



SAP DASHBOARDS

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About the Tutorial

SAP Dashboard is a SAP Business Objects Data Visualization Tool that is used to create interactive dashboards from different data sources. Dashboard allows BI developers to create custom dashboards from almost any data source to meet the business requirements in an organization. You can export the dashboard to PDF, PPT, etc.

This is a fundamental tutorial that covers the basics of SAP Dashboards and how to deal with its various components and sub-components.

Audience

This tutorial has been prepared for those professionals who wish to learn the basics as well as the refinements of SAP Dashboards and execute it in practice.

SAP Dashboard will be useful for BI Developers, Executive Managers and Information Consumers as it provides tools for Data Visualization, Enterprise Reporting, Business Objects Planning and consolidation, Enterprise Performance Management, Query and Analysis, Enterprise Information Management, etc.

This tutorial aims to make the reader comfortable in getting started with SAP Dashboard and its several other utilities.

Prerequisites

It is an elementary and straightforward tutorial which the readers can easily understand. The concepts are explained here with a basic knowledge of how a company or an organization deals with its various reports and Data. However, it will help if you have some prior exposure of charts, tables and working on MS Excel Workbook.

Additionally, it will also be good if the reader has knowledge of Flash files (.swf), Adobe PDF, Power Point Presentation etc. which will help them immensely in understanding this tutorial.

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1. SAP Dashboards – Introduction

In this chapter, we will begin with discussing about the basics of what SAP Dashboard is and how it evolved.

What is SAP Dashboard?

Dashboard designer is a SAP Business Objects Data Visualization Tool that is used to create interactive dashboards from different data sources. Dashboard designer allows BI developers to create custom dashboards from almost any type of data source to meet the business requirements in an organization.

Dashboards can include different graphs, charts and gauge that are based on the data provided by data sources. Dashboards are used by Senior Management that offers up to date information to information to company CEO's and VP's.

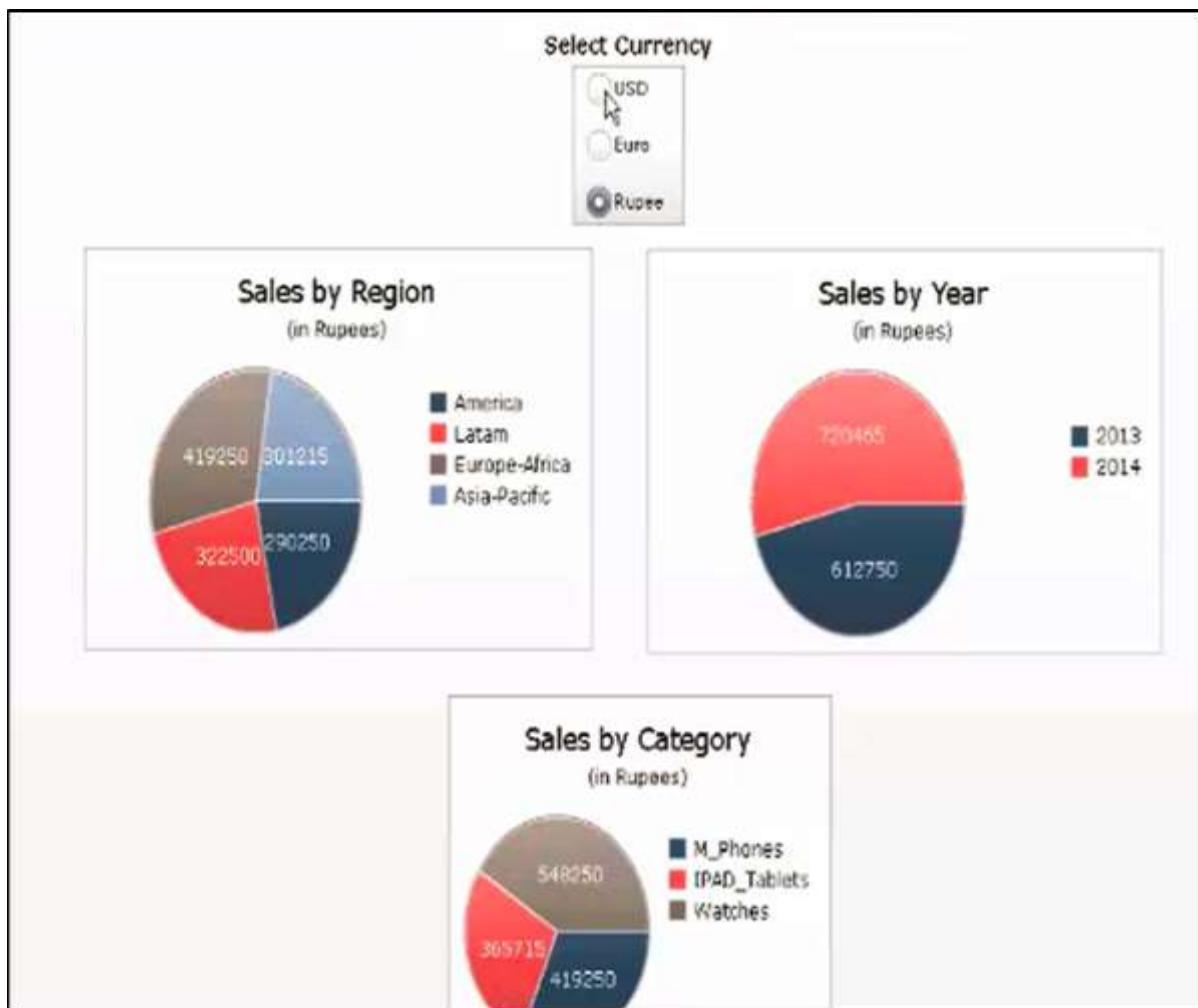
SAP Dashboard – Overview

Consider that you have been promoted to the position of CEO of a company and you want to head a board meeting that shows your company's annual sales growth in different regions.

SAP Business Objects allow you to create dynamic corporate Dashboards for business presentations that looks user interactive and provides the information in quick up to date summary form.

A Dashboard will contain –

- A tab that contains a dynamic chart that contains profit margin by product line, region and Year.
- A tab that contains a chart showing sales versus profit margin.



In the above image, a currency convertor option has been added, to see \$ by value in different currencies.

2. SAP Dashboards – Version

Earlier this Dashboard Designer was known as Xcelsius in SAP Business Objects 3.x version. It was also called Crystal Dashboard when Business Objects was not a product suite of SAP.

When Business Objects was acquired by SAP, the products were renamed as follows –

- BOXI 3.1 compatible Dashboard is called Xcelsius 2008.
- BOXI 4.0 compatible Dashboard is called Dashboard 4.0.
- BOXI 4.1 compatible Dashboard is called Dashboard 4.1.

SAP Dashboards Vs Design Studio

SAP Dashboards Designer and Design Studio both are excellent tools for creating dashboards and support advanced features. The selection to choose one over other purely depends on the client requirements and system landscape.

Features	Dashboards Designer	Design Studio
Chart Types	There are 22 charts of 16 types	34 charts of 12 types
Selectors	18 Selectors of 16 types	10 Selectors of 10 Types
Containers	7 Containers of 3 Types	5 Container of 5 Types
Maps	For 100 Countries	No Maps
Calendar	Calendar is available as table	Calendar is available as input field
Filter Panel	No filter Panel	Drilling and Filtering Capabilities

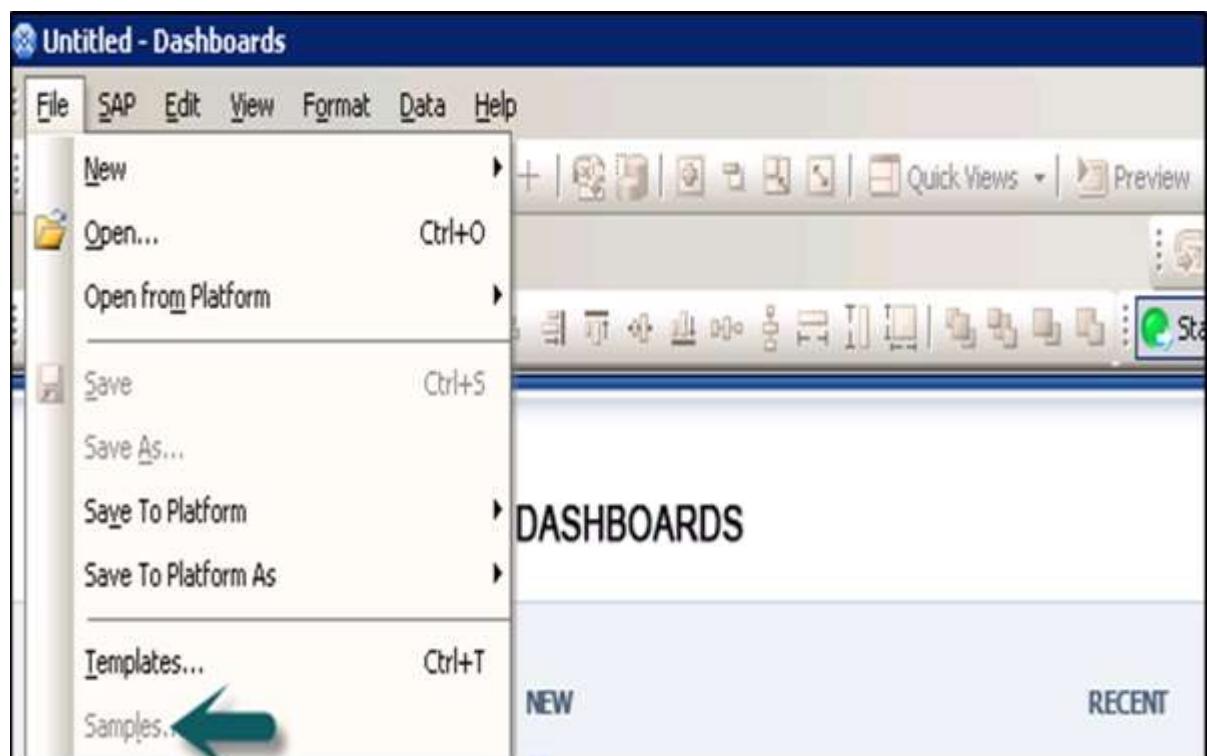
What-If Component	6 components	No components
Visualization Engine	Adobe Flash with HTML5 support	Native HTML with CSS
Design and Color Schemes	Multiple themes, customize using GUI	Basic themes, customized using CSS

Filtering	Basic	Advanced	Green
Parameterization	Basic	Advanced	Green
Drag and Drop	No	Yes*	Green
Report to Report Interface	No	Yes*	Green
Bex Utilization	Full	Full	Green
Hierarchies Utilization	Basic	Advanced	Green
What – If Scenarios	Yes	Only via BI IP functionality	Yellow
Context Menu in Crosstab	No	Yes*	Green
Planning (BI IP) Support	No	Yes	Green
Offline Analysis	Yes	No	Red
Reuse of Dash. Fragments	No	Yes*	Green
Export to PDF and Excel	Yes	Only Excel	Yellow

Sample Models

Sample models can be used to check how the different functions work in Dashboards and how you can use these functions in your own model. Each sample model includes own embedded spreadsheets data to check how different components are bound to data in spreadsheets.

You can check sample models in Dashboard by going to the File option at the top.



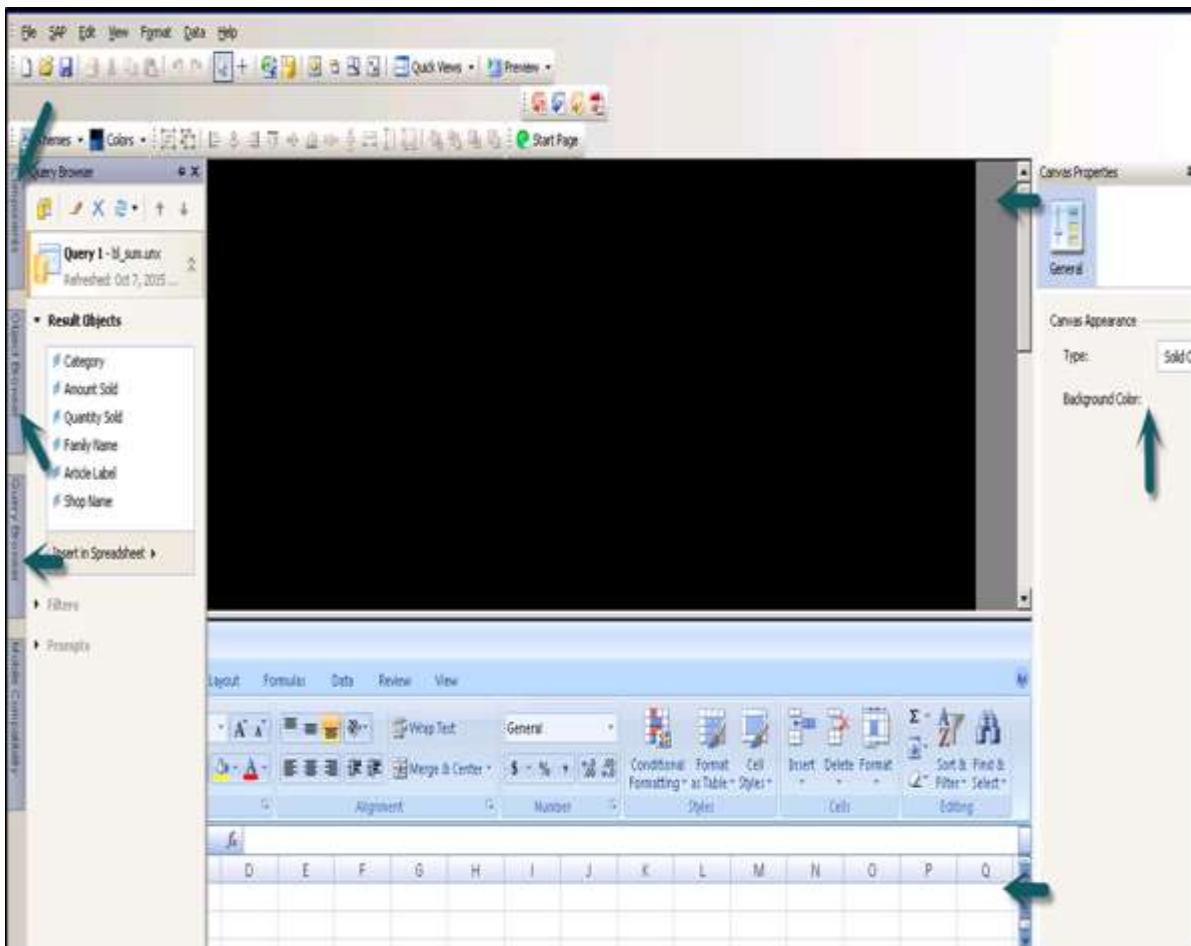
Under Category -> User Guide Samples -> Items list -> OK

3. SAP Dashboards – Workspace

In this chapter, we will discuss about the various tools and buttons that are available in SAP Dashboards.

The following image shows the most commonly used browsers available in the Dashboard designer:

- Component Browser
- Object Browser
- Query Browser
- Canvas
- Embedded Spreadsheets
- Properties Panel



There are five toolbars that you can use when working with models. These are –

- Standard
- Theme
- Export
- Format
- Start Page.

Standard Tool Bar

It contains a button for completing general tasks.



Theme Tool Bar

It contains buttons for working with themes.



Export Toolbar

It contains buttons for exporting your model to different formats.



Format Toolbar

It contains buttons for adjusting component on the canvas.



Start Page Toolbar

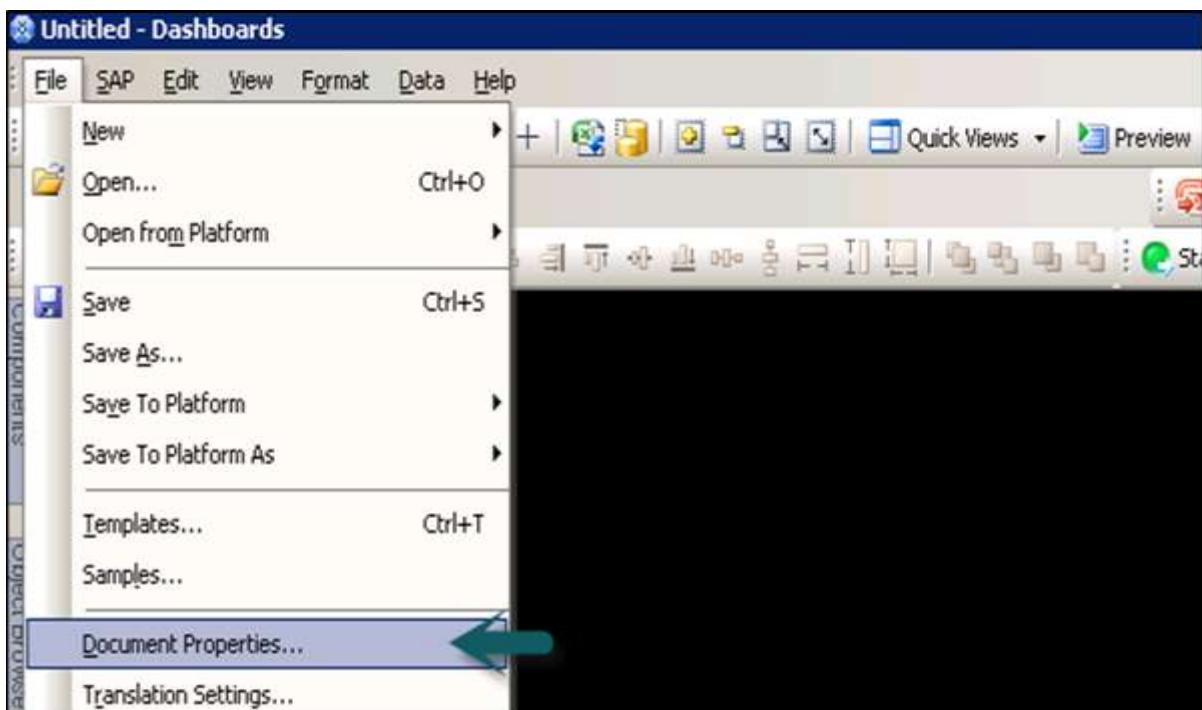
It contains one button that is used to toggle the start page. You can use shortcuts to create new files or to open existing files.



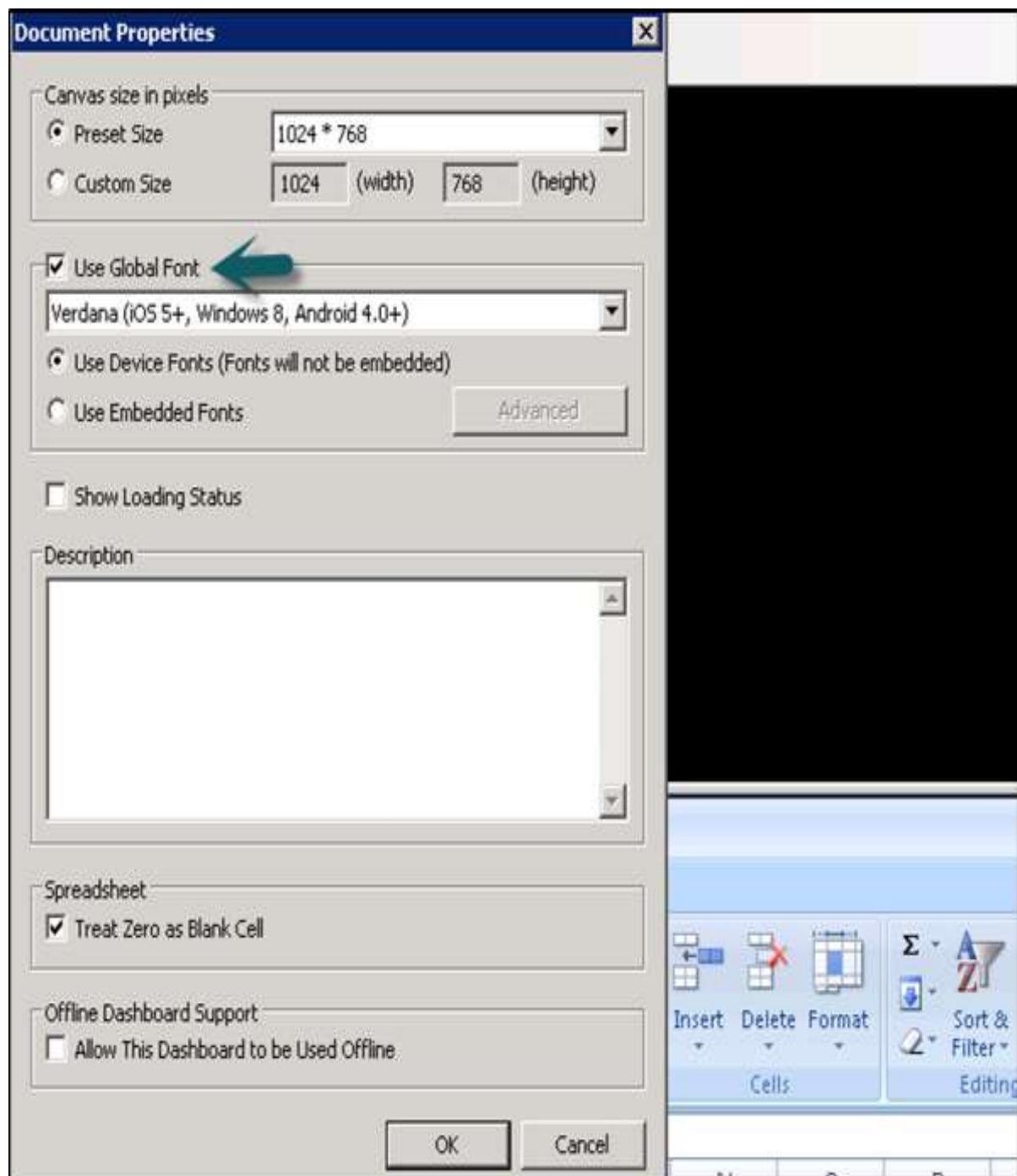
4. SAP Dashboards – Font Options

Different fonts can be set for different components. There is an option to setup the global font if you want to use the same font for all the components. This can be used on device fonts or on embedded fonts. When you use machine fonts, exported file is smaller and you can't rotate text. When embedded fonts are used, you can rotate the text but the file size will be large.

To set Global Font, go to **files -> Document Properties**.



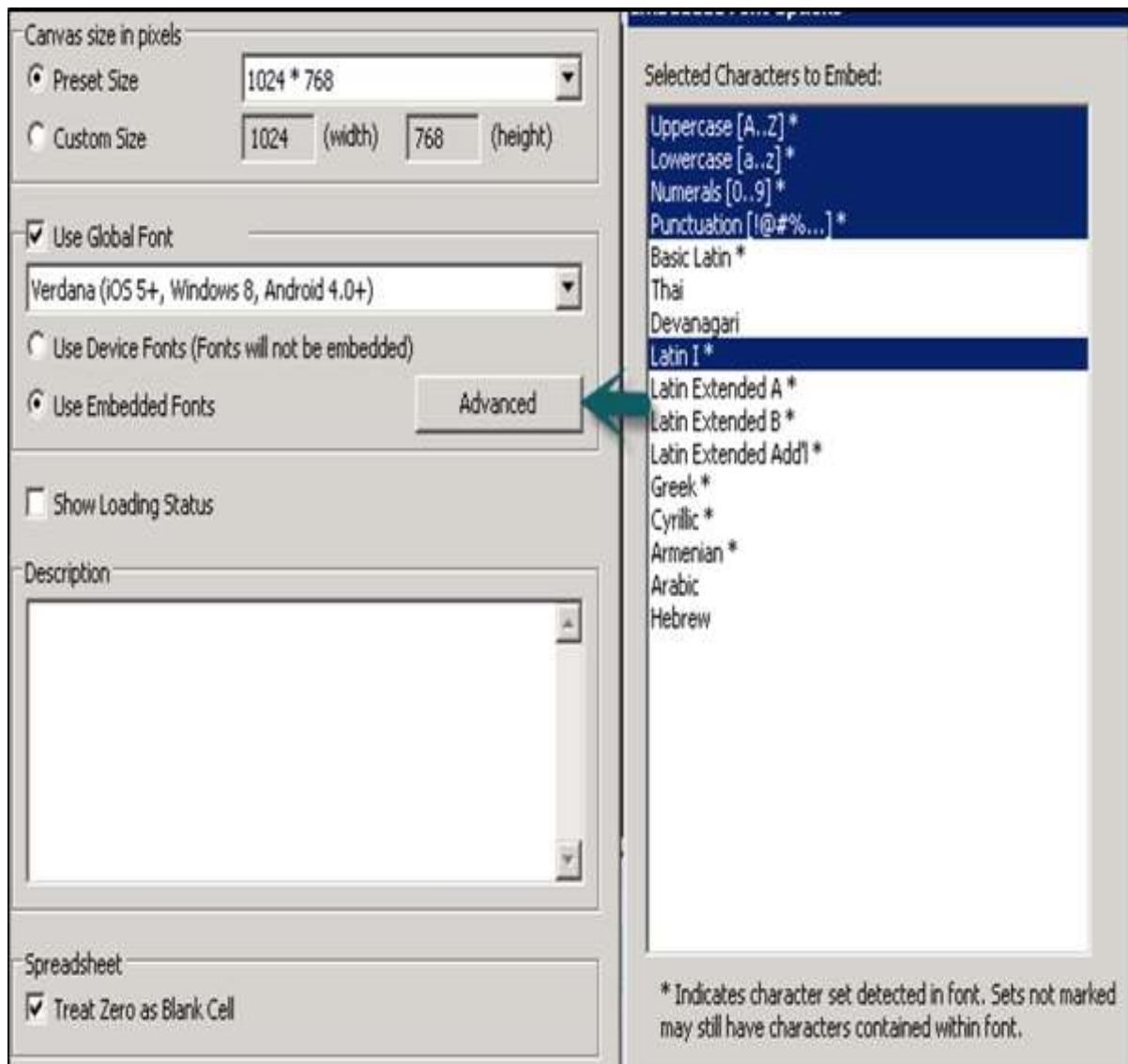
Click on use Global fonts and options for setting up the global font. It will be enabled as shown in the following screenshot –



From the list, you can select –

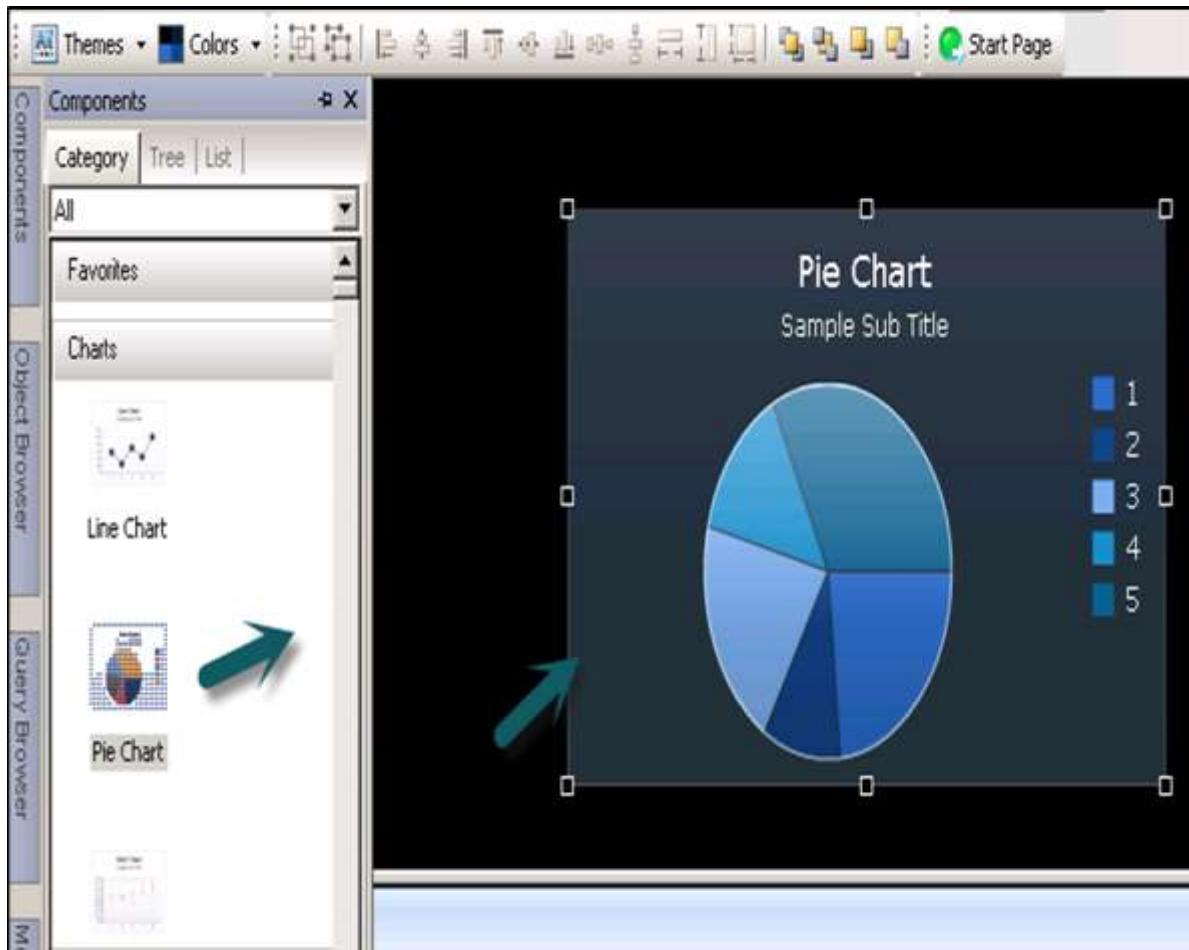
- Use Device Fonts (Fonts will not be embedded).
- Use Embedded Fonts.

In Embedded fonts, you can go to the advanced tab as shown in the following screenshot and then Click OK.



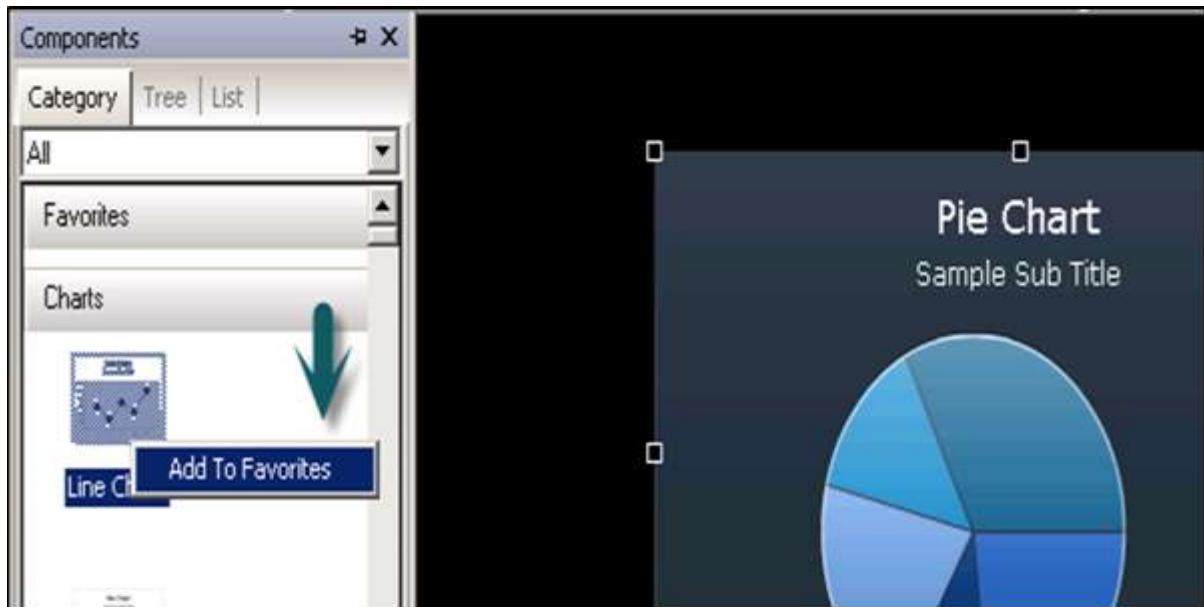
5. SAP Dashboards – Components Browser

This browser provides you with a list of all the components that are available to add to the model in Dashboard. You can drag these components to Canvas.

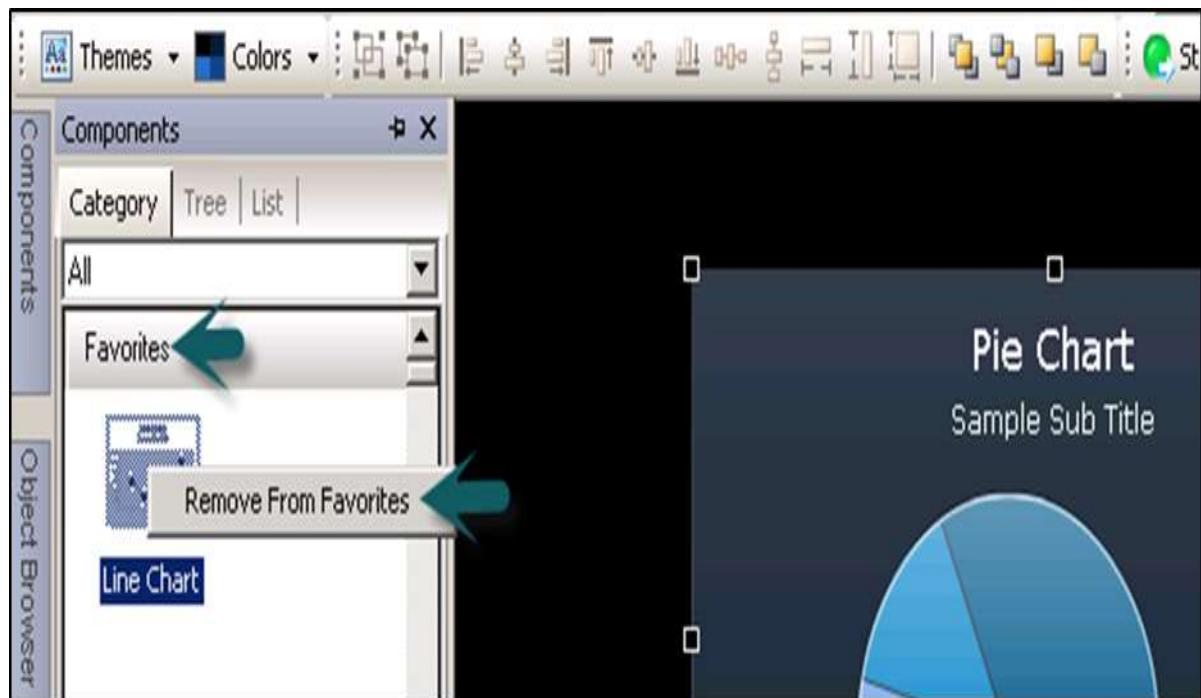


You can also view the components under **Tree and List** as per the functional category.

Favorites: These are available under Category and Tree view. To add a component to Favorite, right click on the component -> Add to Favorites.



Once you add a component to Favorite, you can see it under the Favorite tab. To remove the component, right click -> Remove from Favorites as shown in the following screenshot.



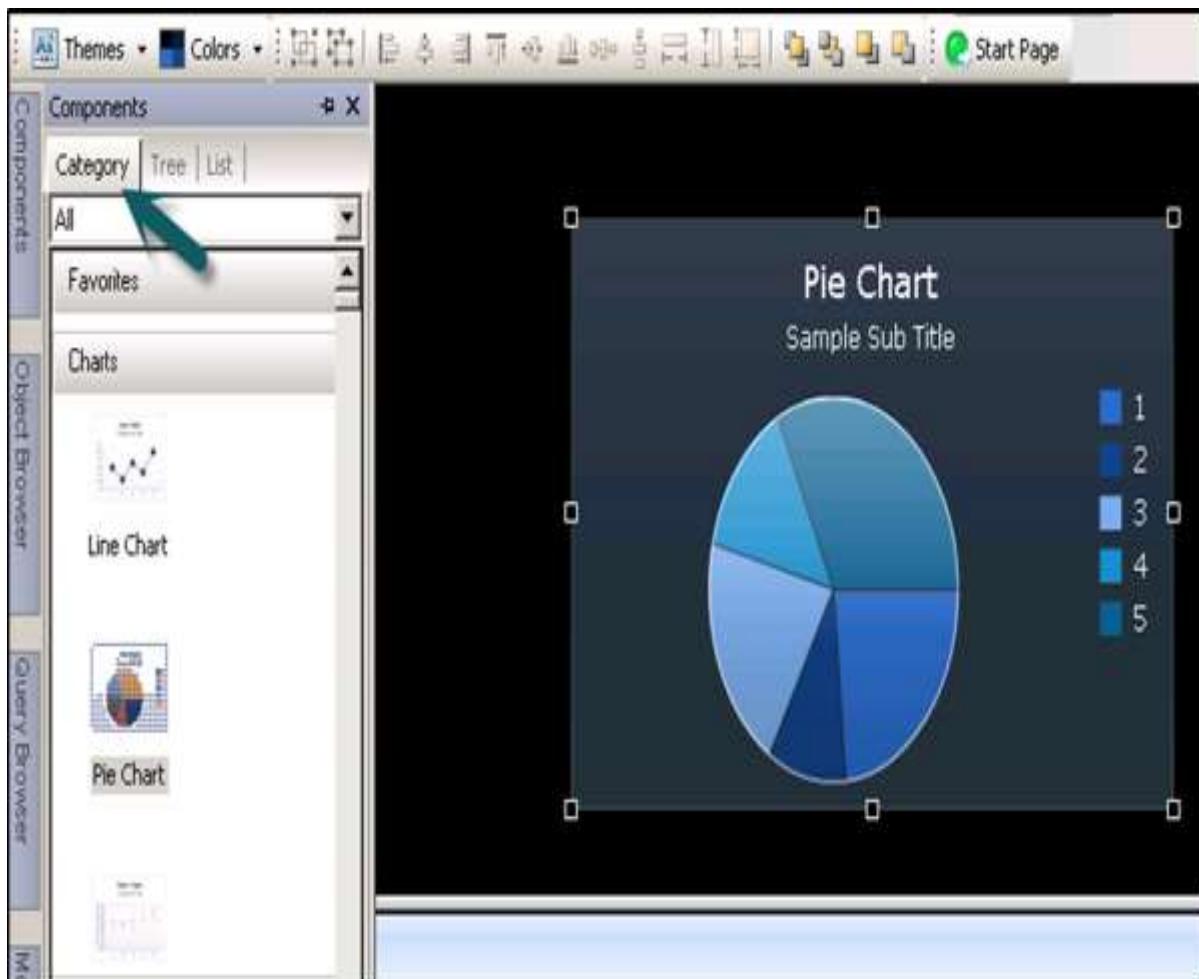
Charts: Charts are used to perform comparison, trend and patterns.

Containers: Container components group and display other components.

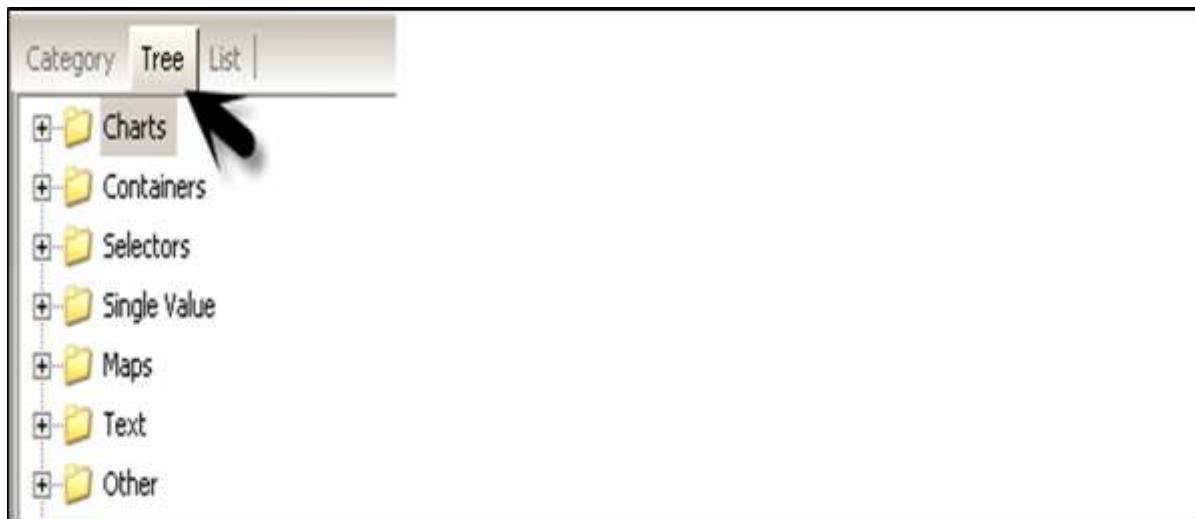
Selectors: It allows dashboard consumer to select data at run time.

Maps: It is used to display data by region.

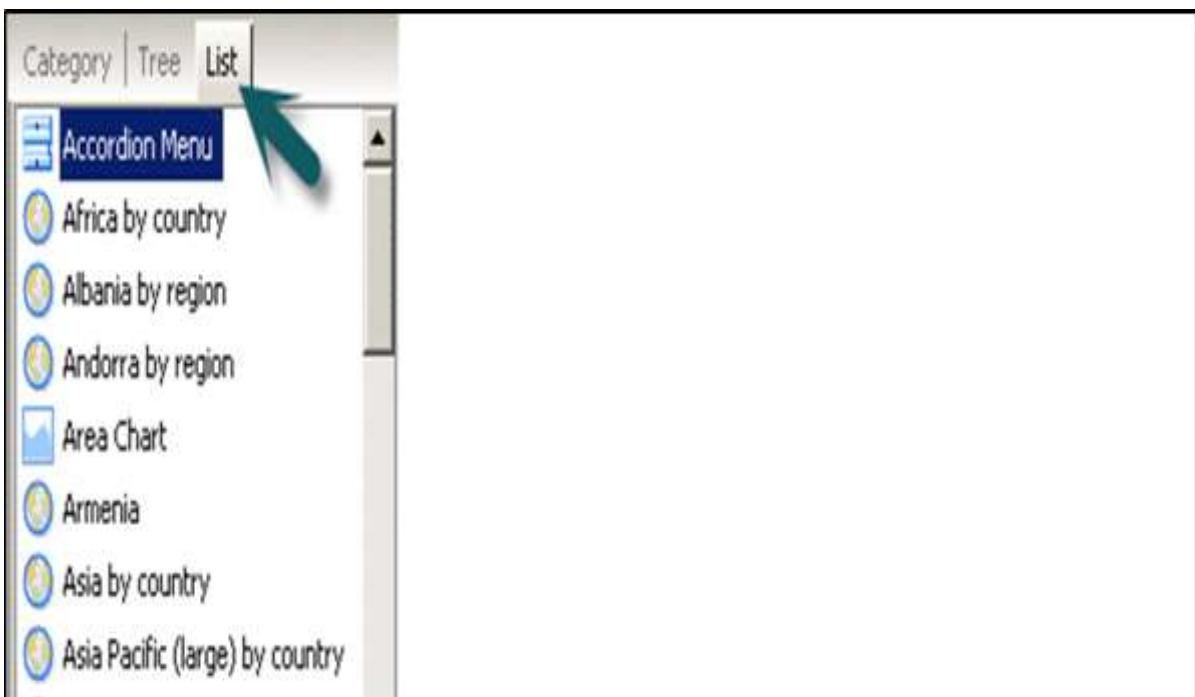
Category View: Components are grouped in a sliding view and you can scroll down to open each category.



Tree View: In tree view, the components are organized in folders as per their category. You can click on the folders to see what all categories are there and check the list of available components as well.

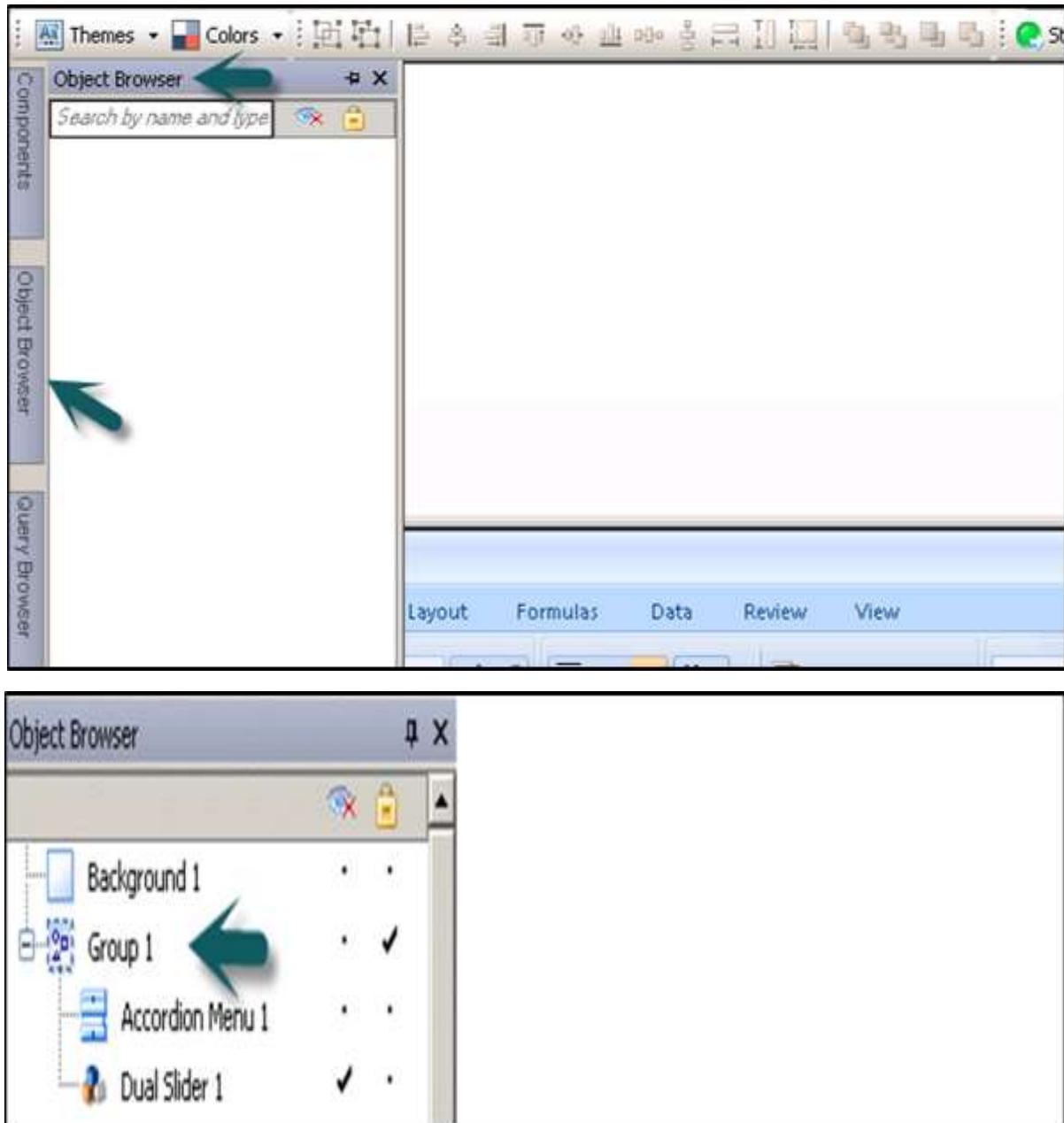


List View: In list view, the components are arranged in alphabetical order and they are not grouped based on the category.



6. SAP Dashboards – Object Browser

An Object Browser provides you with list of all the available components that you can add to your model. You can use Object Browser to add and change these components and to lock or hide the components in the canvas.



To select a component in the Object Browser, click the component name to make it active on the canvas. To select multiple components, you can use the CTRL key.

Renaming and Hiding the Components

You can also rename a component that you add to the Canvas in Object Browser. Click on the component that you want to rename. The name is highlighted and the cursor is in the text box. Enter the name of the component and press ENTER.

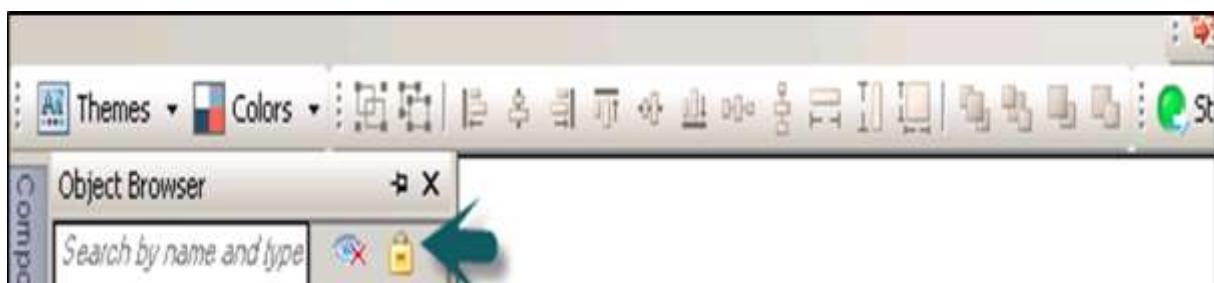
You can hide the components on the Canvas to prevent any interaction with them. To hide or show all the components in the Object Browser, do the following –



Locking the Components

You can also lock the components and groups in the Canvas so that they can't be used in the model.

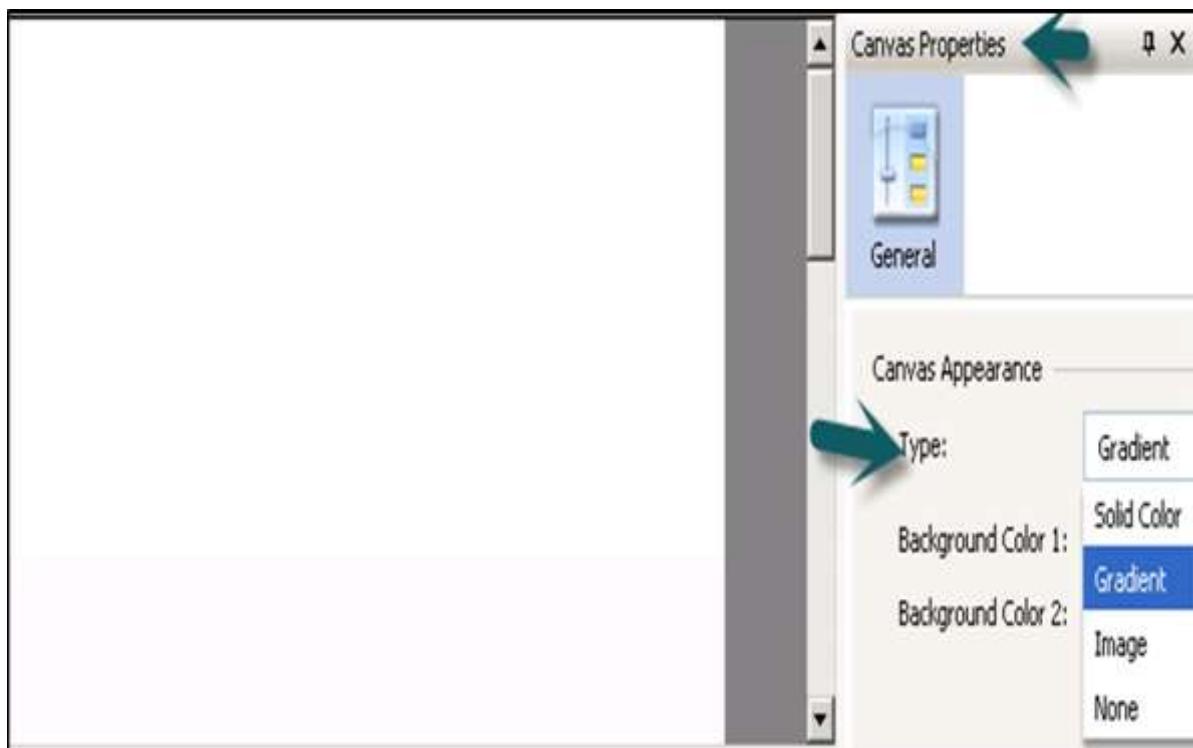
To lock all the components or group, you can click on the lock icon.



