# 3 Structure Examples

This section contains examples of some of the most commonly used data structures in MS-XLS files. The examples are meant to be a starting point for an implementer learning the file format. They are not meant to cover all records in the file format.

The following conventions are followed for all of the examples, unless noted otherwise:

 The order of the records, structures, and fields within the example match their corresponding order in the file format.

 The examples begin with the first record relevant to the example and end with the last record relevant to the example. An example cannot be used as a complete and standalone MS-XLS file.

 The examples are self-contained and contiguous; no records or structures are omitted in the middle of an example.

 Undefined and ignored fields are not included in the field explanations.

 Offsets for records and structures are omitted because these values can vary depending on how the files are created and what optional records applications choose to include in files.

 In the structure diagrams for the examples, the types of arrays are meant for illustration only and can be disregarded.

## 3.1 Conditional Formatting

This example shows conditional formatting applied to [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) A2 with a "between" condition to make the text red when the value is greater than or equal to 1.5, and less than or equal to 2.5.

The first record in this example is a [CondFmt](#Section_03ae6098bdc2475bba2cb8aef7882174) record, which specifies beginning of a collection of [CF](#Section_d6dcadf27e074f7da60a0f643780225d) records and defines the [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) of cells to which the conditional formatting rule applies. The CF record follows next in this example, defining that conditional formatting rule.



Figure 19: Conditional formatting in this example within a sheet

### 3.1.1 Conditional Formatting: CondFmt

The first record in this example, [CondFmt](#Section_03ae6098bdc2475bba2cb8aef7882174), specifies beginning of a collection of [CF](#Section_d6dcadf27e074f7da60a0f643780225d) records and defines the [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) of [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) to which the conditional formatting rule applies.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0016 | CondFmt **- CondFmt** |  |
| 0002 | USHORT **- ccf** | 0x0001 |
| 1 bit | USHORT **- fToughRecalc** | 0x0 |
| 15 bits | USHORT **- nID** | 0x0000 |
| 0008 | [Ref8U](#Section_809af2981e4f499f9bca3cd1021f4934) **- refBound** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- rwFirst** |  |
| 0002 | USHORT **- rw** | 0x0001 |
| 0002 | RwU **- rwLast** |  |
| 0002 | USHORT **- rw** | 0x0001 |
| 0002 | [ColU](#Section_f716fb856c90424aa99ed61b2191a224) **- colFirst** |  |
| 0002 | USHORT **- col** | 0x0000 |
| 0002 | ColU **- colLast** |  |
| 0002 | USHORT **- col** | 0x0000 |
| 000A | [SqRefU](#Section_867dcebec0624c4699b11b2a479e6f32) **- sqref** |  |
| 0002 | USHORT **- cref** | 0x0001 |
| 0008 | RgRef8U **- rgrefs** |  |
| 0008 | Ref8U **- ref[0]** |  |
| 0002 | RwU **- rwFirst** |  |
| 0002 | USHORT **- rw** | 0x0001 |
| 0002 | RwU **- rwLast** |  |
| 0002 | USHORT **- rw** | 0x0001 |
| 0002 | ColU **- colFirst** |  |
| 0002 | USHORT **- col** | 0x0000 |
| 0002 | ColU **- colLast** |  |
| 0002 | USHORT **- col** | 0x0000 |

Figure 20: Structure of CondFmt

**ccf:** 0x0001 specifies that there is one CF record in the collection that follows this record.

**fToughRecalc:** 0x0 specifies that the appearance of the cell does not require significant processing.

**nID:** 0x0000 specifies the identifier for this record.

**refBound:** A Ref2.5.209U structure specifies the bounds of the set of cells to which the rules are applied.

**refBound.rwFirst:** An RwU structure that specifies the index of the first row in the range.

**refBound.rwFirst.rw:** 0x0001 specifies that the range starts in row two of the [**worksheet**](#gt_2fdc6291-fa6a-48a6-afbb-04f910d68615).

**refBound.rwLast:** A RwU structure that specifies index of the last row in the range.

**refBound.rwLast.rw:** 0x0001 specifies that the range ends in row two of the worksheet.

**refBound.colFirst:** A ColU structure that specifies the index of the first column in the range.

**refBound.colFirst.col:** 0x0000 specifies that the range starts in column A of the worksheet.

**refBound.colLast:**  A ColU structure that specifies the index of the last column in the range.

**refBound.colLast.col:** 0x0000 specifies that the range ends in column A of the worksheet.

**sqref:** An SqRefU structure that specifies the cells to which the conditional formatting rules apply.

**sqref.cref:** 0x0001 specifies that there is one Ref2.5.209U structure in **rgrefs**.

**sqref.rgrefs.ref[0]:** This is the first Ref2.5.209U structure that specifies the range of cells on the sheet where the [**conditional formatting**](#gt_5a8a1e18-9f8c-48c6-9ad0-7975ade8d516) rules apply.

**sqref.rgrefs.ref[0].rwFirst.rw:** 0x0001 specifies the range starts in row two of the worksheet.

**sqref.rgrefs.ref[0].rwLast.rw:** 0x0001 specifies the range ends in row two of the worksheet.

**sqref.rgrefs.ref[0].colFirst.col:** 0x0000 specifies the range starts in column A of the worksheet.

**sqref.rgrefs.ref[0].colLast.col:** 0x0000 specifies the range ends in column A of the worksheet.

### 3.1.2 Conditional Formatting: CF

The next record in this example, [CF](#Section_d6dcadf27e074f7da60a0f643780225d), specifies a conditional formatting rule.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0094 | CF **- Cf** |  |
| 0001 | BYTE **- ct** | 0x01 |
| 0001 | BYTE **- cp** | 0x01 |
| 0002 | USHORT **- cce1** | 0x0009 |
| 0002 | USHORT **- cce2** | 0x0009 |
| 007C | [DXFN](#Section_a1141f1df60745efb8dd4a1f2b27b4f9) **- rgbdxf** |  |
| 1 bit | DWORD **- alchNinch** | 0x1 |
| 1 bit | DWORD **- alcvNinch** | 0x1 |
| 1 bit | DWORD **- wrapNinch** | 0x1 |
| 1 bit | DWORD **- trotNinch** | 0x1 |
| 1 bit | DWORD **- kintoNinch** | 0x1 |
| 1 bit | DWORD **- cIndentNinch** | 0x1 |
| 1 bit | DWORD **- fShrinkNinch** | 0x1 |
| 1 bit | DWORD **- fMergeCellNinch** | 0x1 |
| 1 bit | DWORD **- lockedNinch** | 0x1 |
| 1 bit | DWORD **- hiddenNinch** | 0x1 |
| 1 bit | DWORD **- glLeftNinch** | 0x1 |
| 1 bit | DWORD **- glRightNinch** | 0x1 |
| 1 bit | DWORD **- glTopNinch** | 0x1 |
| 1 bit | DWORD **- glBottomNinch** | 0x1 |
| 1 bit | DWORD **- glDiagDownNinch** | 0x1 |
| 1 bit | DWORD **- glDiagUpNinch** | 0x1 |
| 1 bit | DWORD **- flsNinch** | 0x1 |
| 1 bit | DWORD **- icvFNinch** | 0x1 |
| 1 bit | DWORD **- icvBNinch** | 0x1 |
| 1 bit | DWORD **- ifmtNinch** | 0x1 |
| 1 bit | DWORD **- fIfntNinch** | 0x1 |
| 1 bit | DWORD **- unused1** | 0x1 |
| 3 bits | DWORD **- reserved1** | 0x0 |
| 1 bit | DWORD **- ibitAtrNum** | 0x0 |
| 1 bit | DWORD **- ibitAtrFnt** | 0x1 |
| 1 bit | DWORD **- ibitAtrAlc** | 0x0 |
| 1 bit | DWORD **- ibitAtrBdr** | 0x0 |
| 1 bit | DWORD **- ibitAtrPat** | 0x0 |
| 1 bit | DWORD **- ibitAtrProt** | 0x0 |
| 1 bit | DWORD **- iReadingOrderNinch** | 0x0 |
| 1 bit | WORD **- fIfmtUser** | 0x0 |
| 1 bit | WORD **- unused2** | 0x1 |
| 1 bit | WORD **- fNewBorder** | 0x0 |
| 12 bits | WORD **- reserved2** | 0x000 |
| 1 bit | WORD **- fZeroInited** | 0x0 |
| 0076 | [DXFFntD](#Section_de46349dbd0846df8ca9fe436a84013a) **- dxffntd** |  |
| 0001 | BYTE **- cchFont** | 0x00 |
| 003F | unused **- unused** | 0x000100010000000000E03F000000000000E03F0100630075006D0065006E007400200057007200690074006500720000000000000001040006DC00580303FF |
| 0010 | [Stxp](#Section_35f2f61e21db4916860db32d27e45154) **- stxp** |  |
| 0004 | LONG **- twpHeight** | 0xFFFFFFFF |
| 0004 | [Ts](#Section_f2372db53c3e4bb08976e275f1750d0a) **- ts** |  |
| 1 bit | DWORD **- unused1** | 0x0 |
| 1 bit | DWORD **- ftsItalic** | 0x0 |
| 5 bits | DWORD **- unused2** | 0x00 |
| 1 bit | DWORD **- ftsStrikeout** | 0x0 |
| 24 bits | DWORD **- unused3** | 0x000000 |
| 0002 | SHORT **- bls** | 0x0000 |
| 0002 | SHORT **- sss** | 0x0000 |
| 0001 | BYTE **- uls** | 0x00 |
| 0001 | BYTE **- bFamily** | 0x00 |
| 0001 | BYTE **- bCharSet** | 0x00 |
| 0001 | BYTE **- unused** | 0x00 |
| 0004 | LONG **- icvFore** | 0x0000000A |
| 0004 | LONG **- reserved** | 0x00000000 |
| 0004 | Ts **- tsNinch** |  |
| 1 bit | DWORD **- unused1** | 0x0 |
| 1 bit | DWORD **- ftsItalic** | 0x1 |
| 5 bits | DWORD **- unused2** | 0x06 |
| 1 bit | DWORD **- ftsStrikeout** | 0x1 |
| 24 bits | DWORD **- unused3** | 0x000000 |
| 0004 | DWORD **- fSssNinch** | 0x00000001 |
| 0004 | DWORD **- fUlsNinch** | 0x00000001 |
| 0004 | DWORD **- fBlsNinch** | 0x00000001 |
| 0004 | DWORD **- unused2** | 0x00000001 |
| 0004 | LONG **- ich** | 0x00000000 |
| 0004 | LONG **- cch** | 0x7FFFFFFF |
| 0002 | [FontIndex](#Section_b3413c2bca5b498886beab44bfe9e4d3) **- iFnt** |  |
| 0002 | USHORT **- ifnt** | 0x0001 |
| 0009 | [CFParsedFormulaNoCCE](#Section_d7926ace9fbf49b68b0c7502f38c1d97) **- rgce1** |  |
| 0009 | [Rgce](#Section_6cdf7d38d08c4e56bd2f6c82b8da752e) **- rgce** |  |
| 0009 | Ptg **- Ptg[0]** |  |
| 0009 | [PtgNum](#Section_40e691832cd3405187ba2f3ccb82bcfa) **- PtgNum** |  |
| 7 bits | BYTE **- ptg** | 0x1F |
| 1 bit | BYTE **- reserved0** | 0x0 |
| 0008 | Double **- value** | 0x3FF8000000000000 |
| 0009 | CFParsedFormulaNoCCE **- rgce2** |  |
| 0009 | Rgce **- rgce** |  |
| 0009 | Ptg **- Ptg[0]** |  |
| 0009 | PtgNum **- PtgNum** |  |
| 7 bits | BYTE **- ptg** | 0x1F |
| 1 bit | BYTE **- reserved0** | 0x0 |
| 0008 | Double **- value** | 0x4004000000000000 |

Figure 21: Structure of Cf

**ct:** 0x01 specifies that the [**conditional formatting**](#gt_5a8a1e18-9f8c-48c6-9ad0-7975ade8d516) rule requires two inputs. The inputs, **rgce1** and **rgce2**, are evaluated with the comparison function specified in the **cp** field. If the result of the evaluation is TRUE, the conditional formatting rule is applied.

**cp:** 0x01 specifies that the comparison function evaluates to TRUE if the [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) value is greater than or equal to the value of the **rgce1** field and less than or equal to the value of the **rgce2** field.

**cce1:** 0x0009 specifies that the size of the **rgce1** field is 9 bytes.

**cce2:** 0x0009 specifies that the size of the **rgce2** field is 9 bytes.

**rgbdxf:** A DXFN structure that specifies the formatting that is applied if the defined condition evaluates to TRUE.

**rgbdxf.alchNinch:** 0x1 specifies that **rgbdxf.dxfalc.alc** is ignored.

**rgbdxf.alcvNinch:** 0x1 specifies that **rgbdxf.dxfalc.alcv** is ignored.

**rgbdxf.wrapNinch:** 0x1 specifies that **rgbdxf.dxfalc.fWrap** is ignored.

**rgbdxf.trotNinch:** 0x1 specifies that **rgbdxf.dxfalc.trot** is ignored.

**rgbdxf.kintoNinch:** 0x1 specifies that **rgbdxf.dxfalc.fJustLast** is ignored.

**rgbdxf.cIndentNinch:** 0x1 specifies that **rgbdxf.dxfalc.cIndent** and **rgbdxf.dxfalc.iIndent** are ignored.

**rgbdxf.fShrinkNinch:** 0x1 specifies that **rgbdxf.dxfalc.fShrinkToFit** is ignored.

**rgbdxf.fMergeCellNinch:** 0x1 specifies that **rgbdxf.dxfalc.fMergeCell** is ignored.

**rgbdxf.lockedNinch:** 0x1 specifies that **rgbdxf.dxfprot.fLocked** is ignored.

**rgbdxf.hiddenNinch:** 0x1 specifies that **rgbdxf.dxfprot.fHidden** is ignored.

**rgbdxf.glLeftNinch:** 0x1 specifies that **rgbdxf.dxfbdr.dgLeft** and **rgbdxf.dxfbdr.icvLeft** are ignored.

**rgbdxf.glRightNinch:** 0x1 specifies that **rgbdxf.dxfbdr.dgRight** and **rgbdxf.dxfbdr.icvRight** are ignored.

**rgbdxf.glTopNinch:** 0x1 specifies that the properties for the top [**border**](#gt_85bbea8d-a9f4-40a2-b4f8-68b587d21a4c) of the cell can be updated and that **rgbdxf.dxfbdr.dgTop** and **rgbdxf.dxfbdr.icvTop** are ignored.

**rgbdxf.glBottomNinch:** 0x1 specifies that **rgbdxf.dxfbdr.dgBottom** and **rgbdxf.dxfbdr.icvBottom** are ignored.

**rgbdxf.glDiagDownNinch:** 0x1 specifies that **rgbdxf.dxfbdr.bitDiagDown** is ignored.

**rgbdxf.glDiagUpNinch:** 0x1 specifies that **rgbdxf.dxfbdr.bitDiagUp** is ignored. Because **rgbdxf.glDiagDownNinch** is also set to 0x1, **rgbdxf.dxfbdr.dgDiag** and **rgbdxf.dxfbdr.icvDiag** are ignored.

**rgbdxf.flsNinch:** 0x1 specifies that **rgbdxf.dxfpat.fls** is ignored.

**rgbdxf.icvFNinch:** 0x1 specifies that **rgbdxf.dxfpat.icvForeground** is ignored.

**rgbdxf.icvBNinch:** 0x1 specifies that **rgbdxf.dxfpat.icvBackground** is ignored.

**rgbdxf.ifmtNinch:** 0x1 specifies that **rgbdxf.dxfnum.ifmt** is ignored.

**rgbdxf.fIfntNinch:** 0x1 specifies that **rgbdxf.dxffntd.ifnt** is ignored.

**rgbdxf.ibitAtrNum:** 0x0 specifies that the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) is not part of this structure.

**rgbdxf.ibitAtrFnt:** 0x1 specifies that [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) information is a part of this structure.

**rgbdxf.ibitAtrAlc:** 0x0 specifies that alignment information is not a part of this structure.

**rgbdxf.ibitAtrBdr:** 0x0 specifies that [**border formatting**](#gt_96ac39c1-e3ee-4485-b481-0553e5606cad) information is not a part of this structure.

**rgbdxf.ibitAtrPat:** 0x0 specifies that pattern information is not a part of this structure.

**rgbdxf.ibitAtrProt:** 0x0 specifies that rotation information is not a part of this structure.

**rgbdxf.iReadingOrderNinch:** 0x1 specifies that **rgbdxf.dxfalc.iReadingOrder** is ignored.

**rgbdxf.fIfmtUser:** 0x0 specifies that the number format is not a user-defined [**format string**](#gt_07085e26-506a-4b35-81ad-972464e277ff).

**rgbdxf.fNewBorder:** 0x0 specifies that the border formats apply to all cells in the [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99).

**rgbdxf.fZeroInited:** 0x0 specifies that **rgbdxf.dxfalc.iReadingOrder** is undefined and not taken into account.

**rgbdxf.dxffntd:** A DXFFntD structure that specifies the font information used for formatting.

**rgbdxf.dxffntd.cchFont:** 0x00 specifies the number of characters in the font name string.

**rgbdxf.dxffntd.stxp:** This specifies the formatting attributes of the font.

**rgbdxf.dxffntd.stxp.twpHeight:** 0xFFFFFFFF specifies that this value is ignored.

**rgbdxf.dxffntd.stxp.ts:** A Ts structure that specifies additional formatting attributes.

**rgbdxf.dxffntd.stxp.ts.ftsItalic:** 0x1 is ignored because **rgbdxf.dxffntd.tsNinch.ftsItalic** is 0x1.

**rgbdxf.dxffntd.stxp.ts.ftsStrikeout:** 0x0 is ignored because **rgbdxf.dxffntd.tsNinch.ftsStrikeout** is 0x1.

**rgbdxf.dxffntd.stxp.bls:** 0x0000 specifies that the font is normal weight.

**rgbdxf.dxffntd.stxp.sss:** 0x0000 specifies that the font is normal script.

**rgbdxf.dxffntd.stxp.uls:** 0x00 specifies that the font is not underlined.

**rgbdxf.dxffntd.stxp.bFamily:** 0x00 specifies the [**font family**](#gt_bca5490d-d27e-4097-b05d-9efb09083dd2).

**rgbdxf.dxffntd.stxp.bCharSet:** 0x00 specifies the font [**character set**](#gt_5004b992-4a9c-41c9-b65c-b2e7a2b04204).

**rgbdxf.dxffntd.icvFore:** 0x0000000A specifies that the font color is red.

**rgbdxf.dxffntd.tsNinch:** A Ts structure that specifies how the value of **rgbdxf.dxffntd.stxp.ts** is interpreted.

**rgbdxf.dxffntd.tsNinch.ftsItalic:** 0x1 specifies that the value of **rgbdxf.dxffntd.stxp.ts.ftsItalic** is ignored.

**rgbdxf.dxffntd.tsNinch.ftsStrikeout:** 0x1 specifies that the value of **rgbdxf.dxffntd.stxp.ts. ftsStrikeout** is ignored.

**rgbdxf.dxffntd.fSssNinch:** 0x00000001 specifies that **rgbdxf.dxffntd.stxp.sss** is ignored.

**rgbdxf.dxffntd.fUlsNinch:** 0x00000001 specifies that **rgbdxf.dxffntd.stxp.uls** is ignored.

**rgbdxf.dxffntd.fBlsNinch:** 0x00000001 specifies that **rgbdxf.dxffntd.stxp.bls** is ignored.

**rgbdxf.dxffntd.ich:** 0x00000000 specifies that the font formatting is applied starting from the first character.

**rgbdxf.dxffntd.cch:** 0x7FFFFFFF specifies that the font formatting applies to 2147483647 characters.

**rgbdxf.dxffntd.iFnt:** 0x0001 is ignored because **rgbdxf.fIfntNinch** is 0x1.

**rgce1:** A CFParsedFormulaNoCCE structure that specifies the first operand of the comparison.

**rgce1.rgce:**  An Rgce that specifies an array of [Ptgs](#Section_9310c3bbd73f4db0834228e1e0fcb68f).

**rgce1.rgce.Ptg[0]:** A Ptg that specifies a formula element.

**rgce1.rgce.Ptg[0].PtgNum.ptg:** 0x1F specifies that this Ptg is a floating point value.

**rgce1.rgce.Ptg[0].PtgNum.value:** 0x3FF8000000000000 specifies a numeric value of 1.5.

**rgce2:** A CFParsedFormulaNoCCE structure that specifies the second operand of the comparison.

**rgce2.rgce:** A Rgce structure that specifies an array of Ptgs.

**rgce2.rgce.Ptg[0]:** A Ptg that specifies a formula element.

**rgce2.rgce.Ptg[0].PtgNum.ptg:** 0x1F specifies that this Ptg is a floating point value.

**rgce2.rgce.Ptg[0].PtgNum.value:** 0x4004000000000000 specifies a numeric value of 2.5.

## 3.2 Defined Name

This example shows a [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe)-level [**defined name**](#gt_5bb97b28-4adc-48ec-b544-02542753a933), *MyName*, that points to the [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) E4 on the second [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d). A defined name is specified by a [Lbl](#Section_d148e89845044841a793ee85f3ea9eef) record, which is a part of the [Globals Substream](#workbookcontent_biff8workbookgrammar) (not included in this example for brevity). This example includes the [ExternSheet](#Section_475df8d4a3be47a59a014ec828059f43) record referenced by the Lbl record, and the [SupBook](#Section_31ed3738e4ff4b60804cac49ac1ee6c0) record referenced by the ExternSheet record.

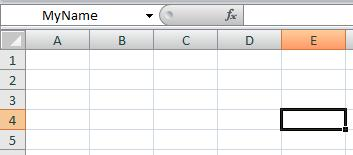


Figure 22: Defined name in this example within a sheet

### 3.2.1 Defined Name: Lbl

The first record in this example, [Lbl](#Section_d148e89845044841a793ee85f3ea9eef), stores the [**defined name**](#gt_5bb97b28-4adc-48ec-b544-02542753a933).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001C | Lbl **- Lbl** |  |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fFunc** | 0x0 |
| 1 bit | USHORT **- fOB** | 0x0 |
| 1 bit | USHORT **- fProc** | 0x0 |
| 1 bit | USHORT **- fCalcExp** | 0x0 |
| 1 bit | USHORT **- fBuiltin** | 0x0 |
| 6 bits | USHORT **- fGrp** | 0x00 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fPublished** | 0x0 |
| 1 bit | USHORT **- fWorkbookParam** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 0001 | BYTE **- chKey** | 0x00 |
| 0001 | BYTE **- cch** | 0x06 |
| 0002 | SHORT **- cce** | 0x0007 |
| 0002 | SHORT **- reserved3** | 0x0000 |
| 0002 | USHORT **- itab** | 0x0000 |
| 0001 | BYTE **- reserved4** | 0x00 |
| 0001 | BYTE **- reserved5** | 0x00 |
| 0001 | BYTE **- reserved6** | 0x00 |
| 0001 | BYTE **- reserved7** | 0x00 |
| 0007 | [XLUnicodeStringNoCch](#Section_e64abeee2f3a4004b9e33d67e29d6066) **- Name** | MyName |
| 0007 | [NameParsedFormula](#Section_9afd1c6cc4864d9cb6443708428d2ffb) **- rgce** |  |
| 0007 | [Ptg](#Section_9310c3bbd73f4db0834228e1e0fcb68f) **- Ptg[0]** |  |
| 0007 | [PtgRef3d](#Section_1ca817be8df34b808d3546b5eb753577) **- PtgRef3d** |  |
| 5 bits | BYTE **- ptg** | 0x1A |
| 2 bits | [PtgDataType](#Section_80d504baeb5d4a0fa5da3dcc792dd78e) **- type** | 0x1 |
| 1 bit | BYTE **- reserved** | 0x0 |
| 0002 | USHORT **- ixti** | 0x0000 |
| 0004 | [RgceLoc](#Section_f2395c3334a44b0785a99bb5f07848d9) **- loc** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- row** |  |
| 0002 | USHORT **- rw** | 0x0003 |
| 0002 | [ColRelU](#Section_6e5eed105b7743d68dd037345f8654ad) **- column** |  |
| 0002 | USHORT **- col** | 0x0004 |

Figure 23: Structure of Lbl

**fHidden:** 0x0 specifies that the defined name is visible in the list of defined names.

**fFunc:** 0x0 specifies that the defined name does not represent an [**XLM**](#gt_11e8ff9f-bce2-4d8b-9ba2-11ac468f7c7b).

**fOB:** 0x0 specifies that the defined name does not represent a [**VBA**](#gt_bc3968c6-4bd2-40a2-8619-5cd7695b3e4f) [**macro**](#gt_cd2933d3-08d1-4931-bd5c-7ae0a668fe7c).

**fProc:** 0x0 specifies that the defined name does not represent a macro.

**fCalcExp:** 0x0 specifies that the defined name does not represent a function that could return an array.

**fBuiltin:** 0x0 specifies that the defined name does not represent a [**built-in name**](#gt_d40a51df-e96f-45ec-885d-6f936d172b39).

**fGrp:** 0x00 specifies the [**function category**](#gt_026a49a8-c3e8-49eb-a97f-58bd2c79c540) for the defined name is "All".

**fPublished:** 0x0 specifies that this defined name is not [**published**](#gt_8ffc383a-d4f1-4515-a8b5-874d84ab2d2b).

**fWorkbookParam:** 0x0 specifies that this defined name is not a [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) parameter.

**chKey:** 0x00 specifies there is no shortcut key for the macro represented by the defined name.

**cch:** 0x06 specifies that there are six characters in the **Name** field.

**cce:** 0x0007 specifies that the length of the **rgce** field is 7 bytes.

**itab:** 0x0000 specifies that the defined name is not local to a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

**Name:** *MyName* specifies the name of the defined name.

**rgce:** A NameParsedFormula that specifies the formula (section [2.2.2](#Section_e7625cc83da94154b44949cf1bbd9703)) that represents the defined name.

**rgce.Ptg[0].PtgRef3d.ptg:** 0x1A specifies that this Ptg is of type PtgRef3d.

**rgce.Ptg[0].PtgRef3d.type:** 0x1 specifies that this Ptg is a reference to a [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99).

**rgce.Ptg[0].PtgRef3d.ixti:** 0x0000 specifies that this range refers to the sheet specified by the first [XTI](#Section_5adbad90093d4bc6acc1b662270bc0d7) element in the [ExternSheet](#Section_475df8d4a3be47a59a014ec828059f43) record.

**rgce.Ptg[0].PtgRef3d.loc.row.rw:** 0x0003 specifies that the referenced [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) is in row four of the [**worksheet**](#gt_2fdc6291-fa6a-48a6-afbb-04f910d68615).

**rgce.Ptg[0].PtgRef3d.loc.column.col:** 0x0004 specifies that the referenced cell is in column E of the worksheet.

### 3.2.2 Defined Name: ExternSheet

The next record in this example is an [ExternSheet](#Section_475df8d4a3be47a59a014ec828059f43) record. This record defines the set of [**sheets**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) that are referenced by this [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe). It is included in this example because the **ixti** fieldin the [Lbl](#Section_d148e89845044841a793ee85f3ea9eef) record points to the [XTI](#Section_5adbad90093d4bc6acc1b662270bc0d7) structure within this record.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | ExternSheet **- ExternSheet** |  |
| 0002 | USHORT **- cXTI** | 0x0001 |
| 0006 | RgXTI **- rgXTI** |  |
| 0006 | XTI **- xti[0]** |  |
| 0002 | USHORT **- iSupBook** | 0x0000 |
| 0002 | SHORT **- itabFirst** | 0x0001 |
| 0002 | SHORT **- itabLast** | 0x0001 |

Figure 24: Structure of ExternSheet

**cXTI:** 0x0001 specifies that there is one XTI record in the **rgXTI** array.

**rgXTI.xti[0].iSupBook:** 0x0000 specifies the reference to the first [SupBook](#Section_31ed3738e4ff4b60804cac49ac1ee6c0) record in the [global substream](#Section_ca4c174887294a93abb94602b3a01fb1).

**rgXTI.xti[0].itabFirst:** 0x0001 specifies that the first sheet referenced by the [**defined name**](#gt_5bb97b28-4adc-48ec-b544-02542753a933) is the second sheet in the workbook (Sheet2). The related [BoundSheet2.4.28](#Section_b9ec509a235d424e871df8e721106501) record is omitted for brevity.

**rgXTI.xti[0].itabLast:** 0x0001 specifies that the last sheet referenced by the defined name is the second sheet in the workbook (Sheet2).

### 3.2.3 Defined Name: SupBook

The next record in this example, [SupBook](#Section_31ed3738e4ff4b60804cac49ac1ee6c0), stores information about a [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) that is referenced by this workbook.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | SupBook **- SupBook** |  |
| 0002 | USHORT **- ctab** | 0x0003 |
| 0002 | USHORT **- cch** | 0x0401 |

Figure 25: Structure of SupBook

**ctab:** 0x0003 specifies that there are three [**sheets**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) in the referenced workbook.

**cch:** 0x0401 specifies that this record defines a self-referencing [supporting link](#Section_cc5920ba01074d92bbdfc12ca986f31f).

## 3.3 Table

This example shows the records that make up a [**table**](#gt_d3a7da8d-a597-4838-9756-25e30b640ba7). The following figure shows a possible implementation of the table discussed in this example:

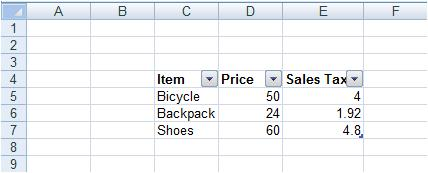


Figure 26: Table in this example within a sheet

### 3.3.1 Table: Feathdr11

The first record in this example is a [Feathdr2.4.113](#Section_45a7d5ac82e142d0a2290c4dc8446d43) record that appears in the [worksheet substream](#Section_f41c06f2905749a18c3fa4a4d211fc56) (the worksheet substream is not included in this example for brevity). This record stores common information about all the tables on this [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001D | FeatHdr11 **- Feathdr11** |  |
| 000C | [FrtHeader](#Section_d56e99f8a2714db1923c222722d21a37) **- frt** |  |
| 0002 | USHORT **- rt** | 0x0871 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0008 | RESERVED **- reserved** | 0x0000000000000000 |
| 0002 | [SharedFeatureType](#Section_4dc13a80f10a46e6b55d1df4c90508e8) **- isf** | 0x0005 |
| 0001 | BYTE **- reserved1** | 0x01 |
| 0004 | DWORD **- reserved2** | 0xFFFFFFFF |
| 0004 | DWORD **- reserved3** | 0xFFFFFFFF |
| 0004 | DWORD **- idListNext** | 0x00000002 |
| 0002 | USHORT **- reserved4** | 0x0000 |

Figure 27: Structure of Feathdr11

**frt:** This structure specifies a future version record type FrtHeader.

**frt.rt:** 0x0871 specifies that this record belongs to a record of type Feathdr2.4.113.

**frt.grbitFrt:** Stores attributes for this record.

**frt.grbitFrt.fFrtRef:** 0x0000 specifies that this record does not specify a [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) of [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461).

**frt.grbitFrt.fFrtAlert:** 0x0000 specifies not to alert the user of possible problems when saving the file as an earlier version of the file format.

**isf:** 0x0005 specifies type Table.

**idListNext:** 0x00000002 specifies the next identifier to try when assigning a unique identifier to a new [**table**](#gt_d3a7da8d-a597-4838-9756-25e30b640ba7).

### 3.3.2 Table: Feature11

The next record in this example, [Feature2.4.114](#Section_4c78a7d3a3ff48e28e2cc89785519322), specifies information about this [**table**](#gt_d3a7da8d-a597-4838-9756-25e30b640ba7) on this [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0116 | Feature11 **- Feature11** |  |
| 000C | [FrtRefHeaderU](#Section_81109a771dbd43fe84d2b5177bb41297) **- frtRefHeaderU** |  |
| 0002 | USHORT **- rt** | 0x0872 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x1 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0008 | [Ref8U](#Section_809af2981e4f499f9bca3cd1021f4934) **- ref8** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- rwFirst** |  |
| 0002 | USHORT **- rw** | 0x0003 |
| 0002 | RwU **- rwLast** |  |
| 0002 | USHORT **- rw** | 0x0006 |
| 0002 | [ColU](#Section_f716fb856c90424aa99ed61b2191a224) **- colFirst** |  |
| 0002 | USHORT **- col** | 0x0002 |
| 0002 | ColU **- colLast** |  |
| 0002 | USHORT **- col** | 0x0004 |
| 0002 | USHORT **- isf** | 0x0005 |
| 0001 | BYTE **- reserved1** | 0x00 |
| 0004 | DWORD **- reserved2** | 0x00000000 |
| 0002 | USHORT **- cref2** | 0x0001 |
| 0004 | DWORD **- cbFeatData** | 0x00000000 |
| 0002 | USHORT **- reserved3** | 0x0000 |
| 0008 | REFS2 **- refs2** |  |
| 0008 | Ref8U **- ref[0]** |  |
| 0002 | RwU **- rwFirst** |  |
| 0002 | USHORT **- rw** | 0x0003 |
| 0002 | RwU **- rwLast** |  |
| 0002 | USHORT **- rw** | 0x0006 |
| 0002 | ColU **- colFirst** |  |
| 0002 | USHORT **- col** | 0x0002 |
| 0002 | ColU **- colLast** |  |
| 0002 | USHORT **- col** | 0x0004 |
| 00F3 | FeatUnion5 **- rgbFeat** |  |
| 00F3 | [TableFeatureType](#Section_0db919872a05497cac1cfbd588e10047) **- TableFeature** |  |
| 0004 | [SourceType](#Section_c283a04493fd403da84368a3bf959502) **- lt** | 0x00000000 |
| 0004 | DWORD **- idList** | 0x00000001 |
| 0004 | DWORD **- crwHeader** | 0x00000001 |
| 0004 | DWORD **- crwTotals** | 0x00000000 |
| 0004 | DWORD **- idFieldNext** | 0x00000004 |
| 0004 | ULONG **- cbFSData** | 0x00000040 |
| 0002 | USHORT **- rupBuild** | 0x0000 |
| 0002 | USHORT **- unused1** | 0x0000 |
| 1 bit | DWORD **- unused2** | 0x0 |
| 1 bit | DWORD **- fAutoFilter** | 0x1 |
| 1 bit | DWORD **- fPersistAutoFilter** | 0x1 |
| 1 bit | DWORD **- fShowInsertRow** | 0x0 |
| 1 bit | DWORD **- fInsertRowInsCells** | 0x0 |
| 1 bit | DWORD **- fLoadPldwIdDeleted** | 0x0 |
| 1 bit | DWORD **- fShownTotalRow** | 0x0 |
| 1 bit | DWORD **- reserved1** | 0x0 |
| 1 bit | DWORD **- fNeedsCommit** | 0x0 |
| 1 bit | DWORD **- fSingleCell** | 0x0 |
| 1 bit | DWORD **- reserved2** | 0x0 |
| 1 bit | DWORD **- fApplyAutoFilter** | 0x1 |
| 1 bit | DWORD **- fForceInsertToBeVis** | 0x0 |
| 1 bit | DWORD **- fCompressedXml** | 0x0 |
| 1 bit | DWORD **- fLoadCSPName** | 0x0 |
| 1 bit | DWORD **- fLoadPldwIdChanged** | 0x0 |
| 4 bits | DWORD **- verXL** | 0xB |
| 1 bit | DWORD **- fLoadEntryId** | 0x1 |
| 1 bit | DWORD **- fLoadPllstclInvalid** | 0x0 |
| 1 bit | DWORD **- fGoodRupBld** | 0x0 |
| 1 bit | DWORD **- unused3** | 0x0 |
| 1 bit | DWORD **- fPublished** | 0x0 |
| 7 bits | DWORD **- unused2** | 0x00 |
| 0004 | ULONG **- lPosStmCache** | 0x00000000 |
| 0004 | ULONG **- cbStmCache** | 0x00000000 |
| 0004 | ULONG **- cchStmCache** | 0x00000000 |
| 0004 | [LEMMode](#Section_fe89780c48f940a0b6df3dbcda29e9e4) **- lem** | 0x00000000 |
| 0010 | rgb **- rgbHashParam** | 0x00000000000000000000000000000000 |
| 0008 | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- rgbName** | List1 |
| 0002 | USHORT **- cFieldData** | 0x0003 |
| 0004 | XLUnicodeString **- entryId** | 1 |
| 00A5 | Feat11FieldDataArray **- fieldData** |  |
| 0035 | [Feat11FieldDataItem](#Section_9680d9295738414888615a09e1b2c319) **- Feat11FieldDataItem[0]** |  |
| 0004 | DWORD **- idField** | 0x00000001 |
| 0004 | DWORD **- lfdt** | 0x00000000 |
| 0004 | DWORD **- lfxidt** | 0x00000000 |
| 0004 | DWORD **- ilta** | 0x00000000 |
| 0004 | DWORD **- cbFmtAgg** | 0x00000000 |
| 0004 | DWORD **- istnAgg** | 0xFFFFFFFF |
| 1 bit | DWORD **- fAutoFilter** | 0x1 |
| 1 bit | DWORD **- fAutoFilterHidden** | 0x0 |
| 1 bit | DWORD **- fLoadXmapi** | 0x0 |
| 1 bit | DWORD **- fLoadFmla** | 0x0 |
| 2 bits | DWORD **- unused1** | 0x0 |
| 1 bit | DWORD **- reserved2** | 0x0 |
| 1 bit | DWORD **- fLoadTotalFmla** | 0x0 |
| 1 bit | DWORD **- fLoadTotalArray** | 0x0 |
| 1 bit | DWORD **- fSaveStyleName** | 0x0 |
| 1 bit | DWORD **- fLoadTotalStr** | 0x0 |
| 1 bit | DWORD **- fAutoCreateCalcCol** | 0x0 |
| 20 bits | DWORD **- unused2** | 0x00000 |
| 0004 | DWORD **- cbFmtInsertRow** | 0x00000000 |
| 0004 | DWORD **- istnInsertRow** | 0xFFFFFFFF |
| 0004 | XLUnicodeString **- strFieldName** | 1 |
| 0007 | XLUnicodeString **- strCaption** | Item |
| 0006 | [Feat11FdaAutoFilter](#Section_c469083158af493c84209503b86a5628) **- AutoFilter** |  |
| 0004 | DWORD **- cbAutoFilter** | 0x00000000 |
| 0002 | USHORT **- unused** | 0x0001 |
| 0036 | Feat11FieldDataItem **- Feat11FieldDataItem[1]** |  |
| 0004 | DWORD **- idField** | 0x00000002 |
| 0004 | DWORD **- lfdt** | 0x00000000 |
| 0004 | DWORD **- lfxidt** | 0x00000000 |
| 0004 | DWORD **- ilta** | 0x00000000 |
| 0004 | DWORD **- cbFmtAgg** | 0x00000000 |
| 0004 | DWORD **- istnAgg** | 0xFFFFFFFF |
| 1 bit | DWORD **- fAutoFilter** | 0x1 |
| 1 bit | DWORD **- fAutoFilterHidden** | 0x0 |
| 1 bit | DWORD **- fLoadXmapi** | 0x0 |
| 1 bit | DWORD **- fLoadFmla** | 0x0 |
| 2 bits | DWORD **- unused1** | 0x0 |
| 1 bit | DWORD **- fLoadCalcColArray** | 0x0 |
| 1 bit | DWORD **- fLoadTotalFmla** | 0x0 |
| 1 bit | DWORD **- fLoadTotalArray** | 0x0 |
| 1 bit | DWORD **- fSaveStyleName** | 0x0 |
| 1 bit | DWORD **- fLoadTotalStr** | 0x0 |
| 1 bit | DWORD **- fAutoCreateCalcCol** | 0x0 |
| 20 bits | DWORD **- unused2** | 0x00000 |
| 0004 | DWORD **- cbFmtInsertRow** | 0x00000000 |
| 0004 | DWORD **- istnInsertRow** | 0xFFFFFFFF |
| 0004 | XLUnicodeString **- strFieldName** | 2 |
| 0008 | XLUnicodeString **- strCaption** | Price |
| 0006 | Feat11FdaAutoFilter **- AutoFilter** |  |
| 0004 | DWORD **- cbAutoFilter** | 0x00000000 |
| 0002 | USHORT **- unused** | 0x0002 |
| 003A | Feat11FieldDataItem **- Feat11FieldDataItem[2]** |  |
| 0004 | DWORD **- idField** | 0x00000003 |
| 0004 | DWORD **- lfdt** | 0x00000000 |
| 0004 | DWORD **- lfxidt** | 0x00000000 |
| 0004 | DWORD **- ilta** | 0x00000000 |
| 0004 | DWORD **- cbFmtAgg** | 0x00000000 |
| 0004 | DWORD **- istnAgg** | 0xFFFFFFFF |
| 1 bit | DWORD **- fAutoFilter** | 0x1 |
| 1 bit | DWORD **- fAutoFilterHidden** | 0x0 |
| 1 bit | DWORD **- fLoadXmapi** | 0x0 |
| 1 bit | DWORD **- fLoadFmla** | 0x0 |
| 2 bits | DWORD **- unused1** | 0x0 |
| 1 bit | DWORD **- fLoadCalcColArray** | 0x0 |
| 1 bit | DWORD **- fLoadTotalFmla** | 0x0 |
| 1 bit | DWORD **- fLoadTotalArray** | 0x0 |
| 1 bit | DWORD **- fSaveStyleName** | 0x0 |
| 1 bit | DWORD **- fLoadTotalStr** | 0x0 |
| 1 bit | DWORD **- fAutoCreateCalcCol** | 0x0 |
| 20 bits | DWORD **- unused2** | 0x00000 |
| 0004 | DWORD **- cbFmtInsertRow** | 0x00000000 |
| 0004 | DWORD **- istnInsertRow** | 0xFFFFFFFF |
| 0004 | XLUnicodeString **- strFieldName** | 3 |
| 000C | XLUnicodeString **- strCaption** | Sales Tax |
| 0006 | Feat11FdaAutoFilter **- AutoFilter** |  |
| 0004 | DWORD **- cbAutoFilter** | 0x00000000 |
| 0002 | USHORT **- unused** | 0x0003 |

Figure 28: Structure of Feature11

**frtRefHeaderU:**  This structure specifies a future version record type header.

**frtRefHeaderU.rt:**  0x0872 specifies that this record belongs to a record of type Feature11.

**frtRefHeaderU.grbitFrt:**  Specifies attributes for this record.

**frtRefHeaderU.grbitFrt.fFrtRef:** 0x1 specifies that the containing record specifies a range of [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461).

**frtRefHeaderU.grbitFrt.fFrtAlert:** 0x0 specifies not to alert the user of possible problems when saving as an earlier version of the file format.

**frtRefHeaderU.ref8:**  Specifies a range of cells on the sheet. This refers to the range C4:E7. Because frt.rt is equal to 0x0872, this field is ignored.

**frtRefHeaderU.ref8.rwFirst:**  Specifies the first row in the Table range.

**frtRefHeaderU.ref8.rwFirst.rw:**  0x0003 specifies the first row in the table on the sheet. This refers to row four of the sheet.

**frtRefHeaderU.ref8.rwLast:**  Specifies the last row in the table range.

**frtRefHeaderU.ref8.rwLast.rw:**  0x0006 specifies the last row in the table on the sheet. This refers to row seven of the sheet.

**frtRefHeaderU.ref8.colFirst:**  Specifies the first column in the table range.

**frtRefHeaderU.ref8.colFirst.col:**  0x0002 specifies the first column in the table on the sheet. This refers to column C of the sheet.

**frtRefHeaderU.ref8.colLast:**  Specifies the last column in the table range.

**frtRefHeaderU.ref8.colLast.col:** 0x0004 specifies the last column in the table on the sheet. This refers to column E of the sheet.

**isf:** 0x0005 specifies that the shared feature type is a table feature.

**cref2:** 0x0001 specifies the count of Ref2.5.209U records within the **refs2** field. **refs2** contains one Ref2.5.209U record.

**cbFeatData:** 0x00000000 specifies that the size of the **rgbFeat** field is calculated using the following formula:

 Size of **rgbFeat** = record total size in bytes – size of **refs2** in bytes – 27 bytes

 Size of **rgbFeat** = 278 bytes - 8 bytes - 27 bytes

 Size of **rgbFeat** = 243 bytes

**refs2:** Specifies the references to the ranges of cells within the sheet that are affected by the feature.

**refs2.ref[0]:** The first Ref2.5.209U record in the array. It specifies the range C4:E7. This specifies the range of cells for the table.

**refs2.ref[0].rwFirst.rw:** 0x0003 specifies that the first row of the range is row four.

**refs2.ref[0].rwLast.rw:** 0x0006 specifies that the last row of the range is row seven.

**refs2.ref[0].colFirst.col:** 0x0002 specifies that the first column of the range is column C.

**refs2.ref[0].colLast.col:** 0x0004 specifies that the last column of the range is column E.

**rgbFeat:** Specifies any of the possible features for this record. Contains a TableFeatureType record, as indicated by isf.

**rgbFeat.TableFeature:** Specifies the definition of this table.

**rgbFeat.TableFeature.lt:** 0x00000000 specifies the type of [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075) for the table is a range.

**rgbFeat.TableFeature.idList:** 0x00000001 specifies the identifier for the table.

**rgbFeat.TableFeature.crwHeader:** 0x00000001 specifies there is a row at the top of the table that is used as a [**header row**](#gt_42711baf-2679-445d-a994-0eadd91b1a38).

**rgbFeat.TableFeature.crwTotals:** 0x00000000 specifies there is not a row at the bottom of the table that is used as a [**total row**](#gt_95e9bcf4-d644-4e96-9070-dbc80b4d1b28).

**rgbFeat.TableFeature.idFieldNext:** 0x00000004 specifies the next unique identifier to try when assigning unique identifiers to columns of the table.

**rgbFeat.TableFeature.cbFSData:** 0x00000040 specifies the size, in bytes, of the fixed portion of this TableFeatureType structure.

**rgbFeat.TableFeature.rupBuild:** This value is not valid, as specified by **rgbFeat.TableFeature.fGoodRupBld**.

**rgbFeat.TableFeature.fAutoFilter:** 0x1 specifies the table has [**AutoFilters**](#gt_aa1cb4ce-f545-4fe2-b44c-5d393d833c35).

**rgbFeat.TableFeature.fPersistAutoFilter:** 0x1 specifies that the AutoFilter information is preserved for this table across data refresh operations.

**rgbFeat.TableFeature.fShowInsertRow:** 0x0 specifies the [**insert row**](#gt_3b3c223b-83e0-4697-85eb-815af907b8a9) is not visible.

**rgbFeat.TableFeature.fInsertRowInsCells:** 0x0 specifies rows are not shifted down because the insert row is not visible.

**rgbFeat.TableFeature.fLoadPldwIdDeleted:** 0x0 specifies the **idDeleted** field is not present.

**rgbFeat.TableFeature.fShownTotalRow:** 0x0 specifies the total row is not displayed at the bottom of the table.

**rgbFeat.TableFeature.fNeedsCommit:** 0x0 specifies that only table modifications that are synchronized with the data source exist.

