemPrintTitles="1"
  createdVersion="3" indent="0" outline="1" outlineData="1"
  multipleFieldFilters="0"/>
```

In the context of pivotTableDefinition:

- name indicates the name of the ~~PivotTable~~PivotTable™.

- cacheId references by Id a particular pivotCache in the pivotCaches collection listed in workbook.xml.
- applyNumberFormats value of "1" means to apply legacy autoformat number format properties.
- applyBorderFormats value of "1" means to apply legacy autoformat border format properties.
- applyFontFormats value of "1" means to apply legacy autoformat Font format properties.
- applyPatternFormats value of "1" means to apply legacy autoformat pattern format properties.
- applyAlignmentFormats value of "1" means to apply legacy autoformat alignment format properties.
- applyWidthHeightFormats value of "1" means to apply legacy autoformat width and height format properties.
- dataCaption is the name of the values area header cell which can appear in the ~~PivotTable~~PivotTable™ when two or more fields are in the values area.
- updatedVersion is the Pivot version that last updated the ~~PivotTable~~PivotTable™.
- minRefreshableVersion is the minimum Pivot version required to update this ~~PivotTable~~PivotTable™'s Pivot Cache.
- showCalcMbrs indicates whether calculated members should be shown in the ~~PivotTable~~PivotTable™. Only applies to PivotTables based on OLAP sources.
- useAutoFormatting indicates whether autoformatting has been applied to the ~~PivotTable~~PivotTable™.
- colGrandTotals indicates whether column grand totals are on for this ~~PivotTable~~PivotTable™.
- rowGrandTotals defaults to "1" and therefore is not written.
- itemPrintTitles flag indicating whether PivotItem names should be repeated at the top of each printed page.
- createdVersion The Pivot version that created the cache.
- indent indentation increment for compact row axis, which means the Report Layout is set to Compact Form.
- outline flag indicating whether new fields should have their outline form flag set to "1".
- outlineData flag indicating whether the values field in the ~~PivotTable~~PivotTable™ should be displayed in outline form.
- multipleFieldFilters flag indicating whether each field of a pivot table can have multiple filters set on it.

Changes to section L.2.9.3.4.2 Location Information

Location provides details on where the ~~PivotTable~~PivotTable™ is located in the sheet.

```
<location ref="B6:G13" firstHeaderRow="1" firstDataRow="4"
  firstDataCol="1" rowPageCount="3" colPageCount="1"/>
```

In the context of location:

- ref the location of the ~~PivotTable~~PivotTable™ area, not including the report filter area.

- firstHeaderRow the first row of the ~~PivotTable~~PivotTable™ header, relative to the top left cell in ref value.
- firstDataRow the first row of the ~~PivotTable~~PivotTable™ values area, relative to the top left cell in ref value.
- firstDataCol the first column of the ~~PivotTable~~PivotTable™ values area, relative to the top left cell in ref value.
- rowPageCount indicates how many rows the report filter area occupies, as fields are added to it, before taking up another column (there can be multiple rows and columns of fields in the report filter area). By default there is a single column of report filter fields and the fields occupy as many rows as there are fields..
- colPageCount indicates how many columns the report filter region occupies, as fields are added to it, before taking up another row (there can be multiple rows and columns of fields in the report filter region). By default, there is a single column of report filter fields and the fields occupy as many rows as there are fields.

Changes to section L.2.9.3.4.3 ~~PivotTable~~PivotTable™ Fields

This collection expresses item order and field information for each field associated with the ~~PivotTable~~PivotTable™, whether shown in the ~~PivotTable~~PivotTable™ report or not. (Note that items have been removed from the "Customer Name" and "City" fields (1st and 6th) to shorten the example.)