Setting up the Canvas Background

You can change the color of the canvas background and can add grid to help you arrange items on the Canvas. You can adjust the size of the canvas to get more space to work. You can set the canvas background as solid or gradient background.

To set a transparent background, under the Canvas properties, select type as None. If you can't see the Canvas property pane, open a model. You can set the following value for type:

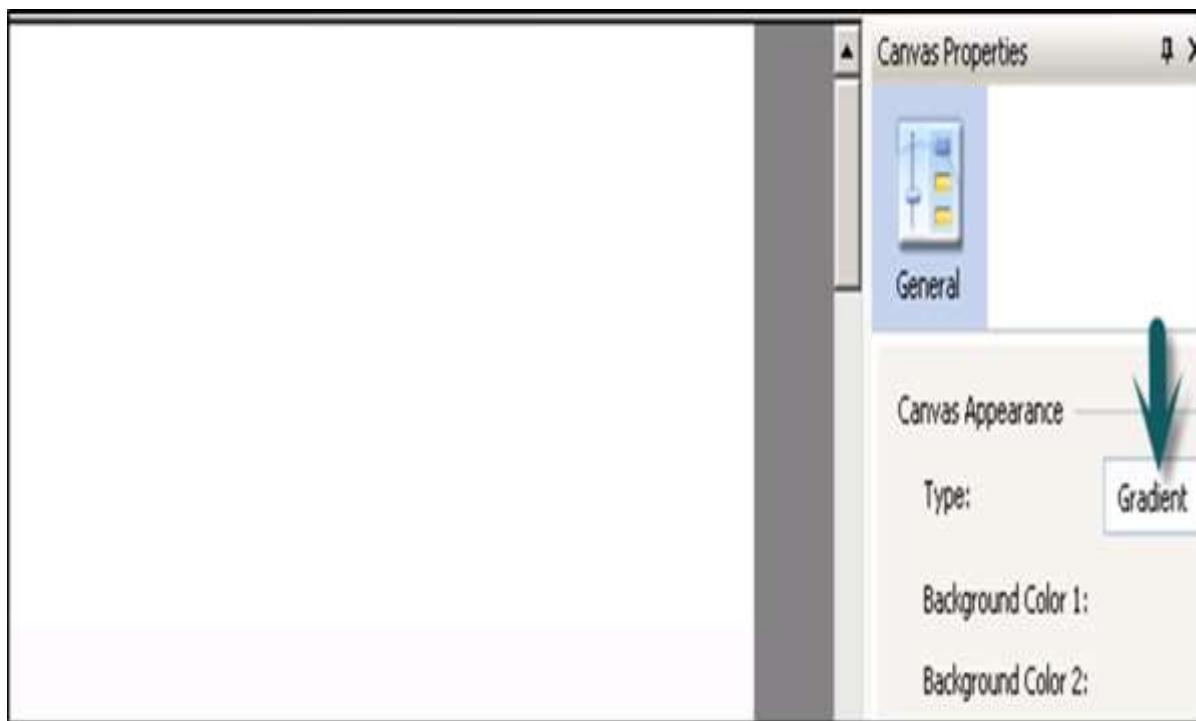


Solid	A single solid color
Gradient	Two colors that fade together from top to bottom
Image	A JPG or SWF file. Select the file to import as the background
None	A transparent background

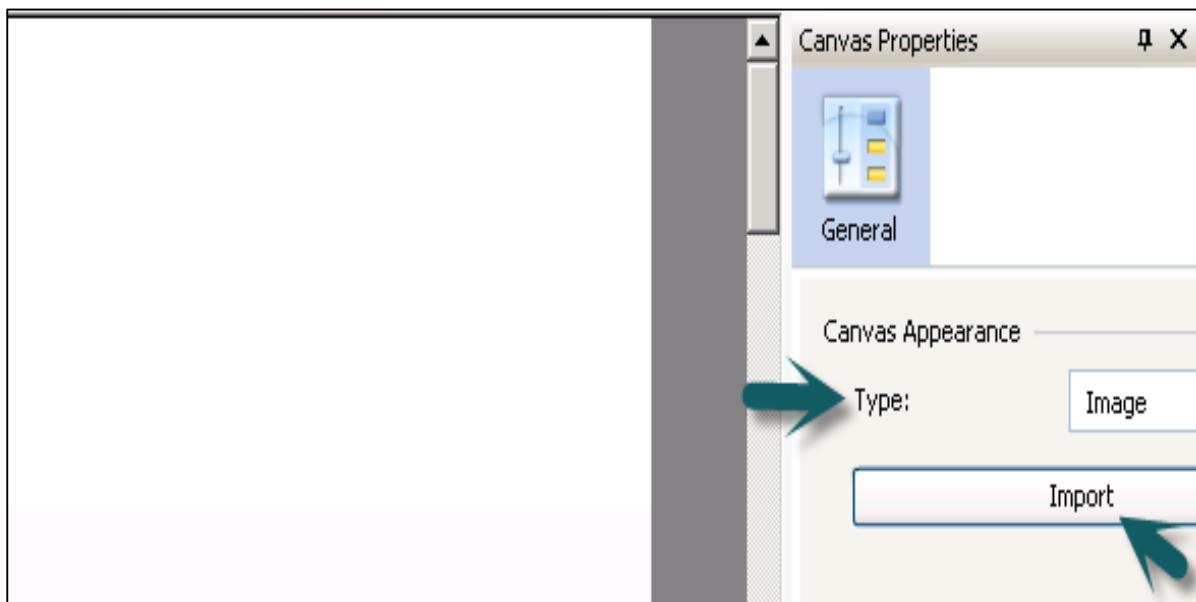
Background Color

When you select solid or gradient type, you can select the background color box to set the colors to be used in the background.

For Solid Background, select a single color and for Gradient background select Background color 1 and Background color 2.



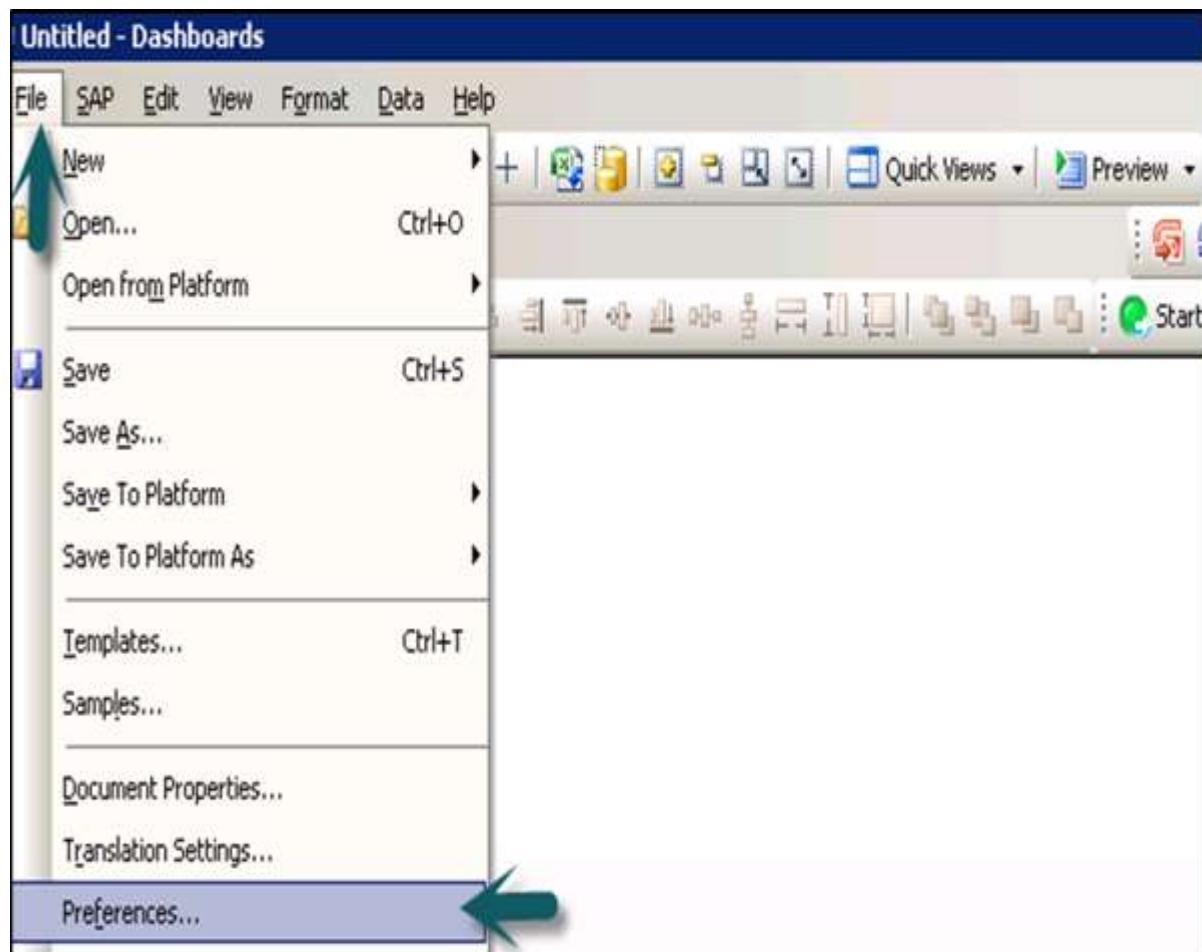
When you select type as Image, you can get an import option to add an image from your local computer. You can add a background in your data model that may match your company logo or any other image represents objective of the model.



Display Grid on Canvas with Components

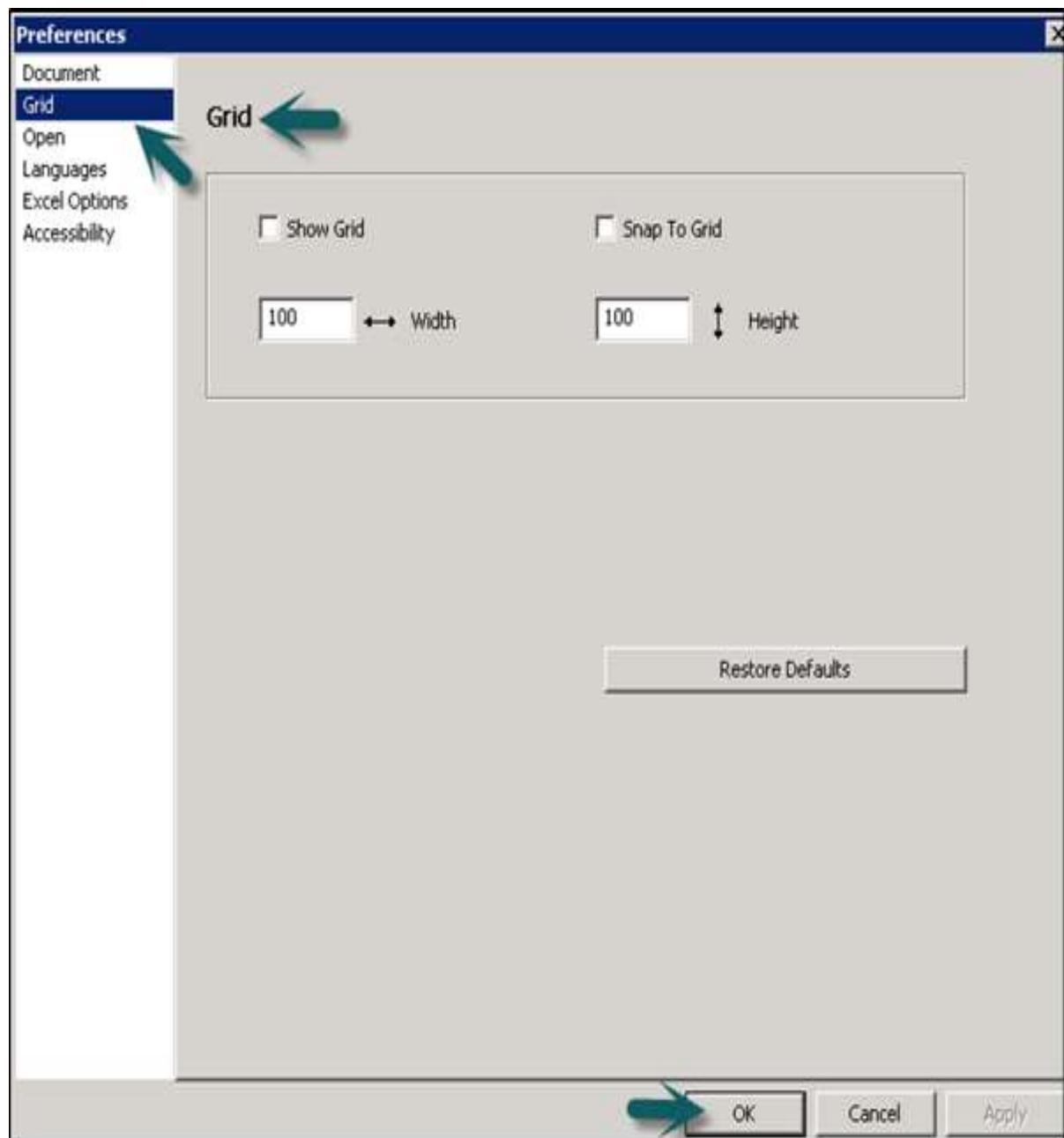
You can also line items along with gridlines. You can use grid manually to position each component.

Go to **File -> Preferences** –



On the left side, select Grid and you can choose from the following options –

Show Grid	Select to display a grid on the canvas.
Snap To Grid	Select to have components automatically align to the nearest gridlines.
Width	Specify the spacing between grid columns in pixels.
Height	Specify the spacing between grid rows in pixels.

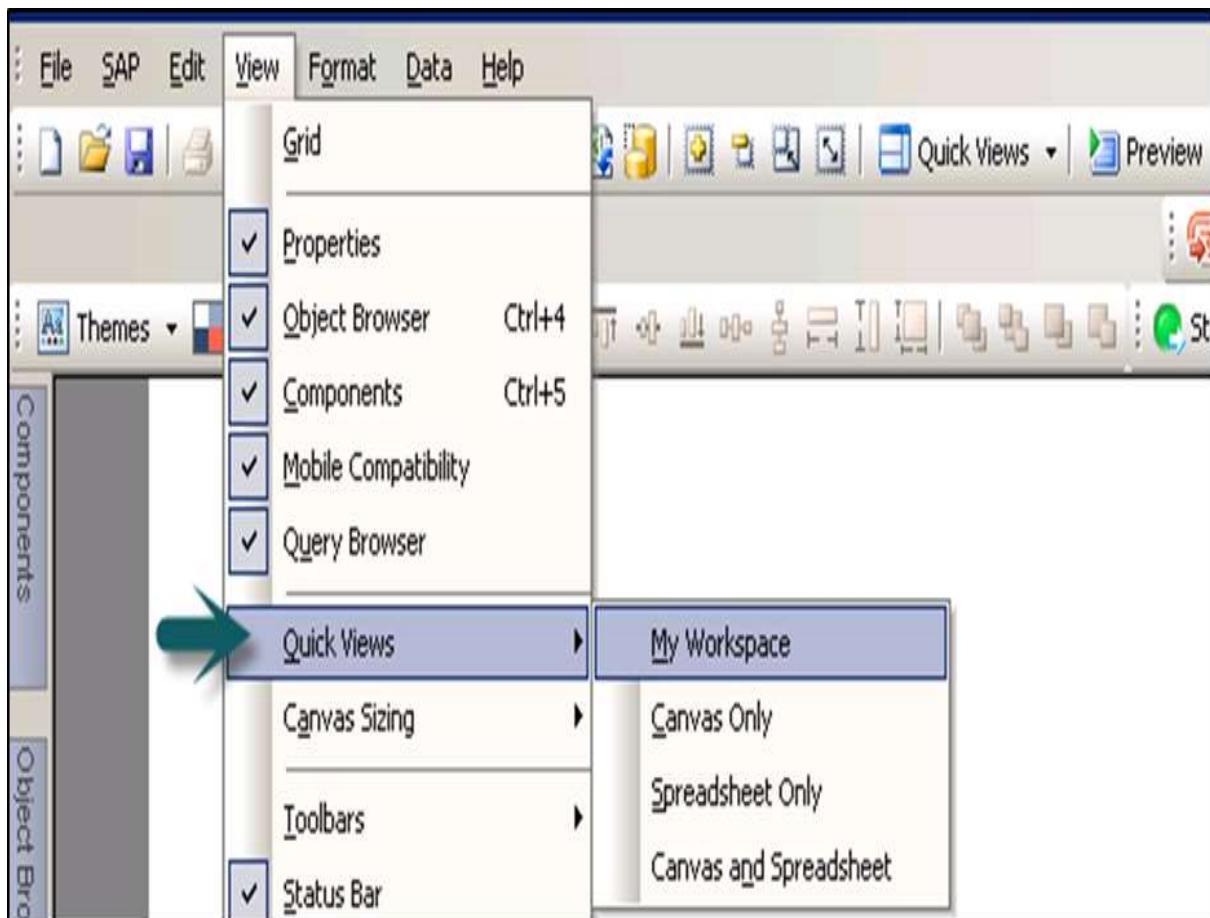


7. SAP Dashboards – Quick Views

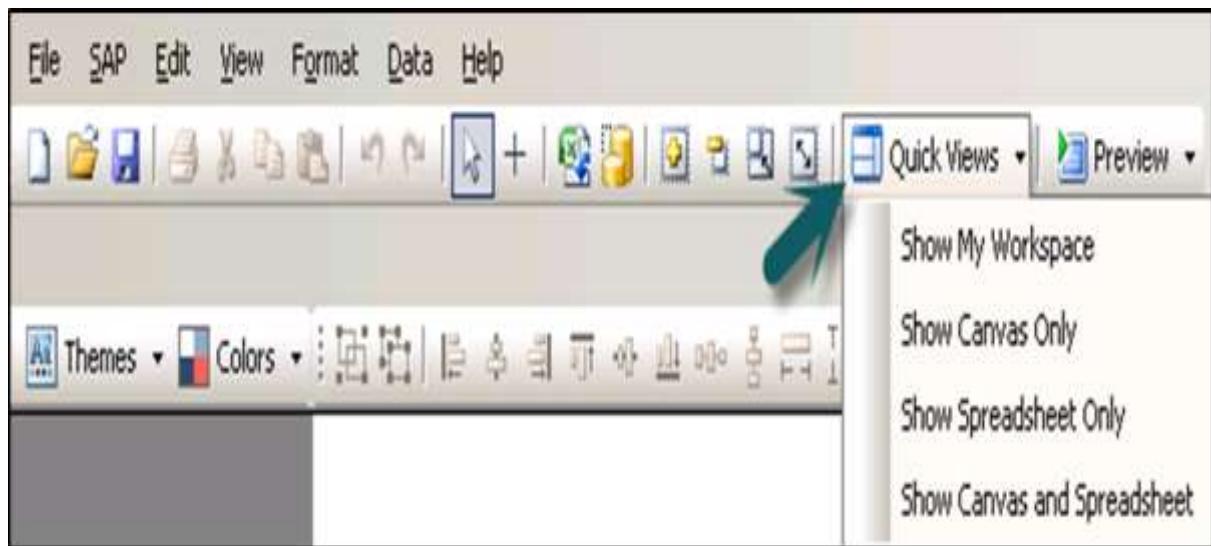
In this chapter, we will discuss what Quick Views are and how is it beneficial to SAP Dashboards.

Ways to Access Quick Views

To quickly access different views in the Dashboard, you can use the Quick Views option. Go to **View -> Quick Views**.

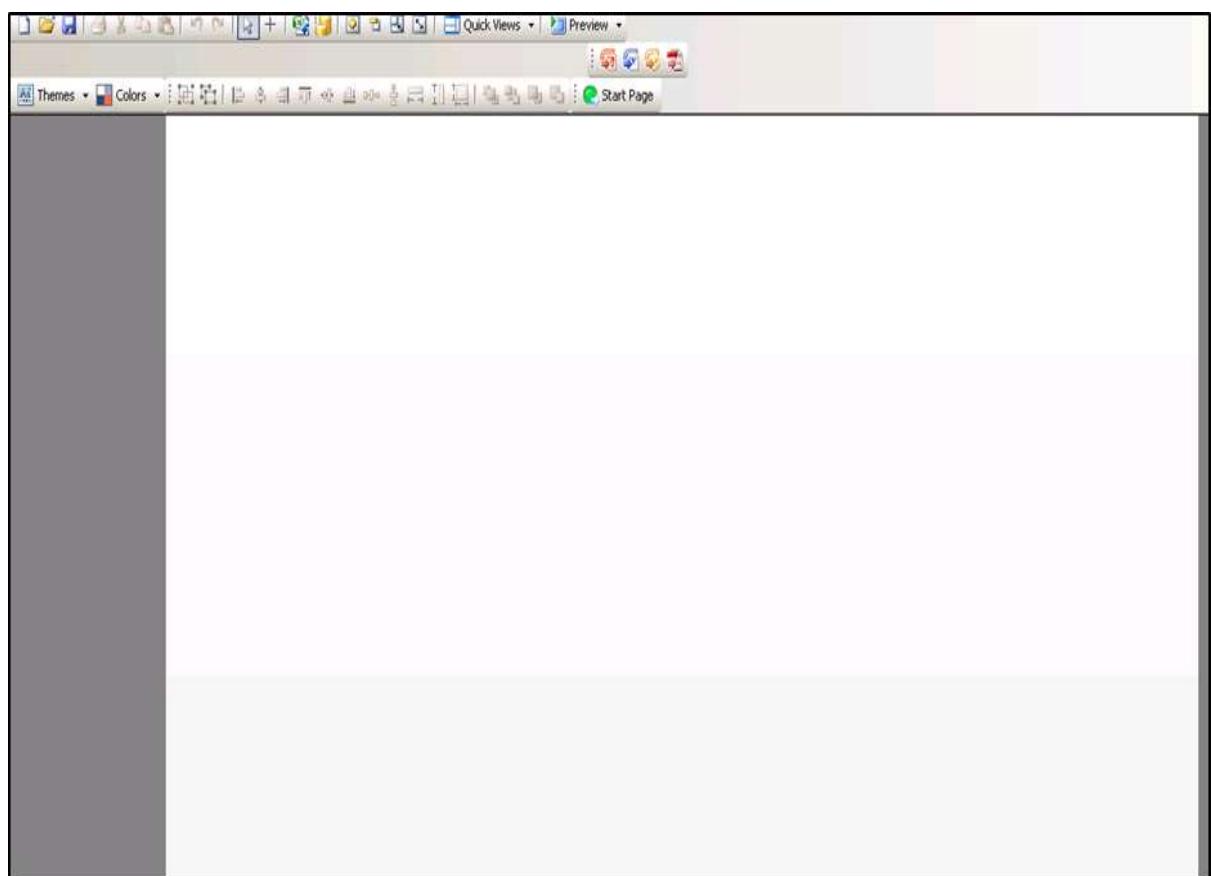


You can also access Quick Views by going to the Standard Tool Bar as shown in the following screenshot.

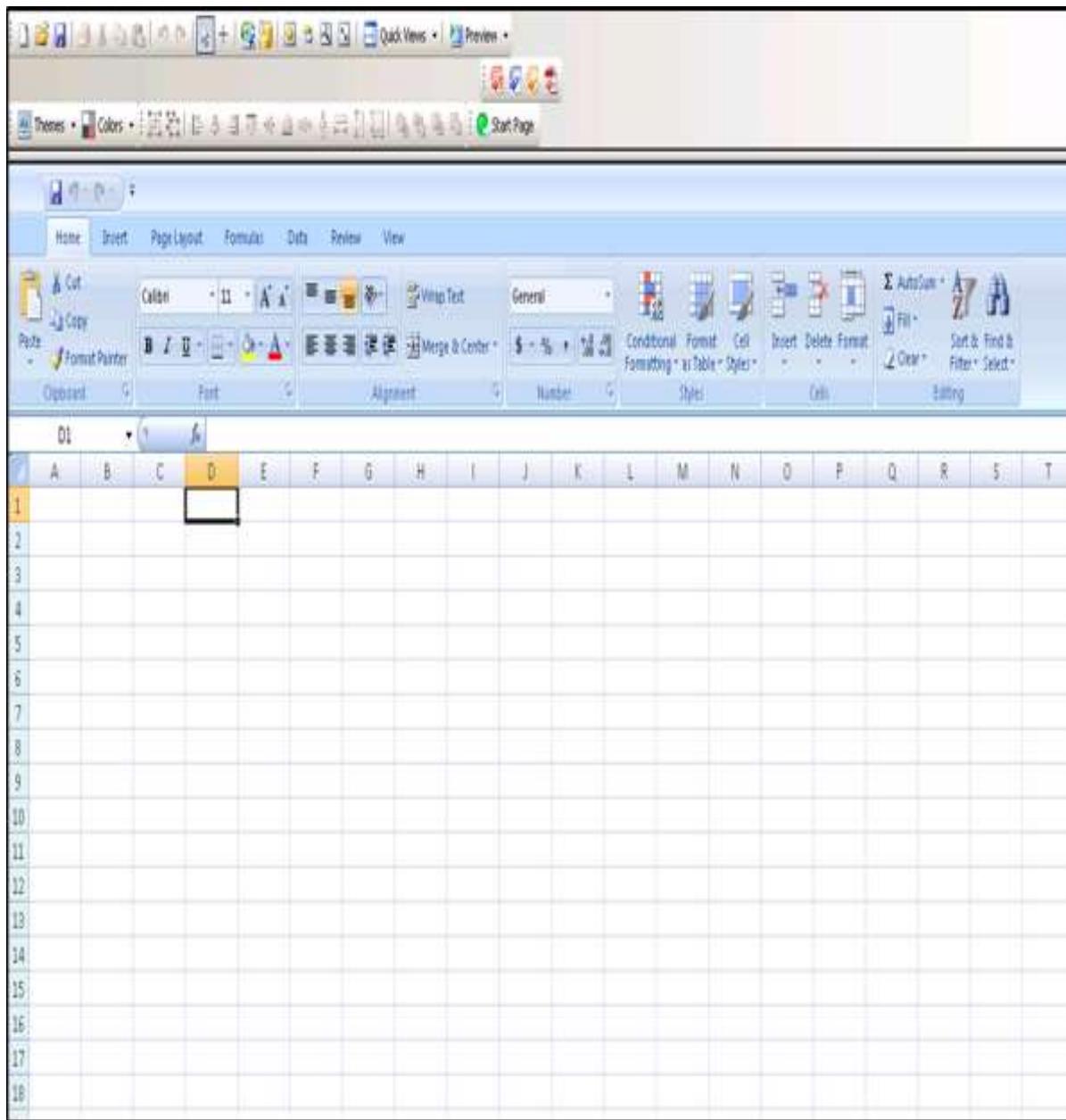


My Workspace: This is used to view workspace as you last configured it.

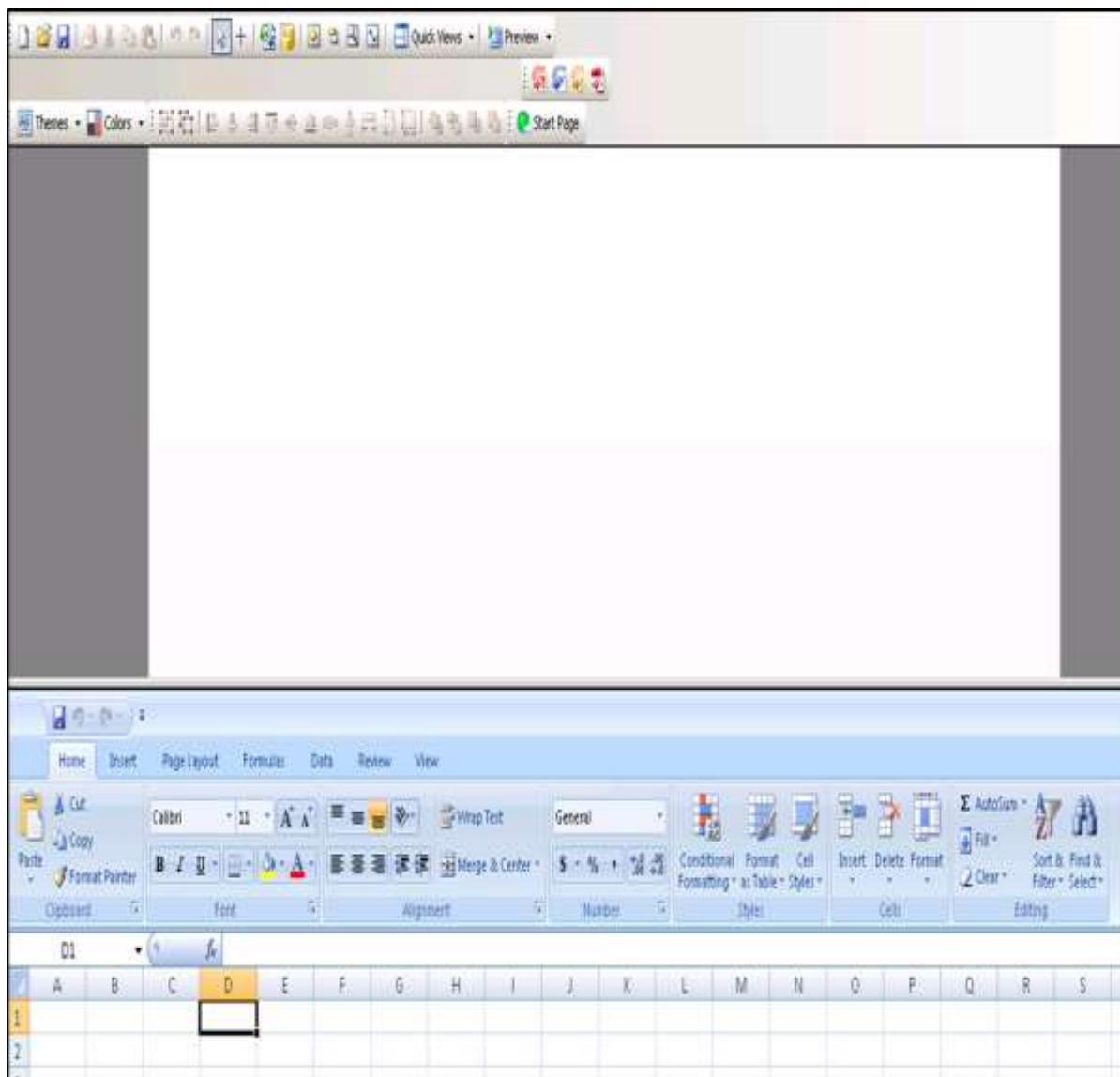
Canvas Only: This view can be selected to arrange components on Canvas while designing your model.



Spreadsheet Only: This view is used to display spreadsheet. It is useful to see the correctness of data, creating blank cells, or to put formulas. You can perform a search easily in case of large size spreadsheets.



Canvas and Spreadsheet: This is used to view Canvas and spreadsheet so that you can get more space to select components and to bind them to spreadsheets.



Using Auto-Hide

The auto-hide feature is used to automatically hide the panels when they are not in use. This function is available for the following components –

- Property
- Object Browser
- Component Browser
- Query Browser



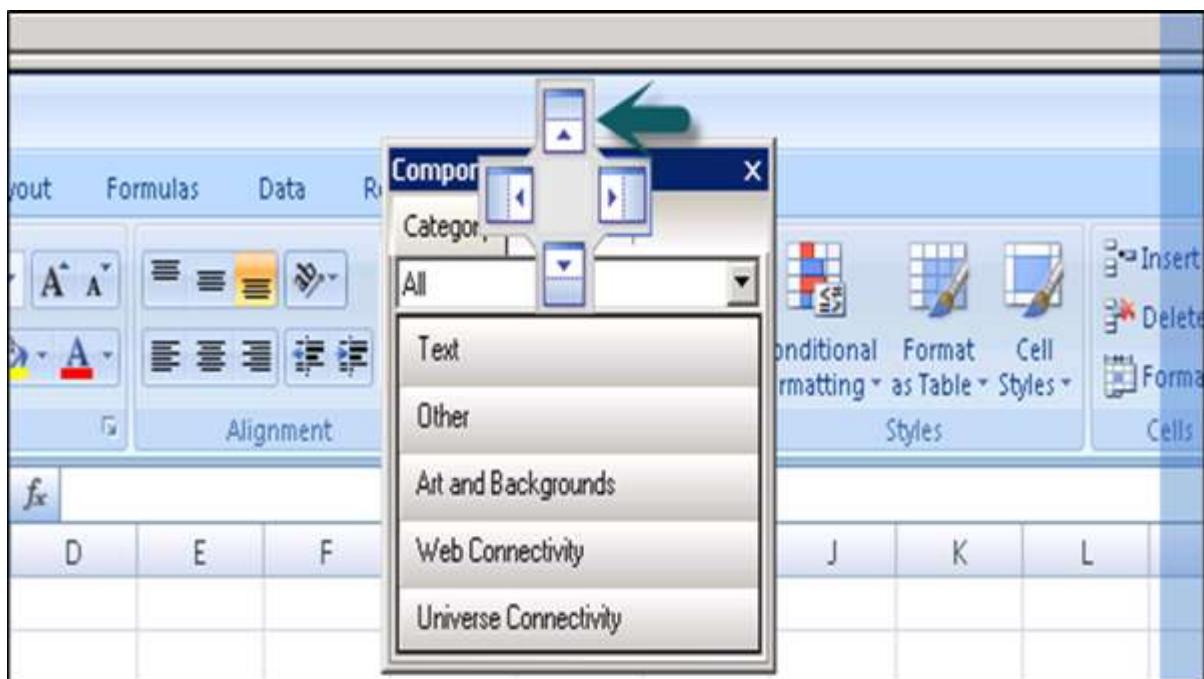
When you have auto hide enabled, a panel will automatically collapse when you point the cursor outside the panel. You can again expand a panel by clicking on the panel name in the workspace area.

8. SAP Dashboards – Docking/Undocking

It is also possible to move the Object Browser, Components Browser, Query Browser and the Properties Panel from their default locations. To dock a component, you have to click on top of the panel and drag it to the docking icon. To move a component, you have to first remove auto hiding.



Each item has a unique docking location. The symbol represents all the possible locations where you can dock the component.

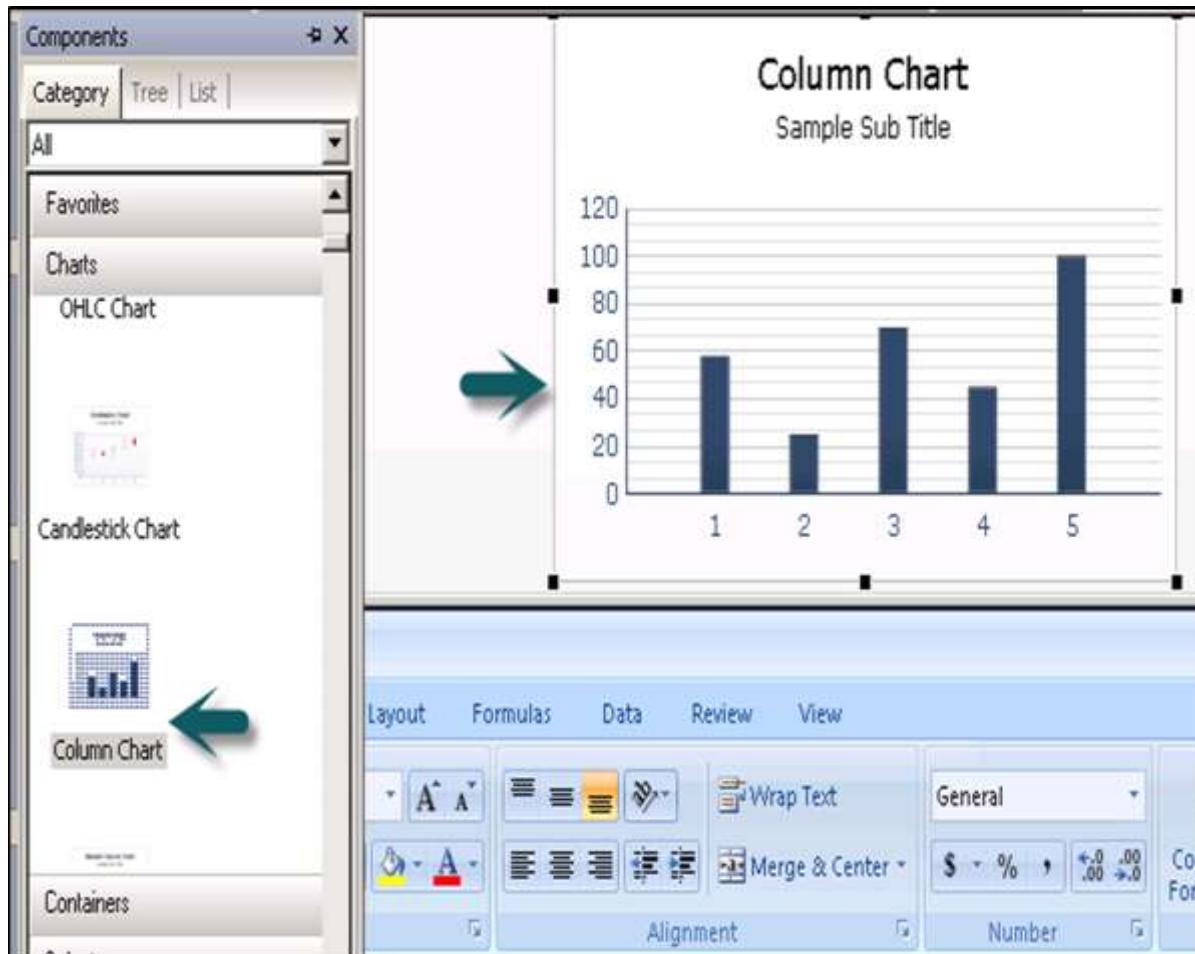


If you want to undock a panel, you can drag the panel to any place away from the docking icon.

9. SAP Dashboards – Working with Components

Components are defined as visual elements in your dashboard. You can categorize components by functions like charts, selectors, maps, and other categories. You can link components to a query in the query browser or to cells that are there in the spreadsheet.

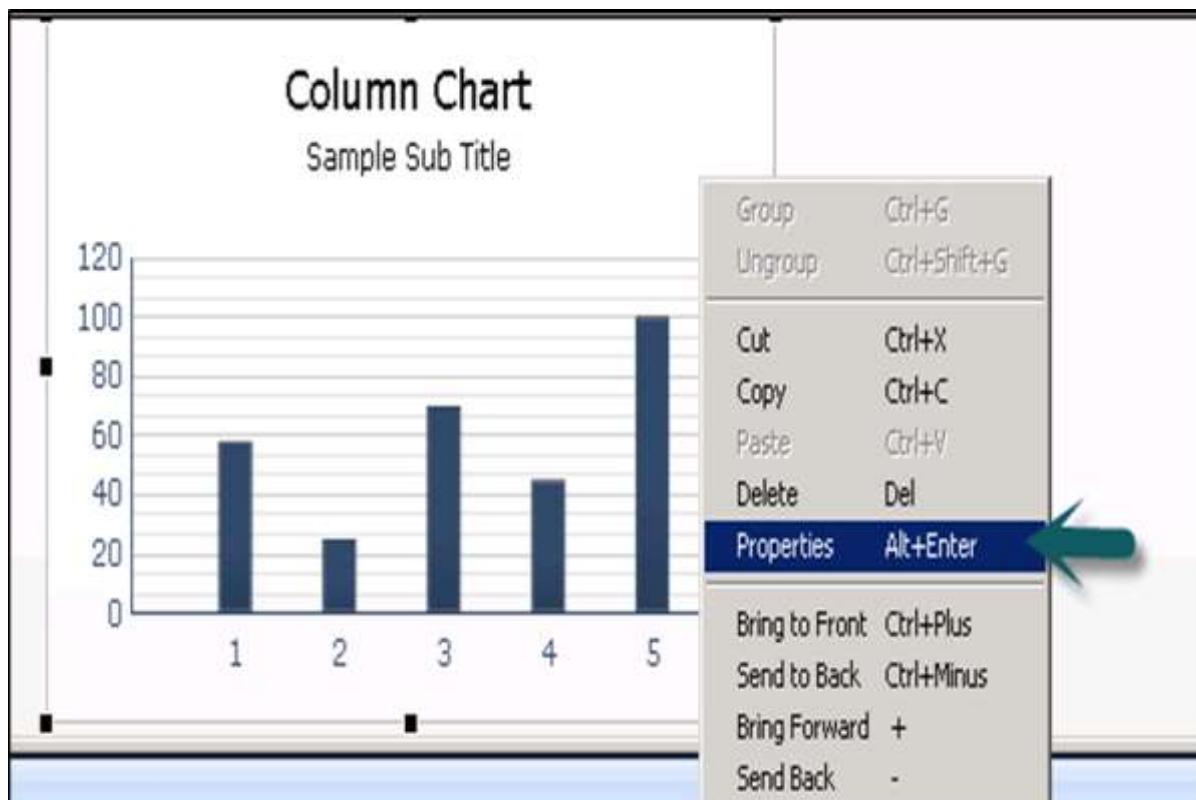
Components can receive data from queries or a cell or you can also return the data to a query or cells in the spreadsheets.



10. SAP Dashboards – Properties Panel

You can use the Properties Panel for settings and format options for the selected component. After you place a component on the Canvas, properties panel can be accessed using the following method.

Double click the components that you have added to the Canvas or you can right click -> Properties as shown in the following screenshot.



Properties panel can be accessed for each component but the options available under Properties varies as per the component.

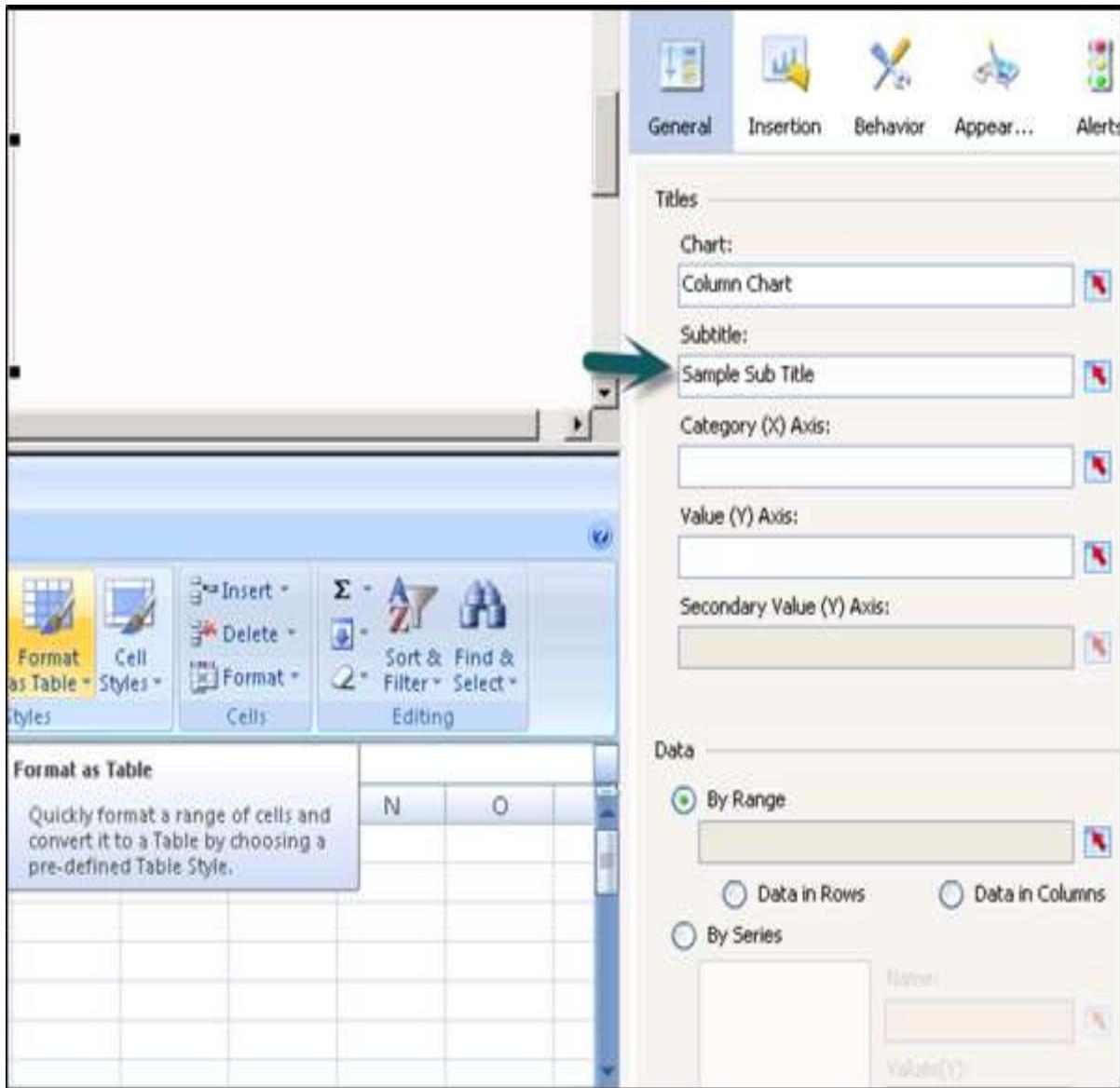


Types of Tabs in the Properties Pane

The following tabs are there in the Properties pane and each tab contains sub-tabs to set more properties.

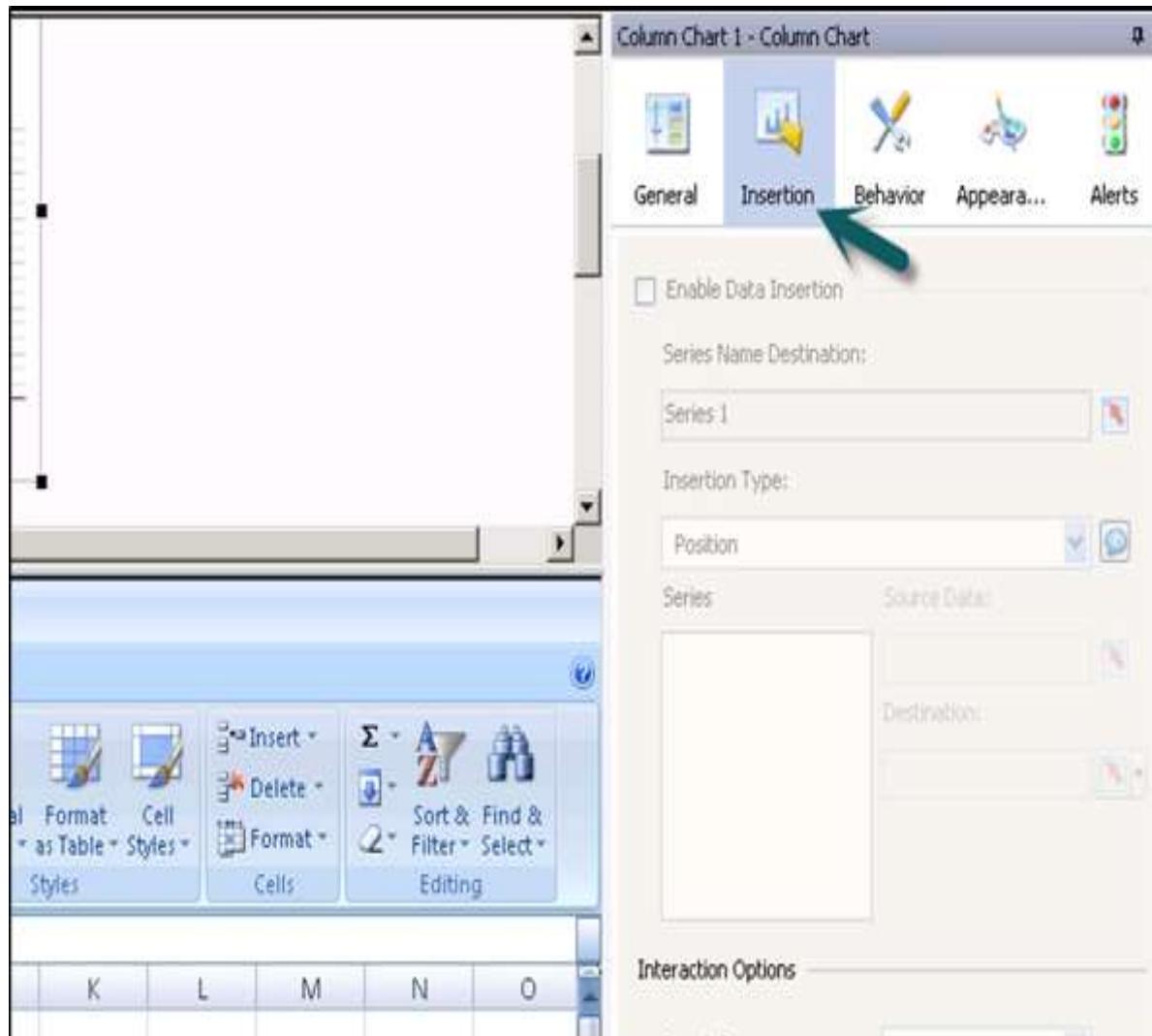
General

This tab is used to set the basic configuration properties of the component like Subtitle, source, category and value axis, etc.