**rgbFeat.TableFeature.fSingleCell:** 0x0 specifies the table is not limited to a single cell.

**rgbFeat.TableFeature.fApplyAutoFilter:** 0x1 specifies that the AutoFilter is currently applied.

**rgbFeat.TableFeature.fForceInsertToBeVis:** 0x0 specifies the insert row is not forced to be visible.

**rgbFeat.TableFeature.fCompressedXml:** 0x0 specifies the XML data linked to the table is to be compressed. No XML data link is present.

**rgbFeat.TableFeature.fLoadCSPName:** 0x0 specifies that the **CSPName** field is not present.

**rgbFeat.TableFeature.fLoadPldwIdChanged:** 0x0 specifies that the **IdChanged** field is not present.

**rgbFeat.TableFeature.verXL:** 0xB specifies the table was created using Microsoft Office Excel 2003.

**rgbFeat.TableFeature.fLoadEntryId:** 0x1 specifies the **EntryId** field is present

**rgbFeat.TableFeature.fLoadPllstclInvalid:** 0x0 specifies the **CellInvalid** field is not present

**rgbFeat.TableFeature.fGoodRupBld:** 0x0 specifies the **rupBuild** field is not valid.

**rgbFeat.TableFeature.fPublished:** 0x0 specifies the table was not published.

**rgbFeat.TableFeature.lPosStmCache:** 0x00000000 specifies the cached data begins at position 0 in the [List Data stream](#Section_914f09bd8c944c099e8631dfe058f037).

**rgbFeat.TableFeature.cbStmCache:** 0x00000000 specifies the size, in bytes, of the cached data within the List Data stream is 0.

**rgbFeat.TableFeature.cchStmCache:** 0x00000000 specifies the count of characters of the cached data within the List Data stream when uncompressed is 0.

**rgbFeat.TableFeature.lem:** 0x00000000 specifies the table can be directly edited inline.

**rgbFeat.TableFeature.rgbHashParam:** The value of this field is required to be zeros because the **lt** field is not equal to 0x00000001.

**rgbFeat.TableFeature.rgbName:** *List1* specifies the unique name of the table.

**rgbFeat.TableFeature.cFieldData:** 0x0003 specifies the number of columns in the table.

**rgbFeat.TableFeature.entryId:**  1 specifies the unique identifier for the table. This is ignored because the **lt** field is not equal to 0x00000002.

**rgbFeat.TableFeature.fieldData:**  An array of Feat2.5.113FieldDataItem that contains the definition of the columns of the table. The array contains three items as specified by the **cFieldData** field.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0]:**  Specifies the definition of the first column of the table.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].idField:** 0x00000001 specifies the identifier of the column.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].lfdt:** 0x00000000 specifies that the table column is of the Web-based data provider data type. This value specifies that the field is unused.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].lfxidt:** 0x00000000 specifies the table column XML data type. This value specifies the field is unused.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].ilta:** 0x00000000 specifies the aggregation function to use for the column. This value specifies that no formula is used.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].cbFmtAgg:** 0x00000000 specifies that the **dxfFmtAgg** field does not exist.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].istnAgg:** 0xFFFFFFFF specifies the total row of the column uses the default style of the table.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].fAutoFilter:** 0x1 specifies that this column has AutoFilters.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].fAutoFilterHidden:** 0x0 specifies that this column has AutoFilters displayed.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].fLoadXmapi:** 0x0 specifies the **rgXmap** field is not present.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].fLoadFmla:** 0x0 specifies that the **fmla** field is not present.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].fLoadTotalFmla:** 0x0 specifies that the **totalFmla** field is not present.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].fLoadTotalArray:** 0x0 specifies that the formula specified by **totalFmla** is not an array formula.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].fSaveStyleName:** 0x0 specifies that the **dskHdrCache.strStyleName** field is not present.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].fLoadTotalStr:** 0x0 specifies the **strTotal** field is not present.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].fAutoCreateCalcCol:** 0x0 specifies the column does not have a calculated column formula.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].cbFmtInsertRow:** 0x00000000 specifies that the **dxfFmtInsertRow** field does not exist.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].istnInsertRow:** 0xFFFFFFFF specifies the insert row of the column uses the default style of the table.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].strFieldName:** Specifies the name of the column, as provided by the data source.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].strCaption:** *Item* specifies the caption of the column.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].AutoFilter:**  Specifies the characteristics of the AutoFilter for the column

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0].AutoFilter.cbAutoFilter:** 0x00000000 specifies that the **recAutoFilter** field does not exist.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[1]:**  Specifies the definition of the second column of the table. The details of most of the fields within this structure are omitted here because they are the same as the fields in the first column **rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0]**.

**rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[2]:**  Specifies the definition of the third column of the table. The details of most of the fields within this structure are omitted here because they are the same as the fields in the first column **rgbFeat.TableFeature.fieldData.Feat11FieldDataItem[0]**.

## 3.4 Filters

This example shows how filters are applied to a [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) of [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) (C4:C8) on a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) when the [**AutoFilter**](#gt_aa1cb4ce-f545-4fe2-b44c-5d393d833c35) is set to display items that are greater than 70.

The first record in this example is the [FilterMode](#Section_5c769f491a514f859bf80394754c7a65) record that appears in a [worksheet substream](#section_f41c06f2905749a18c3fa4a4d211fc56) (the worksheet substream is not included in this example for brevity). This record specifies that the data in the containing sheet is filtered.

Other records mentioned in this example are the [AutoFilterInfo](#Section_48d72277d8054ea08a518a36bc6e32d1) record and [AutoFilter](#Section_665bd56446774ea7bf6b89f27edb0788) record. They specify the properties of the AutoFilter and define the conditions that are used to filter the data.

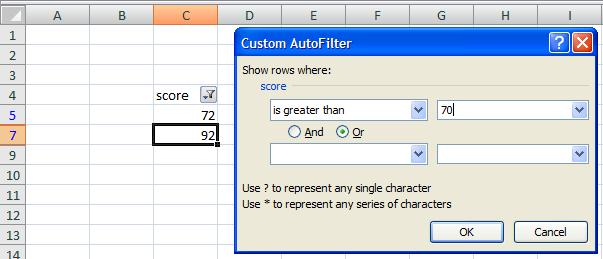


Figure 29: AutoFilter in this example within a sheet

### 3.4.1 Filters: FilterMode

The first record in this example, [FilterMode](#Section_5c769f491a514f859bf80394754c7a65), specifies that the data in the containing [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) is filtered.

| **Size** | **Structure** |
| --- | --- |
| 0000 | FilterMode **- FilterMode** |

Figure 30: Structure of FilterMode

### 3.4.2 Filters: AutoFilterInfo

The [AutoFilterInfo](#Section_48d72277d8054ea08a518a36bc6e32d1) record specifies the number of columns that have [**AutoFilter**](#gt_aa1cb4ce-f545-4fe2-b44c-5d393d833c35) enabled and indicates the beginning of the collection of [AutoFilter](#Section_665bd56446774ea7bf6b89f27edb0788) records.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | AutoFilterInfo **- AutoFilterInfo** |  |
| 0002 | USHORT **- cEntries** | 0x0001 |

Figure 31: Structure of AutoFilterInfo

**cEntries:** 0x0001 specifies the number of filtered columns.

### 3.4.3 Filters: AutoFilter

Next, the [AutoFilter](#Section_665bd56446774ea7bf6b89f27edb0788) record specifies the criteria that are used to filter the data.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0018 | AutoFilter **- AutoFilter** |  |
| 0002 | USHORT **- iEntry** | 0x0000 |
| 2 bits | USHORT **- wJoin** | 0x0 |
| 1 bit | USHORT **- fSimple1** | 0x0 |
| 1 bit | USHORT **- fSimple2** | 0x0 |
| 1 bit | USHORT **- fTopN** | 0x0 |
| 1 bit | USHORT **- fTop** | 0x0 |
| 1 bit | USHORT **- fPercent** | 0x0 |
| 9 bits | USHORT **- wTopN** | 0x000 |
| 000A | [AFDOper](#Section_0e30d7c2fe7a4c97a2bef40a9709a473) **- doper1** |  |
| 0001 | BYTE **- vt** | 0x02 |
| 0001 | BYTE **- grbitSign** | 0x04 |
| 0008 | [AFDOperRk](#Section_416473f854fb49ab93f7b5439f070476) **- vtValue** |  |
| 0004 | [RkNumber](#Section_04fa5340122f49db93ea00cc75501efc) **- rk** |  |
| 1 bit | ULONG **- fX100** | 0x0 |
| 1 bit | ULONG **- fInt** | 0x0 |
| 30 bits | ULONG **- num** | 0x10146000 |
| 0004 | DWORD **- unused1** | 0x00000000 |
| 000A | AFDOper **- doper2** |  |
| 0001 | BYTE **- vt** | 0x00 |
| 0001 | BYTE **- grbitSign** | 0x00 |
| 0008 | BLOB **- vtValue** | 0x0000000000000000 |

Figure 32: Structure of AutoFilter

**iEntry:** 0x0000 specifies that this [**AutoFilter**](#gt_aa1cb4ce-f545-4fe2-b44c-5d393d833c35) applies to the first column in this [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

**wJoin:** 0x0 specifies that filtering conditions specified in **doper1** and **doper2** conditions are joined by a logical AND operation when applying the AutoFilter.

**fSimple1:** 0x0 specifies that an application-specific performance optimization cannot be used.

**fSimple2:** 0x0 specifies that an application-specific performance optimization cannot be used.

**fTopN:** 0x0 specifies that this AutoFilter is not a [**Top N filter**](#gt_0f30d3fd-cc8f-4c20-ab45-4ccbb3f834d9).

**fTop:** 0x0 is ignored because **fTopN** is 0.

**fPercent:** 0x0 is ignored because **fTopN** is 0.

**wTopN:** 0x000 is ignored because **fTopN** is 0.

**doper1:** An AFDOper that specifies the first AutoFilter condition.

**doper1.vt:** 0x02 specifies that the type of comparison is numeric.

**doper1.grbitSign:** 0x04 specifies that the comparison operation is GREATER THAN.

**doper1.vtValue:** An AFDOperRk that specifies a numeric value.

**doper1.vtValue.rk:**  An RkNumber specifies a numeric value.

**doper1.vtValue.rk.fX100:** 0x0 specifies that the value in the **doper1.vtValue.rk.num** field was not multiplied by 100 when it was saved.

**doper1.vtValue.rk.fInt:** 0x0 specifies that the value in the **doper1.vtValue.rk.num** field is 30 most significant bits of a 64-bit binary floating-point number.

**doper1.vtValue.rk.num:** 0x10146000 specifies the 30 most significant bits of a 64-bit binary floating-point number whose remaining bits are 0. That number is 70.

**doper2:**  An AFDOper that specifies the second AutoFilter condition.

**doper2.vt:** 0x00 specifies that there is no second AutoFilter defined.

**doper2.grbitSign:** 0x00 specifies that there is no second filter.

**doper2.vtValue:** 0x0000000000000000 is ignored because **doper2.vt** is 0.

## 3.5 External References

This example shows a workbook where the cell F5 contains an external reference to [Book1.xls]Sheet1!B3. The example workbook and Book1.xls are in the same folder, and the [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) contents of Sheet1!B3 in the external workbook contains the string "External Cell". The following figure shows a possible implementation of the external reference discussed in this example:

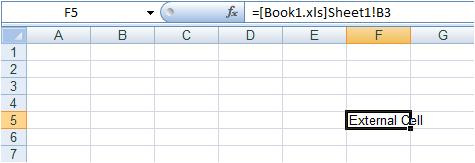


Figure 33: External reference in this example a sheet

### 3.5.1 External References: Formula

The first record in this example is the [Formula](#Section_8e3c69786c9f4915a82607613204b244) record that appears in the [global substream](#Section_ca4c174887294a93abb94602b3a01fb1) (the global substream is not included in this example for brevity). This record specifies the formula for the cell F5. The formula is a reference to a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) in an external [**worksheet**](#gt_2fdc6291-fa6a-48a6-afbb-04f910d68615).

Other records mentioned in this example are [String](#Section_504b6cfcd57b429692f4ceefc0a2ca9b), [SupBook](#Section_31ed3738e4ff4b60804cac49ac1ee6c0), [XCT](#Section_7b5ed322cc93451da553846066fe2f8c), [CRN](#Section_049bee32923041a9ab401cf5de41d563) and [ExternSheet](#Section_475df8d4a3be47a59a014ec828059f43) records. These records specify the external referenced cell as well as the [external cell cache](#Section_b985d1a223f3483ebebdbd0e882d4c89) that stores the cached value of the cell.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001D | Formula **- Formula** |  |
| 0006 | [Cell](#Section_6bb50f66faf048f9b6a9f0f452a77598) **- cell** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0004 |
| 0002 | [Col](#Section_febd138c9c8e42e98a3e49e0978b39a6) **- col** |  |
| 0002 | USHORT **- col** | 0x0005 |
| 0002 | [IXFCell](#Section_f9bc476745704f609a8e6fd3f32ddf3b) **- ixfe** |  |
| 0002 | USHORT **- ixfe** | 0x000F |
| 0008 | [FormulaValue](#Section_39a0757ac7bb4e85b1443e7837b059d7) **- val** |  |
| 0001 | BYTE **- byte1** | 0x00 |
| 0001 | BYTE **- byte2** | 0x00 |
| 0001 | BYTE **- byte3** | 0xA0 |
| 0001 | BYTE **- byte4** | 0x00 |
| 0001 | BYTE **- byte5** | 0x9C |
| 0001 | BYTE **- byte6** | 0x01 |
| 0002 | USHORT **- fExprO** | 0xFFFF |
| 1 bit | USHORT **- fAlwaysCalc** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFill** | 0x0 |
| 1 bit | USHORT **- fShrFmla** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 1 bit | USHORT **- fClearErrors** | 0x0 |
| 10 bits | USHORT **- reserved3** | 0x000 |
| 0004 | ULONG **- unused** | 0xFCC412C8 |
| 0009 | [CellParsedFormula](#Section_7dd67f0a671d4905b87b4cc07295e442) **- formula** |  |
| 0002 | WORD **- cce** | 0x0007 |
| 0007 | [Rgce](#Section_6cdf7d38d08c4e56bd2f6c82b8da752e) **- rgce** |  |
| 0007 | [Ptg](#Section_9310c3bbd73f4db0834228e1e0fcb68f) **- Ptg[0]** |  |
| 0007 | [PtgRef3d](#Section_1ca817be8df34b808d3546b5eb753577) **- PtgRef3d** |  |
| 5 bits | BYTE **- ptg** | 0x1A |
| 2 bits | [PtgDataType](#Section_80d504baeb5d4a0fa5da3dcc792dd78e) **- type** | 0x2 |
| 1 bit | BYTE **- reserved** | 0x0 |
| 0002 | USHORT **- ixti** | 0x0000 |
| 0004 | [RgceLoc](#Section_f2395c3334a44b0785a99bb5f07848d9) **- loc** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- row** |  |
| 0002 | USHORT **- rw** | 0x0002 |
| 0002 | [ColRelU](#Section_6e5eed105b7743d68dd037345f8654ad) **- column** |  |
| 14 bits | USHORT **- col** | 0x0001 |
| 1 bit | USHORT **- colRelative** | 0x1 |
| 1 bit | USHORT **- rowRelative** | 0x1 |

Figure 34: Structure of Formula

**cell:** Specifies a cell in this [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) that contains the external reference. The specified cell is F5.

**cell.rw:** Specifies the row of this cell in this sheet.

**cell.rw.rw:** 0x0004 specifies that the row of this cell is row 5.

**cell.col:** Specifies the column of this cell in this sheet.

**cell.col.col:** 0x0005 specifies that the column of this cell is column F.

**cell.ixfe:** Specifies the formatting properties for this cell.

**cell.ixfe.ixfe:** 0x000F specifies that the cell has the default cell format.

**val:** Specifies the value to which the formula evaluated. This specifies the value stored in cell F5.

**val.byte1:** 0x00 specifies that the value to which this formula is evaluated is a string value. The string value is stored in the String record following this record.

**val.fExprO:** 0xFFFF specifies that the value to which this formula evaluated is a Boolean value, an error value, a string value, or a blank string value and that **val.byte2**, **val.byte3**, **val.byte4**, **val.byte5**, and **val.byte6** are ignored. **val.byte2**, **val.byte3**, **val.byte4**, **val.byte5**, and **val.byte6** are omitted from this example for brevity.

**fAlwaysCalc:** 0x0 specifies that this cell value is not to be calculated during the next recalculation.

**fFill:** 0x0 specifies that this cell has either a [**fill alignment**](#gt_cfc4e171-6104-470e-9ebb-812afea17078) or a [**center-across-selection alignment**](#gt_ef7324bd-dac8-46e2-8df5-db44d8b925a8).

**fShrFmla:** 0x0 specifies that the formula (section [2.2.2](#Section_e7625cc83da94154b44949cf1bbd9703)) is not part of a shared formula.

**fClearErrors:** 0x0 specifies that the formula is not excluded from [**formula error checking**](#gt_c28d38d6-c6d1-4d06-89c2-29816f9c5b23).

**formula:** Specifies the formula contained in the cell F5 in this sheet.

**formula.cce:** 0x0007 specifies that the following **formula.rgce** field is 7 bytes.

**formula.rgce:** Specifies the sequence of Ptgs structures. The sequence of Ptgs specify the formula.

**formula.rgce.Ptg[0]:** The first and only Ptg structure in the sequence. Specifies that there is only one element in the formula.

**formula.rgce.Ptg[0].PtgRef3d:**  Specifies the PtgRef3d structure. Specifies that the formula is a reference to a single cell in a sheet.

**formula.rgce.Ptg[0].PtgRef3d.ptg:** 0x1A specifies that this Ptg is a PtgRef3d structure.

**formula.rgce.Ptg[0].PtgRef3d.type:** 0x2 specifies that the PtgRef3d data type is a single value.

**formula.rgce.Ptg[0].PtgRef3d.ixti:** 0x0000 specifies the first [XTI](#Section_5adbad90093d4bc6acc1b662270bc0d7) structure of the **rgXTI** array in the ExternSheet record. The first XTI of the **rgXTI** array specifies the Supbook record that specifies the target sheet that contains the referenced cell. This Supbook record is the third record in this example. The ExternSheet record is the seventh record in this example.

**formula.rgce.Ptg[0].PtgRef3d.loc:**  Specifies the coordinates of the referenced cell. This field is a RgceLoc value because PtgRef3d is not part of a [NameParsedFormula](#Section_9afd1c6cc4864d9cb6443708428d2ffb) structure.

**formula.rgce.Ptg[0].PtgRef3d.loc.row:**  Specifies the row of the referenced cell.

**formula.rgce.Ptg[0].PtgRef3d.loc.row.rw:** 0x0002 specifies that the row of the referenced cell is row 3.

**formula.rgce.Ptg[0].PtgRef3d.loc.column:**  Specifies the column of the referenced cell.

**formula.rgce.Ptg[0].PtgRef3d.loc.column.col:** 0x0001 specifies that the column of the referenced cell is column B.

**formula.rgce.Ptg[0].PtgRef3d.loc.column.colRelative:** 0x1 specifies that the column is a [**relative reference**](#gt_238687e6-aab3-40c3-ac9f-6107236df2ac).

**formula.rgce.Ptg[0].PtgRef3d.loc.column.rowRelative:** 0x1 specifies that the row is a relative reference.

### 3.5.2 External References: String

The next record in this example, [String](#Section_504b6cfcd57b429692f4ceefc0a2ca9b), specifies the Unicode string value to which the formula evaluated.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0010 | String **- String** |  |
| 0010 | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- string** | External Cell |

Figure 35: Structure of String

**string:**  *External Cell* is the Unicode string value.

### 3.5.3 External References: SupBook 1

The next record in this example, [Supbook](#Section_31ed3738e4ff4b60804cac49ac1ee6c0), specifies an external workbook referencing [supporting link](#Section_cc5920ba01074d92bbdfc12ca986f31f) and specifies the beginning of a collection of records that specifies the referenced cell (B3) in the [External Workbook](#Section_c8bd9cdbb0784622a3bffb87f35a36cc) (*Book1.xls*). This record is the first SupBook record in the [global substream](#Section_ca4c174887294a93abb94602b3a01fb1).

The [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) of the referenced cell (*Book1.xls*) is specified in the Supbook record. The [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) of the referenced cell (*Sheet1*) is specified in the [XCT](#Section_7b5ed322cc93451da553846066fe2f8c) record following this record. The referenced cell (B3) is specified in the [CRN](#Section_049bee32923041a9ab401cf5de41d563) record following the XCT record.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 002A | SupBook **- SupBook** |  |
| 0002 | USHORT **- ctab** | 0x0003 |
| 0002 | USHORT **- cch** | 0x000A |
| 000B | [XLUnicodeStringNoCch](#Section_e64abeee2f3a4004b9e33d67e29d6066) **- virtPath** | Book1.xls |
| 001B | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- rgst** |  |
| 0009 | XLUnicodeString **- rgst[0]** | Sheet1 |
| 0009 | XLUnicodeString **- rgst[1]** | Sheet2 |
| 0009 | XLUnicodeString **- rgst[2]** | Sheet3 |

Figure 36: Structure of SupBook

**ctab:** 0x0003 specifies that there are three sheets in the referenced workbook.

**cch:** 0x000A specifies that there are 10 characters in **virtPath**.

**virtPath:** *Book1.xls* specifies the encoded path of the referenced workbook. The length of the string is 10 characters, but the first character is an unprintable Unicode character with a value of 0x01.

**rgst:** Specifies an array of three sheets contained within the referenced workbook.

**rgst.rgst[0]:** *Sheet1* specifies the name of the first sheet in the referenced workbook.

**rgst.rgst[1]:** *Sheet2* specifies the name of the second sheet in the referenced workbook.

**rgst.rgst[2]:** *Sheet3* specifies the name of the third sheet in the referenced workbook.

### 3.5.4 External References: XCT

The next record in this example, [XCT](#Section_7b5ed322cc93451da553846066fe2f8c), specifies the beginning of an [external cell cache](#Section_b985d1a223f3483ebebdbd0e882d4c89) and specifies the beginning of a collection of [CRN](#Section_049bee32923041a9ab401cf5de41d563) records. The collection of CRN records specifies the value of the [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) (B3) in a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) (*Sheet1*) in the external cell cache.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | XCT **- Xct** |  |
| 0002 | SHORT **- ccrn** | 0x0001 |
| 0002 | USHORT **- itab** | 0x0000 |

Figure 37: Structure of Xct

**ccrn:** 0x0001 specifies that there is one CRN record immediately following this record.

**itab:** 0x0000 specifies the first element in the **rgst** field of the [SupBook](#Section_31ed3738e4ff4b60804cac49ac1ee6c0) that specifies that the referenced cell is in the *Sheet1* sheet.

### 3.5.5 External References: CRN

The next record in this example, [CRN](#Section_049bee32923041a9ab401cf5de41d563), specifies the value of the referenced [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) in the [external cell cache](#Section_b985d1a223f3483ebebdbd0e882d4c89).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0015 | CRN **- Crn** |  |
| 0001 | [ColByteU](#Section_3eb5ecb1fbba49c3b8e3ede2096ff5a0) **- colLast** |  |
| 0001 | BYTE **- col** | 0x01 |
| 0001 | ColByteU **- colFirst** |  |
| 0001 | BYTE **- col** | 0x01 |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- row** |  |
| 0002 | USHORT **- rw** | 0x0002 |
| 0011 | CRNOper **- crnOper** |  |
| 0011 | [SerAr](#Section_69ff31ac671b4aafa3b5a01e9e283a03) **- crnOper[0]** |  |
| 0001 | BYTE **- reserved** | 0x02 |
| 0010 | [SerStr](#Section_8a7db24ebcd549e7af94c7ccb2087f23) **- string** | External Cell |

Figure 38: Structure of Crn

**colLast:** Specifies the column of the last cell that has a value in the external cell cache.

**colLast.col:** 0x01 specifies that the column of the last cell is column B.

**colFirst:** Specifies the column of the first cell that has a value in the external cell cache.

**colFirst.col:** 0x01 specifies that the column of the first cell is column B.

**row:** Specifies the row index of the cell that has a value in the external cell cache.

**row.rw:** 0x0002 specifies that the row of the cell is row 3.

**crnOper:** Specifies an array of cell values in the range specified by **colLast**, **colFirst** and **row**, which is B3.

**crnOper.crnOper[0].string:** *External Cell* specifies the text referenced in cell B3.

### 3.5.6 External References: SupBook 2

The next record in this example, [SupBook](#Section_31ed3738e4ff4b60804cac49ac1ee6c0), specifies a self-referencing [supporting link](#Section_cc5920ba01074d92bbdfc12ca986f31f). The self-referencing supporting link is used when a cell in this [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) refers to a cell in a different [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) in the same workbook. In this example this record is not used. This is the second SupBook record in the [global substream](#Section_ca4c174887294a93abb94602b3a01fb1).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | SupBook **- SupBook** |  |
| 0002 | USHORT **- ctab** | 0x0003 |
| 0002 | USHORT **- cch** | 0x0401 |

Figure 39: Structure of SupBook

The **VirtPath** field and **rgst** field of this record are similar to the corresponding fields of the third record (SupBook) in this example and are omitted for brevity.

**ctab:** 0x0003 specifies that there are three sheets in the referenced workbook.

**cch:** 0x0401 specifies that this is self-referencing supporting link.

### 3.5.7 External References: ExternSheet

The next record in this example, [ExternSheet](#Section_475df8d4a3be47a59a014ec828059f43), specifies a collection of [XTI](#Section_5adbad90093d4bc6acc1b662270bc0d7) records that specify the [supporting link](#Section_cc5920ba01074d92bbdfc12ca986f31f) information.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000E | ExternSheet **- ExtSheet** |  |
| 0002 | USHORT **- cXTI** | 0x0002 |
| 000C | XTI **- rgXTI** |  |
| 0006 | XTI **- xti[0]** |  |
| 0002 | USHORT **- iSupBook** | 0x0000 |
| 0002 | SHORT **- itabFirst** | 0x0000 |
| 0002 | SHORT **- itabLast** | 0x0000 |
| 0006 | XTI **- xti[1]** |  |
| 0002 | USHORT **- iSupBook** | 0x0001 |
| 0002 | SHORT **- itabFirst** | 0x0000 |
| 0002 | SHORT **- itabLast** | 0x0000 |

Figure 40: Structure of ExtSheet

**cXTI:** 0x0002 specifies that there are two elements in the **rgXTI** array.

**rgXTI:** An array of XTI elements. The number of elements in the array is specified by the **cXTI** field.

**rgXTI.xti[0]:** This is the first XTI element in the array.

**rgXTI.xti[0].iSupBook:** 0x0000 specifies the reference to the first [SupBook](#Section_31ed3738e4ff4b60804cac49ac1ee6c0) record in the [global substream](#Section_ca4c174887294a93abb94602b3a01fb1).

**rgXTI.xti[0].itabFirst:** 0x0000 specifies that the supporting link has a sheet-level scope and specifies the first sheet, within the referenced [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe), that is in scope. The first sheet in scope is *Sheet1*.

**rgXTI.xti[0].itabLast:** 0x0000 specifies that the supporting link has a sheet-level scope and specifies the last sheet, within the referenced workbook, that is in scope. The last sheet in scope is *Sheet1*.

**rgXTI.xti[1]:** This is the second XTI element in the array. (The details of the referenced XTI record are omitted for brevity.)

**rgXTI.xti[1].iSupBook:** 0x0001 specifies the reference to the second SupBook record in the global substream.

## 3.6 Column Chart Object

This example shows a column chart object on a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d). The set of records that specify the column chart exist in the [chart sheet substream](#Section_732ff614d939416bb7c76d983471ff11) of the file (the chart sheet substream is not included in this example for brevity). The column chart specified in this example has a single series with three control points. The following figure shows a possible implementation of the column chart discussed in this example:

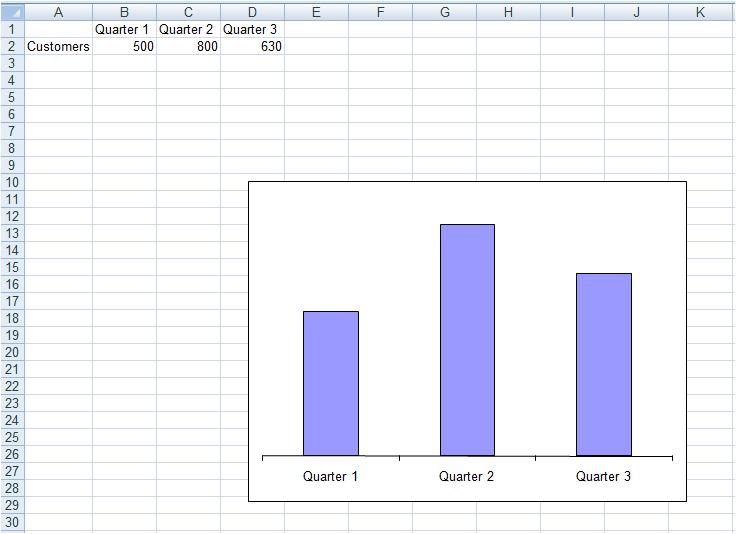


Figure 41: Column chart in this example within a sheet

### 3.6.1 Column Chart Object: Chart

The first record in this example is the [Chart](#Section_8f56b001f57445e0932f84cf30408323) record. This record specifies the position and dimensions of the [**chart area**](#gt_5524dd6c-3d8d-4784-bfca-a3323acceb39) (section [2.2.3.17](#Section_73c3fa9c39be46f6bbf32ee5977a2d7d)). The position of the chart area is automatically calculated by the application and the dimension of the chart is specified by the **dx** and **dy** fields.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0010 | Chart **- Chart** |  |
| 0004 | FixedPoint **- x** | 0x00000000 |
| 0004 | FixedPoint **- y** | 0x00000000 |
| 0004 | FixedPoint **- dx** | 0x01493FD0 |
| 0004 | FixedPoint **- dy** | 0x00F0C000 |

Figure 42: Structure of Chart

**x:** The value of this field is ignored because the **fAutoPosition** field of the **Frame** record that follows this record equals 1.

**y:** The value of this field is ignored because the **fAutoPosition** field of the **Frame** record that follows this record equals 1.

**dx:** 0x01493FD0 specifies the width of the chart in [**points**](#gt_d072e4da-7898-4227-8f25-9fe77db43571). This field is a fixed point and the width is calculated using the following formula:

width of chart = 0149 + (3FD0 / 65536.0) = 329 + (16336 / 65536)

**dy:** 0x00F0C000 specifies the height of the chart in points. This field is a fixed point and the height is calculated using the following formula:

height of chart = 00F0 + (C000 / 65536.0) = 240 + (49152 / 65536)

The next record in this example, [Begin](#Section_52d0d2c76cc540c4adf3aea158411ef3), specifies the beginning of a collection of records that specifies the chart area (section 2.2.3.17) of the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c).

The next record in this example, [Scl](#Section_2cdcac9bf00444cb82e1d592500ffef8), specifies the [**zoom level**](#gt_bfb33471-a018-422b-bc63-177c8bc1831f) of the current view in the window used to display the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d). The zoom level of the current view is equal to 1.

The next record in this example, [PlotGrowth](#Section_38ca32ff60c0449ca5e97a40b3f95185), specifies the scale factors for [**font scaling**](#gt_47254269-4165-4a8c-92a0-c920f732d0bd) in the [**plot area**](#gt_5bf6768b-586e-4869-8247-e0f9e899183c).

(The details of the Begin record, the Scl record, and the PlotGrowth record are omitted from the example for brevity.)

### 3.6.2 Column Chart Object: Frame

The next record in this example, [Frame](#Section_0cb3e202342740b4b93b277c0bd977ff), specifies the type, size, and position of the frame around the column chart. The size of the frame is stored in the [Chart](#Section_8f56b001f57445e0932f84cf30408323) record and the position of the frame is automatically calculated by the application.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | Frame **- Frame** |  |
| 0002 | USHORT **- frt** | 0x0000 |
| 1 bit | USHORT **- fAutoSize** | 0x0 |
| 1 bit | USHORT **- fAutoPosition** | 0x1 |
| 14 bits | USHORT **- reserved** | 0x0000 |

Figure 43: Structure of Frame

**frt:** 0x0000 specifies that the frame surrounding the chart element does not have a shadow.

**fAutoSize:** 0x0000 specifies that the size of the frame is not automatically calculated. The width (**dx** field) and height (**dy** field) of the Chart record are used as the size of the frame.

**fAutoPosition:** 0x0001 specifies that the position of the frame is automatically calculated by the application and the **x** and **y** fields of the Chart record are ignored.

### 3.6.3 Column Chart Object: LineFormat

The next record in this example, [LineFormat](#Section_1bff256238664b958a6bf3fea1659f6d), specifies the appearance of the lines of the frame.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000C | LineFormat **- LineFormat** |  |
| 0004 | [LongRGB](#Section_dfedc14244ef4981b6c650d607abf756) **- rgb** |  |
| 0001 | BYTE **- red** | 0x00 |
| 0001 | BYTE **- green** | 0x00 |
| 0001 | BYTE **- blue** | 0x00 |
| 0001 | BYTE **- reserved** | 0x00 |
| 0002 | USHORT **- lns** | 0x0000 |
| 0002 | SHORT **- we** | 0x0000 |
| 1 bit | USHORT **- fAuto** | 0x1 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fAxisOn** | 0x0 |
| 1 bit | USHORT **- fAutoCo** | 0x1 |
| 12 bits | USHORT **- reserved2** | 0x000 |
| 0002 | [IcvChart](#Section_ab0d01c3cf5945b4aef14e02811b61cb) **- icv** |  |
| 0002 | USHORT **- icv** | 0x004D |

Figure 44: Structure of LineFormat

(Fields in this record that are ignored because **fAuto** is 0x1 are omitted for brevity.)

**fAuto:** 0x1 specifies that the contents of the **lns**, **we**, **icv,** and **rgb** field are ignored and the defaults specified in the following table are used instead:

| Attribute | Default Value |
| --- | --- |
| Line pattern (**lns**) | 0xFFFF (Hairline) |
| Line weight (**we**) | 0x0000 (Narrow) |
| Line color (**icv**) | 0x004D |
| Line color (**rgb**) | 0x004D |

**fAxisOn:** 0x0000 specifies this field is ignored because the previous record is not an [AxisLine](#Section_d59921ddf25e45729d6adee440bb2d67) record with an **id** field equal to 0X0000, specifying the frame does not have any [axis](#Section_4117f73aa0f348d89c0f65864918ffb3) lines.

### 3.6.4 Column Chart Object: AreaFormat

The next record in this example, [AreaFormat](#Section_affb9fe34721495a9e5351c7d3c65480), specifies the patterns and colors used in the filled area of the column chart.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0010 | AreaFormat **- AreaFormat** |  |
| 0004 | [LongRGB](#Section_dfedc14244ef4981b6c650d607abf756) **- rgbFore** |  |
| 0001 | BYTE **- red** | 0xFF |
| 0001 | BYTE **- green** | 0xFF |
| 0001 | BYTE **- blue** | 0xFF |
| 0001 | BYTE **- reserved** | 0x00 |
| 0004 | LongRGB **- rgbBack** |  |
| 0001 | BYTE **- red** | 0x00 |
| 0001 | BYTE **- green** | 0x00 |
| 0001 | BYTE **- blue** | 0x00 |
| 0001 | BYTE **- reserved** | 0x00 |
| 0002 | SHORT **- fls** | 0x0001 |
| 1 bit | WORD **- fAuto** | 0x1 |
| 1 bit | WORD **- fInvertNeg** | 0x0 |
| 14 bits | WORD **- reserved** | 0x0000 |
| 0002 | [IcvChart](#Section_ab0d01c3cf5945b4aef14e02811b61cb) **- icvFore** |  |
| 0002 | USHORT **- icv** | 0x004E |
| 0002 | IcvChart **- icvBack** |  |
| 0002 | USHORT **- icv** | 0x004D |

Figure 45: Structure of AreaFormat

(Fields in this record that are ignored because **fAuto** is 0x1 are omitted for brevity.)

**fls:** 0x0001 specifies that the fill pattern is solid.

**fAuto:** 0x1 specifies that the fill colors are automatically set by the application.

The next record in this example, [End](#Section_abe8fd1db6a847b8864052ba75a76f5c), specifies the end of a collection of records that specifies the [**chart area**](#gt_5524dd6c-3d8d-4784-bfca-a3323acceb39) (section [2.2.3.17](#Section_73c3fa9c39be46f6bbf32ee5977a2d7d)) of the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c). The details of End record are omitted from the example for brevity.

### 3.6.5 Column Chart Object: Series

The next record in this example, [Series](#Section_d6eec0192d634c1e8080442af941b462), specifies a Series of this chart, the type of data it contains and the number of data fields that make up this series**.** The series of this column chart contains three textual [**categories (2)**](#gt_7d6acf13-ba4d-4a0a-930e-3eaee465c7f1) and three numerical values. In this example the series of this column chart is specified by the first Series record in the collection of Series records in the current [chart sheet substream](#Section_732ff614d939416bb7c76d983471ff11).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000C | Series **- Series** |  |
| 0002 | USHORT **- sdtX** | 0x0003 |
| 0002 | USHORT **- sdtY** | 0x0001 |
| 0002 | USHORT **- cValx** | 0x0003 |
| 0002 | USHORT **- cValy** | 0x0003 |
| 0002 | USHORT **- sdtBSize** | 0x0001 |
| 0002 | USHORT **- cValBSize** | 0x0000 |

Figure 46: Structure of Series

Fields in this record that are ignored because this [chart group](#Section_c91fdf3195e2495fa48a5546ce20c0c5) is not of the type bubble chart group, are omitted for brevity.

**sdtX:** 0x0003 specifies that the categories (2) contain text information.

**sdtY:** 0x0001 specifies that the values contain numeric information.

**cValx:** 0x0003 specifies that the count of categories (2) is 3.

**cValy:** 0x0003 specifies that the count of values is 3.

Records following this record, and before the next [BRAI](#Section_c4e36e616c174a75b414f33803c7456b) record, are omitted for brevity.

### 3.6.6 Column Chart Object: BRAI 1

The next record in this example, [BRAI](#Section_c4e36e616c174a75b414f33803c7456b), specifies a reference to [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) in a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) that have values that specify the name of the series.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000F | BRAI **- BRAI** |  |
| 0001 | BYTE **- id** | 0x00 |
| 0001 | BYTE **- rt** | 0x02 |
| 1 bit | USHORT **- fUnlinkedIfmt** | 0x0 |
| 15 bits | USHORT **- reserved** | 0x0000 |
| 0002 | IFmt **- ifmt** | 0x0000 |
| 0009 | [ChartParsedFormula](#Section_c5cd4a9adfc14dfcb06f94d31c7e116c) **- formula** |  |
| 0002 | WORD **- cce** | 0x0007 |
| 0007 | [Rgce](#Section_6cdf7d38d08c4e56bd2f6c82b8da752e) **- rgce** |  |
| 0007 | [Ptg](#Section_9310c3bbd73f4db0834228e1e0fcb68f) **- Ptg[0]** |  |
| 0007 | [PtgRef3d](#Section_1ca817be8df34b808d3546b5eb753577) **- PtgRef3d** |  |
| 5 bits | BYTE **- ptg** | 0x1A |
| 2 bits | [PtgDataType](#Section_80d504baeb5d4a0fa5da3dcc792dd78e) **- type** | 0x1 |
| 1 bit | BYTE **- reserved** | 0x0 |
| 0002 | USHORT **- ixti** | 0x0000 |
| 0004 | [RgceLoc](#Section_f2395c3334a44b0785a99bb5f07848d9) **- loc** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- row** |  |
| 0002 | USHORT **- rw** | 0x0001 |
| 0002 | [ColRelU](#Section_6e5eed105b7743d68dd037345f8654ad) **- column** |  |
| 14 bits | USHORT **- col** | 0x0000 |
| 1 bit | USHORT **- colRelative** | 0x0 |
| 1 bit | USHORT **- rowRelative** | 0x0 |

Figure 47: Structure of BRAI

**id:** 0x00 specifies that the values of the referenced cells specify the name of the series.

**rt:** 0x02 specifies that the [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075) is values from a range of cells in a sheet specified by the **rgce** field.

**fUnlinkedIfmt:** 0x0 specifies that the series name maintains the number formatting of the referenced data.

**ifmt:** 0x0000 specifies that the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) for the name of the series is automatically determined by the application.

**formula.cce:** 0x0007 specifies that the length of **rgce** is 7 bytes.

**formula.rgce.Ptg[0].PtgRef3d:**  This operand specifies a reference to a specific cell on one or more sheets.

**formula.rgce.Ptg[0].PtgRef3d.ptg:** 0x1A specifies that this Ptg is of type PtgRef3d.

**formula.rgce.Ptg[0].PtgRef3d.type:** 0x1 specifies that the value of the **ptg** field is a reference to a [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99).

**formula.rgce.Ptg[0].PtgRef3d.ixti:** 0x0000 specifies that the name of the series is found on the sheets referenced by the first [XTI](#Section_5adbad90093d4bc6acc1b662270bc0d7) in the [ExternSheet](#Section_475df8d4a3be47a59a014ec828059f43) record.

**formula.rgce.Ptg[0].PtgRef3d.loc:** Specifies that the coordinates of the referenced cell for the name of the series refers to cell A2.

**formula.rgce.Ptg[0].PtgRef3d.loc.row.rw:** 0x0001 specifies that the referenced cell is in row two.

**formula.rgce.Ptg[0].PtgRef3d.loc.column.col:** 0x0000 specifies that the referenced cell is in column A.

**formula.rgce.Ptg[0].PtgRef3d.loc.column.colRelative:** 0x0 specifies that the **col** field is an [**absolute reference**](#gt_cb0d7340-bfcf-4740-b77b-6616c2e4a542).

**formula.rgce.Ptg[0].PtgRef3d.loc.column.rowRelative:** 0x0 specifies that the **rw** field is an absolute reference.

### 3.6.7 Column Chart Object: SeriesText

The next record in this example, [SeriesText](#Section_e5d661c4bd7e4664a848495354b9fc3b), specifies the name of this [Series](#Section_d6eec0192d634c1e8080442af941b462). The name of this Series is *Customers*.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0016 | SeriesText **- SeriesText** |  |
| 0002 | USHORT **- reserved** | 0x0000 |
| 0014 | [ShortXLUnicodeString](#Section_051628580ca944cbbb07a720928f63f8) **- stText** | Customers |

Figure 48: Structure of SeriesText

**stText:** *Customers* specifies name of the series.

### 3.6.8 Column Chart Object: BRAI 2

The next record in this example, [BRAI](#Section_c4e36e616c174a75b414f33803c7456b), specifies a reference to data in a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) that specifies the values of this series. The values for this series are stored in the range B2:D2.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0013 | BRAI **- BRAI** |  |
| 0001 | BYTE **- id** | 0x01 |
| 0001 | BYTE **- rt** | 0x02 |
| 1 bit | USHORT **- fUnlinkedIfmt** | 0x0 |
| 15 bits | USHORT **- reserved** | 0x0000 |
| 0002 | IFmt **- ifmt** | 0x0000 |
| 000D | [ChartParsedFormula](#Section_c5cd4a9adfc14dfcb06f94d31c7e116c) **- formula** |  |
| 0002 | WORD **- cce** | 0x000B |
| 000B | [Rgce](#Section_6cdf7d38d08c4e56bd2f6c82b8da752e) **- rgce** |  |
| 000B | [Ptg](#Section_9310c3bbd73f4db0834228e1e0fcb68f) **- Ptg[0]** |  |
| 000B | [PtgArea3d](#Section_869033ad63044b9ab2ba1e7794ae345a) **- PtgArea3d** |  |
| 5 bits | BYTE **- ptg** | 0x1B |
| 2 bits | [PtgDataType](#Section_80d504baeb5d4a0fa5da3dcc792dd78e) **- type** | 0x1 |
| 1 bit | BYTE **- reserved** | 0x0 |
| 0002 | USHORT **- ixti** | 0x0000 |
| 0008 | [RgceArea](#Section_6df491b914e84efd9d9298db51b7cdbd) **- area** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- rowFirst** |  |
| 0002 | USHORT **- rw** | 0x0001 |
| 0002 | RwU **- rowLast** |  |
| 0002 | USHORT **- rw** | 0x0001 |
| 0002 | [ColRelU](#Section_6e5eed105b7743d68dd037345f8654ad) **- columnFirst** |  |
| 14 bits | USHORT **- col** | 0x0001 |
| 1 bit | USHORT **- colRelative** | 0x0 |
| 1 bit | USHORT **- rowRelative** | 0x0 |
| 0002 | ColRelU **- columnLast** |  |
| 14 bits | USHORT **- col** | 0x0003 |
| 1 bit | USHORT **- colRelative** | 0x0 |
| 1 bit | USHORT **- rowRelative** | 0x0 |

Figure 49: Structure of BRAI

**id:** 0x01 specifies that the referenced data specifies the values of the series.

**rt:** 0x02 specifies that the [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075) is values from a range of cells in a sheet specified by the **rgce** field.

**fUnlinkedIfmt:** 0x0 specifies that the series maintains the number formatting of the referenced data.

**ifmt:** 0x0000 specifies that the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) for the values of the series is automatically determined by the application.

**formula.cce:** 0x000B specifies that the length of the **rgce** field is 11 bytes.

**formula.rgce.Ptg[0].PtgArea3d:**  This operand specifies a reference to the rectangular range of cells on the sheet.

**formula.rgce.Ptg[0].PtgArea3d.ptg:** 0x1B specifies that this Ptg structure is of type PtgArea2.5.198.28d.

**formula.rgce.Ptg[0].PtgArea3d.type:** 0x01 specifies that the value of the **ptg** field is a reference to a range.

**formula.rgce.Ptg[0].PtgArea3d.ixti:** 0x0000 specifies the values of the series are found on the sheet referenced by the first [XTI](#Section_5adbad90093d4bc6acc1b662270bc0d7) structure in the [ExternSheet](#Section_475df8d4a3be47a59a014ec828059f43) record.

**formula.rgce.Ptg[0].PtgArea3d.area:**  Specifies that the coordinates of the referenced rectangular range of cells for values of the series are in the range B2:D2.

**formula.rgce.Ptg[0].PtgArea3d.area.rowFirst.rw:** 0x0001 specifies that row two of the sheet is the first row of the rectangular range of cells.

**formula.rgce.Ptg[0].PtgArea3d.area.rowLast.rw:** 0x0001 specifies that row two of the sheet is the last row of the rectangular range of cells.

**formula.rgce.Ptg[0].PtgArea3d.area.columnFirst.col:** 0x0001 specifies that column B of the sheet is the first column of the rectangular range of cells. The details of this ColRelU are not included in this example for brevity.

**formula.rgce.Ptg[0].PtgArea3d.area.columnLast.col:** 0x0003 specifies that column D of the sheet is the last column of the rectangular range of cells. The details of this ColRelU are not included in this example for brevity.