```
<pivotFields count="28">
  <pivotField showAll="0" includeNewItemsInFilter="1">
    <items count="8">
      <item x="66"/>
      <item x="133"/>
      <item x="74"/>
      <item x="27"/>
      <item x="118"/>
      <item x="63"/>
      <item x="141"/>
      <item t="default"/>
    </items>
  </pivotField>
  <pivotField showAll="0" includeNewItemsInFilter="1"/>
  <pivotField axis="axisPage" showAll="0" includeNewItemsInFilter="1">
    <items count="2">
      <item x="0"/>
      <item t="default"/>
    </items>
  </pivotField>
  <pivotField showAll="0" includeNewItemsInFilter="1"/>
```

```
<pivotField axis="axisPage" showAll="0" includeNewItemsInFilter="1">
  <items count="6">
    <item x="3"/>
    <item x="1"/>
    <item x="2"/>
    <item x="4"/>
    <item x="0"/>
    <item t="default"/>
  </items>
</pivotField>
<pivotField axis="axisPage" showAll="0" includeNewItemsInFilter="1">
  <items count="8">
    <item x="0"/>
    <item x="1"/>
    <item x="2"/>
    <item x="3"/>
    <item x="4"/>
    <item x="5"/>
    <item x="6"/>
    <item t="default"/>
  </items>
</pivotField>
<pivotField showAll="0" includeNewItemsInFilter="1"/>
<pivotField axis="axisRow" showAll="0" includeNewItemsInFilter="1">
  <items count="2">
    <item x="0"/>
    <item t="default"/>
  </items>
</pivotField>
<pivotField axis="axisRow" showAll="0" includeNewItemsInFilter="1">
  <items count="3">
    <item x="1"/>
    <item x="0"/>
    <item t="default"/>
  </items>
</pivotField>
<pivotField showAll="0" includeNewItemsInFilter="1"/>
<pivotField showAll="0" includeNewItemsInFilter="1"/>
<pivotField showAll="0" includeNewItemsInFilter="1"/>
<pivotField showAll="0" includeNewItemsInFilter="1"/>
<pivotField showAll="0" includeNewItemsInFilter="1"/>
```

```
    <pivotField axis="axisCol" showAll="0" includeNewItemsInFilter="1">
      <items count="2">
        <item x="0"/>
        <item t="default"/>
      </items>
    </pivotField>
    <pivotField axis="axisCol" showAll="0" includeNewItemsInFilter="1">
      <items count="2">
        <item x="0"/>
        <item t="default"/>
      </items>
    </pivotField>
    <pivotField axis="axisCol" showAll="0" includeNewItemsInFilter="1">
      <items count="4">
        <item x="1"/>
        <item x="2"/>
        <item x="0"/>
        <item t="default"/>
      </items>
    </pivotField>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
    <pivotField dataField="1" showAll="0" includeNewItemsInFilter="1"/>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
    <pivotField showAll="0" includeNewItemsInFilter="1"/>
  </pivotFields>
```

In the context of pivotField:

- showAll flag indicating whether to show all items for this field.
- includeNewItemsInFilter Flag indicating if new items in the data source are included in the filter automatically after refresh when there was at least one hidden item for the field.
- axis indicates on which axis this field is shown on the ~~PivotTable~~PivotTable™.
- dataField indicates that this field is in the values area of the ~~PivotTable~~PivotTable™.

In the context of items, which is a listing of items (by index) in this field. The order in which the items are listed is the order they would appear on a particular axis (row or column, for example). In this example, the first field is "Customer Name" and the first item referenced here is <item x="66"/>,which

references the value "Adam L Flores" in the pivotCacheDefinition. Therefore if one added "Customer Name" to the row axis, "Adam L Flores" would be the first row item listed.

In the context of item:

- t value of 'default' indicates the subtotal or total item.

Changes to section L.2.9.3.4.4 Row Axis Fields

This collection indicates which fields are on the row axis of the ~~PivotTable~~PivotTable™.

```
<rowFields count="2">
  <field x="7"/>
  <field x="8"/>
</rowFields>
```

In the context of field within rowFields:

- x is a zero based index into the pivotFields collection.

For this example, this collection indicates that "Product Category" and "Product Subcategory" are on the row axis of the ~~PivotTable~~PivotTable™, in that order.

Changes to section L.2.9.3.4.5 Row Items

This collection is a listing of all the values on the row axis of the ~~PivotTable~~PivotTable™. In the spreadsheet example, the item values are found in cells B10:B13. For example, "Bikes" is in B10, and corresponds to the first I element below.