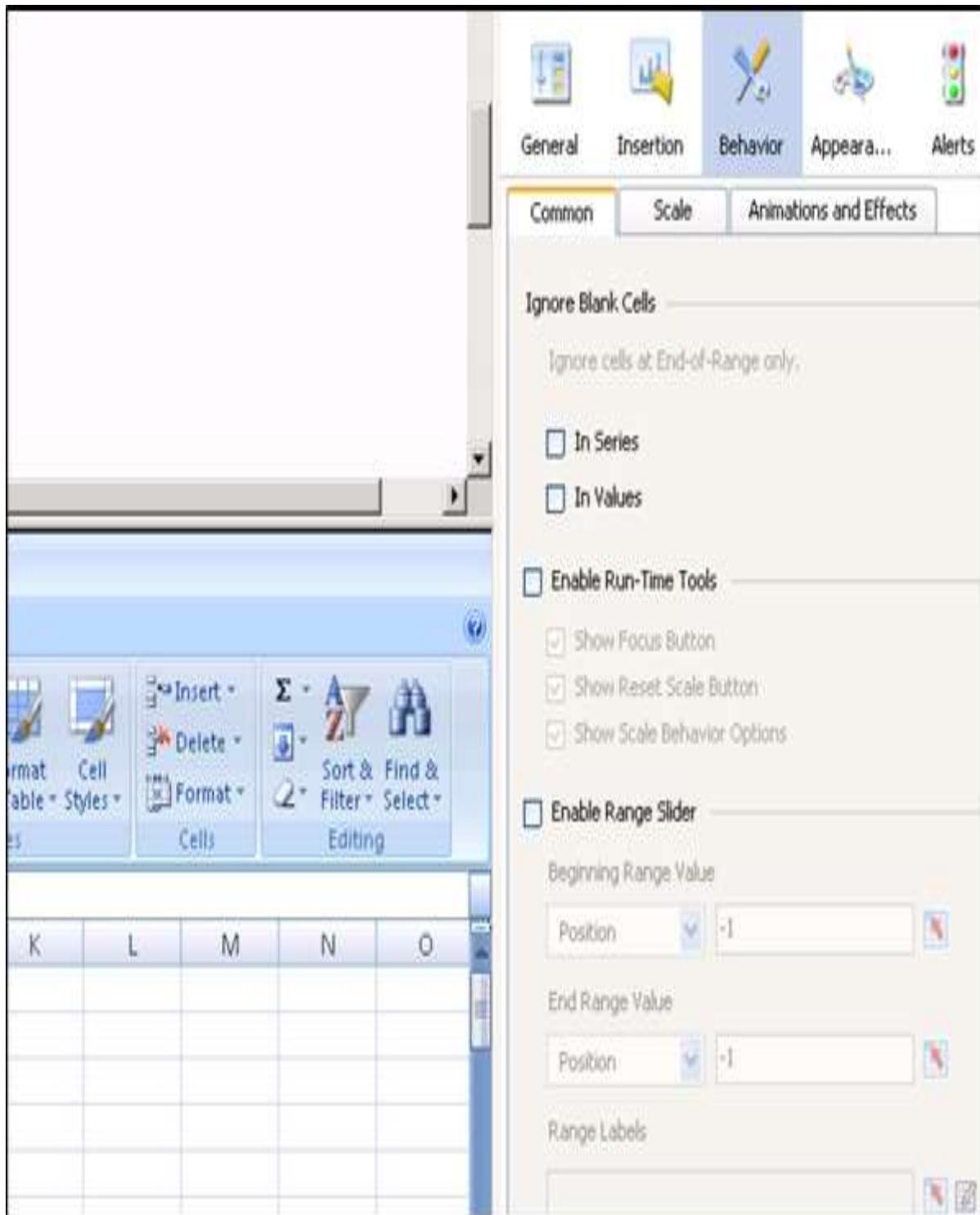
Insertion

This is available for charts and hierarchical tables. You can use this to configure charts as selectors so that clicking a chart adds more detailed information into the embedded spreadsheet.



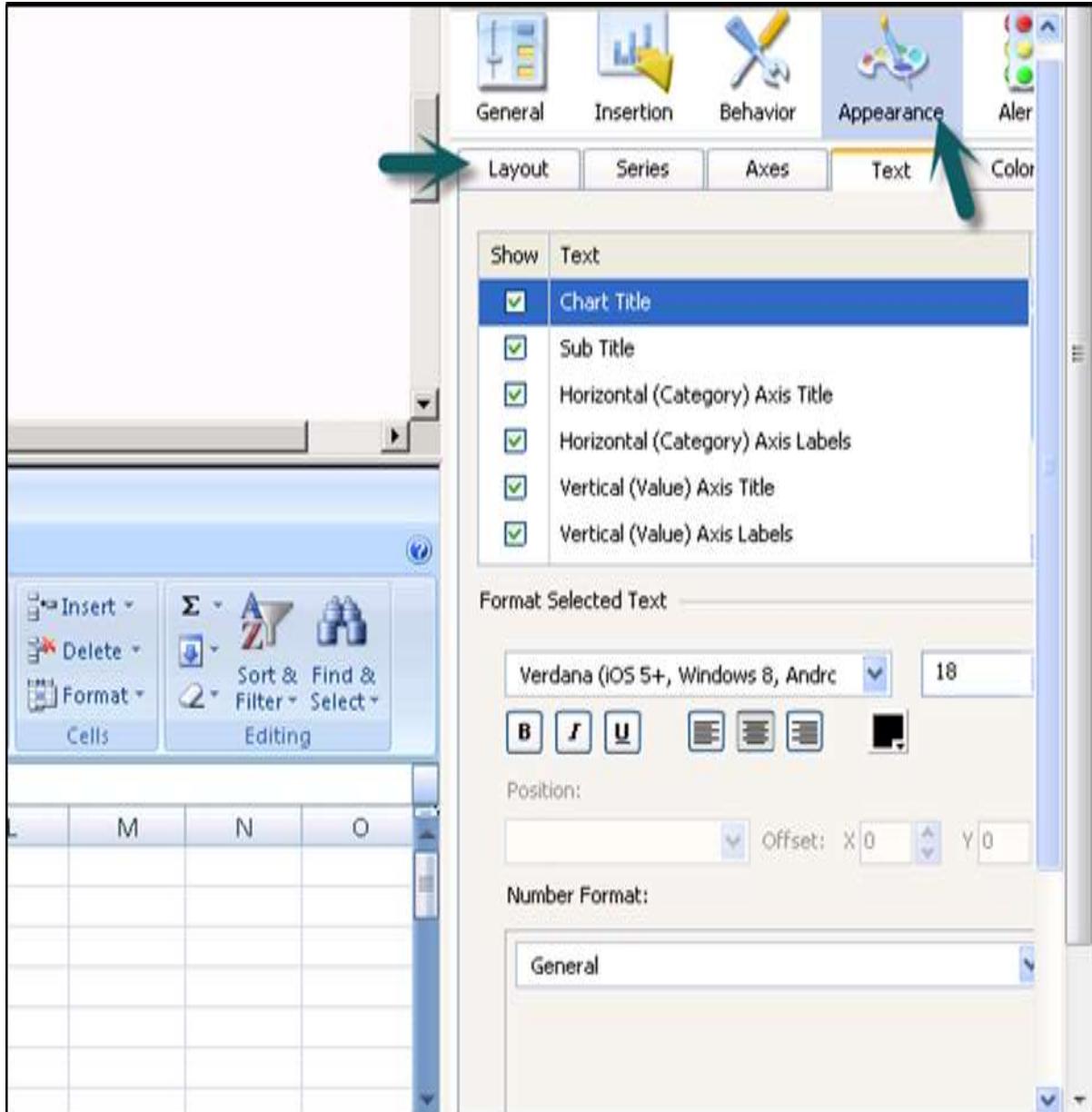
Behavior

It is used to set the behavior of a component in the model-limits, Blank cell, visibility, etc.



Appearance

It is used to set the appearance of the component. You can select text font, color, font size, legends, etc.



Alerts

Alerts are used to set notifications for data values, if values are acceptable or require attention. To enable alerts, click the check box as shown in the following screenshot.

You can set Alert Thresholds, enable auto color, etc.

The screenshot shows the SAP Dashboard configuration interface. On the left, there is a bar chart with three bars colored yellow, yellow, and red, corresponding to values 3, 4, and 5 respectively. The chart is located in a cell with columns H through L. The cell has a context menu open with options like Insert, Delete, Format, Sort & Find, Filter, Select, Cells, and Editing. On the right, a floating configuration panel is open under the 'Alerts' tab. This panel includes the following sections:

- Enable Alerts:** A checked checkbox with a green checkmark. An arrow points from this section to the 'Enable Alerts' checkbox in the main configuration area.
- Alert Thresholds:** A section containing two radio buttons: "As Percent of Ta..." (selected) and "By Value". Below this is a checkbox "Use a Range" which is unchecked.
- Enter a value:** A table with three rows:

	From	To
1	Minimum	30%
2	30%	70%
3	70%	Maximum
No Data		

A "Add" button is located to the right of the table.
- Enable Auto Colors:** A checked checkbox with a green checkmark. An arrow points from the 'Enable Alerts' checkbox in the main configuration area to this section.
- Color Order:** A section with two radio buttons:
 - Low values are good (selected)
 - Middle values are good (percent alerts only)A color palette is also present here.

11. SAP Dashboards – Binding Components

To create a data model in the Dashboard designer, you need to bind the components to data sources. If you want to display numerical data in charts, maps and tables you need to perform binding.

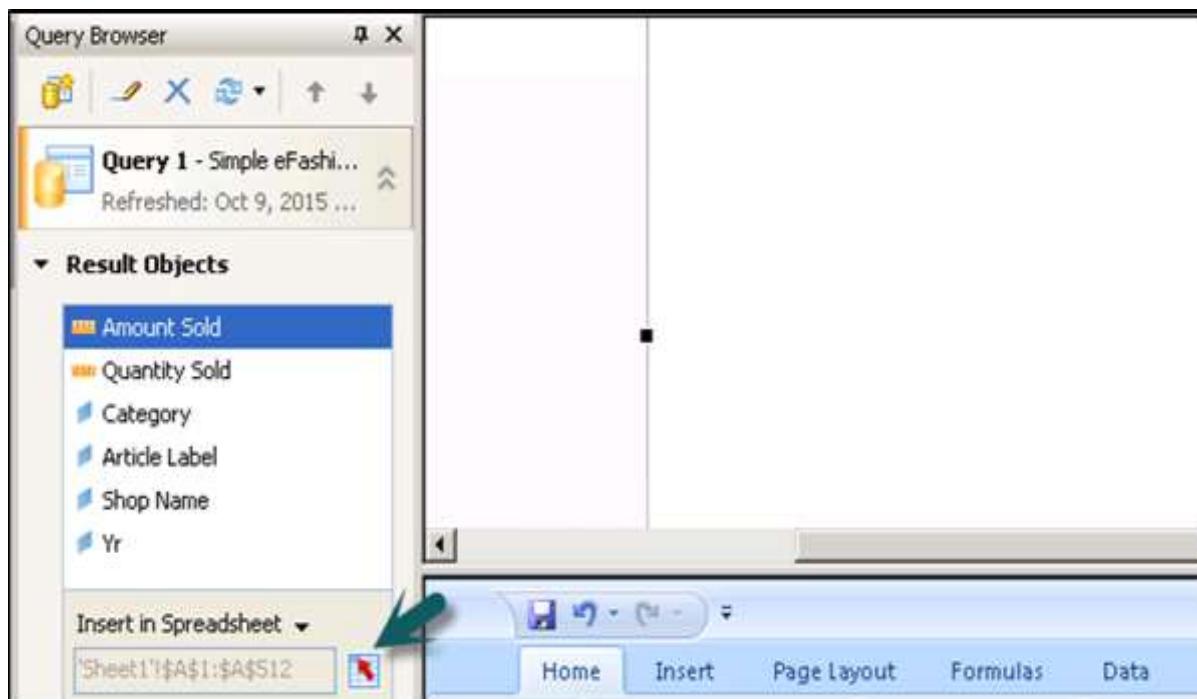
You can also bind component parameters to set parameters like titles, colors, visibility to data sources. Components can bind to cells in spreadsheets or to query in query browser.

Component Binding can be performed in the following two ways:

Embedded Spreadsheets

You can link the component data sets and parameters to source data in embedded spreadsheets. You have to specify each cell in spreadsheet that contains data for parameters or data set. Data can be added to cells manually or by connecting to external sources.

You can also use few components to write data to spread sheets by using the same procedure.



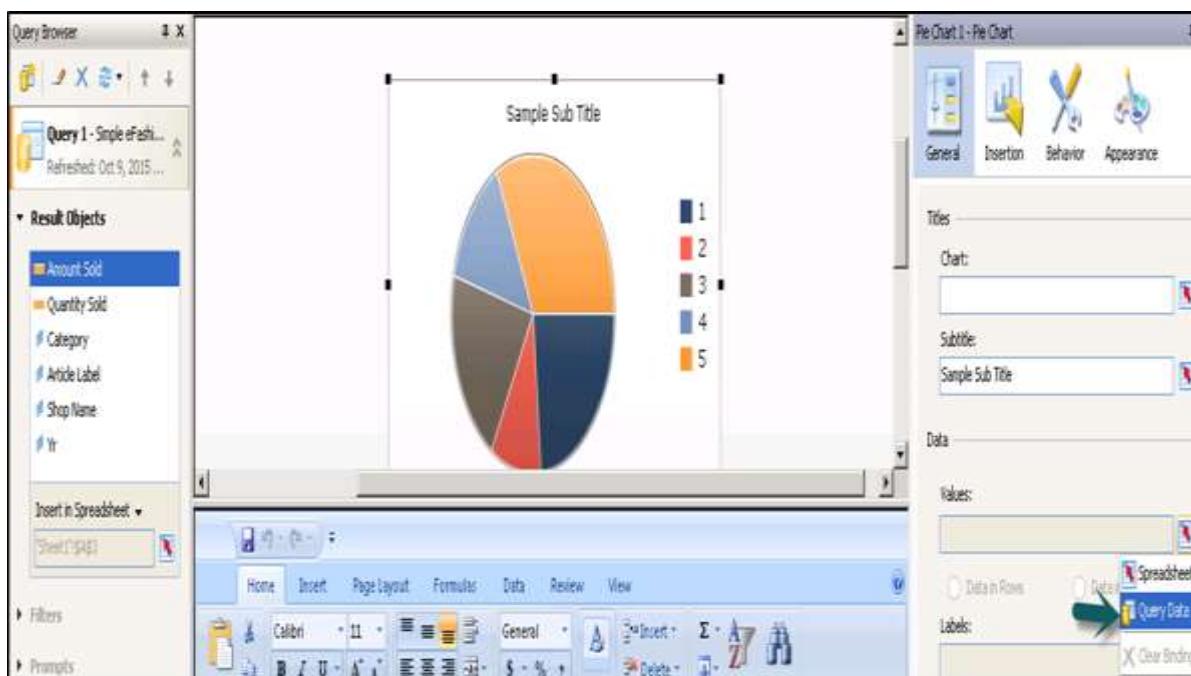
The screenshot shows the SAP Crystal Reports interface with a donut chart titled "Pie Chart 1 - Pie Chart". The chart is filled with many small, colored segments representing data from the range 'Sheet1'!\$A\$1:\$A\$512'. The legend on the right lists the years 2005 through 2007, each associated with a specific color. The report's toolbar includes icons for Insert, Delete, Sort & Find, and Filter. A green arrow points to the "Preview" button in the toolbar, which is highlighted in blue. The status bar at the bottom displays the message "Report generated by SAP Crystal Reports".

BEX Query or Universe Query

You can also use BEX query or Universe query as data source for different components in the model. You can select result objects from query to bind to the components. In many scenarios, it is not possible to bind query objects to component parameters.



You can also use a few components to write the data to query objects.



The screenshot shows two windows from SAP BusinessObjects Web Intelligence.

Select from Query Dialog:

- Result Objects:**
 - Amount Sold
 - Quantity Sold
 - Category
 - Article Label
 - Shop Name
 - Yr
- Data:**
 - Values:** Query 1: Quantity Sold
 - Labels:** Query 1: Yr

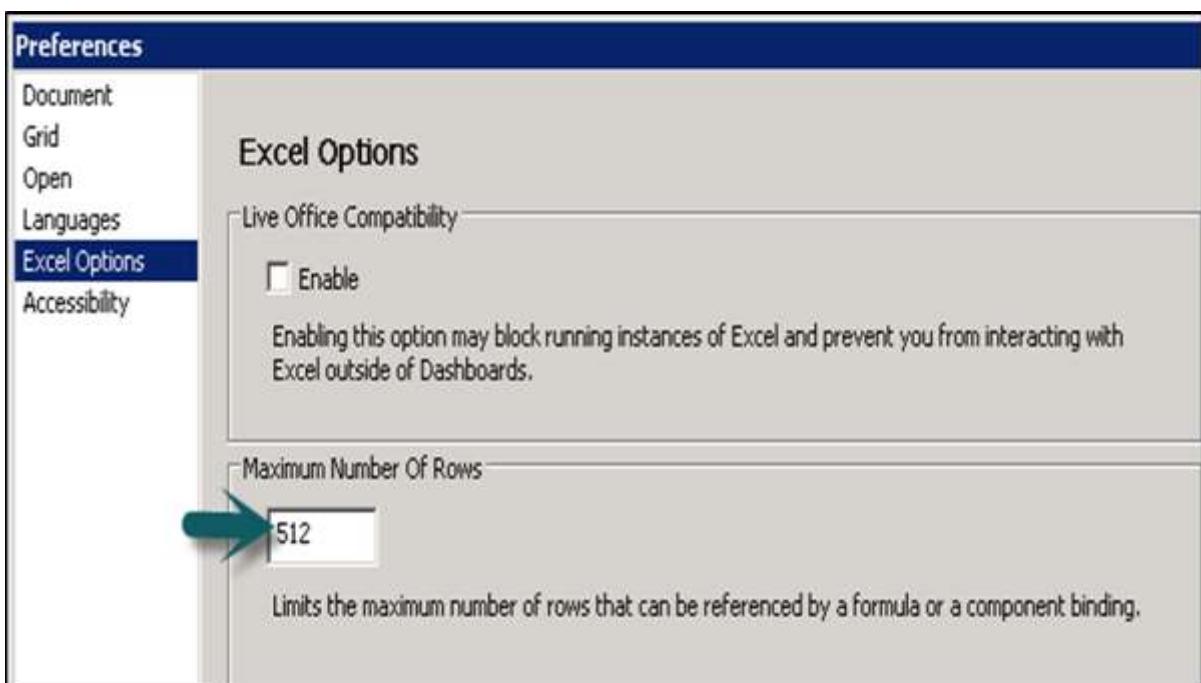
Pie Chart 1 - Pie Chart Dialog:

- General Tab:** Shows a pie chart with many small slices. The legend lists various e-Fashion locations.
- Titles:**
 - Chart:** [Empty]
 - Subtitle:** [Empty]
- Data:**
 - Values:** Query 1: Quantity Sold
 - Labels:** Query 1: Shop Name
- Buttons:** General, Insertion, Behavior, Appearance

To clear the binding from a chart, you can select Clear Binding from the list as shown in the following screenshot.

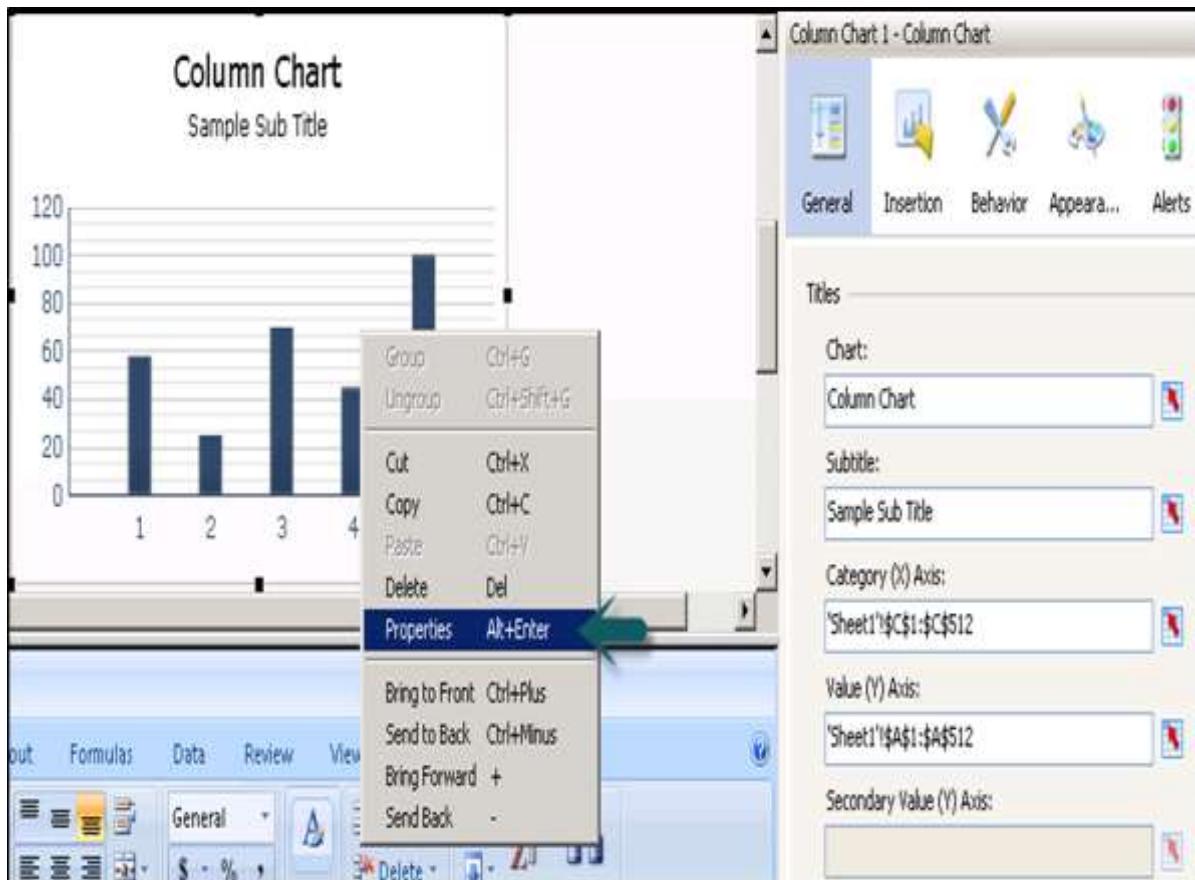


Note: You can select a maximum range of 512 rows in a range. Larger the value, slower the performance of the data model. To change this value, go to **File -> Preferences -> Excel Options**.



12. SAP Dashboards – Setting Component Properties

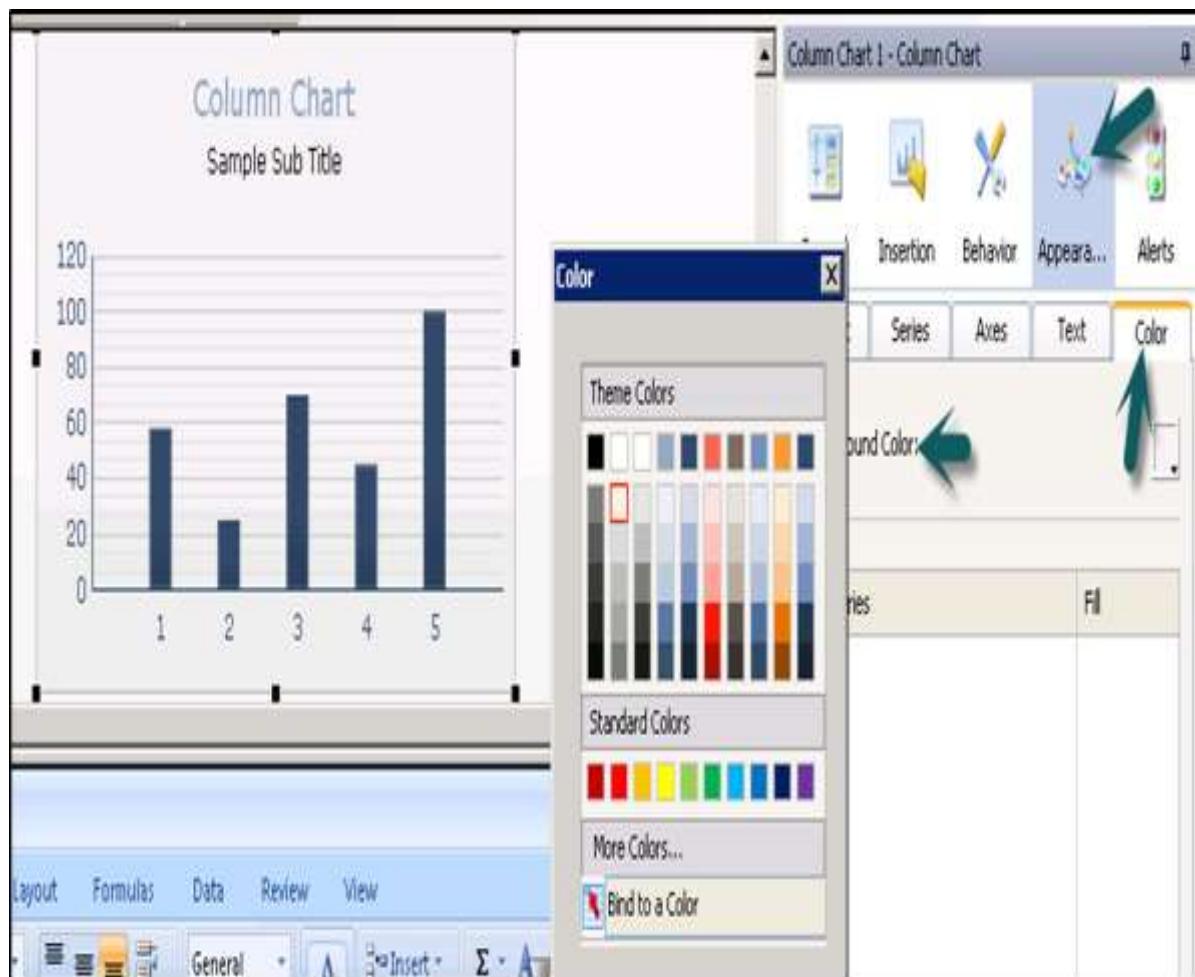
You can select the multiple components and edit the properties. To go to the Properties page, select multiple components and right click -> Go to Properties option as shown in the following screenshot.



Setting Colors for Component Elements

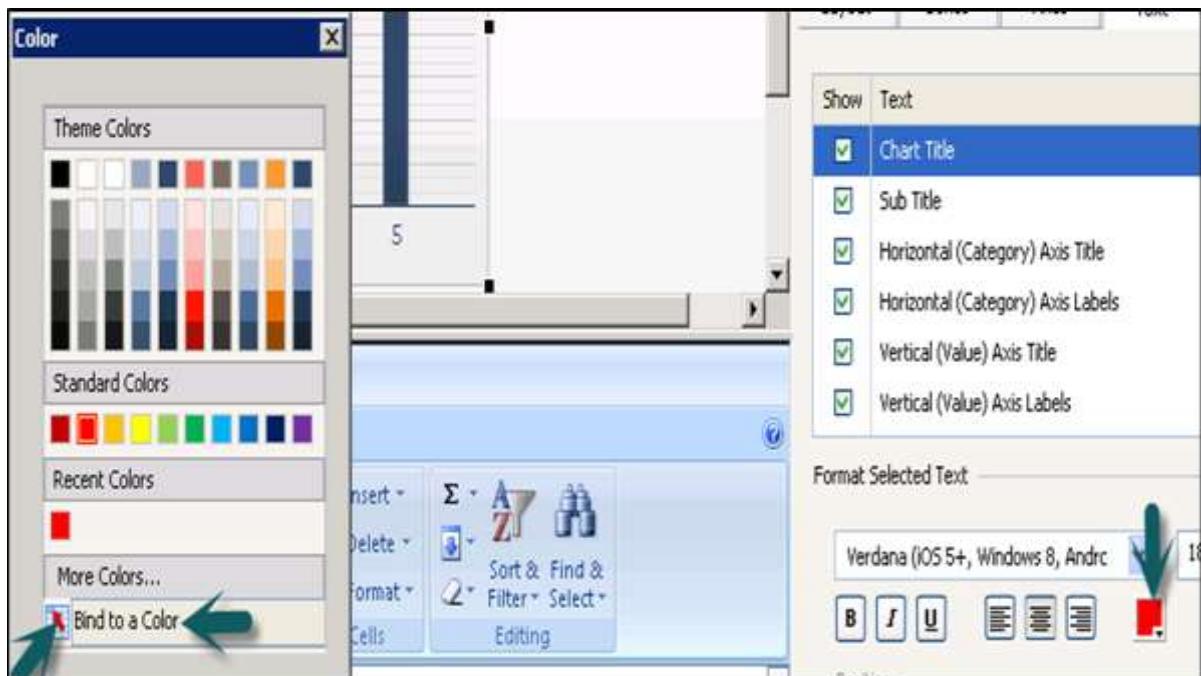
You can select colors for every element of every component in a model in the Dashboard. To set colors, go to Appearance View in the Properties pane.

There are a number of color combinations and you can also define your own color combination.

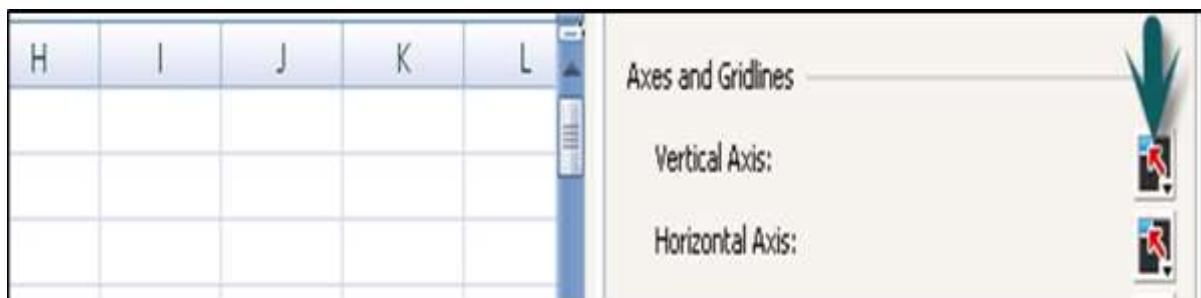


To add your own color combinations, you can click on more color options and select RGB or HSL. You can also set color at run time based on the user input or to a cell in a spreadsheet. Go to **Properties -> Appearance**.

Go to Color tab and click on **Color selector -> Bind to a Color** as shown in the following screen shot.



Color selection cell changes to bound color icon as shown in the following screenshot.

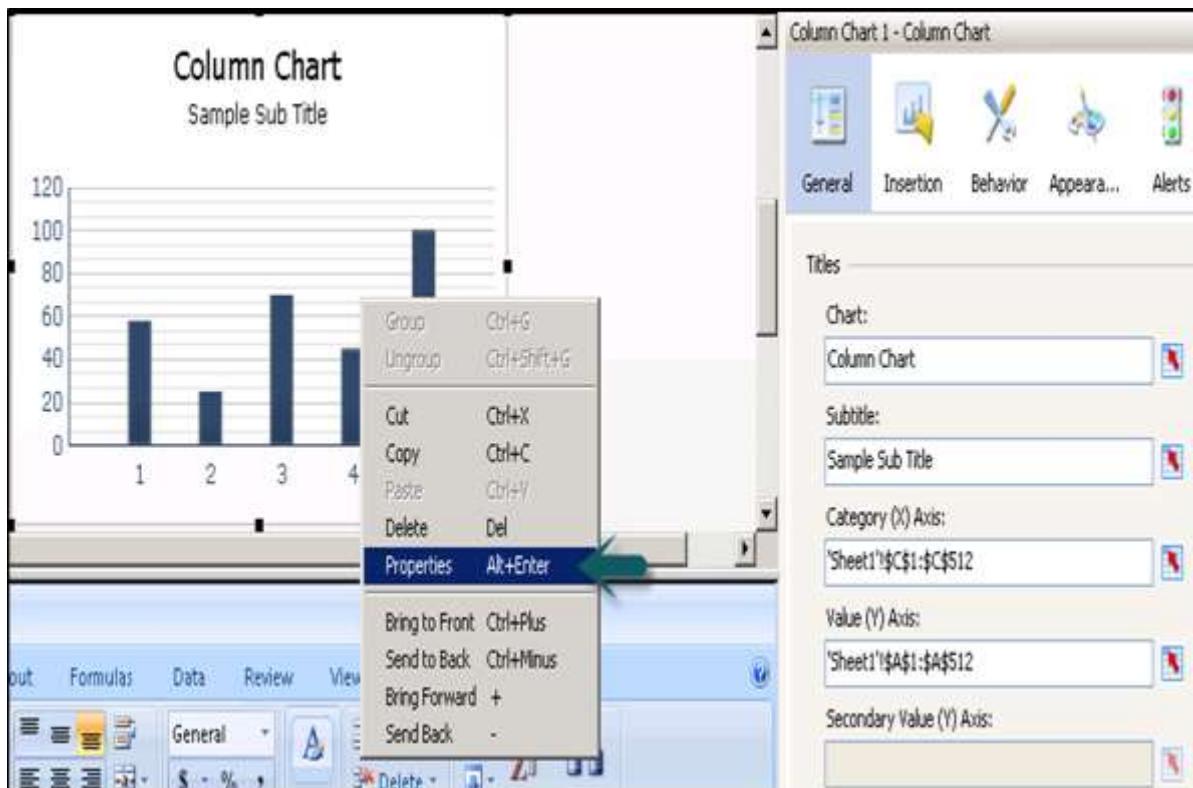


In a similar way, you can format text elements in a model in the Dashboard.

The screenshot shows the SAP Dashboards interface with a Column Chart titled "Column Chart 1 - Column Chart". The chart has two bars with values 4 and 5. On the right, the "Text" tab of the editor is selected, displaying options for Chart Title, Sub Title, and various axis titles and labels. A green arrow points to the "Format Selected Text" button. Below the text editor, the ribbon shows "Format" selected, and the "Number Format" dialog is open, showing "Default Number Format" checked. A green arrow also points to this dialog. The overall interface includes a toolbar with icons for Insert, Delete, Sort & Filter, and Select.

13. SAP Dashboards – Configure Component Properties

You can configure the settings of components in the Properties panel. Select a component in the Canvas and go to Properties as shown in the following screenshot.



Not all the properties are available for all the components.

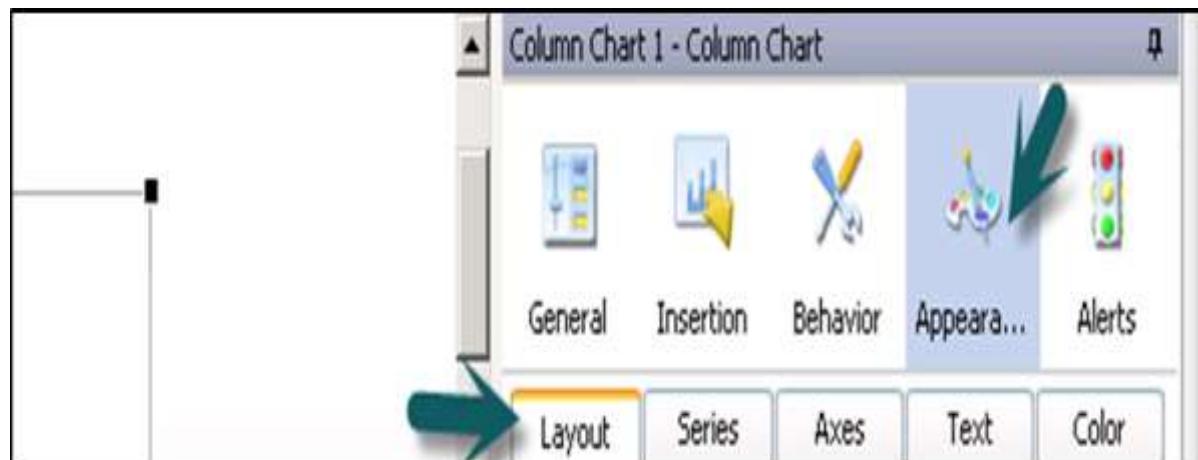
Different Tabs to Configure Component Properties

Following are a few Tabs that help in configuring different component properties in SAP Dashboard.

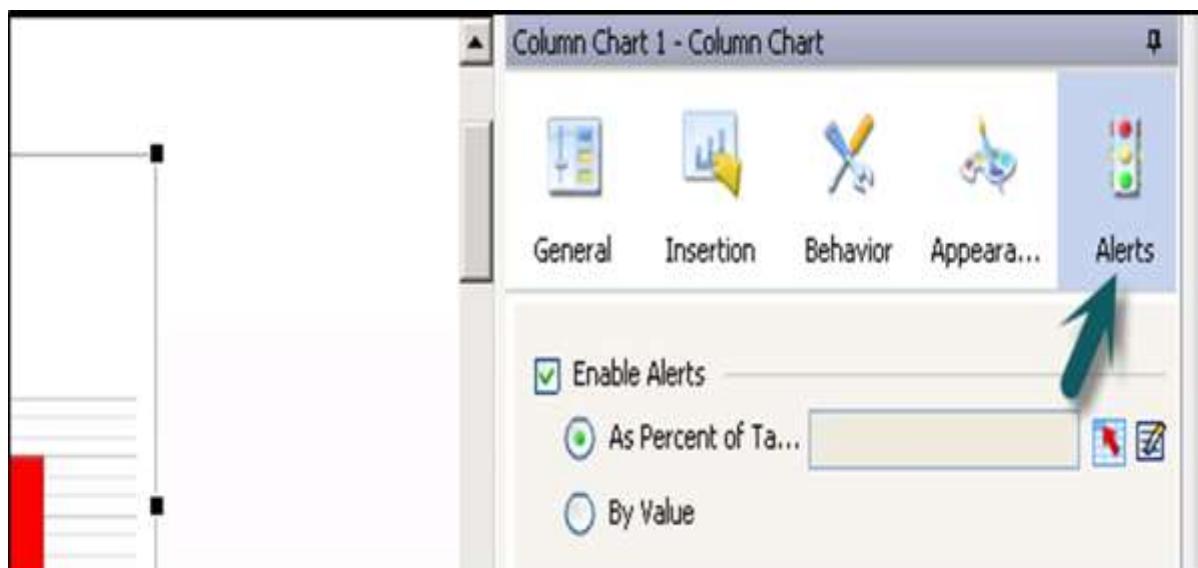
- The General Tab allows you to configure basic properties like labels, displays, source and destination data and so on.
- Insertion tab allows you to configure data insertion options for the component.
- Behavior tab allows you to configure component functions like dynamic visibility, variable amount of data and scaling, etc.



- The Appearance tab allows you to set visual characteristics of the component, its layout options, text options, color, etc.



- The Alert tab is used to enable alerts of acceptable values of data, threshold values, acceptable range and color coding for different values.



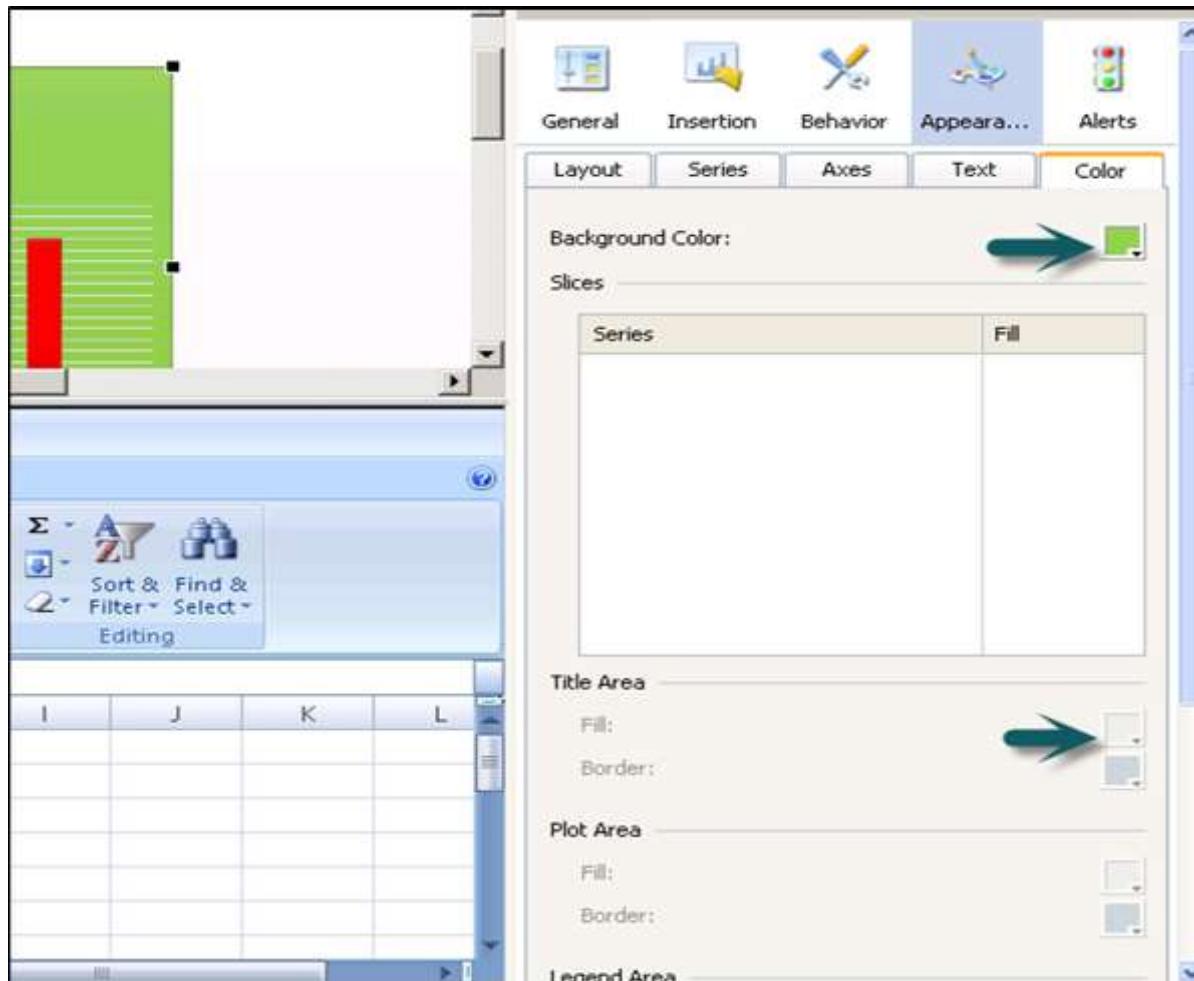
14. SAP Dashboards – Component Colors

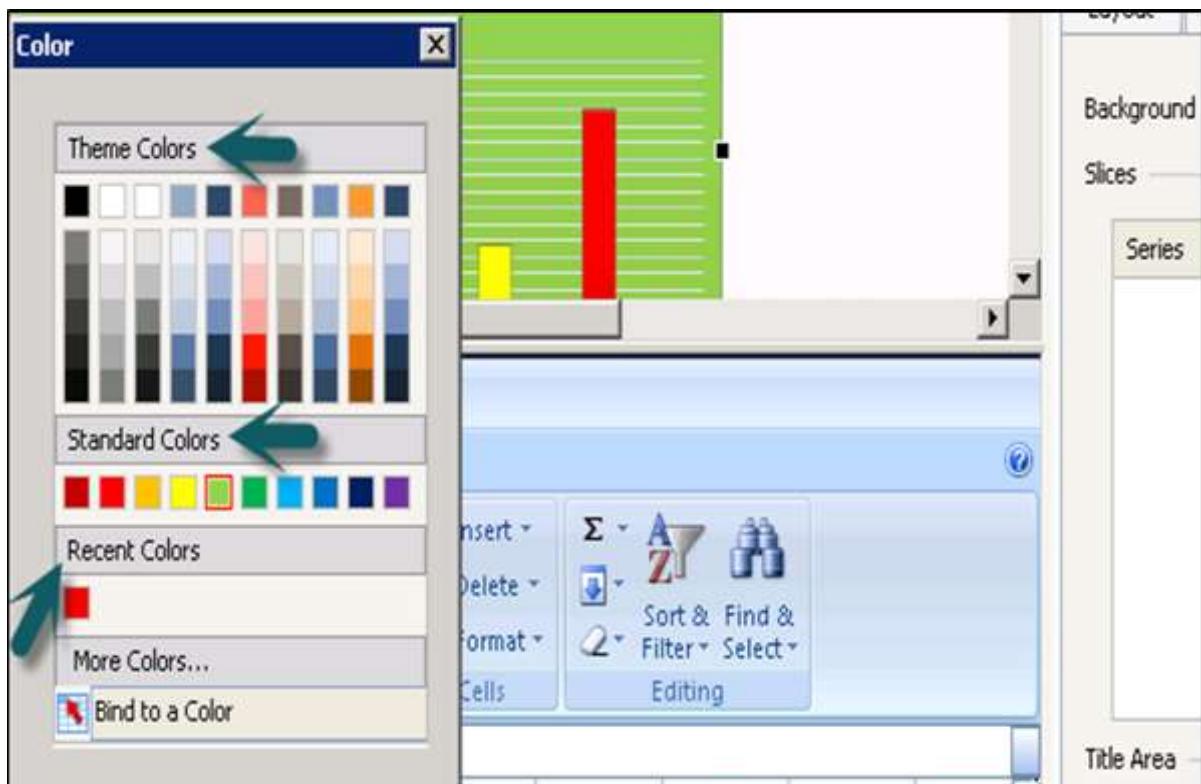
You can set the color for each element of a component in the data model. Colors can be defined in the Appearance tab under the Properties pane. There are a wide range of colors available and you can also create your own custom colors.

How to Define a Color for an Element?

To define color for each element, select the element then -> Go to Color Selector for each element. You can select the following sections in the color dialog box –

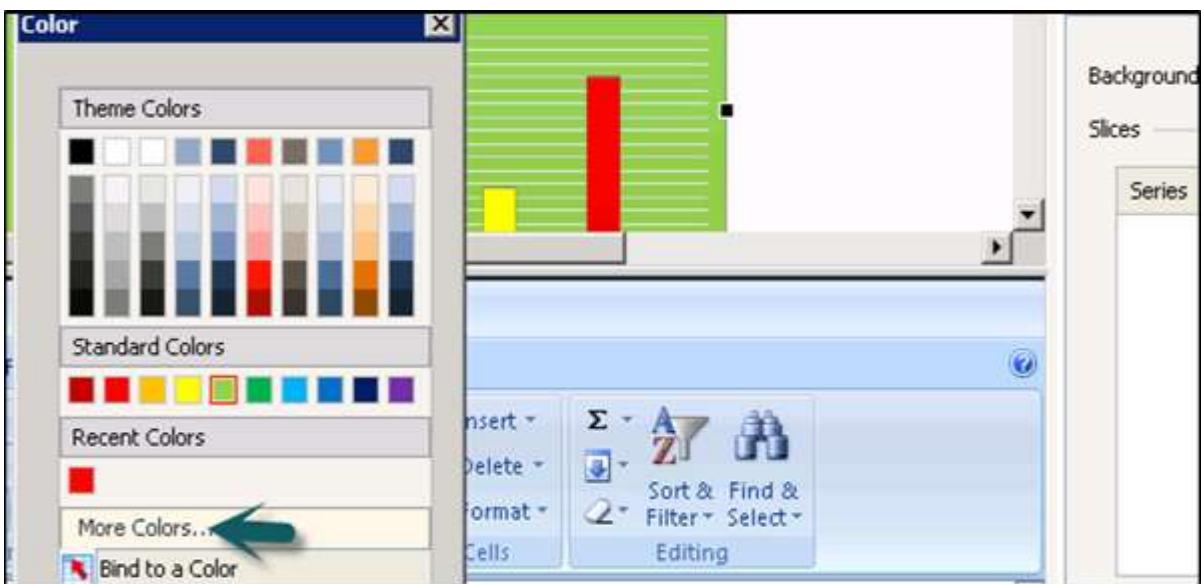
- **Theme Color:** To define color of current theme.
- **Standard Color:** These are group of basic colors.
- **Recent Color:** This shows recently used colors.



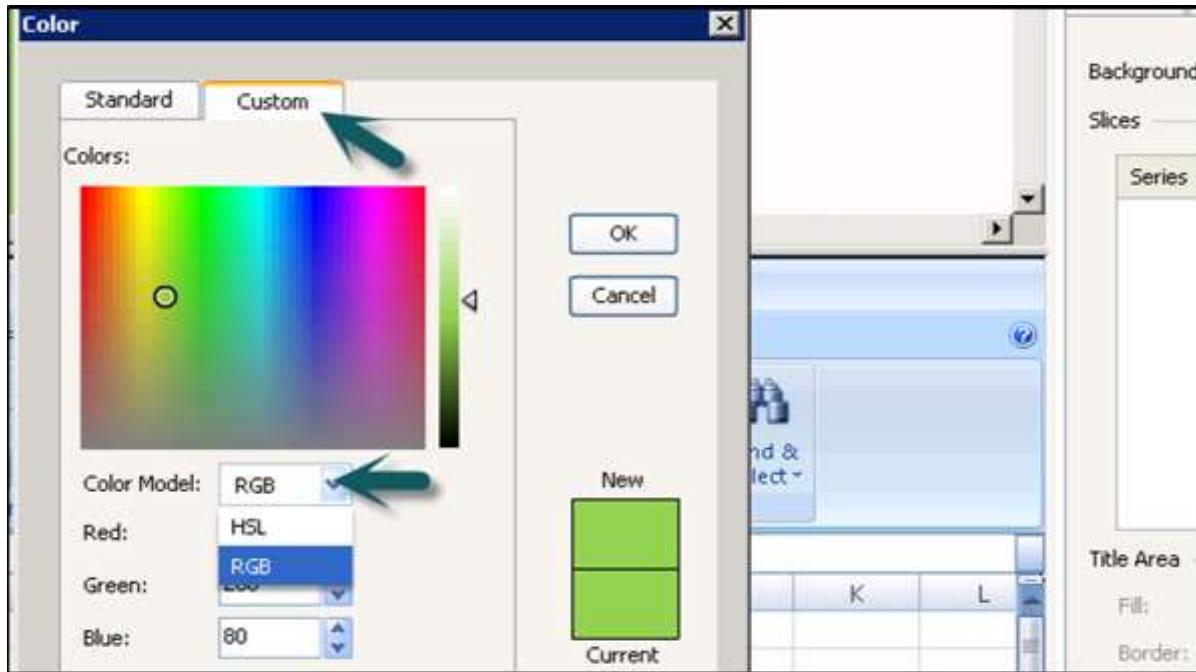


How to Create Custom Colors for Elements?

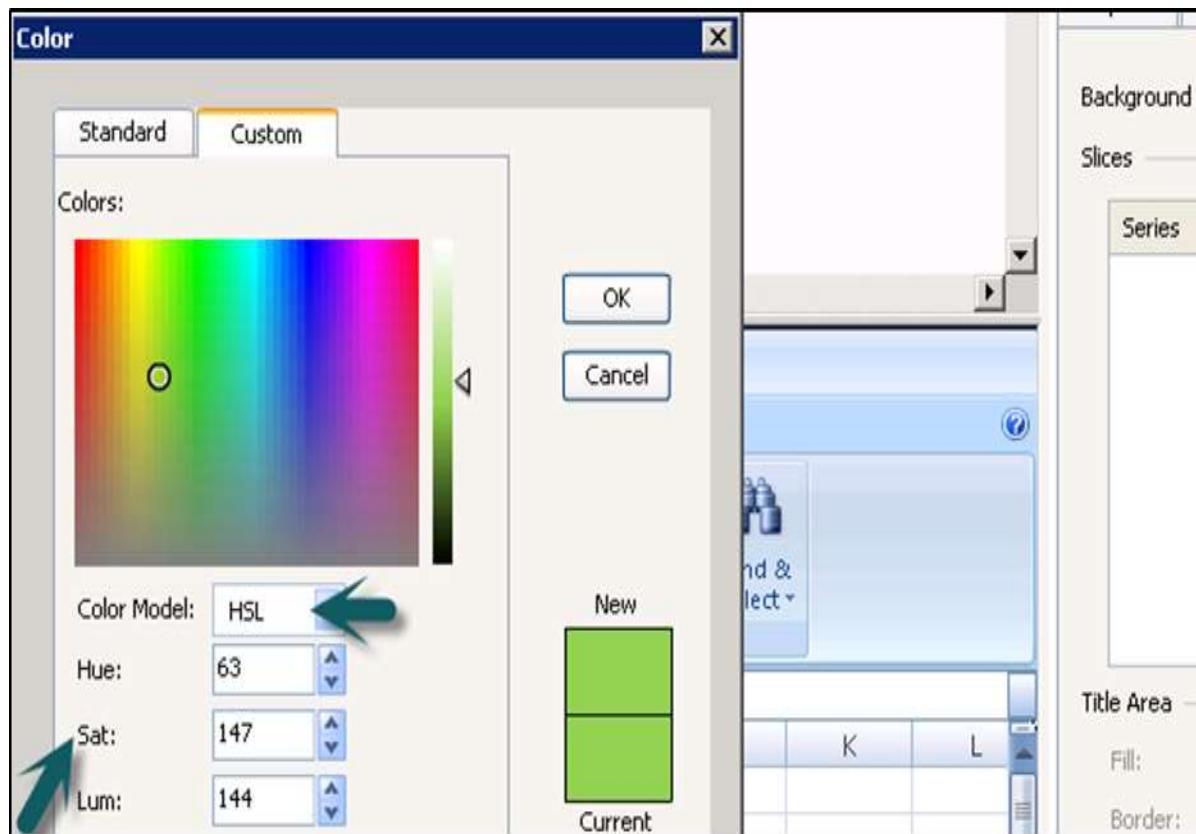
If you want to create a custom color for an element, go to **Color selector -> More Colors.**



Go to Custom Tab -> Select RGB or HSL from the dropdown list.