### 3.6.9 Column Chart Object: BRAI 3

The next record in this example, [BRAI](#Section_c4e36e616c174a75b414f33803c7456b), specifies a reference to data in a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) that specifies the [**category (2)**](#gt_7d6acf13-ba4d-4a0a-930e-3eaee465c7f1) names of this series. The category (2) names are stored in the range B1:D1.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0013 | BRAI **- BRAI** |  |
| 0001 | BYTE **- id** | 0x02 |
| 0001 | BYTE **- rt** | 0x02 |
| 0002 | USHORT **- fUnlinkedIfmt** | 0x0000 |
| 0002 | USHORT **- reserved** | 0x0000 |
| 0002 | IFmt **- ifmt** | 0x0000 |
| 000D | [ChartParsedFormula](#Section_c5cd4a9adfc14dfcb06f94d31c7e116c) **- formula** |  |
| 0002 | WORD **- cce** | 0x000B |
| 000B | [Rgce](#Section_6cdf7d38d08c4e56bd2f6c82b8da752e) **- rgce** |  |
| 000B | [Ptg](#Section_9310c3bbd73f4db0834228e1e0fcb68f) **- Ptg[0]** |  |
| 000B | [PtgArea3d](#Section_869033ad63044b9ab2ba1e7794ae345a) **- PtgArea3d** |  |
| 0001 | BYTE **- ptg** | 0x1B |
| 0001 | [PtgDataType](#Section_80d504baeb5d4a0fa5da3dcc792dd78e) **- type** | 0x01 |
| 0001 | BYTE **- reserved** | 0x00 |
| 0002 | USHORT **- ixti** | 0x0000 |
| 0008 | [RgceArea](#Section_6df491b914e84efd9d9298db51b7cdbd) **- area** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- rowFirst** |  |
| 0002 | USHORT **- rw** | 0x0000 |
| 0002 | RwU **- rowLast** |  |
| 0002 | USHORT **- rw** | 0x0000 |
| 0002 | [ColRelU](#Section_6e5eed105b7743d68dd037345f8654ad) **- columnFirst** |  |
| 14 bits | USHORT **- col** | 0x0001 |
| 1 bit | USHORT **- colRelative** | 0x0 |
| 1 bit | USHORT **- rowRelative** | 0x0 |
| 0002 | ColRelU **- columnLast** |  |
| 14 bits | USHORT **- col** | 0x0003 |
| 1 bit | USHORT **- colRelative** | 0x0 |
| 1 bit | USHORT **- rowRelative** | 0x0 |

Figure 50: Structure of BRAI

**id:** 0x02 specifies that the referenced data specifies the category (2) name of the series.

**rt:** 0x02 specifies that the [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075) is values from a range of cells in a sheet specified by the **rgce** field.

**fUnlinkedIfmt:** 0x0000 specifies that the series maintains the number formatting of the referenced data.

**ifmt:** 0x0000 specifies that the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) for the category (2) names of the series is automatically determined by the application.

**formula.cce:** 0x000B specifies that the length of the **rgce** field is 11 bytes.

**formula.rgce.Ptg[0].PtgArea3d:** This operand specifies a reference to the rectangular range of cells on the sheet.

**formula.rgce.Ptg[0].PtgArea3d.ptg:** 0x1B specifies that this Ptg structure is of type PtgArea2.5.198.28d.

**formula.rgce.Ptg[0].PtgArea3d.type:** 0x01 specifies that the data type for the value of the **ptg** field is a reference to a range.

**formula.rgce.Ptg[0].PtgArea3d.ixti:** 0x0000 specifies that the name of the category (2) is found on the sheet referenced by the first [XTI](#Section_5adbad90093d4bc6acc1b662270bc0d7) structure in the [ExternSheet](#Section_475df8d4a3be47a59a014ec828059f43) record.

**formula.rgce.Ptg[0].PtgArea3d.area:** Specifies that the coordinates of the referenced rectangular range of cells for the names of categories (2) are in the range B1:D1.

**formula.rgce.Ptg[0].PtgArea3d.area.rowFirst.rw:** 0x0000 specifies that the first row of the sheet is the first row of the rectangular range of cells.

**formula.rgce.Ptg[0].PtgArea3d.area.rowLast.rw:** 0x0000 specifies that the first row of the sheet is the last row of the rectangular range of cells.

**formula.rgce.Ptg[0].PtgArea3d.area.columnFirst.col:** 0x0001 specifies that the second column of the sheet is the first column of the rectangular range of cells. The details of this ColRelU structure are not included in this example for brevity.

**formula.rgce.Ptg[0].PtgArea3d.area.columnLast.col:** 0x0003 specifies that the fourth column of the sheet is the last column of the rectangular range of cells. The details of this ColRelU are not included in this example for brevity.

(Records following this record, and before the next [DataFormat](#Section_02773c0de16b4d6d82f473c8fd18868e) record, are omitted for brevity.)

### 3.6.10 Column Chart Object: DataFormat

The next record in this example, [DataFormat](#Section_02773c0de16b4d6d82f473c8fd18868e), specifies the series of this chart to which the formatting information applies. The formatting information is specified by the [Lineformat](#Section_1bff256238664b958a6bf3fea1659f6d) record and [AreaFormat](#Section_affb9fe34721495a9e5351c7d3c65480) record following this record. (The Lineformat and AreaFormat records are not included in this example for brevity.)

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | DataFormat **- DataFormat** |  |
| 0002 | USHORT **- xi** | 0xFFFF |
| 0002 | USHORT **- yi** | 0x0000 |
| 0002 | SHORT **- iss** | 0x0000 |
| 15 bits | SHORT **- reserved** | 0x0000 |

Figure 51: Structure of DataFormat

**xi:** 0xFFFF specifies that the LineFormat record and AreaFormat record following this record specify the format of the series.

**yi:** 0x0000 specifies that the series of this chart is specified by the first [Series](#Section_d6eec0192d634c1e8080442af941b462) record in the collection of Series records in the current [chart sheet substream](#Section_732ff614d939416bb7c76d983471ff11).

**iss:** 0x0000 specifies the number of the series based on the ordering in the legend, which is zero.

The next two records in this example, LineFormat and AreaFormat, specify the formatting information for the series. (The LineFormat record and AreaFormat record are similar to the LineFormat record and AreaFormat record defined earlier in the example and are omitted for brevity.)

### 3.6.11 Column Chart Object: SerToCrt

The next record in this example, [SerToCrt](#Section_34175aa2c0db4e4cbe2ebbe5abf61364), specifies the chart that contains the series specified in this example. The [ChartFormat](#Section_919bca437a814203b9b9b12e4315d5af) record that specifies this chart is the first ChartFormat record in the [chart sheet subsream](#Section_732ff614d939416bb7c76d983471ff11).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | SerToCrt **- SerToCrt** |  |
| 0002 | USHORT **- id** | 0x0000 |

Figure 52: Structure of SerToCrt

**id:** 0x0000 specifies that the chart that contains the series in this example is specified by the first ChartFormat record in the collection of ChartFormat records in the current chart sheet substream.

(Records following this record, and before the next [ShtProps](#Section_8de5048d5e784a8da3288a8293e1fe40) record, are omitted for brevity.)

### 3.6.12 Column Chart Object: ShtProps

The next record in this example, [ShtProps](#Section_8de5048d5e784a8da3288a8293e1fe40), specifies the properties of this chart.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | ShtProps **- ShtProps** |  |
| 1 bit | USHORT **- fManSerAlloc** | 0x0 |
| 1 bit | USHORT **- fPlotVisOnly** | 0x1 |
| 1 bit | USHORT **- fNotSizeWith** | 0x0 |
| 1 bit | USHORT **- fManPlotArea** | 0x1 |
| 1 bit | USHORT **- fAlwaysAutoPlotArea** | 0x0 |
| 11 bits | USHORT **- reserved1** | 0x000 |
| 0001 | BYTE **- mdBlank** | 0x00 |
| 0001 | BYTE **- reserved2** | 0x00 |

Figure 53: Structure of ShtProps

**fManSerAlloc:** 0x0 specifies that the series is not automatically allocated for this chart.

**fPlotVisOnly:** 0x1 specifies to plot only [**visible**](#gt_81648495-ee6b-4cfd-955a-89fc643d3b72) cells on this chart.

**fNotSizeWith:** 0x0 specifies not to size this chart with the window.

**fAlwaysAutoPlotArea:** 0x0 specifies that the default [**plot area**](#gt_5bf6768b-586e-4869-8247-e0f9e899183c) dimension is used for this chart.

**mdBlank:** 0x00 specifies that empty cells are not plotted on this chart.

### 3.6.13 Column Chart Object: DefaultText

The next record in this example, [DefaultText](#Section_cda28b8e07614f108b656c38368f791d), specifies the text elements that are formatted using the information specified in the [Text](#Section_362cfe7d650949fb81402ad59c16b4c4) record that follows this record.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | DefaultText **- DefaultText** |  |
| 0002 | USHORT **- id** | 0x0002 |

Figure 54: Structure of DefaultText

**id:** 0x0002 specifies that the default formatting of all text in the chart that does not use scalable fonts is to be set by the Text record following this record.

### 3.6.14 Column Chart Object: Text

The next record in this example, [Text](#Section_362cfe7d650949fb81402ad59c16b4c4), specifies the position and appearance of text fields specified in the preceding [DefaultText](#Section_cda28b8e07614f108b656c38368f791d) record.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0020 | Text **- Text** |  |
| 0001 | BYTE **- at** | 0x02 |
| 0001 | BYTE **- vat** | 0x02 |
| 0002 | WORD **- wBkgMode** | 0x0001 |
| 0004 | [LongRGB](#Section_dfedc14244ef4981b6c650d607abf756) **- rgbText** |  |
| 0001 | BYTE **- red** | 0x00 |
| 0001 | BYTE **- green** | 0x00 |
| 0001 | BYTE **- blue** | 0x00 |
| 0001 | BYTE **- reserved** | 0x00 |
| 0004 | LONG **- x** | 0xFFFFFFD1 |
| 0004 | LONG **- y** | 0xFFFFFFC0 |
| 0004 | LONG **- dx** | 0x00000000 |
| 0004 | LONG **- dy** | 0x00000000 |
| 1 bit | USHORT **- fAutoColor** | 0x1 |
| 1 bit | USHORT **- fShowKey** | 0x0 |
| 1 bit | USHORT **- fShowValue** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fAutoText** | 0x1 |
| 1 bit | USHORT **- fGenerated** | 0x1 |
| 1 bit | USHORT **- fDeleted** | 0x0 |
| 1 bit | USHORT **- fAutoMode** | 0x1 |
| 3 bits | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fShowLabelAndPerc** | 0x0 |
| 1 bit | USHORT **- fShowPercent** | 0x0 |
| 1 bit | USHORT **- fShowBubbleSizes** | 0x0 |
| 1 bit | USHORT **- fShowLabel** | 0x0 |
| 1 bit | USHORT **- reserved** | 0x0 |
| 0002 | [Icv](#Section_b7160f4eabe8444da76c8f076a007d98) **- icvText** |  |
| 0002 | USHORT **- icv** | 0x004D |
| 4 bits | USHORT **- dlp** | 0x0 |
| 10 bits | USHORT **- unused3** | 0x317 |
| 2 bits | USHORT **- iReadingOrder** | 0x0 |
| 0002 | USHORT **- trot** | 0x0000 |

Figure 55: Structure of Text

The position and size specified by the **x** field, **y** field, **dx** field, and **dy** field is ignored because this record is followed by a [Pos](#Section_b2311d215bad4525b759cacc13d394cf) record. The **fShowLabelAndPerc** field**, fShowPercent** field**, fShowBubbleSizes** field**, fShowLabel** field,and **dlp** field are ignored because this is a column chart.

**at:** 0x02 specifies that the horizontal alignment of the text is center-alignment.

**vat:** 0x02 specifies that the vertical alignment of the text is center-alignment.

**wBkgMode:** 0x0001 specifies that the background of the text is transparent.

**rgbText:** Specifies the color of the text.

**fAutoColor:** 0x0001 specifies that the foreground color is determined automatically.

**fAutoText:** 0x0001 specifies that the text value of the text field is automatically generated and has not been changed.

**fGenerated:** 0x0001 specifies that the properties of the text field are automatically generated and was not changed.

**fAutoMode:** 0x0001 specifies that the background color is determined automatically.

**icvText:** Specifies a color in the color table.

**icvText.icv:** 0x004D specifies that the default chart foreground color is used.

**iReadingOrder:** 0x0000 specifies that the reading order is based on the context.

**trot:** 0x0000 specifies that the text is not rotated.

(Records following this record, and before the next [FontX](#Section_8c065ab610d44029a20dac422620eed2) record, are omitted for brevity.)

### 3.6.15 Column Chart Object: FontX

The next record in this example, [FontX](#Section_8c065ab610d44029a20dac422620eed2), specifies the font used for text of this chart.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | FontX **- FontX** |  |
| 0002 | USHORT **- iFont** | 0x0005 |

Figure 56: Structure of FontX

**iFont:** 0x0005 specifies that the referenced font is the fifth [Font](#Section_291a910ccb694799875ea201845d4fd1) record in the [chart sheet substream](#Section_732ff614d939416bb7c76d983471ff11).

(Records following this record, and before the next [AxesUsed](#Section_398ee70d694840338507cf76ce9e4585) record, are omitted for brevity.)

### 3.6.16 Column Chart Object: AxesUsed

The next record in this example, [AxesUsed](#Section_398ee70d694840338507cf76ce9e4585), specifies the number of [axis groups](#Section_578b739742624944b5a67ee6d4d3bb55) on the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | AxesUsed **- AxesUsed** |  |
| 0002 | USHORT **- cAxes** | 0x0001 |

Figure 57: Structure of AxesUsed

**cAxes:** 0x0001 specifies that this chart contains a single primary axis group.

### 3.6.17 Column Chart Object: AxisParent

The next record in this example, [AxisParent](#Section_5948f3079c624304ae7331bdecd36f9f), specifies the properties of an [axis group](#Section_578b739742624944b5a67ee6d4d3bb55) and specifies the beginning of a collection of records as defined by the [chart sheet substream](#Section_732ff614d939416bb7c76d983471ff11) that specifies an Axis Group.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0012 | AxisParent **- AxisParent** |  |
| 0002 | SHORT **- iax** | 0x0000 |
| 0010 | Unused **- unused** | 5D 00 00 00 81 00 00 00 E6 0E 00 00 10 0D 00 00 |

Figure 58: Structure of AxisParent

**iax:** 0x0000 specifies that the Axis Group specified by the records following this record is primary.

Records following this record, and before the next [Axis](#Section_33155f3a9afe44a493d178af188f77f6) record, are omitted for brevity.

### 3.6.18 Column Chart Object: Axis

The next record in this example, [Axis](#Section_33155f3a9afe44a493d178af188f77f6), specifies properties of an [axis](#Section_4117f73aa0f348d89c0f65864918ffb3) and specifies the beginning of a collection of records as defined by the [chart sheet substream](#Section_732ff614d939416bb7c76d983471ff11) that specifies the [**category (2)**](#gt_7d6acf13-ba4d-4a0a-930e-3eaee465c7f1) axis.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0012 | Axis **- Axis** |  |
| 0002 | WORD **- wType** | 0x0000 |
| 0004 | ULONG **- reserved1** | 0x00000000 |
| 0004 | ULONG **- reserved2** | 0x00000000 |
| 0004 | ULONG **- reserved3** | 0x00000000 |
| 0004 | ULONG **- reserved4** | 0x00000000 |

Figure 59: Structure of Axis

**wType:** 0x0000 specifies that the axis type is category (2) axis.

(Records following this record, and before the next [CatSerRange](#Section_07bdb87444424468a7e2bd166769e6a9) record, are omitted for brevity.)

### 3.6.19 Column Chart Object: CatSerRange

The next record in this example, [CatSerRange](#Section_07bdb87444424468a7e2bd166769e6a9), specifies the properties of the [**category (2)**](#gt_7d6acf13-ba4d-4a0a-930e-3eaee465c7f1) [axis](#Section_4117f73aa0f348d89c0f65864918ffb3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | CatSerRange **- CatSerRange** |  |
| 0002 | SHORT **- catCross** | 0x0001 |
| 0002 | SHORT **- catLabel** | 0x0001 |
| 0002 | SHORT **- catMark** | 0x0001 |
| 1 bit | USHORT **- fBetween** | 0x1 |
| 1 bit | USHORT **- fMaxCross** | 0x0 |
| 1 bit | USHORT **- fReverse** | 0x0 |
| 13 bits | USHORT **- reserved** | 0x0000 |

Figure 60: Structure of CatSerRange

**catCross:** 0x0001 specifies the category (2) axis is crossed by the value axis at the first category (2).

**catLabel:** 0x0001 specifies that the number of categories (2) between [**major tick mark**](#gt_a0f545a5-4d18-4580-903b-8d563f4b65fb) labels is 1.

**catMark:** 0x0001 specifies that the number of categories (2) between major tick marks is 1.

**fBetween:** 0x0001 specifies that the value axis crosses the category (2) axis between two major tick marks.

**fMaxCross:** 0x0000 specifies that the value axis crosses the category (2) axis at the category specified by the **catCross** field.

**fReverse:** 0x0000 specifies that categories (2) are displayed in order.

### 3.6.20 Column Chart Object: Tick

The next record in this example, [Tick](#Section_94946c96e4e14e9eb7fccc959c36a030), specifies the properties of the [**major tick marks**](#gt_a0f545a5-4d18-4580-903b-8d563f4b65fb) and [**minor tick marks**](#gt_c2eb605a-6c5a-427e-8608-f16940de82a6) associated with the [**category (2)**](#gt_7d6acf13-ba4d-4a0a-930e-3eaee465c7f1) [axis](#Section_4117f73aa0f348d89c0f65864918ffb3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001E | Tick **- Tick** |  |
| 0001 | BYTE **- tktMajor** | 0x02 |
| 0001 | BYTE **- tktMinor** | 0x00 |
| 0001 | BYTE **- tlt** | 0x03 |
| 0001 | BYTE **- wBkgMode** | 0x01 |
| 0004 | [LongRGB](#Section_dfedc14244ef4981b6c650d607abf756) **- rgb** |  |
| 0001 | BYTE **- red** | 0x00 |
| 0001 | BYTE **- green** | 0x00 |
| 0001 | BYTE **- blue** | 0x00 |
| 0001 | BYTE **- reserved** | 0x00 |
| 0004 | LONG **- reserved1** | 0x00000000 |
| 0004 | LONG **- reserved2** | 0x00000000 |
| 0004 | LONG **- reserved3** | 0x00000000 |
| 0004 | LONG **- reserved4** | 0x00000000 |
| 1 bit | USHORT **- fAutoCo** | 0x1 |
| 1 bit | USHORT **- fAutoMode** | 0x1 |
| 3 bits | USHORT **- rot** | 0x0 |
| 1 bit | USHORT **- fAutoRot** | 0x1 |
| 8 bits | USHORT **- unused** | 0x00 |
| 2 bits | USHORT **- iReadingOrder** | 0x0 |
| 0002 | [IcvChart](#Section_ab0d01c3cf5945b4aef14e02811b61cb) **- icv** |  |
| 0002 | USHORT **- icv** | 0x004D |
| 0002 | SHORT **- trot** | 0x0000 |

Figure 61: Structure of Tick

The **rgb** field is ignored because the **fAUtoCo** field is equal to 0x0001. The **wBkgMode** field is ignored because the **fAutoMode** field is equal to 0x0001. The **rot** field is ignored because the **fAutoRot** field is equal to 0x0001.

**tktMajor:** 0x02 specifies that the location of the major tick marks is outside, which indicates that the major tick marks are drawn away from the [**plot area**](#gt_5bf6768b-586e-4869-8247-e0f9e899183c).

**tktMinor:** 0x00 specifies that no minor tick marks are present on the axis.

**tlt:** 0x03 specifies to place axis labels next to the axis.

**fAutoCo:** 0x0001 specifies that the text uses an automatically selected foreground color, based on the display settings of the computer.

**fAutoMode:** 0x0001 specifies that the background mode is set according to the [DefaultText](#Section_cda28b8e07614f108b656c38368f791d) settings of the chart

**fAutoRot:** 0x0001 specifies that the text rotation of axis labels is determined automatically.

**iReadingOrder:** 0x0000 specifies that the [**reading order**](#gt_defb8e89-c809-4682-81f3-19c547363361) of the axis label is determined by the application.

**icv.icv:** 0x004D specifies that the foreground color is the default chart foreground color. This is the window text color in the chart display.

**trot:** 0x0000 specifies that the axis label is not rotated.

(Records following this record, and before the next [ChartFormat](#Section_919bca437a814203b9b9b12e4315d5af) record, are omitted for brevity.) The collection of records includes a collection of record beginning with the [Axis](#Section_33155f3a9afe44a493d178af188f77f6) record that specifies the value axis for this chart.

### 3.6.21 Column Chart Object: ChartFormat

The next record in this example, [ChartFormat](#Section_919bca437a814203b9b9b12e4315d5af), specifies properties of this [chart group](#Section_c91fdf3195e2495fa48a5546ce20c0c5) and specifies the beginning of a collection of records as defined by the [chart sheet substream](#Section_732ff614d939416bb7c76d983471ff11). The collection of records specifies this chart group. In this example this record is the first ChartFormat record in the collection of ChartFormat records in the current chart sheet substream.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | ChartFormat **- ChartFormat** |  |
| 0004 | LONG **- Reserved1** | 0x00000000 |
| 0004 | LONG **- Reserved2** | 0x00000000 |
| 0004 | LONG **- Reserved3** | 0x00000000 |
| 0004 | LONG **- Reserved4** | 0x00000000 |
| 1 bit | WORD **- fVaried** | 0x0 |
| 15 bits | WORD **- Reserved5** | 0x0000 |
| 0002 | SHORT **- icrt** | 0x0000 |

Figure 62: Structure of ChartFormat

**fVaried:** 0x0000 specifies that the color of each data point does not vary.

**icrt:** 0x0000 specifies that this chart group is at the bottom of the [**z-order**](#gt_5d059b23-337a-4ab8-82f5-e3789b2e7ae9).

### 3.6.22 Column Chart Object: Bar

The next record in this example, [Bar](#Section_5c1879733f114207b9f440e583715357), specifies the attributes of this [chart group](#Section_c91fdf3195e2495fa48a5546ce20c0c5).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0006 | Bar **- Bar** |  |
| 0002 | SHORT **- pcOverlap** | 0x0000 |
| 0002 | USHORT **- pcGap** | 0x0096 |
| 1 bit | USHORT **- fTranspose** | 0x0 |
| 1 bit | USHORT **- fStacked** | 0x0 |
| 1 bit | USHORT **- f100** | 0x0 |
| 1 bit | USHORT **- fHasShadow** | 0x0 |
| 12 bits | USHORT **- reserved** | 0x000 |

Figure 63: Structure of Bar

**pcOverlap:** 0x0000 specifies that there is no overlap between data points.

**pcGap:** 0x0096 specifies that the width of the gap between adjacent [**categories (2)**](#gt_7d6acf13-ba4d-4a0a-930e-3eaee465c7f1) is 150% of the data point width. It also specifies that the width of the gap between the categories (2) and the left and right edges of the [**plot area**](#gt_5bf6768b-586e-4869-8247-e0f9e899183c) is 75% of the data point width.

**fTranspose:** 0x0000 specifies that the data points and the value [axis](#Section_4117f73aa0f348d89c0f65864918ffb3) are vertical.

**fStacked:** 0x0000 specifies that [data points](#Section_9c986ad250d44fa1a157063ac5c971a0) in the same chart group are not stacked.

**f100:** 0x0000 specifies that data points in the chart group are not displayed as a percentage of the sum of all data points in the chart group that share the same category (2).

**fHasShadow:** 0x0000 specifies that none of the data points in the chart group has shadows.

The remaining records following this record, are omitted for brevity.

## 3.7 Pie Chart Sheet

This is an example of a 2D Pie [Chart Sheet](#Section_2c90d75bc92645aa8ff29d4483f51831). This example omits records previously covered in the [column chart object](#Section_f9e4245bb7b145a98f80c78edac371d4) example.

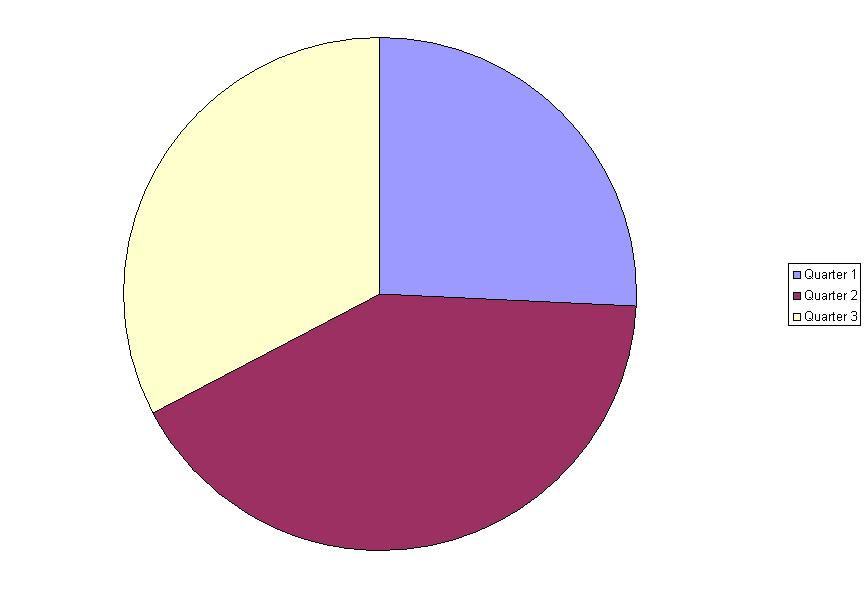


Figure 64: Pie Chart Sheet in this example within a sheet.

### 3.7.1 Pie Chart Sheet: PrintSize

The first record in this example, [PrintSize](#Section_67d08dd9153e476385198354a5ef3ace), specifies the printed size of the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | PrintSize **- PrintSize** |  |
| 0002 | WORD **- printSize** | 0x0003 |

Figure 65: Structure of PrintSize

**printSize:** 0x0003 specifies that the printed size of the chart is defined in the [Chart](#Section_8f56b001f57445e0932f84cf30408323) record that follows this record.

### 3.7.2 Pie Chart Sheet: Chart

The next record in this example, [Chart](#Section_8f56b001f57445e0932f84cf30408323), specifies the beginning of the collection of records for the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c), and specifies the position and size of the [**chart area**](#gt_5524dd6c-3d8d-4784-bfca-a3323acceb39) (section [2.2.3.17](#Section_73c3fa9c39be46f6bbf32ee5977a2d7d)).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0010 | Chart **- Chart** |  |
| 0004 | FixedPoint **- x** | 0x00000000 |
| 0004 | FixedPoint **- y** | 0x00000000 |
| 0004 | FixedPoint **- dx** | 0x02AB0A30 |
| 0004 | FixedPoint **- dy** | 0x01D30A30 |

Figure 66: Structure of Chart

**x:** 0x00000000 specifies that the horizontal position of the upper-left corner of the chart is 0 [**points**](#gt_d072e4da-7898-4227-8f25-9fe77db43571).

**y:** 0x00000000 specifies that the vertical position of the upper-left corner of the chart is 0 points.

**dx:** 0x02AB0A30 specifies that the chart is 44763696 points wide.

**dy:** 0x01D30A30 specifies that the chart is 30607920 points high.

### 3.7.3 Pie Chart Sheet: ShtProps

The next record in this example, [ShtProps](#Section_8de5048d5e784a8da3288a8293e1fe40), specifies the [chart sheet](#Section_2c90d75bc92645aa8ff29d4483f51831) properties.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | ShtProps **- ShtProps** |  |
| 1 bit | USHORT **- fManSerAlloc** | 0x0 |
| 1 bit | USHORT **- fPlotVisOnly** | 0x1 |
| 1 bit | USHORT **- fNotSizeWith** | 0x1 |
| 1 bit | USHORT **- fManPlotArea** | 0x1 |
| 1 bit | USHORT **- fAlwaysAutoPlotArea** | 0x0 |
| 11 bits | USHORT **- reserved1** | 0x000 |
| 0001 | BYTE **- mdBlank** | 0x00 |
| 0001 | BYTE **- reserved2** | 0x00 |

Figure 67: Structure of ShtProps

**fManSerAlloc:** 0x0 specifies that the data [series](#Section_527ce4dfc9f84e50a314d4b07519593c) are not automatically allocated to the series of the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c).

**fPlotVisOnly:** 0x1 specifies to plot [**visible**](#gt_81648495-ee6b-4cfd-955a-89fc643d3b72) [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) only.

**fNotSizeWith:** 0x1 specifies not to size the chart with the window.

**fManPlotArea:** This field is ignored because the **fAlwaysAutoPlotArea** value is 0x0.

**fAlwaysAutoPlotArea:** 0x0 specifies that the default [**plot area**](#gt_5bf6768b-586e-4869-8247-e0f9e899183c) size is used regardless of the [Pos](#Section_b2311d215bad4525b759cacc13d394cf) record information.

**mdBlank:** 0x00 specifies that empty cells are not plotted.

### 3.7.4 Pie Chart Sheet: AxesUsed

The next record in this example, [AxesUsed](#Section_398ee70d694840338507cf76ce9e4585), specifies the value [axes](#Section_4117f73aa0f348d89c0f65864918ffb3) used on the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | AxesUsed **- AxesUsed** |  |
| 0002 | USHORT **- cAxes** | 0x0001 |

Figure 68: Structure of AxesUsed

**cAxes:** 0x0001 specifies that a single primary value axis is present and used on the chart.

### 3.7.5 Pie Chart Sheet: AxisParent

The next record in this example, [AxisParent](#Section_5948f3079c624304ae7331bdecd36f9f), specifies properties of the one [axis group](#Section_578b739742624944b5a67ee6d4d3bb55) on the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c) and specifies the beginning of the collection of records that specifies an axis group.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0012 | AxisParent **- AxisParent** |  |
| 0002 | SHORT **- iax** | 0x0000 |
| 0010 | unused **- unused** |  |

Figure 69: Structure of AxisParent

**iax:** 0x0000 specifies that this axis group is a primary axis group.

### 3.7.6 Pie Chart Sheet: ChartFormat

The next record, [ChartFormat](#Section_919bca437a814203b9b9b12e4315d5af), specifies properties of a [chart group](#Section_c91fdf3195e2495fa48a5546ce20c0c5) and specifies the beginning of the collection of records that specifies further properties of that chart group.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | ChartFormat **- ChartFormat** |  |
| 0004 | LONG **- reserved1** | 0x00000000 |
| 0004 | LONG **- reserved2** | 0x00000000 |
| 0004 | LONG **- reserved3** | 0x00000000 |
| 0004 | LONG **- reserved4** | 0x00000000 |
| 1 bit | WORD **- fVaried** | 0x1 |
| 15 bits | WORD **- reserved5** | 0x0000 |
| 0002 | SHORT **- icrt** | 0x0000 |

Figure 70: Structure of ChartFormat

**fVaried:** 0x0001 specifies that the color for each [data point](#Section_9c986ad250d44fa1a157063ac5c971a0), or the color or type for each [**data marker**](#gt_4a742a31-af1c-4e9d-a104-7c9be0f37c2b) varies.

**icrt:** 0x0000 specifies that the drawing order of the chart group relative to the other chart groups is the bottom of the [**z-order**](#gt_5d059b23-337a-4ab8-82f5-e3789b2e7ae9).

### 3.7.7 Pie Chart Sheet: Pie

The next record in this example, [Pie](#Section_4f749e5278ea4ad4b7278dedec7ad359), specifies that this is a pie [chart group](#Section_c91fdf3195e2495fa48a5546ce20c0c5), and specifies attributes of the chart group.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0006 | Pie **- Pie** |  |
| 0002 | USHORT **- anStart** | 0x0000 |
| 0002 | USHORT **- pcDonut** | 0x0000 |
| 1 bit | USHORT **- fHasShadow** | 0x0 |
| 1 bit | USHORT **- fShowLdrLines** | 0x1 |
| 14 bits | USHORT **- reserved** | 0x0000 |

Figure 71: Structure of Pie

**anStart:** 0x0000 specifies that the starting angle, calculated clockwise from the top of the circle, of the first [data point](#Section_9c986ad250d44fa1a157063ac5c971a0) is 0 degrees.

**pcDonut:** 0x0000 specifies that the chart group is a pie chart group.

**fHasShadow:** 0x0 specifies that zero data points in the chart group have shadows.

**fShowLdrLines:** 0x1 specifies that the [**leader lines**](#gt_8b7c448e-82e3-4d22-a8ba-52e0a10b14fa) to the [data labels](#Section_cac7f43a3af142f58ff2814c2870427f) are shown. This value is ignored because zero data labels are present in this example.

### 3.7.8 Pie Chart Sheet: Legend

The next record in this example, [Legend](#Section_03d359d915f94e7a8ad1d7b741ed2e21), specifies the location of the [legend](#Section_1832229b7d1945f488d455e9c07466f0) on the display and its overall size. The displayed legend contains all the [series](#Section_527ce4dfc9f84e50a314d4b07519593c) on the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c). The position and size information specified in this record is ignored, and the position and size information specified in the following [Pos](#Section_b2311d215bad4525b759cacc13d394cf) record is used.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | Legend **- Legend** |  |
| 0004 | ULONG **- x** | 0x00000E47 |
| 0004 | ULONG **- y** | 0x00000703 |
| 0004 | ULONG **- dx** | 0x00000147 |
| 0004 | ULONG **- dy** | 0x00000199 |
| 0001 | BYTE **- unused** | 0x03 |
| 0001 | BYTE **- wSpace** | 0x01 |
| 1 bit | WORD **- fAutoPosition** | 0x1 |
| 1 bit | WORD **- reserved1** | 0x1 |
| 1 bit | WORD **- fAutoPosX** | 0x1 |
| 1 bit | WORD **- fAutoPosY** | 0x1 |
| 1 bit | WORD **- fVert** | 0x1 |
| 1 bit | WORD **- fWasDataTable** | 0x0 |
| 10 bits | WORD **- reserved2** | 0x000 |

Figure 72: Structure of Legend

**wSpace:** 0x01 specifies that there are 40 [**twips**](#gt_4b82472c-103d-4eff-a07e-6a0f784e3382) between [**legend entries**](#gt_6c27eb24-fb59-4bc8-8962-9cdac46a748e).

**fAutoPosition:** 0x1 specifies that the legend is automatically positioned.

**fAutoPosX:** 0x1 specifies that the x-positioning of the legend is automatic.

**fAutoPosY:** 0x1 specifies that the y-positioning of the legend is automatic.

**fVert:** 0x1 specifies that the layout of the legend entries contain a single column of entries.

**fWasDataTable:** 0x0 specifies that the chart is not displaying the chart [data table](#Section_69938f61d2e94da3af87e154edcb0d98).

The next record in this example, [Begin](#Section_52d0d2c76cc540c4adf3aea158411ef3), specifies the beginning of the collection of records that specifies the properties of the legend.

The details of the Begin record have been omitted from the example for brevity.

### 3.7.9 Pie Chart Sheet: Pos

The next record in this example, [Pos](#Section_b2311d215bad4525b759cacc13d394cf), specifies the size and position for the [Legend](#Section_03d359d915f94e7a8ad1d7b741ed2e21) of the [**plot area**](#gt_5bf6768b-586e-4869-8247-e0f9e899183c).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | Pos **- Pos** |  |
| 0002 | [PositionMode](#Section_1004130236be430988520e56cc2dac64) **- mdTopLt** | 0x0005 |
| 0002 | PositionMode **- mdBotRt** | 0x0002 |
| 0002 | SHORT **- x1** | 0x0E47 |
| 0002 | SHORT **- unused1** | 0x0000 |
| 0002 | SHORT **- y1** | 0x0703 |
| 0002 | SHORT **- unused2** | 0x0000 |
| 0002 | SHORT **- x2** | 0x0000 |
| 0002 | SHORT **- unused3** | 0x0000 |
| 0002 | SHORT **- y2** | 0x0000 |
| 0002 | SHORT **- unused4** | 0x0000 |

Figure 73: Structure of Pos

Fields in this record that are ignored because **mdTopLt** is 0x0005 and **mdBotRt** is 0x0002 are omitted for brevity.

**mdTopLt:** 0x0005 specifies that the horizontal offset of the upper-left corner for this Legend is relative to the upper-left corner of the [**chart area**](#gt_5524dd6c-3d8d-4784-bfca-a3323acceb39) (section [2.2.3.17](#Section_73c3fa9c39be46f6bbf32ee5977a2d7d)), measured in [SPRC](#Section_d5fc728e68de4972905a975bcef8c82d).

**mdBotRt:** 0x0002, when combined with the **mdTopLt** value of 0x0005, specifies that the values of **x1** and **y1** specify the horizontal and vertical offsets of the upper-left corner of the Legend, relative to the upper-left corner of the chart area (section 2.2.3.17).

**x1:** 0x0E47 specifies that the upper-left corner of the Legend is horizontally offset by 3655 SPRC from the upper-left corner of the chart area (section 2.2.3.17).

**y1:** 0x0703 specifies that the upper-left corner of the Legend is vertically offset by 1795 SPRC from the upper-left corner of the chart area (section 2.2.3.17).

### 3.7.10 Pie Chart Sheet: Text

The next record in this example, [Text](#Section_362cfe7d650949fb81402ad59c16b4c4), specifies the position and appearance of text fields that appear on the [chart](#Section_f9430fdccd0f40dd93243bdf4ce7cc4c). The position and size information specified in this record are ignored because this record is followed by a [Pos](#Section_b2311d215bad4525b759cacc13d394cf) record.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0020 | Text **- Text** |  |
| 0001 | BYTE **- at** | 0x02 |
| 0001 | BYTE **- vat** | 0x02 |
| 0002 | WORD **- wBkgMode** | 0x0001 |
| 0004 | [LongRGB](#Section_dfedc14244ef4981b6c650d607abf756) **- rgbText** |  |
| 0001 | BYTE **- red** | 0x00 |
| 0001 | BYTE **- green** | 0x00 |
| 0001 | BYTE **- blue** | 0x00 |
| 0001 | BYTE **- reserved** | 0x00 |
| 0004 | LONG **- x** | 0xFFFFFFEA |
| 0004 | LONG **- y** | 0xFFFFFF75 |
| 0004 | LONG **- dx** | 0x00000000 |
| 0004 | LONG **- dy** | 0x00000000 |
| 1 bit | USHORT **- fAutoColor** | 0x1 |
| 1 bit | USHORT **- fShowKey** | 0x0 |
| 1 bit | USHORT **- fShowValue** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fAutoText** | 0x1 |
| 1 bit | USHORT **- fGenerated** | 0x1 |
| 1 bit | USHORT **- fDeleted** | 0x0 |
| 1 bit | USHORT **- fAutoMode** | 0x1 |
| 3 bits | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fShowLabelAndPerc** | 0x0 |
| 1 bit | USHORT **- fShowPercent** | 0x0 |
| 1 bit | USHORT **- fShowBubbleSizes** | 0x0 |
| 1 bit | USHORT **- fShowLabel** | 0x0 |
| 1 bit | USHORT **- reserved** | 0x0 |
| 0002 | [Icv](#Section_b7160f4eabe8444da76c8f076a007d98) **- icvText** |  |
| 0002 | USHORT **- icv** | 0x004D |
| 4 bits | USHORT **- dlp** | 0x0 |
| 10 bits | USHORT **- unused3** | 0x069 |
| 2 bits | USHORT **- iReadingOrder** | 0x0 |
| 0002 | USHORT **- trot** | 0x0000 |

Figure 74: Structure of Text

**at:** 0x02 specifies that the horizontal alignment of the text fields that appear in the [Legend](#Section_03d359d915f94e7a8ad1d7b741ed2e21) record is center-aligned.

**vat:** 0x02 specifies that the vertical alignment of the text fields that appear in the Legend record is center-aligned.

**wBkgMode:** 0x0001 specifies that the background of the text is transparent.

**rgbText:**  A LongRGB structure that specifies the color of the text.

**rgbText.red:** 0x00 specifies that the relative intensity of red is 0.

**rgbText.green:** 0x00 specifies that the relative intensity of green is 0.

**rgbText.blue:** 0x00 specifies that the relative intensity of blue is 0.

**fAutoColor:** 0x0001 specifies that the foreground text color is determined automatically.

**fShowKey:** This field is ignored because this [AttachedLabel](#Section_9ac44e58af9940f4a99ace470eff0f5a) is not a [data label](#Section_cac7f43a3af142f58ff2814c2870427f).

**fShowValue:**  This field is ignored because this AttachedLabel is not a data label.

**fAutoText:** 0x0001 specifies that the text value of the text field is automatically generated and has not been changed.

**fGenerated:** 0x0001 specifies that the properties of the text field are automatically generated and have not been changed.

**fDeleted:** 0x0000 specifies that this text field, which is displayed by default, has been deleted by the user.

**fAutoMode:** 0x0001 specifies that the background color is determined automatically.

**fShowLabelAndPerc:**  This field is ignored because this AttachedLabel is not a data label.

**fShowPercent:**  This field is ignored because this AttachedLabel is not a data label.

**fShowBubbleSizes:**  This field is ignored because this AttachedLabel is not a data label.

**fShowLabel:**  This field is ignored because this AttachedLabel is not a data label.

**icvText:**  An Icv structure that specifies the color of the text.

**icvText.icv:** 0x004D specifies that the default chart foreground color is used.

**dlp:**  This field is ignored because this AttachedLabel is not a data label.

**iReadingOrder:** 0x0000 specifies that the [**reading order**](#gt_defb8e89-c809-4682-81f3-19c547363361) of the text is determined by the application.

**trot:**  This field is ignored because this AttachedLabel is not a data label.

The next record in this example, [Begin](#Section_52d0d2c76cc540c4adf3aea158411ef3), specifies the beginning of the collection of records that specifies data labels on a [**graph object**](#gt_f4c97882-38e3-4b03-9f11-09ee6566da21).

The details of the Begin record have been omitted from the example for brevity.

### 3.7.11 Pie Chart Sheet: BRAI

The next record in this example, [BRAI](#Section_c4e36e616c174a75b414f33803c7456b), specifies a reference to data in a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) that is used by a [**legend entry**](#gt_6c27eb24-fb59-4bc8-8962-9cdac46a748e).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | BRAI **- BRAI** |  |
| 0001 | BYTE **- id** | 0x00 |
| 0001 | BYTE **- rt** | 0x01 |
| 1 bit | USHORT **- fUnlinkedIfmt** | 0x0 |
| 15 bits | USHORT **- reserved** | 0x0000 |
| 0002 | IFmt **- ifmt** | 0x0000 |
| 0002 | [ChartParsedFormula](#Section_c5cd4a9adfc14dfcb06f94d31c7e116c) **- formula** |  |
| 0002 | WORD **- cce** | 0x0000 |

Figure 75: Structure of BRAI

**id:** 0x00 specifies that the referenced data is used for the text of a legend entry.

**rt:** 0x01 specifies that the [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075) is text or the value contained by the **rgce** field.

**fUnlinkedIfmt:** 0x0 specifies that the data uses the same number formatting as the referenced data.

**ifmt:** 0x0000 specifies that the identifier for [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) information is general (automatic).

**formula:**  A ChartParsedFormula that specifies the formula (section [2.2.2](#Section_e7625cc83da94154b44949cf1bbd9703)) that specifies the referenced data.

**formula.cce:** 0x0000 specifies that the length of **rgce** is 0 bytes.

The next two records in this example are both [End](#Section_abe8fd1db6a847b8864052ba75a76f5c) records. The first End record specifies the end of the collection of records that specifies [data labels](#Section_cac7f43a3af142f58ff2814c2870427f) on a [**graph object**](#gt_f4c97882-38e3-4b03-9f11-09ee6566da21). The second End record specifies the end of the collection of records that specifies the [legend](#Section_1832229b7d1945f488d455e9c07466f0).

The details of the End records have been omitted from the example for brevity.

### 3.7.12 Pie Chart Sheet: Window2

The next record in this example, [Window2.4.346](#Section_80576ec8e7f04c9990a7d850587bc97b), specifies attributes of the window used to display a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) in a [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | WINDOW2 **- Window2** |  |
| 1 bit | USHORT **- fDspFmlaRt** | 0x0 |
| 1 bit | USHORT **- fDspGridRt** | 0x1 |
| 1 bit | USHORT **- fDspRwColRt** | 0x0 |
| 1 bit | USHORT **- fFrozenRt** | 0x0 |
| 1 bit | USHORT **- fDspZerosRt** | 0x0 |
| 1 bit | USHORT **- fDefaultHdr** | 0x0 |
| 1 bit | USHORT **- fRightToLeft** | 0x0 |
| 1 bit | USHORT **- fDspGuts** | 0x0 |
| 1 bit | USHORT **- fFrozenNoSplit** | 0x0 |
| 1 bit | USHORT **- fSelected** | 0x1 |
| 1 bit | USHORT **- fPaged** | 0x1 |
| 1 bit | USHORT **- fSLV** | 0x0 |
| 4 bits | USHORT **- reserved1** | 0x0 |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- rwTop** | 0x0000 |
| 0002 | [ColU](#Section_f716fb856c90424aa99ed61b2191a224) **- colLeft** | 0x0000 |
| 0002 | [Icv](#Section_b7160f4eabe8444da76c8f076a007d98) **- icvHdr** | 0x0000 |
| 0002 | USHORT **- reserved2** | 0x0000 |

Figure 76: Structure of Window2

Fields in this record that are ignored because this Window2.4.346 record is contained in a [chart sheet](#Section_2c90d75bc92645aa8ff29d4483f51831) substream are omitted for brevity.

**fSelected:** 0x1 specifies that the sheet tab of the chart sheet is selected.

## 3.8 Formatting

In this example, [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) formatting and [**number formats**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) are applied to three cells in the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d):

Cell B3, containing 1.2345, is formatted with the built-in "0.00" number format.

Cell B4, containing 1.2345, is formatted with the custom number format "0.00000".

Cell B5, containing "1.2345", is formatted with a blue [**foreground color**](#gt_6710b91a-10b4-4df0-885f-99e53e7f816a), yellow [**background color**](#gt_8e2b1aa9-87f0-4a42-aa3d-9e3a5d5a826c), and is bold.

The following screenshot shows a possible implementation of the cells discussed in this example:

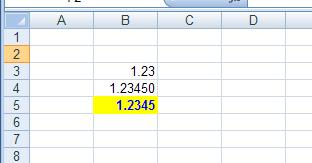


Figure 77: The formatting in this example within a sheet

This example starts at the first [Font](#Section_291a910ccb694799875ea201845d4fd1) record in the [Workbook stream](#Section_f682f4b08c6b444e83f852d156f1e8ba) related to these cells and ends at the [Number](#Section_a40c74c63df44e819a4385521cc92c0a) record containing the value for the last cell. Other records in the Workbook stream or related substreams which are not related to this example are omitted for brevity. The substream of the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) related to this example contains five Font records, nine [Format](#Section_300280fde4fe4675a9244d383af48d3b) records, 24 [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d) records, and three Number records. Of these, the example highlights the first and fifth Font record, the last Format record, the first, sixteenth, seventeenth, and eighteenth XF records, and all three Number records. Any other records in the substream are skipped in this example.

