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How to use different types of charts in Dashboard

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About the Author

Selwyn Zhou is Big Data Scientist at ATCG Solutions. He is an expert on end to end solutions of data analysis, predictive algorithm and SAP/Hadoop Database Architecture. Prior to Join ATCG he specialized in Optimal data analysis in his PHD studies. Selwyn graduated top 2% in the china national exam received PHD entrance privilege as a freshman in college with a full scholarship. He has obtained 2 patents and currently pursuing research in Data Science algorithm in predictive manufacture environment.

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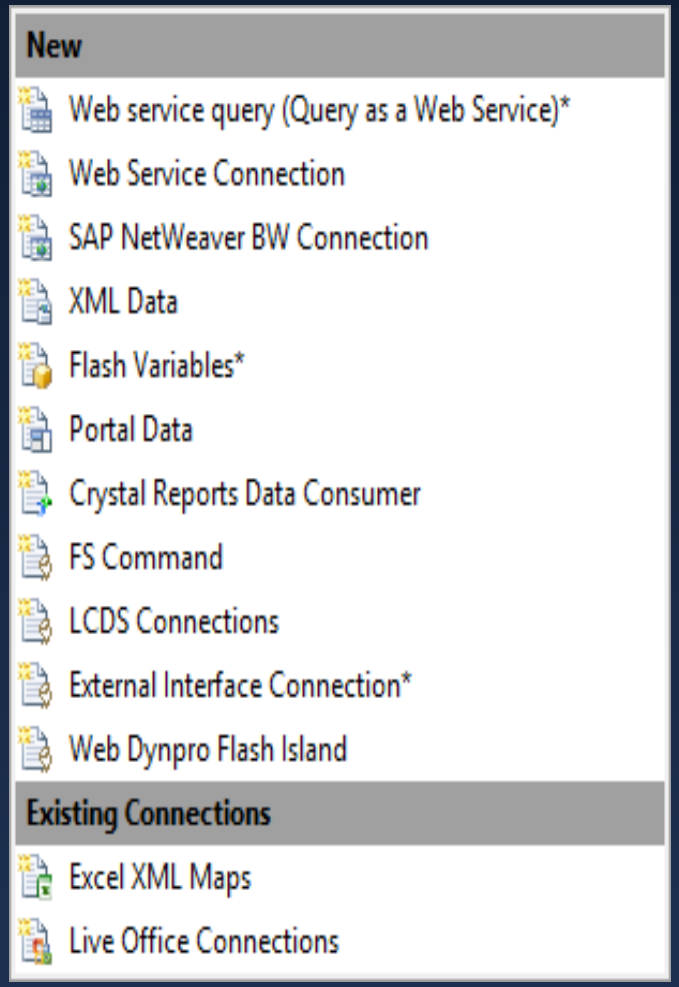


Dashboards supports three categories of data sources:

The embedded spreadsheet

- Best suited for small-to-medium sized business users

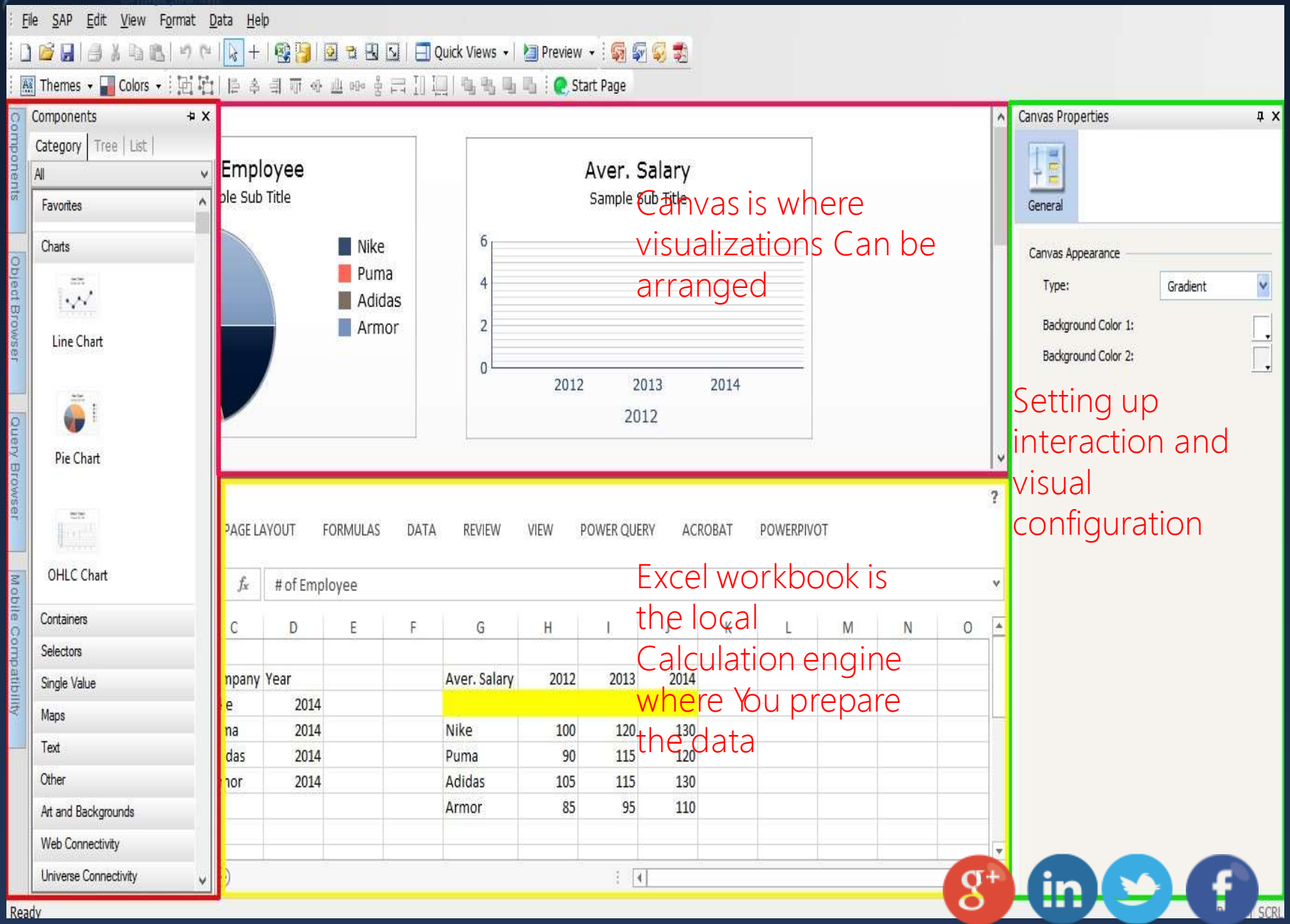
External data connection

- Best suited for small-to-medium sized business users who need a dynamic data sources; these connections provide up-to-date data

BEx and universe queries

- Best suited for businesses running the BI Platform. Queries are used to select specific result objects from the chosen data source

Working with Data Sources



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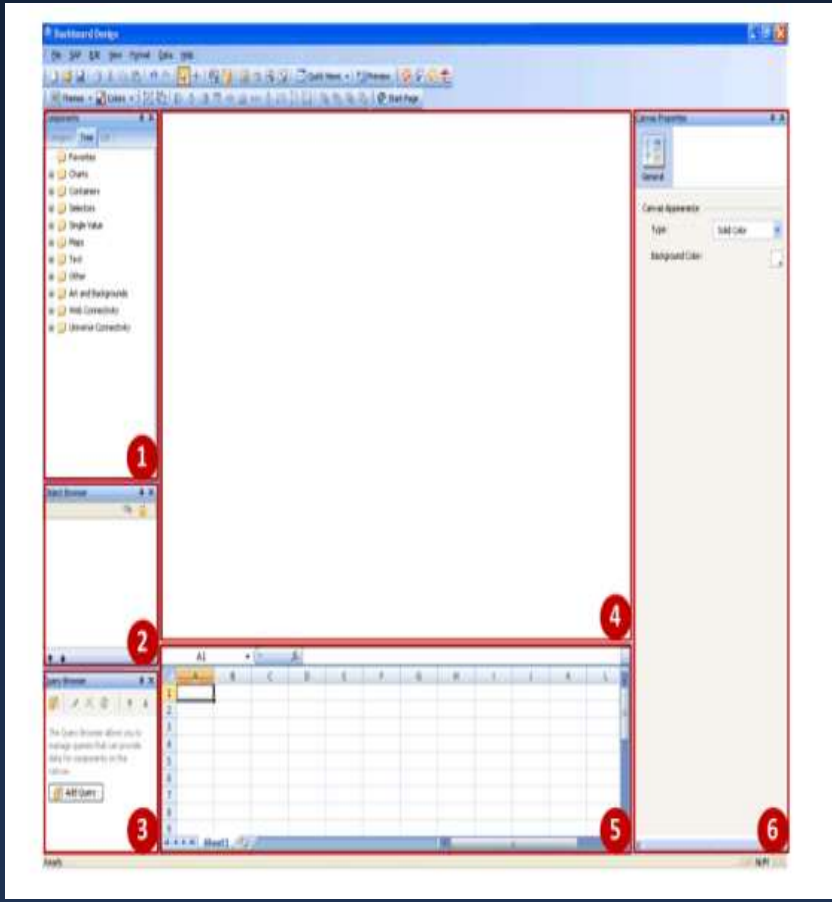
Understanding the workspace



