

DOCUMENTATION

Nr.:

Customer:

Project: Chart-Styles - XML-Definition
in the SCHMITZM Java library

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Martin Schmitz
EDV-Beratung & Programmierung

Grüner Weg 7, 51107 Köln

Contact

mobil: 0177 / 4936590

privat: 0228 / 4339543

Martin.Schmitz@koeln.de

I. Content

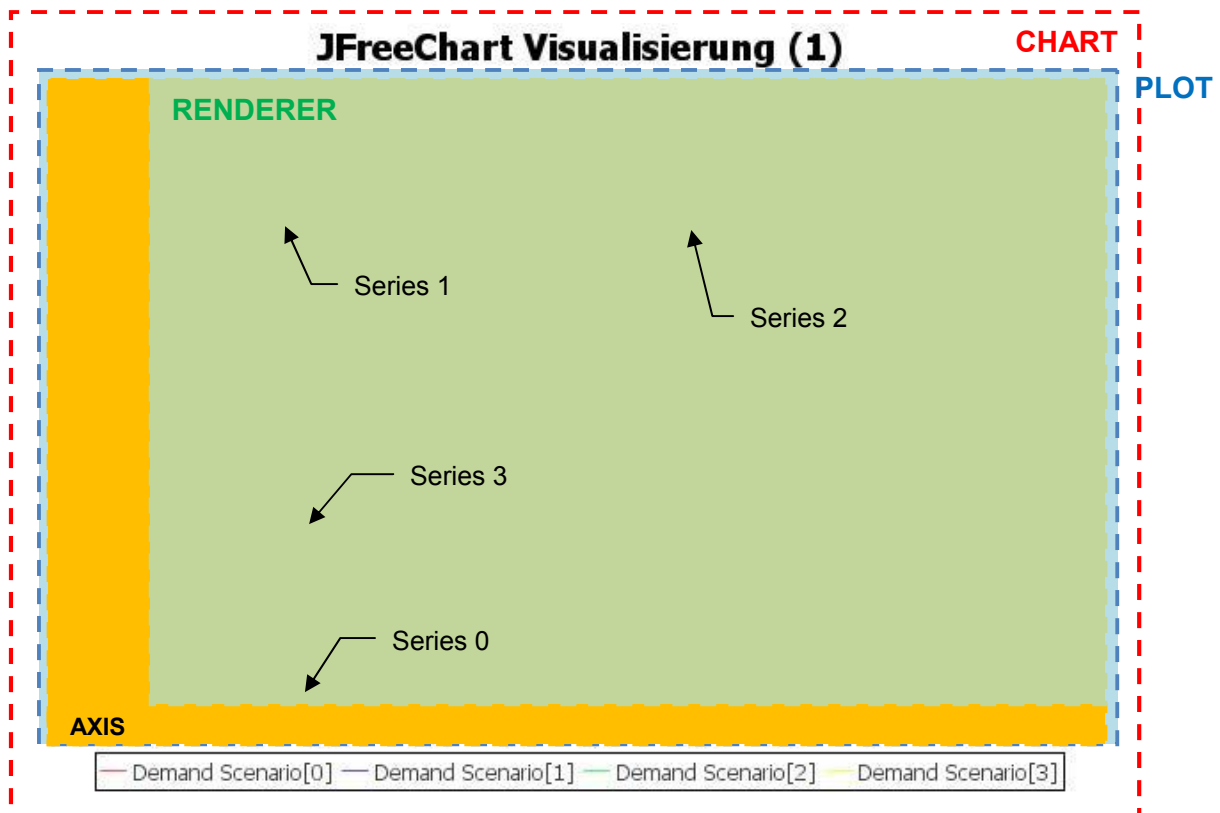
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II. Document version history

to version	date	Change
1.2	19.07.2009, Martin Schmitz	Axis title, title paint and title angle moved to an own element <title>.
1.3	31.07.2009, Martin Schmitz	Attribute "unit" for axis style. Variable count of range attributes (<rangeAttr2> eliminated). Attribute "normalize" for feature attributes. Attributes "sort" and "forceCategories" for feature domain attribute.
1.4	01.08.2009, Martin Schmitz	Attributes "legendVisible", "legendLabel" and "legendTooltip" for <series> element of <renderer>

III. General terminology

Chart	The root panel is called chart. It contains the plot with the axis and the different graphs as well as the legend.
Plot	The plot contains the axis and graphs defined by the datasets.
Axis	The horizontal and vertical axis. Multiple axis are possible.
Dataset	The dataset contains the data. Multiple dataset for one plot are possible.
Series	A series is a part of the data, e.g. one row in a table, where every column defines a time step. In this case the series defines one line in the chart.
Renderer	The renderer defines the layout of one dataset (e.g. lines, points or areas). Additionally the renderer controls some properties about the dataset series (e.g. visibility or color). If the plot contains multiple datasets, also multiple renderers must be defined, e.g. to show one dataset as lines and another as points in the same chart.