You can select Red, Green and Blue values for RGB and Hue, Sat and Lum for HSL. Once the custom color is selected, click OK to apply the color to that specific component.

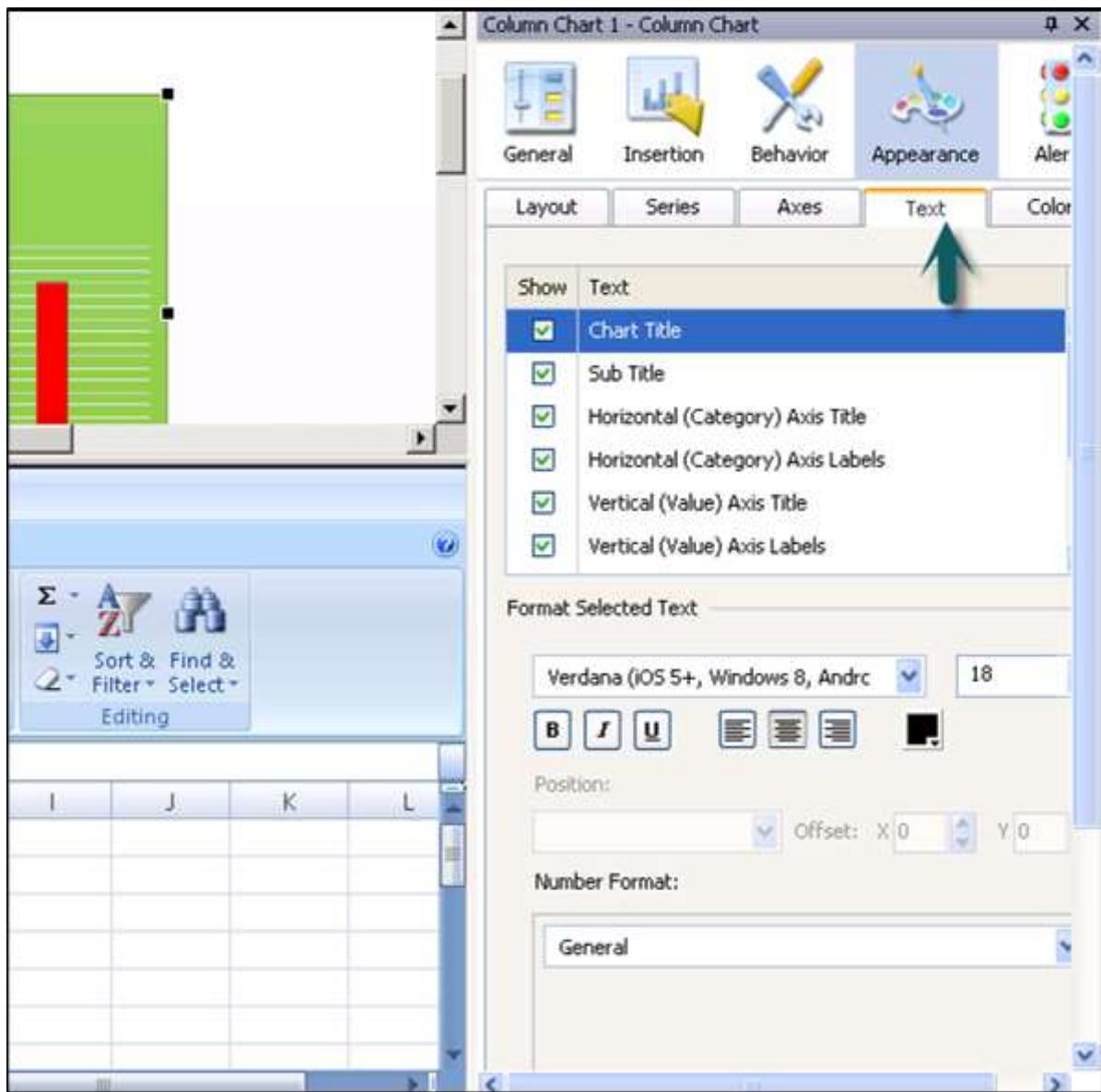


15. SAP Dashboards – Setting Component Text

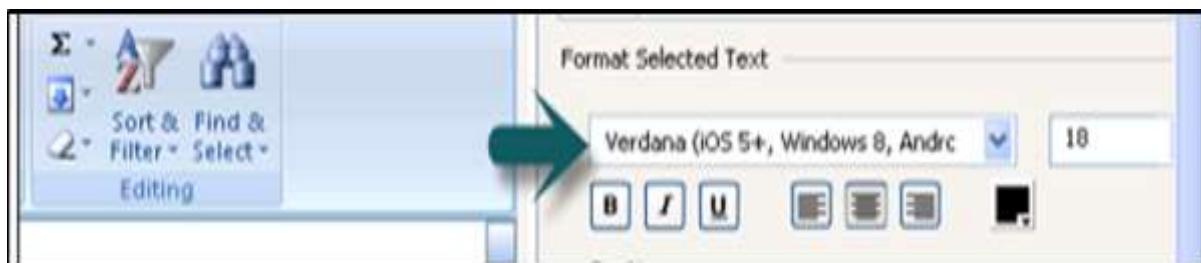
You can decide text formatting in a data model, if text has to be hidden or displayed like in labels, button text, legends, etc. When you select text to be displayed, you can define how the text will be look like.

How to Define Text Formatting?

To define Text Formatting, go to **Properties -> Appearance -> Text**.



When you click on the Text tab, it shows a list of text elements that you can set for a component. In a format selected text, you can select font name, size, and text type (Bold, Italic or Underline), text color settings, etc.



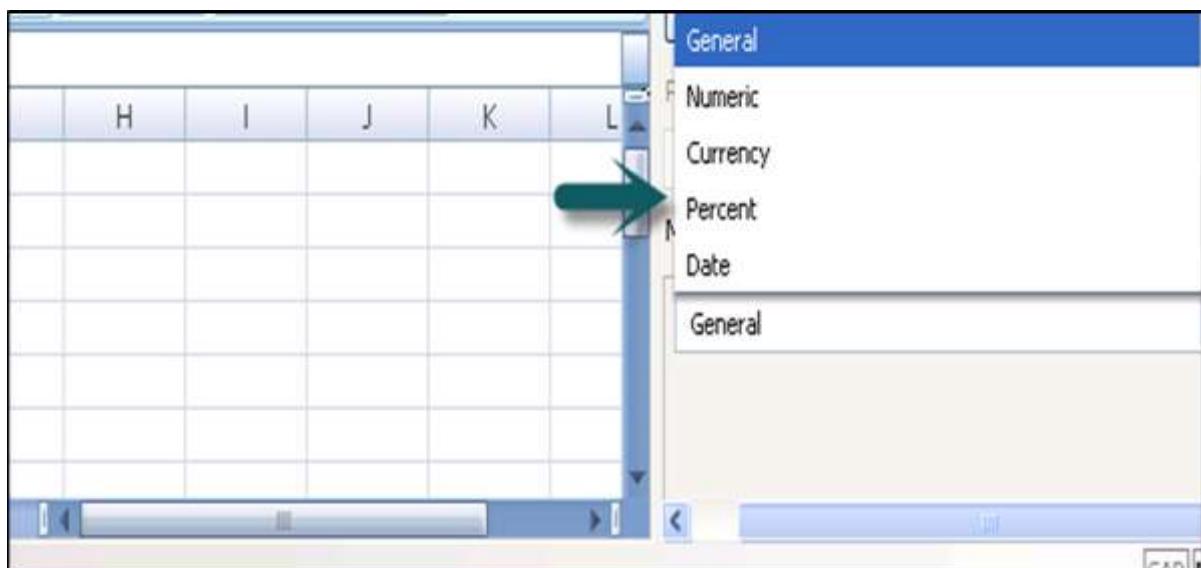
The Position section defines where the label should be in relation to a component and in the offset you can set the distance to move it relatively to the position.



Number Formatting

In the Number format you can select the following values from drop down list –

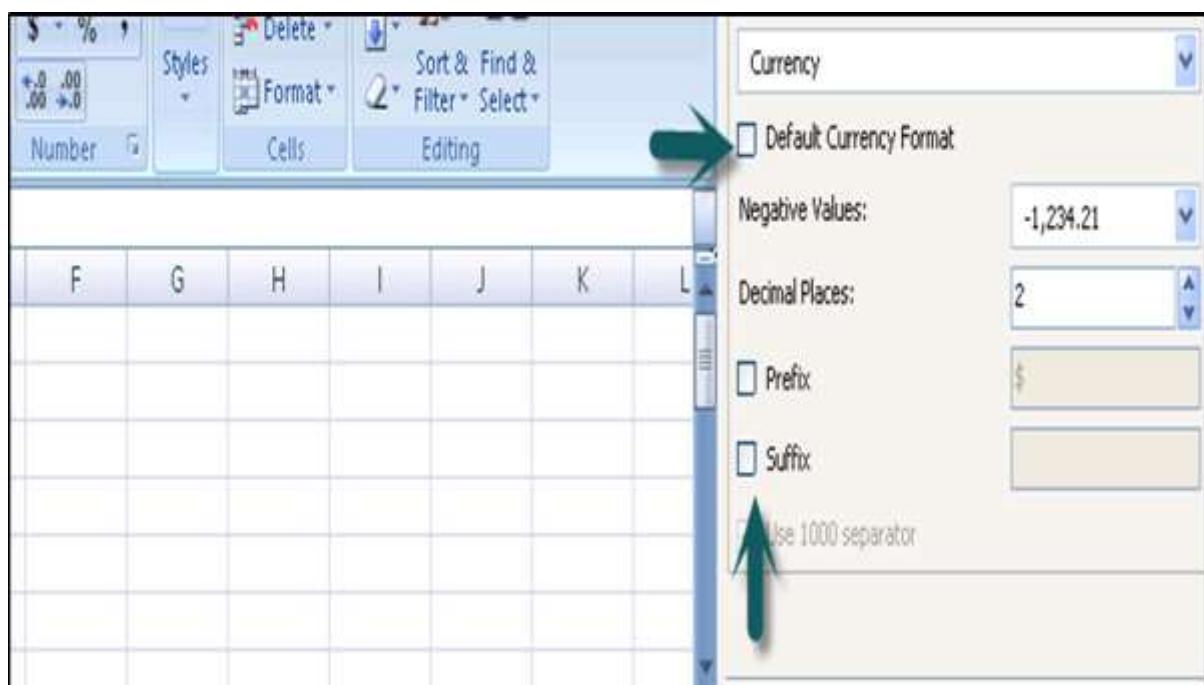
- **General:** No specific number format.
- **Numeric:** Values are considered as numbers only.
- **Currency:** In this format, values are displayed as monetary values.
- **Percent:** Values are displayed as percentage format.
- **Date:** The values are displayed in the Date format.
- **Time:** The format allows values to display in time format.
- **Boolean:** The values are displayed as two value option (true/false, etc.)
- **Text:** The data is displayed as text only.



Additional Formatting

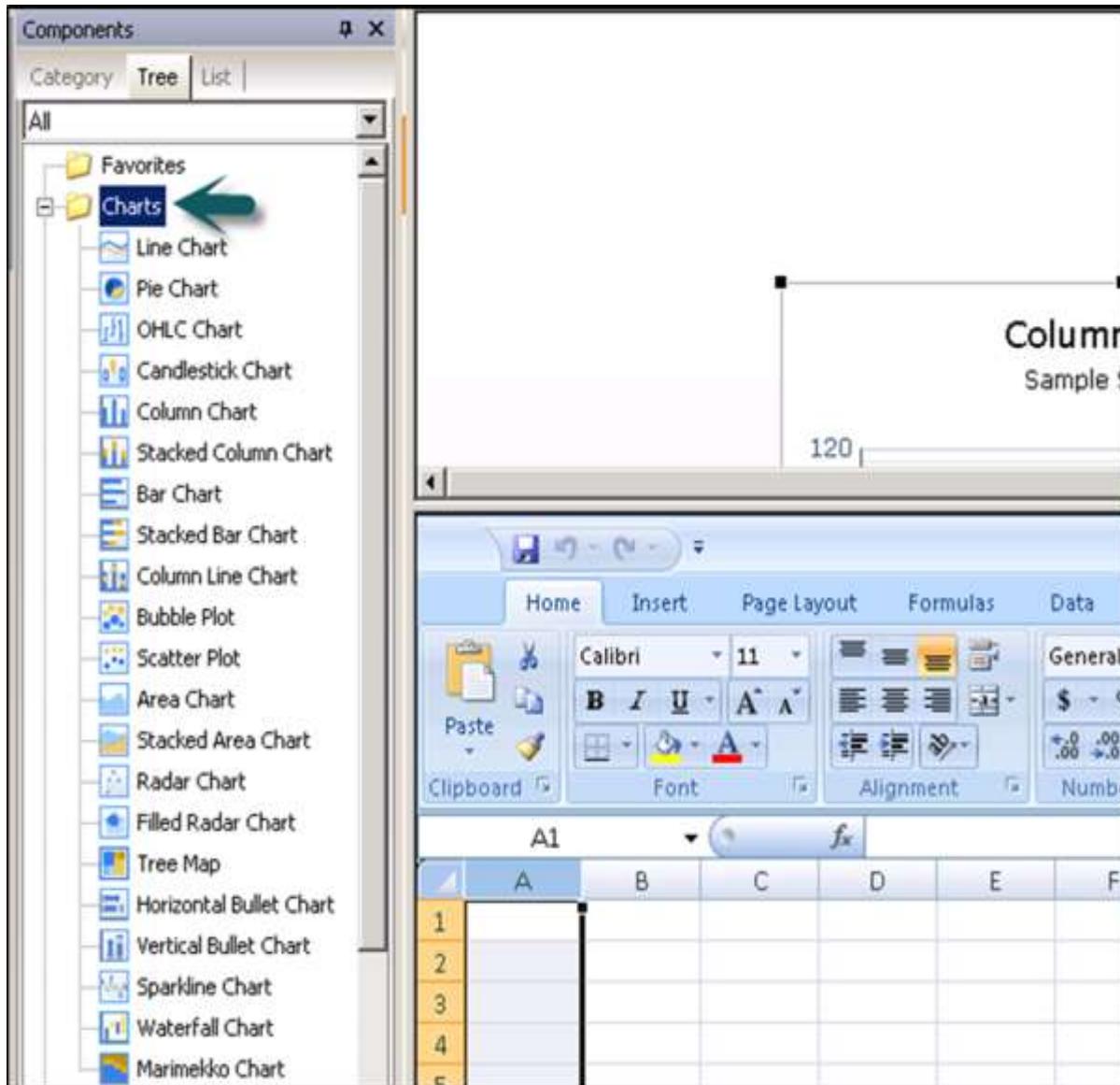
You can also do some additional formatting for a few format types. Some of them are as follows:

- **Negative Values:** This is applicable to numeric and currency format and is used to specify formatting for numeric values.
- **Decimal Places:** This is used to specify the number of decimal places.
- **Prefix/Suffix:** This is used to specify the current symbol to show before/after the value.
- **Use 1000 Separators:** This is used to put comma between hundred and thousand values.



16. SAP Dashboards – Chart Components

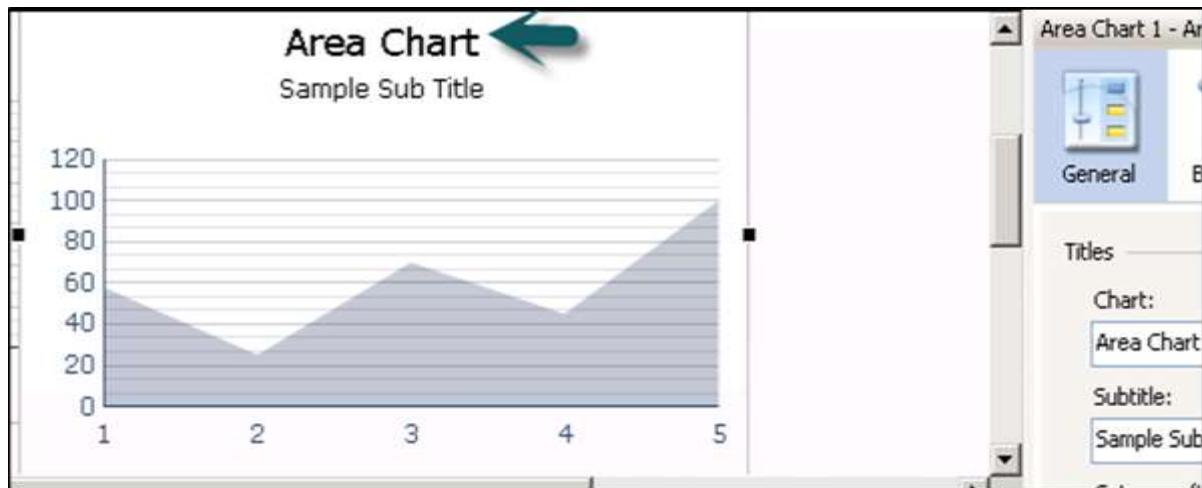
In a Data model, charts are used to perform comparisons, value analysis, and trend summary of data from data source. There are different charts options available for multiple purposes. The following screenshot shows what all options are there in the charts folder.



In this section, we will discuss regarding the different types of charts that are available in SAP Dashboards.

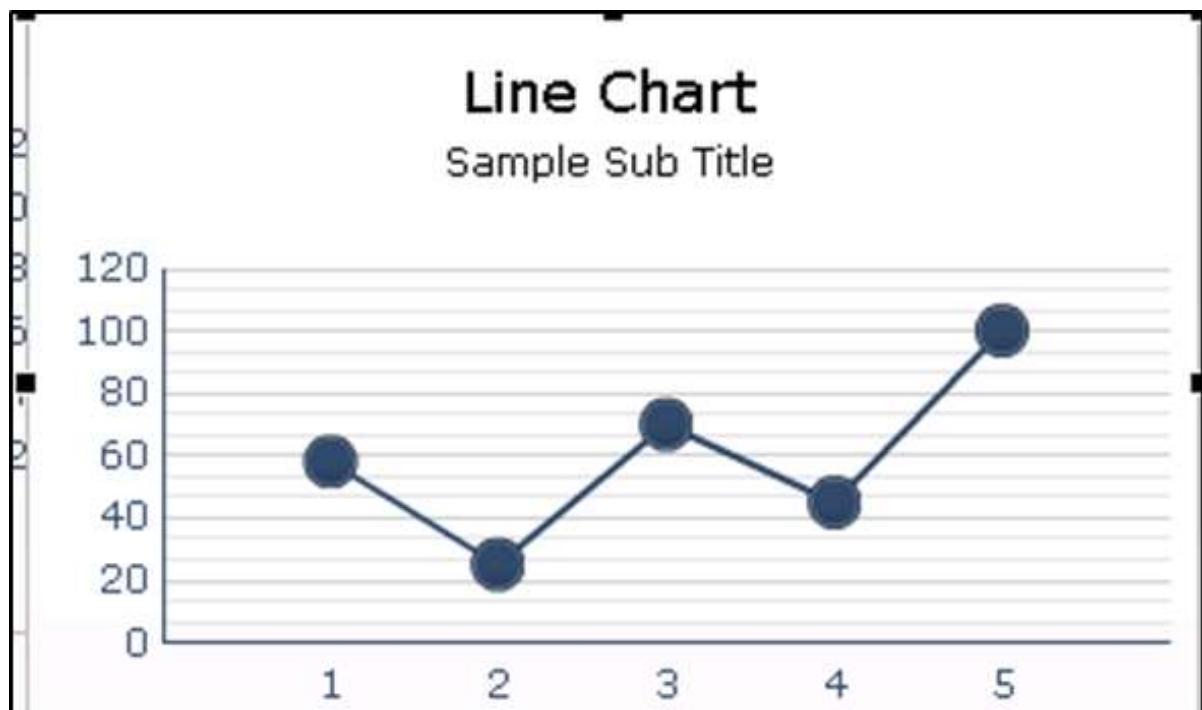
Area Chart

This is a standard chart with a horizontal and vertical axis.



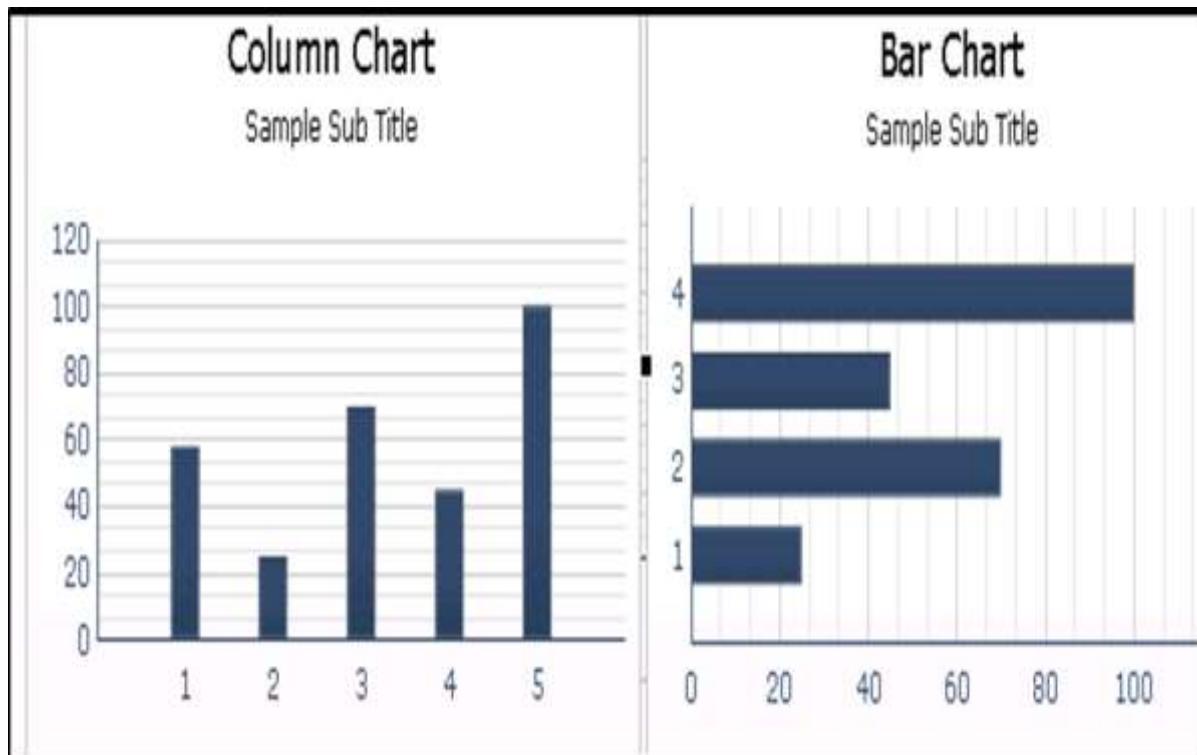
Line Chart

A Line Chart is useful for showing tendency over a period of time. It should be used for continuous data like stock revenues.



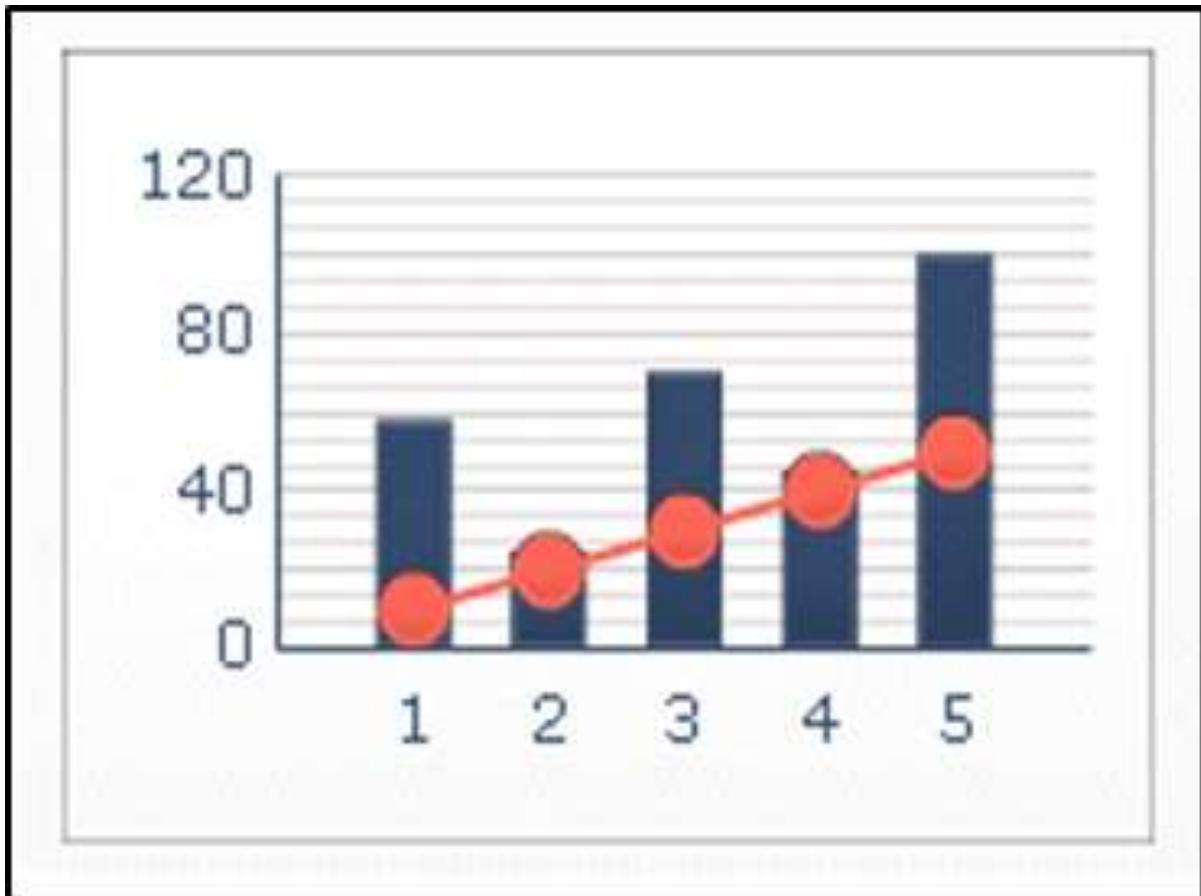
Bar and Column Chart

These charts are used to compare one or more items over a specific period of time. Bar and Column Charts are same and the only difference is their orientation.



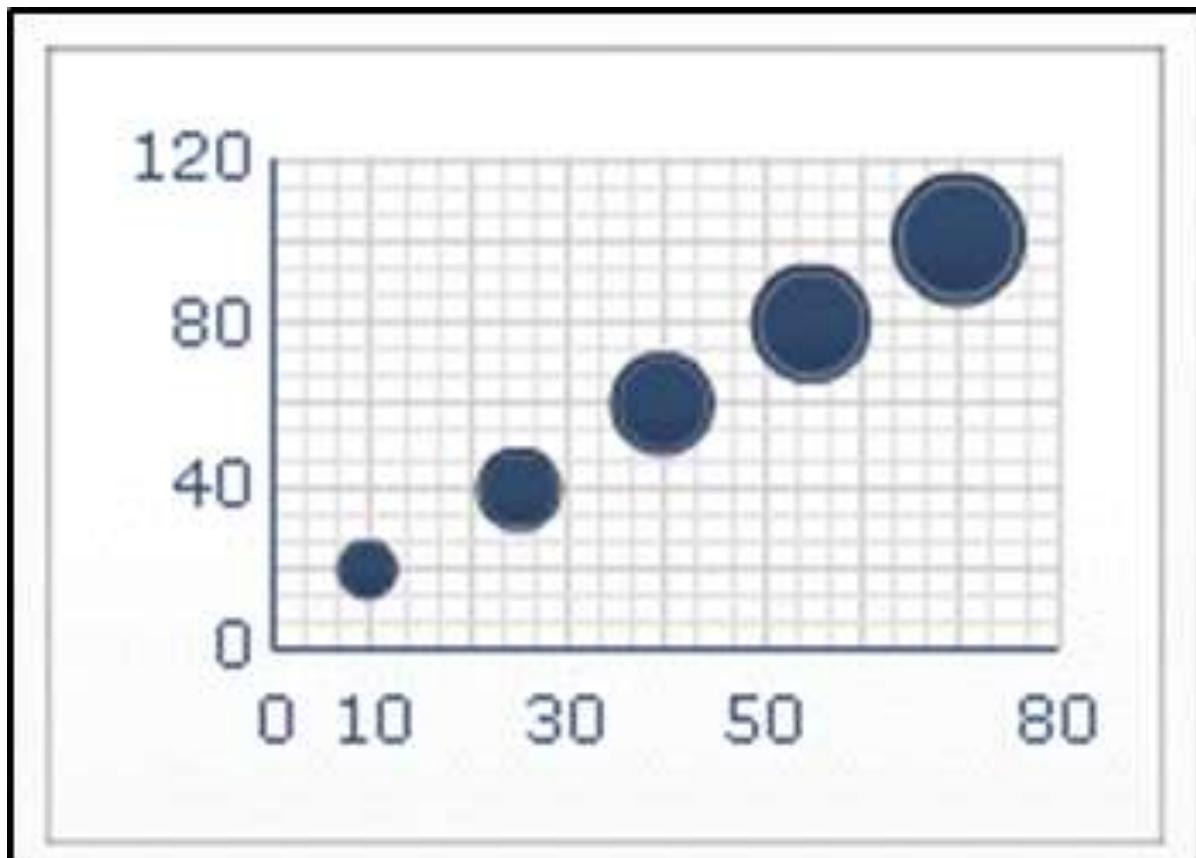
Combination Chart

This is a combination of column and line chart where the line chart shows the trend line for values.



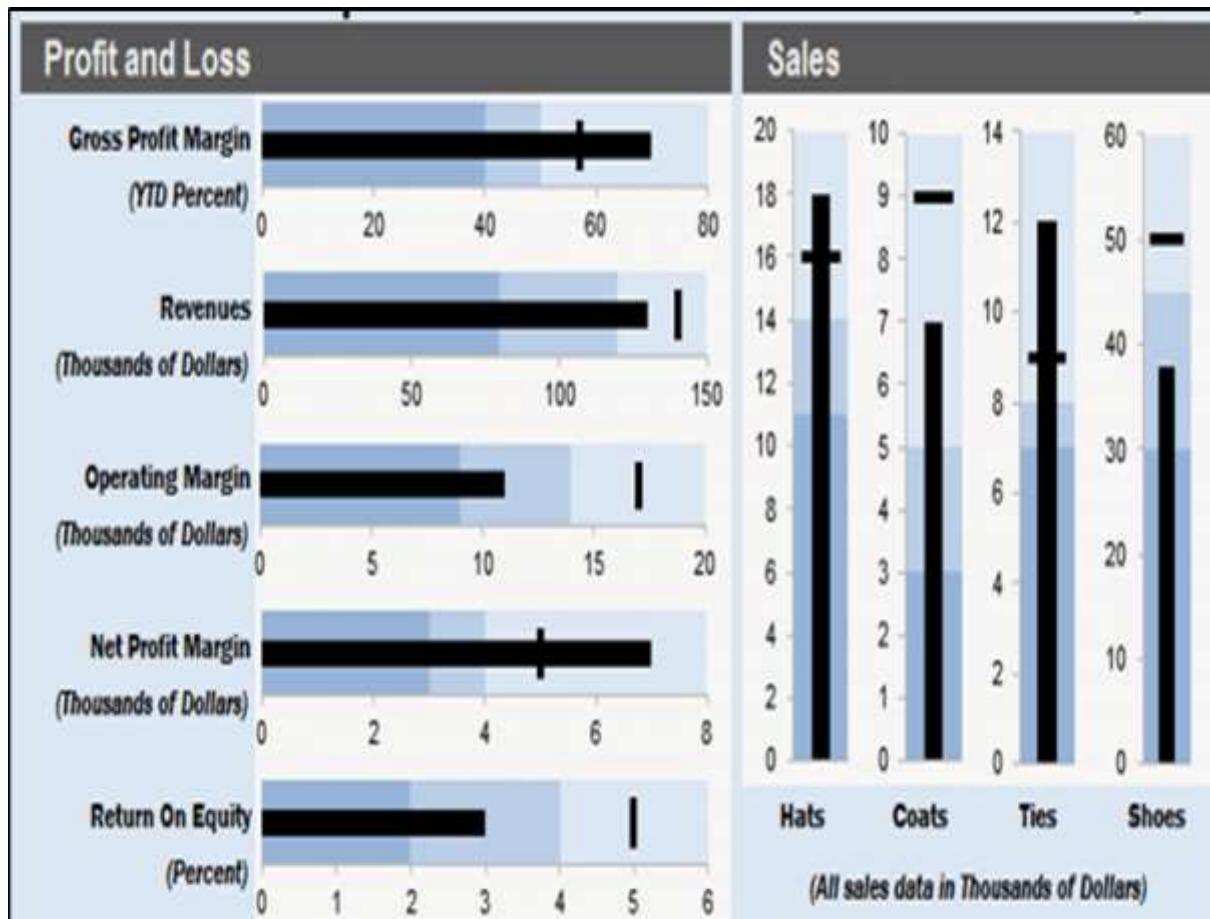
Bubble Chart

A Bubble chart is used to compare a group or series of item. On Z axis you represent the item size.



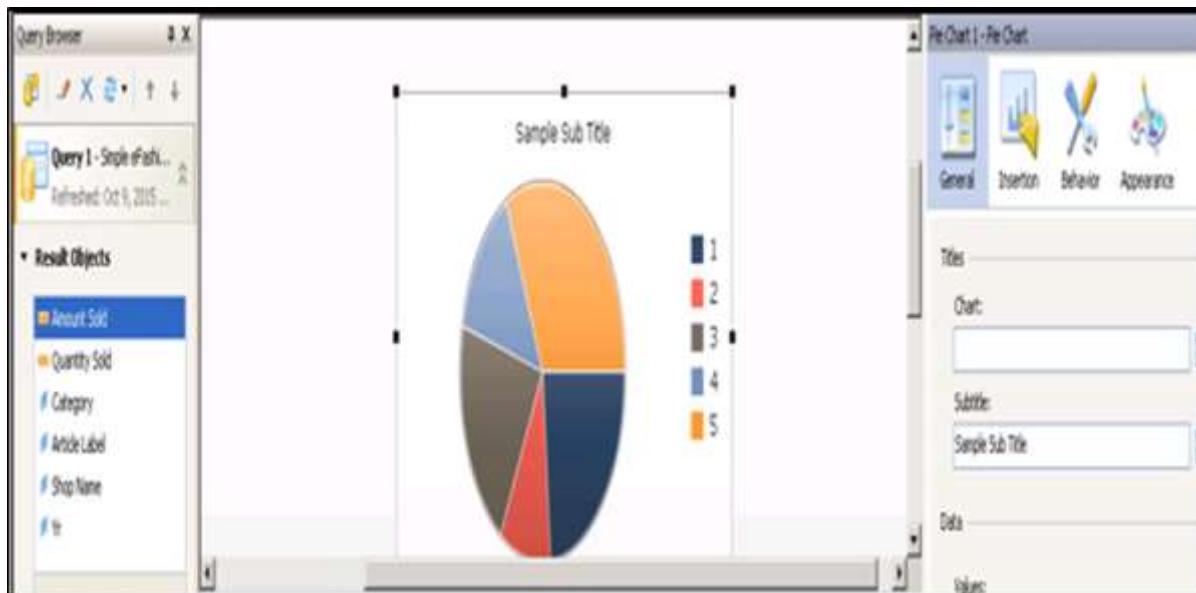
Bullet Chart

You can use bullet charts to show a single primary measure on a vertical or a horizontal bar.



Pie Chart

It is used to represent the participation of each item of a certain total value in a circular format. The Pie Chart is suitable for models like total revenue by the product line.



There are quite a few different types of charts that can be used, some of which are as follows:

- Radar Chart
- Sparkline
- Water Fall Chart
- XV Chart

17. SAP Dashboards – Container Components

The container component can be nested to create multilayer models. You can use a canvas container within the main canvas to hold one or more components. You can add, move, delete or change components in the panel container.

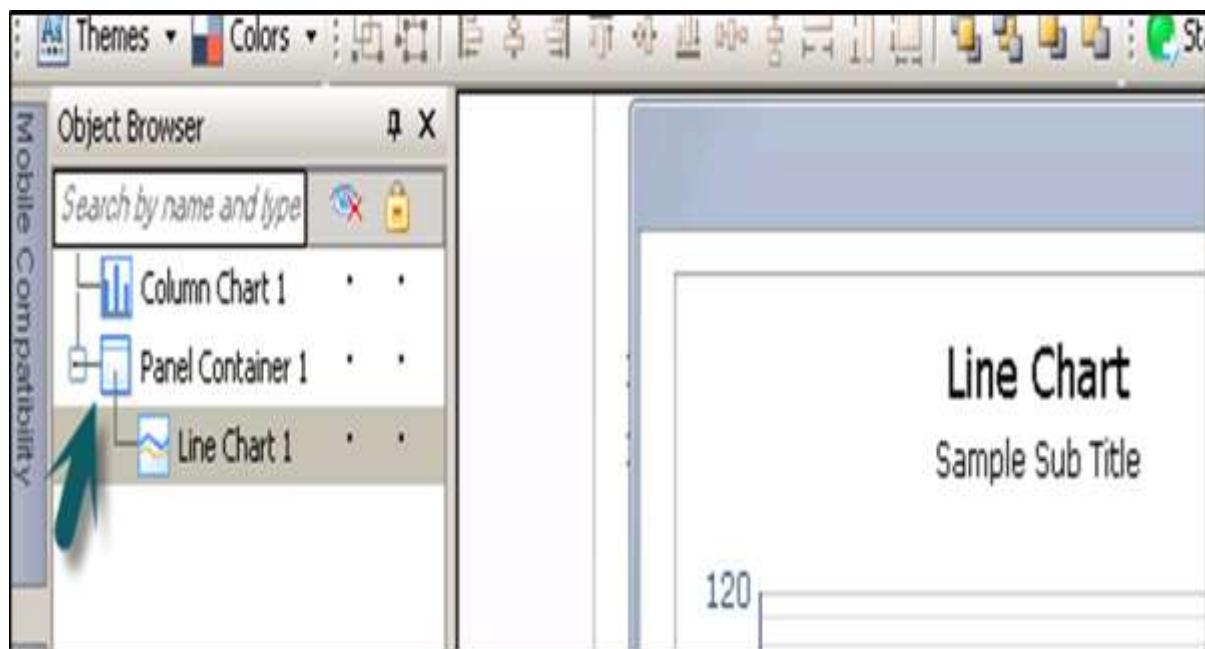
Types of Containers

You can use different types of containers, some of which are as follows:

Panel Container

You can use a panel container to hold components in smaller canvases within the main canvas. You can add, delete, move or change components in a panel container.

To see the list of components in a panel container, go to **Object Browser -> Expand**.



Tab Set

A Tab Set component acts as a smaller canvas within the main canvas and contains multiple tabs. To display a view, you can click on the corresponding tab.

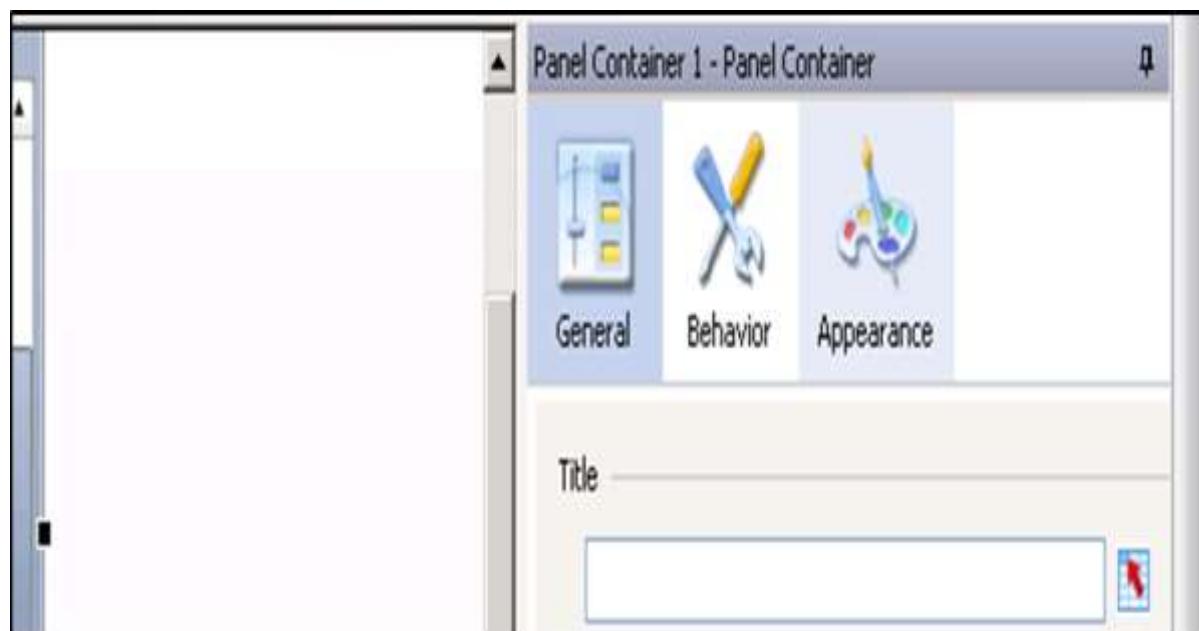


Note: In case you delete a container or a tab set, all the components in a container or tab set are also deleted.

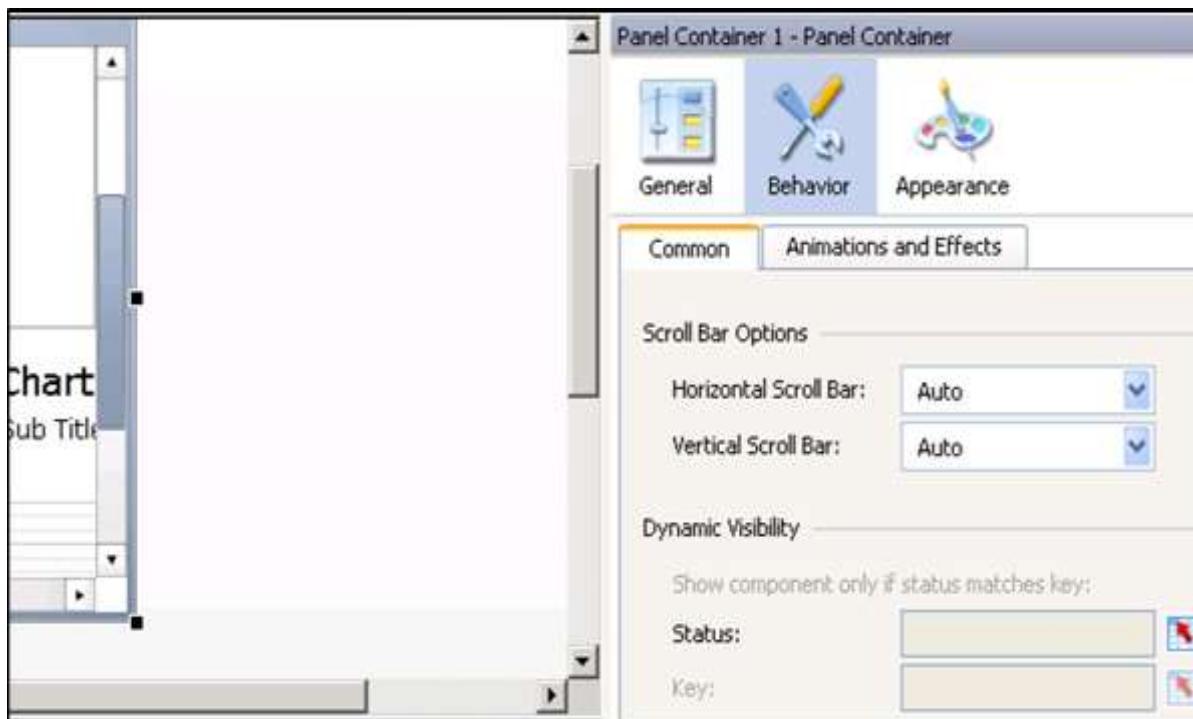
Container Properties

Like a Canvas, you can set different properties for a container-

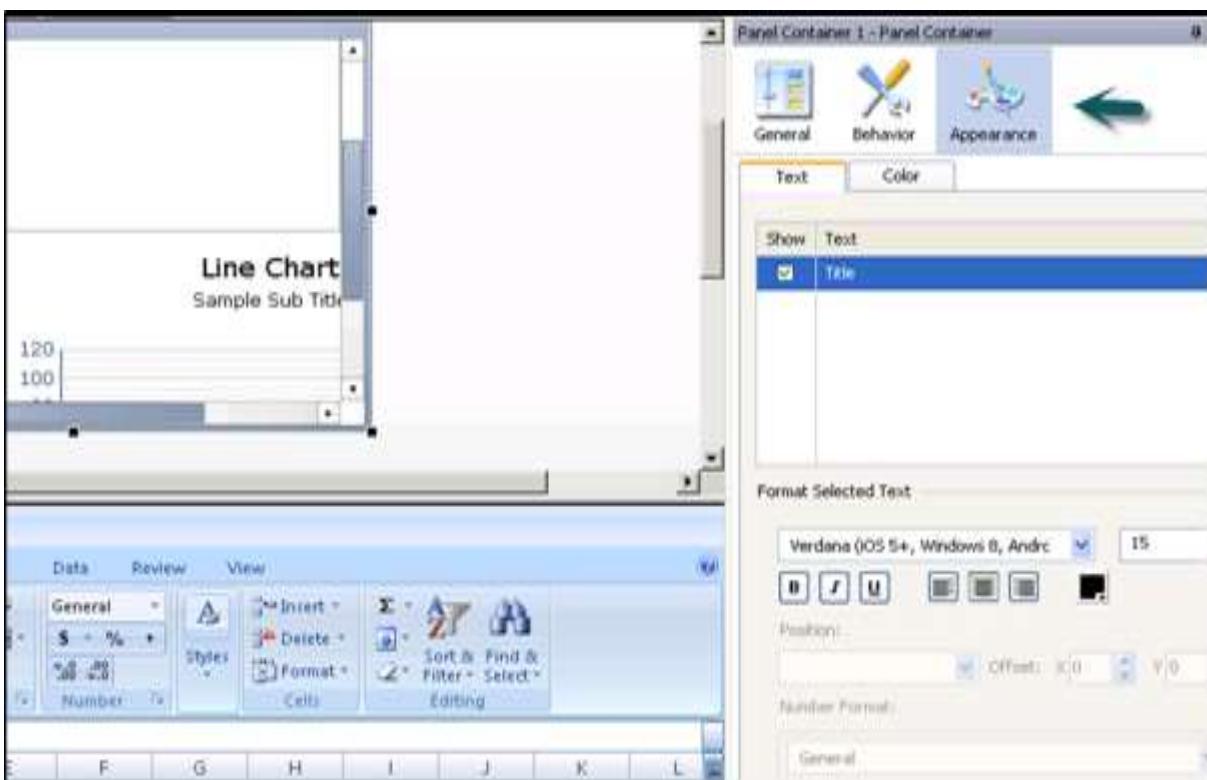
Container General Properties: You can add general properties of a Container such as – Title, etc.



Container Behavior Properties: You can set behavior properties of the container such as the Scroll bar options, Dynamic visibility, etc.

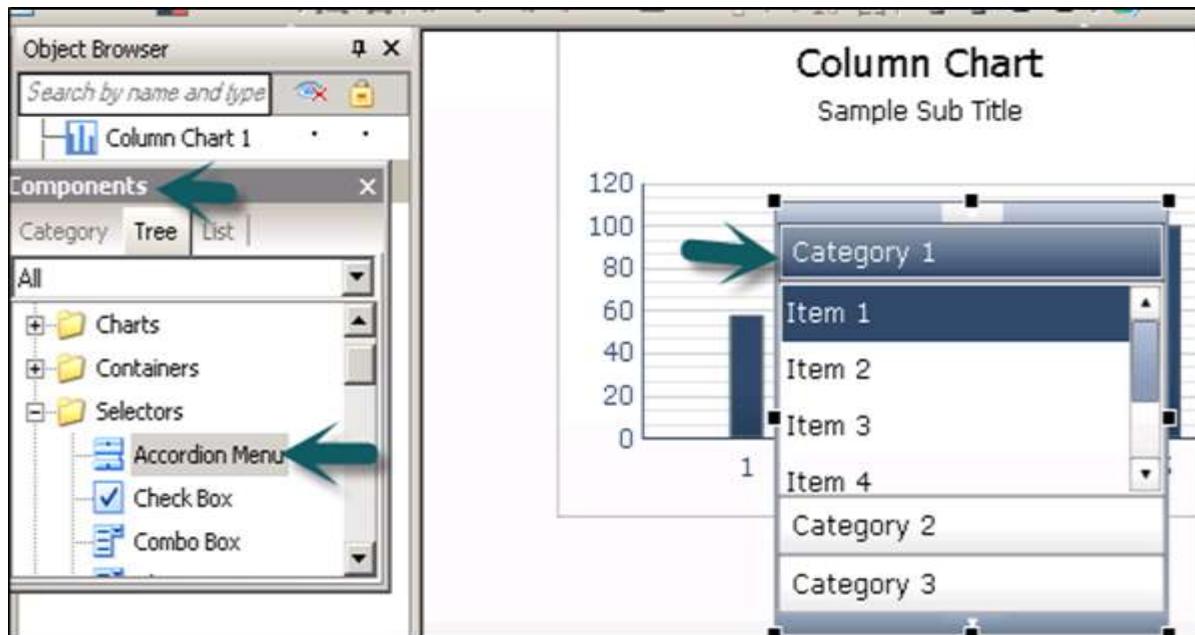


Container Appearance Properties: You can define Appearance for the container elements like Text and Color properties.



18. SAP Dashboards – Selector Components

A Selector component allows users to pick different options at run time. A selector can be used to configure the item's row, value, position and label into an embedded spreadsheet. You can add selectors from the Component browser in the Dashboard designer.

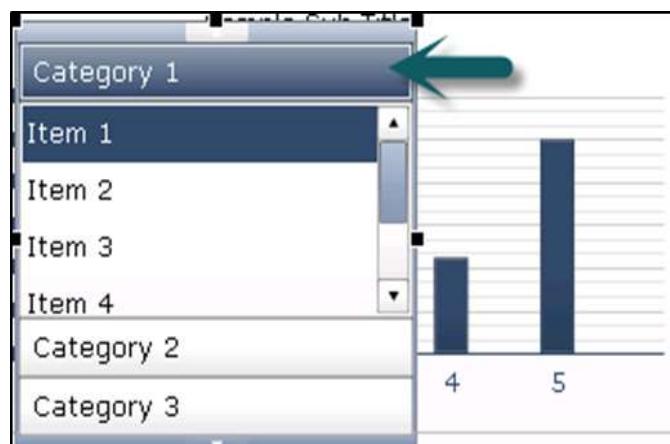


Types of Selectors

There are quite a few selectors which are available in the Selector Component. Some of them are as follows.