Each Number record that specifies a cell with a [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) corresponds to one of the three cells in this example. The Number record contains a [Cell](#Section_6bb50f66faf048f9b6a9f0f452a77598) structure, which in turn contains an [IXFCell](#Section_f9bc476745704f609a8e6fd3f32ddf3b) structure with an **ixfe** field containing the index to an XF record in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1). The XF record that specifies formatting properties for a cell contains a [FontIndex](#Section_b3413c2bca5b498886beab44bfe9e4d3) structure and an [IFmt](#Section_9017e24779954a9c96e8950df24735a2) structure. Those records contain indexes for a Font record and a Format record, respectively. The Font record specifies [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) and font formatting information, and the Format record specifies a number format.

### 3.8.1 Formatting: Font 1

The first record in the example, [Font](#Section_291a910ccb694799875ea201845d4fd1), specifies the [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) and font formatting information which is used by [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) B3 and B4.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001A | Font **- Font** |  |
| 0002 | USHORT **- dyHeight** | 0x00C8 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fItalic** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fStrikeOut** | 0x0 |
| 1 bit | USHORT **- fOutline** | 0x0 |
| 1 bit | USHORT **- fShadow** | 0x0 |
| 1 bit | USHORT **- fCondense** | 0x0 |
| 1 bit | USHORT **- fExtend** | 0x0 |
| 8 bits | USHORT **- reserved** | 0x00 |
| 0002 | USHORT **- icv** | 0x7FFF |
| 0002 | USHORT **- bls** | 0x0190 |
| 0002 | USHORT **- sss** | 0x0000 |
| 0001 | BYTE **- uls** | 0x00 |
| 0001 | BYTE **- bFamily** | 0x00 |
| 0001 | BYTE **- bCharSet** | 0x00 |
| 0001 | BYTE **- unused3** | 0xDF |
| 000C | [ShortXLUnicodeString](#Section_051628580ca944cbbb07a720928f63f8) **- fontName** | Arial |

Figure 78: Structure of Font

**dyHeight:** 0x00C8 specifies the height of the font is 200 [**twips**](#gt_4b82472c-103d-4eff-a07e-6a0f784e3382).

**fItalic:** 0x0 specifies that the font is not italicized.

**fStrikeOut:** 0x0 specifies that the font does not have [**strikethrough formatting**](#gt_b16d9600-aebb-4a4f-bf14-c38e13c11c14) applied.

**fOutline:** 0x0 specifies that the font is not an outline.

**fShadow:** 0x0 specifies that the font does not have a shadow applied.

**fCondense:** 0x0 specifies that the font is not condensed by compressing spacing between characters.

**fExtend:** 0x0 specifies that the font is not extended by stretching spacing between characters.

**icv:** 0x7FFF is an [Icv](#Section_b7160f4eabe8444da76c8f076a007d98) value that specifies that the color of the font is the default [**foreground color**](#gt_6710b91a-10b4-4df0-885f-99e53e7f816a).

**bls:** 0x0190 specifies that the font is normal weight.

**sss:** 0x0000 specifies that the font is normal script.

**uls:** 0x00 specifies that the font has no underline.

**bFamily:** 0x00 specifies that the [**font family**](#gt_bca5490d-d27e-4097-b05d-9efb09083dd2) of the font is not applicable as detailed in the Windows API LOGFONT structure in [[MSDN-FONTS]](https://go.microsoft.com/fwlink/?LinkId=90008).

**bCharSet:** 0x00 specifies that that this font belongs to the [**ANSI character set**](#gt_100cd8a6-5cb1-4895-9de6-e4a3c224a583).

**fontName:** Arial specifies the name of the font.

Records following this record, and before the fifth Font record, are omitted for brevity.

### 3.8.2 Formatting: Font 2

The next record in this example, [Font](#Section_291a910ccb694799875ea201845d4fd1), specifies the [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) and font formatting information which is used by [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) B5.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001A | Font **- Font** |  |
| 0002 | USHORT **- dyHeight** | 0x00C8 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fItalic** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fStrikeOut** | 0x0 |
| 1 bit | USHORT **- fOutline** | 0x0 |
| 1 bit | USHORT **- fShadow** | 0x0 |
| 1 bit | USHORT **- fCondense** | 0x0 |
| 1 bit | USHORT **- fExtend** | 0x0 |
| 8 bits | USHORT **- reserved** | 0x00 |
| 0002 | USHORT **- icv** | 0x000C |
| 0002 | USHORT **- bls** | 0x02BC |
| 0002 | USHORT **- sss** | 0x0000 |
| 0001 | BYTE **- uls** | 0x00 |
| 0001 | BYTE **- bFamily** | 0x00 |
| 0001 | BYTE **- bCharSet** | 0x00 |
| 0001 | BYTE **- unused3** | 0xDF |
| 000C | [ShortXLUnicodeString](#Section_051628580ca944cbbb07a720928f63f8) **- fontName** | Arial |

Figure 79: Structure of Font

Fields in this record that are explained in previous records in this example have been omitted for brevity.

**icv:** 0x000C is an [Icv](#Section_b7160f4eabe8444da76c8f076a007d98) value that specifies that the color of the font is composed of an RGB value with a red value of 0, a green value of 0, and a blue value of 255, representing the color blue.

**bls:** 0x02BC specifies that the font is bold.

Records following this record, and before the ninth [Format](#Section_300280fde4fe4675a9244d383af48d3b) record, are omitted for brevity.

### 3.8.3 Formatting: Format

The next record in this example, [Format](#Section_300280fde4fe4675a9244d383af48d3b), specifies the number format which is used by [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) B4.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000C | Format **- Format** |  |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** | 0x00A4 |
| 000A | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- stFormat** | 0.00000 |

Figure 80: Structure of Format

**ifmt:** 0x00A4 specifies the identifier of the format string.

**stFormat:** "0.00000" specifies the custom [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) string to be applied.

### 3.8.4 Formatting: XF 1

The next record in this example, [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d), specifies default formatting properties for a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) and is always written out. It is not referenced in this example.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | XF **- XF** |  |
| 0002 | FontIndex **- ifnt** |  |
| 0002 | USHORT **- ifnt** | 0x0000 |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x0000 |
| 1 bit | USHORT **- fLocked** | 0x1 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fStyle** | 0x1 |
| 1 bit | USHORT **- f123Prefix** | 0x0 |
| 12 bits | USHORT **- ixfParent** | 0xFFF |
| 000E | [StyleXF](#Section_38cad019597749bfa55a6e2e9feaca74) **- Data** |  |
| 3 bits | BYTE **- alc** | 0x0 |
| 1 bit | BYTE **- fWrap** | 0x0 |
| 3 bits | BYTE **- alcV** | 0x2 |
| 1 bit | BYTE **- fJustLast** | 0x0 |
| 0001 | [XFPropTextRotation](#Section_828733cb953a48ceb4054d235575e9b3) **- trot** |  |
| 0001 | BYTE **- trot** | 0x00 |
| 4 bits | BYTE **- cIndent** | 0x0 |
| 1 bit | BYTE **- fShrinkToFit** | 0x0 |
| 1 bit | BYTE **- reserved1** | 0x0 |
| 2 bits | BYTE **- iReadOrder** | 0x0 |
| 0001 | BYTE **- unused** | 0x00 |
| 4 bits | USHORT **- dgLeft** | 0x0 |
| 4 bits | USHORT **- dgRight** | 0x0 |
| 4 bits | USHORT **- dgTop** | 0x0 |
| 4 bits | USHORT **- dgBottom** | 0x0 |
| 7 bits | USHORT **- icvLeft** | 0x00 |
| 7 bits | USHORT **- icvRight** | 0x00 |
| 2 bits | USHORT **- grbitDiag** | 0x0 |
| 7 bits | ULONG **- icvTop** | 0x00 |
| 7 bits | ULONG **- icvBottom** | 0x00 |
| 7 bits | ULONG **- icvDiag** | 0x00 |
| 4 bits | ULONG **- dgDiag** | 0x0 |
| 1 bit | ULONG **- reserved2** | 0x0 |
| 6 bits | ULONG **- fls** | 0x00 |
| 7 bits | USHORT **- icvFore** | 0x40 |
| 7 bits | USHORT **- icvBack** | 0x41 |
| 2 bits | USHORT **- reserved3** | 0x0 |

Figure 81: Structure of XF

**ifnt:** Specifies formatting properties for the cell.

**ifnt.ifnt:** 0x0000 specifies the [FontIndex](#Section_b3413c2bca5b498886beab44bfe9e4d3) that specifies the cell uses the default [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2).

**ifmt:** Specifies the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) and text formatting for the cell.

**ifmt.ifmt:** 0x0000 specifies an IFmt that specifies general (automatic) formatting for the cell.

**fLocked:** 0x1 specifies that the cell is set to be [**locked**](#gt_7795ac77-550e-4531-9ce5-327bbde6fa81) for user editing when the worksheet is [**protected**](#gt_edd09e04-ab93-4769-ae34-2cad606fa829).

**fHidden:** 0x0 specifies that the cell formula is not [**hidden**](#gt_6928fba3-3deb-453c-82ed-ecac33026ffd) when the worksheet is protected.

**fStyle:** 0x1 specifies that this record specifies a [cell style](#Section_f9425d3f127545be8389bf80f65b56b7).

**f123Prefix:** 0x0 specifies that the text in the cell is not prefixed by a single quote mark.

**ixfParent:** 0xFFF is the required value as **fStyle** is 0x1.

**Data:** Specifies additional properties of this cell style.

**Data.alc:** 0x0 specifies that the horizontal alignment of the cell is [**general alignment**](#gt_3ee6d1d4-830b-4dc2-b8be-751665f8045f).

**Data.fWrap:** 0x0 specifies that the cell text is not line-wrapped within the cell.

**Data.alcV:** 0x2 specifies that the cell has a bottom [**vertical alignment**](#gt_5a59a612-2d00-4cb5-9565-952243641878).

**Data.fJustLast:** 0x0 specifies that the cell text is not [**justify distributed**](#gt_11eced66-af2c-4391-8b45-87a60ad41483).

**Data.trot:** Specifies the text rotation.

**Data.trot.trot:** 0x00 specifies that the cell text is rotated counterclockwise 0 degrees.

**Data.cIndent:** 0x0 specifies that the cell text is not indented.

**Data.fShrinkToFit:** 0x0 specifies that the cell is not [**shrink to fit**](#gt_4740d2ef-00d3-4a29-983c-b7b3a6aa01e0).

**Data.iReadOrder:** 0x0 specifies that the [**reading order**](#gt_defb8e89-c809-4682-81f3-19c547363361) of the cell is context reading order.

**Data.dgLeft:** 0x0 specifies that the [**logical left**](#gt_ccc2ab6c-db9b-4c67-9b95-21ce79e7358d) [**border formatting**](#gt_96ac39c1-e3ee-4485-b481-0553e5606cad) of the cell is no [**border**](#gt_85bbea8d-a9f4-40a2-b4f8-68b587d21a4c).

**Data.dgRight:** 0x0 specifies that the [**logical right**](#gt_ef86cf61-a2e3-4130-abc4-9e92dae5a2a7) border formatting of the cell is no border.

**Data.dgTop:** 0x0 specifies that the top border formatting of the cell is no border.

**Data.dgBottom:** 0x0 specifies that the bottom border formatting of the cell is no border.

**Data.icvLeft:** 0x00 specifies that the color of the logical left border is not specified.

**Data.icvRight:** 0x00 specifies that the color of the logical right border is not specified.

**Data.grbitDiag:** 0x0 specifies that the cell does not have a diagonal border.

**Data.icvTop:** 0x00 specifies that the color of the top border is not specified.

**Data.icvBottom:** 0x00 specifies that the color of the bottom border is not specified.

**Data.icvDiag:** 0x00 specifies that the color of the diagonal border is not specified.

**Data.dgDiag:** 0x0 specifies that the diagonal border formatting of the cell is no border.

**Data.fls:** 0x00 specifies that there is no [**fill pattern**](#gt_87f0d54c-75c5-4242-a462-f55a2a95be9e) for the cell.

**Data.icvFore:** 0x40 specifies that the [**foreground color**](#gt_6710b91a-10b4-4df0-885f-99e53e7f816a) of the fill pattern is the default foreground color.

**Data.icvBack:** 0x41 specifies that the [**background color**](#gt_8e2b1aa9-87f0-4a42-aa3d-9e3a5d5a826c) of the fill pattern is the default background color.

Records following this record, and before the sixteenth XF record, are omitted for brevity.

### 3.8.5 Formatting: XF 2

The next record in this example, [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d), specifies formatting properties for a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) and is referenced by the [Number](#Section_a40c74c63df44e819a4385521cc92c0a) record for cell B3.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | XF **- XF** |  |
| 0002 | FontIndex **- ifnt** |  |
| 0002 | USHORT **- ifnt** | 0x0000 |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x0002 |
| 1 bit | USHORT **- fLocked** | 0x1 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fStyle** | 0x0 |
| 1 bit | USHORT **- f123Prefix** | 0x0 |
| 12 bits | USHORT **- ixfParent** | 0x000 |
| 000E | [CellXF](#Section_671c8577901f42159ebf6f5890e5896d) **- Data** |  |
| 3 bits | BYTE **- alc** | 0x0 |
| 1 bit | BYTE **- fWrap** | 0x0 |
| 3 bits | BYTE **- alcV** | 0x2 |
| 1 bit | BYTE **- fJustLast** | 0x0 |
| 0001 | [XFPropTextRotation](#Section_828733cb953a48ceb4054d235575e9b3) **- trot** |  |
| 0001 | BYTE **- trot** | 0x00 |
| 4 bits | BYTE **- cIndent** | 0x0 |
| 1 bit | BYTE **- fShrinkToFit** | 0x0 |
| 1 bit | BYTE **- reserved1** | 0x0 |
| 2 bits | BYTE **- iReadOrder** | 0x0 |
| 2 bits | BYTE **- reserved2** | 0x0 |
| 1 bit | BYTE **- fAtrNum** | 0x1 |
| 1 bit | BYTE **- fAtrFnt** | 0x0 |
| 1 bit | BYTE **- fAtrAlc** | 0x0 |
| 1 bit | BYTE **- fAtrBdr** | 0x0 |
| 1 bit | BYTE **- fAtrPat** | 0x0 |
| 1 bit | BYTE **- fAtrProt** | 0x0 |
| 4 bits | USHORT **- dgLeft** | 0x0 |
| 4 bits | USHORT **- dgRight** | 0x0 |
| 4 bits | USHORT **- dgTop** | 0x0 |
| 4 bits | USHORT **- dgBottom** | 0x0 |
| 7 bits | USHORT **- icvLeft** | 0x00 |
| 7 bits | USHORT **- ivcRight** | 0x00 |
| 2 bits | USHORT **- grbitDiag** | 0x0 |
| 7 bits | ULONG **- icvTop** | 0x00 |
| 7 bits | ULONG **- icvBottom** | 0x00 |
| 7 bits | ULONG **- icvDiag** | 0x00 |
| 4 bits | ULONG **- dgDiag** | 0x0 |
| 1 bit | ULONG **- fHasXFExt** | 0x0 |
| 6 bits | ULONG **- fls** | 0x00 |
| 7 bits | USHORT **- icvFore** | 0x40 |
| 7 bits | USHORT **- icvBack** | 0x41 |
| 1 bit | USHORT **- fsxButton** | 0x0 |
| 1 bit | USHORT **- reserved3** | 0x0 |

Figure 82: Structure of XF

Fields in this record that are explained in previous records in this example have been omitted for brevity.

**ifmt:**  Specifies the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) and text formatting for the cell.

**ifmt.ifmt:** 0x0002 specifies an IFmt value that specifies a number format with two decimals and no 1000s comma.

**fStyle:** 0x0 specifies that the cell uses a cell format.

**ixfParent:** 0x000 specifies that the cell inherits formatting properties from the first [cell style XF](#Section_3d5348ded9df4c31b1fd9f9377273152) record in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1).

**Data:** Specifies additional properties of the cell format.

**Data.fAtrNum:** 0x1 specifies that the **ifmt** field of this XF record is not updated when the corresponding field of the XF record specified by the **ixfParent** field of this XF record is changed.

**Data.fAtrFnt:** 0x0 specifies that the **ifnt** field of this XF record is updated when the corresponding field of the XF record specified by the **ixfParent** field of this XF record is changed.

**Data.fAtrAlc:** 0x0 specifies that the **alc**, **fWrap**, **alcV**, **fJustLast**, **trot**, **cIndent**, **fShrinkToFit**, and **iReadOrder** fields are updated when the corresponding fields of the XF record specified by the **ixfParent** field of this XF record are changed.

**Data.fAtrBdr:** 0x0 specifies that the **dgLeft**, **dgRight**, **dgTop**, **dgBottom**, **dgDiag**, **icvLeft**, **icvRight**, **grbitDiag**, **icvTop**, **icvBottom**, and **icvDiag** fields are updated when the corresponding fields of the XF record specified by the **ixfParent** field of this XF record are changed.

**Data.fAtrPat:** 0x0 specifies that the **fls**, **icvFore**, and **icvBack** fields are updated when the corresponding fields of the XF record specified by the **ixfParent** field of this XF record are changed.

**Data.fAtrProt:** 0x0 specifies that the **fLocked** and **fHidden** fields are updated when the corresponding fields of the XF record specified by the **ixfParent** field of this XF record are changed.

**Data.fHasXFExt:** 0x0 specifies that the information in this XF will not be extended by an [XFExt](#Section_8a19848536094bcb87e741894d48b76a) record.

**Data.fsxButton:** 0x0 specifies that the XF record is not attached to a pivot field drop-down button.

### 3.8.6 Formatting: XF 3

The next record in this example, [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d), specifies formatting properties for a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) or a [cell style](#Section_f9425d3f127545be8389bf80f65b56b7) and is referenced by the [Number](#Section_a40c74c63df44e819a4385521cc92c0a) record for cell B4.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | XF **- XF** |  |
| 0002 | FontIndex **- ifnt** |  |
| 0002 | USHORT **- ifnt** | 0x0000 |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x00A4 |
| 1 bit | USHORT **- fLocked** | 0x1 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fStyle** | 0x0 |
| 1 bit | USHORT **- f123Prefix** | 0x0 |
| 12 bits | USHORT **- ixfParent** | 0x000 |
| 000E | [CellXF](#Section_671c8577901f42159ebf6f5890e5896d) **- Data** |  |
| 3 bits | BYTE **- alc** | 0x0 |
| 1 bit | BYTE **- fWrap** | 0x0 |
| 3 bits | BYTE **- alcV** | 0x2 |
| 1 bit | BYTE **- fJustLast** | 0x0 |
| 0001 | [XFPropTextRotation](#Section_828733cb953a48ceb4054d235575e9b3) **- trot** |  |
| 0001 | BYTE **- trot** | 0x00 |
| 4 bits | BYTE **- cIndent** | 0x0 |
| 1 bit | BYTE **- fShrinkToFit** | 0x0 |
| 1 bit | BYTE **- reserved1** | 0x0 |
| 2 bits | BYTE **- iReadOrder** | 0x0 |
| 2 bits | BYTE **- reserved2** | 0x0 |
| 1 bit | BYTE **- fAtrNum** | 0x1 |
| 1 bit | BYTE **- fAtrFnt** | 0x0 |
| 1 bit | BYTE **- fAtrAlc** | 0x0 |
| 1 bit | BYTE **- fAtrBdr** | 0x0 |
| 1 bit | BYTE **- fAtrPat** | 0x0 |
| 1 bit | BYTE **- fAtrProt** | 0x0 |
| 4 bits | USHORT **- dgLeft** | 0x0 |
| 4 bits | USHORT **- dgRight** | 0x0 |
| 4 bits | USHORT **- dgTop** | 0x0 |
| 4 bits | USHORT **- dgBottom** | 0x0 |
| 7 bits | USHORT **- icvLeft** | 0x00 |
| 7 bits | USHORT **- ivcRight** | 0x00 |
| 2 bits | USHORT **- grbitDiag** | 0x0 |
| 7 bits | ULONG **- icvTop** | 0x00 |
| 7 bits | ULONG **- icvBottom** | 0x00 |
| 7 bits | ULONG **- icvDiag** | 0x00 |
| 4 bits | ULONG **- dgDiag** | 0x0 |
| 1 bit | ULONG **- fHasXFExt** | 0x0 |
| 6 bits | ULONG **- fls** | 0x00 |
| 7 bits | USHORT **- icvFore** | 0x40 |
| 7 bits | USHORT **- icvBack** | 0x41 |
| 1 bit | USHORT **- fsxButton** | 0x0 |
| 1 bit | USHORT **- reserved3** | 0x0 |

Figure 83: Structure of XF

Fields in this record that are explained in previous records in this example have been omitted for brevity.

**ifmt:**  Specifies the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) and text formatting for the cell.

**ifmt.ifmt:** 0x00A4 specifies the first user-defined [Format](#Section_300280fde4fe4675a9244d383af48d3b) record illustrated previously. The formatting string specified by the referenced Format record is "0.00000".

### 3.8.7 Formatting: XF 4

The next record in this example, [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d), specifies formatting properties for a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) or a [cell style](#Section_f9425d3f127545be8389bf80f65b56b7) and is referenced by the [Number](#Section_a40c74c63df44e819a4385521cc92c0a) record for cell B5.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | XF **- XF** |  |
| 0002 | FontIndex **- ifnt** |  |
| 0002 | USHORT **- ifnt** | 0x0005 |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x0000 |
| 1 bit | USHORT **- fLocked** | 0x1 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fStyle** | 0x0 |
| 1 bit | USHORT **- f123Prefix** | 0x0 |
| 12 bits | USHORT **- ixfParent** | 0x000 |
| 000E | [CellXF](#Section_671c8577901f42159ebf6f5890e5896d) **- Data** |  |
| 3 bits | BYTE **- alc** | 0x0 |
| 1 bit | BYTE **- fWrap** | 0x0 |
| 3 bits | BYTE **- alcV** | 0x2 |
| 1 bit | BYTE **- fJustLast** | 0x0 |
| 0001 | [XFPropTextRotation](#Section_828733cb953a48ceb4054d235575e9b3) **- trot** |  |
| 0001 | BYTE **- trot** | 0x00 |
| 4 bits | BYTE **- cIndent** | 0x0 |
| 1 bit | BYTE **- fShrinkToFit** | 0x0 |
| 1 bit | BYTE **- reserved1** | 0x0 |
| 2 bits | BYTE **- iReadOrder** | 0x0 |
| 2 bits | BYTE **- reserved2** | 0x0 |
| 1 bit | BYTE **- fAtrNum** | 0x0 |
| 1 bit | BYTE **- fAtrFnt** | 0x1 |
| 1 bit | BYTE **- fAtrAlc** | 0x0 |
| 1 bit | BYTE **- fAtrBdr** | 0x0 |
| 1 bit | BYTE **- fAtrPat** | 0x1 |
| 1 bit | BYTE **- fAtrProt** | 0x0 |
| 4 bits | USHORT **- dgLeft** | 0x0 |
| 4 bits | USHORT **- dgRight** | 0x0 |
| 4 bits | USHORT **- dgTop** | 0x0 |
| 4 bits | USHORT **- dgBottom** | 0x0 |
| 7 bits | USHORT **- icvLeft** | 0x00 |
| 7 bits | USHORT **- ivcRight** | 0x00 |
| 2 bits | USHORT **- grbitDiag** | 0x0 |
| 7 bits | ULONG **- icvTop** | 0x00 |
| 7 bits | ULONG **- icvBottom** | 0x00 |
| 7 bits | ULONG **- icvDiag** | 0x00 |
| 4 bits | ULONG **- dgDiag** | 0x0 |
| 1 bit | ULONG **- fHasXFExt** | 0x0 |
| 6 bits | ULONG **- fls** | 0x01 |
| 7 bits | USHORT **- icvFore** | 0x0D |
| 7 bits | USHORT **- icvBack** | 0x40 |
| 1 bit | USHORT **- fsxButton** | 0x0 |
| 1 bit | USHORT **- reserved3** | 0x0 |

Figure 84: Structure of XF

Fields in this record that are explained in previous records in this example have been omitted for brevity.

**ifnt:**  Specifies formatting properties for the cell.

**ifnt.ifnt:** 0x0005 specifies a [FontIndex](#Section_b3413c2bca5b498886beab44bfe9e4d3) which specifies the first [Font](#Section_291a910ccb694799875ea201845d4fd1) record in the collection of Font records in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1). This Font record is illustrated previously.

**Data:**  Specifies additional properties of the cell format.

**Data.fAtrNum:** 0x0 specifies that the **ifmt** field of this XF record is updated when the corresponding field of the XF record specified by the **ixfParent** field of this XF record is changed.

**Data.fAtrFnt:** 0x1 specifies that the **ifnt** field of this XF record is not updated when the corresponding field of the XF record specified by the **ixfParent** field of the containing XF record is changed.

**Data.fAtrPat:** 0x1 specifies that the **fls**, **icvFore**, and **icvBack** fields are not updated when the corresponding fields of the XF record specified by the **ixfParent** field of this XF record are changed.

**Data.fls:** 0x01 specifies a solid [**fill pattern**](#gt_87f0d54c-75c5-4242-a462-f55a2a95be9e). Only **icvFore** is rendered.

**Data.icvFore:** 0x0D specifies that the [**foreground color**](#gt_6710b91a-10b4-4df0-885f-99e53e7f816a) of the fill pattern is field **rgColor**[5] of the [Palette](#Section_bf61236aa89e4425967934992c61ae5e) record in the file. If no Palette record exists, the default value is an RGB value with a red value of 255, a green value of 255, and a blue value of 0, representing the color yellow.

**Data.icvBack:** 0x40 specifies that the [**background color**](#gt_8e2b1aa9-87f0-4a42-aa3d-9e3a5d5a826c) of the fill pattern is the default foreground color.

Records following this record, and before the next Number record, are omitted for brevity.

### 3.8.8 Formatting: Number 1

The next record in this example, [Number](#Section_a40c74c63df44e819a4385521cc92c0a), specifies the [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) B3, which contains a [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d). This record is the first in the set of Number records in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000E | Number **- Number** |  |
| 0006 | [Cell](#Section_6bb50f66faf048f9b6a9f0f452a77598) **- cell** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0002 |
| 0002 | [Col](#Section_febd138c9c8e42e98a3e49e0978b39a6) **- col** |  |
| 0002 | USHORT **- col** | 0x0001 |
| 0002 | [IXFCell](#Section_f9bc476745704f609a8e6fd3f32ddf3b) **- ixfe** |  |
| 0002 | USHORT **- ixfe** | 0x0015 |
| 0008 | Double **- num** | 3FF3C083126E978D |

Figure 85: Structure of Number

**cell:** Specifies a cell in the current [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) containing a floating-point number.

**cell.rw:** Specifies the row index of the cell.

**cell.rw.rw:** 0x0002 specifies that the cell is in row 3.

**cell.col:** Specifies the column index of the cell.

**cell.col.col:** 0x0001 specifies that the cell is in column B.

**cell.ixfe:** Specifies the [cell XF](#Section_518a740d71c640c8bb97e7df6915861a) record in the collection of [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d) records in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1).

**cell.ixfe.ixfe:** 0x0015 specifies that the cell is formatted according to the first user-defined XF record in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1). This XF is the second XF record in this example.

**num:** 0x3FF3C083126E978D specifies a 64-bit IEEE-754 floating-point value of 1.2345 as the value of the cell.

### 3.8.9 Formatting: Number 2

The next record in this example, [Number](#Section_a40c74c63df44e819a4385521cc92c0a), specifies the [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) B4, which contains a [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000E | Number **- Number** |  |
| 0006 | [Cell](#Section_6bb50f66faf048f9b6a9f0f452a77598) **- cell** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0003 |
| 0002 | [Col](#Section_febd138c9c8e42e98a3e49e0978b39a6) **- col** |  |
| 0002 | USHORT **- col** | 0x0001 |
| 0002 | [IXFCell](#Section_f9bc476745704f609a8e6fd3f32ddf3b) **- ixfe** |  |
| 0002 | USHORT **- ixfe** | 0x0016 |
| 0008 | Double **- num** | 3FF3C083126E978D |

Figure 86: Structure of Number

Fields in this record that are explained in previous records in this example have been omitted for brevity.

**cell:**  Specifies a cell in the current [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) containing a floating-point number.

**cell.rw:**  Specifies the row index of the cell.

**cell.rw.rw:** 0x0003 specifies that the cell is in row 4.

**cell.col:**  Specifies the column index of the cell.

**cell.col.col:** 0x0001 specifies that the cell is in column B.

**cell.ixfe:**  Specifies the [cell XF](#Section_518a740d71c640c8bb97e7df6915861a) record in the collection of [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d) records in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1).

**cell.ixfe.ixfe:** 0x0016 specifies that the cell is formatted according to the second user-defined XF record in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1). This XF is the third XF record in this example.

### 3.8.10 Formatting: Number 3

The next record in this example, [Number](#Section_a40c74c63df44e819a4385521cc92c0a), specifies the [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) B5, which contains a [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000E | Number **- Number** |  |
| 0006 | [Cell](#Section_6bb50f66faf048f9b6a9f0f452a77598) **- cell** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0004 |
| 0002 | [Col](#Section_febd138c9c8e42e98a3e49e0978b39a6) **- col** |  |
| 0002 | USHORT **- col** | 0x0001 |
| 0002 | [IXFCell](#Section_f9bc476745704f609a8e6fd3f32ddf3b) **- ixfe** |  |
| 0002 | USHORT **- ixfe** | 0x0017 |
| 0008 | Double **- num** | 3FF3C083126E978D |

Figure 87: Structure of Number

Fields in this record that are explained in previous records in this example have been omitted for brevity.

**cell:**  Specifies a cell in the current [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) containing a floating-point number.

**cell.rw:**  Specifies the row index of the cell.

**cell.rw.rw:** 0x0004 specifies that the cell is in row 5.

**cell.col:**  Specifies the column index of the cell.

**cell.col.col:** 0x0001 specifies that the cell is in column B.

**cell.ixfe:**  Specifies the [cell XF](#Section_518a740d71c640c8bb97e7df6915861a) record in the collection of [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d) records in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1).

**cell.ixfe.ixfe:** 0x0017 specifies that the cell is formatted according to the third user-defined XF record in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1). This XF is the fourth XF record in this example.

## 3.9 Workbook

This example shows a [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) containing three [**sheets**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d), named "Sheet1", "Sheet2" and "Sheet3". "Sheet1" contains the following cell content:

 Cell B4 contains the string "Number".

 Cell B5 contains the number 1.

 Cell B6 contains the string "Formula".

 Cell B7 contains the formula "=SQRT(B5\*2)".

The workbook example can be broken into two parts. The first part of the example includes records found in the [Globals](#Section_ca4c174887294a93abb94602b3a01fb1) Substream. These records contain details about the entire workbook through examples of the following parent records: [BOF](#Section_4d6a3d1ed7c5405fbbaed01e9cb79366), [RRTabId](#Section_e1b235b2c9554d38b7adfab84d93d4bc)**,** [BuiltInFnGroupCount](#Section_970af5a7a51d4a62925501456033ebd6), [Window1](#Section_5e7b06630af04ff583fbb3c42a7ed54f), [HideObj](#Section_78419232de624b9b943e4032b882cf1e), [Date1904](#Section_4a5e900a0eb043558fc181aab8f46e8b), [CalcPrecision](#Section_102f9376fbe8471f8ede844d6078e857), [BookBool](#Section_088a59501c4544a39c47939e1c6af485), [Font](#Section_291a910ccb694799875ea201845d4fd1), [Format](#Section_300280fde4fe4675a9244d383af48d3b), [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d), [Style](#Section_13bec5ebe6ec4dc192350e7f9e5426a1), [BoundSheet8](#Section_b9ec509a235d424e871df8e721106501)**,** [Country](#Section_440b4cc6215f439aaf5bf1b666c1af78), [RecalcId](#Section_95ba561a69a64661a8dde03305bbff3f), [SST](#Section_b6231b92d32e4626baddc3310a672bab)**,** [ExtSST](#Section_5d981e629e25490a9a75b177373e2d79), [BookExt](#Section_57a303542c054a3094b47a75cdc58d55), and [EOF](#Section_012176fe5802423b913578e22642456b).

The second part of this example contains the [Worksheet](#Section_f41c06f2905749a18c3fa4a4d211fc56) substream. These records contain details about the first sheet through examples of the following parent records: BOF**,** [Index](#Section_67c2092204274c2d96cc2267d3f09e8c), [DefaultRowHeight](#Section_407c7fd6d37849018c79432bfe38cef9), [WsBool](#Section_ccbd73f9ff1d4069be3113d16c074ec4), [Setup](#Section_23642d03de0e4a7f94dac2e594020bf2), [DefColWidth](#Section_30dc2bcb4f9943a3a745fbc54b5b8161), [Dimensions](#Section_5fd3837c9f3d49528a85ad93ddb37ced), [Row](#Section_4aab09eb49ed4d01a3b11d726247d3c2), [LabelSst](#Section_3f52609d816f44a7aad1e0fe2abccebd), [RK](#Section_656e0e798b9d4854803f23ec62080678), [Formula](#Section_8e3c69786c9f4915a82607613204b244), [DBCell](#Section_e08dc762bf8a457cb3ba39055bff423a), [Window2](#Section_80576ec8e7f04c9990a7d850587bc97b), [Selection](#Section_00131cedfe32403b9be4d9c234fde7d4), [PhoneticInfo](#Section_fe4b96b2cc6e46b1adf22070f65dfe43), and EOF.

"Sheet2" and "Sheet3" are empty sheets and their record details are not documented in this example.

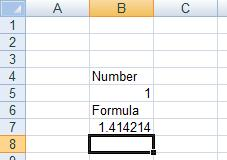


Figure 88: A sheet within a workbook

### 3.9.1 Workbook: BOF 1

This first [BOF](#Section_4d6a3d1ed7c5405fbbaed01e9cb79366) record begins the [Globals](#Section_ca4c174887294a93abb94602b3a01fb1) Substream and [Workbook](#Section_f682f4b08c6b444e83f852d156f1e8ba) stream and specifies global properties and data for a [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe), as well as the [**sheets**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) in this example workbook.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | BOF **- BOF** |  |
| 0002 | USHORT **- vers** | 0x0600 |
| 0002 | USHORT **- dt** | 0x0005 |
| 0002 | USHORT **- rupBuild** | 0x2013 |
| 0002 | USHORT **- rupYear** | 0x07CD |
| 1 bit | DWORD **- fWin** | 0x1 |
| 1 bit | DWORD **- fRisc** | 0x0 |
| 1 bit | DWORD **- fBeta** | 0x0 |
| 1 bit | DWORD **- fWinAny** | 0x0 |
| 1 bit | DWORD **- fMacAny** | 0x0 |
| 1 bit | DWORD **- fBetaAny** | 0x0 |
| 2 bits | DWORD **- unused1** | 0x3 |
| 1 bit | DWORD **- fRiscAny** | 0x0 |
| 1 bit | DWORD **- fOOM** | 0x0 |
| 1 bit | DWORD **- fGlJmp** | 0x0 |
| 2 bits | DWORD **- unused2** | 0x0 |
| 1 bit | DWORD **- fFontLimit** | 0x0 |
| 4 bits | DWORD **- verXLHigh** | 0x3 |
| 1 bit | DWORD **- unused3** | 0x0 |
| 13 bits | DWORD **- reserved1** | 0x0000 |
| 8 bits | DWORD **- verLowestBiff** | 0x06 |
| 4 bits | DWORD **- verLastXLSaved** | 0x3 |
| 20 bits | DWORD **- reserved2** | 0x00000 |

Figure 89: Structure of BOF

**vers:** 0x0600 specifies that the [**BIFF**](#gt_f9965de8-cd18-4e26-a9c6-adfee3d67517) version of the file is 1536.

**dt:** 0x0005 specifies that the substream of records following this BOF record are part of the workbook stream.

**rupBuild:** 0x2013 specifies that the version of the build is 8211.

**rupYear:** 0x07CD specifies 1997 as the year when the file format version was first created.

**fWin:** 0x1 specifies that the file was last edited on a Windows platform.

**fRisc:** 0x0 specifies that the file was not last edited on a RISC platform.

**fBeta:** 0x0 specifies that the file was not last edited by a [**beta**](#gt_b7cc0e52-196c-41e1-afa2-14da4352ac5d) version of the application.

**fWinAny:** 0x0 specifies that the file has not been subsequently saved.

**fMacAny:** 0x0 specifies that the file has never been edited on a Macintosh platform.

**fBetaAny:** 0x0 specifies that the file has never been edited on a beta version of the application.

**fRiscAny:** 0x0 specifies that the file has never been edited on a RISC platform.

**fOOM:** 0x0 specifies that the file has never had an [**out-of-memory**](#gt_1607fcec-cc19-40a2-9a61-678f90f5943e) failure.

**fGlJmp:** 0x0 specifies that the file has never had an out-of-memory failure during rendering.

**fFontLimit:** 0x0 specifies that the file has never reached the 255 [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) limit.

**verXLHigh:** 0x3 specifies that the file was not edited in any applications after Office Excel 2003.

**verLowestBiff:** 0x06 specifies that the files are saved in BIFF version 6.

**verLastXLSaved:** 0x3 specifies that the file was last saved by Office Excel 2003.

Records following this record, and before the next [RRTabId](#Section_e1b235b2c9554d38b7adfab84d93d4bc) record, are omitted for brevity.

### 3.9.2 Workbook: RRTabId

This [RRTabId](#Section_e1b235b2c9554d38b7adfab84d93d4bc) record specifies unique [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) identifiers, each of which is associated with a sheet in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0006 | RRTabId **- RRTabId** |  |
| 0006 | RgTabId **- rgtabid** |  |
| 0002 | USHORT **- rgtabid[0]** | 0x0001 |
| 0002 | USHORT **- rgtabid[1]** | 0x0002 |
| 0002 | USHORT **- rgtabid[2]** | 0x0003 |

Figure 90: Structure of RRTabId

**rgtabid:** An array of elements of unique sheet identifiers.

**rgtabid.rgtabid[0]:** 0x0001 specifies the first sheet identifier.

**rgtabid.rgtabid[1]:** 0x0002 specifies the second sheet identifier.

**rgtabid.rgtabid[2]:** 0x0003 specifies the third sheet identifier.

### 3.9.3 Workbook: BuiltInFnGroupCount

This [BuiltInFnGroupCount](#Section_970af5a7a51d4a62925501456033ebd6) record specifies information about the built-in [**function categories**](#gt_026a49a8-c3e8-49eb-a97f-58bd2c79c540) in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | BuiltInFnGroupCount **- BuiltinFnGroupCount** |  |
| 0002 | USHORT **- count** | 0x000E |

Figure 91: Structure of BuiltinFnGroupCount

**count:** 0x000E specifies there are 14 built-in function categories in the workbook.

Records following this record, and before the next [Window2.4.345](#Section_5e7b06630af04ff583fbb3c42a7ed54f) record, are omitted for brevity.

### 3.9.4 Workbook: Window1

This [Window2.4.345](#Section_5e7b06630af04ff583fbb3c42a7ed54f) record specifies attributes of the window used to display the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0012 | Window1 **- Window1** |  |
| 0002 | SHORT **- xWn** | 0x01E0 |
| 0002 | SHORT **- yWn** | 0x0069 |
| 0002 | SHORT **- dxWn** | 0x4E1B |
| 0002 | SHORT **- dyWn** | 0x3CE1 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fIconic** | 0x0 |
| 1 bit | USHORT **- fVeryHidden** | 0x0 |
| 1 bit | USHORT **- fDspHScroll** | 0x1 |
| 1 bit | USHORT **- fDspVScroll** | 0x1 |
| 1 bit | USHORT **- fBotAdornment** | 0x1 |
| 1 bit | USHORT **- fNoAFDateGroup** | 0x0 |
| 9 bits | USHORT **- reserved** | 0x000 |
| 0002 | [TabIndex](#Section_4bf91dd999de44058bfb95aa32a1a29f) **- itabCur** |  |
| 0002 | USHORT **- itab** | 0x0000 |
| 0002 | TabIndex **- itabFirst** |  |
| 0002 | USHORT **- itab** | 0x0000 |
| 0002 | USHORT **- ctabSel** | 0x0001 |
| 0002 | USHORT **- wTabRatio** | 0x0258 |

Figure 92: Structure of Window1

**xWn:** 0x01E0 specifies that the horizontal position of the window is 480 [**twips**](#gt_4b82472c-103d-4eff-a07e-6a0f784e3382) from the logical left edge of the [**client area**](#gt_623ea69b-ffdb-4751-8751-2cbf4cc11f08) of the window.

**yWn:** 0x0069 specifies that the vertical position of the window is 105 twips from the top edge of the client area of the window.

**dxWn:** 0x4E1B specifies that the width of the window is 19995 twips.

**dyWn:** 0x3CE1 specifies that the height of the window 15585 twips.

**fHidden:** 0x0000 specifies that the window is not [**hidden**](#gt_6928fba3-3deb-453c-82ed-ecac33026ffd).

**fIconic:** 0x0000 specifies that the window is not minimized.

**fVeryHidden:** 0x0000 specifies that the window is not hidden.

**fDspHScroll:** 0x0001 specifies that the horizontal scroll bar is displayed

**fDspVScroll:** 0x0001 specifies that the vertical scroll bar is displayed.

**fBotAdornment:** 0x0001 specifies that the [**sheet tabs**](#gt_3b131045-238c-4ce8-9c22-b6aac874c7c5) are displayed.

**fNoAFDateGroup:** 0x0000 specifies that dates are grouped by year, month, and day in the [**AutoFilter**](#gt_aa1cb4ce-f545-4fe2-b44c-5d393d833c35) menu.

**itabCur:** Specifies which sheet tab is [**selected**](#gt_f27adb49-1bec-4bfa-a1a8-0eb4db1ba595).

**itabCur.itab:** 0x0000 specifies that the first sheet tab is selected.

**itabFirst:** Specifies which is the first displayed sheet tab.

**itabFirst.itab:** 0x0000 specifies that the first tab is the displayed sheet tab.

**ctabSel:** 0x0001 specifies that one sheet tab is selected in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

**wTabRatio:** 0x0258 specifies that the ratio of the width of the sheet tabs to the width of the horizontal scroll bar is 0.6.

Records following this record, and before the next [HideObj](#Section_78419232de624b9b943e4032b882cf1e)record, are omitted for brevity.

### 3.9.5 Workbook: HideObj

This [HideObj](#Section_78419232de624b9b943e4032b882cf1e) record specifies how [**drawing objects**](#gt_51dfe494-9c84-4a0e-9d53-06068c5ce3ac) appear in a window that contains the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | HideObj **- HideObj** |  |
| 0002 | [HideObjEnum](#Section_8107b973334c41a786dbfe32fd929fce) **- hideObj** | 0x0000 |

Figure 93: Structure of HideObj

**hideObj:** 0x0000 specifies that all drawing objects in the window are shown.

### 3.9.6 Workbook: Date1904

This [Date2.4.77](#Section_4a5e900a0eb043558fc181aab8f46e8b) record specifies whether the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) uses the 1904-based or the 1900-based [**date system**](#gt_cfc29c5e-eb23-4077-b6eb-492f20f5c87f).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | Date1904 **- Date1904** |  |
| 0002 | SHORT **- f1904DateSystem** | 0x0000 |

Figure 94: Structure of Date1904

**f1904DateSystem:** 0x0000 specifies that the workbook uses the 1900 date system.

### 3.9.7 Workbook: CalcPrecision

This [CalcPrecision](#Section_102f9376fbe8471f8ede844d6078e857) record specifies the calculation precision mode for the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | CalcPrecision **- CalcPrec** |  |
| 0002 | SHORT **- fFullPrec** | 0x0001 |

Figure 95: Structure of CalcPrec

**fFullPrec:** 0x0001 specifies that [**precision as displayed**](#gt_e2ff81a6-eb9a-4e49-a1d0-cd4483e2e9a6) mode is not [**selected**](#gt_f27adb49-1bec-4bfa-a1a8-0eb4db1ba595).

Records following this record, and before the next [BookBool](#Section_088a59501c4544a39c47939e1c6af485)record, are omitted for brevity.

### 3.9.8 Workbook: BookBool

This [BookBool](#Section_088a59501c4544a39c47939e1c6af485)record specifies some properties associated with the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | BookBool **- BookBool** |  |
| 1 bit | USHORT **- fNoSaveSup** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fHasEnvelope** | 0x0 |
| 1 bit | USHORT **- fEnvelopeVisible** | 0x0 |
| 1 bit | USHORT **- fEnvelopeInitDone** | 0x0 |
| 2 bits | USHORT **- grUpdateLinks** | 0x0 |
| 1 bit | USHORT **- unused** | 0x0 |
| 1 bit | USHORT **- fHideBorderUnselLists** | 0x0 |
| 7 bits | USHORT **- reserved2** | 0x00 |

Figure 96: Structure of BookBool

**fNoSaveSup:** 0x0000 specifies that [**external link**](#gt_496fd743-2045-4c53-81b9-83fb90a7fab1) values are saved in the workbook.

**fHasEnvelope:** 0x0000 specifies the workbook does not have an envelope.

**fEnvelopeVisible:** 0x0000 specifies the envelope is not visible.

**fEnvelopeInitDone:** 0x0000 specifies the envelope has not been initialized.

**grUpdateLinks:** 0x0000 specifies the application prompts users to update external links in the workbook.

**fHideBorderUnselLists:** 0x0000 specifies that borders of [**tables**](#gt_d3a7da8d-a597-4838-9756-25e30b640ba7) that do not contain the active [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) are not [**hidden**](#gt_6928fba3-3deb-453c-82ed-ecac33026ffd).

### 3.9.9 Workbook: Font

This [Font](#Section_291a910ccb694799875ea201845d4fd1) record specifies [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) formatting information and is the first of four in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001A | Font **- Font** |  |
| 0002 | USHORT **- dyHeight** | 0x00C8 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fItalic** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fStrikeOut** | 0x0 |
| 1 bit | USHORT **- fOutline** | 0x0 |
| 1 bit | USHORT **- fShadow** | 0x0 |
| 1 bit | USHORT **- fCondense** | 0x0 |
| 1 bit | USHORT **- fExtend** | 0x0 |
| 8 bits | USHORT **- reserved** | 0x00 |
| 0002 | USHORT **- icv** | 0x7FFF |
| 0002 | USHORT **- bls** | 0x0190 |
| 0002 | USHORT **- sss** | 0x0000 |
| 0001 | BYTE **- uls** | 0x00 |
| 0001 | BYTE **- bFamily** | 0x00 |
| 0001 | BYTE **- bCharSet** | 0x00 |
| 0001 | BYTE **- unused3** | 0x57 |
| 000C | [ShortXLUnicodeString](#Section_051628580ca944cbbb07a720928f63f8) **- fontName** | Arial |

Figure 97: Structure of Font

**dyHeight:** 0x00C8 specifies that the height of the font is 200 [**twips**](#gt_4b82472c-103d-4eff-a07e-6a0f784e3382).

**fItalic:** 0x0 specifies that the font is not italic.

**fStrikeOut:** 0x0 specifies that the font does not have [**strikethrough formatting**](#gt_b16d9600-aebb-4a4f-bf14-c38e13c11c14) applied.