The workspace and its major features are illustrated below:

1.Components Browser
2.Object Browser
3. Query Browser
4. Canvas
5. Embedded spreadsheet
6. "Properties" panel

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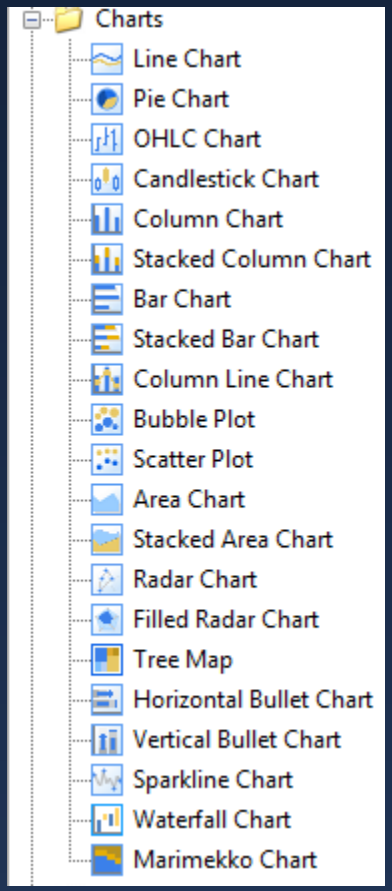
Visual Components

Category	Description
Charts	Chart components allow you to create visual representations of data to make it easy for dashboard consumers to see comparisons, patterns, and trends.
Containers	Container components group and display other components. Note:Container components are not available in Presentation Design.
Selectors	Selector components are used to create a visualization with multiple options to select from
Single Value	Single-value components can be linked to a single cell in the spreadsheet and can either allow dashboard consumers to change the value in that cell or display the product of a formula from that cell.
Maps	Map components create visualizations with geographical representations that can display data by region
Text	Text components can be used to add labels to your model, or to allow the dash- board consumer to enter text at runtime.
Other	The Other category includes various components that can enhance the model, such as calendars, trend icons, panel sets, and print buttons.
Art & Backgrounds	Art & Backgrounds components allow you to visually enhance your model by adding images and backgrounds.
Web Connectivity	Web connectivity components allow data retrieval at runtime to by linking models to the Internet.
Universe Connectivity	Universe connectivity components allows users to interact with Universe connec- tions such as refreshing data and entering prompt values. Note:Universe Connectivity components are not available in Presentation Design.

Different Type of Charts



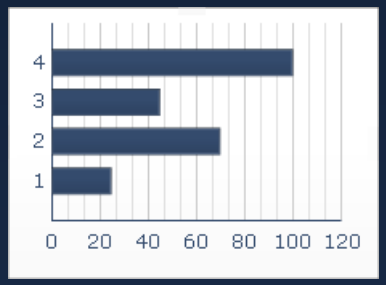
- Charts allow you to represent data visually to make it easy for users to see comparisons, patterns, and trends. The software includes the following types of charts.

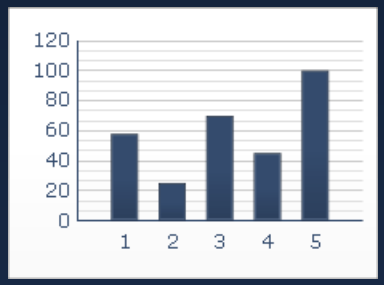
- ***Bar chart and column chart***

  These are multi-bar charts that show and compare one or more items over a period of time or in a specific range of values. You could, for example, use a column chart in models that contain the quarterly headcount by region.