IV. XML structure

```

<ChartStyle id="" type="..." orientation="..." legend="..." tooltips="..." urls="..."
            stepped="..." stacked="..."
            regrLineVisible="...">
  <background paint="..."/>
  <border visible="..."/>
  <title paint="...">chart title</title>
  <desc paint="...">...</desc>
  <domainAxis visible="..." unit="...">
    <title paint="..." angle="...">axis title</title>
    <valueLabels valueAngle="..." numberFormat="..." dateFormat="..."/>
  </domainAxis>
  <rangeAxis> ...</rangeAxis>
  <rangeAxis2>...</rangeAxis2>
  <renderer margin="...">
    <series paint="..." itemLabelsVisible="..." shapesVisible="..."
            legendVisible="..." legendLabel="..." legendTooltip="..."/>
    ...
  </renderer>
  <plot>
    <foreground alpha="..."/>
    <background alpha="..." paint="..."/>
    <insets top="..." bottom="..." left="..." right="..."/>
    <domainGridline visible="..." paint="..."/>
    <rangeGridline visible="..." paint="..."/>
  </plot>
  <featureAttributes>
    <domainAttr name="..." normalize="..." sort="..." forceCategories="..."/>
    <rangeAttr name="..." normalize="..." function="..."/>
    <rangeAttr name="..." normalize="..." function="..."/>
    ...
  </featureAttributes>
</ChartStyle>

```

Legend	
black colored	available for all styles
red colored	only available for some styles; see chapter V for details
green colored / italic	individual text (e.g. title)
yellow background	not yet supported; further work!

Chart-Styles - XML-Definition

Element	Description	Attribute	Description	Restrictions
<background>	defines the background format of the whole chart panel	paint	defines the background color: RGB (<r>, <g>,) or Hex-Definition or BLUE, RED, GREEN, ...	
<border>	defines the border format "around" the whole chart panel	visible	indicates a border is visible: true false	
<title>	The element body defines the chart title. The Translation format can be used!	paint	defines the text color of the title: see <background>	
<desc>	The element body defines a detailed description for the chart ¹ . The Translation format can be used!	paint	defines the text color of the description: see <background>	
<domainAxis> <rangeAxis> <rangeAxis2>	The element body defines the axis title. The Translation format can be used!	visible	indicates whether the axis is visible: true false	
		unit	defines an individual string which represents the unit for the axis values (e.g. used for tooltips)	
<title> as child of <domainAxis> <rangeAxis> <rangeAxis2>	The element body defines the axis title. The Translation format can be used!	paint angle	defines the text color of the axis title: see <background> indicates the angle the axis title is rotated with: 0 ... 360 (degrees)	

¹ not yet shown in the chart directly; maybe in extra tooltip

Chart-Styles - XML-Definition

Element	Description	Attribute	Description	Restrictions
<valueLabels>	Defines the format of the axis values.	valuesAngle numberFormat dateFormat	indicates the angle the axis values are rotated with: 0 ... 360 (degrees) Number format for the axis values: see java.text.DecimalFormat Date format for the axis values: see java.text.DateFormat	for NumberAxis and DateAxis only the values 0 and 90 are allowed only applicable for DateAxis (e.g. not for CategoryAxis) only applicable for DateAxis (e.g. not for CategoryAxis)
<renderer>	Defines the style for each of the chart's graphs. Multiple <renderer> elements are possible, but the order of the elements is important!!	margin	Defines the margin (in percentage) between the bars: 0.0 ... 1.0 (percentage)	only applicable for XYBarRenderer
<series>	Defines the style for each series in the dataset. Multiple <series> elements are possible, but the order of the elements is important!!	paint itemLabelsVisible shapesVisible legendVisible legendLabel legendTooltip	defines the color for the graph: see <background> indicates whether a value label is visible for each note: true false indicates whether a (default) shape is shown for each note: true false indicates whether a legend entry for the series is shown in the legend: true false defines label shown for the series in the legend defines tooltip shown for the series in the legend	not useful for point charts!

Chart-Styles - XML-Definition

Element	Description	Attribute	Description	Restrictions
<plot>	Defines the style for the plot.			
<foreground>	Defines the foreground of the plot.	alpha	defines the transparency: 0.0 ... 1.0 (percentage)	
<background>	Defines the background of the plot.	alpha	defines the transparency: 0.0 ... 1.0 (percentage)	
		paint	defines the background color of the plot: see <background>	
<insets>	Defines the border margins of the plot to the rest of the chart (e.g. legend and title)	bottom top left right	bottom margin in pixels top margin in pixels left margin in pixels right margin in pixels	
<domainGridLine> <rangeGridLine>	Defines the horizontal / vertical grid lines	visible paint	indicates whether grid lines are displayed: true false defines the color the grid lines are displayed in: see <background>	
<featureAttributes>	Defines feature attributes used to generate the data from FeatureCollection			
<domainAttr>	Feature attribute defining the data along the domain axis (X).	name normalize	defines the feature attribute name indicates whether the values are normalized before inserted into chart dataset: true <u>false</u>	only applicable for numeric attributes

Chart-Styles - XML-Definition

Element	Description	Attribute	Description	Restrictions
		sort forceCategories	indicates whether the features are sorted according to the domain attribute before inserting into chart dataset: true <u>false</u> indicates whether a CategoryDataset is forced also for a numeric domain attribute: true <u>false</u>	if domain attribute is not numeric always a CategoryDataset is used
<rangeAttr>	Feature attribute(s) defining the data along the range axis (Y). For each range attribute a series is created.	name normalize function	defines the feature attribute name indicates whether the values are normalized before inserted into chart dataset: true <u>false</u> specifies a function, which is applied to all feature values of one category: min max avg sum	ScatterChartStyle only supports exactly one range attribute. For pie charts the range attributes are completely ignored. function only supported for CategoryDataset

VI. Style objects

1. *BasicChartStyle*

This style can be used to style basic charts:

- line
- area
- bar

Only one Y-Axis is provided.

2. *ScatterChartStyle*

This style can be used to style a point chart. Only one dataset and one series is provided. Optionally a second dataset for a regression line is generated automatically.