**fOutline:** 0x0 specifies that the font does not have an [**outline effect**](#gt_4e818802-fdc1-4227-b32f-1a3cb0943de7).

**fShadow:** 0x0 specifies that the font does not have a [**shadow effect**](#gt_83056968-00f2-463b-abc6-607dbb242cbf).

**fCondense:** 0x0 specifies that the font is not condensed

**fExtend:** 0x0 specifies that the font is not extended.

**icv:** 0x7FFF specifies that the color of the font is automatic and matches the window text color.

**bls:** 0x0190 specifies that the font weight is normal.

**sss:** 0x0000 specifies that no superscript or subscript is used.

**uls:** 0x00 specifies that the font does not have underlining.

**bFamily:** 0x00 specifies that the [**font family**](#gt_bca5490d-d27e-4097-b05d-9efb09083dd2) of the font is not applicable as detailed in the Windows API LOGFONT structure in [[MSDN-FONTS]](https://go.microsoft.com/fwlink/?LinkId=90008).

**bCharSet:** 0x00 specifies that this font belongs to the [**ANSI character set**](#gt_100cd8a6-5cb1-4895-9de6-e4a3c224a583).

**fontName:** "Arial" specifies the name of the font.

The three Font records following this record, and before the next [Format](#Section_300280fde4fe4675a9244d383af48d3b)record, are omitted for brevity.

### 3.9.10 Workbook: Format

This [Format](#Section_300280fde4fe4675a9244d383af48d3b) record specifies the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) applied to a number and is the first of eight in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001C | Format **- Format** |  |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** | 0x0005 |
| 001A | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- stFormat** | 0.00000 |

Figure 98: Structure of Format

**ifmt:** 0x0005 specifies the identifier for the formatting string.

**stFormat:**  "0.00000" specifies the custom number format string to be applied.

The seven Format records following this record, and before the next [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d)record, are omitted for brevity.

### 3.9.11 Workbook: XF

This [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d) record specifies formatting properties for a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) and is the first of 21 XF records in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | XF **- Xf** |  |
| 0002 | [FontIndex](#Section_b3413c2bca5b498886beab44bfe9e4d3) **- ifnt** |  |
| 0002 | USHORT **- ifnt** | 0x0000 |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x0000 |
| 1 bit | USHORT **- fLocked** | 0x1 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fStyle** | 0x1 |
| 1 bit | USHORT **- f123Prefix** | 0x0 |
| 12 bits | USHORT **- ixfParent** | 0xFFF |
| 0003 | [StyleXF](#Section_38cad019597749bfa55a6e2e9feaca74) **- Data** |  |
| 3 bits | BYTE **- alc** | 0x0 |
| 1 bit | BYTE **- fWrap** | 0x0 |
| 3 bits | BYTE **- alcV** | 0x2 |
| 1 bit | BYTE **- fJustLast** | 0x0 |
| 0001 | [XFPropTextRotation](#Section_828733cb953a48ceb4054d235575e9b3) **- trot** |  |
| 0001 | BYTE **- trot** | 0x00 |
| 4 bits | BYTE **- cIndent** | 0x0 |
| 1 bit | BYTE **- fShrinkToFit** | 0x0 |
| 1 bit | BYTE **- reserved1** | 0x0 |
| 2 bits | BYTE **- iReadOrder** | 0x0 |
| 0001 | BYTE **- unused** | 0x00 |
| 4 bits | USHORT **- dgLeft** | 0x0 |
| 4 bits | USHORT **- dgRight** | 0x0 |
| 4 bits | USHORT **- dgTop** | 0x0 |
| 4 bits | USHORT **- dgBottom** | 0x0 |
| 7 bits | USHORT **- icvLeft** | 0x00 |
| 7 bits | USHORT **- ivcRight** | 0x00 |
| 2 bits | USHORT **- grbitDiag** | 0x0 |
| 7 bits | ULONG **- icvTop** | 0x00 |
| 7 bits | ULONG **- icvBottom** | 0x00 |
| 7 bits | ULONG **- icvDiag** | 0x00 |
| 4 bits | ULONG **- dgDiag** | 0x0 |
| 1 bit | ULONG **- reserved2** | 0x0 |
| 6 bits | ULONG **- fls** | 0x00 |
| 7 bits | USHORT **- icvFore** | 0x40 |
| 7 bits | USHORT **- icvBack** | 0x41 |
| 2 bits | USHORT **- reserved3** | 0x0 |

Figure 99: Structure of Xf

**ifnt:** A FontIndex that specifies a [Font](#Section_291a910ccb694799875ea201845d4fd1) record.

**ifnt.ifnt:** 0x0000 specifies that the default [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) is used.

**ifmt:** Specifies the identifier of a [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b).

**ifmt.ifmt:** 0x0000 specifies that general (automatic) formatting is applied for the cell.

**fLocked:** 0x1 specifies that this cell has [**locked protection**](#gt_10f1ec97-0464-49da-bf78-5339b9d3520c). Because this workbook example has no [Protect](#Section_b32708d535d240059488abbfc319ae1f) record, this setting does not apply.

**fHidden:** 0x0 specifies that this cell is not [**hidden**](#gt_6928fba3-3deb-453c-82ed-ecac33026ffd).

**fStyle:** 0x1 specifies that this record specifies a [cell style XF](#Section_3d5348ded9df4c31b1fd9f9377273152).

**f123Prefix:** 0x0 specifies that prefix characters are not present in the cell.

**ixfParent:** 0xFFF specifies that there is no inheritance from a cell style XF.

**Data:** This structure specifies formatting properties for a [cell style](#Section_f9425d3f127545be8389bf80f65b56b7).

**Data.alc:** 0x0 specifies that [**horizontal alignment**](#gt_f0e60ca8-51d5-4553-9126-3d89a4d08f90) for the cell is [**general alignment**](#gt_3ee6d1d4-830b-4dc2-b8be-751665f8045f).

**Data.fWrap:** 0x0 specifies that cell text is not wrapped.

**Data.alcV:** 0x2 specifies that [**vertical alignment**](#gt_5a59a612-2d00-4cb5-9565-952243641878) for the cell is bottom alignment.

**Data.fJustLast:** 0x0 specifies that the cell text is not justified.

**Data.trot:** This structure specifies rotation for the cell text.

**Data.trot.trot:** 0x00 specifies zero degrees of rotation.

**Data.cIndent:** 0x0 specifies that the text indent level is zero.

**Data.fShrinkToFit:** 0x0 specifies that text is not [**shrink to fit**](#gt_4740d2ef-00d3-4a29-983c-b7b3a6aa01e0).

**Data.iReadOrder:** 0x0 specifies that context [**reading order**](#gt_defb8e89-c809-4682-81f3-19c547363361) is set.

**Data.dgLeft:** 0x0 specifies that there is no [**logical left**](#gt_ccc2ab6c-db9b-4c67-9b95-21ce79e7358d) border.

**Data.dgRight:** 0x0 specifies that there is no [**logical right**](#gt_ef86cf61-a2e3-4130-abc4-9e92dae5a2a7) border.

**Data.dgTop:** 0x0 specifies that there is no top border.

**Data.dgBottom:** 0x0 specifies that there is no bottom border.

**Data.icvLeft:** 0x00 specifies that the logical left border color has not been set.

**Data.ivcRight:** 0x00 specifies that the logical right border color has not been set.

**Data.grbitDiag:** 0x0 specifies that there is no diagonal border.

**Data.icvTop:** 0x00 specifies that the top border color has not been set.

**Data.icvBottom:** 0x00 specifies that the bottom border color has not been set.

**Data.icvDiag:** 0x00 specifies that the diagonal border color has not been set.

**Data.dgDiag:** 0x0 specifies the line style for the diagonal border is set to no border.

**Data.fls:** 0x00 specifies that there is no [**fill pattern**](#gt_87f0d54c-75c5-4242-a462-f55a2a95be9e).

**Data.icvFore:** 0x40 specifies that the fill pattern uses the default [**foreground color**](#gt_6710b91a-10b4-4df0-885f-99e53e7f816a) which is the window text color.

**Data.icvBack:** 0x41 specifies that fill pattern uses the default [**background color**](#gt_8e2b1aa9-87f0-4a42-aa3d-9e3a5d5a826c) which is the default background color for a cell.

The 20 XF records following this record, and before the next [Style](#Section_13bec5ebe6ec4dc192350e7f9e5426a1)record, are omitted for brevity.

### 3.9.12 Workbook: Style

This [Style](#Section_13bec5ebe6ec4dc192350e7f9e5426a1) record specifies a [cell style](#Section_f9425d3f127545be8389bf80f65b56b7) and is the first of six Style records in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) example .

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | Style **- Style** |  |
| 12 bits | USHORT **- ixfe** | 0x010 |
| 3 bits | USHORT **- unused** | 0x0 |
| 1 bit | USHORT **- fBuiltIn** | 0x1 |
| 0002 | [BuiltInStyle](#Section_ff60de5e7d8a42b790563250e22019ec) **- builtInData** |  |
| 0001 | BYTE **- istyBuiltIn** | 0x03 |
| 0001 | BYTE **- iLevel** | 0xFF |

Figure 100: Structure of Style

Fields in this record that are ignored are omitted for brevity.

**ixfe:** 0x010 specifies the index to the 16th [XF](#Section_993d15c4ec0443e9ba36594dfb336c6d) record for which these properties apply; this XF record is omitted from this workbook example for brevity.

**fBuiltIn:** 0x0001 specifies that this cell uses the built-in cell style.

**builtInData:** Specifies an optional built-in cell style.

**builtInData.istyBuiltIn:** 0x03 specifies that the comma cell style is applied.

The records following this record, and before the next [BoundSheet2.4.28](#Section_b9ec509a235d424e871df8e721106501)record, are omitted for brevity.

### 3.9.13 Workbook: BoundSheet8 1

This [BoundSheet2.4.28](#Section_b9ec509a235d424e871df8e721106501) record specifies basic information about the first [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) example, including the sheet name, [**hidden**](#gt_6928fba3-3deb-453c-82ed-ecac33026ffd) state, and type of sheet.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000E | BoundSheet8 **- BoundSheet8** |  |
| 0004 | FilePointer **- lbPlyPos** | 0x000005CA |
| 2 bits | USHORT **- hsState** | 0x0 |
| 6 bits | USHORT **- unused** | 0x00 |
| 8 bits | USHORT **- dt** | 0x00 |
| 0008 | [ShortXLUnicodeString](#Section_051628580ca944cbbb07a720928f63f8) **- stName** | Sheet1 |

Figure 101: Structure of BoundSheet8

**lbPlyPos:** 0x000005CA specifies the stream position of the start of the [BOF](#Section_4d6a3d1ed7c5405fbbaed01e9cb79366) record for the sheet associated with this BoundSheet2.4.28record. This stream position is the start of the binary record, which begins with the two-byte record type and two-byte record size information. See the [record](#Section_170e90ce87d747589331dcf14cd72388) overview for more details. The [worksheet](#Section_f41c06f2905749a18c3fa4a4d211fc56) substream for this sheet is shown later in this workbook example.

**hsState:** 0x0 specifies that the sheet is [**visible**](#gt_81648495-ee6b-4cfd-955a-89fc643d3b72).

**dt:** 0x00 specifies that the sheet type is a [**Worksheet**](#gt_2fdc6291-fa6a-48a6-afbb-04f910d68615).

**stName:**  "Sheet1" specifies the case-insensitive name of the sheet.

### 3.9.14 Workbook: BoundSheet8 2

This record is the same as the previous [BoundSheet2.4.28](#Section_b9ec509a235d424e871df8e721106501) record example and specifies basic information about the second [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) example. The fields that contain the same values as the previous record are omitted for brevity.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000E | BoundSheet8 **- BoundSheet8** |  |
| 0004 | FilePointer **- lbPlyPos** | 0x00000785 |
| 2 bits | USHORT **- hsState** | 0x0 |
| 6 bits | USHORT **- unused** | 0x00 |
| 8 bits | USHORT **- dt** | 0x00 |
| 0008 | [ShortXLUnicodeString](#Section_051628580ca944cbbb07a720928f63f8) **- stName** | Sheet2 |

Figure 102: Structure of BoundSheet8

**lbPlyPos:** 0x00000785 specifies the stream position of the start of the [BOF](#Section_4d6a3d1ed7c5405fbbaed01e9cb79366) record for the sheet associated with this BoundSheet2.4.28 record. The [worksheet](#Section_f41c06f2905749a18c3fa4a4d211fc56) substream for this sheet is omitted for brevity from the workbook example.

**stName:** "Sheet2" specifies the unique name of the sheet, which is not case sensitive.

### 3.9.15 Workbook: BoundSheet8 3

This record is the same as the first [BoundSheet2.4.28](#Section_b9ec509a235d424e871df8e721106501) record example and specifies basic information about the third [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) example. The fields that contain the same values as the first BoundSheet2.4.28 record are omitted for brevity.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000E | BoundSheet8 **- BoundSheet8** |  |
| 0004 | FilePointer **- lbPlyPos** | 0x0000088C |
| 2 bits | USHORT **- hsState** | 0x0 |
| 6 bits | USHORT **- unused** | 0x00 |
| 8 bits | USHORT **- dt** | 0x00 |
| 0008 | [ShortXLUnicodeString](#Section_051628580ca944cbbb07a720928f63f8) **- stName** | Sheet3 |

Figure 103: Structure of BoundSheet8

**lbPlyPos:** 0x0000088C specifies the stream position of the start of the [BOF](#Section_4d6a3d1ed7c5405fbbaed01e9cb79366) record for the sheet associated with this BoundSheet2.4.28 record. The [worksheet](#Section_f41c06f2905749a18c3fa4a4d211fc56) substream for this sheet is omitted for brevity from the workbook example.

**stName:**  "Sheet3" specifies the name of the sheet, which is not case sensitive.

### 3.9.16 Workbook: Country

This [Country](#Section_440b4cc6215f439aaf5bf1b666c1af78) record specifies the [**locale**](#gt_7b78ebef-e35d-45ab-abfd-4121b60995de) information for a [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | Country **- Country** |  |
| 0002 | USHORT **- iCountryDef** | 0x0001 |
| 0002 | USHORT **- iCountryWinIni** | 0x0001 |

Figure 104: Structure of Country

**iCountryDef:** 0x0001 specifies that the locale for the workbook is the United States.

**iCountryWinIni:** 0x0001 specifies that the system [**regional setting**](#gt_ede60f7f-1131-4845-800b-b6848215e015) is United States.

### 3.9.17 Workbook: RecalcId

This [RecalcId](#Section_95ba561a69a64661a8dde03305bbff3f) record specifies the recalculation engine identifier of the recalculation engine that last performed a recalculation.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | RecalcId **- RecalcID** |  |
| 0002 | USHORT **- rt** | 0x01C1 |
| 0002 | USHORT **- reserved** | 0x0000 |
| 0004 | DWORD **- dwBuild** | 0x0001BE22 |

Figure 105: Structure of RecalcID

**rt:** 0x01C1 specifies that the record identifier for this record is 449.

**dwBuild:** 0x0001BE22 specifies the recalculation engine identifier of the recalculation engine that performed the last recalculation, which is 114210.

### 3.9.18 Workbook: SST

This [SST](#Section_b6231b92d32e4626baddc3310a672bab) record specifies string constants.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001B | SST **- Sst** |  |
| 0004 | LONG **- cstTotal** | 0x00000002 |
| 0004 | LONG **- cstUnique** | 0x00000002 |
| 0013 | XLUnicodeRichExtendedString[] **- rgb** |  |
| 0009 | [XLUnicodeRichExtendedString](#Section_173d9f51e5d343da8de2be7f22e119b9) **- rgb[0]** | Number |
| 000A | XLUnicodeRichExtendedString **- rgb[1]** | Formula |

Figure 106: Structure of Sst

Fields in this record that are ignored because they are optional are omitted for brevity.

**cstTotal:** 0x00000002 specifies that there are two references in the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) to the strings in the shared string table.

**cstUnique:** 0x00000002 specifies that there are two unique strings in the shared string table.

**rgb:**  Specifies an array of [**Unicode**](#gt_c305d0ab-8b94-461a-bd76-13b40cb8c4d8) strings.

**rgb.rgb[0]:** "Number" is the first string in the shared string table.

**rgb.rgb[1]:** "Formula" is the second string in the shared string table.

### 3.9.19 Workbook: ExtSST

This [ExtSST](#Section_5d981e629e25490a9a75b177373e2d79) record specifies the location of strings within the shared string table, specified in the previous [SST](#Section_b6231b92d32e4626baddc3310a672bab) record.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | ExtSST **- ExtSst** |  |
| 0002 | USHORT **- dsst** | 0x0008 |
| 0008 | ISSTInf[] **- rgISSTInf** |  |
| 0008 | [ISSTInf](#Section_deefa525886441549201777ff7f2bb8f) **- rgISSTInf[0]** |  |
| 0004 | FilePointer **- ib** | 0x0000058C |
| 0002 | UINT **- cbOffset** | 0x000C |
| 0002 | reserved **- reserved** | 0x0000 |

Figure 107: Structure of ExtSst

**dsst:** 0x0008 specifies the default value for this field as specified by the formula in the ExtSST record.

**rgISSTInf:** Specifies the location of a set of strings within the SST record.

**rgISSTInf.rgISSTInf[0].ib:** 0x0000058C specifies that the FilePointer as specified in [[MS-OSHARED]](file:///C:\Users\Administrator\Desktop\OfficeEncryption\%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.2.1.5 that specifies the zero-based offset into the [Workbook](#Section_f682f4b08c6b444e83f852d156f1e8ba) stream is 1420.

**rgISSTInf.rgISSTInf[0].cbOffset:** 0x000C specifies that the zero-based offset into the SST record is 12.

### 3.9.20 Workbook: BookExt

This [BookExt](#Section_57a303542c054a3094b47a75cdc58d55) record specifies properties of the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0015 | BookExt **- BookExt** |  |
| 000C | [FrtHeader](#Section_d56e99f8a2714db1923c222722d21a37) **- FrtHeader** |  |
| 0002 | USHORT **- rt** | 0x0863 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0008 | reserved **- reserved** | 0x0000000000000000 |
| 0004 | DWORD **- cb** | 0x00000015 |
| 1 bit | DWORD **- fDontAutoRecover** | 0x0 |
| 1 bit | DWORD **- fHidePivotList** | 0x0 |
| 1 bit | DWORD **- fFilterPrivacy** | 0x0 |
| 1 bit | DWORD **- fEmbedFactoids** | 0x0 |
| 2 bits | DWORD **- mdFactoidDisplay** | 0x0 |
| 1 bit | DWORD **- fSavedDuringRecovery** | 0x0 |
| 1 bit | DWORD **- fCreatedViaMinimalSave** | 0x0 |
| 1 bit | DWORD **- fOpenedViaDataRecovery** | 0x0 |
| 1 bit | DWORD **- fOpenedViaSafeLoad** | 0x0 |
| 22 bits | DWORD **- reserved** | 0x000000 |
| 0001 | [BookExt\_Conditional11](#Section_50cc0d44e2d14aa99a05d1dacd35f8d3) **- grbit1** |  |
| 1 bit | BYTE **- fBuggedUserAboutSolution** | 0x0 |
| 1 bit | BYTE **- fShowInkAnnotation** | 0x1 |
| 6 bits | BYTE **- unused** | 0x00 |

Figure 108: Structure of BookExt

Fields in this record that are ignored because they have zero values are omitted for brevity.

**FrtHeader:**  This structure specifies a [future record](#Section_b660b67822684414839ed1ae9a4e4e85) header.

**FrtHeader.rt:** 0x0863 is the required value for this field and specifies that this record is contained in a BookExt record.

**FrtHeader.grbitFrt:** This structure specifies flags used in the future record header.

**FrtHeader.grbitFrt.fFrtRef:** 0x0000 specifies that this **FrtHeader** does not specify a [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) of [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461).

**FrtHeader.grbitFrt.fFrtAlert:** 0x0000 specifies that the user is not alerted of possible problems when saving this file without having recognized this record.

**cb:** 0x00000015 specifies that the size of the record is 21 bytes.

**fDontAutoRecover:** 0x0 specifies that [**AutoRecover**](#gt_082e4fd1-0461-4797-baa0-d2797f0ba555) is enabled for the workbook.

**fHidePivotList:** 0x0 specifies that the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3) field list is not [**hidden**](#gt_6928fba3-3deb-453c-82ed-ecac33026ffd) for this workbook.

**fFilterPrivacy:** 0x0 specifies that personal information is not removed from the workbook on save.

**fEmbedFactoids:** 0x0 specifies that [**smart tags**](#gt_2f57a49a-d503-4605-8798-0e53bd637609) are not embedded in this workbook on save.

**mdFactoidDisplay:** 0x0 specifies that the workbook displays smart tags as [**smart tag actions buttons**](#gt_7c1f7dd0-048a-433e-a5ac-98b32121bcb9) and [**smart tag indicators**](#gt_62e83b67-c6c5-4a3e-8a09-2a5f0f39f65f).

**fSavedDuringRecovery:** 0x0 specifies that the workbook was not saved during AutoRecover.

**fCreatedViaMinimalSave:** 0x0 specifies the workbook was not created by a [**minimal save**](#gt_37ba5c27-ec42-4ccf-8122-86166df37c61) during [**data recovery**](#gt_667a7046-739a-4c24-9674-837d88e0031b).

**fOpenedViaDataRecovery:** 0x0 specifies that the workbook was not opened as a result of data recovery.

**fOpenedViaSafeLoad:** 0x0 specifies that the workbook was not opened in [**safe load**](#gt_78d75560-7171-4a5d-be0e-3b8c14bc62c4) mode.

**grbit1:**  Specifies additional workbook information.

**grbit1.fBuggedUserAboutSolution:** 0x0 specifies that no warning is requested before loading a [**manifest**](#gt_d1a20cdc-cced-44de-a041-857fb9054856) that is a [**smart document**](#gt_cc9fe152-6a63-4555-91f1-1543ff84035d).

**grbit1.fShowInkAnnotation:** 0x1 specifies that [**ink**](#gt_9fcdd1d5-3563-49b9-8a2e-bf696fb08fd0) [**comments**](#gt_c8a897b9-522f-4b7a-8df6-40b65ac09f4d) for the workbook are not displayed.

### 3.9.21 Workbook: EOF 1

This [EOF](#Section_012176fe5802423b913578e22642456b) record specifies the end of a collection of records as defined by [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1) [**ABNF**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf).

| **Size** | **Structure** |
| --- | --- |
| 0000 | EOF **- EOF** |

Figure 109: Structure of EOF

### 3.9.22 Workbook: BOF 2

This [BOF](#Section_4d6a3d1ed7c5405fbbaed01e9cb79366) record specifies the beginning of the [worksheet](#Section_f41c06f2905749a18c3fa4a4d211fc56) substream and specifies information about "Sheet1".

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | BOF **- BOF** |  |
| 0002 | USHORT **- vers** | 0x0600 |
| 0002 | USHORT **- dt** | 0x0010 |
| 0002 | USHORT **- rupBuild** | 0x2013 |
| 0002 | USHORT **- rupYear** | 0x07CD |
| 1 bit | DWORD **- fWin** | 0x1 |
| 1 bit | DWORD **- fRisc** | 0x0 |
| 1 bit | DWORD **- fBeta** | 0x0 |
| 1 bit | DWORD **- fWinAny** | 0x0 |
| 1 bit | DWORD **- fMacAny** | 0x0 |
| 1 bit | DWORD **- fBetaAny** | 0x0 |
| 2 bits | DWORD **- unused1** | 0x3 |
| 1 bit | DWORD **- fRiscAny** | 0x0 |
| 1 bit | DWORD **- fOOM** | 0x0 |
| 1 bit | DWORD **- fGlJmp** | 0x0 |
| 2 bits | DWORD **- unused2** | 0x0 |
| 1 bit | DWORD **- fFontLimit** | 0x0 |
| 4 bits | DWORD **- verXLHigh** | 0x3 |
| 1 bit | DWORD **- unused3** | 0x0 |
| 13 bits | DWORD **- reserved1** | 0x0000 |
| 8 bits | DWORD **- verLowestBiff** | 0x06 |
| 4 bits | DWORD **- verLastXLSaved** | 0x3 |
| 20 bits | DWORD **- reserved2** | 0x00000 |

Figure 110: Structure of BOF

**vers:** 0x0600 specifies that the file uses [**BIFF**](#gt_f9965de8-cd18-4e26-a9c6-adfee3d67517) version 6.

**dt:** 0x0010 specifies that the records following this BOFrecord are part of the worksheet substream.

**rupBuild:** 0x2013 specifies that the version of the build is 8211.

**rupYear:** 0x07CD specifies that 1997 was the year when the file format version was first created.

**fWin:** 0x1 specifies that the file was last edited on a Windows platform.

**fRisc:** 0x0 specifies that the file was not lasted edited on a RISC platform.

**fBeta:** 0x0 specifies that the file was not last edited by a [**beta**](#gt_b7cc0e52-196c-41e1-afa2-14da4352ac5d) version of the application.

**fWinAny:** 0x0 specifies that the file has not been subsequently saved.

**fMacAny:** 0x0 specifies that the file has never been edited on a Macintosh platform.

**fBetaAny:** 0x0 specifies that the file has never edited on a beta version of the application.

**fRiscAny:** 0x0 specifies that the file has never been edited on a RISC platform.

**fOOM:** 0x0 specifies that the file never had an [**out-of-memory**](#gt_1607fcec-cc19-40a2-9a61-678f90f5943e) failure.

**fGlJmp:** 0x0 specifies that this file has never had an out-of-memory failure during rendering.

**fFontLimit:** 0x0 specifies that the file has never reached the 255 [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) limit.

**verXLHigh:** 0x3 specifies that the file was not edited in any applications after Office Excel 2003.

**verLowestBiff:** 0x06 specifies that the file is saved in BIFF version 6.

**verLastXLSaved:** 0x3 specifies that the file was last saved on Office Excel 2003.

### 3.9.23 Workbook: Index

The next record is an [Index](#Section_67c2092204274c2d96cc2267d3f09e8c) record that specifies row information and the file locations for all [DBCell](#Section_e08dc762bf8a457cb3ba39055bff423a) records corresponding to each row block in the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d). This record, combined with the DBCell records, is used to optimize the [lookup of cells](#Section_24bbaffdab88489e983f3c400c8a8559) in a [cell table](#Section_d690007dd25c4822a650b24c13288bb7).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | Index **- Index** |  |
| 0004 | ULONG **- reserved** | 0x00000000 |
| 0004 | [RwLongU](#Section_a6fff2b4470a463da6e99dad9676cd44) **- rwMic** |  |
| 0004 | ULONG **- rw** | 0x00000003 |
| 0004 | ULONG **- rwMac** | 0x00000007 |
| 0004 | FilePointer **- ibXF** | 0x00000686 |
| 0004 | RgibRw **- rgibRw** |  |
| 0004 | FilePointer **- rgibRw[0]** | 0x0000073E |

Figure 111: Structure of Index

**rwMic:** Specifies the first row that has a cell with data.

**rwMic.rw:** 0x00000003 specifies that row 4 is the first row with data or formatting.

**rwMac:** 0x00000007 specifies that row 7 is the last row with data or formatting. This field value specifies the row after the last row that has data or formatting.

**ibXF:** 0x00000686 specifies a FilePointer as specified in [[MS-OSHARED]](file:///C:\Users\Administrator\Desktop\OfficeEncryption\%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.2.1.5 that specifies the file position of the [DefColWidth](#Section_30dc2bcb4f9943a3a745fbc54b5b8161) record in this sheet.

**rgibRw.rgibRw[0]:** 0x0000073E specifies the file position of the DBCell record. This stream position is the start of the binary record, which begins with the two-byte record type and two-byte record size information. See the [record](#Section_170e90ce87d747589331dcf14cd72388) overview for more details.

The records following this record, and before the next [DefaultRowHeight](#Section_407c7fd6d37849018c79432bfe38cef9)record, are omitted for brevity.

### 3.9.24 Workbook: DefaultRowHeight

The next record is a [DefaultRowHeight](#Section_407c7fd6d37849018c79432bfe38cef9) record that specifies the height of all empty rows in the current [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | DefaultRowHeight **- DefaultRowHeight** |  |
| 1 bit | USHORT **- fUnsynced** | 0x0 |
| 1 bit | USHORT **- fDyZero** | 0x0 |
| 1 bit | USHORT **- fExAsc** | 0x0 |
| 1 bit | USHORT **- fExDsc** | 0x0 |
| 12 bits | USHORT **- reserved** | 0x000 |
| 0002 | SHORT **- miyRw** | 0x00FF |

Figure 112: Structure of DefaultRowHeight

**fUnsynced:** 0x0 specifies that default settings for the row height have not changed.

**fDyZero:** 0x0 specifies that empty rows do not have a height of zero.

**fExAsc:** 0x0 specifies that empty rows do not have a thick [**border style**](#gt_2baf659e-8e18-4f60-b3d0-ce0b8e1f2eab) applied to the top [**border**](#gt_85bbea8d-a9f4-40a2-b4f8-68b587d21a4c).

**fExDsc:** 0x0 specifies that empty rows do not have a thick border style applied to the bottom border.

**miyRw:** 0x00FF specifies 255 [**twips**](#gt_4b82472c-103d-4eff-a07e-6a0f784e3382) as the default row height for empty rows.

### 3.9.25 Workbook: WsBool

The next record is a [WsBool](#Section_ccbd73f9ff1d4069be3113d16c074ec4) record that specifies information about a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | WsBool **- WsBool** |  |
| 1 bit | USHORT **- fShowAutoBreaks** | 0x1 |
| 3 bits | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fDialog** | 0x0 |
| 1 bit | USHORT **- fApplyStyles** | 0x0 |
| 1 bit | USHORT **- fRowSumsBelow** | 0x1 |
| 1 bit | USHORT **- fColSumsRight** | 0x1 |
| 1 bit | USHORT **- fFitToPage** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 2 bits | USHORT **- unused** | 0x1 |
| 1 bit | USHORT **- fSyncHoriz** | 0x0 |
| 1 bit | USHORT **- fSyncVert** | 0x0 |
| 1 bit | USHORT **- fAltExprEval** | 0x0 |
| 1 bit | USHORT **- fAltFormulaEntry** | 0x0 |

Figure 113: Structure of WsBool

**fShowAutoBreaks:** 0x0001 specifies that [**page breaks**](#gt_55584218-fec7-4f6a-8295-e4dbf3b7d871) inserted automatically on the sheet are [**visible**](#gt_81648495-ee6b-4cfd-955a-89fc643d3b72).

**fDialog:** 0x0000 specifies that the sheet is not a [**dialog sheet**](#gt_293d2e0c-de3d-4808-99fc-99fa824158a8).

**fApplyStyles:** 0x0000 specifies not to apply styles in an [**outline**](#gt_d20b50ce-6124-4bda-ba32-5d132016d639) when an outline is applied.

**fRowSumsBelow:** 0x0001 specifies that summary rows appear below an outline’s detail rows.

**fColSumsRight:** 0x0001 specifies that summary columns appear on the left if the sheet is displayed [**left-to-right**](#gt_b8c262f8-6c09-457a-9b68-4bf3a08ab067) or appear on the right if the sheet is displayed [**right-to-left**](#gt_91359688-7863-4e88-b507-f57b3dada5ec).

**fFitToPage:** 0x0000 specifies that printable contents do not have to fit to a single page when the sheet is printed.

**fSyncHoriz:** 0x0000 specifies that horizontal scrolling is not synchronized across multiple windows displaying this sheet.

**fSyncVert:** 0x0000 specifies that vertical scrolling is not synchronized across multiple windows displaying this sheet.

**fAltExprEval:** 0x0000 specifies that the sheet does not use [**transition formula evaluation**](#gt_47a54c6a-a541-44ae-a0a9-acf78ab8a331).

**fAltFormulaEntry:** 0x0000 specifies that the sheet does not use [**transition formula entry**](#gt_fd2c615c-ad67-4b97-bde4-7827b37196eb).

The records following this record, and before the next [Setup](#Section_23642d03de0e4a7f94dac2e594020bf2)record, are omitted for brevity.

### 3.9.26 Workbook: Setup

The next record is a [Setup](#Section_23642d03de0e4a7f94dac2e594020bf2) record that specifies the page-format settings used to print the current [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0022 | Setup **- Setup** |  |
| 0002 | USHORT **- iPaperSize** | 0x0000 |
| 0002 | USHORT **- iScale** | 0x00FF |
| 0002 | SHORT **- iPageStart** | 0x0001 |
| 0002 | USHORT **- iFitWidth** | 0x0001 |
| 0002 | USHORT **- iFitHeight** | 0x0001 |
| 1 bit | BYTE **- fLeftToRight** | 0x0 |
| 1 bit | BYTE **- fPortrait** | 0x0 |
| 1 bit | BYTE **- fNoPls** | 0x1 |
| 1 bit | BYTE **- fNoColor** | 0x0 |
| 1 bit | BYTE **- fDraft** | 0x0 |
| 1 bit | BYTE **- fNotes** | 0x0 |
| 1 bit | BYTE **- fNoOrient** | 0x0 |
| 1 bit | BYTE **- fUsePage** | 0x0 |
| 1 bit | BYTE **- unused1** | 0x0 |
| 1 bit | BYTE **- fEndNotes** | 0x0 |
| 2 bits | BYTE **- iErrors** | 0x0 |
| 4 bits | BYTE **- unused2** | 0x0 |
| 0002 | USHORT **- iRes** | 0x0015 |
| 0002 | USHORT **- iVRes** | 0x0000 |
| 0008 | Double **- numHdr** | 0x3FE0000000000000 |
| 0008 | Double **- numFtr** | 0x3FE0000000000000 |
| 0002 | USHORT **- iCopies** | 0x3030 |

Figure 114: Structure of Setup

Fields in this record that are ignored because **fNoPls** is 1 are omitted for brevity.

**iFitWidth:** 0x0001 specifies that the sheet width is fit to one page.

**iFitHeight:** 0x0001 specifies that the sheet height is fit to one page.

**fLeftToRight:** 0x00 specifies that the pages are printed in columns.

**fNoPls:** 0x01 specifies that fields **iPaperSize**, **iScale**, **iRes**, **iVRes**, **iCopies, fNoOrient**, and **fPortrait** data are undefined and ignored.

**fNoColor:** 0x00 specifies that the workbook is not printed in black and white.

**fDraft:** 0x00 specifies that the workbook is not printed using draft quality.

**fNotes:** 0x00 specifies that cell notes are not printed. The **fEndNotes** field is not included in this example for brevity.

**fUsePage:** 0x00 specifies that no custom starting page number is being used to print. The **iPageStart** field is not included in this example for brevity.

**iErrors:** 0x00 specifies that errors in the [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) data are printed as displayed on the sheet.

**numHdr:** 0x3FE0000000000000 specifies that the header margin is .5 inches.

**numFtr:** 0x3FE0000000000000 specifies that the footer margin is .5 inches.

### 3.9.27 Workbook: DefColWidth

The next record is a [DefColWidth](#Section_30dc2bcb4f9943a3a745fbc54b5b8161) record that specifies the default column width of a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | DefColWidth **- DefColWidth** |  |
| 0002 | USHORT **- cchdefColWidth** | 0x0008 |

Figure 115: Structure of DefColWidth

**cchdefColWidth:** 0x0008 specifies that the default width of the columns in the sheet is 8 characters.

### 3.9.28 Workbook: Dimensions

The next record is a [Dimensions](#Section_5fd3837c9f3d49528a85ad93ddb37ced) record that specifies the minimum and maximum bounds of all [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) on the sheet that contain data or formatting.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000E | Dimensions **- Dimensions** |  |
| 0004 | [RwLongU](#Section_a6fff2b4470a463da6e99dad9676cd44) **- rwMic** |  |
| 0004 | ULONG **- rw** | 0x00000003 |
| 0004 | ULONG **- rwMac** | 0x00000007 |
| 0002 | [ColU](#Section_f716fb856c90424aa99ed61b2191a224) **- colMic** |  |
| 0002 | USHORT **- col** | 0x0001 |
| 0002 | USHORT **- colMac** | 0x0002 |
| 0002 | USHORT **- reserved** | 0x0000 |

Figure 116: Structure of Dimensions

**rwMic:**  Specifies the first row in the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) that contains a cell with data or formatting.

**rwMic.rw:** 0x00000003 specifies that the first row with data or formatting is row 4.

**rwMac:** 0x00000007 specifies that that row 7 is the last row with data or formatting. This field value specifies the row after the last row that has data or formatting.

**colMic:** Specifies the first column in the sheet that contains a cell with data or formatting.

**colMic.col:** 0x0001 specifies that column B is the first column with data or formatting.

**colMac:** 0x0002 specifies that column B is the last column with data or formatting. This field value specifies the column after the last column that has data or formatting.

### 3.9.29 Workbook: Row 1

This record is a [Row](#Section_4aab09eb49ed4d01a3b11d726247d3c2) record that specifies a single row on a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0010 | Row **- Row** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0003 |
| 0002 | USHORT **- colMic** | 0x0001 |
| 0002 | USHORT **- colMac** | 0x0002 |
| 0002 | USHORT **- miyRw** | 0x00FF |
| 0002 | SHORT **- reserved1** | 0x0000 |
| 0002 | SHORT **- unused1** | 0x0000 |
| 3 bits | BYTE **- iOutLevel** | 0x0 |
| 1 bit | BYTE **- reserved2** | 0x0 |
| 1 bit | BYTE **- fCollapsed** | 0x0 |
| 1 bit | BYTE **- fDyZero** | 0x0 |
| 1 bit | BYTE **- fUnsynced** | 0x0 |
| 1 bit | BYTE **- fGhostDirty** | 0x0 |
| 0001 | BYTE **- reserved3** | 0x01 |
| 12 bits | SHORT **- ixfe\_val** | 0x00F |
| 1 bit | SHORT **- fExAsc** | 0x0 |
| 1 bit | SHORT **- fExDes** | 0x0 |
| 1 bit | SHORT **- fPhonetic** | 0x0 |
| 1 bit | SHORT **- unused2** | 0x0 |

Figure 117: Structure of Row

**rw:** Specifies the row index.

**rw.rw:** 0x0003 specifies that this record is for row 4.

**colMic:** 0x0001 specifies that column B is the first column that contains a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) populated with data or formatting.

**colMac:** 0x0002 specifies that column B is the last column that contains a cell populated with data or formatting.

**miyRw:** 0x00FF specifies the row height as 255 [**twips**](#gt_4b82472c-103d-4eff-a07e-6a0f784e3382).

**iOutLevel:** 0x00 specifies the row has no [**outline level**](#gt_a5cd5eff-ddeb-490b-bc71-f6256774e3c3).

**fDyZero:** 0x00 specifies that the row is not [**hidden**](#gt_6928fba3-3deb-453c-82ed-ecac33026ffd).

**fUnsynced:** 0x00 specifies that the row height has not been manually set.

**fGhostDirty:** 0x00 specifies that the row has not been formatted.

**ixfe\_val:** 0x000F specifies that this row uses the default formatting.

**fExAsc:** 0x0000 specifies that no cell in the row has a thick top [**border**](#gt_85bbea8d-a9f4-40a2-b4f8-68b587d21a4c).

**fExDes:** 0x0000 specifies that no cell in the row has a thick bottom border.

**fPhonetic:** 0x0000 specifies that [**phonetic guide**](#gt_f5ae2680-242d-4731-8f12-da90d5d7f09f) is not enabled for any cell in this row.

### 3.9.30 Workbook: Row 2

This record is another [Row](#Section_4aab09eb49ed4d01a3b11d726247d3c2) record that specifies a single row on a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0010 | Row **- Row** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0004 |
| 0002 | USHORT **- colMic** | 0x0001 |
| 0002 | USHORT **- colMac** | 0x0002 |
| 0002 | USHORT **- miyRw** | 0x00FF |
| 0002 | SHORT **- reserved1** | 0x0000 |
| 0002 | SHORT **- unused1** | 0x0000 |
| 3 bits | BYTE **- iOutLevel** | 0x0 |
| 1 bit | BYTE **- reserved2** | 0x0 |
| 1 bit | BYTE **- fCollapsed** | 0x0 |
| 1 bit | BYTE **- fDyZero** | 0x0 |
| 1 bit | BYTE **- fUnsynced** | 0x0 |
| 1 bit | BYTE **- fGhostDirty** | 0x0 |
| 0001 | BYTE **- reserved3** | 0x01 |
| 12 bits | SHORT **- ixfe\_val** | 0x00F |
| 1 bit | SHORT **- fExAsc** | 0x0 |
| 1 bit | SHORT **- fExDes** | 0x0 |
| 1 bit | SHORT **- fPhonetic** | 0x0 |
| 1 bit | SHORT **- unused2** | 0x0 |

Figure 118: Structure of Row

Fields in this record that are explained in previous records in this example are omitted for brevity.

**rw.rw:** 0x0004 specifies that this record is for row 5.

### 3.9.31 Workbook: Row 3

This record is another [Row](#Section_4aab09eb49ed4d01a3b11d726247d3c2) record that specifies a single row on a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0010 | Row **- Row** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0005 |
| 0002 | USHORT **- colMic** | 0x0001 |
| 0002 | USHORT **- colMac** | 0x0002 |
| 0002 | USHORT **- miyRw** | 0x00FF |
| 0002 | SHORT **- reserved1** | 0x0000 |
| 0002 | SHORT **- unused1** | 0x0000 |
| 3 bits | BYTE **- iOutLevel** | 0x0 |
| 1 bit | BYTE **- reserved2** | 0x0 |
| 1 bit | BYTE **- fCollapsed** | 0x0 |
| 1 bit | BYTE **- fDyZero** | 0x0 |
| 1 bit | BYTE **- fUnsynced** | 0x0 |
| 1 bit | BYTE **- fGhostDirty** | 0x0 |
| 0001 | BYTE **- reserved3** | 0x01 |
| 12 bits | SHORT **- ixfe\_val** | 0x00F |
| 1 bit | SHORT **- fExAsc** | 0x0 |
| 1 bit | SHORT **- fExDes** | 0x0 |
| 1 bit | SHORT **- fPhonetic** | 0x0 |
| 1 bit | SHORT **- unused2** | 0x0 |

Figure 119: Structure of Row

Fields in this record that are explained in previous records in this example are omitted for brevity.

**rw.rw:** 0x0005 specifies that this record is for row 6.

### 3.9.32 Workbook: Row 4

This record is another [Row](#Section_4aab09eb49ed4d01a3b11d726247d3c2) record that specifies a single row on a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0010 | Row **- Row** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0006 |
| 0002 | USHORT **- colMic** | 0x0001 |
| 0002 | USHORT **- colMac** | 0x0002 |
| 0002 | USHORT **- miyRw** | 0x00FF |
| 0002 | SHORT **- reserved1** | 0x0000 |
| 0002 | SHORT **- unused1** | 0x0000 |
| 3 bits | BYTE **- iOutLevel** | 0x0 |
| 1 bit | BYTE **- reserved2** | 0x0 |
| 1 bit | BYTE **- fCollapsed** | 0x0 |
| 1 bit | BYTE **- fDyZero** | 0x0 |
| 1 bit | BYTE **- fUnsynced** | 0x0 |
| 1 bit | BYTE **- fGhostDirty** | 0x0 |
| 0001 | BYTE **- reserved3** | 0x01 |
| 12 bits | SHORT **- ixfe\_val** | 0x00F |
| 1 bit | SHORT **- fExAsc** | 0x0 |
| 1 bit | SHORT **- fExDes** | 0x0 |
| 1 bit | SHORT **- fPhonetic** | 0x0 |
| 1 bit | SHORT **- unused2** | 0x0 |

Figure 120: Structure of Row

Fields in this record that are explained in previous records in this example are omitted for brevity.

**rw.rw:** 0x0006 specifies that this record is for row 7.

### 3.9.33 Workbook: LabelSst 1

This record is a [LabelSst](#Section_3f52609d816f44a7aad1e0fe2abccebd) record that specifies a string that is stored in a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) as a reference to the shared string table.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | LabelSst **- LabelSst** |  |
| 0006 | [Cell](#Section_6bb50f66faf048f9b6a9f0f452a77598) **- cell** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0003 |
| 0002 | [Col](#Section_febd138c9c8e42e98a3e49e0978b39a6) **- col** |  |
| 0002 | USHORT **- col** | 0x0001 |
| 0002 | [IXFCell](#Section_f9bc476745704f609a8e6fd3f32ddf3b) **- ixfe** |  |
| 0002 | USHORT **- ixfe** | 0x000F |
| 0004 | ULONG **- isst** | 0x00000000 |

Figure 121: Structure of LabelSst

**cell:** Specifies a cell in a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

**cell.rw:** Specifies a row in the sheet.

**cell.rw.rw:** 0x0003 specifies row 4.

**cell.col:** Specifies a column in the sheet.

**cell.col.col:** 0x0001 specifies column B.

**cell.ixfe:**  Specifies the index of a [cell XF](#Section_518a740d71c640c8bb97e7df6915861a) record that describes the formatting properties for the cell.

**cell.ixfe.ixfe:** 0x000F specifies that this cell uses the default cell format.

**isst:** 0x00000000 specifies that 0 is the zero-based index into the **rgb** field of [SST](#Section_b6231b92d32e4626baddc3310a672bab), which specifies that the text for this cell is "Number".

### 3.9.34 Workbook: RK

This record is an [RK](#Section_656e0e798b9d4854803f23ec62080678) record that specifies the numeric data contained in a single [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | RK **- Rk** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0004 |
| 0002 | [Col](#Section_febd138c9c8e42e98a3e49e0978b39a6) **- col** |  |
| 0002 | USHORT **- col** | 0x0001 |
| 0006 | [RkRec](#Section_b2e3021e06734a268440eb367f63b1e8) **- rkrec** |  |
| 0002 | [IXFCell](#Section_f9bc476745704f609a8e6fd3f32ddf3b) **- ixfe** |  |
| 0002 | USHORT **- ixfe** | 0x000F |
| 0004 | [RkNumber](#Section_04fa5340122f49db93ea00cc75501efc) **- RK** |  |
| 1 bit | ULONG **- FX100** | 0x0 |
| 1 bit | ULONG **- FInt** | 0x0 |
| 30 bits | ULONG **- num** | 0x0FFC0000 |

Figure 122: Structure of Rk

**rw:** Specifies a row in the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

**rw.rw:** 0x0004 specifies row 5.

**col:** Specifies a column in the sheet.

**col.col:** 0x0001 specifies column B.

**rkrec:**  Specifies the numeric data for this cell.

**rkrec.ixfe:**  Specifies the index of a [cell XF](#Section_518a740d71c640c8bb97e7df6915861a) record that describes the formatting properties for the cell.