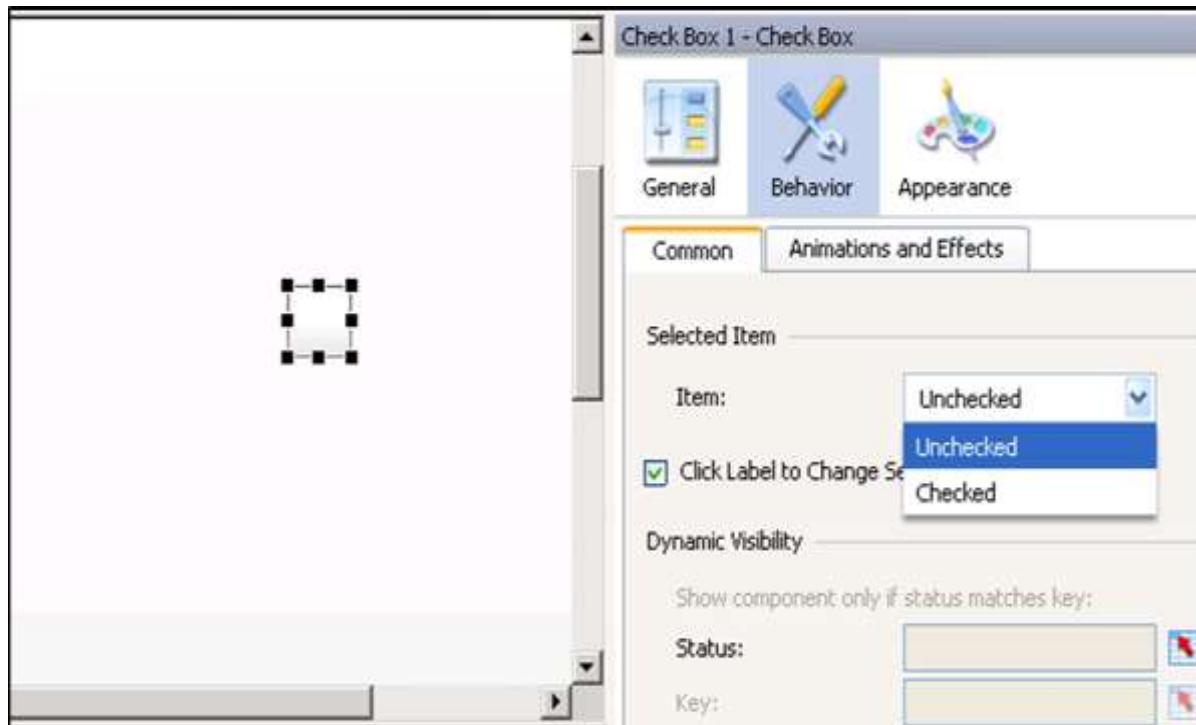
Accordion Menu

This is defined as a two-type of a selector that allows the users to select a category and then select items from that category.



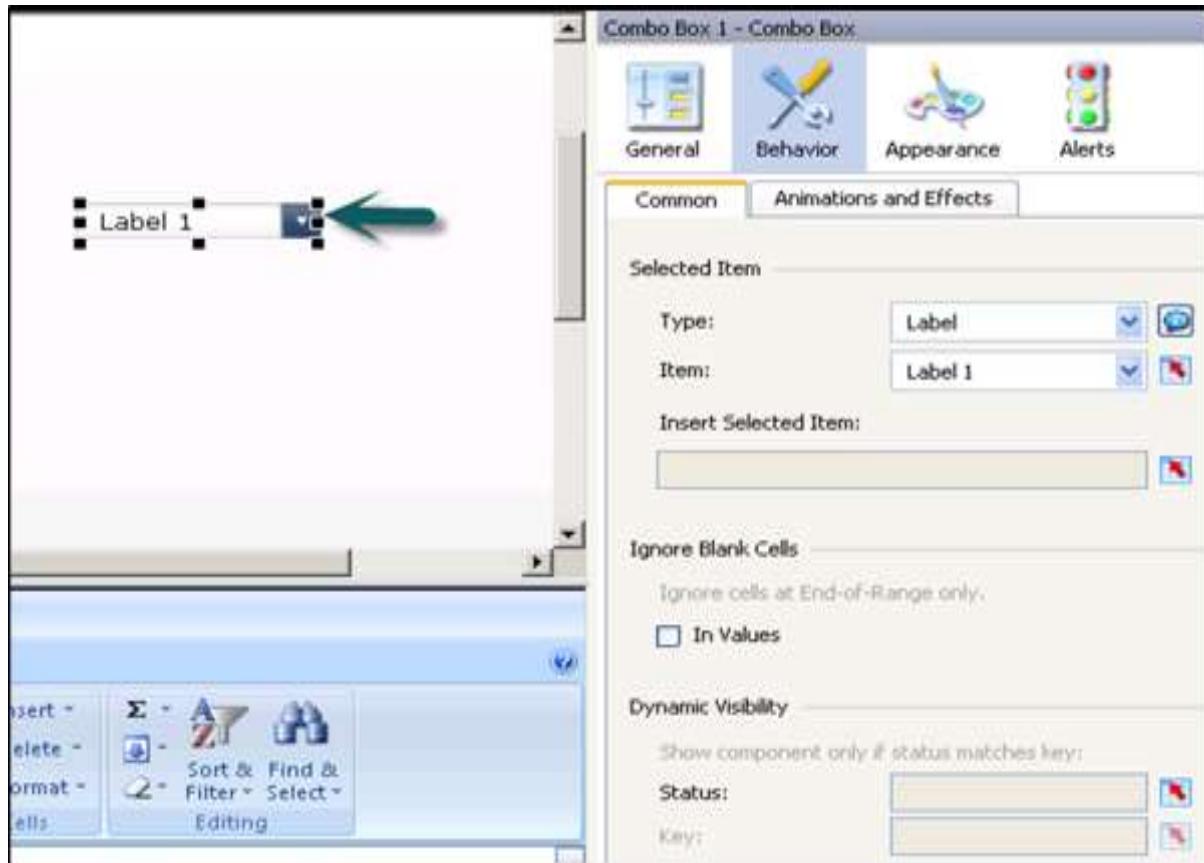
Check Box

This is a two-way box where a user can assign a checked or unchecked box. You can pass specific values to be checked or unchecked states or can bind the value to each state to use in the spreadsheet.



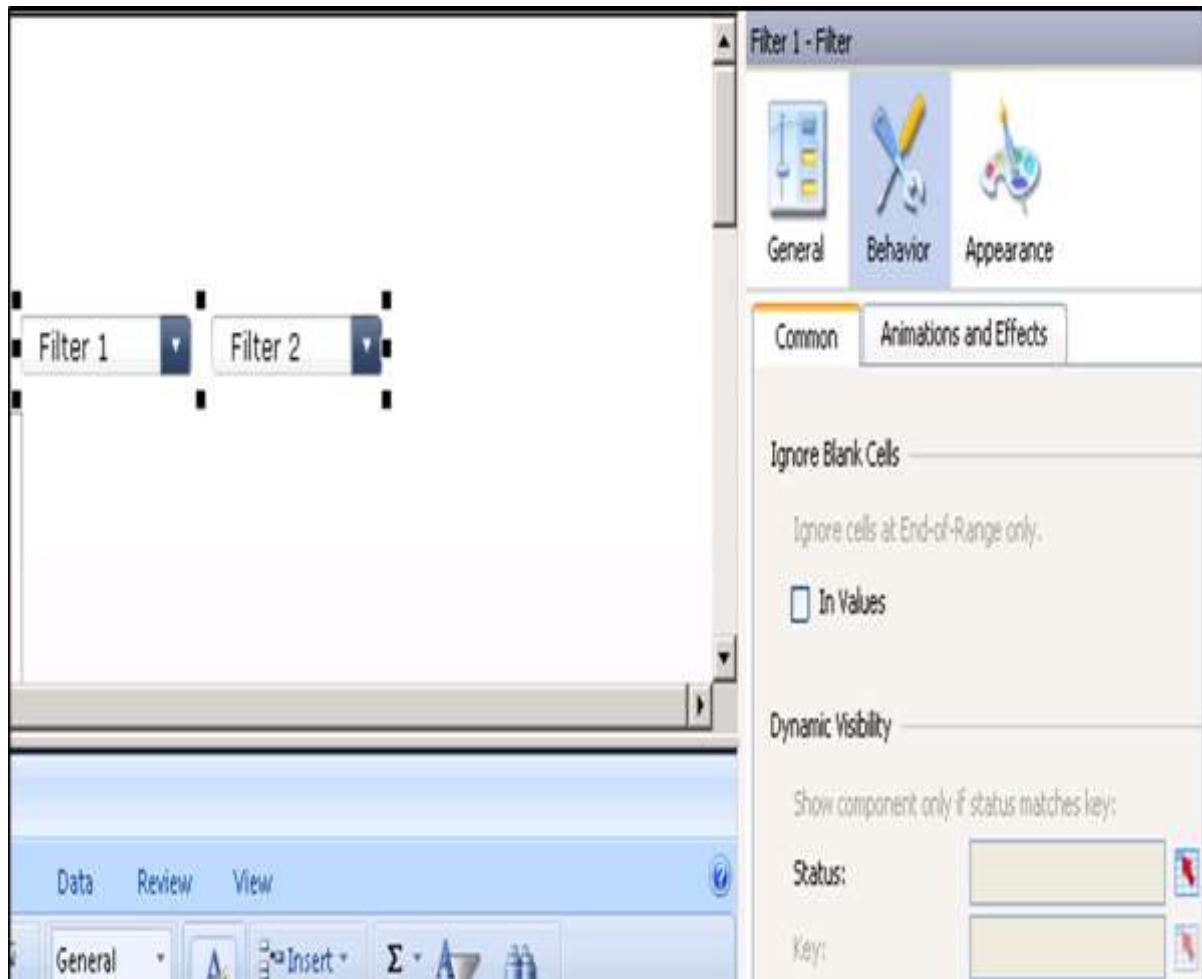
Combo Box

It allows you to use a drop down list of the items when it is clicked. A user can select an item from the list.



Filter

The Filter component checks a range of cells with multiple fields of data and categorizes them as multiple set of filter criteria. A User can select different information in each filter list.



There are many other selectors that you can use in the data models.

The screenshot shows the SAP Dashboards interface. On the left, the 'Components' palette is open, displaying a tree view of various UI elements under the 'Selectors' category. A green arrow points to the 'Selectors' node. The right side of the screen shows a spreadsheet editor with a single column labeled 'Column' containing the text 'Sample Su'. The spreadsheet has rows numbered 1 through 5. Below the spreadsheet is a ribbon-style toolbar with tabs for Home, Insert, Page Layout, Formulas, and Data. The Home tab is selected, showing standard Office-style icons for Paste, Font, Alignment, and Number.

19. SAP Dashboards – Single Value Components

Single Value Components (**SVC**) are used for adding interactivity to data models. You can use them to add more attention to important parameters.

Types of SVC

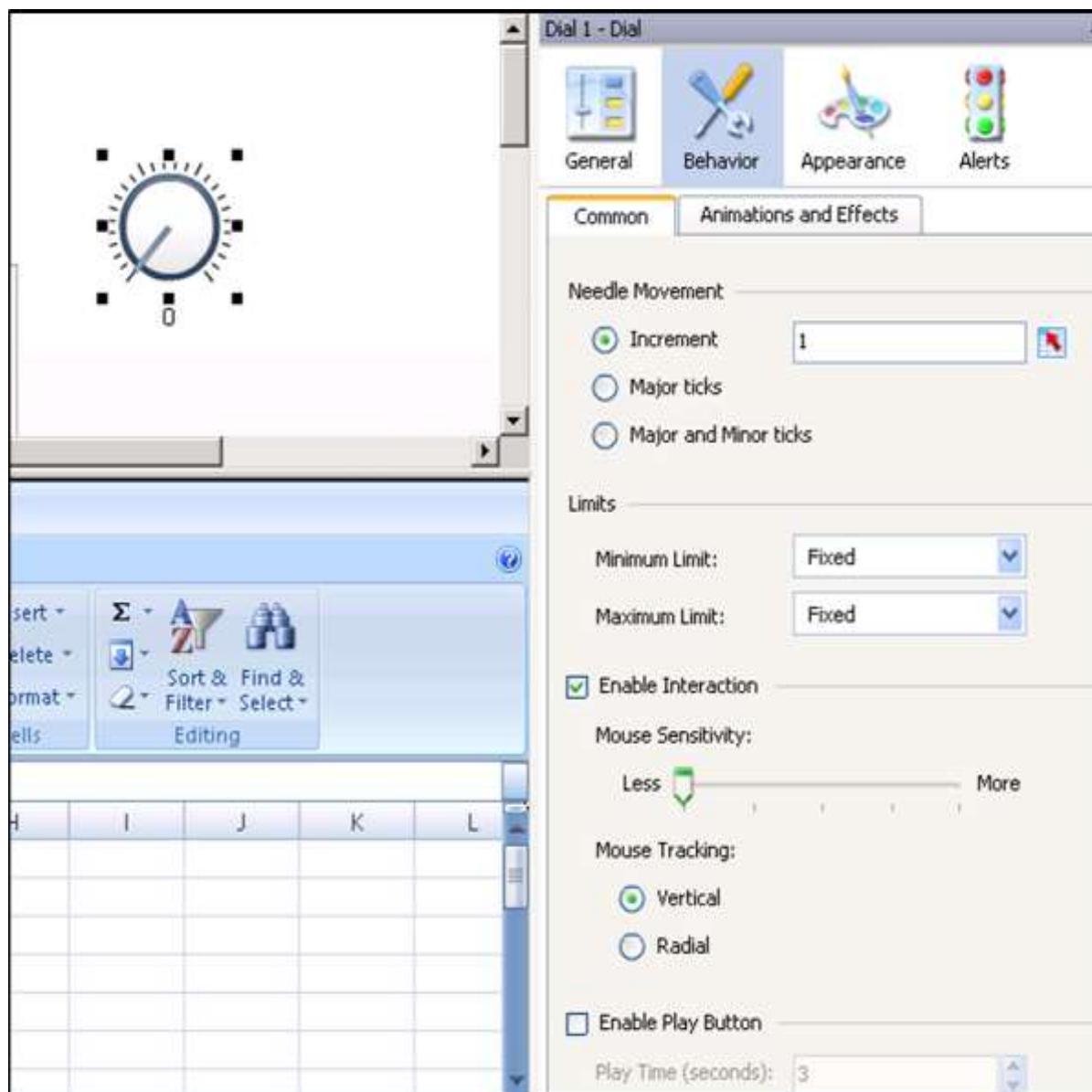
Single value components can be used in different styles, some of which are as follows –

- Horizontal Progress Bar
- Vertical Progress Bar
- Dual Slider
- Dual Slider 2
- Dial and many more

Single value components can be used as an input or output element. As an input element, it can add user interactivity and output element is used to display value of cells.

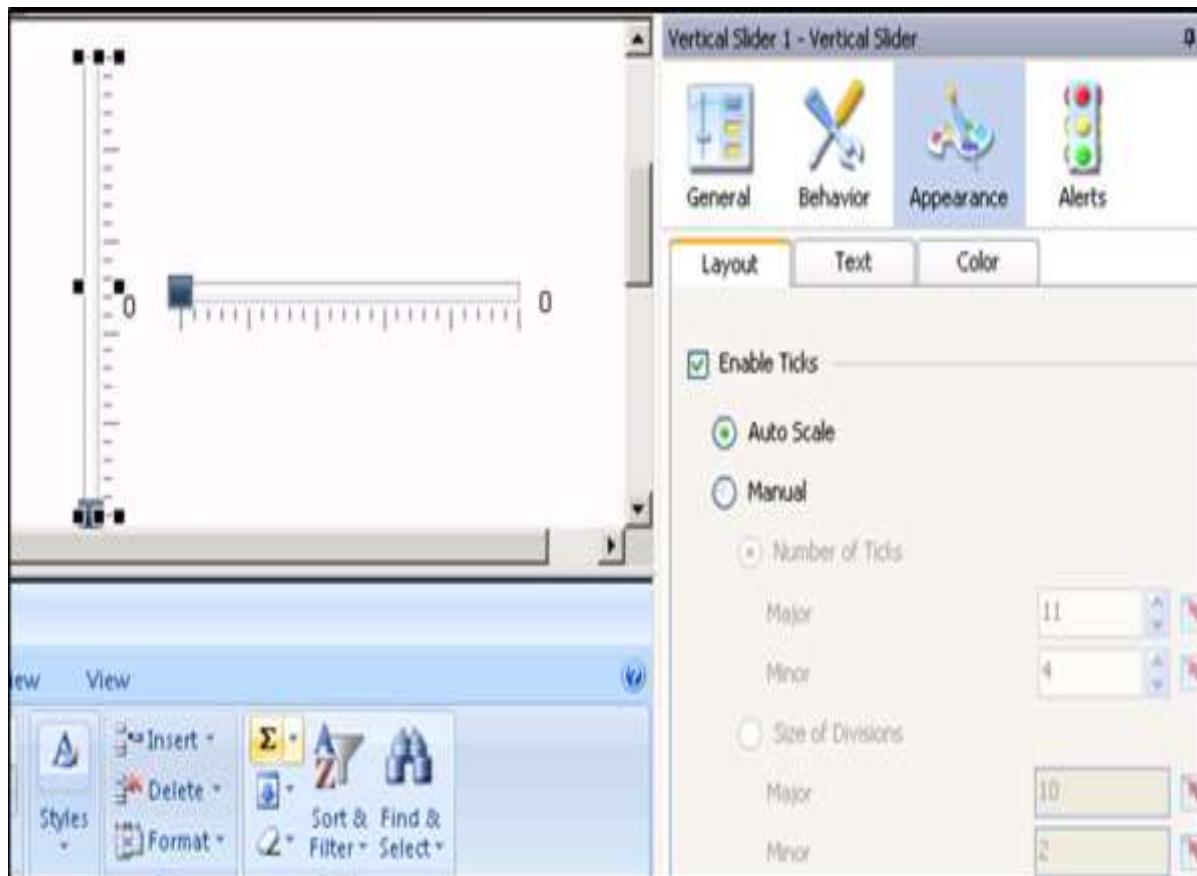
Dial

Dial is used as a link to a single cell. Users can click and drag dial to change the values.



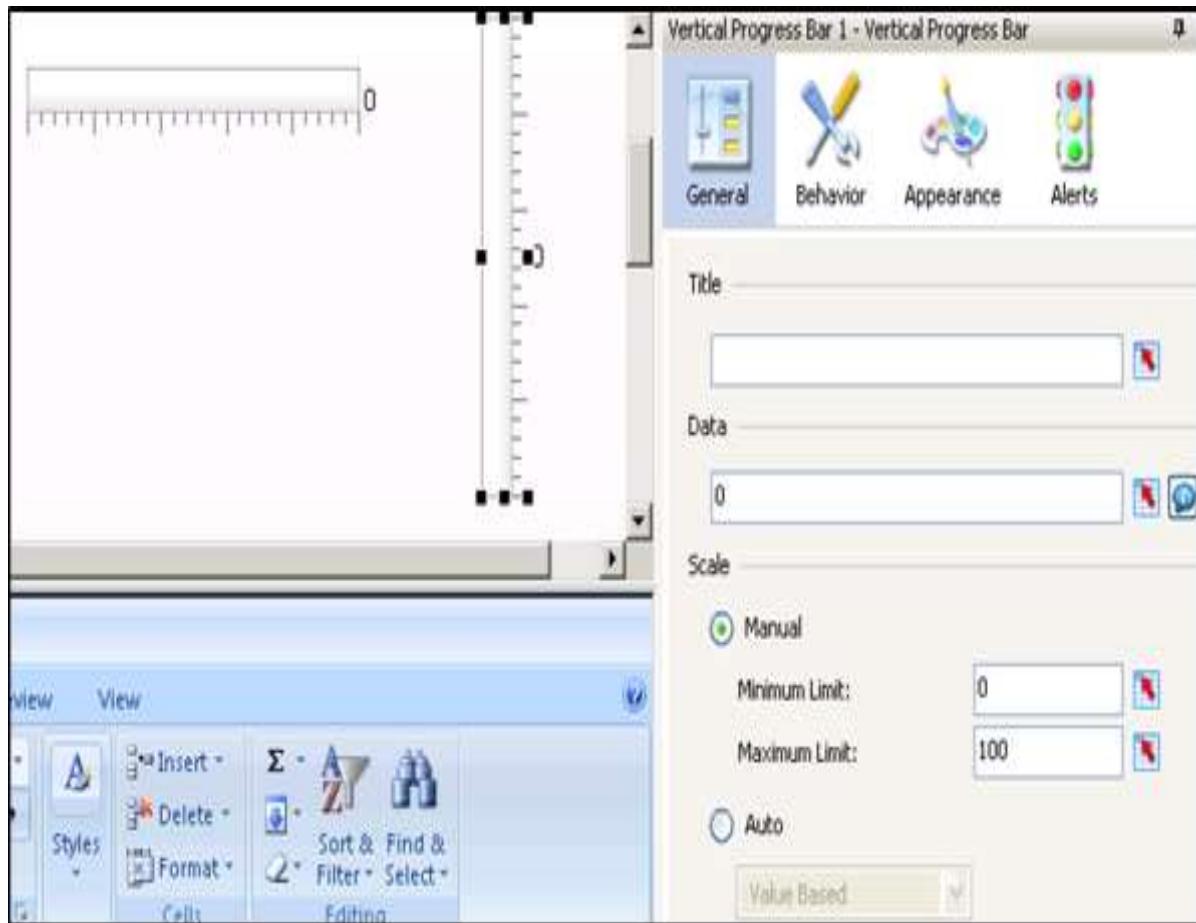
Horizontal and Vertical Slider

These are connected to a single cell and is used to pass user input. Users can drag the slider to change the values in the data model.

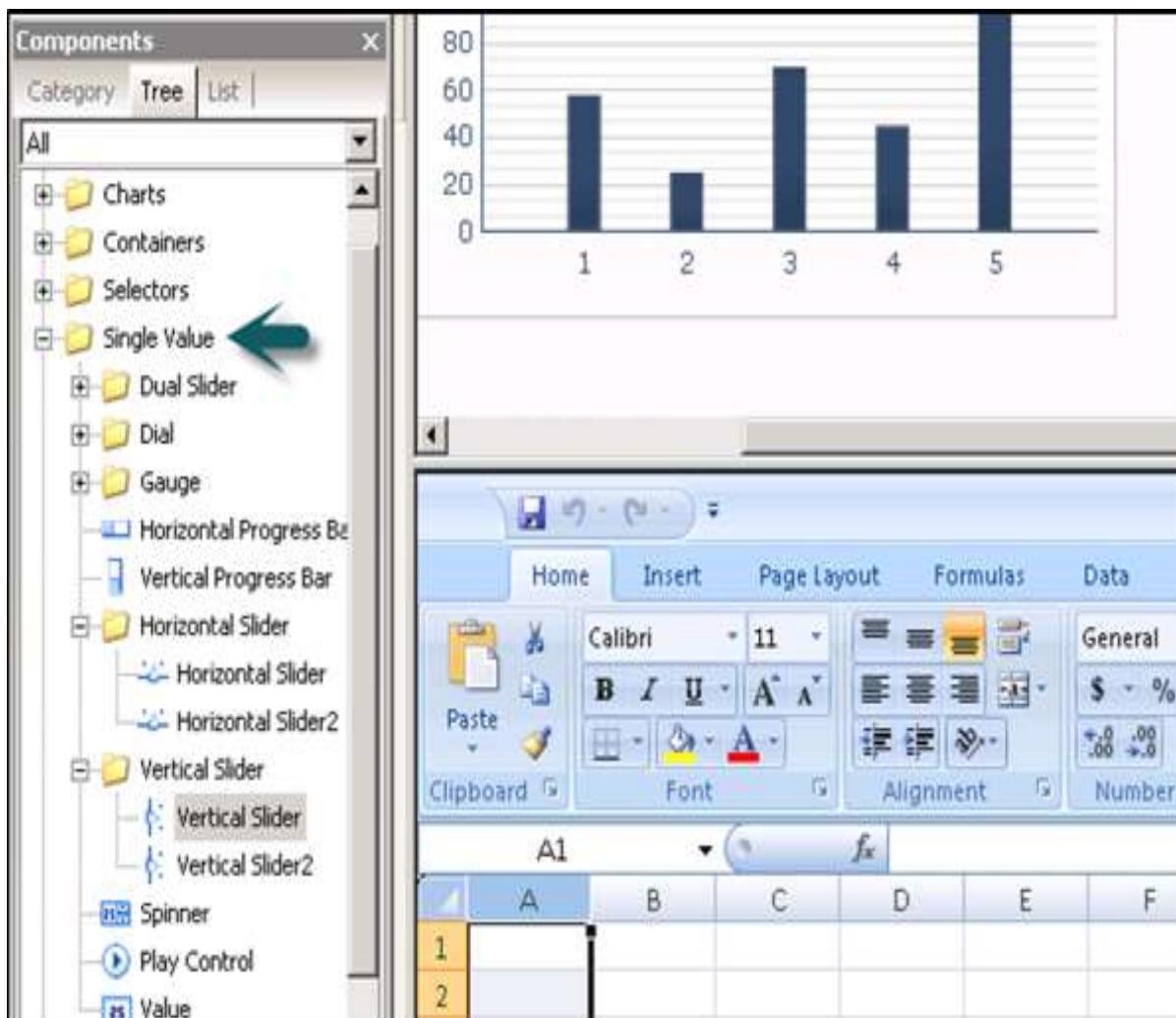


Horizontal and Vertical Progress Bar

When value displayed by progress bar increases, more and more area gets filled.



There are various single selector components that you can use in a data model. Some of these are shown in the following screenshot.



Like other components, you can also set different properties for a Single Value Component.

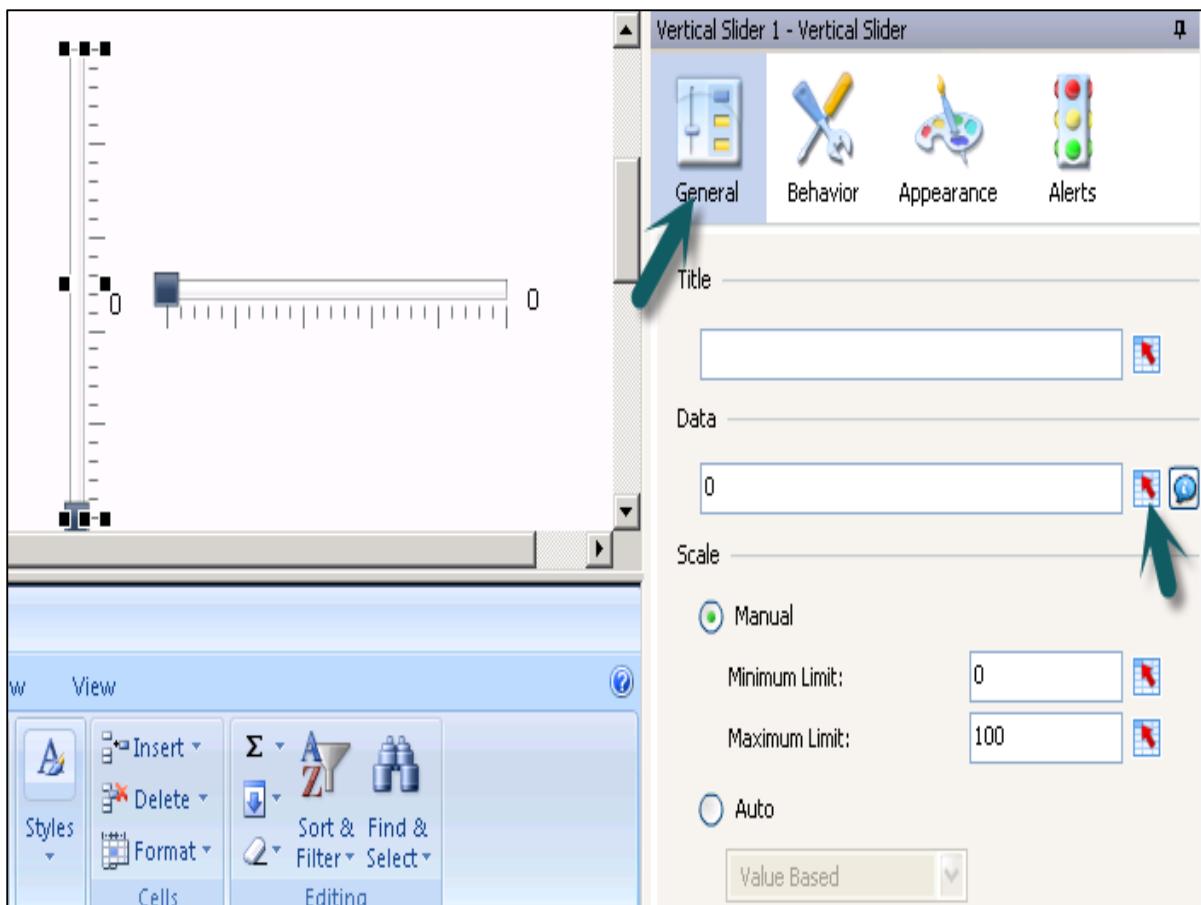
Note: You can use Data inside General Properties to display a value statically or use cell selector to choose a cell from spreadsheet. You should select a single cell for many of the components except Dual slider and Gauge components.

Properties of Single Value Component (SVC)

Following are a few properties of Single Value Component (SVC).

General Properties

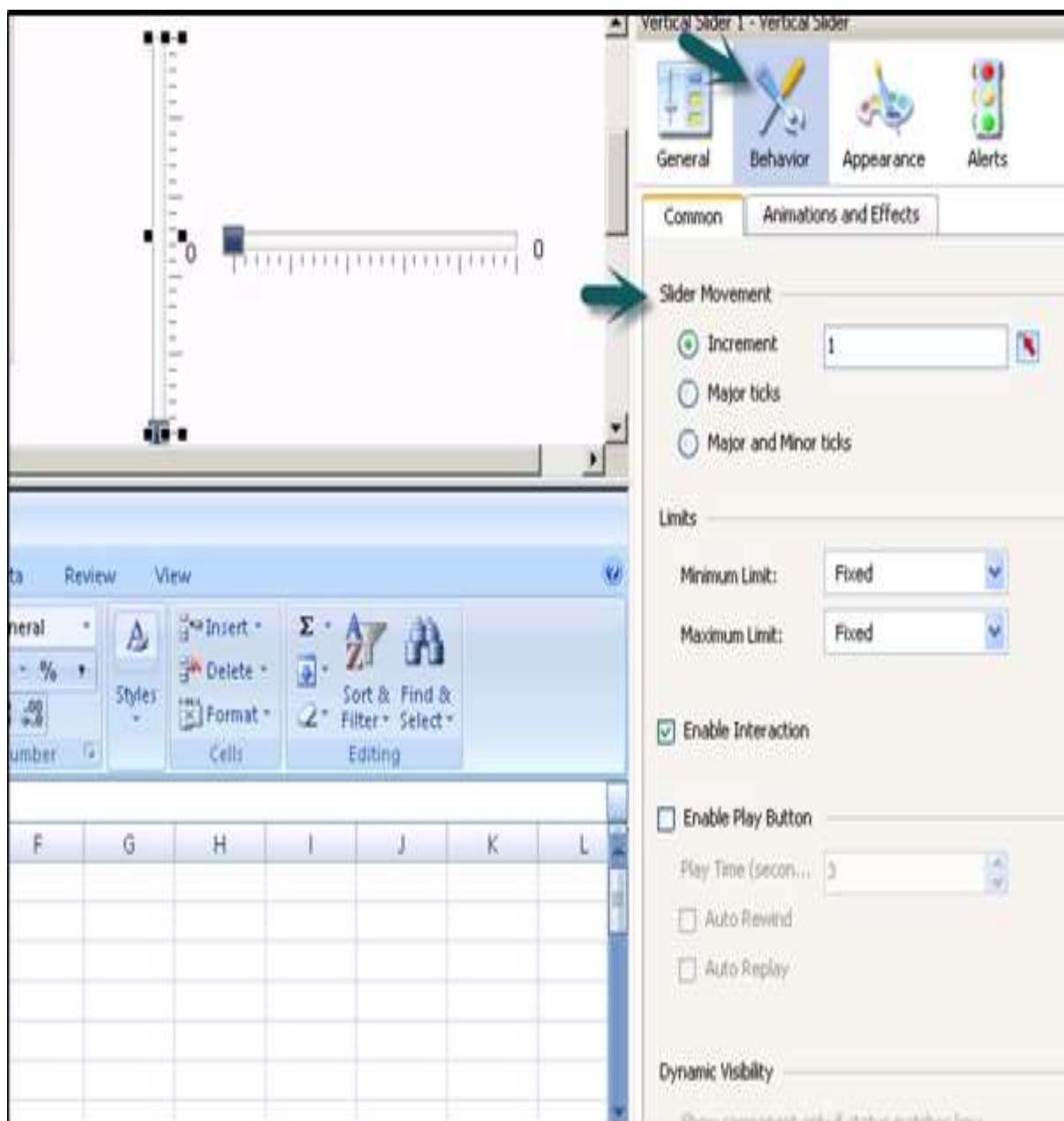
It includes title, data, range, minimum and maximum value and other general properties.



Behavior Properties

You have two tabs in behavior properties, which are

- Common
- Animations and Effect



Appearance Properties

You have different tabs under appearance such as –

- Layout tab
- Text tab
- Color tab

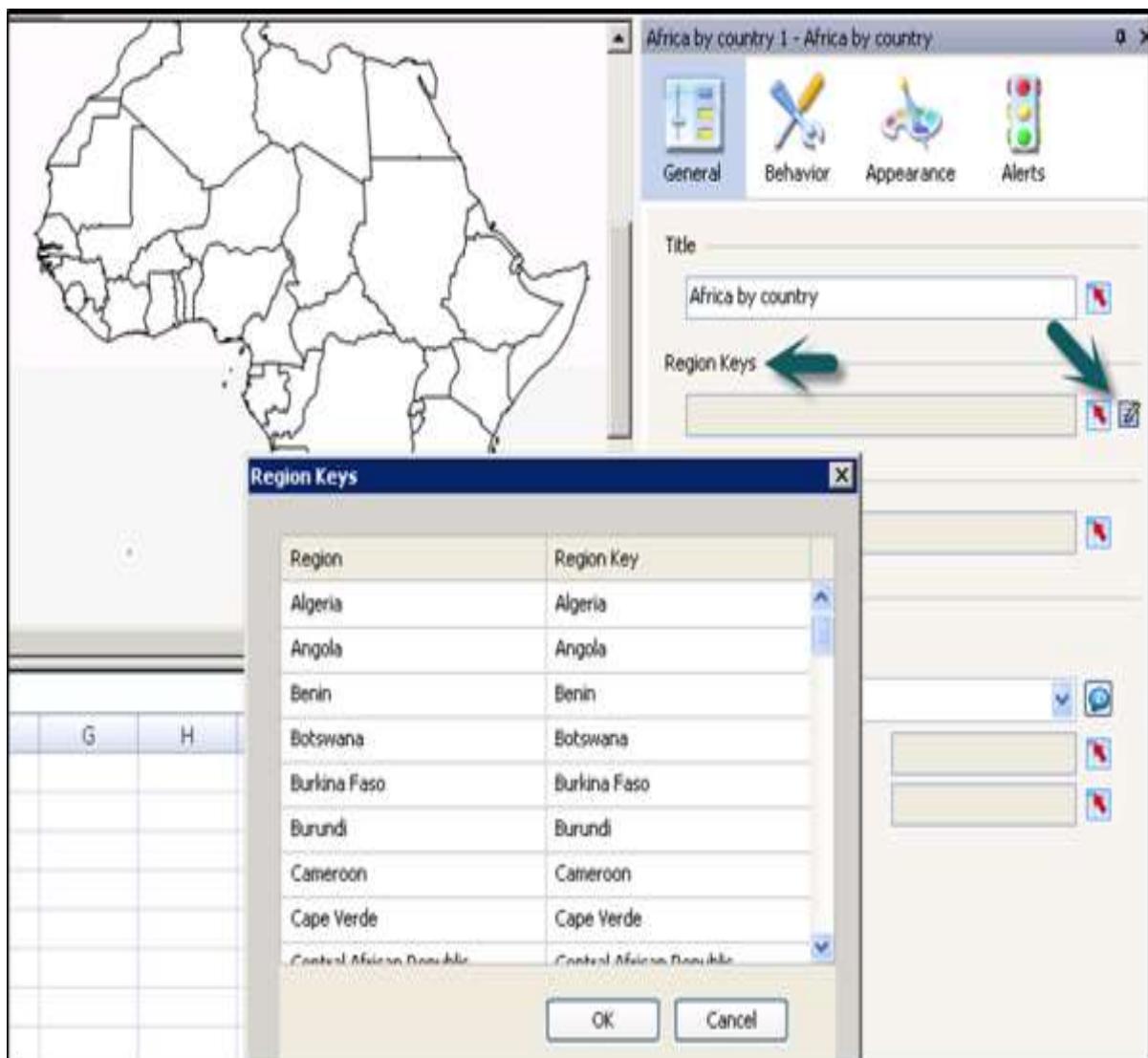
You can select different values under these tabs for various components.

20. SAP Dashboards – Map Components

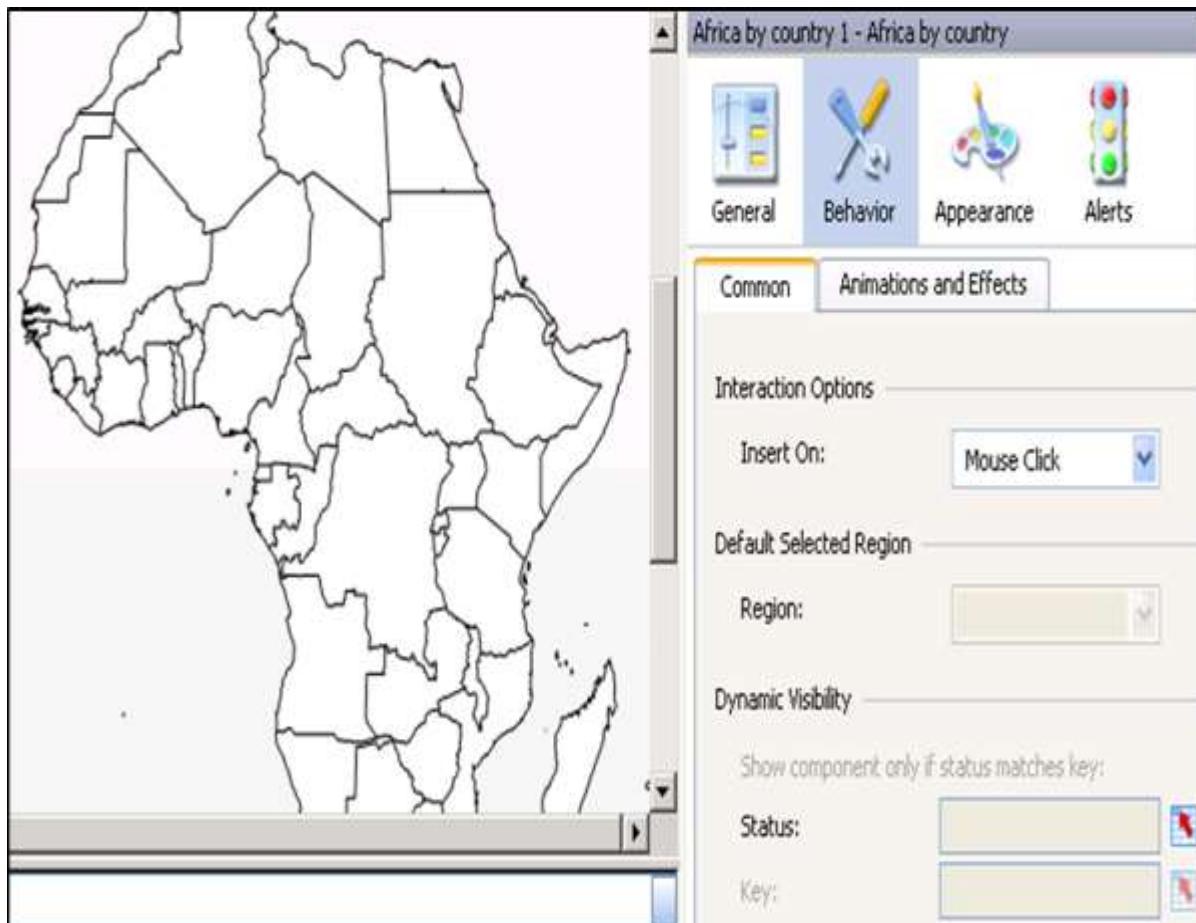
You can use the map component to create data models to display data by region. You can also use each region as a selector. This allows the user to create a data model that shows data for each region whenever the user's cursor is over that region and allows the user to check more details for each region.

The screenshot shows the SAP Studio interface for creating dashboards. On the left, there is a tree view under the 'Maps' node, listing various regional data models. One item, 'Africa by country', is highlighted. To the right of the tree view is a large, empty rectangular area representing the dashboard canvas. Below the canvas is a grid editor window. The grid has a header row with columns labeled A, B, C, D, E, and F. The first column (A) contains numerical values from 1 to 9, each enclosed in a small orange box. The other columns (B through F) are empty. The cell containing the value '1' is currently selected, indicated by a black border around it.

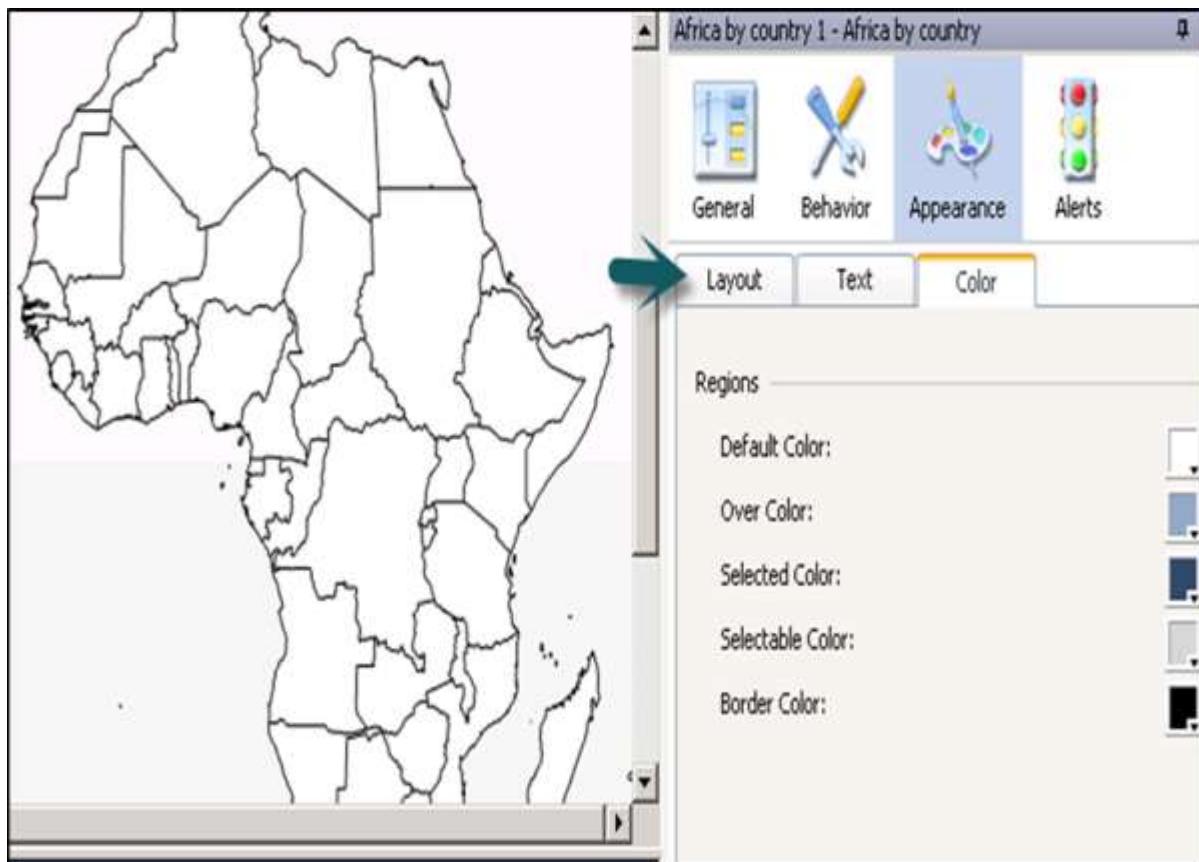
The data is associated to a map using region keys and that usually is the name of that region. You can also edit region keys by clicking manual edit option or by clicking on the cell selector.



Under the General Properties you can set the title, region keys, display data and other general properties. Whereas, under the Behavior properties, you can select insert on, region, dynamic visibility, etc.



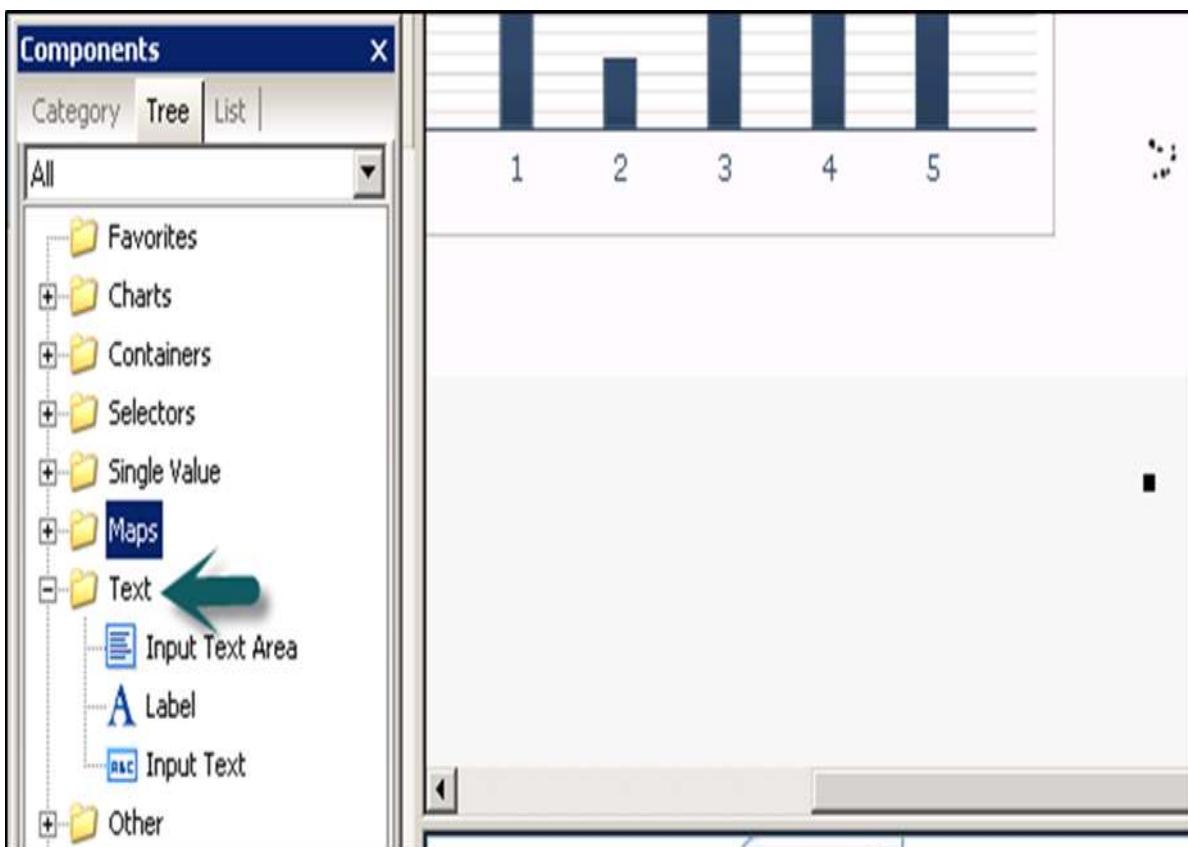
Under the Appearance properties, you can select transparency, mouse over labels, values, default color, selected color and other text and color properties.



21. SAP Dashboards – Text Components

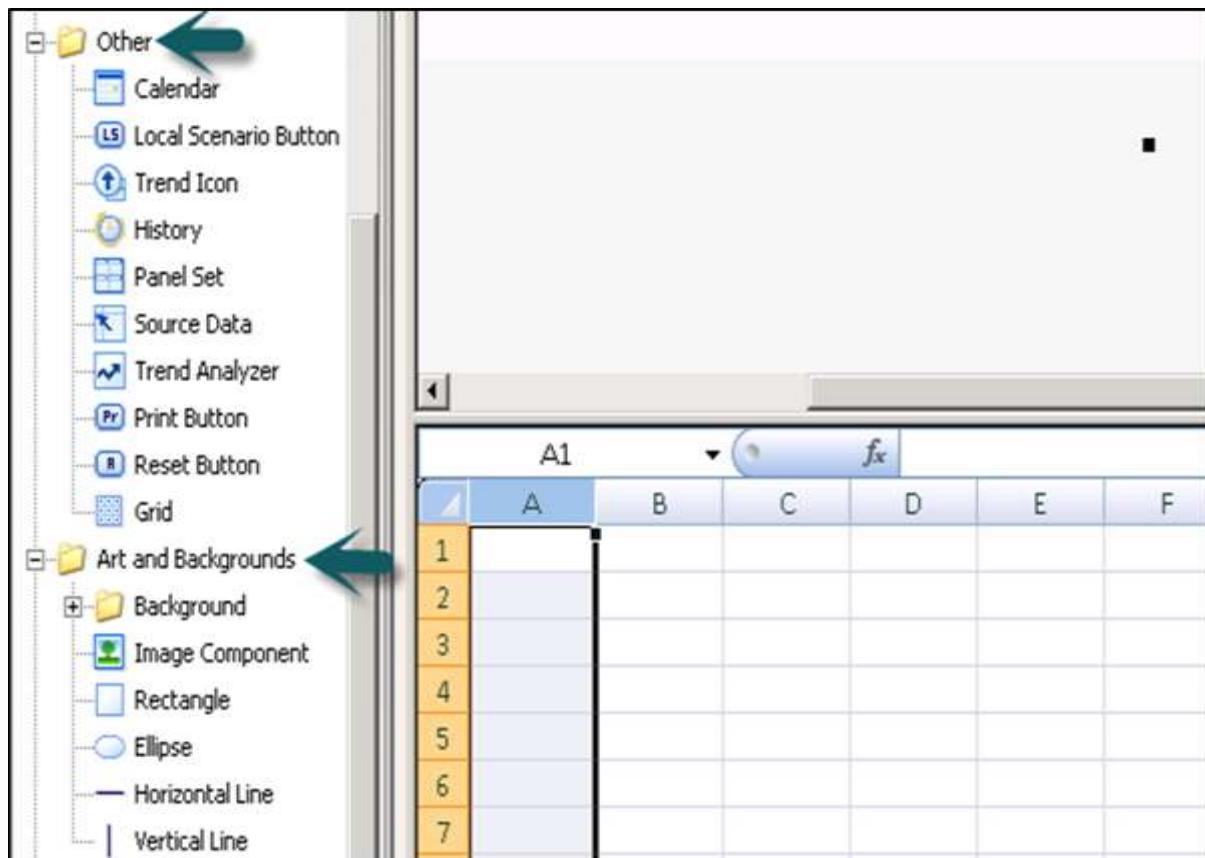
Text Components in a data model allows you to customize that data model. You can link text components to cells in embedded spreadsheet to change values dynamically or can also insert static text. You can also use formulas with HTML to allow more formatting options.