  Note:

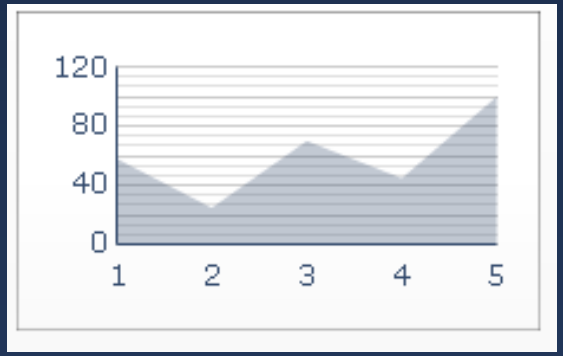
  Bar charts and column charts are functionally identical; they display the same information. The only difference is the orientation of the bars.





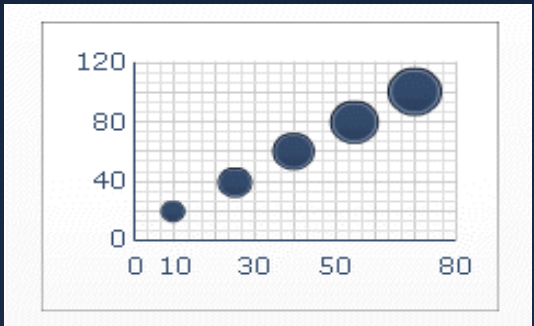
- ***Area chart***

The area chart is a standard chart with vertical and horizontal axes. Each point along the horizontal axis represents a data point. The values for each data point are plotted along the vertical axis. For each series, colored areas are created by connecting the plotted points against the horizontal axis. Use this chart in models that emphasize a trend line, such as stock prices or revenue history.



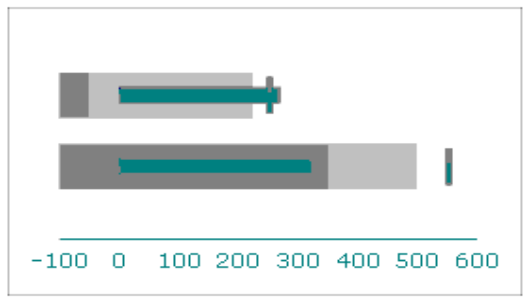
- ***Bubble chart***

The bubble chart is one of the most powerful analytic tools available. It lets you compare a group or series of items based on three different parameters. It has an X-axis and Y-axis to represent the item location over the chart area, and a Z value to represent the item size.



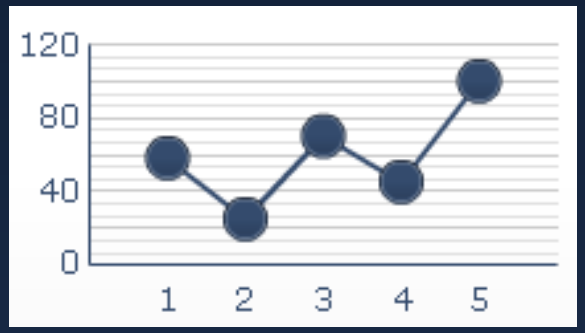
- ***Bullet charts***

This chart provides a method to display information in a condensed, less-distracting format and is available with either a vertical or horizontal orientation.
Bullet charts have a single primary measure (for example, current year-to-date revenue) that is displayed as a vertical or horizontal bar. A marker indicates a target or performance goal and changing color hues behind the bar indicate qualitative ranges of performance (for example, poor, satisfactory, and good).



- ***Line Chart***

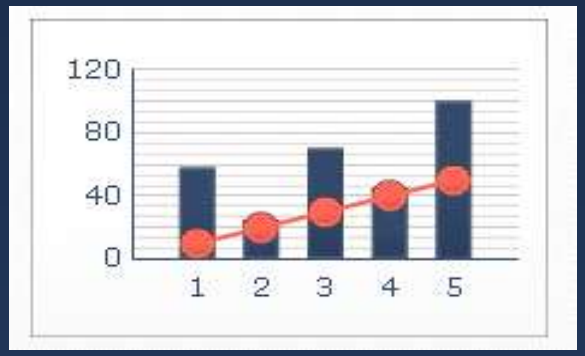
A single- or multi-line chart is ideal for showing tendency over a period of time. Use this chart in models that emphasize a trend or a continuing sequence of data, such as stock prices or revenue history.