**rkrec.ixfe.ixfe:** 0x000F specifies that this cell uses the default cell format.

**rkrec.RK:** An RkNumber that specifies a numeric value.

**rkrec.RK.FX100:** 0x0 specifies that the value in the **rkrec.RK.num** field was not multiplied by 100 when it was saved.

**rkrec.RK.FInt:** 0x0 specifies that the value in the **rkrec.RK.num** field is the 30 most significant bits of a 64-bit binary floating-point number as defined in [[IEEE754]](https://go.microsoft.com/fwlink/?LinkId=89903).

**rkrec.RK.num:** 0x0FFC0000 specifies the 30 most significant bits of a 64-bit binary floating-point number as defined in [IEEE754]. The remaining 34 bits are 0, which evaluates to a numeric value of 1.

### 3.9.35 Workbook: LabelSst 2

This record is a [LabelSst](#Section_3f52609d816f44a7aad1e0fe2abccebd) record that specifies a string that is stored in a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) as a reference to the shared string table.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | LabelSst **- LabelSst** |  |
| 0006 | [Cell](#Section_6bb50f66faf048f9b6a9f0f452a77598) **- cell** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0005 |
| 0002 | [Col](#Section_febd138c9c8e42e98a3e49e0978b39a6) **- col** |  |
| 0002 | USHORT **- col** | 0x0001 |
| 0002 | [IXFCell](#Section_f9bc476745704f609a8e6fd3f32ddf3b) **- ixfe** |  |
| 0002 | USHORT **- ixfe** | 0x000F |
| 0004 | ULONG **- isst** | 0x00000001 |

Figure 123: Structure of LabelSst

Fields in this record that are explained in previous records in this example are omitted for brevity.

**cell.rw.rw:** 0x0005 specifies row 6.

**isst:** 0x00000001 specifies that 1 is the zero-based index into the **rgb** field of [SST](#Section_b6231b92d32e4626baddc3310a672bab), which specifies that the text for this cell is "Formula".

### 3.9.36 Workbook: Formula

This record is a [Formula](#Section_8e3c69786c9f4915a82607613204b244) record that specifies a formula (section [2.2.2](#Section_e7625cc83da94154b44949cf1bbd9703)) for a [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0022 | Formula **- Formula** |  |
| 0006 | [Cell](#Section_6bb50f66faf048f9b6a9f0f452a77598) **- cell** |  |
| 0002 | [Rw](#Section_f85db6ee1e7f4a06b4533fc8bffacc97) **- rw** |  |
| 0002 | USHORT **- rw** | 0x0006 |
| 0002 | [Col](#Section_febd138c9c8e42e98a3e49e0978b39a6) **- col** |  |
| 0002 | USHORT **- col** | 0x0001 |
| 0002 | [IXFCell](#Section_f9bc476745704f609a8e6fd3f32ddf3b) **- ixfe** |  |
| 0002 | USHORT **- ixfe** | 0x000F |
| 0008 | [FormulaValue](#Section_39a0757ac7bb4e85b1443e7837b059d7) **- val** | 0x3FF6A09E667F3BCD |
| 1 bit | USHORT **- fAlwaysCalc** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFill** | 0x0 |
| 1 bit | USHORT **- fShrFmla** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 1 bit | USHORT **- fClearErrors** | 0x0 |
| 10 bits | USHORT **- reserved3** | 0x000 |
| 0004 | DWORD **- chn** | 0xFCFC000C |
| 000E | [CellParsedFormula](#Section_7dd67f0a671d4905b87b4cc07295e442) **- formula** |  |
| 0002 | WORD **- cce** | 0x000C |
| 000C | [Rgce](#Section_6cdf7d38d08c4e56bd2f6c82b8da752e) **- rgce** |  |
| 0005 | [Ptg](#Section_9310c3bbd73f4db0834228e1e0fcb68f) **- Ptg[0]** |  |
| 0005 | [PtgRef](#Section_fc7c380bd7934219a897e47e13c4e055) **- PtgRef** |  |
| 5 bits | BYTE **- ptg** | 0x04 |
| 2 bits | BYTE **- type** | 0x2 |
| 1 bit | BYTE **- reserved** | 0x0 |
| 0004 | [RgceLoc](#Section_f2395c3334a44b0785a99bb5f07848d9) **- loc** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- row** |  |
| 0002 | USHORT **- rw** | 0x0004 |
| 0002 | [ColRelU](#Section_6e5eed105b7743d68dd037345f8654ad) **- column** |  |
| 14 bits | USHORT **- col** | 0x0001 |
| 1 bit | USHORT **- colRelative** | 0x1 |
| 1 bit | USHORT **- rowRelative** | 0x1 |
| 0003 | Ptg **- Ptg[1]** |  |
| 0003 | [PtgInt](#Section_508ecf183b81462895b37a9d2a295bca) **- PtgInt** |  |
| 7 bits | BYTE **- ptg** | 0x1E |
| 1 bit | BYTE **- reserved0** | 0x0 |
| 0002 | WORD **- integer** | 0x0002 |
| 0001 | Ptg **- Ptg[2]** |  |
| 0001 | [PtgMul](#Section_52863fc53d3c487490e6a7961902849f) **- PtgMul** |  |
| 7 bits | BYTE **- ptg** | 0x05 |
| 1 bit | BYTE **- reserved0** | 0x0 |
| 0003 | Ptg **- Ptg[3]** |  |
| 0003 | [PtgFunc](#Section_87ce512d273a4da0a9f826cf1d93508d) **- PtgFunc** |  |
| 5 bits | BYTE **- ptg** | 0x01 |
| 2 bits | BYTE **- type** | 0x2 |
| 1 bit | BYTE **- reserved** | 0x0 |
| 0002 | [Ftab](#Section_00b5dd7d51ca4938b7b7483fe0e5933b) **- iftab** |  |
| 0002 | WORD **- iftab** | 0x0014 |

Figure 124: Structure of Formula

**cell:** Specifies a cell on the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

**cell.rw:** Specifies the row of the cell.

**cell.rw.rw:** 0x0006 specifies row 7.

**cell.col:** Specifies the column of the cell.

**cell.col.col:** 0x0001 specifies column B.

**cell.ixfe:**  Specifies the index of a [cell XF](#Section_518a740d71c640c8bb97e7df6915861a) record that describes the formatting properties for the cell.

**cell.ixfe.ixfe:** 0x000F specifies that this cell uses the default cell format.

**val:** 0x3FF6A09E667F3BCD specifies the floating-point value of 1.4142135623731, which is the value in the cell as a result of the last calculation.

**fAlwaysCalc:** 0x0 specifies that the formula does not need to be recalculated.

**fFill:** 0x0 specifies this cell does not have a [**fill alignment**](#gt_cfc4e171-6104-470e-9ebb-812afea17078) or a [**center-across-selection alignment**](#gt_ef7324bd-dac8-46e2-8df5-db44d8b925a8).

**fShrFmla:** 0x0 specifies that the formula is not part of a shared formula.

**fClearErrors:** 0x0 specifies that the formula is not excluded from [**formula error checking**](#gt_c28d38d6-c6d1-4d06-89c2-29816f9c5b23).

**chn:** Specifies an application-specific cache. This is optionally used and can be ignored.

**formula:** Specifies a formula.

**formula.cce:** 0x000C specifies the length of **rgce** in bytes.

**formula.rgce:** Specifies the sequence of Ptgs for the formula SQRT(B5\*2).

**formula.rgce.Ptg[0]:**  Specifies a single element of a formula.

**formula.rgce.Ptg[0].PtgRef:** Specifies a reference to a single cell on the current sheet.

**formula.rgce.Ptg[0].PtgRef.ptg:** 0x04 specifies that this Ptg is a PtgRef.

**formula.rgce.Ptg[0].PtgRef.type:** 0x2 specifies that this PtgRef uses a value data type.

**formula.rgce.Ptg[0].PtgRef.loc:** Specifies the cell referenced by this Ptg.

**formula.rgce.Ptg[0].PtgRef.loc.row:** Specifies the row of the referenced cell.

**formula.rgce.Ptg[0].PtgRef.loc.row.rw:** 0x0004 specifies that the referenced cell is in row 5.

**formula.rgce.Ptg[0].PtgRef.loc.column:** Specifies the column of the referenced cell.

**formula.rgce.Ptg[0].PtgRef.loc.column.col:** 0x0001 specifies that the referenced cell is in column B.

**formula.rgce.Ptg[0].PtgRef.loc.column.colRelative:** 0x1 specifies that the column reference is a [**relative reference**](#gt_238687e6-aab3-40c3-ac9f-6107236df2ac).

**formula.rgce.Ptg[0].PtgRef.loc.column.rowRelative:** 0x1 specifies that the row reference is a relative reference.

**formula.rgce.Ptg[1]:** Specifies a single element of a formula.

**formula.rgce.Ptg[1].PtgInt:** Specifies an integer value.

**formula.rgce.Ptg[1].PtgInt.ptg:** 0x1E specifies that this is a PtgInt.

**formula.rgce.Ptg[1].PtgInt.integer:** 0x0002 specifies that the value is 2.

**formula.rgce.Ptg[2]:** Specifies a single element of a formula.

**formula.rgce.Ptg[2].PtgMul:**  Specifies a binary-value-operator that multiplies the first and second expressions in a binary-value-expression.

**formula.rgce.Ptg[2].PtgMul.ptg:** 0x05 specifies that this Ptg is a PtgMul.

**formula.rgce.Ptg[3]:** Specifies a single element of a formula.

**formula.rgce.Ptg[3].PtgFunc:**  Specifies a mathematical function.

**formula.rgce.Ptg[3].PtgFunc.ptg:** 0x01 specifies that this is a PtgFunc.

**formula.rgce.Ptg[3].PtgFunc.type:** 0x2 specifies that this Ptg uses a value data type.

**formula.rgce.Ptg[3].PtgFunc.iftab:** Specifies the function to be called for this Ptg.

**formula.rgce.Ptg[3].PtgFunc.iftab.iftab:** 0x0014 specifies that SQRT is the function to be called.

### 3.9.37 Workbook: DBCell

This record is a [DBCell](#Section_e08dc762bf8a457cb3ba39055bff423a) record that specifies the location of the first row and the first cell record in each row of the current row block in the [workbook stream](#Section_f682f4b08c6b444e83f852d156f1e8ba).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000C | DBCell **- DbCell** |  |
| 0004 | ULONG **- dbRtrw** | 0x000000A0 |
| 0008 | Rgdb **- rgdb** |  |
| 0002 | USHORT **- rgdb[0]** | 0x003C |
| 0002 | USHORT **- rgdb[1]** | 0x000E |
| 0002 | USHORT **- rgdb[2]** | 0x000E |
| 0002 | USHORT **- rgdb[3]** | 0x000E |

Figure 125: Structure of DbCell

**dbRtrw:** 0x000000A0 specifies the offset from the file position of this record to the file position of the first row record.

**rgdb:** Specifies the file offset to the first cell record in each row.

**rgdb.rgdb[0]:** 0x003C specifies the file offset in bytes to the first record that specifies a [CELL](#section_a1b3d8b4744241fd9c57bbd2a6394082) in each row that is a part of this row block. The starting position of this offset is specified relative to the file position of the end of the first [Row](#Section_4aab09eb49ed4d01a3b11d726247d3c2) record in the row block

**rgdb.rgdb[1]:** 0x000E specifies the file offset in bytes to the first record that specifies a CELL in each row that is a part of this row block. The offset is specified relative to the file position of the CELL record specified by the previous element in this array.

**rgdb.rgdb[2]:** 0x000E specifies the file offset in bytes to the first record that specifies a CELL in each row that is a part of this row block. The offset is specified relative to the file position of the CELL record specified by the previous element in this array.

**rgdb.rgdb[3]:** 0x000E specifies the file offset in bytes to the first record that specifies a CELL in each row that is a part of this row block. The offset is specified relative to the file position of the CELL record specified by the previous element in this array.

### 3.9.38 Workbook: Window2

This record is a [Window2.4.346](#Section_80576ec8e7f04c9990a7d850587bc97b) record that specifies attributes of the window used to display the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0012 | Window2 **- Window2** |  |
| 1 bit | USHORT **- fDspFmlaRt** | 0x0 |
| 1 bit | USHORT **- fDspGridRt** | 0x1 |
| 1 bit | USHORT **- fDspRwColRt** | 0x1 |
| 1 bit | USHORT **- fFrozenRt** | 0x0 |
| 1 bit | USHORT **- fDspZerosRt** | 0x1 |
| 1 bit | USHORT **- fDefaultHdr** | 0x1 |
| 1 bit | USHORT **- fRightToLeft** | 0x0 |
| 1 bit | USHORT **- fDspGuts** | 0x1 |
| 1 bit | USHORT **- fFrozenNoSplit** | 0x0 |
| 1 bit | USHORT **- fSelected** | 0x1 |
| 1 bit | USHORT **- fPaged** | 0x1 |
| 1 bit | USHORT **- fSLV** | 0x0 |
| 4 bits | USHORT **- reserved1** | 0x0 |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- rwTop** |  |
| 0002 | USHORT **- rw** | 0x0000 |
| 0002 | [ColU](#Section_f716fb856c90424aa99ed61b2191a224) **- colLeft** |  |
| 0002 | USHORT **- col** | 0x0000 |
| 0002 | [Icv](#Section_b7160f4eabe8444da76c8f076a007d98) **- icvHdr** |  |
| 0002 | USHORT **- icv** | 0x0040 |
| 0002 | USHORT **- reserved2** | 0x0000 |
| 0002 | USHORT **- wScaleSLV** | 0x0000 |
| 0002 | USHORT **- wScaleNormal** | 0x0000 |
| 0002 | USHORT **- unused** | 0x0000 |
| 0002 | USHORT **- reserved3** | 0x0000 |

Figure 126: Structure of Window2

**fDspFmlaRt:** 0x0 specifies that this window displays values.

**fDspGridRt:** 0x1 specifies that this window displays [**gridlines**](#gt_82f8a326-64b0-4506-a18e-930f7c2c95b9).

**fDspRwColRt:** 0x1 specifies that this window displays row headings and column headings.

**fFrozenRt:** 0x0 specifies that the panes in the window are not [**frozen**](#gt_1e984b7c-9760-4832-88c8-798e30f845db). The **fFrozenNoSplit** fieldis not included in this example for brevity.

**fDspZerosRt:** 0x1 specifies that this window displays each [**cell**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) that has a value of zero as a zero.

**fDefaultHdr:** 0x1 specifies that the gridlines of this window are drawn in the default [**foreground color**](#gt_6710b91a-10b4-4df0-885f-99e53e7f816a) of the window.

**fRightToLeft:** 0x0 specifies that the text is displayed [**left-to-right**](#gt_b8c262f8-6c09-457a-9b68-4bf3a08ab067).

**fDspGuts:** 0x1 specifies that this window displays the [**outline state**](#gt_595fa0de-0130-489d-ba83-fbba78917310).

**fSelected:** 0x1 specifies that the [**sheet tab**](#gt_3b131045-238c-4ce8-9c22-b6aac874c7c5) is [**selected**](#gt_f27adb49-1bec-4bfa-a1a8-0eb4db1ba595).

**fPaged:** 0x1 specifies that the sheet is currently being displayed in the window.

**fSLV:** 0x0 specifies that the sheet is not in [**Page Break Preview view**](#gt_a7342c25-b4fd-4c84-9922-ae9c4a92d180).

**rwTop.rw:** 0x0000 specifies row 1 as the first visible row on the sheet.

**colLeft.col:** 0x0000 specifies column 1 as the first visible column on the sheet.

**icvHdr.icv:** 0x0040 specifies that the gridlines of this window are drawn in the default foreground color of the window.

**wScaleSLV:** 0x0000 specifies that the [**zoom level**](#gt_bfb33471-a018-422b-bc63-177c8bc1831f) in the Page Break Preview view is the default zoom level.

**wScaleNormal:** 0x0000 specifies that the zoom level in the [**Normal view**](#gt_b3c343ae-05ca-4b91-9cc1-383ee3563990) is the default zoom level.

### 3.9.39 Workbook: Selection

This record is a [Selection](#Section_00131cedfe32403b9be4d9c234fde7d4) record that specifies the [**selected**](#gt_f27adb49-1bec-4bfa-a1a8-0eb4db1ba595) [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) within a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000F | Selection **- Selection** |  |
| 0001 | [PaneType](#Section_016387b99dac43dfb22634800b3c2198) **- pnn** | 0x03 |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- rwAct** |  |
| 0002 | USHORT **- rw** | 0x0007 |
| 0002 | [ColU](#Section_f716fb856c90424aa99ed61b2191a224) **- colAct** |  |
| 0002 | USHORT **- col** | 0x0001 |
| 0002 | USHORT **- irefAct** | 0x0000 |
| 0002 | USHORT **- cref** | 0x0001 |
| 0006 | [SqRefU](#Section_867dcebec0624c4699b11b2a479e6f32) **- rgref** |  |
| 0006 | [RefU](#Section_0bb7dda629a3440db2bea793540b3f16) **- rgref[0]** |  |
| 0002 | RwU **- rwFirst** |  |
| 0002 | USHORT **- rw** | 0x0007 |
| 0002 | RwU **- rwLast** |  |
| 0002 | USHORT **- rw** | 0x0007 |
| 0001 | [ColByteU](#Section_3eb5ecb1fbba49c3b8e3ede2096ff5a0) **- colFirst** |  |
| 0001 | BYTE **- col** | 0x01 |
| 0001 | ColByteU **- colLast** |  |
| 0001 | BYTE **- col** | 0x01 |

Figure 127: Structure of Selection

**pnn:** 0x03 specifies that a top left pane is the [**active pane**](#gt_33f49274-001d-40a3-bcca-f54a93906c29).

**rwAct:**  An RwU that specifies the row number of the [**active cell**](#gt_2c0759a5-6721-422b-8cb9-f4bb09e07c84).

**rwAct.rw:** 0x0007 specifies that row 8 contains the active cell.

**colAct:**  A ColU that specifies the column number of the active cell.

**colAct.col:** 0x0001 specifies that column B contains the active cell.

**irefAct:** 0x0000 specifies an index into the **rgref** array that specifies the [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) of cells that contain the active cell.

**cref:** 0x0001 specifies that there is 1 range of cells in the **rgref** array of this record.

**rgref:**  An array of RefU that specifies ranges of selected cells in the sheet.

**rgref.rgref[0]:**  Specifies a range of cells on the sheet.

**rgref.rgref[0].rwFirst:**  An RwU that specifies the first row in the range.

**rgref.rgref[0].rwFirst.rw:** 0x0007 specifies that row 8 is the first row in the range.

**rgref.rgref[0].rwLast:** Specifies the last row in the range.

**rgref.rgref[0].rwLast.rw:** 0x0007 specifies that row 8 is the last row in the range.

**rgref.rgref[0].colFirst:**  A ColByteU that specifies the first column in the range.

**rgref.rgref[0].colFirst.col:** 0x01 specifies that column B is the first column in the range.

**rgref.rgref[0].colLast:**  A ColByteU that specifies the last column in the range.

**rgref.rgref[0].colLast.col:** 0x01 specifies that column B is the last column in the range.

### 3.9.40 Workbook: PhoneticInfo

This record is a [PhoneticInfo](#Section_fe4b96b2cc6e46b1adf22070f65dfe43) record that specifies the default format for [**phonetic strings**](#gt_7947dcd6-cb7d-4957-ada6-6e832b075e77) and the [**ranges**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) of [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) on the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) that have [**visible**](#gt_81648495-ee6b-4cfd-955a-89fc643d3b72) phonetic strings.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0006 | PhoneticInfo **- PhoneticInfo** |  |
| 0004 | [Phs](#Section_a9702cefc57842d69d881c23252e1f3a) **- phs** |  |
| 0002 | [FontIndex](#Section_b3413c2bca5b498886beab44bfe9e4d3) **- ifnt** |  |
| 0002 | USHORT **- ifnt** | 0x0000 |
| 2 bits | USHORT **- phType** | 0x3 |
| 2 bits | USHORT **- alcH** | 0x1 |
| 12 bits | USHORT **- unused** | 0x003 |
| 0002 | [SqRef](#Section_31e64836df9647cbb04e4495d2871aaa) **- sqref** |  |
| 0002 | USHORT **- cref** | 0x0000 |

Figure 128: Structure of PhoneticInfo

**phs:** A Phs structure that specifies the default format for phonetic string on the sheet.

**phs.ifnt:** A FontIndex structure that specifies the [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) for the string.

**phs.ifnt.ifnt:** 0x0000 specifies that the default font is used.

**phs.phType:** 0x0003 specifies that phonetic string can use any type of characters.

**phs.alcH:** 0x0001 specifies that left alignment is used in the phonetic string.

**sqref:**  A SqRef structure that specifies the ranges of cells on the sheet that have visible phonetic strings.

**sqref.cref:** 0x0000 specifies the number of elements in **rgrefs**. The **rgrefs** fieldis not included in this example for brevity.

### 3.9.41 Workbook: EOF 2

This record is an [EOF](#Section_012176fe5802423b913578e22642456b) record which specifies the end of a collection of records for this [worksheet](#Section_f41c06f2905749a18c3fa4a4d211fc56) substream.

| **Size** | **Structure** |
| --- | --- |
| 0000 | EOF **- EOF** |

Figure 129: Structure of EOF

The remaining records in this [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) example, two Worksheet substreams, are omitted for brevity.

## 3.10 PivotTable

This example shows a [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3) and associated [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e) within a [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe). The PivotTable uses a range of cells (A1:E45) in the "Source Data" [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) as its [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075). A CustomerName field and ProductName field are added to the [row area](#Section_5594c95e6819461e80706f4b4fdfa091), a Quantity field to the [data area](#Section_237a24905c614931923f7ee856f23c72), and an OrderDate field to the [page area](#Section_f10ef7d86c044d35a5830d6f2ce92063) of this PivotTable. Two dates are selected in the [**filter**](#gt_ffbe7b55-8e84-4f41-a18d-fc29191a4cda) for the OrderDate field; the other dates are filtered out from page area. This example addresses important PivotTable records, and those records that are relevant to different parts of the PivotTable from the [Workbook stream](#Section_f682f4b08c6b444e83f852d156f1e8ba) and [Pivot Cache Storage stream](#Section_c5fb3f663ef64308ae3de59244159687).

The following figure shows a possible implementation of the PivotTable discussed in this example.

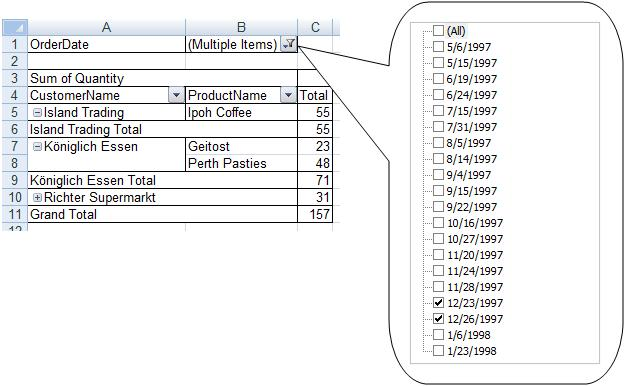


Figure 130: Example PivotTable within a sheet

### 3.10.1 PivotTable: SXStreamID

The first record, an [SXStreamID](#Section_a4dc3f5438904e35aad080a16b4b4cff), specifies the stream in the [PivotCache storage](#Section_c5fb3f663ef64308ae3de59244159687) that contains the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e) for this [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | SXStreamID **- SxStreamID** |  |
| 0002 | USHORT **- idstm** | 0x0001 |

Figure 131: Structure of SxStreamID

**idstm:** 0x0001 specifies the identifier of the stream in the PivotCache storage that contains the PivotCache for this PivotTable. The stream identifier is a four-character string representation of the hexadecimal value. In this case the stream identifier is "0001".

### 3.10.2 PivotTable: SXVS

The next record, an [SXVS](#Section_386ddcb0d3f94370b60c2f05b2d371c7), specifies that the type of [source data](#Section_e65bff19ea464f3b9798d8d2db9202b4) used for this [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e) is a [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0002 | SXVS **- SXVS** |  |
| 0002 | USHORT **- sxvs** | 0x0001 |

Figure 132: Structure of SXVS

**sxvs:** 0x0001 specifies that the source data for this PivotTable is a range. The [DConRef](#Section_589885b2fd4e4fcc9c8e37fbf7838716) record that follows this record specifies the range.

### 3.10.3 PivotTable: DConRef

The next record, a [DConRef](#Section_589885b2fd4e4fcc9c8e37fbf7838716), specifies the [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) in this [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) that is the [source data](#Section_e65bff19ea464f3b9798d8d2db9202b4) for this [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0016 | DConRef **- DConRef** |  |
| 0006 | [RefU](#Section_0bb7dda629a3440db2bea793540b3f16) **- ref** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- rwFirst** |  |
| 0002 | USHORT **- rw** | 0x0000 |
| 0002 | RwU **- rwLast** |  |
| 0002 | USHORT **- rw** | 0x002C |
| 0001 | [ColByteU](#Section_3eb5ecb1fbba49c3b8e3ede2096ff5a0) **- colFirst** |  |
| 0001 | BYTE **- col** | 0x00 |
| 0001 | ColByteU **- colLast** |  |
| 0001 | BYTE **- col** | 0x04 |
| 0002 | USHORT **- cchFile** | 0x000C |
| 000D | [DConFile](#Section_a558d2a65afc4bc7ac8307ced5230b0d) **- stFile** |  |
| 000D | [XLUnicodeStringNoCch](#Section_e64abeee2f3a4004b9e33d67e29d6066) **- stFile** | Source Data |
| 0001 | unused **- unused** | 0x00 |

Figure 133: Structure of DConRef

**ref:** A RefU structure that specifies the range of the source data for this PivotTable in the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) specified by **stFile**.

**ref.rwFirst:** An RwU structure that specifies the first row in the range of the source data for this PivotTable.

**ref.rwFirst.rw:** 0x0000 specifies that the range of the source data for this PivotTable begins in row 1 of the sheet specified by **stFile**.

**ref.rwLast:** An RwU structure that specifies the last row in the range of the source data for this PivotTable.

**ref.rwLast.rw:** 0x002C specifies that the range of the source data for this PivotTable ends in row 45 of the sheet specified by **stFile.**

**ref.colFirst:** A ColByteU structure that specifies the first column in the range of the source data for this PivotTable.

**ref.colFirst.col:** 0x00 specifies that the range of the source data for this PivotTable begins in the column A of the sheet specified by **stFile.**

**ref.colLast:** A ColByteU structure that specifies the last column in the range of the source data for this PivotTable.

**ref.colLast.col:** 0x04 specifies that the range of the source data for this PivotTable ends in column E of the sheet specified by **stFile**.

**cchFile:** 0x000C specifies that **stFile** is 12 characters in length.

**stFile:** A DConFile structure that specifies the name of the worksheet that contains the range of the source data for this PivotTable.

**stFile.stFile:** A string, "Source Data", that specifies the name of the worksheet that contains the range of the source data for this PivotTable.

### 3.10.4 PivotTable: SXAddl 1

The next record, [SXAddl](#Section_54370a1209c34832a72c37d317bf069e), specifies additional information for this [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000C | [SXAddl\_SXCCache\_SXDId](#Section_21eb148497344b9d80952b1d7db4808e) **- SXAddl** |  |
| 0006 | [SXAddlHdr](#Section_fd41637ad9fe486b80101ed68fefc6db) **- hdr** |  |
| 0004 | [FrtHeaderOld](#Section_02b165efca714c4393ca613d0d5a020b) **- frtHeaderOld** |  |
| 0002 | USHORT **- rt** | 0x0864 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0001 | BYTE **- sxc** | 0x03 |
| 0001 | BYTE **- sxd** | 0x00 |
| 0004 | ULONG **- idCache** | 0x00000001 |
| 0002 | USHORT **- reserved** | 0x0000 |

Figure 134: Structure of SXAddl

**hdr:**  An SXAddlHdr structure that specifies header information for this SXAddl record.

**hdr.frtHeaderOld:**  A structure that specifies a [future record](#Section_b660b67822684414839ed1ae9a4e4e85) type header.

**hdr.frtHeaderOld.rt:** 0x0864 specifies the record type identifier for this record.

**hdr.frtHeaderOld.grbitFrt:**  A structure that specifies flags for **hdr.FrtHeaderOld**.

**hdr.frtHeaderOld.grbitFrt.fFrtRef:** 0x0 specifies that thisrecord does not specify a [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) of [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461).

**hdr.frtHeaderOld.grbitFrt.fFrtAlert:** 0x0 specifies that the application does not alert the user about possible problems if the file is saved without the record being recognized.

**hdr.sxc:** 0x03 specifies the current [class](#Section_3450b26af2b247dd982c6b9eb2d448b0) as an [SxcCache class](#Section_1681856cae2d4f64b8cc40d2702754e7).

**hdr.sxd:** 0x00 specifies the type of record contained in the **data** field of the containing SXAddl record. This value specifies that the type of this SXAddl record is SXAddl\_SXCCache\_SXDId.

**idCache:** 0x00000001 specifies the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e) stream that is associated with this SxcCache class.

### 3.10.5 PivotTable: SXAddl 2

The next record, [SXAddl](#Section_54370a1209c34832a72c37d317bf069e), specifies additional information for this [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001C | [SXAddl\_SXCCache\_SXDVer10Info](#Section_38d95aa179c14ea697b37e460ff9a61c) **- SXAddl** |  |
| 0006 | [SXAddlHdr](#Section_fd41637ad9fe486b80101ed68fefc6db) **- hdr** |  |
| 0004 | [FrtHeaderOld](#Section_02b165efca714c4393ca613d0d5a020b) **- frtHeaderOld** |  |
| 0002 | USHORT **- rt** | 0x0864 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0001 | BYTE **- sxc** | 0x03 |
| 0001 | BYTE **- sxd** | 0x02 |
| 0006 | reserved **- reserved1** | 0x000000000000 |
| 0004 | LONG **- citmGhostMax** | 0xFFFFFFFF |
| 0001 | BYTE **- bVerCacheLastRefresh** | 0x02 |
| 0001 | BYTE **- bVerCacheRefreshableMin** | 0x00 |
| 0008 | [DateAsNum](#Section_f8099a22ecdf407ea1ef2f38cb5d211e) **- numDateCopy** |  |
| 0008 | Double **- dateNum** | 0x40E355907CBEB8CE |
| 0002 | USHORT **- reserved2** | 0x0000 |

Figure 135: Structure of SXAddl

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**hdr:**  An SXAddlHdr structure that specifies header information for this SXAddl record.

**hdr.sxc:** 0x03 specifies the current [class](#Section_3450b26af2b247dd982c6b9eb2d448b0) as an [SxcCache class](#Section_1681856cae2d4f64b8cc40d2702754e7).

**hdr.sxd:** 0x02 specifies the type of record contained in the **data** field of the containing SXAddl record. See class for more information. This value specifies that the type of this SXAddl record is SXAddl\_SXCCache\_SXDVer2.4.273.9Info.

**citmGhostMax:** 0xFFFFFFFF specifies that the number of unused [cache items](#Section_bdf43e0d59a04111aec09b0a6d3882a0) to allow before discarding those that are unused is not determined by the file; instead, the application optimizes the number of unused cache items at run time.

**bVerCacheLastRefresh:** 0x02 specifies the [data functionality level](#Section_2bcedd76ef064e6084c718ea55042ed6) with which the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e) was last refreshed.

**bVerCacheRefreshableMin:** 0x00 specifies the lowest data functionality level with which the application is allowed to [**refresh**](#gt_d947dfed-8e3a-4451-b978-d69a89ae6060) the PivotCache.

**numDateCopy:**  Specifies the date and time when the PivotCache was last refreshed.

**numDateCopy.dateNum:**  0x40E355907CBEB8CE specifies a DateAsNum structure which indicates that this PivotCache was last refreshed on May 28th, 2008 at 12:21PM.

### 3.10.6 PivotTable: SXAddl 3

The next record in this example, [SXAddl](#Section_54370a1209c34832a72c37d317bf069e), specifies additional information for this [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000C | [SXAddl\_SXCCache\_SXDEnd](#Section_c88c0132c4be428bb83faad491cc3cac) **- SXAddl** |  |
| 0006 | [SXAddlHdr](#Section_fd41637ad9fe486b80101ed68fefc6db) **- hdr** |  |
| 0004 | [FrtHeaderOld](#Section_02b165efca714c4393ca613d0d5a020b) **- frtHeaderOld** |  |
| 0002 | USHORT **- rt** | 0x0864 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0001 | BYTE **- sxc** | 0x03 |
| 0001 | BYTE **- sxd** | 0xFF |
| 0006 | reserved **- reserved** | 0x000000000000 |

Figure 136: Structure of SXAddl

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**hdr:**  An SXAddlHdr structure that specifies header information for this SXAddl record.

**hdr.sxc:** 0x03 specifies the current [class](#Section_3450b26af2b247dd982c6b9eb2d448b0) as an [SxcCache class](#Section_1681856cae2d4f64b8cc40d2702754e7).

**hdr.sxd:** 0xFF specifies the type of record contained in the **data** field of the containing SXAddl record. See class for more information. This value specifies that the type of this SXAddl record is SXAddl\_SXCCache\_SXDEnd.

### 3.10.7 PivotTable: SxView

The next record in this example, [SxView](#Section_fcf246969b7b45a2b48a4199d26fb41b), specifies the top-level [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37) information for this [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0042 | SxView **- SxView** |  |
| 0008 | [Ref8U](#Section_809af2981e4f499f9bca3cd1021f4934) **- ref** |  |
| 0002 | [RwU](#Section_5a871cb48740466b87746adb09caacca) **- rwFirst** |  |
| 0002 | USHORT **- rw** | 0x0002 |
| 0002 | RwU **- rwLast** |  |
| 0002 | USHORT **- rw** | 0x000A |
| 0002 | [ColU](#Section_f716fb856c90424aa99ed61b2191a224) **- colFirst** |  |
| 0002 | USHORT **- col** | 0x0000 |
| 0002 | ColU **- colLast** |  |
| 0002 | USHORT **- col** | 0x0002 |
| 0002 | RwU **- rwFirstHead** |  |
| 0002 | USHORT **- rw** | 0x0004 |
| 0002 | RwU **- rwFirstData** |  |
| 0002 | USHORT **- rw** | 0x0004 |
| 0002 | ColU **- colFirstData** |  |
| 0002 | USHORT **- col** | 0x0002 |
| 0002 | SHORT **- iCache** | 0x0000 |
| 0002 | SHORT **- reserved** | 0x0000 |
| 0002 | [SXAxis](#Section_2c4ee792d1444a7884bf68a617edb018) **- sxaxis4Data** |  |
| 1 bit | USHORT **- sxaxisRw** | 0x1 |
| 1 bit | USHORT **- sxaxisCol** | 0x0 |
| 1 bit | USHORT **- sxaxisPage** | 0x0 |
| 1 bit | USHORT **- sxaxisData** | 0x0 |
| 12 bits | USHORT **- reserved** | 0x000 |
| 0002 | SHORT **- ipos4Data** | 0xFFFF |
| 0002 | SHORT **- cDim** | 0x0005 |
| 0002 | SHORT **- cDimRw** | 0x0002 |
| 0002 | SHORT **- cDimCol** | 0x0000 |
| 0002 | SHORT **- cDimPg** | 0x0001 |
| 0002 | SHORT **- cDimData** | 0x0001 |
| 0002 | USHORT **- cRw** | 0x0007 |
| 0002 | USHORT **- cCol** | 0x0001 |
| 1 bit | USHORT **- fRwGrand** | 0x1 |
| 1 bit | USHORT **- fColGrand** | 0x1 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fAutoFormat** | 0x1 |
| 1 bit | USHORT **- fAtrNum** | 0x0 |
| 1 bit | USHORT **- fAtrFnt** | 0x0 |
| 1 bit | USHORT **- fAtrAlc** | 0x0 |
| 1 bit | USHORT **- fAtrBdr** | 0x0 |
| 1 bit | USHORT **- fAtrPat** | 0x0 |
| 1 bit | USHORT **- fAtrProc** | 0x1 |
| 6 bits | USHORT **- unused2** | 0x00 |
| 0002 | [AutoFmt8](#Section_c43451301af54d2892707082e9f98154) **- itblAutoFmt** | 0x0001 |
| 0002 | USHORT **- cchTableName** | 0x0010 |
| 0002 | USHORT **- cchDataName** | 0x0004 |
| 0011 | [XLUnicodeStringNoCch](#Section_e64abeee2f3a4004b9e33d67e29d6066) **- stTable** | OrdersPivotTable |
| 0005 | XLUnicodeStringNoCch **- stData** | Data |

Figure 137: Structure of SxView

**ref:** A structure that specifies the [**range**](#gt_c2c93fec-8d3e-45de-8010-c738cc1cea99) (A2:C11) that specifies the location of the PivotTable view.

**ref.rwFirst:** A structure that specifies the first row in the range.

**ref.rwFirst.rw:** 0x0002 specifies the third row (row 3) in the [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d).

**ref.rwLast:** A structure that specifies the last row in the range.

**ref.rwLast.rw:** 0x000A specifies the eleventh row (row 11) in the sheet.

**ref.colFirst:** A structure that specifies the first column in the range.

**ref.colFirst.col:** 0x0000 specifies the first column (column A) in the sheet.

**ref.colLast:** A structure that specifies the last column in the range.

**ref.colLast.col:** 0x0002 specifies the third column (column C) in the sheet.

**rwFirstHead:** A structure that specifies the first PivotTable [**header row**](#gt_42711baf-2679-445d-a994-0eadd91b1a38).

**rwFirstHead.rw:** 0x0004 specifies the fifth row (row 5) in the sheet.

**rwFirstData:** A structure that specifies the first row that contains PivotTable data.

**rwFirstData.rw:** 0x0004 specifies the fifth row (row 5) in the sheet.

**colFirstData:** A structure that specifies the first column that contains PivotTable data.

**colFirstData.col:** 0x0002 specifies the third column (column C) in the sheet.

**iCache:** 0x0000 specifies the index of the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e) for this PivotTable, which is the first stream in the \_SX\_DB\_CUR storage.

**sxaxis4Data:** A structure that specifies the default axis for data fields. Only the **sxaxisRow** and **sxaxisCol** bits of the structure are shown, as the rest of the bits are always 0.

**sxaxis4Data.sxaxisRw:** 0x0001 specifies that the [row axis](#Section_3f46e7207706400cba9473cb829f869a) is the default axis for data fields.

**sxaxis4Data.sxaxisCol:** 0x0000 is required in this field because **sxaxisRw** is 0x0001.

**sxaxis4Data.sxaxisPage:** 0x0000 is required in this field because **sxaxisRw** is 0x0001.

**sxaxis4Data.sxaxisData:** 0x0000 is required in this field because **sxaxisRw** is 0x0001.

**ipos4Data:** 0xFFFF (-1) specifies that the data field is in the default position.

**cDim:** 0x0005 specifies that there are five fields in the database.

**cDimRw:** 0x0002 specifies that there are two fields on the row axis.

**cDimCol:** 0x0000 specifies that there are no fields on the [column axis](#Section_00d9d88b8fa74bf08446584bf651677f).

**cDimPg:** 0x0001 specifies that there is one field on the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7).

**cDimData:** 0x0001 specifies that there is one field on the [data axis](#Section_4c5c2daa289746e1854b0ce04209f060).

**cRw:** 0x0007 specifies that there are seven [pivot lines](#Section_76610990666f492791b6d2280f607464) in the [row area](#Section_5594c95e6819461e80706f4b4fdfa091) of this PivotTable view.

**cCol:** 0x0001 specifies that there is one pivot line in the [column area](#Section_03aced8c25864e83982a1e3551a563d6) of this PivotTable view.

**fRwGrand:** 0x0001 specifies that this PivotTable view contains [**grand totals**](#gt_417eeaf5-caef-4fc3-afe1-048db5482eb7) for rows.

**fColGrand:** 0x0001 specifies that this PivotTable view contains grand totals for columns.

**fAutoFormat:** 0x0001 specifies that this PivotTable has [**AutoFormat**](#gt_f7e1ea19-1129-4519-a857-008db95c462f) applied.

**fAtrNum:** 0x0000 specifies that this PivotTable does not have AutoFormat applied for numbers.

**fAtrFnt:** 0x0000 specifies that this PivotTable does not have AutoFormat applied for fonts.

**fAtrAlc:** 0x0000 specifies that this PivotTable does not have AutoFormat applied for alignment.

**fAtrBdr:** 0x0000 specifies that this PivotTable does not have AutoFormat applied for [**borders**](#gt_85bbea8d-a9f4-40a2-b4f8-68b587d21a4c).

**fAtrPat:** 0x0000 specifies that this PivotTable does not have AutoFormat applied for patterns.

**fAtrProc:** 0x0000 specifies that this PivotTable has AutoFormat applied for width and height.

**itblAutoFmt:**  XL8\_ITBLCLASSIC1 specifies that this PivotTable is using the "Classic" style of AutoFormat.

**cchTableName:** 0x0010 specifies that the string in **stTable** has 16 characters.

**cchDataName:** 0x0004 specifies that the string in **stData** has four characters.

**stTable:** Specifies that the name of this PivotTable view is "OrdersPivotTable".

**stData:** Specifies that the name of the data [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) is "Data".

### 3.10.8 PivotTable: Sxvd 1

The next record in this example, [Sxvd](#Section_6f48271ee32547ea9efe9c197d0fb8e6), specifies the first [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) ("CustomerName") in the [row axis](#Section_3f46e7207706400cba9473cb829f869a).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | Sxvd **- Sxvd** |  |
| 0002 | [SXAxis](#Section_2c4ee792d1444a7884bf68a617edb018) **- sxaxis** |  |
| 1 bit | USHORT **- sxaxisRw** | 0x1 |
| 1 bit | USHORT **- sxaxisCol** | 0x0 |
| 1 bit | USHORT **- sxaxisPage** | 0x0 |
| 1 bit | USHORT **- sxaxisData** | 0x0 |
| 12 bits | USHORT **- reserved** | 0x000 |
| 0002 | USHORT **- cSub** | 0x0001 |
| 1 bit | USHORT **- fDefault** | 0x1 |
| 1 bit | USHORT **- fSum** | 0x0 |
| 1 bit | USHORT **- fCounta** | 0x0 |
| 1 bit | USHORT **- fAverage** | 0x0 |
| 1 bit | USHORT **- fMax** | 0x0 |
| 1 bit | USHORT **- fMin** | 0x0 |
| 1 bit | USHORT **- fProduct** | 0x0 |
| 1 bit | USHORT **- fCount** | 0x0 |
| 1 bit | USHORT **- fStdev** | 0x0 |
| 1 bit | USHORT **- fStdevp** | 0x0 |
| 1 bit | USHORT **- fVariance** | 0x0 |
| 1 bit | USHORT **- fVariancep** | 0x0 |
| 4 bits | USHORT **- reserved** | 0x0 |
| 0002 | SHORT **- cItm** | 0x0006 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 138: Structure of Sxvd

**sxaxis:**  Specifies the [PivotTable axis](#Section_89db73685e8e4324b592af85e4559e6c) to which this pivot field belongs.

**sxaxis.sxaxisRw:** 0x1 specifies that this pivot field refers to the row axis.

**sxaxis.sxaxisCol:** 0x0 specifies that this pivot field does not refer to the [column axis](#Section_00d9d88b8fa74bf08446584bf651677f).

**sxaxis.sxaxisPage:** 0x0 specifies that this pivot field does not refer to the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7).

**sxaxis.sxaxisData:** 0x0 specifies that this pivot field does not refer to the [value axis](#Section_4c5c2daa289746e1854b0ce04209f060).

**cSub:** 0x0001 specifies that one subtotal [**function**](#gt_bf7cf9ec-4b24-4d58-985a-55d73c69297d) is used for this pivot field.

**fDefault:** 0x1 specifies that the default subtotal function is applied.

**fSum:** 0x0 specifies that the **sum** subtotal function is not displayed.

**fCounta:** 0x0 specifies that the **count** subtotal function is not displayed.

**fAverage:** 0x0 specifies that the **average** subtotal function is not displayed.

**fMax:** 0x0 specifies that the **max** subtotal function is not displayed.

**fMin:** 0x0 specifies that the **min** subtotal function is not displayed.

**fProduct:** 0x0 specifies that the **sum** subtotal function is not displayed.

**fCount:** 0x0 specifies that the **count numbers** subtotal function is not displayed.

**fStdev:** 0x0 specifies that the **standard deviation** subtotal function is not displayed.

**fStdevp:** 0x0 specifies that the **standard deviation population** subtotal function is not displayed.

**fVariance:** 0x0 specifies that the **variance** subtotal function is not displayed.

**fVariancep:** 0x0 specifies that the **variance population** subtotal function is not displayed.

**cItm:** 0x0006 specifies that there are six [pivot items](#Section_58891cc5dd9b4293a97831070779524f) for this pivot field.

**cchName:** 0xFFFF specifies that the caption of this pivot field is NULL, which means that the name is inherited from the associated [cache field](#Section_6497eb794042445780e75959c9f0583c) instead.

### 3.10.9 PivotTable: SXVI 1

The next record in this example, [SXVI](#Section_79769ad0d2134e6dbf34fb766907091c), specifies the first [pivot item](#Section_58891cc5dd9b4293a97831070779524f) ("Antonio Moreno Taquería") of this [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) ("CustomerName"). This item is filtered out and not visible in the PivotTable report.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXVI **- SXVI** |  |
| 0002 | SHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fHideDetail** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFormula** | 0x0 |
| 1 bit | USHORT **- fMissing** | 0x0 |
| 11 bits | USHORT **- reserved2** | 0x000 |
| 0002 | SHORT **- iCache** | 0x0001 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 139: Structure of SXVI

**itmType:** 0x0000 specifies that the pivot item is a regular data value.

**fHidden:** 0x0 specifies that the pivot item is not hidden.

**fHideDetail:** 0x0 specifies that the pivot item is not collapsed (see [Collapsing](#Section_1c9375b4cc664783821f6b2b49bac169)).

**fFormula:** 0x0 specifies that the pivot item is not a [calculated item](#Section_6c6b3e3d22354a609f5b1c902ee0a50b).

**fMissing:** 0x0 specifies that the pivot item exists in the [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075).

**iCache:** This field specifies a [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in the [cache field](#Section_6497eb794042445780e75959c9f0583c) that is associated with this pivot field ("CustomerName"). The index 0x01 specifies the second [SXString](#Section_0b135d8b213f4d54970bd7a934a79f36) ("Antonio Moreno Taquería") in the collection following the [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe) with **stFieldName**="CustomerName".

**cchName:**  0xFFFF specifies that this pivot item does not have a caption.

### 3.10.10 PivotTable: SXVI 2

The next record in this example, [SXVI](#Section_79769ad0d2134e6dbf34fb766907091c), specifies the [pivot item](#Section_58891cc5dd9b4293a97831070779524f) "Island Trading" in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXVI **- SXVI** |  |
| 0002 | SHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fHideDetail** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFormula** | 0x0 |
| 1 bit | USHORT **- fMissing** | 0x0 |
| 11 bits | USHORT **- reserved2** | 0x000 |
| 0002 | SHORT **- iCache** | 0x0003 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 140: Structure of SXVI

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**itmType:** 0x0000 specifies that this pivot item is a regular data value.