```
<rowItems count="4">
  <i>
    <x/>
  </i>
  <i r="1">
    <x/>
  </i>
  <i r="1">
    <x v="1"/>
  </i>
  <i t="grand">
    <x/>
  </i>
</rowItems>
```

In the context of rowItems:

- i expresses all the values (for all fields) in one row of the row axis. There is an I element for every row in the ~~PivotTable~~PivotTable™.

In the context of i:

- r indicates how many fields/item values to "fill down" from the previous row item.

Note that the first item has no r explicitly written. Since a default of 0 is specified in the schema, for any item whose r is missing, a default value of 0 is implied.

In the context of x:

- v is a zero-based index referencing a pivotField item value. There is as many x elements as there are item values in any particular row. Note that these x elements cannot be explicitly written, but instead "inherited" from the previous row/i element, via the value of r. Note also that the pivotField items don't list values explicitly, but instead reference a shared item value in the pivotCacheDefinition part.

Note that the first instance of x has no attribute value v associated with it, so v's default value of 0 is implied.

Looking at the layout of the ~~PivotTable~~PivotTable™ in the spreadsheet for this example, "Bikes" is the first (and only) item value in the first row, in cell B10. In the XML defining the ~~PivotTable~~PivotTable™ row item values, the first I element corresponds to the first row. There is a single index element x. The first (and only) x element corresponds to the first field on the row axis, namely "Product Category", and an index value of "0" indicates that the 0th item in the items collection for that pivotField definition is how to obtain the item value. Note that "Bikes" isn't explicitly listed as a value here, but instead the 0th item is an index to this field's shared items collection in the pivotCacheDefinition part.

For the second row, there are two item values, one item value (Bikes) from the first field in that row (Product Category) and one item value (Mountain Bikes) from the second field in that row (Product Subcategory). In the ~~PivotTable~~PivotTable™, the first item value "Bikes" is hidden from view. In the XML for this example, the second I element expresses both item values for this row. The first item value "Bikes" is expressed implicitly, because the value of r on the second i element is 1, indicating that the first item value from the previous row is reused again as the first item value for the current row. The second item value is expressed explicitly via the x element under the second i element. The index of '0' indicates that the 0th item in the pivotField element for that field is how to obtain the item value. Note again that the 0th item is itself an index into this field's shared items collection in the pivotCacheDefinition part.

The item values for the third row can be discovered in a similar way, so is not discussed in detail here.

In the context of item:

- t value of 'default' indicates a grand total as the last row item value.

Changes to section L.2.9.3.4.6 Column Axis Fields

This collection indicates which fields are on the column axis of the ~~PivotTable~~PivotTable™.

```
<colFields count="3">
  <field x="14"/>
  <field x="15"/>
  <field x="16"/>
</colFields>
```

In the context of field:

- x is a zero based index into the pivotFields collection defined in this part.

For this example, the collection indicates that "Year", "Quarter" and "Month" are on the column axis of the ~~PivotTable~~PivotTable™, in that order.

Changes to section L.2.9.3.4.7 Column Items

This collection is a listing of all the values on the column axis of the ~~PivotTable~~PivotTable™. In this example, the item values are found in cells C6:H8. For example, "2001" / "3" / "July" values are in C7:C9. Those are the first column item values and are referenced by the first <i> element below.