- ***Combination chart***

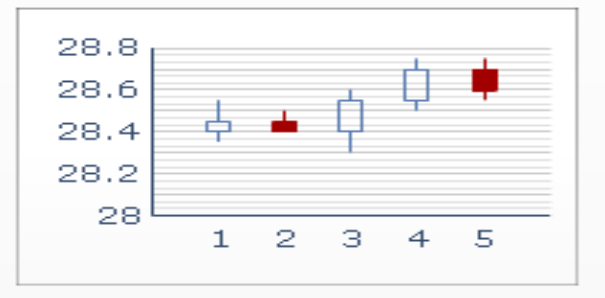
A combination column and line chart ideal for displaying a range of values and a trend line for those values. You can use the combination chart in models examining stocks. A line series might show the historical stock price over the year, and a column chart might show the volume of trading for that stock.

A combination chart can also have alert notifications when it has multiple data series. Combination charts are the only type of chart with this capability. For more information on alerts



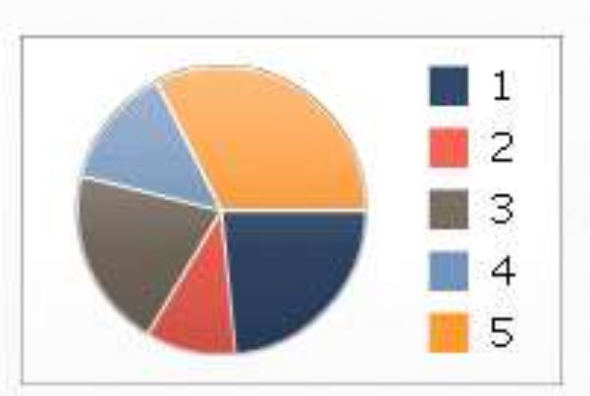
- ***OHLC chart and candlestick chart***

The open-high-low-close (OHLC) and candlestick charts are primarily used to display stock data. Each marker corresponds to the values, which are represented as lines attached to the marker on the OHLC chart and as colors on the candlestick chart. The open value displays the opening price of the stock. The high value displays the highest price the stock achieved on that day. The low value displays the lowest price of the stock on that day. The close value displays the closing price of the stock.



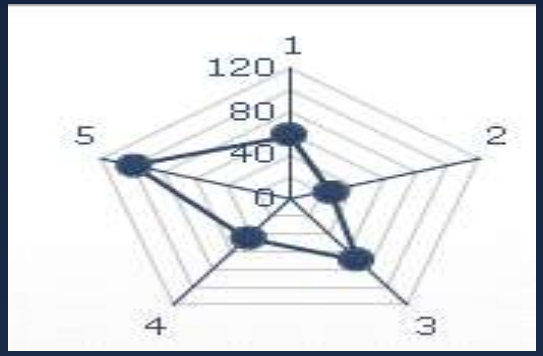
- ***Pie chart***

A circular chart that represents the distribution or participation of each item (represented by a slice) of a certain total that is represented as the overall pie value. The pie chart is appropriate for models such as revenue contribution by product. In that example, the overall pie size would represent the total revenue, and each slice would represent a different product.



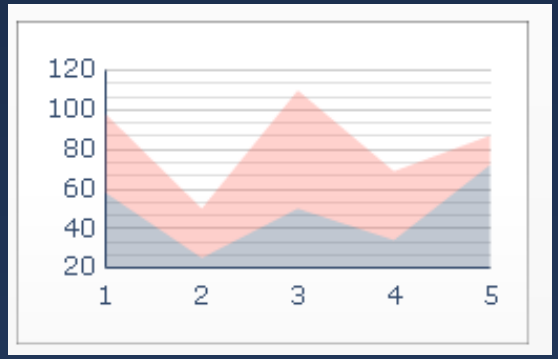
- ***Radar chart and filled radar chart***

Radar charts have axes that radiate outwards from the center of the chart. These charts can have several axes. They are useful for plotting multi-dimensional sets of data. In the filled radar chart, the shape created by connecting the points along each axis is filled in with color. You could use the radar charts to compare aspects of stocks. One axis could display the price, another the volume, another the Price to Earnings ratio, and any other relevant data.



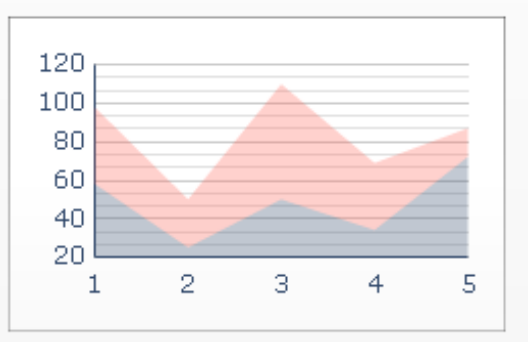
- ***Sparkline***

The sparkline presents trends and variations associated with some measurement, such as stock market activity, in a simple and condensed way.
Designers can set key data points (start value, end value, low value, and high value) that are displayed as markers on the sparkline. They can also define a normal range that is displayed as a colored background behind the chart.



