SmartXLS
PivotTable framework – XML specification
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PivotTable framework provides functionality to store state of a PivotTable into a XML file, or to load PivotTable state from XML file. Read about XML format if you not familiar with it. XLS if a quite simple and human readable format, so it's possible to not only read and edit generated XML document, but also to manually create one from scratch.

XML document should start with the «system» tag:

<?xml version="1.0" encoding="UTF-8"?>

(Of course file should be encoded in UTF-8 if you specify so.)

Table

Root element of the document should be named «table». Table element describes all configuration of a PivotTable. Example:

<table>
</table>

Attributes:

1. source-sheet → non negative integer (index of a sheet, starting with 0)

Sets number of the sheet in a source document.
Example:

<table source-sheet="0">

If not specified – currently selected sheet will be used by default.

2. source-range

Sets range of the source data in a source document. Can be described in several ways:
If not specified: all data on a source sheet will be used by default.

a) Single range – describe as Excel range string:
Valid values: one Excel style range address string.

<table source-range="A1:K10">

b) Two cells – describe as two different cells:
Valid values: one Excel cell address string.
If only one cell specified: error will happen.

<table source-range-start="A1" source-range-end="K10">

c) Each cell also can be described as pair of coordinates:
Valid values for «...-row» and «...-col» attributes: non negative integer number – index of a row or column, starting with 0.

<table source-range-start="A1" source-range-end-row="10" source-range-end-col="10">

3. target-name → any string value

Sets name of the sheet of the result pivot table.
If not specified: default name of the sheet will not be changed.

<table target-name="PIVOT TABLE">

4. target-cell

Sets cell at which top-left corner of the pivot table will be placed.
Default value: 0, 0 («A1»)
Described in two ways:

a) Excel cell address → string value

<table target-cell="B2">

b) Pair of coordinates → non negative integer value (index started with 0)

<table target-cell-row="1" target-cell-col="1">

5. style → enum (PivotBuiltInStyles)

Values:
PivotStyleDark1 to PivotStyleDark28
PivotStyleLight1 to PivotStyleLight28
PivotStyleMedium1 to PivotStyleMedium28

If not specified: style will not be changed

<table style="PivotStyleMedium4">
<table style="PivotStyleDark15">
<table style="PivotStyleLight6">

6. show-dataonrow → boolean

Sets whether data fields will be shown as rows (in the «Row» area)
Default value: false

<table show-dataonrow="yes">

7. show-header → boolean

Sets whether header of the pivot table will be shown
Default value: true

<table show-header="no">

8. show-rowbuttons → boolean

Sets whether buttons will be shown on compact row fields.
Default value: true

<table show-rowbuttons="false">

9. show-totalcol → boolean

Sets whether column of total results will be shown.
Default value: true

<table show-totalcol="no">

10. show-totalrow → boolean

Sets whether row of total results will be shown.
Default value: true

<table show-totalrow="no">

Document

This element describes object of a «Document» class. PivotTable can contain 2 documents (source and target).
Example:

```
<table>
  <document />
</table>
```

Attributes:

1. type → (source / target)

Required attribute. Sets whether it is source or a target target document. If not specified – error will happen.

<document type="source" />
<document type="target" />

2. format → enum (DocumentFormat)

Values: CSV / XLS / XLSX / XLSB
Required attribute. Sets format of a document. If not specified – error will happen.

<document format="XLSX" />
<document format="CSV" />

3. path → string value

Required attribute. Sets path to the document file. If not specified – error will happen.

<document path="source data.xlsx" />
<document path="pivot table.xlsx" />

4. pass → string value

Optional. Sets password to read or write a document.
If source document is encripted and password not specified – error will happen.
Target document will be encripted if password is specified.

<document pass="password" />

Note: **SCV documents cannot be encripted**. So for this format attribute «pass» sets values separator.
Default values separator (space) will be used if not specified.
Separator should be exactly 1 character long.

<document format="CSV" pass=";" />
<document format="CSV" pass="," />

Field

This element describes field of a PivotTable. Example:

<table>
  <field />
</table>

Attributes (for any field):

1. type → canonical name of the field class

Required. In not specified – error will happen. Describes type of the field.
For standard PivotTable field types you can specify **canonical or simple name** of the class:

Values:
- com.vsubhuman.simplexls.PivotField = PivotField
- com.vsubhuman.simplexls.RowField = RowField
- com.vsubhuman.simplexls.DataField = DataField
- com.vsubhuman.simplexls.FormulaField = FormulaField

Next two elements is equivalent:
<field type="com.vsubhuman.simplexls.PivotField" />
<field type="PivotField" />

This aliases works only for fields from the package «com.vsubhuman.simplexls». If you use custom fields from different packages, you should specify full (canonical) name.

2. area → enum (PivotArea)

Required for fields of the type «PivotField». If not specified – error will happen.
For other **standard type any area** may be specified, it won't have any effect.
Possible values: PAGE / ROW / COLUMN / DATA
But this attribute actually should be used only for «page» or «column» fields. For other areas use special classes (type). Example:

<field type="PivotField" area="PAGE" />
<field type="PivotField" area="COLUMN" />

3. source → string value

Required value. If not specified – error will happen. Sets name of the source data for the field. Example:

<field type="PivotField" area="PAGE" source="Page data" />
<field type="RowField" source="Row data" />

4. sort → enum (SortType)

Optional. Sets sorting type for the field data. If not specified – default sort value will not be changed.
Values: ASCEND / DESCEND / AUTO / MANUAL

<field sort="ASCEND" />

5. width → non negative integer number

Sets width of the field column. Example:

<field width="110" />

6. width-unit → enum (SizeUnit)

Read only if «width» attribute is specified. Sets units of width value.
VALUES: PIXEL / POINT / NATIVE
If not specified – NATIVE value is set automatically.

<field width="110" width-unit="PIXEL" />

RowField attributes:

This attributes may be specified only for field with type «RowField»

1. outline → boolean

Sets whether row field will be otlined.
Default value: true

<field type="RowField" outline="no" />

2. compact → boolean

Sets whether row field will be compact (child rows will be shown in the same column).
Default value: true

<field type="RowField" compact="no" />

3. subtotaltop → boolean

Sets whether subtotal values will be shown in the top line of the row.
Default value: true

<field type="RowField" subtotaltop="no" />

DataField attributes:

This attributes may be specified only for fields with type «DataField» or «FormulaField».

1. name → string value

Sets name of the pivot table field. If not specified – default name will not be changed.

<field type="DataField" source="Data 1" name="First data" />
<field type="DataField" source="Data 2" name="Second data" />

2. number-format → Excel number formatting string

Sets format of the number values in the field. If not specified – default format will not be changed.

<field type="DataField" source="Data 1" number-format="0.0" />

3. sum-type → enum (SummarizeType)

Sets type of total value summarization for the field data.
If not specified default summarize type will not be changed. Values:
AVERAGE / COUNT / COUNT_NUMS / MAX / MIN / PRODUCT / STD_DEV / STD_DEVP / SUM / VAR / VARP

<field type="DataField" source="Data 1" sum-type="SUM" />
<field type="DataField" source="Data 2" sum-type="AVERAGE" />

FormulaField

FormulaField is declared almost exactly the same way as DataField with one difference. You should not specify «source» attribute (this type of field is the only exception for «source» requirement). Instead you **specify formula as text value inside of the field element**.

<field type="FormulaField" name="Formula" number-format="0.00" width="100" width-unit="PIXEL">
  'Data 1' * 'Data 2'
</field>

This formula field will calculate product of fields «Data 1» and «Data 2» and show it in the column «Formula».