Various text components can be used in data models, some of which are shown in the following screenshot.



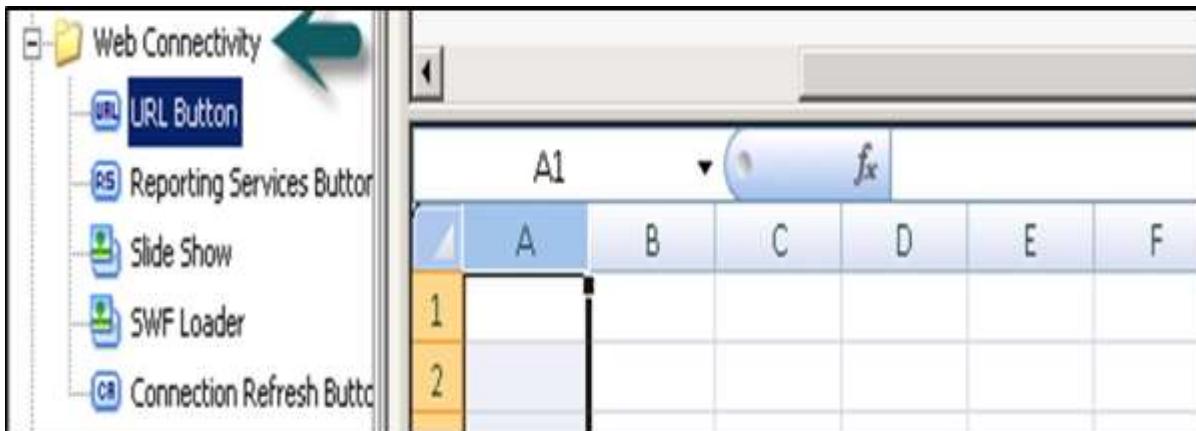
- The input text area allows the user to display multiple times at run time.
- A label component allows you to add comments like – explanation, help, etc.
- Input text component allows you to display text that a user can edit at runtime. Like other components you can set the properties for text components.

Apart from the above components there are various other components that you can use for a different purpose.



22. SAP Dashboards – Web Connectivity Components

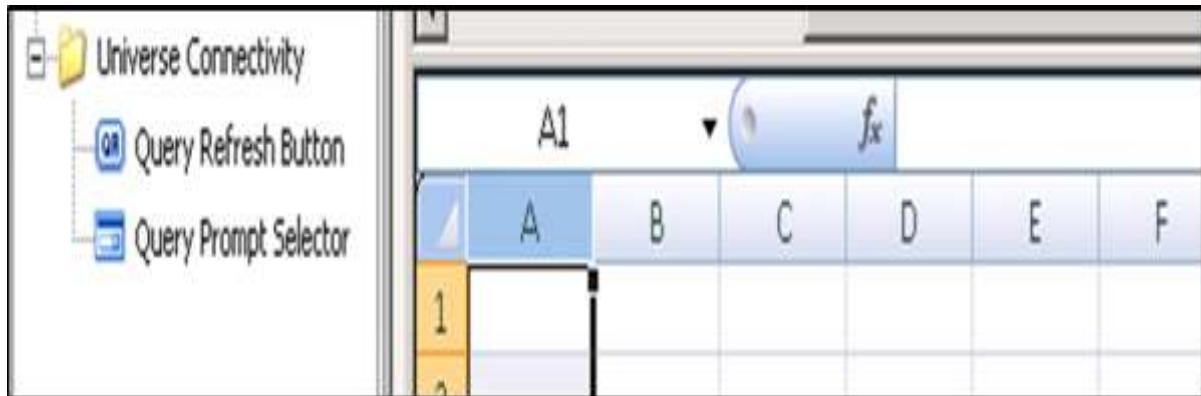
These components allow you to connect your data model to the web. Apart from this, you can also use data manager to configure web connectivity.



- **URL button:** When a user clicks at run time, a button links to a relative or absolute URL.
- **Reporting Service Button:** This allows you to connect to the reporting services server and select a report to use in the data model.
- **Slide Show:** This allows you to create a slide show of URL based images and SWF files.
- **SWL Loader:** This allows you to load the SWF files from a URL and you don't have to import the files. It is similar to the slide show component but it provides better memory management.
- **Connection Refresh Button:** This allows the user to refresh the connection manually when you link to it.

23. SAP Dashboards – Universe Connectivity

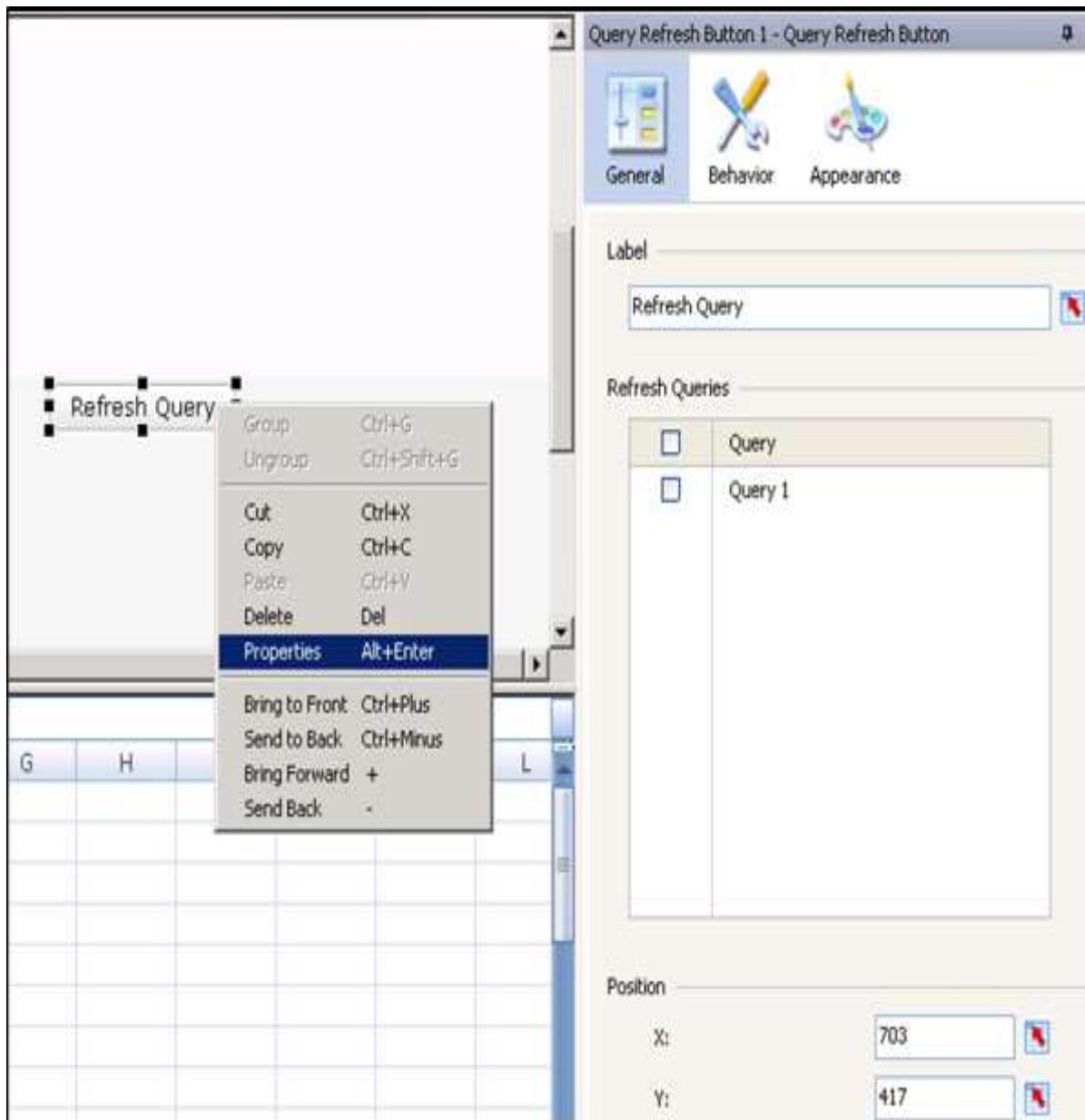
This category provides components that can be used with queries on the Universe.



Query Refresh Button

This allows the user to refresh the data at runtime. You can include Universe or BEX query to allow users to request a query refresh at run time.

Add Query Refresh button to Canvas and **Right Click -> Properties**.



In the label tab, you can enter the text manually or can use cell selector to add a text from a cell in spreadsheet. Refresh the queries window which allows you to select the query active for your data model.

In a similar way you can go to the Behavior tab and set the following property.

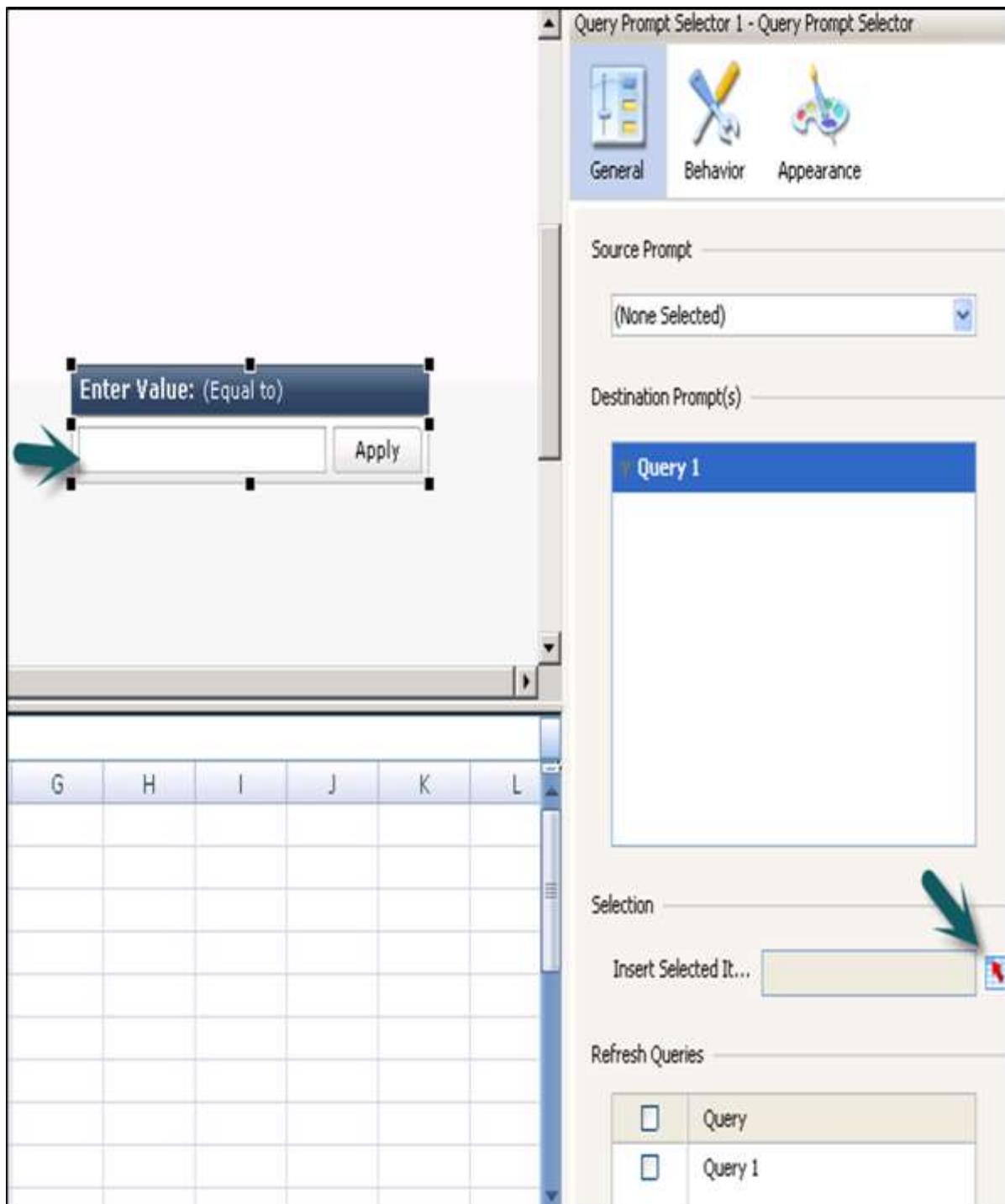
Refresh after components are loaded: This option allows you to refresh the connection automatically when your data model loads. There are various other fields that you can select for a query refresh.

The screenshot shows the configuration interface for a component named "Query Refresh Button 1". The "General" tab is selected. In the "Behaviors" section, there is a "Trigger Behavior" group. It contains a checkbox labeled "Refresh After Components Are Loaded" which is currently unchecked. Below it are two radio button options for "Trigger Cell": "When Value Changes" (which is selected) and "When Value Becomes" (which is unchecked). The "Dynamic Visibility" section at the bottom has fields for "Status" and "Key", each with a corresponding checkbox.

Query Prompt Selector

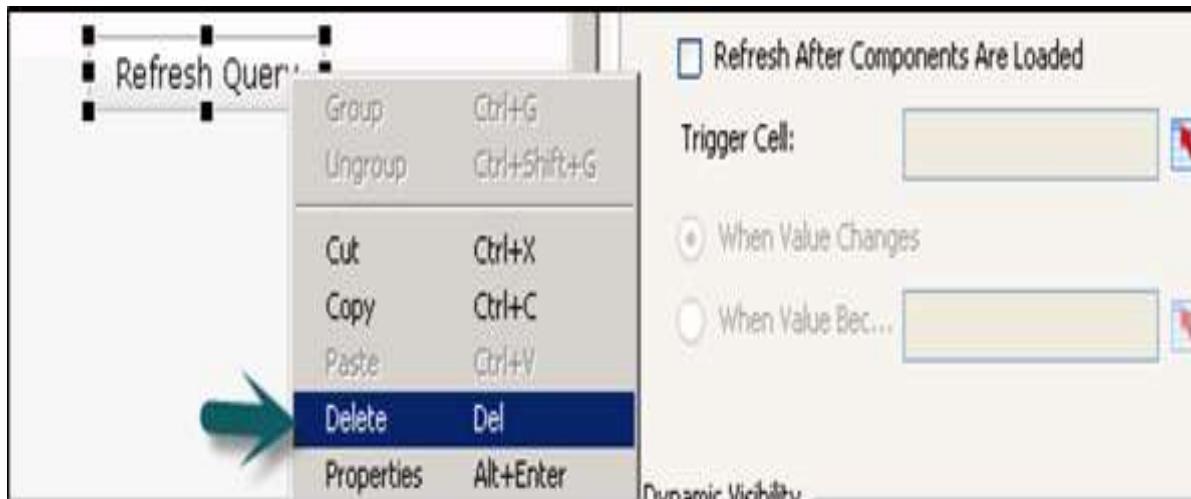
This allows the user to select values from the BEX or Universe query prompts at run time. As per the prompt type, a user can select a single value to use as the filter parameter or can choose selection objects.

To add a query prompt, you can add it from the components list and select a source query prompt or a preconfigured query prompt by dragging a query prompt to canvas.



24. SAP Dashboards – Deleting Components & Alerts

To delete a component, select the component and delete or right click and the delete as shown in the following screenshots.



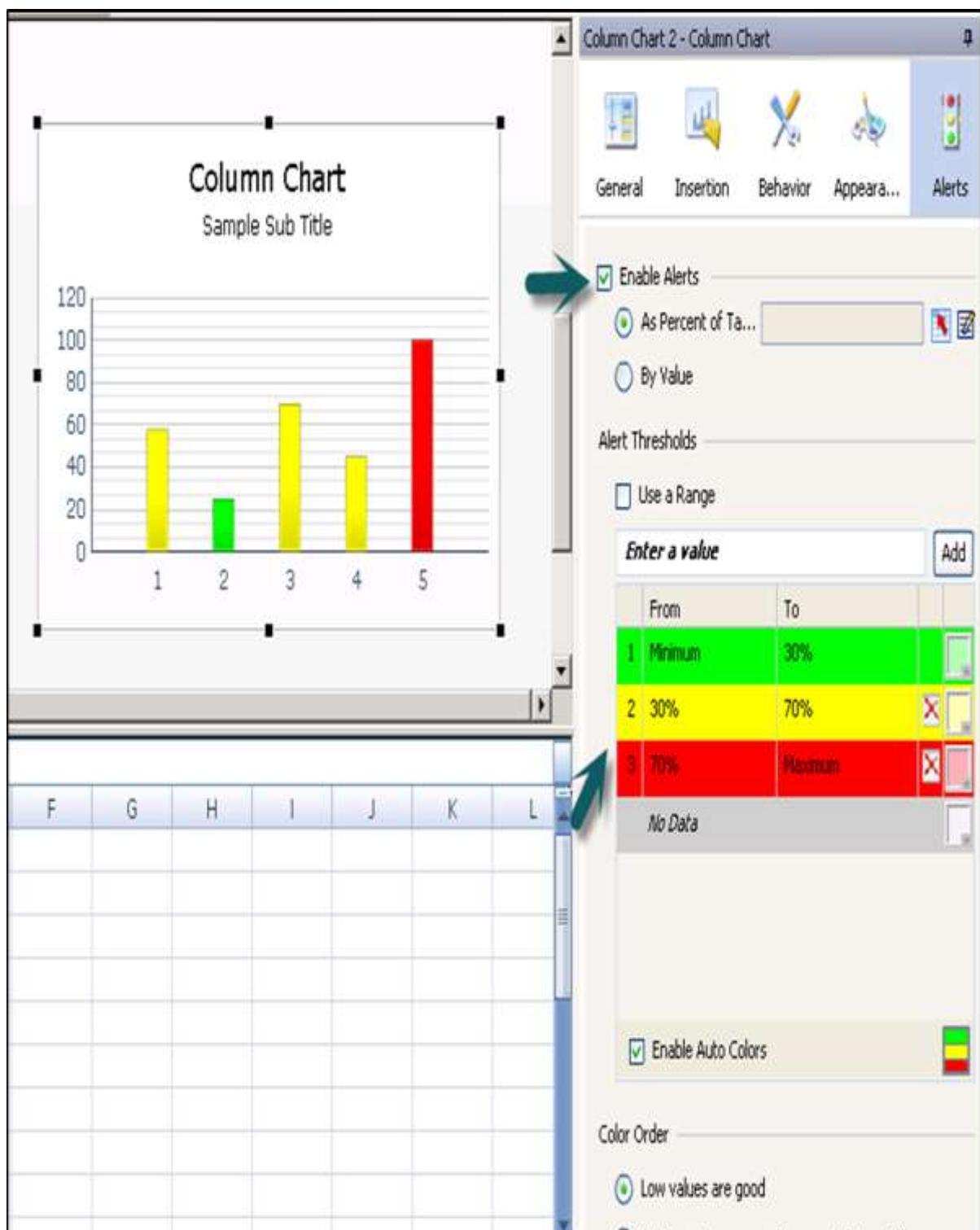
Alerts

Alerts are used to bring the user's attention to a specific item that reaches as per a pre-established limit. You can set different colors showing the level of alerts. In a common scenario the following colors represent some conditions, which are mentioned alongside them:

- **Green** – Represents a desired condition.
- **Yellow** – Represents a warning or not a desired condition.
- **Red** – Represents a critical issue.

You can enable alerts for the following components in a data model.

- Selectors
- Single Value Component
- Charts
- Maps
- Other Components



25. SAP Dashboards – Models & Templates

A data model is known to consist multiple components that are bound to the data source in a query or a spreadsheet. You can use the default templates in the Dashboard designer to create data models.

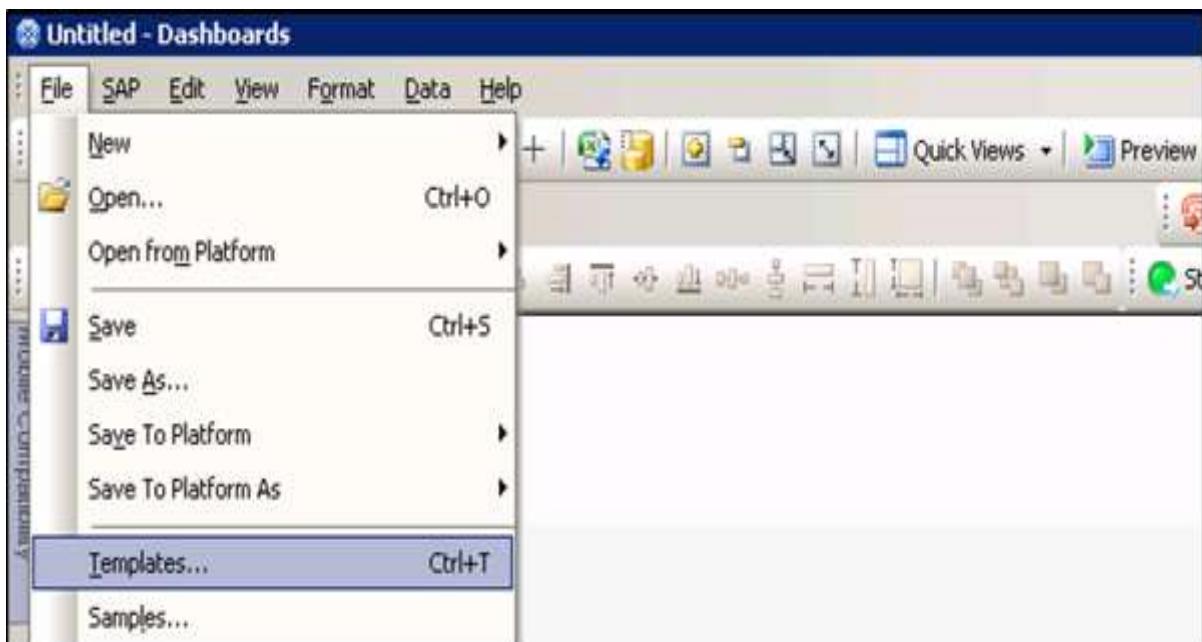
To create a model in the Dashboard, you first need to import data into the embedded spreadsheet or create a query from the external data source. The next step is to add components as per the model requirements and link them to a data source. Then comes setting the properties of component like formatting, text, color and layout of component and last step is to preview and publish the model.

Templates

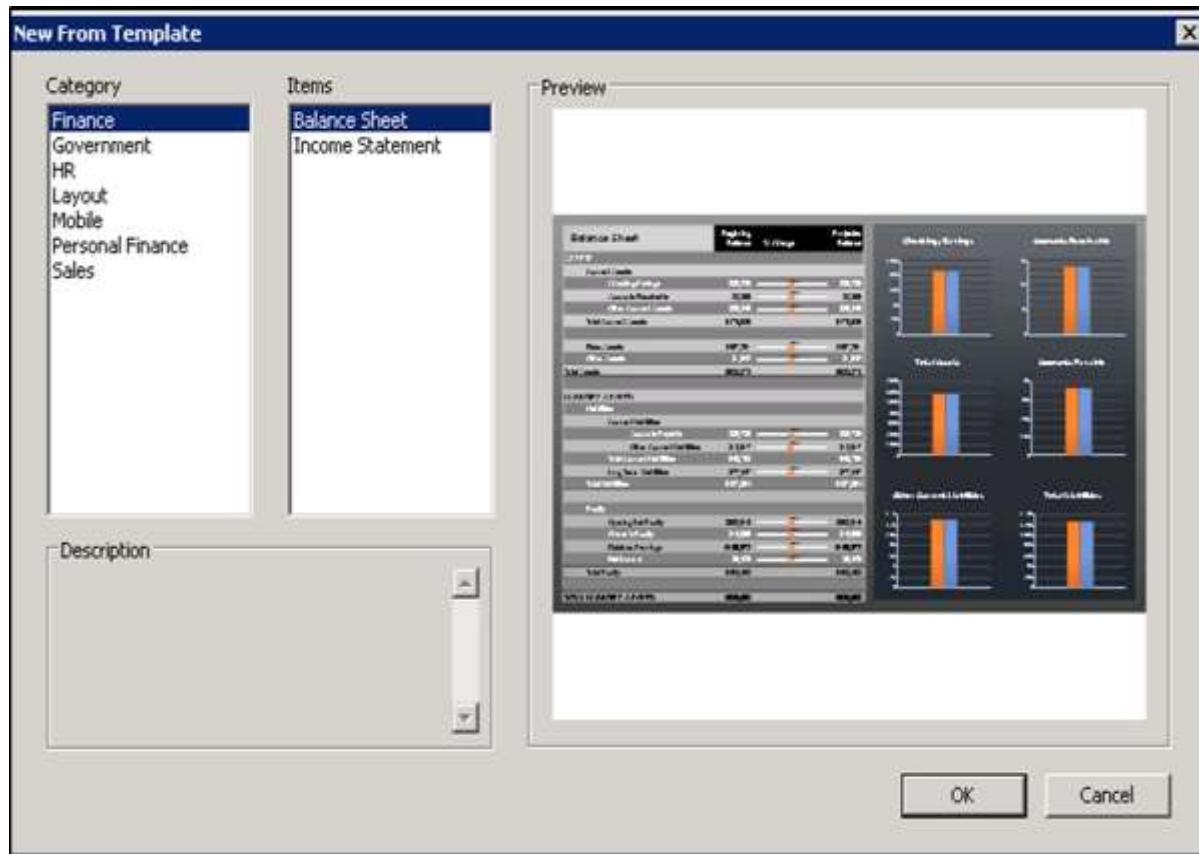
To create new models, you can use templates as the starting point. Templates also gives an idea how different the component works and you can add them to the canvas to build a new model. You can add a template, delete it or can also modify it.

You can use templates that contain basic components and add customization to meet the dashboard needs as per the requirement.

To open templates, go to **File -> Templates** as shown in the following screenshot.



In the next window, you can see the template category. When you select a category, it shows you the list of templates under that category.

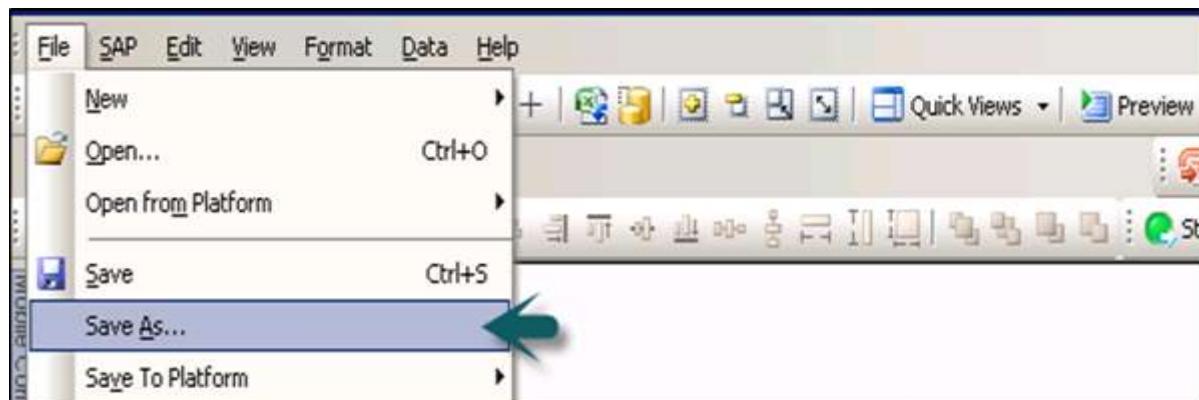


You can see the template item in the preview tab. Select the template and click OK.

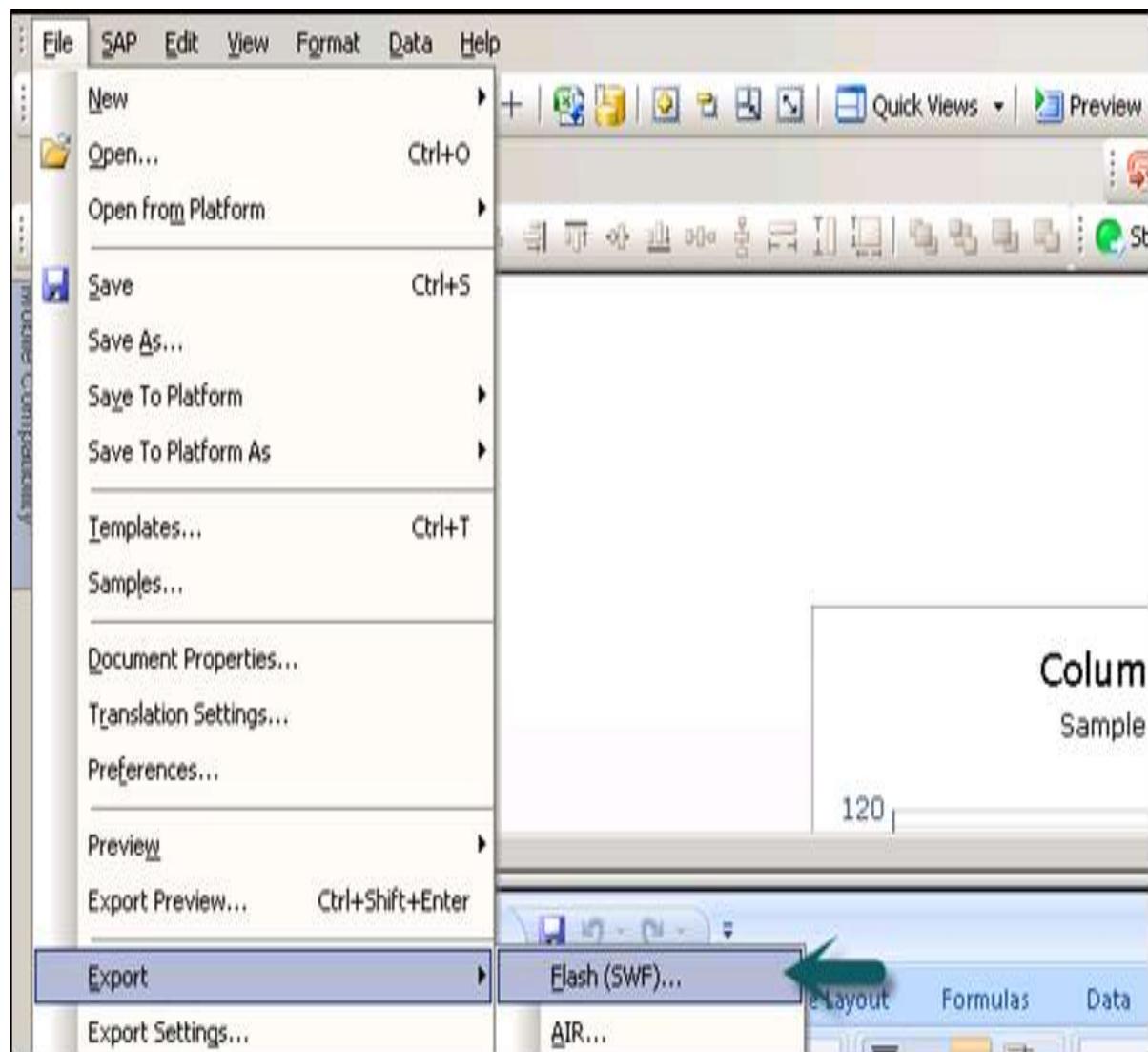
Creating New Templates

Suppose you want to create templates with a company logo to use in the dashboards. You can add logos and set appearances and once it is done you can save your model.

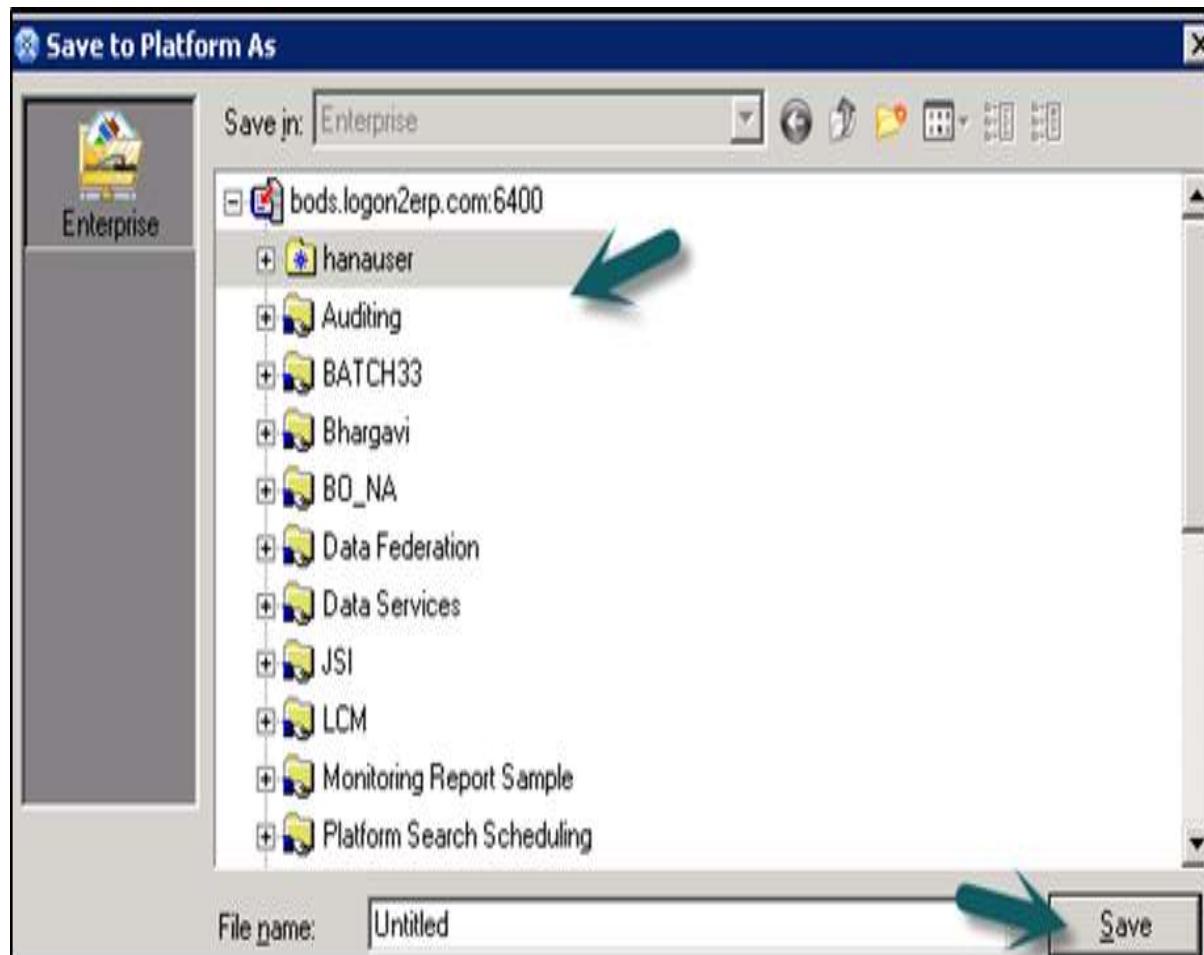
Go to **File -> Save As** and navigate to template folder **\assets\template**. Enter the name of file and click Save.



To export the template, go to **File -> Export -> Flash (SWF)**



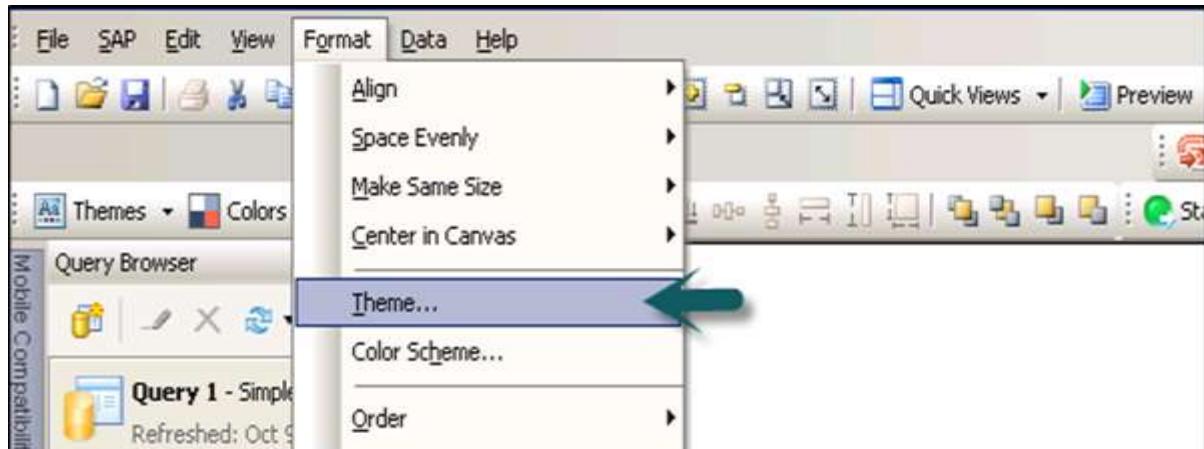
Navigate to the Template folder and select the file name and click Save.



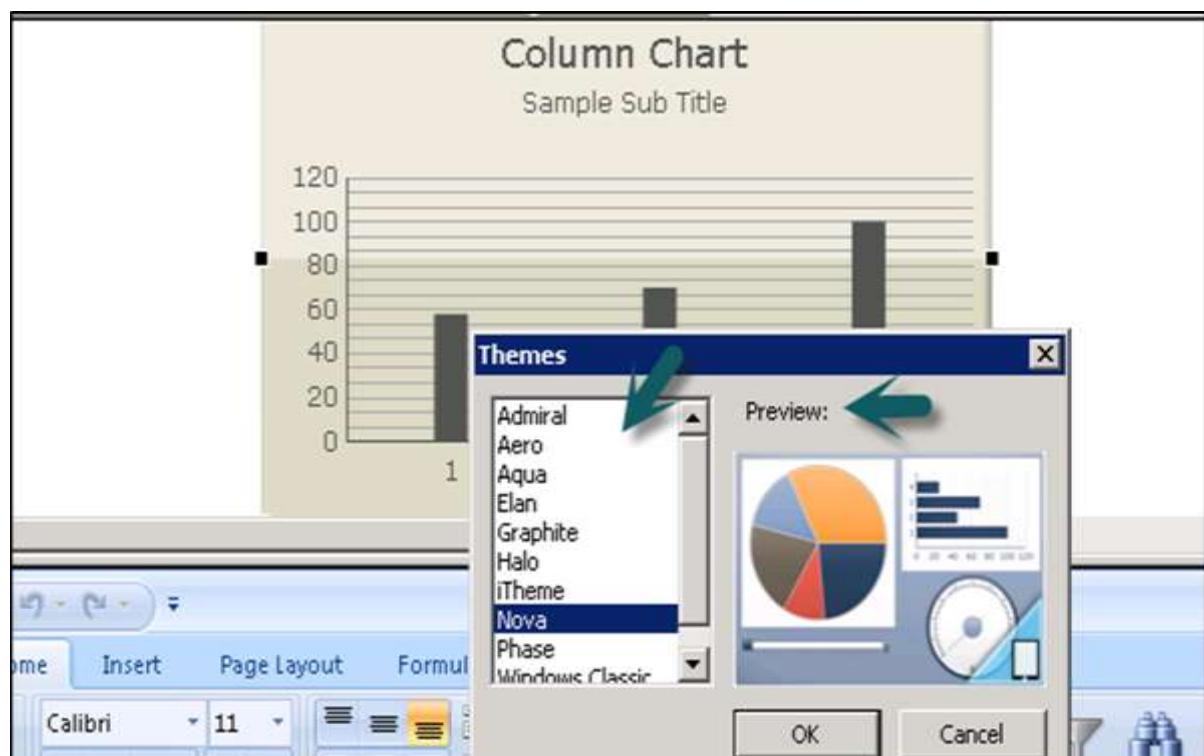
26. SAP Dashboards – Themes

Using themes, you can apply the same layout, appearance and formatting to data models when you need all models with the same look. Theme provides you with a color scheme but you can customize it as per the requirement.

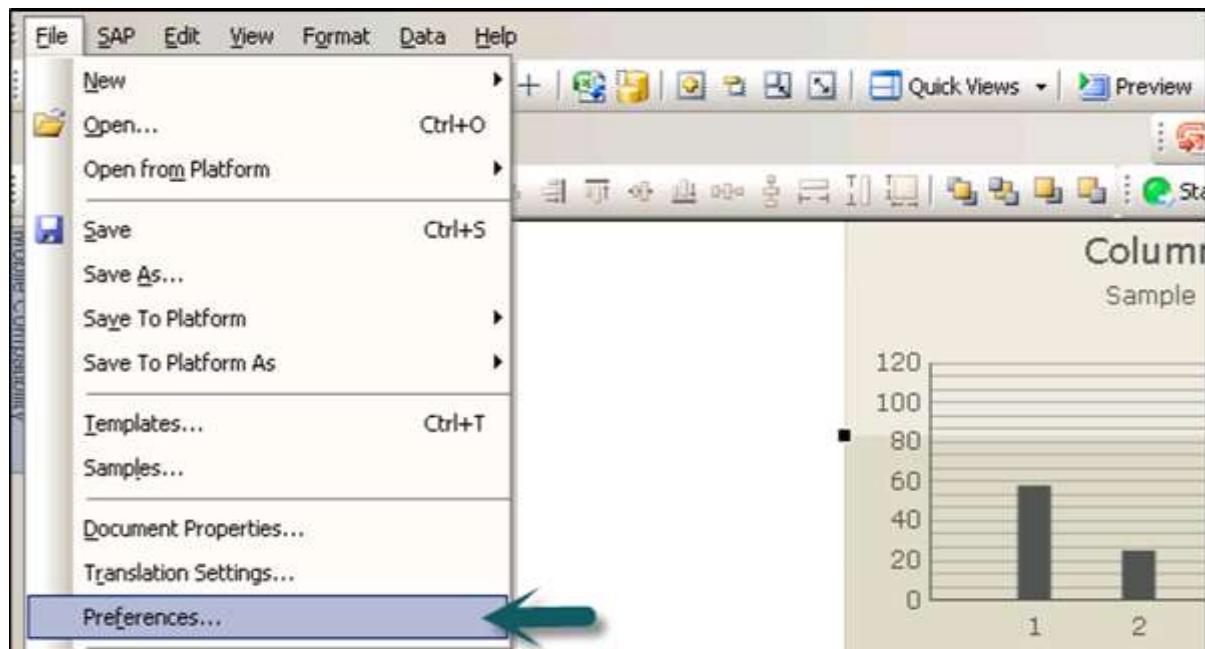
To apply a theme, go to **Format -> Theme**



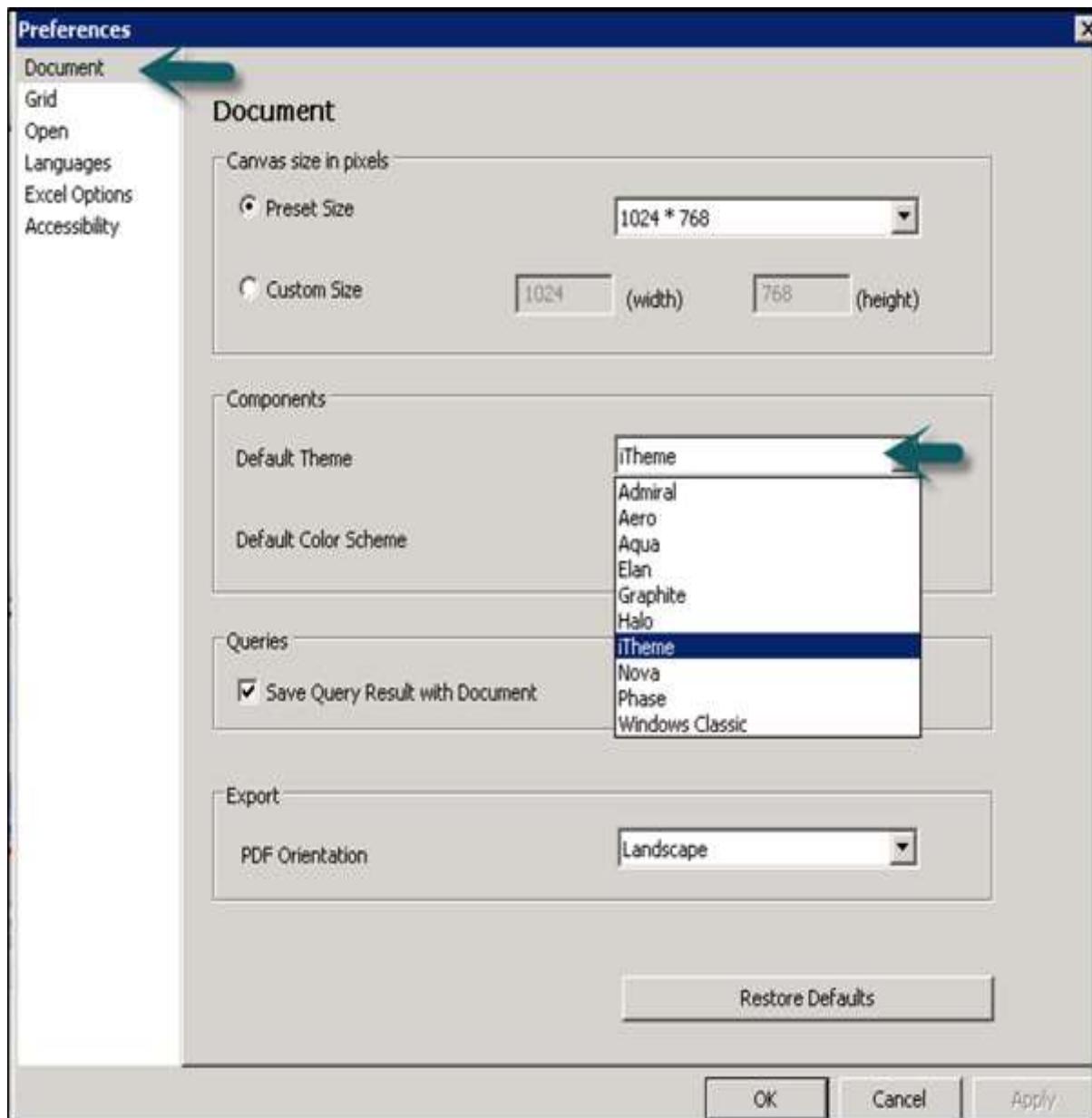
From the theme list, select the theme and you can see the preview of that theme in the preview window. Your model is updated as per the theme properties.



You can also set that theme as the default theme for your model. To set a theme as default, go to **File -> Preference**



Go to **Document** -> **Under Components** -> **Select Theme from drop down list** -> **OK**.



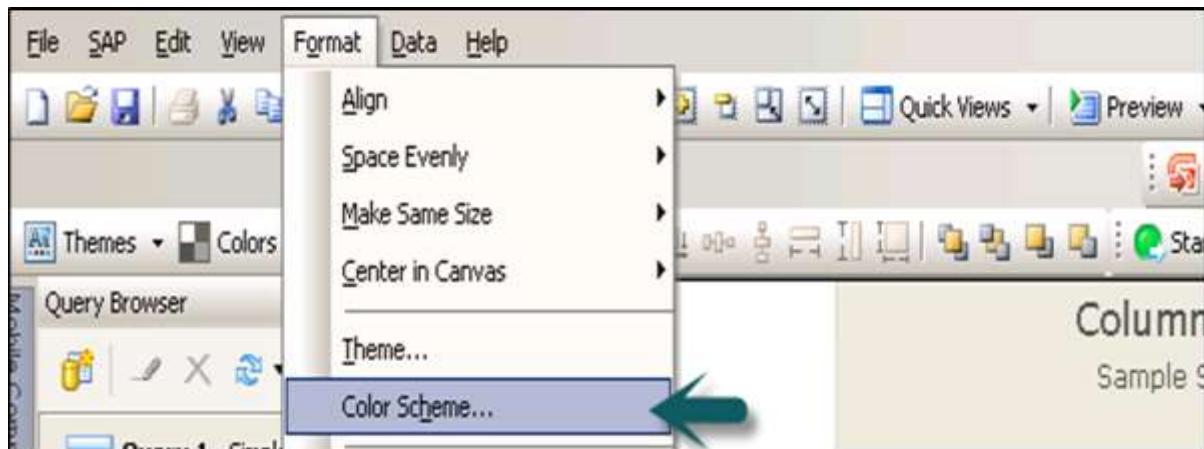
27. SAP Dashboards – Color Schemes

Color Schemes are used to set color platelet components in the model. A color scheme can be applied to an entire mode or to specific components.

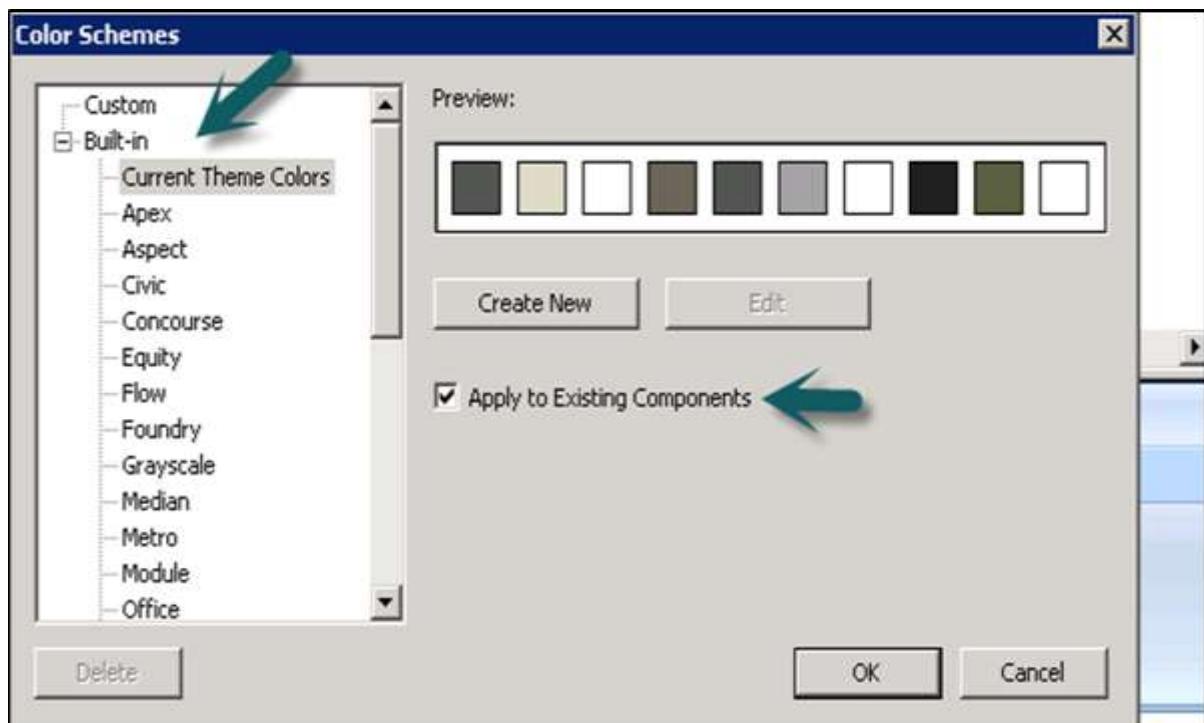
How to Apply a Color Scheme?

To apply a color scheme, select the model.

