# Chart Generator Plugin

This plugin contains plugin components to generate charts in Appian as Appian documents.

## Smart Service: Create Chart

### Overview

This smart service creates images of charts and saves them in Appian as Appian documents.

Properties

* Category: Document Generation
* Assignment Options: Unattended

### Data Tab

The Data Tab displays the static inputs of the smart service by default.

After configuring the necessary static inputs listed below, you must configure additional custom inputs to provide the data series display on the charts.

|  |  |  |  |
| --- | --- | --- | --- |
| **Input** | **Type** | **Required** | **Multiple** |
| Chart Settings | Type | Yes | No |
| Create New Document | Boolean | Yes | No |
| New Document Name | Text | No | No |
| New Document Description | Text | No | No |
| Save In Folder | Folder | No | No |
| Existing Document | Document | No | No |

#### Configuring the Static Inputs

* Set the input “Create New Document” to create a new Appian document for the chart instead of creating a new version of an existing document. When setting the input “Create New Document” to TRUE, use the following inputs for the new document to be created
  + Use the input “New Document Name” to provide the name of the new document
  + Use the input “New Document Description” to provide the description of the new document
  + Use the input “Save In Folder” to specify in which folder the new document is created
* Set the input “Existing Document” to an existing document to specify that the new chart is created as a new version of this existing document instead of as a new document altogether
* Use the input “Chart Settings” to provide general settings to the chart. This input is a JSON String representing several settings as listed below

|  |  |  |
| --- | --- | --- |
| **Setting** | **Type** | **Description** |
| type | Text | **REQUIRED**.  Type of the chart. Available types are “LINE”, “COLUMN”, “PIE”, “DONUT |
| width | Integer | **REQUIRED**.  Width of the chart image |
| height | Integer | **REQUIRED**.  Height of the chart image |
| title | Text | Title to display on top of the chart |
| titleFontSize | Integer | Size of the font used to display the chart title |
| showTitle | Boolean | Set to TRUE to display the title. Set to FALSE to hide the title |
| xLabel | Text | Name/Label of the X axis |
| xLabelValues | Text Array | Values to display on the X axis |
| xLabelAngle | Integer | Rotation angle of the X label values. A positive number rotates the label values counterclockwise |
| yLabel | Text | Name/label of the Y axis |
| axisLabelFontSize | Integer | Size of the font used to display the label/title of the X and Y axis |
| axisValueFontSize | Integer | Size of the font used to display the values of the X and Y axis |
| showLegend | Boolean | Set to TRUE to show the chart legend. Set to FALSE to hide the chart legend. Default is TRUE |
| legendPosition | Text | Position of the chart legend relative to the chart. Set to “RIGHT” to display the legend to the right of the chart. Set to “BOTTOM” to display the legend under the chart. |
| legendFontSize | Integer | Size of the font used to display the chart legend. |
| yAxisMax | Number | Maximum value on the Y axis. Use this setting to manually increase the range of data displayed on the Y axis of the chart |
| showAnnotations | Boolean | Set to TRUE to show the annotations in the chart. For a COLUMN chart, the values of each column is shown above the columns |
| annotationsAngle | Integer | Rotation angle of the annotations. By default, the annotations are displayed horizontally from left to right. A value of 90 rotates the annotations 90 degrees to the left, displaying them vertically |
| annotationsFontSize | Integer | Size of the font used to display the annotations |

#### Configuring the Custom Inputs For the Chart Data

Custom inputs are created by adding new “Custom Inputs” to the list of inputs in the smart service. Custom inputs are used to create data series to display in the charts.