```
<colItems count="5">
  <i>
    <x/>
    <x/>
    <x/>
  </i>
  <i r="2">
    <x v="1"/>
  </i>
  <i r="2">
    <x v="2"/>
  </i>
  <i t="default" r="1">
    <x/>
  </i>
  <i t="default">
    <x/>
  </i>
</colItems>
```

In the context of colItems:

- i expresses all the values (for all fields) in one column of the column axis. There is an i element for every column in the ~~PivotTable~~PivotTable™ column area.

In the context of i:

- r indicates how many fields/item values to "fill right" from the previous column.

Note that the first item has no r explicitly written so the default value of 0 is implied.

In the context of x:

- v is a zero-based index referencing a pivotField item value. There is as many x elements as there are item values in any particular column. Note that these x elements sometimes are not explicitly written, but instead "inherited" from the previous column/i element, via the value of r. Note also that the pivotField items don't list values explicitly, but instead reference a shared item value in the pivotCacheDefinition part.

Note that the first instance of x has no attribute value v associated with it, so v's default value of 0 is implied.

The first i collection represents all item values for the first column in the column axis area of the ~~PivotTable~~PivotTable™. The first x in the first i corresponds to the first field in the columns area of the ~~PivotTable~~PivotTable™, namely "Year". The implied index value of '0' on this x indicates that the item value for this first item in the column is the 0th item for this pivotField. The 0th item for this pivotField is itself an index to an item value into this field's shared items collection in the pivotCacheDefinition part, namely "2001".

The item values corresponding to the second and third x elements can be found in the same way, arriving at "3" for the second item value, and arriving at "July" for the third item value for this first column.

The second i collection expresses all three item values for the second column in the column axis area. The r value of '2' indicates that the first two item values from the previous column is repeated here, which means that the first item value for this second column is "2001" again and the second item value for this second column is "3". The third item value is expressed by the only x element under this second i element, and without further explanation is understood to reference the item value "August".

Changes to section L.2.9.3.4.8 Report Filter Area Fields

This collection describes which fields are found in the report filter area of the ~~PivotTable~~PivotTable™.

```
<pageFields count="3">
  <pageField fld="2" hier="0"/>
  <pageField fld="4" hier="0"/>
  <pageField fld="5" hier="0"/>
</pageFields>
```

In the context of pageField:

- fld is a zero-based index indicating the field to be on the report filter area.

- hier is an index of the OLAP hierarchy to which this belongs.

Changes to section L.2.9.3.4.9 Values Area Fields

This collection describes which fields are found in the values area of the ~~PivotTable~~PivotTable™.

```
<dataFields count="1">
  <dataField name="Sum of Sales Amount" fld="25" baseField="0"
baseItem="0"/>
</dataFields>
```

In the context of dataField:

- name is the name of the values field.
- fld is the index of the field being summarized.
- baseField is the index of the base field when showDataAs calculation is in use.
- baseItem is the index of the base item when showDataAs calculation is in use.

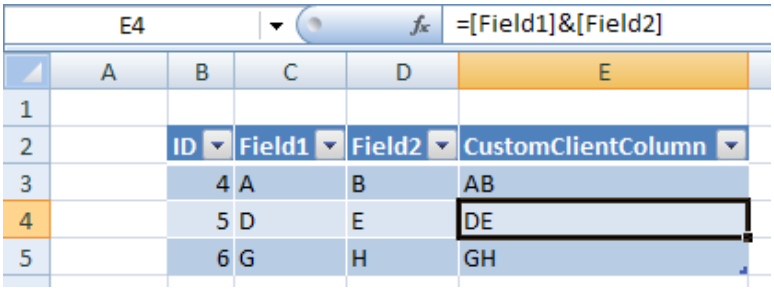
Changes to section L.2.9.3.4.10 ~~PivotTable~~PivotTable™ Style Information

Styles information is discussed in the informative subclause on spreadsheetML styles. Therefore the XML is provided for completeness, but is not discussed here.

```
<pivotTableStyleInfo name="PivotStyleDark8" showRowHeaders="1"
 showColHeaders="1" showRowStripes="0" showColStripes="0"
 showLastColumn="1"/>
</pivotTableDefinition>
```

Changes to section L.2.11.4 ~~Access~~Access® Table Example

This example demonstrates a QueryTable that is applied to a Table object. This data came from connecting to an ~~Access~~Access® database table with four fields: "ID", "Field1", "Field2", and "Field3". "Field3" has been deleted from the QueryTable in the worksheet below. Notice that a calculated column has been added to the Table, in the column titled "CustomClientColumn", which concatenates the values from "Field1" and "Field2".



Changes to section L.2.12.2 OLAP Connection

Below is a ~~PivotTable~~PivotTable™ that is rendering data from an OLAP source:

	A	B	C
1			
2		**Row Labels**	**Amount**
3		Current Year's Actuals	398755.69
4		Adjustment for Budget input	565238.13
5		Current Year's Budget	565238.13
6		Forecast	565238.13
7		**Grand Total**	**398755.69**
8			

Changes to section L.2.12.3 Pivot XML fragment

In this example, the ~~PivotTable~~PivotTable™ data cache records `/cacheSource@connectionId="2"`, which associates this ~~PivotTable~~PivotTable™ to the connection whose id="2" in the workbook connections part.