**fHidden:** 0x0 specifies that this pivot item is not hidden.

**fHideDetail:** 0x0 specifies that this pivot item is not collapsed (see [Collapsing](#Section_1c9375b4cc664783821f6b2b49bac169)).

**fFormula:** 0x0 specifies that this pivot item is not a [calculated item](#Section_6c6b3e3d22354a609f5b1c902ee0a50b).

**fMissing:** 0x0 specifies that this pivot item exists in the [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075).

**iCache:**  The index 0x03 specifies the fourth [SXString](#Section_0b135d8b213f4d54970bd7a934a79f36) ("Island Trading") in the collection following the [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe) with **stFieldName**="CustomerName".

### 3.10.11 PivotTable: SXVI 3

The next record in this example, [SXVI](#Section_79769ad0d2134e6dbf34fb766907091c), specifies the [pivot item](#Section_58891cc5dd9b4293a97831070779524f) "Richter Supermarkt" in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXVI **- SXVI** |  |
| 0002 | SHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fHideDetail** | 0x1 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFormula** | 0x0 |
| 1 bit | USHORT **- fMissing** | 0x0 |
| 11 bits | USHORT **- reserved2** | 0x000 |
| 0002 | SHORT **- iCache** | 0x0002 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 141: Structure of SXVI

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**fHideDetail:** 0x1 specifies that the pivot item is collapsed (see [Collapsing](#Section_1c9375b4cc664783821f6b2b49bac169)).

### 3.10.12 PivotTable: SXVI 4

The next record in this example, [SXVI](#Section_79769ad0d2134e6dbf34fb766907091c), specifies the Total row in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXVI **- SXVI** |  |
| 0002 | SHORT **- itmType** | 0x0001 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fHideDetail** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFormula** | 0x0 |
| 1 bit | USHORT **- fMissing** | 0x0 |
| 11 bits | USHORT **- reserved2** | 0x000 |
| 0002 | SHORT **- iCache** | 0xFFFF |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 142: Structure of SXVI

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**itmType:** 0x0001 specifies that the [pivot item](#Section_58891cc5dd9b4293a97831070779524f) is a subtotal.

**iCache:** 0xFFFF specifies that the pivot item does not refer to any [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0).

### 3.10.13 PivotTable: SXVDEx 1

The next record in this example, [SXVDEx](#Section_07ecd5c3e40e44ffbf1a0a473659a5cf), specifies the extended information about this ("CustomerName") [pivot field](#Section_1edf7f2294084945b2de56526c14fca5).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | SXVDEx **- SXVDEx** |  |
| 1 bit | USHORT **- fShowAllItems** | 0x0 |
| 1 bit | USHORT **- fDragToRow** | 0x1 |
| 1 bit | USHORT **- fDragToColumn** | 0x1 |
| 1 bit | USHORT **- fDragToPage** | 0x1 |
| 1 bit | USHORT **- fDragToHide** | 0x1 |
| 1 bit | USHORT **- fNotDragToData** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fServerBased** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 1 bit | USHORT **- fAutoSort** | 0x0 |
| 1 bit | USHORT **- fAscendSort** | 0x1 |
| 1 bit | USHORT **- fAutoShow** | 0x0 |
| 1 bit | USHORT **- fTopAutoShow** | 0x1 |
| 1 bit | USHORT **- fCalculatedField** | 0x0 |
| 1 bit | USHORT **- fPageBreaksBetweenItems** | 0x0 |
| 1 bit | USHORT **- fHideNewItems** | 0x0 |
| 5 bits | USHORT **- reserved3** | 0x00 |
| 1 bit | USHORT **- fOutline** | 0x0 |
| 1 bit | USHORT **- fInsertBlankRow** | 0x0 |
| 1 bit | USHORT **- fSubtotalAtTop** | 0x0 |
| 8 bits | USHORT **- citmAutoShow** | 0x0A |
| 0002 | SHORT **- isxdiAutoSort** | 0xFFFF |
| 0002 | SHORT **- isxdiAutoShow** | 0xFFFF |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x0000 |
| 000A | [SXVDEx\_Opt](#Section_3c1134144e9d46228e3ec946d3d03df8) **- subName** |  |
| 0002 | USHORT **- cchSubName** | 0xFFFF |
| 0004 | ULONG **- reserved1** | 0x00000000 |
| 0004 | ULONG **- reserved2** | 0x00000000 |

Figure 143: Structure of SXVDEx

**fShowAllItems:** 0x0 specifies that all [pivot items](#Section_58891cc5dd9b4293a97831070779524f) in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37) are not displayed.

**fDragToRow:** 0x1 specifies that the pivot field can be dragged to the [row axis](#Section_3f46e7207706400cba9473cb829f869a).

**fDragToColumn:** 0x1 specifies that the pivot field can be placed on the [column axis](#Section_00d9d88b8fa74bf08446584bf651677f).

**fDragToPage:** 0x1 specifies that the pivot field can be dragged to the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7).

**fDragToHide:** 0x1 specifies that the pivot field can be removed from the PivotTable view.

**fNotDragToData:** 0x0 specifies that the pivot field can be dragged to the [data axis](#Section_4c5c2daa289746e1854b0ce04209f060).

**fServerBased:** 0x0 is required because the corresponding [cache field](#Section_6497eb794042445780e75959c9f0583c) is not server-based.

**fAutoSort:** 0x0 specifies that AutoSort is not enabled for this pivot field.

**fAscendSort:** 0x1 specifies that AutoSort order is set to ascending, and if AutoSort is enabled, this pivot field is sorted in ascending order.

**fAutoShow:** 0x0 specifies that [**AutoShow**](#gt_42126923-0aed-4547-8761-95a0ce2badde) is not enabled on this pivot field.

**fTopAutoShow:** 0x1 specifies that AutoShow is set to show top 10 values rather than bottom 10 values. If AutoShow is enabled, this PivotTable view uses top 10 values for AutoShow (filter).

**fCalculatedField:** 0x0 specifies that this pivot field is not a [calculated field](#Section_4594f2ac815740b381142e77ba8efb7d).

**fPageBreaksBetweenItems:** 0x0 specifies that a [**page break**](#gt_55584218-fec7-4f6a-8295-e4dbf3b7d871) is not set between different pivot items in the PivotTable view during printing.

**fHideNewItems:** 0x0 specifies that new pivot items that are added to the [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075) are displayed automatically in the PivotTable view when the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3) is refreshed.

**fOutline:** 0x0 specifies that this pivot field is not displayed in [**outline**](#gt_d20b50ce-6124-4bda-ba32-5d132016d639) format.

**fInsertBlankRow:** 0x0 specifies that a blank line is not inserted between different pivot items in the PivotTable view.

**fSubtotalAtTop:** 0x0 specifies that subtotals are displayed at the bottom of the list of pivot items for this pivot field.

**citmAutoShow:** 0x0A specifies that 10 pivot items are set to display for the top *n* AutoShow (filter).

**isxdiAutoSort:** 0xFFFF specifies that AutoSort uses current [data item](#Section_b51aa7b309b34aa78cb4964ad24d1679).

**isxdiAutoShow:** 0xFFFF specifies that AutoShow is not enabled for this pivot field.

**subName:** Specifies the name of the aggregate [**function**](#gt_bf7cf9ec-4b24-4d58-985a-55d73c69297d) used to calculate this pivot field's subtotals.

**subName.cchSubName:** 0xFFFF specifies that there is no aggregate function to use.

### 3.10.14 PivotTable: Sxvd 2

The next record in this example, [Sxvd](#Section_6f48271ee32547ea9efe9c197d0fb8e6), specifies the pageField ("OrderDate") of this [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | Sxvd **- Sxvd** |  |
| 0002 | [SXAxis](#Section_2c4ee792d1444a7884bf68a617edb018) **- sxaxis** |  |
| 1 bit | USHORT **- sxaxisRw** | 0x0 |
| 1 bit | USHORT **- sxaxisCol** | 0x0 |
| 1 bit | USHORT **- sxaxisPage** | 0x1 |
| 1 bit | USHORT **- sxaxisData** | 0x0 |
| 12 bits | USHORT **- reserved** | 0x000 |
| 0002 | USHORT **- cSub** | 0x0001 |
| 1 bit | USHORT **- fDefault** | 0x1 |
| 1 bit | USHORT **- fSum** | 0x0 |
| 1 bit | USHORT **- fCounta** | 0x0 |
| 1 bit | USHORT **- fAverage** | 0x0 |
| 1 bit | USHORT **- fMax** | 0x0 |
| 1 bit | USHORT **- fMin** | 0x0 |
| 1 bit | USHORT **- fProduct** | 0x0 |
| 1 bit | USHORT **- fCount** | 0x0 |
| 1 bit | USHORT **- fStdev** | 0x0 |
| 1 bit | USHORT **- fStdevp** | 0x0 |
| 1 bit | USHORT **- fVariance** | 0x0 |
| 1 bit | USHORT **- fVariancep** | 0x0 |
| 4 bits | USHORT **- reserved** | 0x0 |
| 0002 | SHORT **- cItm** | 0x0015 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 144: Structure of Sxvd

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**sxaxis:**  This field specifies the [PivotTable axis](#Section_89db73685e8e4324b592af85e4559e6c) upon which this [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) exists.

**sxaxis.sxaxisRw:** 0x0 specifies that this pivot field does not refer to the [row axis](#Section_3f46e7207706400cba9473cb829f869a).

**sxaxis.sxaxisCol:** 0x0 specifies that this pivot field does not refer to the [column axis](#Section_00d9d88b8fa74bf08446584bf651677f).

**sxaxis.sxaxisPage:** 0x1 specifies that this pivot field refers to the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7).

**sxaxis.sxaxisData:** 0x0 specifies that this pivot field does not refer to the [data axis](#Section_4c5c2daa289746e1854b0ce04209f060).

**cItm:** 0x0015 specifies that this pivot field contains 21 [pivot items](#Section_58891cc5dd9b4293a97831070779524f).

### 3.10.15 PivotTable: SXVI 5

The next record in this example, [SXVI](#Section_79769ad0d2134e6dbf34fb766907091c), specifies the first [pivot item](#Section_58891cc5dd9b4293a97831070779524f) (5/6/1997) of this page field ("OrderDate"). This pivot item is filtered out and not displayed in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXVI **- SXVI** |  |
| 0002 | SHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- fHidden** | 0x1 |
| 1 bit | USHORT **- fHideDetail** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFormula** | 0x0 |
| 1 bit | USHORT **- fMissing** | 0x0 |
| 11 bits | USHORT **- reserved2** | 0x000 |
| 0002 | SHORT **- iCache** | 0x0000 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 145: Structure of SXVI

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**fHidden:** 0x1 specifies that this pivot item is hidden (filtered out).

### 3.10.16 PivotTable: SXVI 6

The next record in this example, [SXVI](#Section_79769ad0d2134e6dbf34fb766907091c), specifies the second [pivot item](#Section_58891cc5dd9b4293a97831070779524f) (11/28/1997) of this page field ("OrderDate").

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXVI **- SXVI** |  |
| 0002 | SHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- fHidden** | 0x1 |
| 1 bit | USHORT **- fHideDetail** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFormula** | 0x0 |
| 1 bit | USHORT **- fMissing** | 0x0 |
| 11 bits | USHORT **- reserved2** | 0x000 |
| 0002 | SHORT **- iCache** | 0x000F |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 146: Structure of SXVI

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**fHidden:** 0x1 specifies that the pivot item is hidden. Because this pivot item is one of the items showing in the filter in the [page area](#Section_f10ef7d86c044d35a5830d6f2ce92063) but is not actually displayed in the report, it is marked as hidden.

### 3.10.17 PivotTable: SXVI 7

The next record in this example, [SXVI](#Section_79769ad0d2134e6dbf34fb766907091c), specifies the third [pivot item](#Section_58891cc5dd9b4293a97831070779524f) (12/23/1997) of this page field ("OrderDate").

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXVI **- SXVI** |  |
| 0002 | SHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- fHidden** | 0x0 |
| 1 bit | USHORT **- fHideDetail** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFormula** | 0x0 |
| 1 bit | USHORT **- fMissing** | 0x0 |
| 11 bits | USHORT **- reserved2** | 0x000 |
| 0002 | SHORT **- iCache** | 0x0010 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 147: Structure of SXVI

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**fHidden:** 0x0 specifies that the pivot item is not hidden.

### 3.10.18 PivotTable: SXVDEx 2

The next record in this example, [SXVDEx](#Section_07ecd5c3e40e44ffbf1a0a473659a5cf), specifies extended information about this [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) ("OrderDate").

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | SXVDEx **- SXVDEx** |  |
| 1 bit | USHORT **- fShowAllItems** | 0x0 |
| 1 bit | USHORT **- fDragToRow** | 0x1 |
| 1 bit | USHORT **- fDragToColumn** | 0x1 |
| 1 bit | USHORT **- fDragToPage** | 0x1 |
| 1 bit | USHORT **- fDragToHide** | 0x1 |
| 1 bit | USHORT **- fNotDragToData** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fServerBased** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 1 bit | USHORT **- fAutoSort** | 0x0 |
| 1 bit | USHORT **- fAscendSort** | 0x1 |
| 1 bit | USHORT **- fAutoShow** | 0x0 |
| 1 bit | USHORT **- fTopAutoShow** | 0x1 |
| 1 bit | USHORT **- fCalculatedField** | 0x0 |
| 1 bit | USHORT **- fPageBreaksBetweenItems** | 0x0 |
| 1 bit | USHORT **- fHideNewItems** | 0x0 |
| 5 bits | USHORT **- reserved3** | 0x00 |
| 1 bit | USHORT **- fOutline** | 0x0 |
| 1 bit | USHORT **- fInsertBlankRow** | 0x0 |
| 1 bit | USHORT **- fSubtotalAtTop** | 0x0 |
| 8 bits | USHORT **- citmAutoShow** | 0x0A |
| 0002 | SHORT **- isxdiAutoSort** | 0xFFFF |
| 0002 | SHORT **- isxdiAutoShow** | 0xFFFF |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x000E |
| 000A | [SXVDEx\_Opt](#Section_3c1134144e9d46228e3ec946d3d03df8) **- subName** |  |
| 0002 | USHORT **- cchSubName** | 0xFFFF |
| 0004 | ULONG **- reserved1** | 0x00000000 |
| 0004 | ULONG **- reserved2** | 0x00000000 |

Figure 148: Structure of SXVDEx

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**ifmt:** Specifies the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) of this pivot field.

**ifmt.ifmt:** 0x000E specifies that the format of this [pivot item](#Section_58891cc5dd9b4293a97831070779524f) is the built-in format **mm-dd-yy**.

### 3.10.19 PivotTable: Sxvd 3

The next record in this example, [Sxvd](#Section_6f48271ee32547ea9efe9c197d0fb8e6), specifies the second field in the [row axis](#Section_3f46e7207706400cba9473cb829f869a), "ProductName".

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | Sxvd **- Sxvd** |  |
| 0002 | [SXAxis](#Section_2c4ee792d1444a7884bf68a617edb018) **- sxaxis** |  |
| 1 bit | USHORT **- sxaxisRw** | 0x1 |
| 1 bit | USHORT **- sxaxisCol** | 0x0 |
| 1 bit | USHORT **- sxaxisPage** | 0x0 |
| 1 bit | USHORT **- sxaxisData** | 0x0 |
| 12 bits | USHORT **- reserved** | 0x000 |
| 0002 | USHORT **- cSub** | 0x0001 |
| 1 bit | USHORT **- fDefault** | 0x1 |
| 1 bit | USHORT **- fSum** | 0x0 |
| 1 bit | USHORT **- fCounta** | 0x0 |
| 1 bit | USHORT **- fAverage** | 0x0 |
| 1 bit | USHORT **- fMax** | 0x0 |
| 1 bit | USHORT **- fMin** | 0x0 |
| 1 bit | USHORT **- fProduct** | 0x0 |
| 1 bit | USHORT **- fCount** | 0x0 |
| 1 bit | USHORT **- fStdev** | 0x0 |
| 1 bit | USHORT **- fStdevp** | 0x0 |
| 1 bit | USHORT **- fVariance** | 0x0 |
| 1 bit | USHORT **- fVariancep** | 0x0 |
| 4 bits | USHORT **- reserved** | 0x0 |
| 0002 | SHORT **- cItm** | 0x0007 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 149: Structure of Sxvd

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**cItm:** 0x0007 specifies that this [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) has seven [pivot items](#Section_58891cc5dd9b4293a97831070779524f).

### 3.10.20 PivotTable: Sxvd 4

The next record in this example, [Sxvd](#Section_6f48271ee32547ea9efe9c197d0fb8e6), specifies the [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) "UnitPrice", which is not in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | Sxvd **- Sxvd** |  |
| 0002 | [SXAxis](#Section_2c4ee792d1444a7884bf68a617edb018) **- sxaxis** |  |
| 1 bit | USHORT **- sxaxisRw** | 0x0 |
| 1 bit | USHORT **- sxaxisCol** | 0x0 |
| 1 bit | USHORT **- sxaxisPage** | 0x0 |
| 1 bit | USHORT **- sxaxisData** | 0x0 |
| 12 bits | USHORT **- reserved** | 0x000 |
| 0002 | USHORT **- cSub** | 0x0001 |
| 1 bit | USHORT **- fDefault** | 0x1 |
| 1 bit | USHORT **- fSum** | 0x0 |
| 1 bit | USHORT **- fCounta** | 0x0 |
| 1 bit | USHORT **- fAverage** | 0x0 |
| 1 bit | USHORT **- fMax** | 0x0 |
| 1 bit | USHORT **- fMin** | 0x0 |
| 1 bit | USHORT **- fProduct** | 0x0 |
| 1 bit | USHORT **- fCount** | 0x0 |
| 1 bit | USHORT **- fStdev** | 0x0 |
| 1 bit | USHORT **- fStdevp** | 0x0 |
| 1 bit | USHORT **- fVariance** | 0x0 |
| 1 bit | USHORT **- fVariancep** | 0x0 |
| 4 bits | USHORT **- reserved** | 0x0 |
| 0002 | SHORT **- cItm** | 0x0000 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 150: Structure of Sxvd

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**sxaxis:** Specifies the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3) axis that this pivot field belongs to.

**sxaxis.sxaxisRw:** 0x0 specifies that this pivot field does not refer to the [row axis](#Section_3f46e7207706400cba9473cb829f869a).

**sxaxis.sxaxisCol:** 0x0 specifies that this pivot field does not refer to the [column axis](#Section_00d9d88b8fa74bf08446584bf651677f).

**sxaxis.sxaxisPage:** 0x0 specifies that this pivot field does not refer to the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7).

**sxaxis.sxaxisData:** 0x0 specifies that this pivot field does not refer to the [data axis](#Section_4c5c2daa289746e1854b0ce04209f060).

**fDefault:** 0x1 specifies that the default subtotal is applied.

**cItm: cItm:** 0x0000 specifies that there are no [pivot items](#Section_58891cc5dd9b4293a97831070779524f) for this pivot field. This is because this pivot field is a numeric field, and cache items do not need to be stored for numeric fields.

Records following this record, and before the next [SXVDEx](#Section_07ecd5c3e40e44ffbf1a0a473659a5cf) record, are omitted for brevity.

### 3.10.21 PivotTable: SXVDEx 3

The next record in this example, [SXVDEx](#Section_07ecd5c3e40e44ffbf1a0a473659a5cf), specifies extended information about this [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) ("UnitPrice").

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | SXVDEx **- SXVDEx** |  |
| 1 bit | USHORT **- fShowAllItems** | 0x0 |
| 1 bit | USHORT **- fDragToRow** | 0x1 |
| 1 bit | USHORT **- fDragToColumn** | 0x1 |
| 1 bit | USHORT **- fDragToPage** | 0x1 |
| 1 bit | USHORT **- fDragToHide** | 0x1 |
| 1 bit | USHORT **- fNotDragToData** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fServerBased** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 1 bit | USHORT **- fAutoSort** | 0x0 |
| 1 bit | USHORT **- fAscendSort** | 0x1 |
| 1 bit | USHORT **- fAutoShow** | 0x0 |
| 1 bit | USHORT **- fTopAutoShow** | 0x1 |
| 1 bit | USHORT **- fCalculatedField** | 0x0 |
| 1 bit | USHORT **- fPageBreaksBetweenItems** | 0x0 |
| 1 bit | USHORT **- fHideNewItems** | 0x0 |
| 5 bits | USHORT **- reserved3** | 0x00 |
| 1 bit | USHORT **- fOutline** | 0x0 |
| 1 bit | USHORT **- fInsertBlankRow** | 0x0 |
| 1 bit | USHORT **- fSubtotalAtTop** | 0x0 |
| 8 bits | USHORT **- citmAutoShow** | 0x0A |
| 0002 | SHORT **- isxdiAutoSort** | 0xFFFF |
| 0002 | SHORT **- isxdiAutoShow** | 0xFFFF |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x002C |
| 000A | [SXVDEx\_Opt](#Section_3c1134144e9d46228e3ec946d3d03df8) **- subName** |  |
| 0002 | USHORT **- cchSubName** | 0xFFFF |
| 0004 | ULONG **- reserved1** | 0x00000000 |
| 0004 | ULONG **- reserved2** | 0x00000000 |

Figure 151: Structure of SXVDEx

**fShowAllItems:** 0x0 specifies that [pivot items](#Section_58891cc5dd9b4293a97831070779524f) that do not currently exist in the [source data](#Section_e65bff19ea464f3b9798d8d2db9202b4) are not displayed.

**fDragToRow:** 0x1 specifies that this pivot field can be placed on the [row axis](#Section_3f46e7207706400cba9473cb829f869a) of this [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

**fDragToColumn:** 0x1 specifies that this pivot field can be placed on the [column axis](#Section_00d9d88b8fa74bf08446584bf651677f) of this PivotTable view.

**fDragToPage:** 0x1 specifies that this pivot field can be dragged to the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7) of this PivotTable view.

**fDragToHide:** 0x1 specifies that this pivot field can be removed from the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3) view.

**fNotDragToData:** 0x0 specifies that this pivot field can be placed on the [data axis](#Section_4c5c2daa289746e1854b0ce04209f060) of this PivotTable view.

**fCalculatedField:** 0x0 specifies that this pivot field is not a calculated field.

**fOutline:** 0x0 specifies that this pivot field is not displayed in [**outline**](#gt_d20b50ce-6124-4bda-ba32-5d132016d639) format.

**ifmt:**  Specifies the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) of this pivot field.

**ifmt.ifmt:** 0x002C specifies that this field has the **\_($\* #,##0.00\_);\_($\* (#,##0.00);\_($\* "-"??\_);\_(@\_)** number format applied.

### 3.10.22 PivotTable: Sxvd 5

The next record in this example, [Sxvd](#Section_6f48271ee32547ea9efe9c197d0fb8e6), specifies the data field ("Quantity") in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000A | Sxvd **- Sxvd** |  |
| 0002 | [SXAxis](#Section_2c4ee792d1444a7884bf68a617edb018) **- sxaxis** |  |
| 1 bit | USHORT **- sxaxisRw** | 0x0 |
| 1 bit | USHORT **- sxaxisCol** | 0x0 |
| 1 bit | USHORT **- sxaxisPage** | 0x0 |
| 1 bit | USHORT **- sxaxisData** | 0x1 |
| 12 bits | USHORT **- reserved** | 0x000 |
| 0002 | USHORT **- cSub** | 0x0001 |
| 1 bit | USHORT **- fDefault** | 0x1 |
| 1 bit | USHORT **- fSum** | 0x0 |
| 1 bit | USHORT **- fCounta** | 0x0 |
| 1 bit | USHORT **- fAverage** | 0x0 |
| 1 bit | USHORT **- fMax** | 0x0 |
| 1 bit | USHORT **- fMin** | 0x0 |
| 1 bit | USHORT **- fProduct** | 0x0 |
| 1 bit | USHORT **- fCount** | 0x0 |
| 1 bit | USHORT **- fStdev** | 0x0 |
| 1 bit | USHORT **- fStdevp** | 0x0 |
| 1 bit | USHORT **- fVariance** | 0x0 |
| 1 bit | USHORT **- fVariancep** | 0x0 |
| 4 bits | USHORT **- reserved** | 0x0 |
| 0002 | SHORT **- cItm** | 0x0000 |
| 0002 | USHORT **- cchName** | 0xFFFF |

Figure 152: Structure of Sxvd

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**sxaxis:**  This field specifies the [PivotTable axis](#Section_89db73685e8e4324b592af85e4559e6c) that this [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) is on.

**sxaxis.sxaxisRw:** 0x0 specifies that this pivot field does not refer to the [row axis](#Section_3f46e7207706400cba9473cb829f869a).

**sxaxis.sxaxisCol:** 0x0 specifies that this pivot field does not refer to the [column axis](#Section_00d9d88b8fa74bf08446584bf651677f).

**sxaxis.sxaxisPage:** 0x0 specifies that this pivot field does not refer to the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7).

**sxaxis.sxaxisData:** 0x1 specifies that this pivot field refers to the [data axis](#Section_4c5c2daa289746e1854b0ce04209f060).

**cItm:** 0x0000 specifies that there are no [pivot items](#Section_58891cc5dd9b4293a97831070779524f) for this pivot field. This is because this pivot field is a numeric field, and cache items do not need to be stored for numeric fields.

Records following this record, and before the next [SXVDEx](#Section_07ecd5c3e40e44ffbf1a0a473659a5cf) record, are omitted for brevity.

### 3.10.23 PivotTable: SXVDEx 4

The next record in this example, [SXVDEx](#Section_07ecd5c3e40e44ffbf1a0a473659a5cf), specifies the extended information about this [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) ("Quantity").

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0014 | SXVDEx **- SXVDEx** |  |
| 1 bit | USHORT **- fShowAllItems** | 0x0 |
| 1 bit | USHORT **- fDragToRow** | 0x1 |
| 1 bit | USHORT **- fDragToColumn** | 0x1 |
| 1 bit | USHORT **- fDragToPage** | 0x1 |
| 1 bit | USHORT **- fDragToHide** | 0x1 |
| 1 bit | USHORT **- fNotDragToData** | 0x0 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fServerBased** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 1 bit | USHORT **- fAutoSort** | 0x0 |
| 1 bit | USHORT **- fAscendSort** | 0x1 |
| 1 bit | USHORT **- fAutoShow** | 0x0 |
| 1 bit | USHORT **- fTopAutoShow** | 0x1 |
| 1 bit | USHORT **- fCalculatedField** | 0x0 |
| 1 bit | USHORT **- fPageBreaksBetweenItems** | 0x0 |
| 1 bit | USHORT **- fHideNewItems** | 0x0 |
| 5 bits | USHORT **- reserved3** | 0x00 |
| 1 bit | USHORT **- fOutline** | 0x0 |
| 1 bit | USHORT **- fInsertBlankRow** | 0x0 |
| 1 bit | USHORT **- fSubtotalAtTop** | 0x0 |
| 8 bits | USHORT **- citmAutoShow** | 0x0A |
| 0002 | SHORT **- isxdiAutoSort** | 0xFFFF |
| 0002 | SHORT **- isxdiAutoShow** | 0xFFFF |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x0000 |
| 000A | [SXVDEx\_Opt](#Section_3c1134144e9d46228e3ec946d3d03df8) **- subName** |  |
| 0002 | USHORT **- cchSubName** | 0xFFFF |
| 0004 | ULONG **- reserved1** | 0x00000000 |
| 0004 | ULONG **- reserved2** | 0x00000000 |

Figure 153: Structure of SXVDEx

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**ifmt:**  A field that specifies the [**number format**](#gt_16fc3e8f-047a-42fe-b28c-4856c09cd74b) of this pivot field.

**ifmt.ifmt:** 0x0000 specifies that the General number format is applied.

### 3.10.24 PivotTable: SxIvd

The next record in this example, [SxIvd](#Section_72c54b06c9254140b6dbdf133439e596), specifies an array of references to [pivot fields](#Section_1edf7f2294084945b2de56526c14fca5) on the [row axis](#Section_3f46e7207706400cba9473cb829f869a). Because **cDimRw** is 2 and **cDimCol** is 0 for the parent [SxView](#Section_fcf246969b7b45a2b48a4199d26fb41b), this contains an array of rows.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | SxIvd **- Sxivd** |  |
| 0004 | rgSxivd **- rgSxivd** |  |
| 0002 | [SxIvdRw](#Section_1d9d8a26acf84281bbc8816ced4926a7) **- SxIvdRw[0]** |  |
| 0002 | SHORT **- rw** | 0x0000 |
| 0002 | SxIvdRw **- SxIvdRw[1]** |  |
| 0002 | SHORT **- rw** | 0x0002 |

Figure 154: Structure of Sxivd

**rgSxivd:** A field that specifies an array of references to pivot fields.

**rgSxivd.SxIvdRw[0]:** A field that specifies a reference to a pivot field on the row axis.

**rgSxivd.SxIvdRw[0].rw:** 0x0000 specifies the first pivot field.

**rgSxivd.SxIvdRw[1]:**  A field that specifies a reference to a pivot field on the row axis.

**rgSxivd.SxIvdRw[1].rw:** 0x0002 specifies the third pivot field.

### 3.10.25 PivotTable: SXPI

The next record in this example, [SXPI](#Section_ab19ef2ad06e4dccb6e936c36a6af22f), specifies an array of [SXPI\_Item](#Section_d60b13f8534b40f2b40a5c8739ec2b76) (information about the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3) page item) structures that specify the [pivot items](#Section_58891cc5dd9b4293a97831070779524f) on the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7) of this PivotTable. There is one item in the array because the **cDimPg** field of the [SxView](#Section_fcf246969b7b45a2b48a4199d26fb41b) record for the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37) is 1.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0006 | SXPI **- SXPI** |  |
| 0006 | SXPI\_Item **- rgsxpi** |  |
| 0006 | SXPI\_Item **- SXPI\_Item[0]** |  |
| 0002 | SHORT **- isxvd** | 0x0001 |
| 0002 | SHORT **- isxvi** | 0x7FFD |
| 0002 | SHORT **- idObj** | 0x0001 |

Figure 155: Structure of SXPI

**rgsxpi:** Specifies an array of page item information or SXPI\_Item Structures.

**rgsxpi.SXPI\_Item[0]:** Specifies the first item in the [page area](#Section_f10ef7d86c044d35a5830d6f2ce92063).

**rgsxpi.SXPI\_Item[0].isxvd:** 0x0001 specifies the second [pivot field](#Section_1edf7f2294084945b2de56526c14fca5), "OrderDate".

**rgsxpi.SXPI\_Item[0].isxvi:** 0x7FFD specifies that all pivot items are used by the "OrderDate" pivot field.

**rgsxpi.SXPI\_Item[0].idObj:** 0x001 which specifies the object identifier of the [Obj](#Section_dd34df60825040a983a3911476a31ea7) record with the page item drop-down arrow.

### 3.10.26 PivotTable: SXDI

The next record in this example, [SXDI](#Section_4143b9eec91a443c83e82185e75cb7b5), specifies the [data item](#Section_b51aa7b309b34aa78cb4964ad24d1679) "Quantity" for this [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001E | SXDI **- SXDI** |  |
| 0002 | SHORT **- isxvdData** | 0x0004 |
| 0002 | SHORT **- iiftab** | 0x0000 |
| 0002 | SHORT **- df** | 0x0000 |
| 0002 | SHORT **- isxvd** | 0x0000 |
| 0002 | SHORT **- isxvi** | 0x0000 |
| 0002 | [IFmt](#Section_9017e24779954a9c96e8950df24735a2) **- ifmt** |  |
| 0002 | USHORT **- ifmt** | 0x0000 |
| 0002 | USHORT **- cchName** | 0x000F |
| 0010 | [XLUnicodeStringNoCch](#Section_e64abeee2f3a4004b9e33d67e29d6066) **- stName** | Sum Of Quantity |

Figure 156: Structure of SXDI

**isxvdData:** A field that specifies a [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) in the form of an index in the collection of pivot fields specified by [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe). The value 0x04 specifies the fifth pivot field, "Quantity".

**iiftab:** 0x0000 specifies the "Sum of values" **aggregation** [**function**](#gt_bf7cf9ec-4b24-4d58-985a-55d73c69297d).

**df:** 0x0000 specifies that this data item is to be displayed as its raw value with no calculation applied.

**isxvd:** 0x0000 is required because **df** is 0x0000.

**isxvi:** 0x0000 is required because **df** is 0x0000.

**cchName:** 0x000F specifies that the length of this data item is 15 characters.

**stName:** "Sum Of Quantity" specifies the name of this data item.

### 3.10.27 PivotTable: SXLI 1

Because the **cRw** and **cCol** fields of the [SxView](#Section_fcf246969b7b45a2b48a4199d26fb41b) record are greater than zero, this example contains two [SXLI](#Section_ecd011a31ac1437997888aace5299d40) records. This first SXLI specifies the [pivot lines](#Section_76610990666f492791b6d2280f607464) for the [row area](#Section_5594c95e6819461e80706f4b4fdfa091).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0054 | SXLI **- SXLI** |  |
| 0054 | [SXLIItem](#Section_f978b7c5d80f415dbea83922ccbcb723) **- rgsxli** |  |
| 000C | SXLIItem **- SXLIItem[0]** |  |
| 0002 | SHORT **- cSic** | 0x0000 |
| 15 bits | USHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 0002 | SHORT **- isxviMac** | 0x0002 |
| 1 bit | USHORT **- fMultiDataName** | 0x0 |
| 8 bits | USHORT **- iData** | 0x00 |
| 1 bit | USHORT **- fSbt** | 0x0 |
| 1 bit | USHORT **- fBlock** | 0x0 |
| 1 bit | USHORT **- fGrand** | 0x0 |
| 1 bit | USHORT **- fMultiDataOnAxis** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 0004 | SHORT **- rgisxvi** |  |
| 0002 | SHORT **- isxvi[0]** | 0x0002 |
| 0002 | SHORT **- isxvi[1]** | 0x0002 |
| 000C | SXLIItem **- SXLIItem[1]** |  |
| 0002 | SHORT **- cSic** | 0x0000 |
| 15 bits | USHORT **- itmType** | 0x0001 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 0002 | SHORT **- isxviMac** | 0x0001 |
| 1 bit | USHORT **- fMultiDataName** | 0x0 |
| 8 bits | USHORT **- iData** | 0x00 |
| 1 bit | USHORT **- fSbt** | 0x1 |
| 1 bit | USHORT **- fBlock** | 0x0 |
| 1 bit | USHORT **- fGrand** | 0x0 |
| 1 bit | USHORT **- fMultiDataOnAxis** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 0004 | SHORT **- rgisxvi** |  |
| 0002 | SHORT **- isxvi[0]** | 0x0002 |
| 0002 | SHORT **- isxvi[1]** | 0x0002 |
| 000C | SXLIItem **- SXLIItem[2]** |  |
| 0002 | SHORT **- cSic** | 0x0000 |
| 15 bits | USHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 0002 | SHORT **- isxviMac** | 0x0002 |
| 1 bit | USHORT **- fMultiDataName** | 0x0 |
| 8 bits | USHORT **- iData** | 0x00 |
| 1 bit | USHORT **- fSbt** | 0x0 |
| 1 bit | USHORT **- fBlock** | 0x0 |
| 1 bit | USHORT **- fGrand** | 0x0 |
| 1 bit | USHORT **- fMultiDataOnAxis** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 0004 | SHORT **- rgisxvi** |  |
| 0002 | SHORT **- isxvi[0]** | 0x0003 |
| 0002 | SHORT **- isxvi[1]** | 0x0000 |
| 000C | SXLIItem **- SXLIItem[3]** |  |
| 0002 | SHORT **- cSic** | 0x0001 |
| 15 bits | USHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 0002 | SHORT **- isxviMac** | 0x0002 |
| 1 bit | USHORT **- fMultiDataName** | 0x0 |
| 8 bits | USHORT **- iData** | 0x00 |
| 1 bit | USHORT **- fSbt** | 0x0 |
| 1 bit | USHORT **- fBlock** | 0x0 |
| 1 bit | USHORT **- fGrand** | 0x0 |
| 1 bit | USHORT **- fMultiDataOnAxis** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 0004 | SHORT **- rgisxvi** |  |
| 0002 | SHORT **- isxvi[0]** | 0x0003 |
| 0002 | SHORT **- isxvi[1]** | 0x0003 |
| 000C | SXLIItem **- SXLIItem[4]** |  |
| 0002 | SHORT **- cSic** | 0x0000 |
| 15 bits | USHORT **- itmType** | 0x0001 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 0002 | SHORT **- isxviMac** | 0x0001 |
| 1 bit | USHORT **- fMultiDataName** | 0x0 |
| 8 bits | USHORT **- iData** | 0x00 |
| 1 bit | USHORT **- fSbt** | 0x1 |
| 1 bit | USHORT **- fBlock** | 0x0 |
| 1 bit | USHORT **- fGrand** | 0x0 |
| 1 bit | USHORT **- fMultiDataOnAxis** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 0004 | SHORT **- rgisxvi** |  |
| 0002 | SHORT **- isxvi[0]** | 0x0003 |
| 0002 | SHORT **- isxvi[1]** | 0x0003 |
| 000C | SXLIItem **- SXLIItem[5]** |  |
| 0002 | SHORT **- cSic** | 0x0000 |
| 15 bits | USHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 0002 | SHORT **- isxviMac** | 0x0001 |
| 1 bit | USHORT **- fMultiDataName** | 0x0 |
| 8 bits | USHORT **- iData** | 0x00 |
| 1 bit | USHORT **- fSbt** | 0x0 |
| 1 bit | USHORT **- fBlock** | 0x0 |
| 1 bit | USHORT **- fGrand** | 0x0 |
| 1 bit | USHORT **- fMultiDataOnAxis** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x1 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 0004 | SHORT **- rgisxvi** |  |
| 0002 | SHORT **- isxvi[0]** | 0x0004 |
| 0002 | SHORT **- isxvi[1]** | 0x7FFF |
| 000C | SXLIItem **- SXLIItem[6]** |  |
| 0002 | SHORT **- cSic** | 0x0000 |
| 15 bits | USHORT **- itmType** | 0x000D |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 0002 | SHORT **- isxviMac** | 0x0001 |
| 1 bit | USHORT **- fMultiDataName** | 0x0 |
| 8 bits | USHORT **- iData** | 0x00 |
| 1 bit | USHORT **- fSbt** | 0x1 |
| 1 bit | USHORT **- fBlock** | 0x0 |
| 1 bit | USHORT **- fGrand** | 0x1 |
| 1 bit | USHORT **- fMultiDataOnAxis** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |
| 0004 | SHORT **- rgisxvi** |  |
| 0002 | SHORT **- isxvi[0]** | 0x0000 |
| 0002 | SHORT **- isxvi[1]** | 0x0000 |

Figure 157: Structure of SXLI

Fields that appear in several SXLIItem structures with the same values are omitted for brevity.

**rgsxli:** A field that contains an array of SXLIItem structures, which specify the pivot lines present in this [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

**rgsxli.SXLIItem[0]:** Specifies the first pivot line and its [pivot items](#Section_58891cc5dd9b4293a97831070779524f) in the [row axis](#Section_3f46e7207706400cba9473cb829f869a).

**rgsxli.SXLIItem[0].cSic:** 0x0000 specifies that no pivot items in the **rgisxvi** array are identical to the first pivot items in the previous pivot line item in this record.

**rgsxli.SXLIItem[0].itmType:** 0x0000 specifies that the pivot item is a regular data value.

**rgsxli.SXLIItem[0].isxviMac:** 0x0002 specifies that this pivot line contains two pivot items.

**rgsxli.SXLIItem[0].fMultiDataName:** 0x0 specifies that the [data field](#Section_b4187a6caa2d4a9789bd26f394d67592) name is used for the total.

**rgsxli.SXLIItem[0].iData:** 0x00 specifies that the data item for this line item is "Quantity" (the only data item in this PivotTable).

**rgsxli.SXLIItem[0].fSbt:** 0x0 specifies that this pivot item does not represent a subtotal.

**rgsxli.SXLIItem[0].fBlock:** 0x0 specifies that this pivot item is not a block total.

**rgsxli.SXLIItem[0].fGrand:** 0x0 specifies that this pivot item is not a [**grand total**](#gt_417eeaf5-caef-4fc3-afe1-048db5482eb7).

**rgsxli.SXLIItem[0].fMultiDataOnAxis:** 0x0 specifies that this pivot line does not contain multiple data fields.

**rgsxli.SXLIItem[0].rgisxvi:**  Specifies [pivot line entries](#Section_ecba812f4a31495ebeb46749e5897f2d) for this pivot line.

**rgsxli.SXLIItem[0].rgisxvi.isxvi[0]:** A field that specifies a pivot item index, because the [SxIvd](#Section_72c54b06c9254140b6dbdf133439e596) record with the same index, **rgSxivd.SxIvdRw[0]**, specifies a pivot item index. 0x0002 specifies the third pivot item ([SXVI](#Section_79769ad0d2134e6dbf34fb766907091c)) within this [Sxvd](#Section_6f48271ee32547ea9efe9c197d0fb8e6) ("CustomerName") record. The referenced pivot item contains an index which refers to the fourth cache item ([SXString](#Section_0b135d8b213f4d54970bd7a934a79f36)) of the corresponding [cache field](#Section_6497eb794042445780e75959c9f0583c) ("CustomerName"). The fourth [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) within this cache field is "Island Trading".

**rgsxli.SXLIItem[0].rgisxvi.isxvi[1]:**  A field that specifies a pivot item index, because the SxIvd record with the same index, **rgSxivd.SxIvdRw[1]**, specifies a pivot item index. 0x0002 specifies the third pivot item (SXVI) within this Sxvd ("ProductName"). The referenced pivot item contains an index which refers to the fourth cache item (SXString) of the corresponding cache field ("ProductName "). The fourth cache item within this cache field is "Ipoh Coffee".

**rgsxli.SXLIItem[1]:**  Specifies the second pivot line and its pivot items in the row axis.

**rgsxli.SXLIItem[1].itmType:** 0x0001 specifies that the pivot item is a subtotal.

**rgsxli.SXLIItem[1].isxviMac:** 0x0001 specifies that this pivot line contains one item.

**rgsxli.SXLIItem[1].fSbt:** 0x1 specifies that this item is a subtotal.

**rgsxli.SXLIItem[2]:**  Specifies the third pivot line and its pivot items in the row axis.

**rgsxli.SXLIItem[2].rgisxvi:**  Specifies pivot line entries for this pivot line.

**rgsxli.SXLIItem[2].rgisxvi.isxvi[0]:**  A field that specifies a pivot item index, because the SxIvd record with the same index, **rgSxivd.SxIvdRw[0]**, specifies a pivot item index. 0x0003 specifies the fourth pivot item (SXVI) within this Sxvd ("CustomerName"). The referenced pivot item contains an index which refers to the fifth cache item (SXString) of the corresponding cache field ("CustomerName"). The first cache item within this cache field is "Königlich Essen".

**rgsxli.SXLIItem[2].rgisxvi.isxvi[1]:**  A field that specifies a pivot item index, because the SxIvd record with the same index, **rgSxivd.SxIvdRw[1]**, specifies a pivot item index. 0x0000 specifies the first pivot item (SXVI) within this Sxvd ("ProductName") record. The referenced pivot item contains an index which refers to the first cache item (SXString) of the corresponding cache field ("ProductName"). The first cache item within this cache field is "Geitost".

**rgsxli.SXLIItem[3]:**  Specifies the fourth pivot line and its pivot items in the row axis.

**rgsxli.SXLIItem[3].cSic:** 0x0001 specifies that one pivot item in the **rgisxvi** array is identical to the first pivot item in the previous pivot line item in this record.

**rgsxli.SXLIItem[3].rgisxvi:**  Specifies pivot line entries for this pivot line.

**rgsxli.SXLIItem[3].rgisxvi.isxvi[0]:**  A field that specifies a pivot item index, because the SxIvd record with the same index, **rgSxivd.SxIvdRw[0]**, specifies a pivot item index. 0x0003 specifies the fourth pivot item (SXVI) within this Sxvd ("CustomerName") record. The referenced pivot item contains an index which refers to the fifth cache item (SXString) of the corresponding cache field ("CustomerName"). The fifth cache item within this cache field is "Königlich Essen".

**rgsxli.SXLIItem[3].rgisxvi.isxvi[1]:**  A field that specifies a pivot item index, because the SxIvd record with the same index, **rgSxivd.SxIvdRw[1]**, specifies a pivot item index. 0x0003 specifies the fourth pivot item (SXVI) within this Sxvd ("ProductName") record. The referenced pivot item contains an index which refers to the third cache item (SXString) of the corresponding cache field ("ProductName"). The third cache item within this cache field is "Perth Pasties".

The next pivot line is similar to the earlier subtotal pivot line and is not described here.

**rgsxli.SXLIItem[5]:**  Specifies the sixth pivot line and its pivot items in the row axis.

**rgsxli.SXLIItem[5].rgisxvi:**  Specifies pivot line entries for this pivot line.

**rgsxli.SXLIItem[5].rgisxvi.isxvi[0]:**  A field that specifies a pivot item index, because the SxIvd record with the same index, **rgSxivd.SxIvdRw[0]**, specifies a pivot item index. 0x0004 specifies the fourth pivot item (SXVI) within this Sxvd ("CustomerName") record. The referenced pivot item contains an index which refers to the third cache item (SXString) of the corresponding cache field ("ProductName"). The third cache item within this cache field is "Richter Supermarkt".

**rgsxli.SXLIItem[5].rgisxvi.isxvi[1]:** 0x7FFF specifies that there is no pivot item in this position and the cell is blank.

**rgsxli.SXLIItem[6]:**  Specifies the seventh pivot line and its pivot items in the row axis.

**rgsxli.SXLIItem[6].itmType:** 0x000D specifies that the pivot item is a grand total.

**rgsxli.SXLIItem[6].fGrand:** 0x1 specifies that this pivot item is a grand total.

**rgsxli.SXLIItem[6].rgisxvi:**  Specifies pivot line entries for this pivot line.

**rgsxli.SXLIItem[6].rgisxvi.isxvi[0]:** This field has the value 0x0000 because this pivot item is a grand total (**fGrand**=1).

**rgsxli.SXLIItem[6].rgisxvi.isxvi[1]:**  This field has the value 0x0000 because this pivot item is a grand total (**fGrand**=1).

### 3.10.28 PivotTable: SXLI 2

This second [SXLI](#Section_ecd011a31ac1437997888aace5299d40) record specifies the [pivot line](#Section_76610990666f492791b6d2280f607464) item structures for the [column axis](#Section_00d9d88b8fa74bf08446584bf651677f). The size of this array (one item) is determined by the **cCol** field of the [SxView](#Section_fcf246969b7b45a2b48a4199d26fb41b) record.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXLI **- SXLI** |  |
| 0008 | [SXLIItem](#Section_f978b7c5d80f415dbea83922ccbcb723) **- rgsxli** |  |
| 0008 | SXLIItem **- SXLI\_Item[0]** |  |
| 0002 | SHORT **- cSic** | 0x0000 |
| 15 bits | USHORT **- itmType** | 0x0000 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 0002 | SHORT **- isxviMac** | 0x0000 |
| 1 bit | USHORT **- fMultiDataName** | 0x0 |
| 8 bits | USHORT **- iData** | 0x00 |
| 1 bit | USHORT **- fSbt** | 0x0 |
| 1 bit | USHORT **- fBlock** | 0x0 |
| 1 bit | USHORT **- fGrand** | 0x0 |
| 1 bit | USHORT **- fMultiDataOnAxis** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- reserved2** | 0x0 |

Figure 158: Structure of SXLI

All values of this record are 0 because there is no field or any item in column axis. Because of this, none of the fields are described in this section.