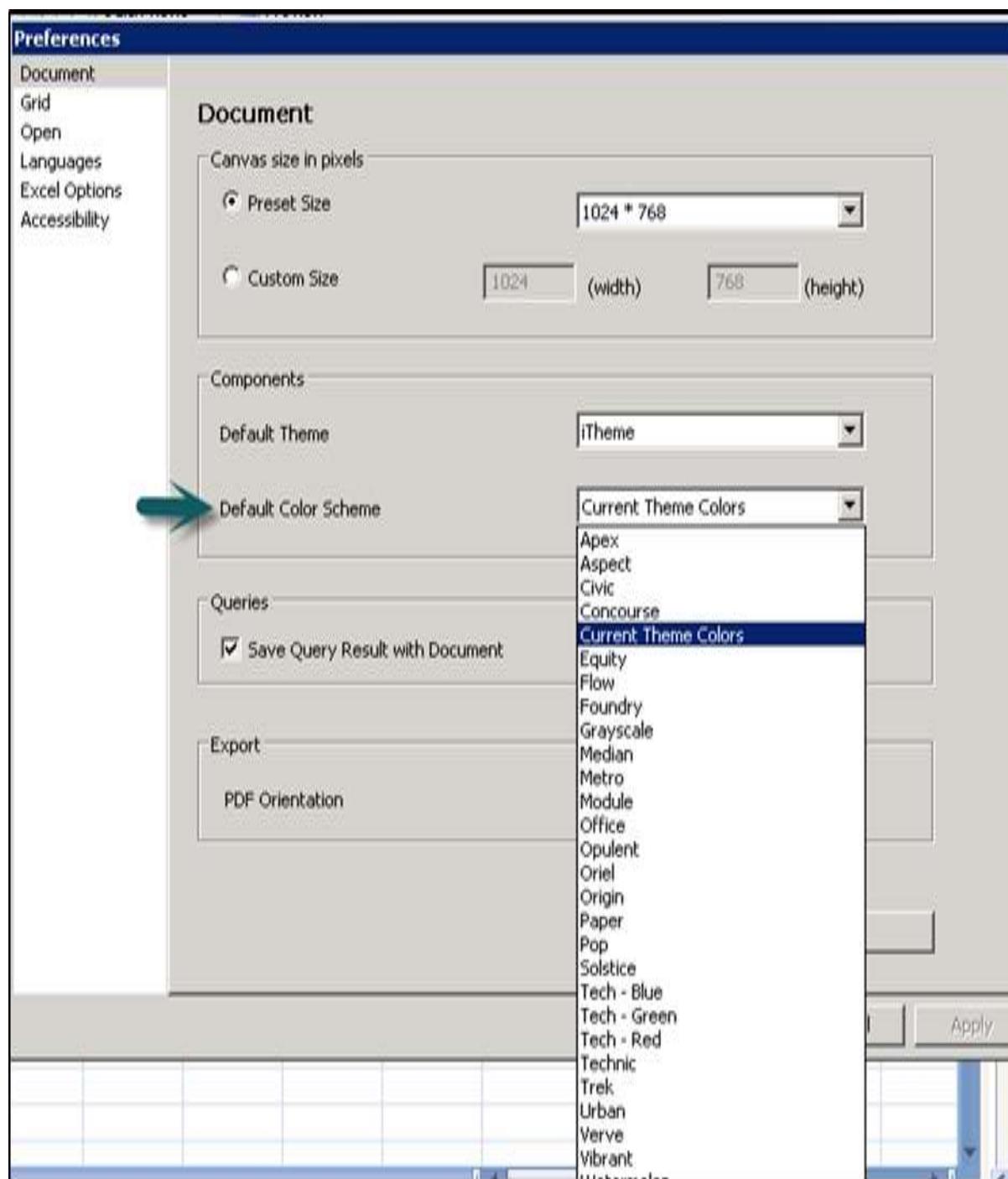
Go to **Format -> Color Scheme**.



Select the color scheme you want to apply. You can select Apply to the existing components otherwise it is applied to the canvas and all the newly added components.



You can set a color scheme as default by going to **File -> Preference**.

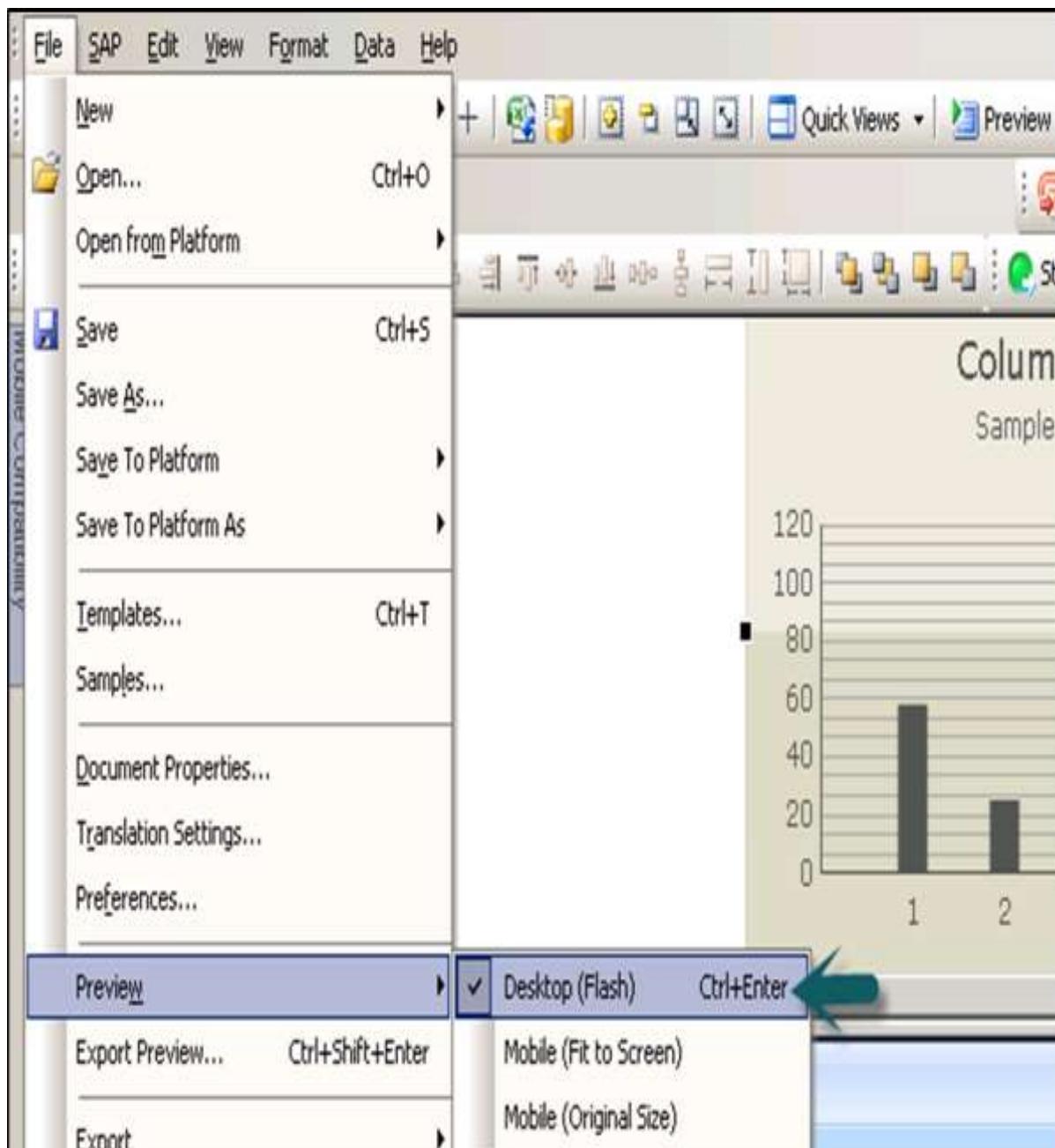


28. SAP Dashboards – Previewing Models

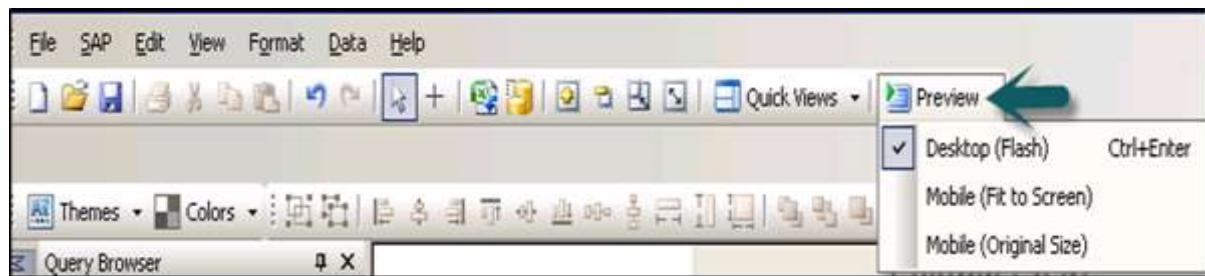
You can use the Preview option to view different combination of components, colors, layouts, and can check how different schemes can be applied to the models.

How to Preview a Model?

To Preview a model, go to **File -> Preview** as shown in the following screenshot.



The other option is to click on the Preview button at the top in the tool bar as shown in the following screenshot.



29. SAP Dashboards – Working with Data Sources

To create data models, you need to import data from different data sources. You can use the following functions:

- Data connections
- Embedded spreadsheets
- BEX and Universe queries

Embedded Spreadsheets

In your data model, you can link your components to cells in the spreadsheet. It supports many features that are supported by Excel files. However, few of its functions like Macros, Conditional Formatting and Function Formulas, etc. are not supported.

You can insert data in the spreadsheets using different ways, some of which are:

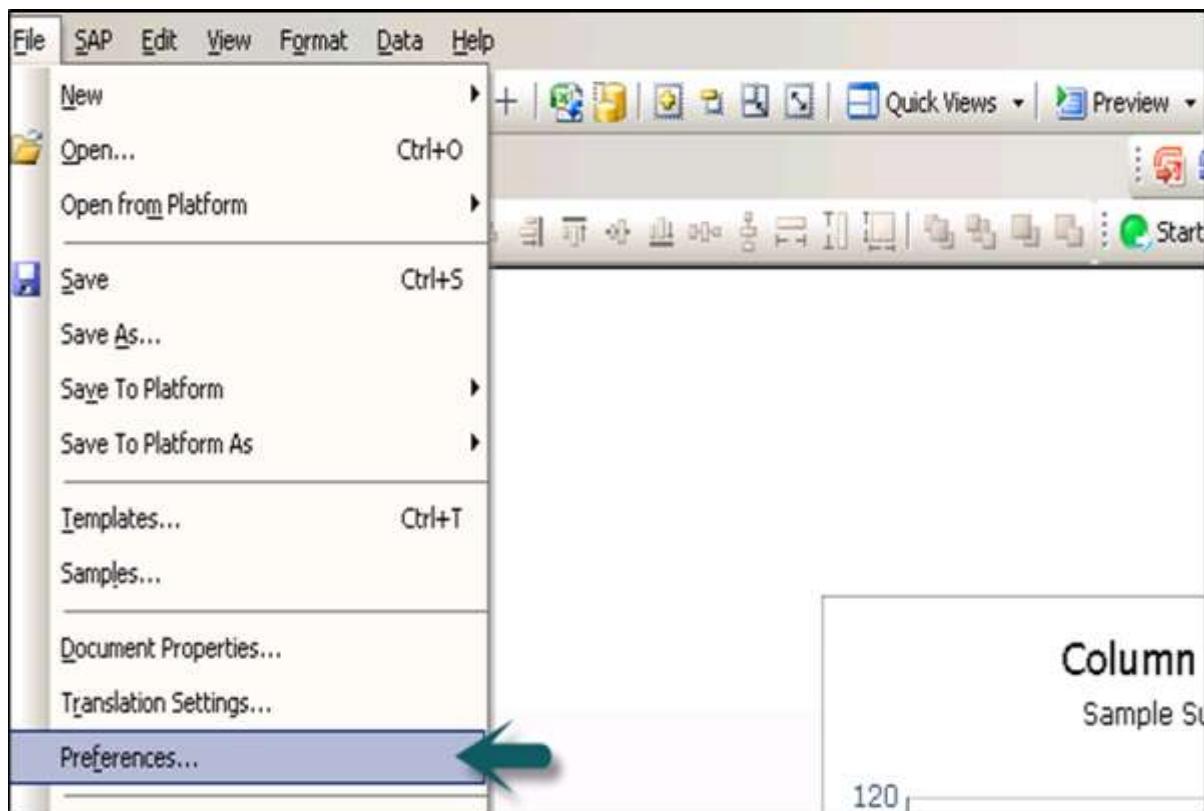
- You can copy paste the data from other excel spreadsheets to the embedded spreadsheets.
- You can import a spreadsheet from excel.
- You can manually enter the data in a spreadsheet.
- You can link query objects from a BEX or a Universe query to cells in an embedded spreadsheet.

Before you create a data model using embedded spreadsheets, it is necessary for you to create a performance optimized structure. You can consider multiple points to ensure that the structure is good. Some of these points are:

- Use Excel functions with small data sets.
- Use only supported Excel functions.
- You can use color, labels and borders to find out cells or range in spreadsheet.
- In case you have a large volume of data in the spreadsheet, you can create multiple tabs.

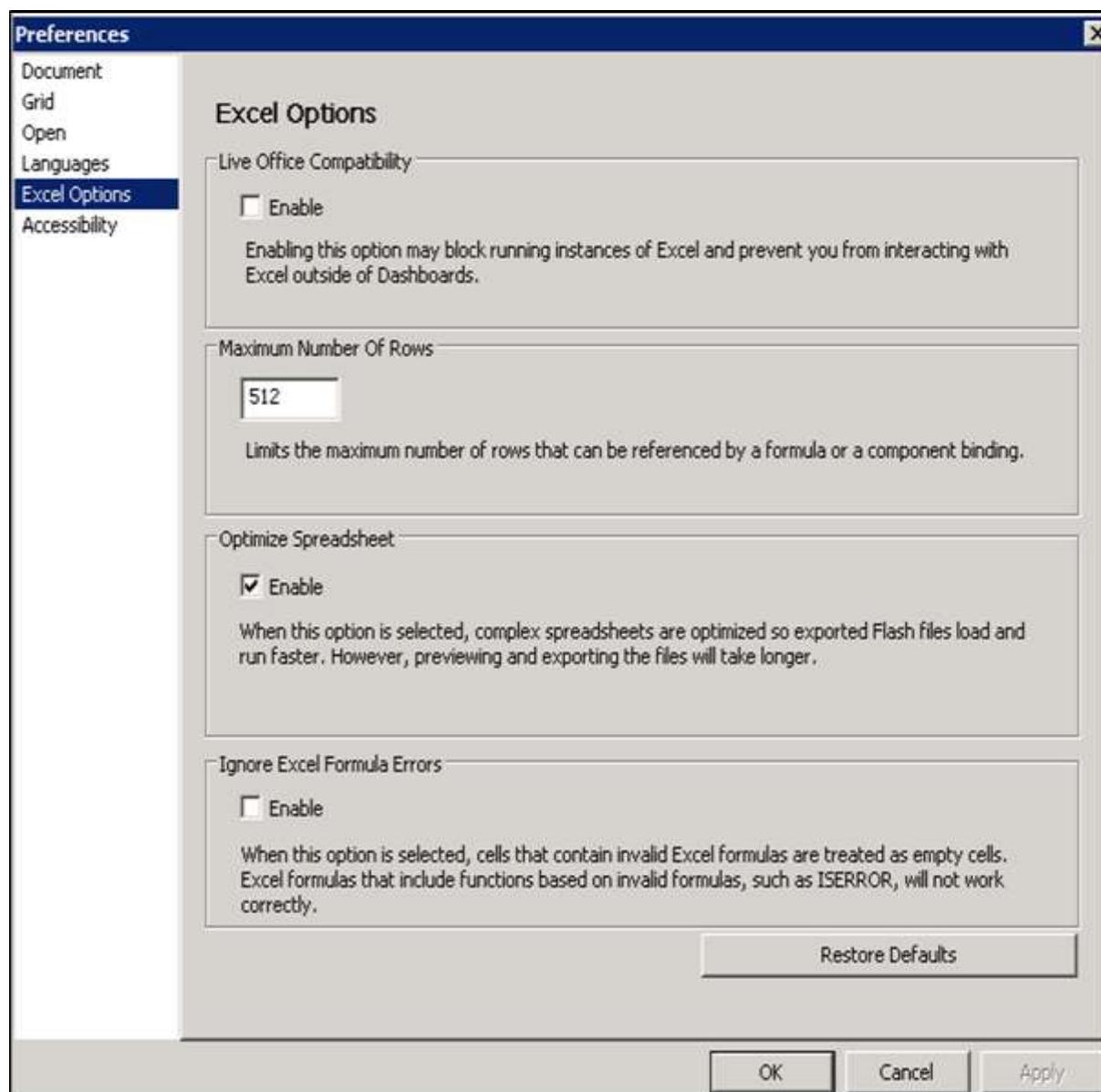
How to Set Preference for Embedded Spreadsheets?

To set preference for Embedded Spreadsheets, go to **File -> Preferences** as shown in the following screenshot.



On the left side, go to Excel Options and you can select the following options:

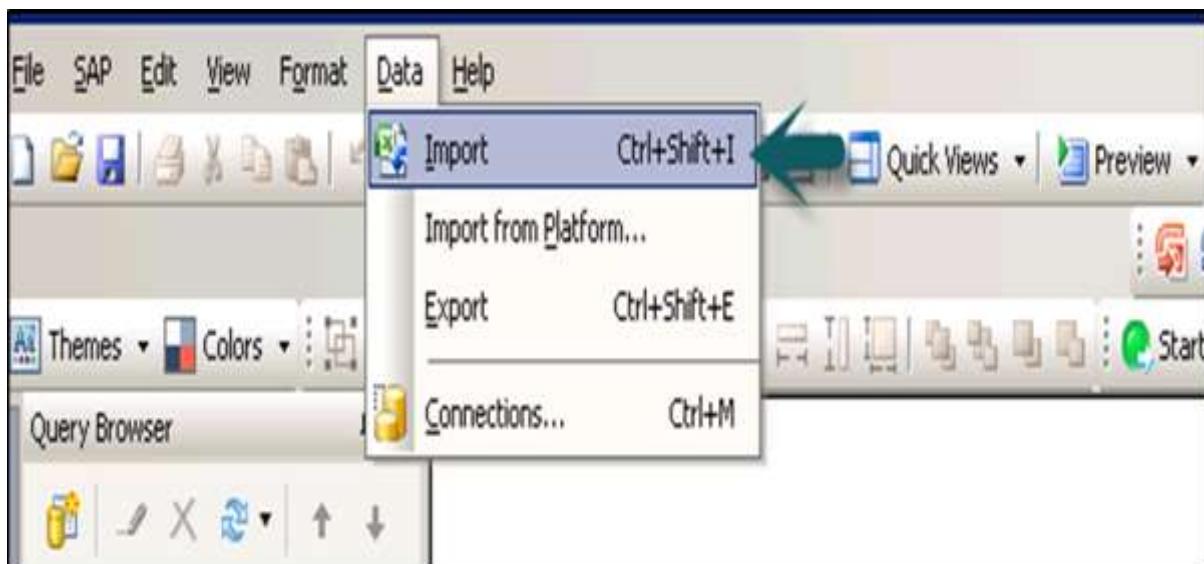
- **Live Office Compatibility:** You can work with Live Office enabled spreadsheet within dashboards.
- **Maximum Number of Rows:** Here you can select the maximum number of rows in a spreadsheet that can be bound to components.
- **Optimize Spreadsheet:** This is used to optimize the spreadsheet at run time. This allows to calculate the formulas and save them in SWF, hence the model performs better at run time.
- **Ignore Excel Formula Errors:** You can use this option to ignore the errors in the spreadsheet.



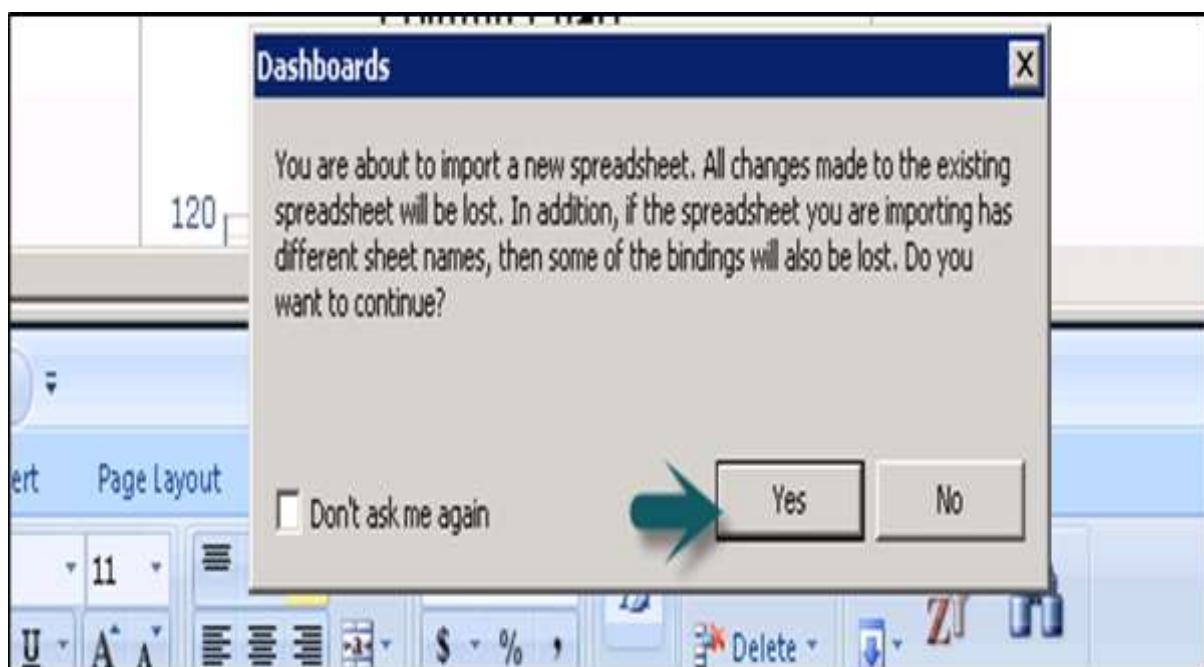
How to Import an Excel Spreadsheet?

To use an existing spreadsheet that will be used as a source for a new data model, you can import it to a new spreadsheet.

For this you will have to go to **Data -> Import** as shown in the following screenshot.



In the dialog box which appears soon afterwards, click Yes as shown in the following screenshot.

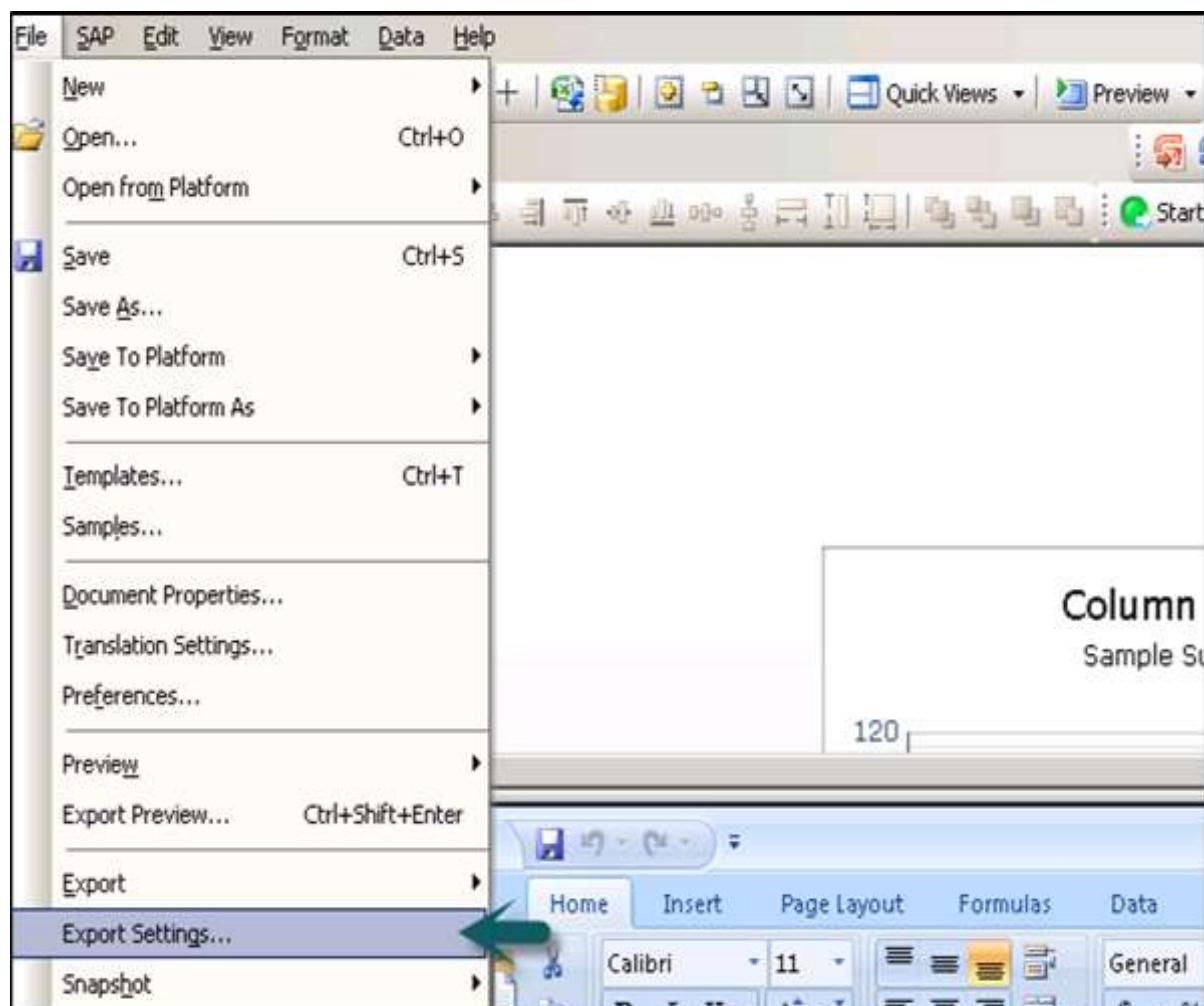


Select the spreadsheet you want to import and click Open.

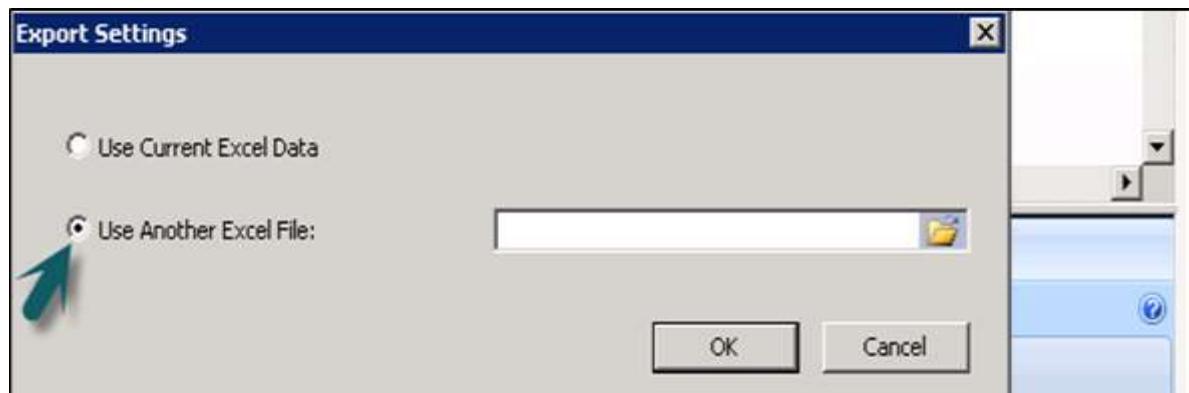
To Generate SWF Using an External Spreadsheet

To create the same model using the same spreadsheet structure but different values, the model can be exported using an external spreadsheet.

To do this, go to **File -> Export Settings** as shown in the following screenshot.

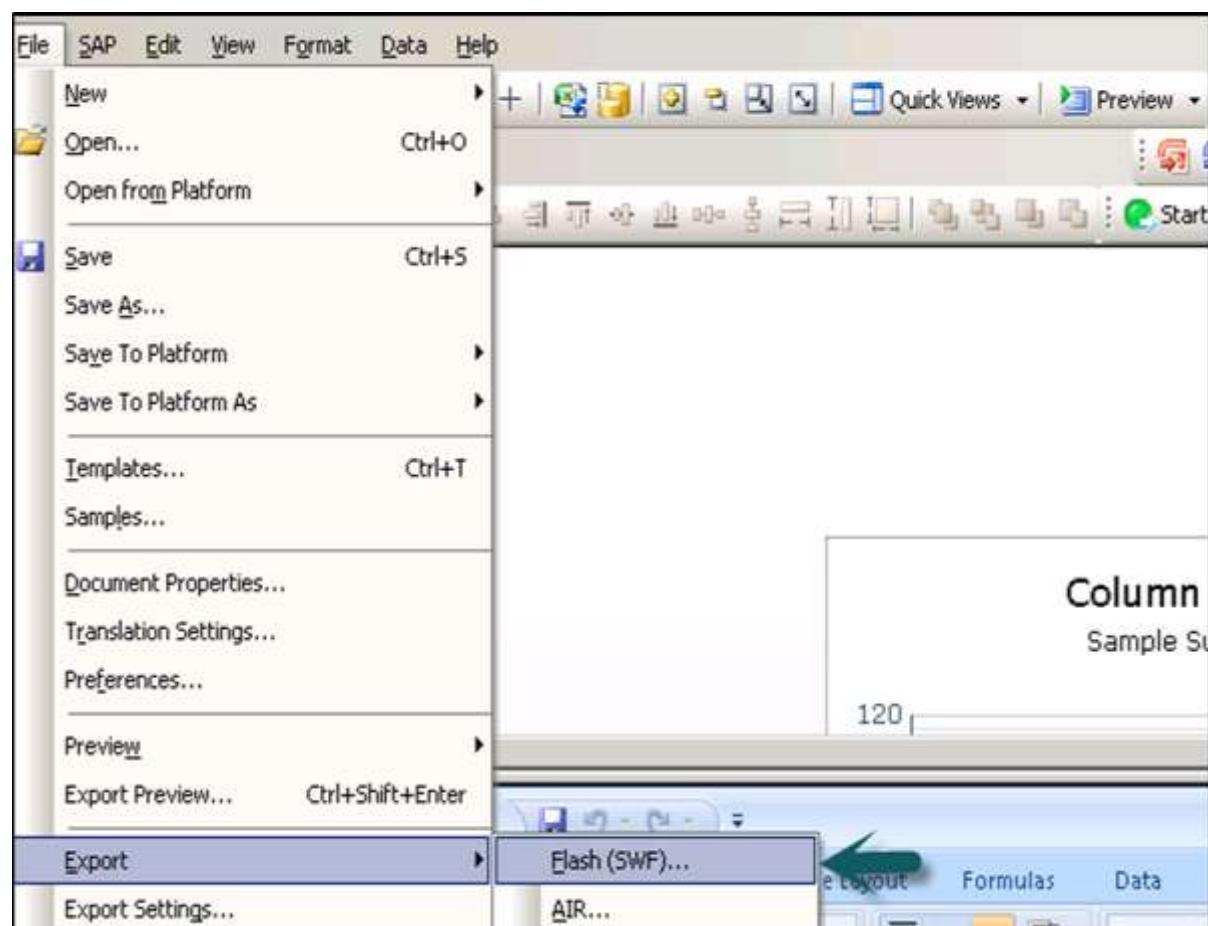


Select Another **Excel File** -> Go to folder and select the spreadsheet to use. Click OK.



Now go to **File -> Export -> Flash (SWF)**.

This opens a Save As Dialog Box. Enter the path and name of SWF **File -> OK**.



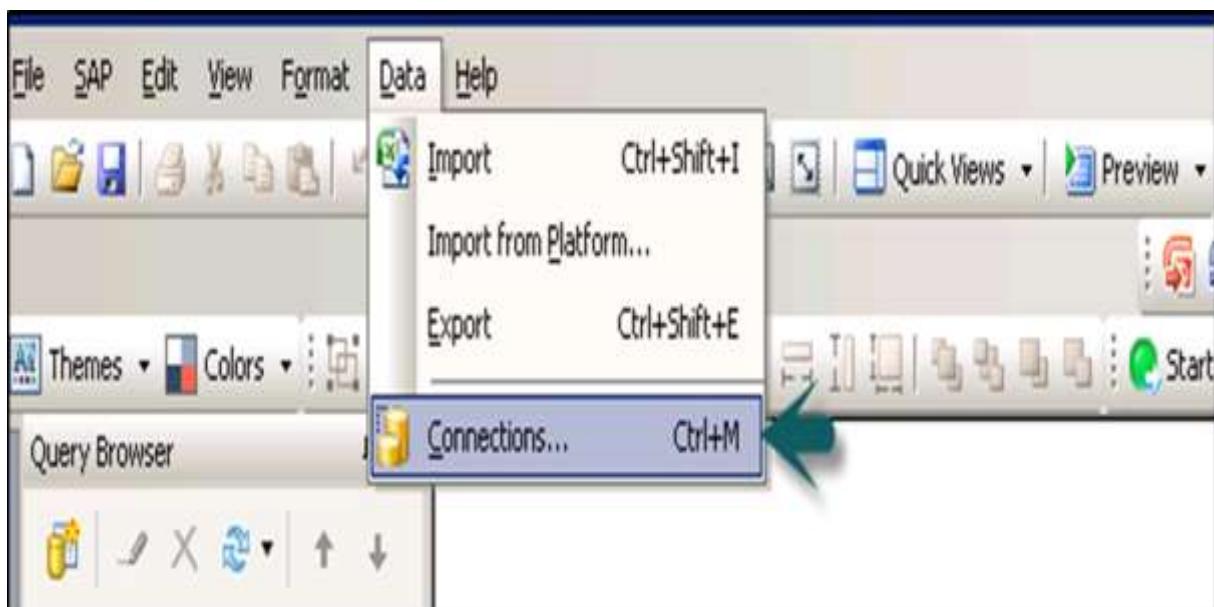
30. SAP Dashboards – Data Connections

You can connect your model to an external data source. When you run the model, data is updated as per the current information in the data source. You can connect to an external data sources in the following ways:

- Using an External data connection in Data Manager
- Create query from BI source

Managing Data Connections

You can manage all the data connections using the Data Manager (CTRL+M). To open the Data Manager, go to **Data -> Connections** as shown in the following screenshot.



In SAP Dashboard Designer, the following data connections are supported:

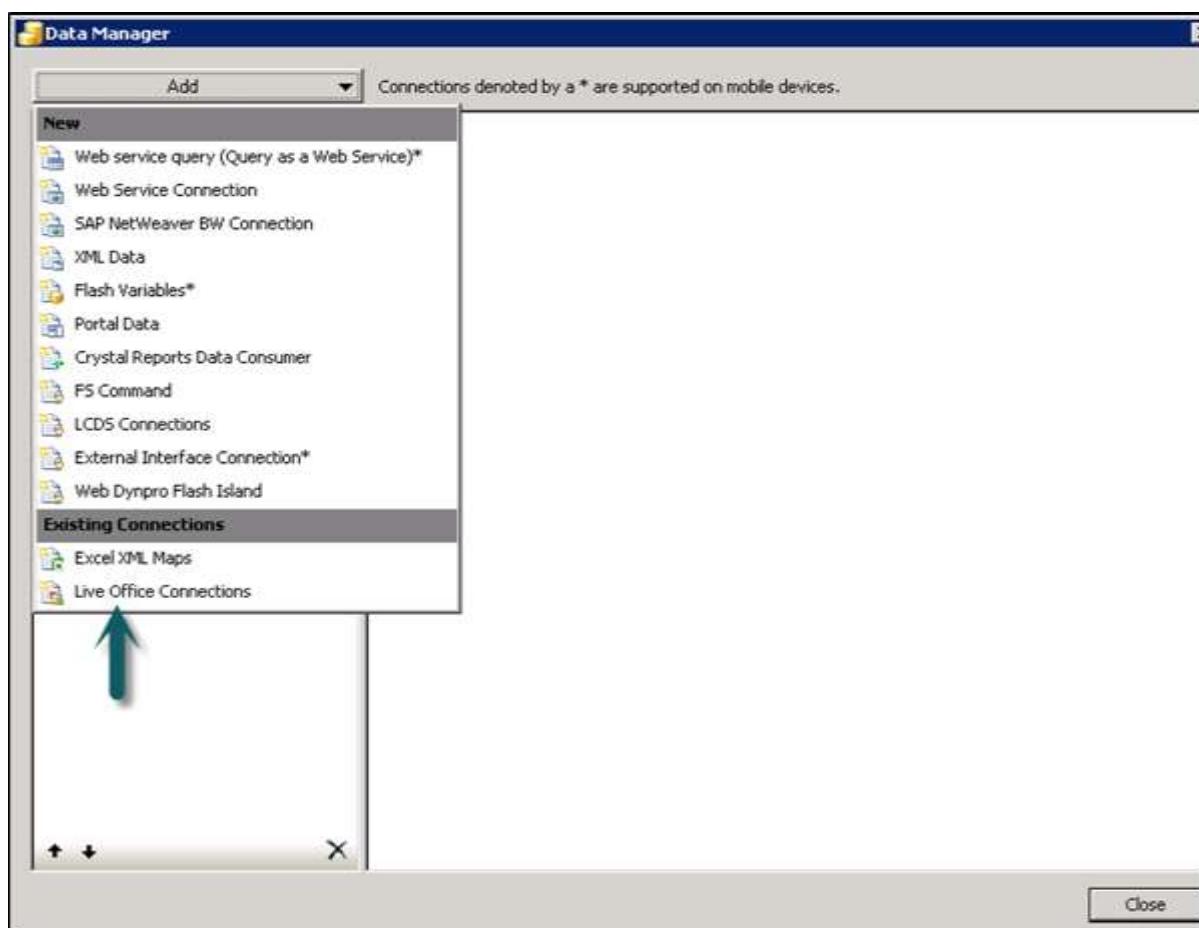
- Query as a Web service (QWAAS)
- Web Service Connection
- SAP NetWeaver BW connection
- XML Data
- Crystal Report Data Consumer
- Live cycle Data Services
- External Interface Connection
- Live Office Connections
- Web Dynpro application as Flash Island and many more as below.

Adding an External Data Connection

To add an external data connection, go to **Data -> Connections** as shown in the following screenshot.



In the Data Manager Dialog Box, click on Add Connection and select a connection type from the list.

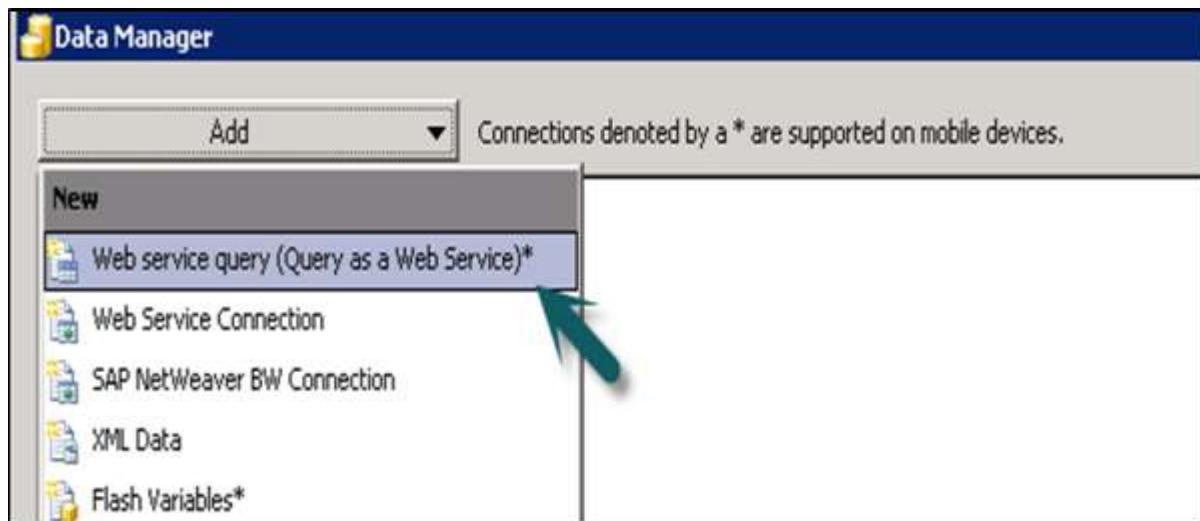


The next step is to configure the data connection.

To delete a connection, select the connection in the data manager and click on the Delete button.

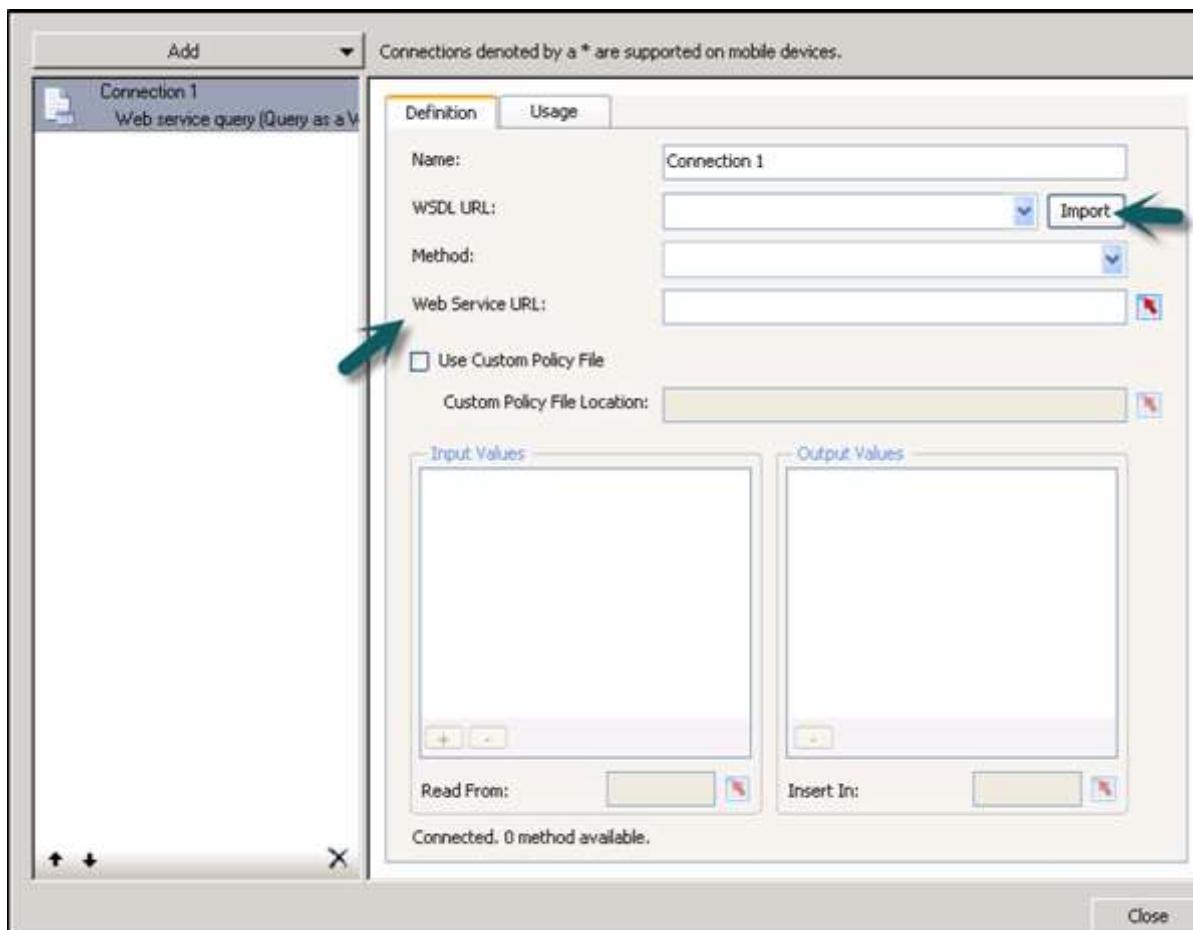
How to Configure a Query as a Web Service?

To configure a query as a web service, go to **Data -> Connections**. In the Data Manager dialog box, click on **Add -> select Web Service Query**.



In the Definition window, enter the following details:

- **Name:** A name for the connection.
- **WSDL URL:** Type URL for WSDL generated by the web service query or select from the list. Click Import.



Select the method from the drop down list. When you select the method, the web service URL is displayed.

RunQueryAsAService	This web service call is generated for index unaware prompts. This method requires an Enter_Year_As string as the prompt value for year.
RunQueryAsAServiceEx	This web service call is generated for index aware prompts. The input and output parameter sets are the same as for RunQueryAsAService method except for the input Prompt for Year values. This method requires an instance of LovValueIndex for year.
Valueof_	This method is generated only when the Web service query encloses at least one prompt and is intended to provide a list of values for the prompt it is named after.

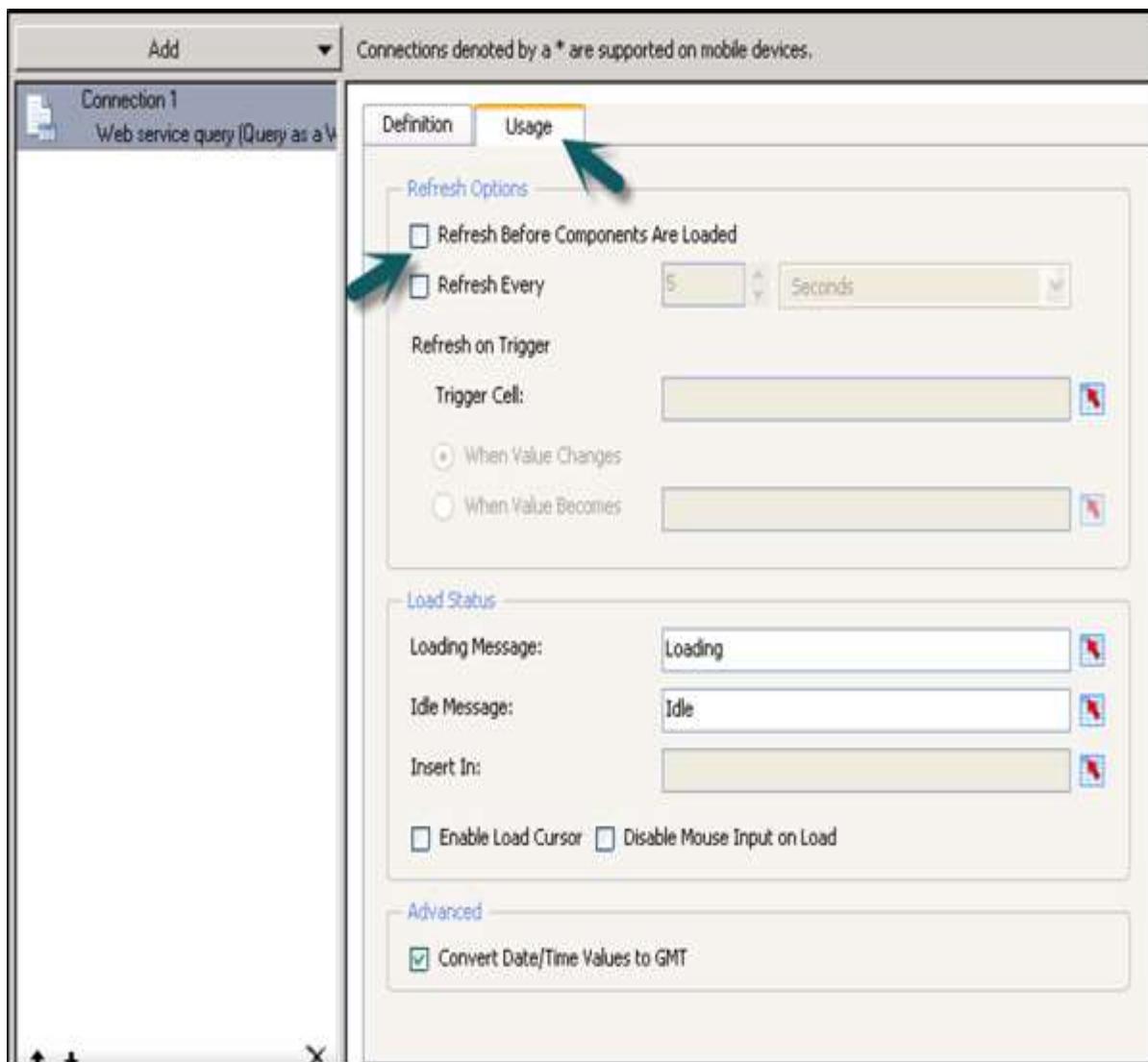
Input Value:

Input Values	When you import the WSDL, the required inputs defined for the web service are displayed in this list. To set a value for each item, select the Input object from the list then set the Read From option to map it to your model.
---------------------	---

Read from and Output Value:

Read From	If the input values list includes items that require input, select the Input item and then click the Cell Selector () to select a cell from the embedded spreadsheet where the selected object will retrieve its value.
Output Values	When you import the WSDL, the output parameters for the results objects in the web service are displayed in this list.

In the Usage tab, set the refresh and message options as shown in the following screenshot.



In a similar way you can configure other external data connections as well in the Dashboard.

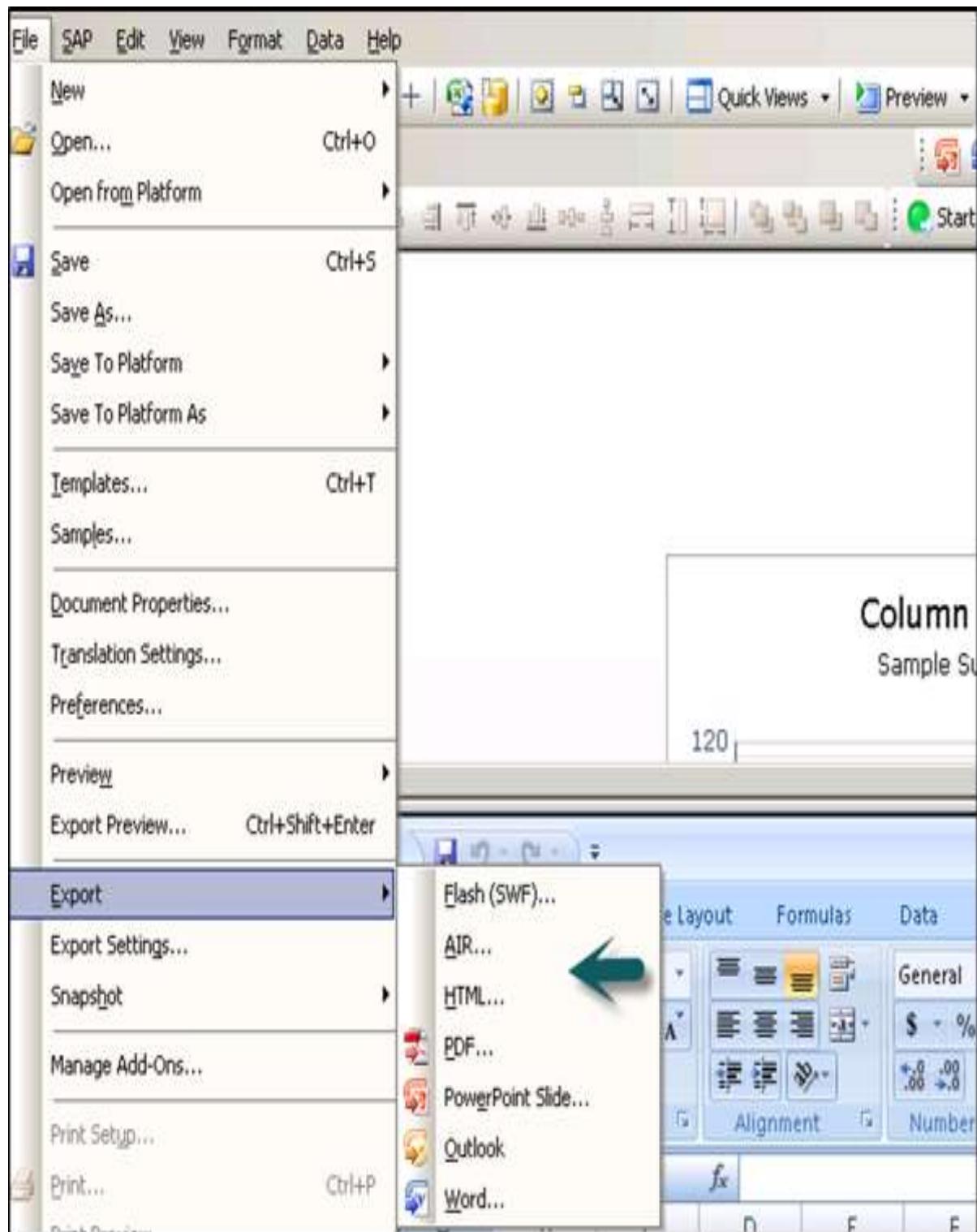
31. SAP Dashboards – Export Format Options

You can export models from the Dashboard designer in different formats. Once you complete the configuration of the data model, to export the model, go to **File -> Export**.