```
<pivotCacheDefinition … saveData="0" refreshedBy="Chad Rothschiller"
  refreshedDateIso="2006-04-13T16:02:14" backgroundQuery="1"
    createdVersion="3"
  refreshedVersion="3" minRefreshableVersion="3" recordCount="0">
  <cacheSource type="external" connectionId="2"/>
  <cacheFields count="2">
   <cacheField name="[Category].[Category Description]"
     caption="Category
     Description" numFmtId="0" hierarchy="1" level="1">
     <sharedItems count="4">
       <s v="[Category].[All Category].[Current Year's Actuals]"
         c="Current Year's Actuals"/>
   …
   </cacheField>
  </cacheFields>
</pivoCacheDefinition>
```

Changes to section L.7.2.3.1 Embeddings In Line With Text

When the embedding is present in line with text, it is stored as follows:

- The WordprocessingML object element specifies the presence of an embedded object in line with text.
- The child objectEmbed or objectLink element must specify the details about the embedding itself, including an explicit relationship to the appropriate Embedded Package or Embedded Object part.
- The child inline element must specify the image which can be used to represent the object.

For example, if we embed a SpreadsheetML worksheet in a WordprocessingML document, the following run content would be present:

```
<w:r>
  <w:object w:dxaOrig="7247" w:dyaOrig="2920">
    <w:objectEmbed drawAspect="content" r:id="rId7" progId="Excel.Sheet.8"
      shapeId="10"/>
    <w:drawing>
      <wp:inline> ... </wp:inline>
    </w:drawing>
  </w:object>
</w:r>
```

If we examine this markup, it can be seen that:

- We have an inline embedded object, as defined by the object element.
- The objectEmbed element specifies that that object is stored as an embedding, and that its ProgID is `Excel.Sheet.8` (the ProgID code for ~~Microsoft~~Microsoft® ~~Excel~~Excel® worksheets); it also specifies that the associated image (when the object data cannot be used) is stored in the shape with an ID of `10`.
- The associated shape with an ID of `_x0000_i1026` must be used in place of the object whenever it is not loaded - this shape is stored in the inline element in the same object element as the objectEmbed element. This shape specifies its desired size and provides an explicit relationship to the part that stores the image data.

Changes to section L.7.2.3.2 Floating Embeddings

When the embedding is present as a floating object, it is stored as follows:

- The WordprocessingML pict element specifies the presence of a floating image in the document.
- The child objectEmbed or objectLink element must specify the details about the embedding itself, including an explicit relationship to the appropriate Embedded Package or Embedded Object part.
- The child anchor element must specify the image that can be used to represent the object in place of loading the actual object data.

For example, if we embed a SpreadsheetML worksheet in a WordprocessingML document as a floating object, the following run content would be present:

```
<w:r>
  <w:object>
    <w:objectEmbed drawAspect="content" r:id="rId5" progId="Excel.Sheet.8"
shapeId="18"/>
    <w:drawing>
      <wp:anchor> ... </wp:anchor>
    </w:drawing>
```

```
    </w:object>
  </w:r>
```

If we examine this markup, it can be seen that:

- We have a floating image, as defined by the pict element.
- The objectEmbed element specifies that that floating image is actually an embedding that is stored as an Embed, and that its ProgID is Excel.Sheet.8 (the ProgID code for ~~Microsoft~~Microsoft® ~~Excel~~Excel® worksheets); it also specifies that the associated image (when the object data cannot be used) is stored in the shape with an ID of 18.
- The associated shape with an ID of 18 must be used in place of the object whenever it is not loaded - this shape is stored in the anchor element in the same object element as the corresponding OLEObject element. This shape specifies its desired size and provides an explicit relationship to the part which stores the image data.