To create a new data serie

* Add a new custom input to the smart service
* Set the type of the custom input to “DataSeries”
* Set the data serie’s attributes as follow

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Type** | **Description** |
| name | Text | Name of the data serie. This is used by the chart legend |
| values | Number Array | Values of the data serie |
| settings | Text | JSON string representation of the settings of the data serie. The list of data serie settings is provided below |

##### Data Series Settings

|  |  |  |
| --- | --- | --- |
| **Setting** | **Type** | **Description** |
| marker | Text | **Only applies to charts of type “LINE”.**  Defines the type of marker to display on a line/data serie of a line chart.  Available values are “NONE”, “CIRCLE”, “DIAMOND”, “SQUARE”, “TRIANGLEDOWN”, “TRIANGLEUP”, “CROSS”, “PLUS”, “TRAPEZOID”, “OVAL”, “RECTANGLE” |
| color | Text | Hexadecimal value of the color to use to draw the serie in the chart. |

## Outputs

|  |  |  |
| --- | --- | --- |
| **Output** | **Type** | **Description** |
| Generated Chart | Document | Appian Document representing the chart image created by the smart service |

## Examples

### Line Chart

This example creates a line chart with 2 data series with different markers.

Chart Settings to configure in the smart service static input “Chart Settings”

{"width":500, "height":300, "type":"LINE", "title":"Sample Line Chart", "ylabel":"Label of the Y Axis", "xlabel":"Label of the X Axis", "xlabelvalues":["one", "2", "three"], "xlabelangle":30, "legendPosition":"bottom"}

First smart service custom input of type DataSeries to create a data serie with diamond shaped markers

'type!{http://types.appiancorp.com/ps}DataSeries'(name: "Serie 1",values: {1,2,3},settings: a!toJson({marker:"diamond"}))

Second smart service custom input of type DataSeries to create a data serie with circle shaped markers

'type!{http://types.appiancorp.com/ps}DataSeries'(name: "Serie 2",values: {2,3,1},settings: a!toJson({marker:"circle"}))

### Pie Chart

This example creates a pie chart with 5 data series with different colors.

Chart Settings to configure in the smart service static input “Chart Settings”

{"width":500, "height":300, "type":"PIE", "title":"Sample Pie Chart", "showTitle":"true", "titlefontsize":"20", "legendPosition":"bottom", "legendfontsize":10, "showlegend":true, "yaxismax":50.0, "showannotations":true, "annotationsangle":90, "annotationsfontsize":12}

First smart service custom input of type DataSeries to create a data serie with gold pie

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "Gold",

values: { 12 },

settings: a!toJson({ color: "d3a46a" }))

Second smart service custom input of type DataSeries to create a data serie with silver pie

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "Silver",

values: { 24 },

settings: a!toJson({ color: "c0c0c0" }))

Third smart service custom input of type DataSeries to create a data serie with platinum pie

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "Platinum",

values: { 36 },

settings: a!toJson({ color: "e5e1e6" }))

Fourth smart service custom input of type DataSeries to create a data serie with copper pie

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "Copper",

values: { 11 },

settings: a!toJson({ color: "e5e4e2" }))

Fifth smart service custom input of type DataSeries to create a data serie with silver pie

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "Zinc",

values: { 17 },

settings: a!toJson({ color: "92898a" }))

Donut Chart

This example creates a donut chart with 5 data series with different colors.

Chart Settings to configure in the smart service static input “Chart Settings”

{"width":500, "height":300, "type":"DONUT", "title":"Sample Donut Chart", "showtitle":"true", "titlefontsize":"20", "legendPosition":"bottom", "legendfontsize":10, "showlegend":true, "yaxismax":50.0, "showannotations":true, "annotationsangle":90, "annotationsfontsize":12,"donutthickness":0.6}

First smart service custom input of type DataSeries to create a data serie with A donut slice

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "A",

values: { 12 },

settings: a!toJson({ color: "dfbbb1" }))

Second smart service custom input of type DataSeries to create a data serie with B donut slice

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "B",

values: { 24 },

settings: a!toJson({ color: "f56476" }))

Third smart service custom input of type DataSeries to create a data serie with C donut slice

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "C",

values: { 36 },

settings: a!toJson({ color: "e43f6f" }))

Fourth smart service custom input of type DataSeries to create a data serie with D donut slice

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "D",

values: { 11 },

settings: a!toJson({ color: "be3e82" }))

Fifth smart service custom input of type DataSeries to create a data serie with E donut slice

'type!{http://types.appiancorp.com/ps}DataSeries'(

name: "E",

values: { 17 },

settings: a!toJson({ color: "5e4352" }))