The following table shows the list of supported format for a Dashboard Designer.

Supported Format	Presentation Design	SAP Crystal Dashboard	SAP BO Dashboards
Macromedia Flash (SWF)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Adobe AIR		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Adobe Acrobat 6 (PDF)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Adobe Acrobat 9 (PDF)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HTML			<input checked="" type="checkbox"/>
Microsoft PowerPoint			<input checked="" type="checkbox"/>
Microsoft Outlook			<input checked="" type="checkbox"/>
Microsoft Word			<input checked="" type="checkbox"/>
BusinessObjects Enterprise			<input checked="" type="checkbox"/>

To export the model, go to **File -> Export** and then select as shown in the following screenshot.



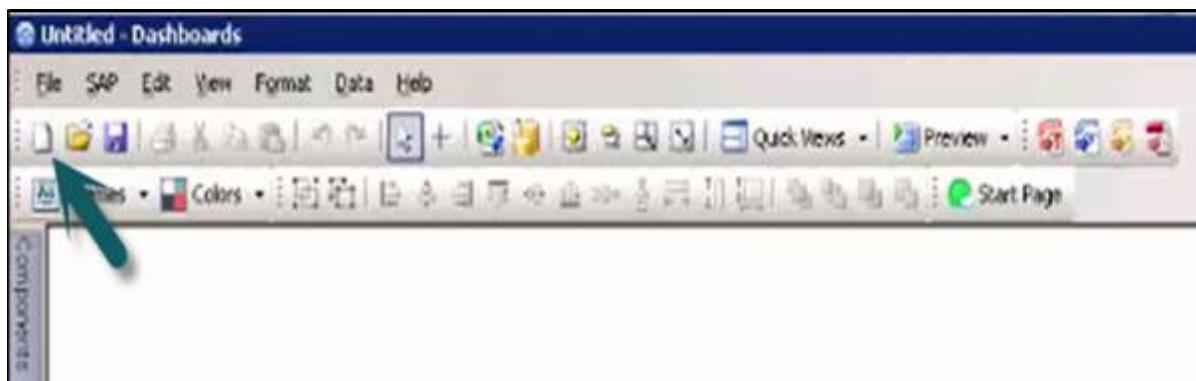
Enter the name of the exported file and then save it. If you are exporting to Outlook, enter the message and then click on the Send button.

32. SAP Dashboards – Dynamic Dashboard

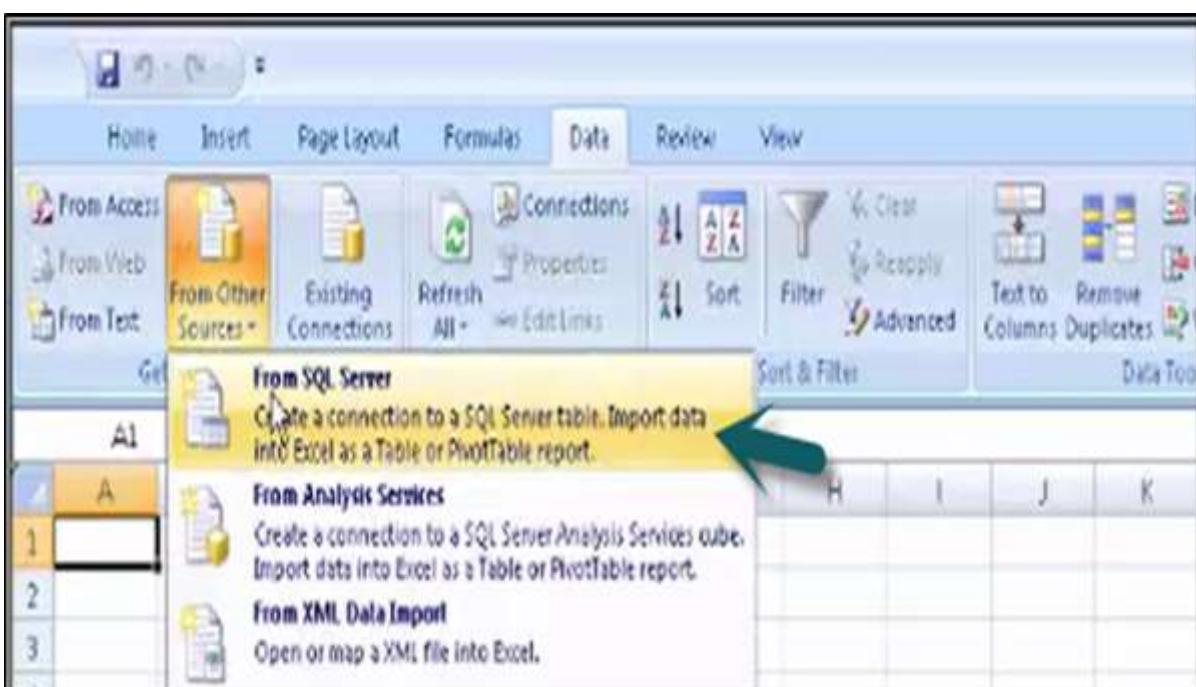
In this chapter, we will discuss how to create a Dashboard on top of the SQL Server using Embedded Spreadsheets.

Dynamic Dashboard using SQL Server

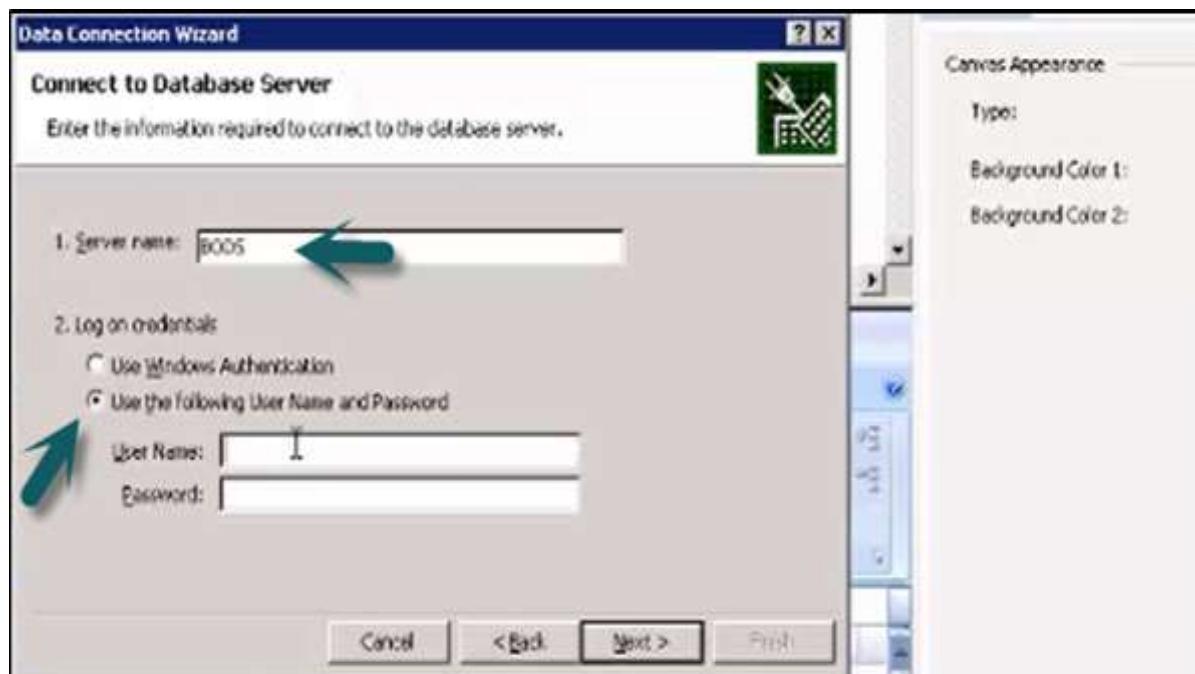
Open the Dashboard Designer and select an untitled dashboard.



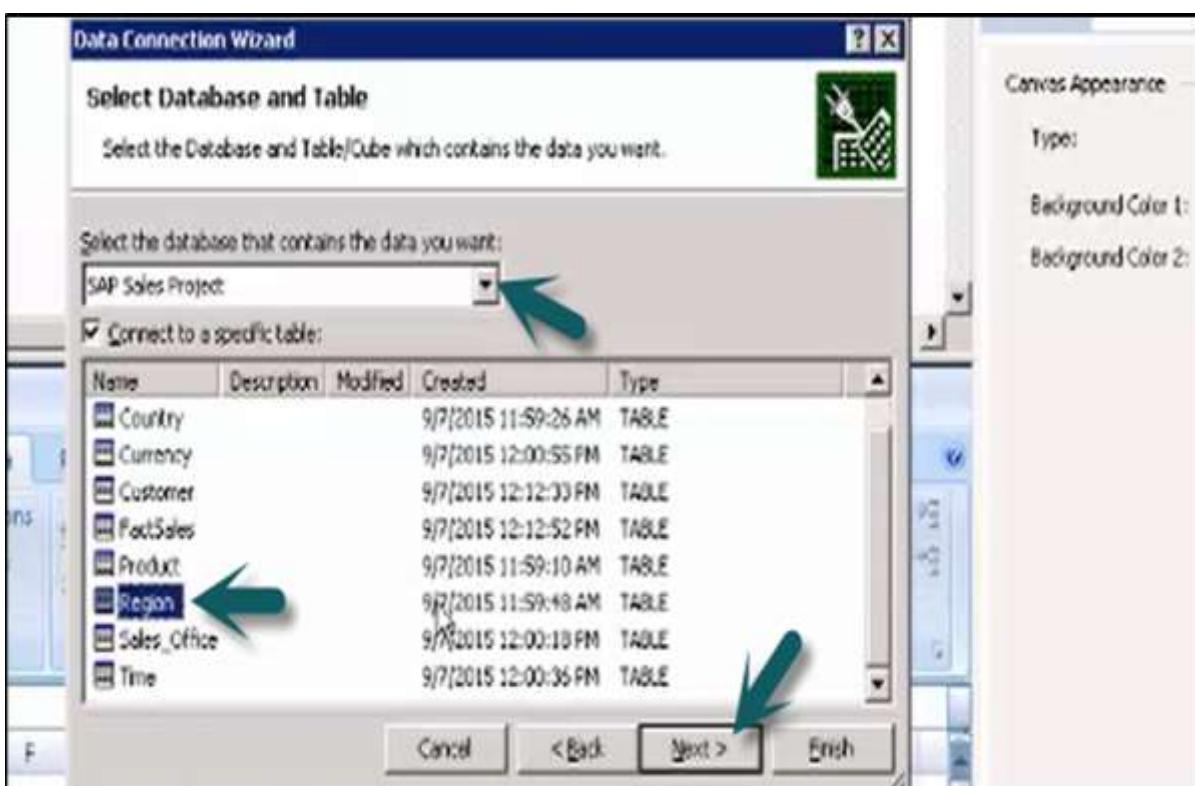
Go to the **Data tab in the Spreadsheet -> From Other sources -> From SQL server.**



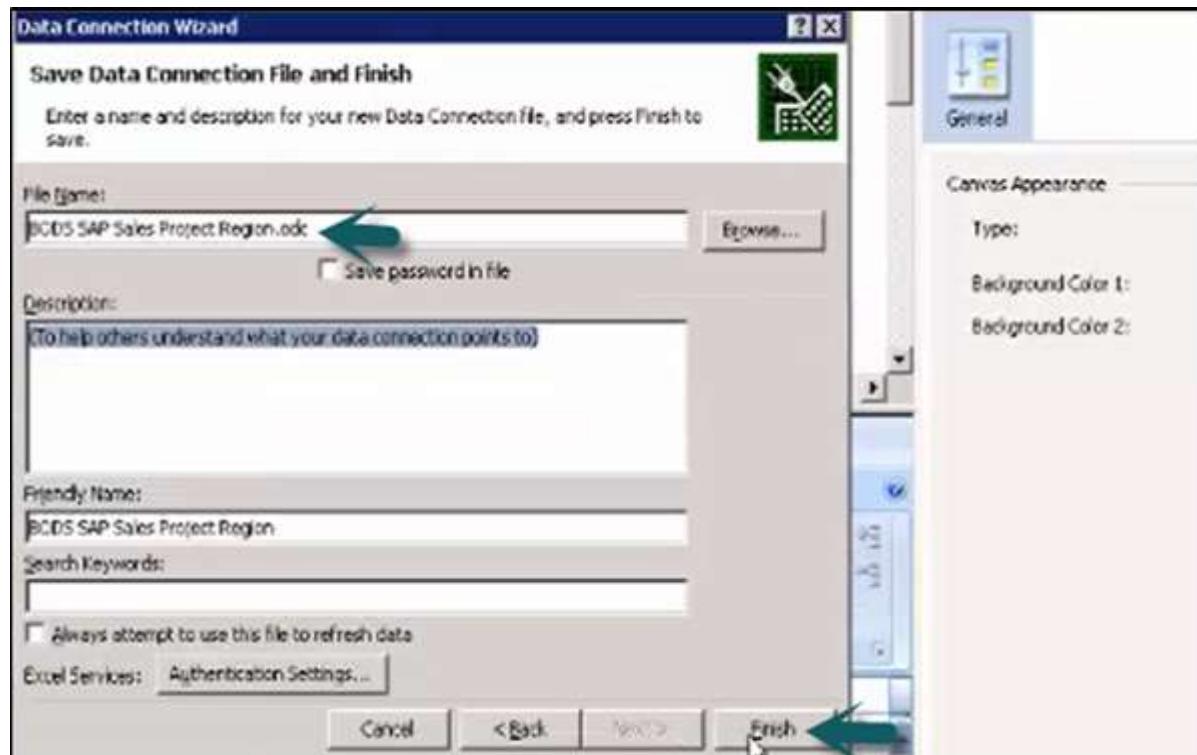
Enter the SQL Server name and credentials to connect to the SQL server database as shown in the following screenshot.



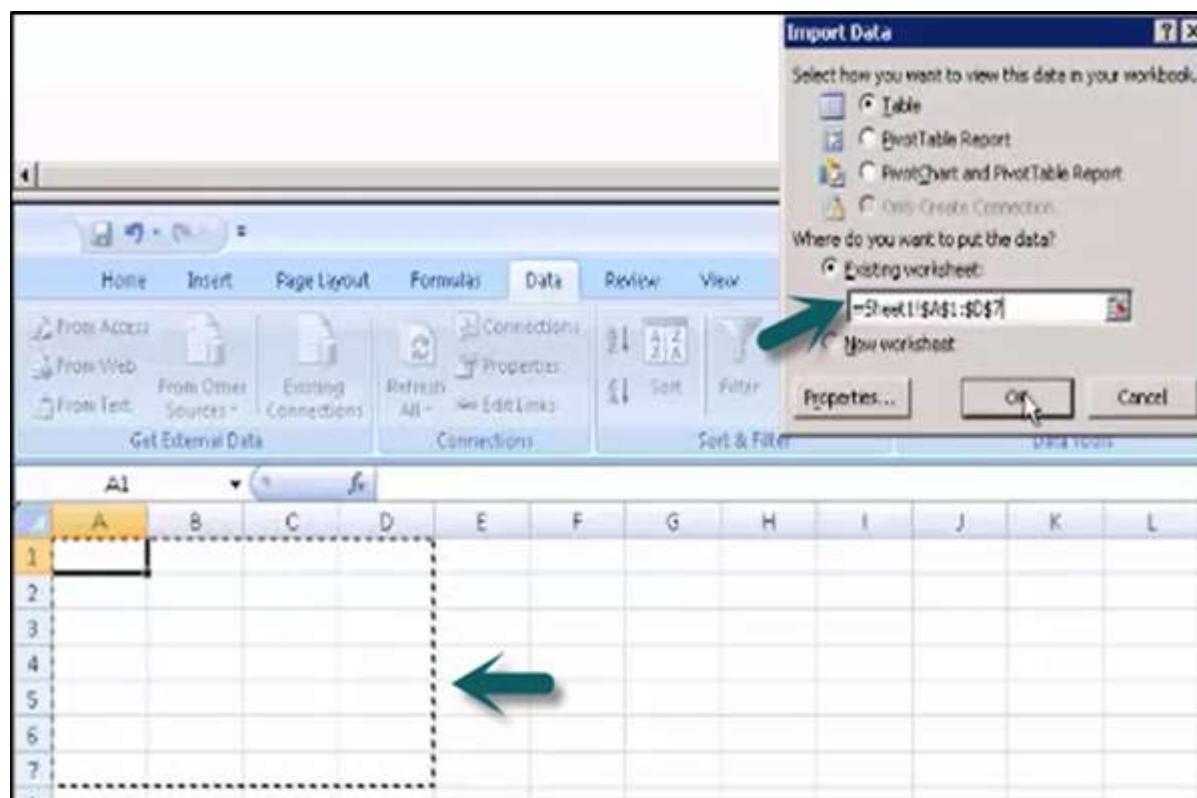
In the next window, select the database and table you want to use in the model.



Enter the name of your data connection file and click Finish.



Select the area in the embedded spreadsheet and click ok. Enter the credentials again if it prompts.



In a similar way, select all the tables from the database to the embedded spreadsheet.

Data Connection Wizard

Select Database and Table

Select the Database and Table/Cube which contains the data you want.

Select the database that contains the data you want:

SAP Sales Project

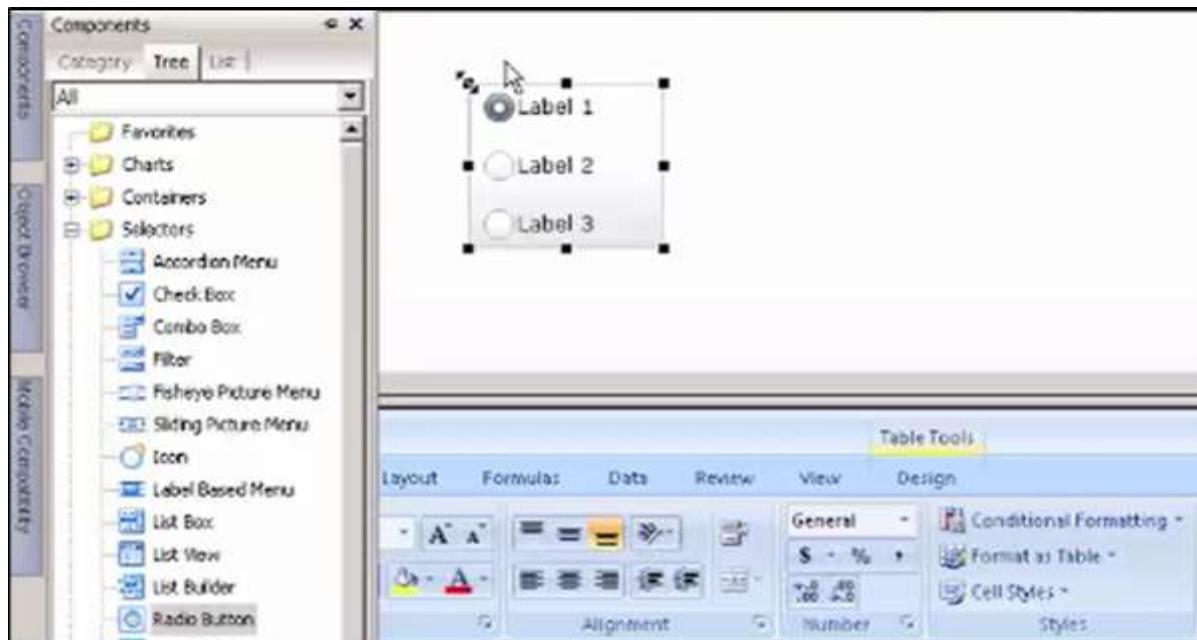
Connect to a specific table

Name	Owner	Description	Modified	Type
Category	dbo		9/7/2015 12:00:04 PM	TABLE
Country	dbo		9/7/2015 11:59:26 AM	TABLE
Currency	dbo		9/7/2015 12:00:25 PM	TABLE
Customer	dbo		9/7/2015 12:12:33 PM	TABLE
FactSales	dbo		9/7/2015 12:12:52 PM	TABLE
Product	dbo		9/7/2015 11:59:10 AM	TABLE
Region	dbo		9/7/2015 11:59:40 AM	TABLE
Sales_Office	dbo		9/7/2015 12:00:18 PM	TABLE

A	B	C	D	E	F	G	H	I	J	K	L
1	Region_Id	Region_Name									
2	101	America		1 M_Phones		1	1 January		1	2014	
3	102	Latam		2 IPAD_Tablets		2	2 February		1	2014	
4	103	Europe-Africa		3 Watches		3	3 March		1	2014	
5	104	Asia-Pacific				4	4 April		2	2014	
6						5	5 May		2	2014	
7						6	6 June		2	2014	
8						7	7 July		3	2014	

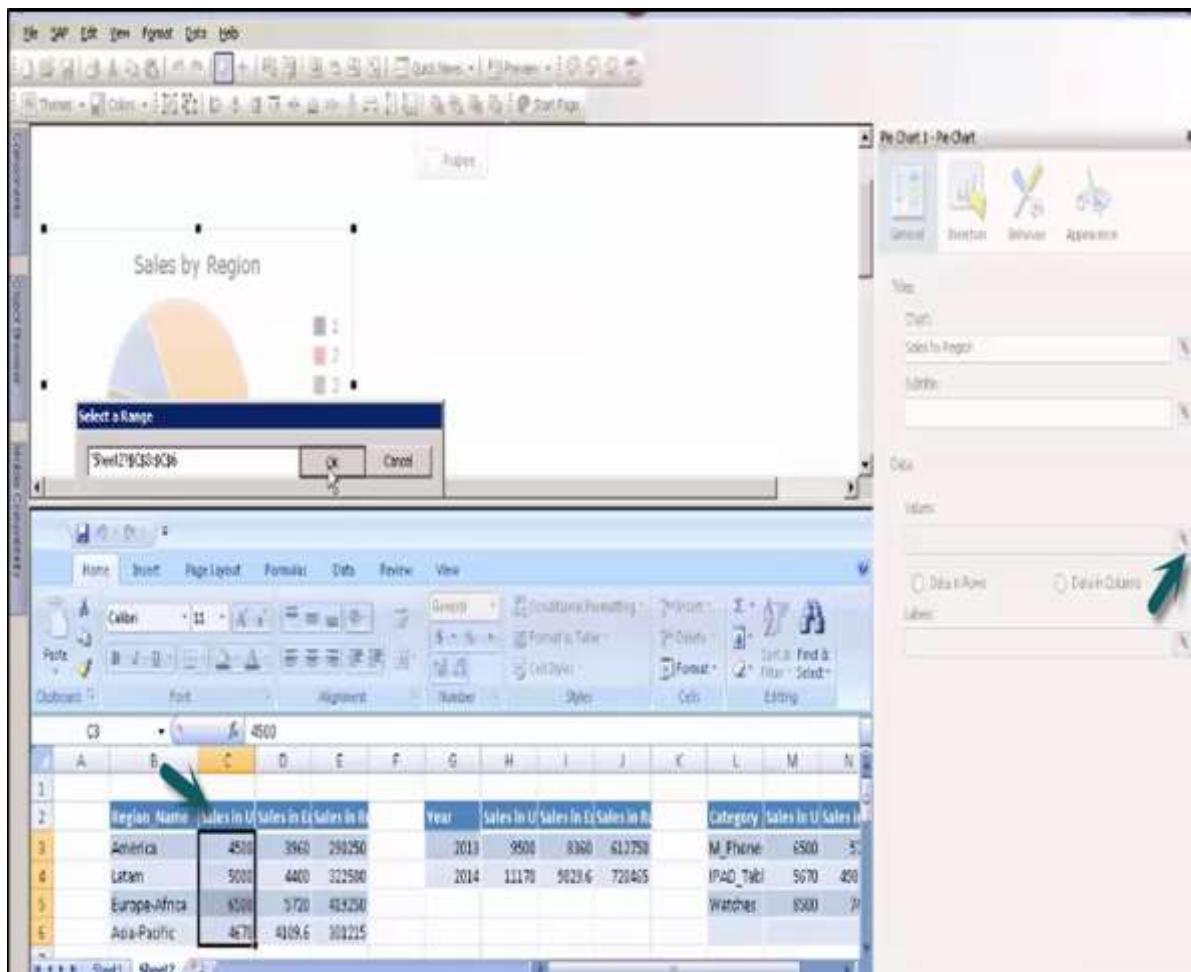
How to Add a Selector Component?

Here we can add the selector component – A radio button to implement Currency conversion in the data model.



Enter the title of the Radio button and go to the Cell selector to select cells from the spreadsheet.

From components, select a Pie chart. Enter the title and sub title of the chart. Go to cell selector from the Values tab and select cells from the spreadsheets.



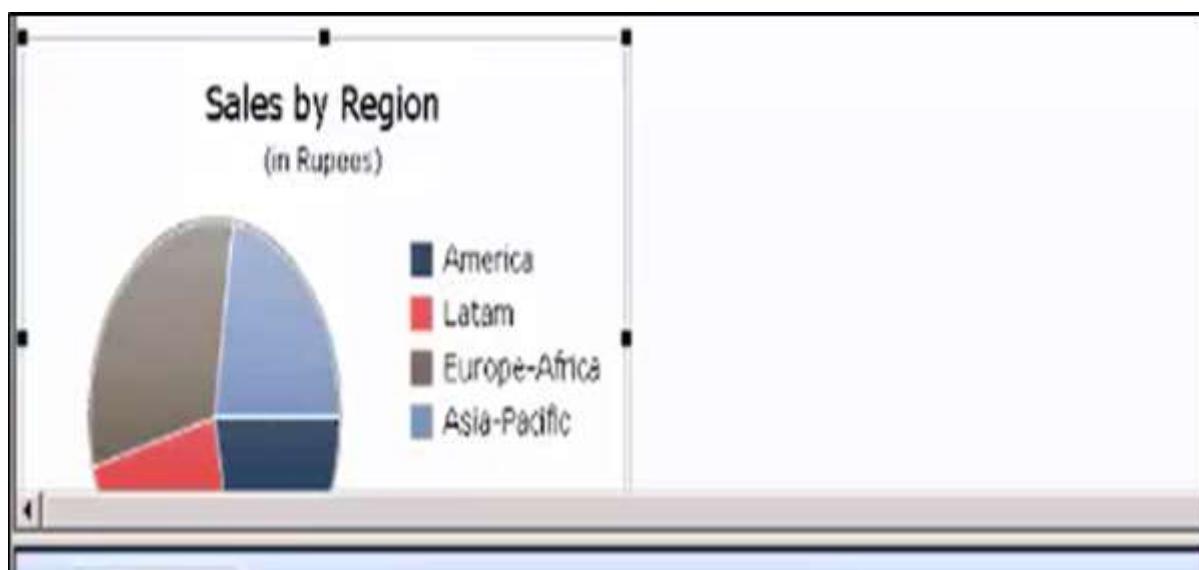
Go to **General -> Labels -> Cell Selector** to add labels to this component. Select cells from the spreadsheet to add labels as shown in the following screenshot.

The screenshot shows the SAP Dashboards interface. At the top, there's a toolbar with various icons. Below it is a ribbon menu with tabs like Home, Insert, Page Layout, etc. On the left, there's a navigation pane with a tree view. In the center, there's a pie chart titled "Sales by Region (in USD)" with four categories: America (blue), Latam (red), Europe-Africa (brown), and Asia-Pacific (grey). To the right of the chart is a "Re Chart" panel with tabs for General, Insertion, Behavior, and Appearance. The General tab is selected. Below the chart is a spreadsheet table with data. A green arrow points from the "Labels" section of the "Re Chart" panel to the cell "B2" in the table, which contains the value "America". Another green arrow points from the "Labels" section to the cell "B1" in the table, which contains the header "Region Name". The table has columns for Region Name, Sales in U.S., Sales in E.U., Sales in R.A., Year, Sales in U.S., Sales in E.U., Sales in R.A., Category, Sales in U.S., Sales in E.U., and Sales in R.A. The data rows are: America (Sales in U.S.: 4500, Sales in E.U.: 3960, Sales in R.A.: 291250, Year: 2013, Sales in U.S.: 9500, Sales in E.U.: 8360, Sales in R.A.: 612750, Category: M_Phone, Sales in U.S.: 6500, Sales in E.U.: 5500, Sales in R.A.: 5), Latam (Sales in U.S.: 5000, Sales in E.U.: 4400, Sales in R.A.: 332500, Year: 2014, Sales in U.S.: 11170, Sales in E.U.: 9029.6, Sales in R.A.: 72045, Category: P4Q_Tablet, Sales in U.S.: 5700, Sales in E.U.: 4900, Sales in R.A.: 4), Europe-Africa (Sales in U.S.: 4700, Sales in E.U.: 5720, Sales in R.A.: 433250, Year: 2014, Sales in U.S.: 11170, Sales in E.U.: 9029.6, Sales in R.A.: 72045, Category: Watcher, Sales in U.S.: 6500, Sales in E.U.: 5500, Sales in R.A.: 5), and Asia-Pacific (Sales in U.S.: 4670, Sales in E.U.: 4809.6, Sales in R.A.: 303225, Year: 2014, Sales in U.S.: 11170, Sales in E.U.: 9029.6, Sales in R.A.: 72045, Category: Watcher, Sales in U.S.: 6500, Sales in E.U.: 5500, Sales in R.A.: 5).

In a similar way, add more pie charts to add Currency in Euros and Rupees to show the sales. Add titles and subtitles to the chart to show the same and go to a cell selector.

The screenshot shows the SAP BusinessObjects Web Intelligence interface. A pie chart titled "Sales by Region" is displayed on the left. A callout arrow points from the chart to a "Select a Region" dialog box at the bottom left, which contains the value "Asia-Pacific". Another callout arrow points from the chart to the "Properties" panel on the right, specifically to the "Title" section where "Sales by Region" is listed. The main workspace shows a table with data for different regions and years, and a separate table for category sales.

Region	Name	Sales in US Dollars	Cat Sales in US Dollars	Year	Sales in US Dollars	Cat Sales in US Dollars	Category	Sales in US Dollars
America	4500	3967	39326	2013	9500	8301	Mobile Phone	4300
Latam	5000	4400	322500	2014	11170	9029.6	Pad Tab	5670
Europe-Africa	6500	5760	43326				Watches	1500
Asia-Pacific	4870	3945	30125					



How to Enable Dynamic Visibility?

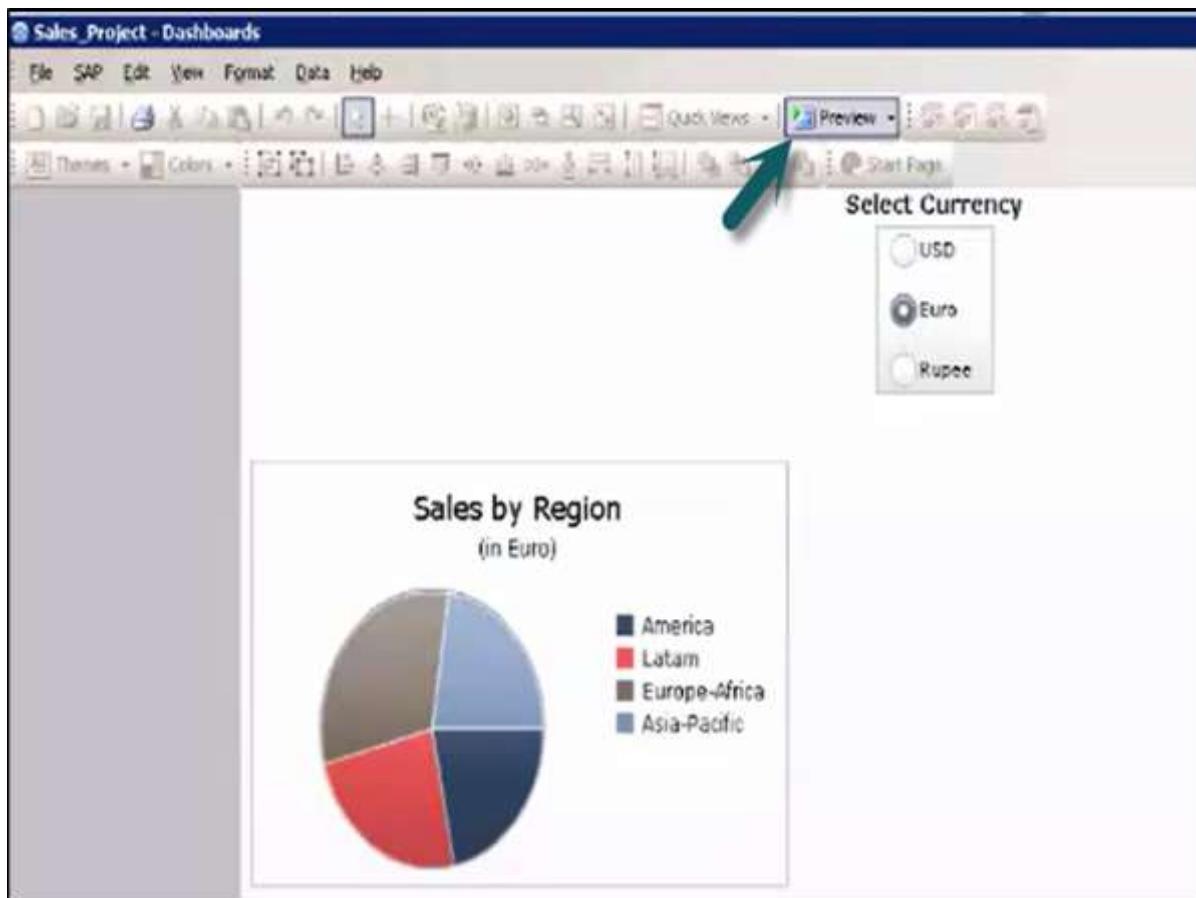
To enable dynamic visibility for each chart, go to **Behavior -> Dynamic Visibility and Status**. Go to that cell in the Chart which stores value for dynamic visibility.

The screenshot shows a Microsoft Excel interface. A 'Select a Range' dialog box is open at the top, with the range 'Sheet2!\$D\$10' selected and 'OK' highlighted with a green arrow. In the main Excel window, the ribbon is visible with 'Home', 'Insert', 'Page Layout', 'Formulas', 'Data', 'Review', and 'View' tabs. The 'Behavior' tab is selected in the ribbon. On the right side, the 'Dynamic Visibility' section of the 'Behavior' panel is shown, with a green arrow pointing to the 'Status' dropdown menu. Below it, the 'Show component only if status matches key:' section is visible, with a green arrow pointing to the 'Key' input field containing the value 'Sheet2!\$D\$10'. The status dropdown menu also has a green arrow pointing to it.

Enter the key value of each pie chart as per the Radio button selector component.

The screenshot shows a Microsoft Excel interface with a pie chart titled 'Sales by Region (in Rupees)' in the upper left. The chart legend includes 'America' (dark blue), 'Latam' (red), 'Europe-Africa' (brown), and 'Asia-Pacific' (light blue). The ribbon shows 'Home', 'Sheet', 'Page Layout', 'Formulas', 'Data', 'Review', and 'View' tabs. The 'Behavior' tab is selected in the ribbon. On the right, the 'Behavior' panel is open, specifically the 'Dynamic Visibility' section. It contains a 'Status' dropdown set to 'Sheet2!\$D\$10' and a 'Key' input field containing the value '3'. A green arrow points from the 'Key' field to the 'Status' dropdown. The status dropdown menu also has a green arrow pointing to it.

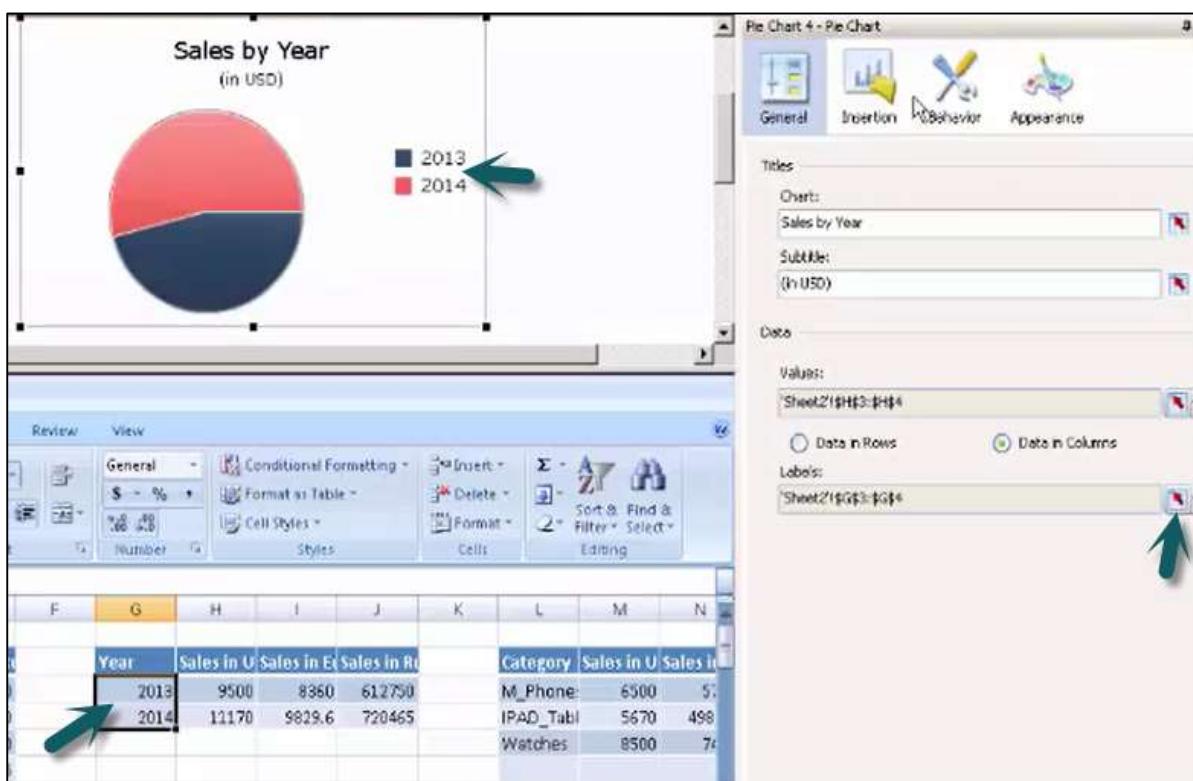
Save the model using the option at the top and go to the Preview option to see the preview as shown in the following screenshot.



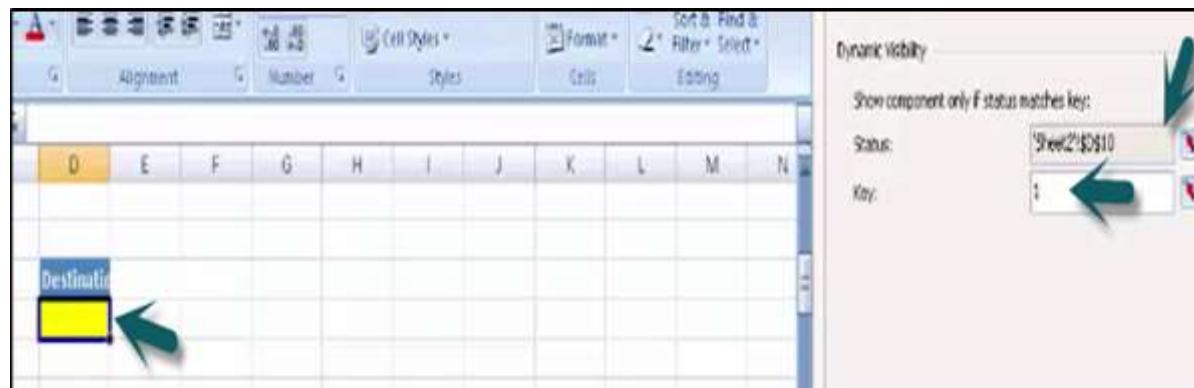
To add more components to show sales by year, select a Pie chart and title it as Sales by year and subtitle as USD. Go to cell selector to pass value from embedded spreadsheet.



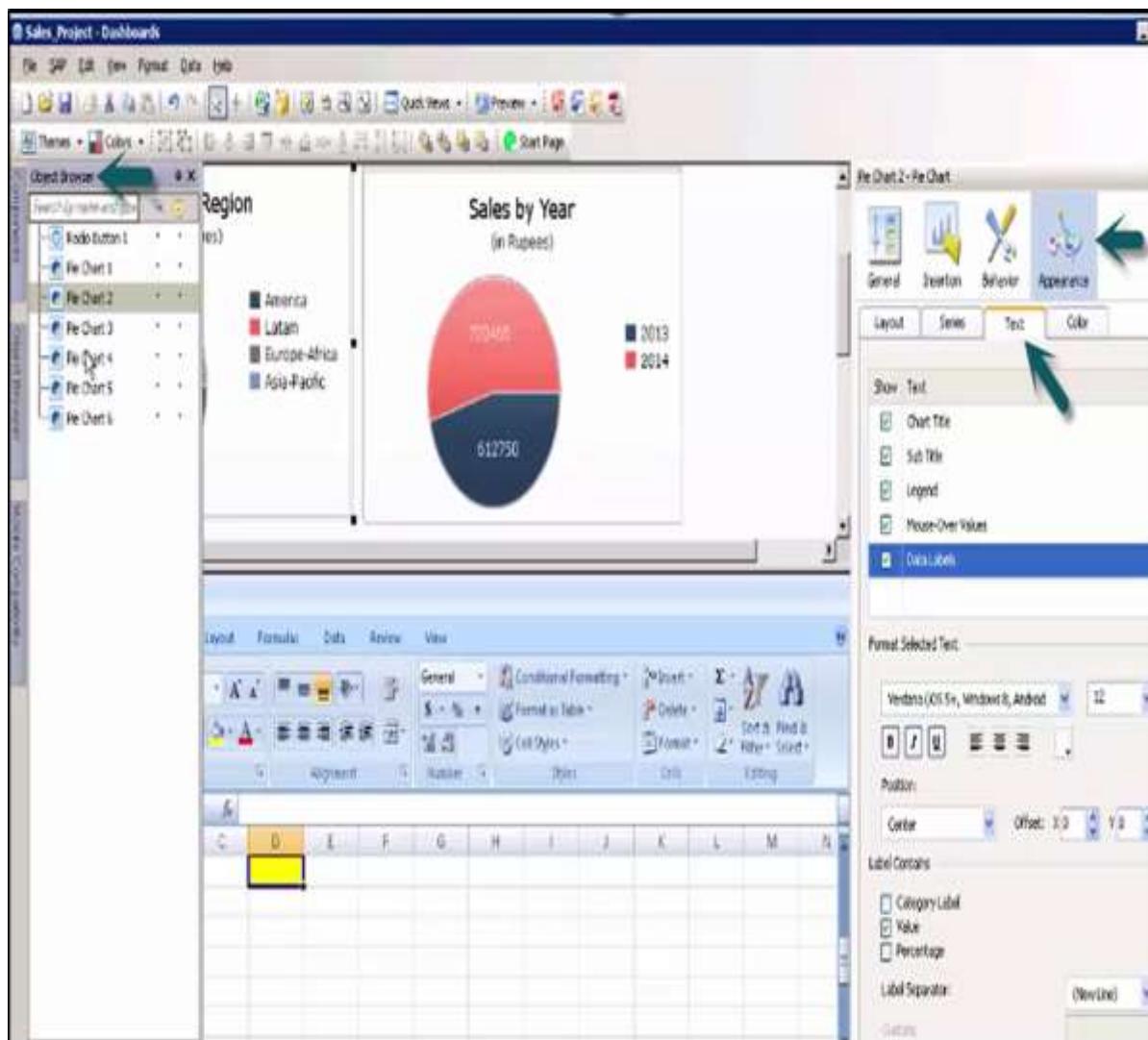
To add years as labels, go to labels and select the Years column from the embedded spreadsheet.



Set the dynamic visibility of the chart as mentioned in the previous topics. Value of the key is stored in the cell under Destination.



In a similar way, add pie charts for Sales by Year (In Euros) and Sales by Year (In Rupees). Save the Sales Project. To apply any type of formatting, you can view all the charts from the object browser, go to **Appearance -> Text**.



Similarly, you can add more charts with the title – Sales by Category, as shown in the following screenshot.

The screenshot shows a Microsoft Excel interface with three charts and a data table:

- Sales by Region:** A pie chart titled "Sales by Region" showing sales distribution across regions.
- Sales by Year:** A pie chart titled "Sales by Year" showing sales distribution across years.
- Sales by Category:** A pie chart titled "Sales by Category (in USD)" showing sales distribution across product categories.
- Data Table:** A table titled "Sales in U.S." containing sales data for four years (2013, 2014, 2015, 2016) across various categories like M-Phone, PAD, Tab, and Watches.

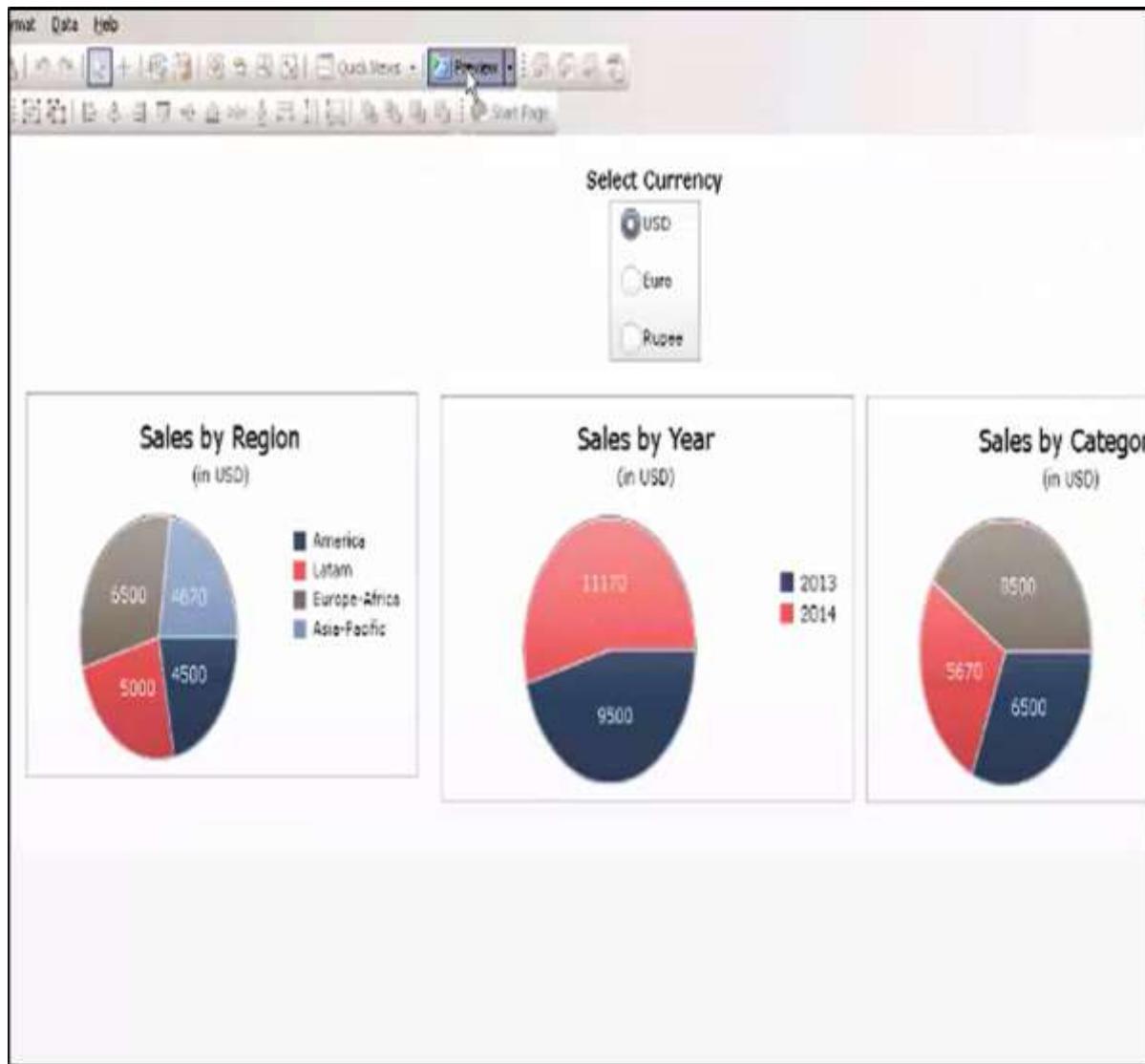
A green arrow points from the "Sales by Category" chart towards the data table, indicating the connection between the chart and the underlying data.

	Sales in U.S.			Year	Sales in U.S.			Sales in U.S.			
	Sales in U.S.	Sales in E.	Sales in R.		Sales in U.S.	Sales in E.	Sales in R.		Sales in U.S.	Sales in E.	Sales in R.
2013	3960	29050	4500	2013	3560	3360	62750	M-Phone	6500	5720	45250
2014	4400	32250	5000	2014	11170	5829.5	70465	PAD, Tab	5670	4955.5	365715
2015	5700	48950	6500	2015	11170	5829.5	70465	Watches	3500	2480	548250
2016	4209.6	311215	4670	2016	11170	5829.5	70465				

Add labels by going to the cell selector. Set the dynamic visibility for the components and multiple charts.

The screenshot shows the SAP Excel add-in interface. On the left, there's a ribbon with tabs like Home, Insert, Page Layout, etc. Below the ribbon is a toolbar with various icons. The main area contains three charts: 'Sales by Region' (in Rupees), 'Sales by Year' (in Rupees), and 'Sales by Category' (in USD). A 'Select Currency' dropdown is also present. On the right, a context menu for the third chart is open, titled 'ReChart7 - ReChart'. This menu includes tabs for General, Insertion, Behavior, and Appearance. Under the Behavior tab, there's a section for 'Dynamic Visibility' with a checkbox labeled 'Show component only if status matches key'. Below this are fields for 'Status' (containing '=Sheet2!\$B\$10') and 'Key' (containing '=Sheet2!\$C\$10'). A red arrow points to the 'Key' field, and another red arrow points to the 'Dynamic Visibility' section.

Save the project again and go to Preview option at the top.



This is how you can create models in SAP Business Objects Dashboard Designer and use embedded spreadsheets to get data from external data sources and do binding data with different components in the Canvas and use the dynamic visibility feature.