### 3.10.29 PivotTable: SXEx

The next record in this example, [SXEx](#Section_a758cb8447e340398a6cbbe32a3120ba), specifies additional properties of this [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0018 | SXEx **- Sxex** |  |
| 0002 | USHORT **- csxformat** | 0x0000 |
| 0002 | USHORT **- cchErrorString** | 0xFFFF |
| 0002 | USHORT **- cchNullString** | 0xFFFF |
| 0002 | USHORT **- cchTag** | 0xFFFF |
| 0002 | USHORT **- csxselect** | 0x0000 |
| 0002 | [DRw](#Section_22965732283b49b9acd7515de46fdf7a) **- crwPage** |  |
| 0002 | USHORT **- drw** | 0x0001 |
| 0002 | [DCol](#Section_902a939388ee47059f559fe85f174c6e) **- ccolPage** |  |
| 0002 | USHORT **- dcol** | 0x0001 |
| 1 bit | USHORT **- fAcrossPageLay** | 0x0 |
| 8 bits | USHORT **- cWrapPage** | 0x00 |
| 1 bit | USHORT **- unused** | 0x1 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 5 bits | USHORT **- reserved2** | 0x00 |
| 1 bit | USHORT **- fEnableWizard** | 0x1 |
| 1 bit | USHORT **- fEnableDrilldown** | 0x1 |
| 1 bit | USHORT **- fEnableFieldDialog** | 0x1 |
| 1 bit | USHORT **- fPreserveFormatting** | 0x1 |
| 1 bit | USHORT **- fMergeLabels** | 0x0 |
| 1 bit | USHORT **- fDisplayErrorString** | 0x0 |
| 1 bit | USHORT **- fDisplayNullString** | 0x1 |
| 1 bit | USHORT **- fSubtotalHiddenPageItems** | 0x0 |
| 8 bits | USHORT **- reserved3** | 0x00 |
| 0002 | USHORT **- cchPageFieldStyle** | 0xFFFF |
| 0002 | USHORT **- cchTableStyle** | 0xFFFF |
| 0002 | USHORT **- cchVacateStyle** | 0xFFFF |

Figure 159: Structure of Sxex

**csxformat:** 0x0000 specifies that no [SxFormat](#Section_1bf196bf9b3440db8d3787d204b2f8e7) records follow this record.

**cchErrorString:** 0xFFFF specifies that a custom string displayed in [**cells**](#gt_43d1e51e-4f26-493b-b7c9-e84e920d7461) that contain errors does not exist.

**cchNullString:** 0xFFFF specifies that a custom string displayed in cells that contain NULL values does not exist.

**cchTag:** 0xFFFF specifies that a custom string saved with this PivotTable view does not exist.

**csxselect:** 0x0000 specifies that no [SxSelect](#Section_9fb92c604b6f49928ef89a5a682a610c) records follow this record.

**crwPage:**  Specifies the number of rows in the [page area](#Section_f10ef7d86c044d35a5830d6f2ce92063) of the PivotTable view.

**crwPage.drw:** 0x0001 specifies that this PivotTable view contains one row on the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7).

**ccolPage:** Specifies the number of columns in the page area in the PivotTable view.

**ccolPage.dcol:** 0x0001 specifies that this PivotTable view contains one column on the page axis.

**fAcrossPageLay:** 0x0 specifies that multiple [pivot fields](#Section_1edf7f2294084945b2de56526c14fca5) on the page axis will be displayed in the page area from the top to the bottom first, as fields are added, before moving to another column.

**cWrapPage:** 0x00 specifies that pivot fields in the page area do not wrap, as specified by **fAcrossPageLay**.

**fEnableWizard:** 0x1 specifies that the application displays a user interface to interact with the PivotTable view.

**fEnableDrilldown:** 0x1 specifies that details can be shown for cells in the [data area](#Section_237a24905c614931923f7ee856f23c72).

**fEnableFieldDialog:** 0x1 specifies that a user interface for setting properties of a pivot field can be displayed.

**fPreserveFormatting:** 0x1 specifies that formatting is preserved when the PivotTable view is recalculated.

**fMergeLabels:** 0x0 specifies that empty cells adjacent to the cells displaying [pivot item](#Section_58891cc5dd9b4293a97831070779524f) captions of pivot fields on the [row axis](#Section_3f46e7207706400cba9473cb829f869a) and [column axis](#Section_00d9d88b8fa74bf08446584bf651677f) of this PivotTable view are not merged into a single cell.

**fDisplayErrorString:** 0x0 specifies that the PivotTable view does not display a custom error string in cells that contain errors.

**fDisplayNullString:** 0x1 specifies that the PivotTable view displays a custom string in cells that contain NULL values.

**fSubtotalHiddenPageItems:** 0x0 specifies that hidden pivot items, as specified by [SXVI](#Section_79769ad0d2134e6dbf34fb766907091c) records with the **fHidden** field equal to 1, of a pivot field on the page axis with the **isxvi** field of the corresponding [SXPI\_Item](#Section_d60b13f8534b40f2b40a5c8739ec2b76) structure equal to 0x7FFD, are filtered out when calculating the PivotTable view.

**cchPageFieldStyle:** 0xFFFF specifies that no [**style**](#gt_b1e1f096-9da0-411f-909a-f69b92c17633) is applied in the page area of the PivotTable view.

**cchTableStyle:** 0xFFFF specifies that no style is applied in the [body](#Section_7f7d9d76a55041d9ae9f0d8539cc09f8) of the PivotTable view.

**cchVacateStyle:** 0xFFFF specifies that no style is applied to cells that become empty when the PivotTable view is recalculated.

### 3.10.30 PivotTable: QsiSXTag

The next record in this example, [QsiSXTag](#Section_3bb6727096504455944daa8e21dbb19f), specifies the name and [**refresh**](#gt_d947dfed-8e3a-4451-b978-d69a89ae6060) information for this [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0025 | QsiSXTag **- QsiSxTag** |  |
| 0004 | [FrtHeaderOld](#Section_02b165efca714c4393ca613d0d5a020b) **- frtHeader** |  |
| 0002 | USHORT **- rt** | 0x0802 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0002 | SHORT **- fSx** | 0x0001 |
| 1 bit | USHORT **- fEnableRefresh** | 0x1 |
| 1 bit | USHORT **- fInvalid** | 0x0 |
| 1 bit | USHORT **- fTensorEx** | 0x0 |
| 13 bits | USHORT **- reserved1** | 0x0000 |
| 0004 | [SXView9Save](#Section_7f274de6deb14f998fae6e6b773afb88) **- dwQsiFuture** |  |
| 1 bit | USHORT **- fNoStencil** | 0x0 |
| 1 bit | USHORT **- fHideTotAnnotation** | 0x1 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fIncludeEmptyRw** | 0x0 |
| 1 bit | USHORT **- fIncludeEmptyCol** | 0x0 |
| 11 bits | USHORT **- reserved2** | 0x000 |
| 16 bits | USHORT **- reserved3** | 0x0000 |
| 0001 | BYTE **- verSxLastUpdated** | 0x02 |
| 0001 | BYTE **- verSxUpdatableMin** | 0x00 |
| 0001 | BYTE **- obCchName** | 0x10 |
| 0001 | BYTE **- reserved2** | 0x00 |
| 0013 | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- stName** | OrdersPivotTable |
| 0002 | USHORT **- unused** | 0x0100 |

Figure 160: Structure of QsiSxTag

**frtHeader:**  A structure that specifies a [future record](#Section_b660b67822684414839ed1ae9a4e4e85) type header.

**frtHeader.rt:**  0x0802 specifies the record type identifier and is required.

**frtHeader.grbitFrt:** 0x00 specifies a constant value of 0x00.

**fSx:** 0x0001 specifies that this record relates to a PivotTable.

**fEnableRefresh:** 0x1 specifies that the PivotTable is to be refreshed with data from an external [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075).

**fInvalid:** 0x0 specifies that the PivotTable needs to be refreshed.

**fTensorEx:** 0x0 specifies that the PivotTable is not an [**OLAP**](#gt_055c223a-52f1-4d41-b95b-d7c60eaa388f) report.

**dwQsiFuture:**  Specifies additional option flags for a PivotTable.

**dwQsiFuture.fNoStencil:** 0x0 specifies that the drawing of large drop zones is enabled for this [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37)that has no data fields.

**dwQsiFuture.fHideTotAnnotation:** 0x1 specifies that annotation for the total in this [OLAP PivotTable view](#Section_bbdb91f53cc644e4a812d5e06c977f6f) is hidden.

**dwQsiFuture.fIncludeEmptyRw:** 0x0 specifies that empty rows from an OLAP data source are not shown in this PivotTable view.

**dwQsiFuture.fIncludeEmptyCol:** 0x0 specifies that empty columns from an OLAP data source are not shown in this PivotTable view.

**verSxLastUpdated:** 0x02 specifies the [data functionality level](#Section_2bcedd76ef064e6084c718ea55042ed6) that this PivotTable was last refreshed with.

**verSxUpdatableMin:** 0x00 specifies the minimum version of the application that can refresh this PivotTable.

**stName:** "OrdersPivotTable" specifies the name of this PivotTable.

### 3.10.31 PivotTable: SXViewEx9

QsiSXTag The next record in this example, [SXViewEx2.4.315](#Section_0afb49167a5243b6891742c07b8dc954), specifies extensions to the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0011 | SXViewEx9 **- Sxviewex9** |  |
| 0002 | USHORT **- rt** | 0x0810 |
| 1 bit | USHORT **- reserved1** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved2** | 0x0000 |
| 0004 | ULONG **- reserved3** | 0x00000000 |
| 1 bit | ULONG **- reserved4** | 0x0 |
| 1 bit | ULONG **- fPrintTitles** | 0x0 |
| 1 bit | ULONG **- fLineMode** | 0x0 |
| 2 bits | ULONG **- reserved5** | 0x0 |
| 1 bit | ULONG **- fRepeatItemsOnEachPrintedPage** | 0x1 |
| 26 bits | ULONG **- reserved6** | 0x0000000 |
| 0002 | [AutoFmt8](#Section_c43451301af54d2892707082e9f98154) **- itblAutoFmt** | 0x0001 |
| 0003 | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- chGrand** | empty string |

Figure 161: Structure of Sxviewex9

**rt:** 0x0810 specifies a constant record type identifier.

**fFrtAlert:** 0x0000 specifies that features of this [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3) are supported in earlier versions of the [**BIFF**](#gt_f9965de8-cd18-4e26-a9c6-adfee3d67517).

**fPrintTitles:** 0x00000000 specifies that print titles for the [**worksheet**](#gt_2fdc6291-fa6a-48a6-afbb-04f910d68615) are not set based on the PivotTable report.

**fLineMode:** 0x00000000 specifies that no [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) is in outline mode. See [subtotaling](#Section_427438d9b8e34a5c8b678f158fbf680f) for more information.

**fRepeatItemsOnEachPrintedPage:** 0x00000001 specifies that [pivot item](#Section_58891cc5dd9b4293a97831070779524f) captions on the [row axis](#Section_3f46e7207706400cba9473cb829f869a) will be repeated at the top of each printed page for pivot fields in tabular form.

**itblAutoFmt:** 0x0001 specifies the PivotTable [**AutoFormat**](#gt_f7e1ea19-1129-4519-a857-008db95c462f). A value of 0x001 specifies XL8\_ITBLCLASSIC1 or the **Classic 1** AutoFormat style.

### 3.10.32 PivotTable: SxAddl 4

The next record in this example, [SxAddl](#Section_54370a1209c34832a72c37d317bf069e), specifies additional information for a [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37) and [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001F | [SXAddl\_SXCView\_SXDId](#Section_b62c9dbcce0d430bab35fb2e310a36b7) **- SXAddl** |  |
| 0006 | [SXAddlHdr](#Section_fd41637ad9fe486b80101ed68fefc6db) **- hdr** |  |
| 0004 | [FrtHeaderOld](#Section_02b165efca714c4393ca613d0d5a020b) **- frtHeaderOld** |  |
| 0002 | USHORT **- rt** | 0x0864 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0001 | BYTE **- sxc** | 0x00 |
| 0001 | BYTE **- sxd** | 0x00 |
| 0019 | SXAddl\_SXString **- stName** |  |
| 0019 | [XLUnicodeStringSegmentedSXAddl](#Section_18afd49069014d3da8de38898a3724a0) **- stName** | OrdersPivotTable |

Figure 162: Structure of SXAddl

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**hdr:**  An SXAddlHdr structure that specifies header information for this SXAddl record.

**hdr.sxc:** 0x00 specifies the current [class](#Section_3450b26af2b247dd982c6b9eb2d448b0) as an [SxcView class](#Section_a17d6dc32db74ec4b3cbeded2b7126c3).

**hdr.sxd:** 0x00 specifies the type of record contained in the **data** field of the containing SXAddl record. This value specifies that the type of this SXAddl record is [SXAddl\_SXCCache\_SXDId](#Section_21eb148497344b9d80952b1d7db4808e).

**stName.stName:** "OrdersPivotTable" specifies the name of the PivotTable View.

### 3.10.33 PivotTable: SxAddl 5

The next record in this example, [SxAddl](#Section_54370a1209c34832a72c37d317bf069e), specifies additional information for a [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37) and [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000C | [SXAddl\_SXCView\_SXDVer10Info](#Section_852f0dea13e84b8bae42ae9b09e76c5e) **- SXAddl** |  |
| 0006 | [SXAddlHdr](#Section_fd41637ad9fe486b80101ed68fefc6db) **- hdr** |  |
| 0004 | [FrtHeaderOld](#Section_02b165efca714c4393ca613d0d5a020b) **- frtHeaderOld** |  |
| 0002 | USHORT **- rt** | 0x0864 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0001 | BYTE **- sxc** | 0x00 |
| 0001 | BYTE **- sxd** | 0x02 |
| 8 bits | ULONG **- bVerSxMacro** | 0x01 |
| 1 bit | ULONG **- fDisplayImmediateItems** | 0x1 |
| 1 bit | ULONG **- fEnableDataEd** | 0x0 |
| 1 bit | ULONG **- fDisableFList** | 0x0 |
| 1 bit | ULONG **- fReenterOnLoadOnce** | 0x0 |
| 1 bit | ULONG **- fNotViewCalculatedMembers** | 0x0 |
| 1 bit | ULONG **- fNotVisualTotals** | 0x0 |
| 1 bit | ULONG **- fPageMultipleItemLabel** | 0x1 |
| 1 bit | ULONG **- fTensorFillCv** | 0x0 |
| 1 bit | ULONG **- fHideDDData** | 0x0 |
| 3 bits | ULONG **- reserved1** | 0x0 |
| 12 bits | ULONG **- unused** | 0x000 |
| 0002 | USHORT **- reserved2** | 0x0000 |

Figure 163: Structure of SXAddl

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**hdr:**  An SXAddlHdr structure that specifies header information for this SXAddl record.

**hdr.sxc:** 0x00 specifies the current [class](#Section_3450b26af2b247dd982c6b9eb2d448b0) as an [SxcView class](#Section_a17d6dc32db74ec4b3cbeded2b7126c3).

**hdr.sxd:** 0x02 specifies the type of record contained in the **data** field of the containing SXAddl record. See class for more information. This value specifies that the type of this SXAddl record is SXAddl\_SXCView\_SXDVer2.4.273.108Info.

**bVerSxMacro:** 0x01 specifies the [data functionality level](#Section_2bcedd76ef064e6084c718ea55042ed6) with which this [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3) was created.

**fDisplayImmediateItems:** 0x1 specifies that [pivot items](#Section_58891cc5dd9b4293a97831070779524f) are displayed in the PivotTable view even when there is no [pivot field](#Section_1edf7f2294084945b2de56526c14fca5) on the [data axis](#Section_4c5c2daa289746e1854b0ce04209f060).

**fEnableDataEd:** 0x0 specifies the user is not allowed to change values in the data axis of the PivotTable view.

**fDisableFList:** 0x0 specifies the [**PivotTable field list**](#gt_1760fb56-0c97-4c0d-a077-38338baa7577) is enabled.

**fReenterOnLoadOnce:** 0x0 specifies that this PivotTable view will not [**refresh**](#gt_d947dfed-8e3a-4451-b978-d69a89ae6060) the next time the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) is opened.

**fPageMultipleItemLabel:** 0x1 specifies that [OLAP calculated members](#Section_e67071408ab5499ca7bab1d8eca85058) are [**hidden**](#gt_6928fba3-3deb-453c-82ed-ecac33026ffd) in the PivotTable view.

### 3.10.34 PivotTable: SxAddl 6

The next record in this example, [SxAddl](#Section_54370a1209c34832a72c37d317bf069e), specifies additional information for a [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37) and [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e). In this record, the **data.hdr.sxd** field specifies that this is the last record of an **SxAddl** record collection.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000C | [SXAddl\_SXCView\_SXDEnd](#Section_38d4685f17224c828bae3c9d008e5bfb) **- SXAddl** |  |
| 0006 | [SXAddlHdr](#Section_fd41637ad9fe486b80101ed68fefc6db) **- hdr** |  |
| 0004 | [FrtHeaderOld](#Section_02b165efca714c4393ca613d0d5a020b) **- frtHeaderOld** |  |
| 0002 | USHORT **- rt** | 0x0864 |
| 0002 | [FrtFlags](#Section_4ba52910e74d484d9a6d4588e054561e) **- grbitFrt** |  |
| 1 bit | USHORT **- fFrtRef** | 0x0 |
| 1 bit | USHORT **- fFrtAlert** | 0x0 |
| 14 bits | USHORT **- reserved** | 0x0000 |
| 0001 | BYTE **- sxc** | 0x00 |
| 0001 | BYTE **- sxd** | 0xFF |
| 0006 | reserved **- reserved** | 0x000000000000 |

Figure 164: Structure of SXAddl

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**hdr:**  An SXAddlHdr structure that specifies header information for this SXAddl record.

**hdr.sxc:** 0x00 specifies the current [class](#Section_3450b26af2b247dd982c6b9eb2d448b0) as an [SxcView class](#Section_a17d6dc32db74ec4b3cbeded2b7126c3).

**hdr.sxd:** 0xFF specifies the type of record contained in the **data** field of the containing SXAddl record. See class for more information. This value specifies that the type of this SXAddl record is SXAddl\_SXCView\_SXDEnd.

### 3.10.35 PivotTable: SXDB

The next record in this example, [SXDB](#Section_f0e04937a8cf4a1c891bea1fa4b85fdc), specifies some of the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e) properties for the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3) in this example. This SXDB record marks the beginning of the set of records in the stream associated with this PivotTable that appear in the [Pivot Cache storage](#Section_c5fb3f663ef64308ae3de59244159687) (\_SX\_DB\_CUR).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001F | SXDB **- SXDB** |  |
| 0004 | LONG **- crdbdb** | 0x0000002C |
| 0002 | USHORT **- idstm** | 0x0001 |
| 1 bit | USHORT **- fSaveData** | 0x1 |
| 1 bit | USHORT **- fInvalid** | 0x0 |
| 1 bit | USHORT **- fRefreshOnLoad** | 0x0 |
| 1 bit | USHORT **- fOptimizeCache** | 0x0 |
| 1 bit | USHORT **- fBackgroundQuery** | 0x0 |
| 1 bit | USHORT **- fEnableRefresh** | 0x1 |
| 10 bits | USHORT **- unused1** | 0x000 |
| 0002 | SHORT **- unused2** | 0x0666 |
| 0002 | SHORT **- cfdbdb** | 0x0005 |
| 0002 | SHORT **- cfdbTot** | 0x0005 |
| 0002 | SHORT **- crdbUsed** | 0x0006 |
| 0002 | USHORT **- vsType** | 0x0001 |
| 0002 | USHORT **- cchWho** | 0x000A |
| 000B | [XLUnicodeStringNoCch](#Section_e64abeee2f3a4004b9e33d67e29d6066) **- rgb** | John Smith |

Figure 165: Structure of SXDB

**crdbdb:** 0x0000002C specifies that there are a total of 44 records in the [source data](#Section_e65bff19ea464f3b9798d8d2db9202b4) of this PivotCache.

**idstm:** 0x0001 specifies the identifier of the stream in the PivotCache storage that contains the PivotCache for this PivotTable. The stream identifier is a four-character string representation of the hexadecimal value. In this case the stream identifier is "0001". This field is equal to the **idstm** field of [SXStreamID](#Section_a4dc3f5438904e35aad080a16b4b4cff).

**fSaveData:** 0x1 specifies that [cache records](#Section_fe6e4ca0a9b646a4898124e4b61a770a) exist for this PivotCache.

**fInvalid:** 0x0 specifies that the cache does not need to be refreshed before the next recalculation.

**fRefreshOnLoad:** 0x0 specifies that the PivotCache is not refreshed on load.

**fOptimizeCache:** 0x0 specifies that the cache is not optimized for reduced memory usage.

**fBackgroundQuery:** 0x0 specifies that a [**refresh**](#gt_d947dfed-8e3a-4451-b978-d69a89ae6060) of the PivotCache is performed synchronously.

**fEnableRefresh:** 0x1 specifies that the PivotCache refresh is enabled.

**cfdbdb:** 0x0005 specifies that there are five base [cache fields](#Section_6497eb794042445780e75959c9f0583c) in the source data.

**cfdbTot:** 0x0005 specifies that there are a sum total of five base, grouped, and calculated fields in the cache. The value of this field is the same as the **cfdbdb** field because there are no grouped or calculated fields.

**crdbUsed:** 0x0006 specifies that there are six records in use from the source data in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37) as a result of the filtering in the [page area](#Section_f10ef7d86c044d35a5830d6f2ce92063).

**vsType:** 0x0001 specifies that the [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075) is a [**sheet**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d) range.

**cchWho:** 0x000A specifies the length (10) of the following **rgb** string.

**rgb:** "John Smith" specifies the name of the user who last refreshed the PivotTable.

### 3.10.36 PivotTable: SXDBEx

The next record in this example, [SXDBEx](#Section_69f27aaef85e487eb3573b64491a9520), specifies additional [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e) properties.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 000C | SXDBEx **- SXDBEx** |  |
| 0008 | [DateAsNum](#Section_f8099a22ecdf407ea1ef2f38cb5d211e) **- numDate** |  |
| 0008 | [Xnum](#Section_f4aa57255bb846a99fb57f0393070a4c) **- dateNum** | 0x40E355907CBEB8CE |
| 0004 | DWORD **- cSxFormula** | 0x00000000 |

Figure 166: Structure of SXDBEx

**numDate:**  A DateAsNum structure that specifies the PivotCache was last refreshed on 5/28/2008.

**numDate.dateNum:** 0x40E355907CBEB8CE specifies the numeric value 39596.515227662035, which represents the date (5/28/2008 12:21:56 PM) that the PivotCache was last refreshed.

**cSxFormula:** 0x00000000 specifies that there are no [SXFormula](#Section_b7c4ebe61ade458fb78ca1d05ada9862) records for this PivotCache.

### 3.10.37 PivotTable: SXFDB 1

The next records in this example are a series of [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe) and related records that specify the [cache fields](#Section_6497eb794042445780e75959c9f0583c) and their contents. This first SXFDB record specifies details of the CustomerName cache field in the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e). In this example, this cache field is displayed in the [row axis](#Section_3f46e7207706400cba9473cb829f869a) of the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001D | SXFDB **- SXFDB** |  |
| 1 bit | USHORT **- fAllAtoms** | 0x1 |
| 1 bit | USHORT **- fSomeUnhashed** | 0x0 |
| 1 bit | USHORT **- fUsed** | 0x0 |
| 1 bit | USHORT **- fHasParent** | 0x0 |
| 1 bit | USHORT **- fRangeGroup** | 0x0 |
| 1 bit | USHORT **- fNumField** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fTextEtcField** | 0x1 |
| 1 bit | USHORT **- fnumMinMaxValid** | 0x0 |
| 1 bit | USHORT **- fShortIitms** | 0x0 |
| 1 bit | USHORT **- fNonDates** | 0x1 |
| 1 bit | USHORT **- fDateInField** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fServerBased** | 0x0 |
| 1 bit | USHORT **- fCantGetUniqueItems** | 0x0 |
| 1 bit | USHORT **- fCalculatedField** | 0x0 |
| 0002 | SHORT **- ifdbParent** | 0x0000 |
| 0002 | SHORT **- ifdbBase** | 0x0000 |
| 0002 | SHORT **- citmUnq** | 0x0005 |
| 0002 | SHORT **- csxoper** | 0x0000 |
| 0002 | SHORT **- cisxoper** | 0x0000 |
| 0002 | SHORT **- catm** | 0x0005 |
| 000F | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- stFieldName** | CustomerName |

Figure 167: Structure of SXFDB

Fields in this record that are ignored because **fHasParent** is 0 are omitted for brevity.

**fAllAtoms:** 0x1 specifies that the [source data](#Section_e65bff19ea464f3b9798d8d2db9202b4) for this cache field is cached. It is cached because the CustomerName cache field is displayed in the PivotTable as the first row field.

**fSomeUnhashed:** 0x0 specifies that all source data is cached in the PivotCache.

**fUsed:** 0x0 specifies that no calculated cache fields are used in the PivotTable.

**fHasParent:** 0x0 specifies that this cache field does not have a parent cache field.

**fRangeGroup:** 0x0 specifies that this cache field is not grouped by range grouping, as specified in [Grouping](#Section_63e07ed20a764cb08cf446aaf25464c2).

**fNumField:** 0x0 specifies that the [cache items](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in this cache field do not contain numeric data.

**fTextEtcField:** 0x1 specifies that the cache items in this cache field contain text values.

**fnumMinMaxValid:** 0x0 specifies that a valid minimum or maximum value is not computed for this cache field.

**fShortIitms:** 0x0 specifies that this cache field does not contain more than 255 cache items.

**fNonDates:** 0x1 specifies that the cache items in this cache field contain values that are neither time nor date values.

**fDateInField:** 0x0 specifies that none of the cache items in this cache field contain a time or date value.

**fServerBased:** 0x0 specifies that this cache field is not a server-based field, as specified in Source Data.

**fCantGetUniqueItems:** 0x0 specifies that it is possible to retrieve a list of unique items for this cache field.

**fCalculatedField:** 0x0 specifies that this record is not a [calculated field](#Section_4594f2ac815740b381142e77ba8efb7d).

**csxoper:** 0x0000 specifies that there are zero cache item values in this cache field that are based on [**child**](#gt_bc38f35b-d253-4f8f-8dcc-095e3a211ae0) cache fields.

**cisxoper:** 0x0000 specifies that there are zero values in the child cache fields of this cache field.

**catm:** 0x0005 specifies that there are five items in the cache item collection for this cache field.

**stFieldName:** "CustomerName" specifies the name of this cache field.

The following record, [SXFDBType](#Section_01791f7a870b4ce89d1621f77245c4b5), is not included in this example because the **sxvs** field of the [SXVS](#Section_386ddcb0d3f94370b60c2f05b2d371c7) record in this example is 1.

### 3.10.38 PivotTable: SXString 1

After the [cache field](#Section_6497eb794042445780e75959c9f0583c) is specified, a series of records follow it that specify the [cache items](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in the CustomerName cache field. In this example, the next record is an [SXString](#Section_0b135d8b213f4d54970bd7a934a79f36) record, which specifies a string cache item. This cache item is not displayed in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001A | SXString **- SXString** |  |
| 0002 | USHORT **- cch** | 0x0017 |
| 0018 | [XLUnicodeStringNoCch](#Section_e64abeee2f3a4004b9e33d67e29d6066) **- segment** | Great Lakes Food Market |

Figure 168: Structure of SXString

**cch:** 0x0017 specifies the length (23) of the cache item string.

**segment:** "Great Lakes Food Market" specifies the value of the cache item.

### 3.10.39 PivotTable: SXString 2

The next record in this example, [SXString](#Section_0b135d8b213f4d54970bd7a934a79f36), specifies a string [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in the CustomerName [cache field](#Section_6497eb794042445780e75959c9f0583c). This cache item does not appear in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001A | SXString **- SxString** |  |
| 0002 | USHORT **- cch** | 0x0017 |
| 0018 | [XLUnicodeStringNoCch](#Section_e64abeee2f3a4004b9e33d67e29d6066) **- segment** | Antonio Moreno Taquería |

Figure 169: Structure of SxString

**cch:** 0x0017 specifies the length (23) of the cache item string.

**segment:** "Antonio Moreno Taquería" specifies the value of the cache item.

This record is followed by 1 additional SXString record that is omitted for brevity.

### 3.10.40 PivotTable: SXString 3

The next record in this example, [SXString](#Section_0b135d8b213f4d54970bd7a934a79f36), specifies a string [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in the CustomerName [cache field](#Section_6497eb794042445780e75959c9f0583c). This record is included in this example because it is displayed in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0011 | SXString **- SXString** |  |
| 0002 | USHORT **- cch** | 0x000E |
| 000F | [XLUnicodeStringNoCch](#Section_e64abeee2f3a4004b9e33d67e29d6066) **- segment** | Island Trading |

Figure 170: Structure of SXString

**cch:** 0x000E specifies the length (14) of the cache item string.

**segment:** "Island Trading" specifies the value of the cache item.

Records following this record, and before the next [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe) record, are omitted for brevity.

### 3.10.41 PivotTable: SXFDB 2

The next record in this example, [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe), specifies the OrderDate [cache field](#Section_6497eb794042445780e75959c9f0583c) in the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e). This cache field is displayed in the [page axis](#Section_ff63f3d9274542878e6e11120ecf30b7) of the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001A | SXFDB **- SXFDB** |  |
| 1 bit | USHORT **- fAllAtoms** | 0x1 |
| 1 bit | USHORT **- fSomeUnhashed** | 0x0 |
| 1 bit | USHORT **- fUsed** | 0x0 |
| 1 bit | USHORT **- fHasParent** | 0x0 |
| 1 bit | USHORT **- fRangeGroup** | 0x0 |
| 1 bit | USHORT **- fNumField** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fTextEtcField** | 0x0 |
| 1 bit | USHORT **- fnumMinMaxValid** | 0x1 |
| 1 bit | USHORT **- fShortIitms** | 0x0 |
| 1 bit | USHORT **- fNonDates** | 0x0 |
| 1 bit | USHORT **- fDateInField** | 0x1 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fServerBased** | 0x0 |
| 1 bit | USHORT **- fCantGetUniqueItems** | 0x0 |
| 1 bit | USHORT **- fCalculatedField** | 0x0 |
| 0002 | SHORT **- ifdbParent** | 0x0000 |
| 0002 | SHORT **- ifdbBase** | 0x0000 |
| 0002 | SHORT **- citmUnq** | 0x0014 |
| 0002 | SHORT **- csxoper** | 0x0000 |
| 0002 | SHORT **- cisxoper** | 0x0000 |
| 0002 | SHORT **- catm** | 0x0014 |
| 000C | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- stFieldName** | OrderDate |

Figure 171: Structure of SXFDB

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**fAllAtoms:** 0x1 specifies that the [source data](#Section_e65bff19ea464f3b9798d8d2db9202b4) for this cache field is cached. It is cached because the OrderDate cache field is displayed in the PivotTable as the first page field.

**fNonDates:** 0x0 specifies that the [cache items](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in this cache field are date or time values.

**fDateInField:** 0x1 specifies that at least one cache item in this cache field is a date or time value.

**catm:** 0x0014 specifies that there are 20 items in the cache item collection for this cache field.

**stFieldName:** "OrderDate" specifies the name of the cache field.

Records following this record, and before the next [SXDtr](#Section_5c7ffeb26d504ee4b415ed075f9bf158) record, are omitted for brevity.

### 3.10.42 PivotTable: SXDtr 1

The next record in this example, [SXDtr](#Section_5c7ffeb26d504ee4b415ed075f9bf158), specifies a date [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in the OrderDate [cache field](#Section_6497eb794042445780e75959c9f0583c). This cache item is filtered out in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXDtr **- SXDtr** |  |
| 0002 | USHORT **- yr** | 0x07CD |
| 0002 | USHORT **- mon** | 0x0005 |
| 0001 | BYTE **- dom** | 0x06 |
| 0001 | BYTE **- hr** | 0x00 |
| 0001 | BYTE **- min** | 0x00 |
| 0001 | BYTE **- sec** | 0x00 |

Figure 172: Structure of SXDtr

**yr:** 0x07CD specifies the year value (1997) of the cache item.

**mon:** 0x0005 specifies the month value (5) of the cache item.

**dom:** 0x06 specifies the day of the month value (6) of the cache item.

**hr:** 0x00 specifies the hour value (0) of the cache item.

**min:** 0x00 specifies the minute value (0) of the cache item.

**sec:** 0x00 specifies the second value (0) of the cache item.

This record is followed by 15 additional SXDtr records that are omitted for brevity.

### 3.10.43 PivotTable: SXDtr 2

The next record in this example, [SXDtr](#Section_5c7ffeb26d504ee4b415ed075f9bf158), specifies a date [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in the OrderDate page field that is not filtered in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXDtr **- SXDtr** |  |
| 0002 | USHORT **- yr** | 0x07CD |
| 0002 | USHORT **- mon** | 0x000C |
| 0001 | BYTE **- dom** | 0x17 |
| 0001 | BYTE **- hr** | 0x00 |
| 0001 | BYTE **- min** | 0x00 |
| 0001 | BYTE **- sec** | 0x00 |

Figure 173: Structure of SXDtr

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**yr:** 0x07CD specifies the year value (1997) of the cache item.

**mon:** 0x000C specifies the month value (12) of the cache item.

**dom:** 0x17 specifies the day of the month value (23) of the cache item.

Records following this record, and before the next [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe) record, are omitted for brevity.

### 3.10.44 PivotTable: SXFDB 3

The next record in this example, [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe), specifies the ProductName [cache field](#Section_6497eb794042445780e75959c9f0583c) in the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e). This cache field is displayed in the [row axis](#Section_3f46e7207706400cba9473cb829f869a) of the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001C | SXFDB **- SXFDB** |  |
| 1 bit | USHORT **- fAllAtoms** | 0x1 |
| 1 bit | USHORT **- fSomeUnhashed** | 0x0 |
| 1 bit | USHORT **- fUsed** | 0x0 |
| 1 bit | USHORT **- fHasParent** | 0x0 |
| 1 bit | USHORT **- fRangeGroup** | 0x0 |
| 1 bit | USHORT **- fNumField** | 0x0 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fTextEtcField** | 0x1 |
| 1 bit | USHORT **- fnumMinMaxValid** | 0x0 |
| 1 bit | USHORT **- fShortIitms** | 0x0 |
| 1 bit | USHORT **- fNonDates** | 0x1 |
| 1 bit | USHORT **- fDateInField** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fServerBased** | 0x0 |
| 1 bit | USHORT **- fCantGetUniqueItems** | 0x0 |
| 1 bit | USHORT **- fCalculatedField** | 0x0 |
| 0002 | SHORT **- ifdbParent** | 0x0000 |
| 0002 | SHORT **- ifdbBase** | 0x0000 |
| 0002 | SHORT **- citmUnq** | 0x0006 |
| 0002 | SHORT **- csxoper** | 0x0000 |
| 0002 | SHORT **- cisxoper** | 0x0000 |
| 0002 | SHORT **- catm** | 0x0006 |
| 000E | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- stFieldName** | ProductName |

Figure 174: Structure of SXFDB

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**fAllAtoms:** 0x1 specifies that the [source data](#Section_e65bff19ea464f3b9798d8d2db9202b4) for this cache field is cached. It is cached because the ProductName cache field is displayed in the PivotTable as the first row field.

**fNumField:** 0x0 specifies that the [cache items](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in this cache field do not contain numeric data.

**fTextEtcField:** 0x1 specifies that the cache items in this cache field contain text values.

**catm:** 0x0006 specifies that there are six items in the cache item collection for this cache field. The number of items in the cache field was affected in this case by the filtering on the page field.

**stFieldName:** "ProductName" specifies the name of the cache field.

Records following this record, and before the next SXFDB record, are omitted for brevity.

### 3.10.45 PivotTable: SXFDB 4

The next record in this example, [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe), specifies the UnitPrice [cache field](#Section_6497eb794042445780e75959c9f0583c) in the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e). This cache field does not appear on any [PivotTable axis](#Section_89db73685e8e4324b592af85e4559e6c) in the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 001A | SXFDB **- SXFDB** |  |
| 1 bit | USHORT **- fAllAtoms** | 0x1 |
| 1 bit | USHORT **- fSomeUnhashed** | 0x0 |
| 1 bit | USHORT **- fUsed** | 0x0 |
| 1 bit | USHORT **- fHasParent** | 0x0 |
| 1 bit | USHORT **- fRangeGroup** | 0x0 |
| 1 bit | USHORT **- fNumField** | 0x1 |
| 1 bit | USHORT **- unused1** | 0x0 |
| 1 bit | USHORT **- fTextEtcField** | 0x0 |
| 1 bit | USHORT **- fnumMinMaxValid** | 0x1 |
| 1 bit | USHORT **- fShortIitms** | 0x0 |
| 1 bit | USHORT **- fNonDates** | 0x1 |
| 1 bit | USHORT **- fDateInField** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fServerBased** | 0x0 |
| 1 bit | USHORT **- fCantGetUniqueItems** | 0x0 |
| 1 bit | USHORT **- fCalculatedField** | 0x0 |
| 0002 | SHORT **- ifdbParent** | 0x0000 |
| 0002 | SHORT **- ifdbBase** | 0x0000 |
| 0002 | SHORT **- citmUnq** | 0x0007 |
| 0002 | SHORT **- csxoper** | 0x0000 |
| 0002 | SHORT **- cisxoper** | 0x0000 |
| 0002 | SHORT **- catm** | 0x0007 |
| 000C | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- stFieldName** | UnitPrice |

Figure 175: Structure of SXFDB

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**fAllAtoms:** 0x1 specifies that the [source data](#Section_e65bff19ea464f3b9798d8d2db9202b4) for this cache field is cached. Though this cache field is not displayed on any areas of the PivotTable, its source data is cached because it was displayed in the PivotTable at some point.

**fNumField:** 0x1 specifies that the [cache items](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in this cache field contain numeric data.

**catm:** 0x0007 specifies that there are seven items in the cache item collection for this cache field.

**stFieldName:** "UnitPrice" specifies the name of the cache field.

Records following this record, and before the next [SXNum](#Section_e16fd21368b54566886499600b002f4d) record, are omitted for brevity.

### 3.10.46 PivotTable: SXNum 1

The next record in this example, [SXNum](#Section_e16fd21368b54566886499600b002f4d), specifies a [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in the UnitPrice [cache field](#Section_6497eb794042445780e75959c9f0583c) that is not in the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXNum **- SXNum** |  |
| 0008 | [Xnum](#Section_f4aa57255bb846a99fb57f0393070a4c) **- num** | 0x4004000000000000 |

Figure 176: Structure of SXNum

**num:** 0x4004000000000000 specifies the cache item's numeric value is 2.5.

Records following this record, and before the next [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe) record, are omitted for brevity.

### 3.10.47 PivotTable: SXFDB 5

The next record in this example, [SXFDB](#Section_e410a60fad0340c7a4fc9e9932339abe), specifies the Quantity [cache field](#Section_6497eb794042445780e75959c9f0583c) in the [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e). This cache field appears in the [data axis](#Section_4c5c2daa289746e1854b0ce04209f060) of the [PivotTable](#Section_a5f57198f2af40b2ba07e4b1836d73f3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0019 | SXFDB **- SXFDB** |  |
| 1 bit | USHORT **- fAllAtoms** | 0x0 |
| 1 bit | USHORT **- fSomeUnhashed** | 0x1 |
| 1 bit | USHORT **- fUsed** | 0x0 |
| 1 bit | USHORT **- fHasParent** | 0x0 |
| 1 bit | USHORT **- fRangeGroup** | 0x0 |
| 1 bit | USHORT **- fNumField** | 0x1 |
| 1 bit | USHORT **- unused1** | 0x1 |
| 1 bit | USHORT **- fTextEtcField** | 0x0 |
| 1 bit | USHORT **- fnumMinMaxValid** | 0x1 |
| 1 bit | USHORT **- fShortIitms** | 0x0 |
| 1 bit | USHORT **- fNonDates** | 0x1 |
| 1 bit | USHORT **- fDateInField** | 0x0 |
| 1 bit | USHORT **- unused2** | 0x0 |
| 1 bit | USHORT **- fServerBased** | 0x0 |
| 1 bit | USHORT **- fCantGetUniqueItems** | 0x0 |
| 1 bit | USHORT **- fCalculatedField** | 0x0 |
| 0002 | SHORT **- ifdbParent** | 0x0000 |
| 0002 | SHORT **- ifdbBase** | 0x0000 |
| 0002 | SHORT **- citmUnq** | 0x001E |
| 0002 | SHORT **- csxoper** | 0x0000 |
| 0002 | SHORT **- cisxoper** | 0x0000 |
| 0002 | SHORT **- catm** | 0x0000 |
| 000B | [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) **- stFieldName** | Quantity |

Figure 177: Structure of SXFDB

Fields in this record that are explained in previous record descriptions in this example are omitted for brevity.

**fAllAtoms:** 0x0 specifies that the [source data](#Section_e65bff19ea464f3b9798d8d2db9202b4) for this cache field is not cached. Though this cache field is displayed in the PivotTable, its source data is not cached because the cache field is displayed in the [data area](#Section_237a24905c614931923f7ee856f23c72).

**fNumField:** 0x1 specifies that the [cache items](#Section_bdf43e0d59a04111aec09b0a6d3882a0) in this cache field contain numeric data.

**catm:** 0x0000 is 0 because **fAllAtoms** is 0.

**stFieldName:** "Quantity" specifies the name of this cache field.

Records following this record, and before the next [SXDBB](#Section_e38eeddd951449fd83398938219fcbe3) record, are omitted for brevity.

### 3.10.48 PivotTable: SXDBB 1

The next records in this example are a series of [SXDBB](#Section_e38eeddd951449fd83398938219fcbe3) and [SXNum](#Section_e16fd21368b54566886499600b002f4d) records that specify the [cache records](#Section_fe6e4ca0a9b646a4898124e4b61a770a) for this [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e). This first SXDBB specifies the first cache record.

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | SXDBB **- SXDBB** |  |
| 0004 | rgb **- blob** |  |
| 0001 | BYTE **- blob[0]** | 0x00 |
| 0001 | BYTE **- blob[1]** | 0x00 |
| 0001 | BYTE **- blob[2]** | 0x00 |
| 0001 | BYTE **- blob[3]** | 0x00 |

Figure 178: Structure of SXDBB

**blob.blob[0]:** 0x00 specifies the index of the first [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) (Great Lakes Food Market) within the collection of cache items of the first [cache field](#Section_6497eb794042445780e75959c9f0583c) (CustomerName).

**blob.blob[1]:** 0x00 specifies the index of the first cache item (5/6/1997) within the collection of cache items of the second cache field (OrderDate).

**blob.blob[2]:** 0x00 specifies the index of the first cache item (Geitost) within the collection of cache items of the third cache field (ProductName).

**blob.blob[3]:** 0x00 specifies the index of the first cache item (2.5) within the collection of cache items of the fourth cache field (UnitPrice).

### 3.10.49 PivotTable: SXNum 2

The next record in this example, [SXNum](#Section_e16fd21368b54566886499600b002f4d), specifies the [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) value for the Quantity [cache field](#Section_6497eb794042445780e75959c9f0583c) in the [cache record](#Section_fe6e4ca0a9b646a4898124e4b61a770a) specified by the previous [SXDBB](#Section_e38eeddd951449fd83398938219fcbe3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXNum **- SXNum** |  |
| 0008 | [Xnum](#Section_f4aa57255bb846a99fb57f0393070a4c) **- num** | 0x4020000000000000 |

Figure 179: Structure of SXNum

**num:** 0x4020000000000000 specifies that the floating-point number value of this [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) is 8.

This record is followed by 35 additional pairs of SXDBB and SXNum records that are omitted for brevity.

### 3.10.50 PivotTable: SXDBB 2

The next record in this example, [SXDBB](#Section_e38eeddd951449fd83398938219fcbe3), specifies a [cache record](#Section_fe6e4ca0a9b646a4898124e4b61a770a) that is displayed within the [PivotTable view](#Section_09410dfbaac84a719ecf177ffba12c37).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0004 | SXDBB **- SXDBB** |  |
| 0004 | rgb **- blob** |  |
| 0001 | BYTE **- blob[0]** | 0x04 |
| 0001 | BYTE **- blob[1]** | 0x11 |
| 0001 | BYTE **- blob[2]** | 0x00 |
| 0001 | BYTE **- blob[3]** | 0x00 |

Figure 180: Structure of SXDBB

**blob.blob[0]:** 0x04 specifies the index of the fifth [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) (Königlich Essen) within the collection of cache items of the first [cache field](#Section_6497eb794042445780e75959c9f0583c) (CustomerName).

**blob.blob[1]:** 0x11 specifies the index of the eighteenth cache item (12/26/1997) within the collection of cache items of the second cache field (OrderDate).

**blob.blob[2]:** 0x00 specifies the index of the first cache item (Geitost) within the collection of cache items of the third cache field (ProductName).

**blob.blob[3]:** 0x00 specifies the index of the seventh cache item (2.5) within the collection of cache items of the fourth cache field (UnitPrice).

### 3.10.51 PivotTable: SXNum 3

The next record in this example, [SXNum](#Section_e16fd21368b54566886499600b002f4d), specifies the [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) value for the Quantity [cache field](#Section_6497eb794042445780e75959c9f0583c) in the [cache record](#Section_fe6e4ca0a9b646a4898124e4b61a770a) specified by the previous [SXDBB](#Section_e38eeddd951449fd83398938219fcbe3).

| **Size** | **Structure** | **Value** |
| --- | --- | --- |
| 0008 | SXNum **- SXNum** |  |
| 0008 | [Xnum](#Section_f4aa57255bb846a99fb57f0393070a4c) **- num** | 0x4037000000000000 |

Figure 181: Structure of SXNum

**num:** 0x4037000000000000 specifies that the floating-point number value of this [cache item](#Section_bdf43e0d59a04111aec09b0a6d3882a0) is 23.

Records following this record, and before the next [EOF](#Section_012176fe5802423b913578e22642456b) record, are omitted for brevity.

### 3.10.52 PivotTable: EOF

The next record in this example, [EOF](#Section_012176fe5802423b913578e22642456b), specifies the end of the collection of records for this [PivotCache](#Section_a8496208d8334015938a56a0e97f9f0e).

| **Size** | **Structure** |
| --- | --- |
| 0000 | EOF **- EOF** |

Figure 182: Structure of EOF