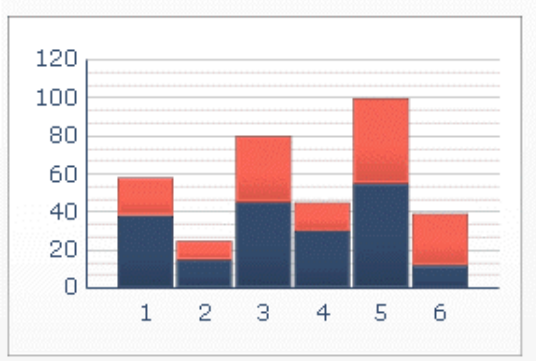
- ***Stacked area chart***

This standard chart has vertical and horizontal axes. Each point along the horizontal axis represents a data point. The actual values for the data points are plotted against the vertical axis, with each series adding to the total value. You could use the stacked area chart to compare the revenue for multiple products as well as the combined revenue of all the products and the contribution of each product to the combined revenue.



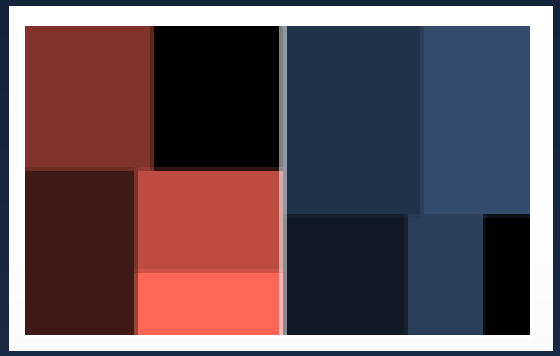
- ***Stacked column chart and stacked bar chart***

Stacked bars compare one or more variables, with each series adding to the total value. This chart compares several variables over a period of time, for example, marketing cost and administrative cost. Each one of the cost components is presented in a different color and each bar represents a different time period. The total bar size represents the total cost.



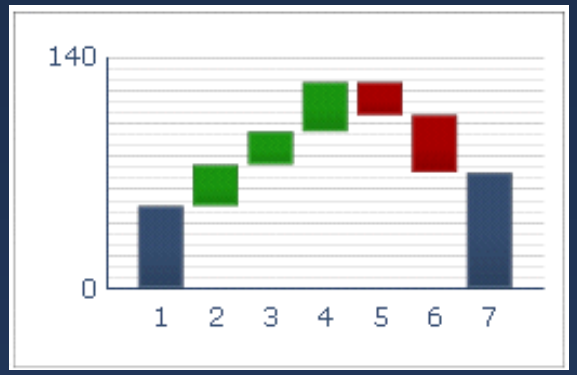
- ***Tree map***

This chart displays data in a two-dimensional area. Each data point is represented by a rectangle. The tree maps display two parameters, represented by size and color intensity and can be used to compare two sets of data.



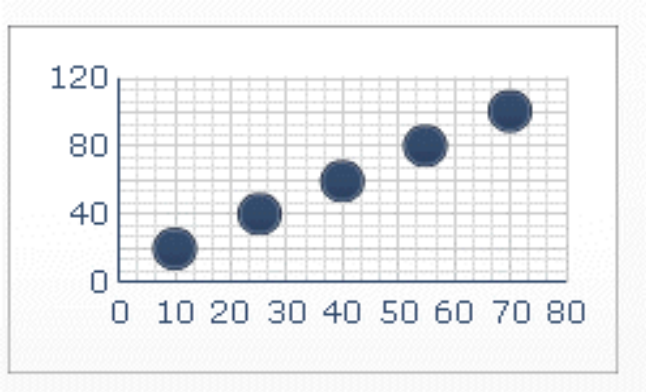
- ***Waterfall chart***

A waterfall chart is commonly used to display how an initial value is affected by a series of sequential positive or negative values. The initial and final values are represented by full columns, while the intermediate values are represented by partial columns. The columns are color-coded to distinguish between positive and negative values.



- ***XY Chart***

This chart displays data that encompasses two dimensions. The XY chart shows each data point as a result of the intersection of X values and Y values. You can, for example, use the XY chart in models that compare ROI (on the X axis) against market value (on the Y axis) for a group of companies.

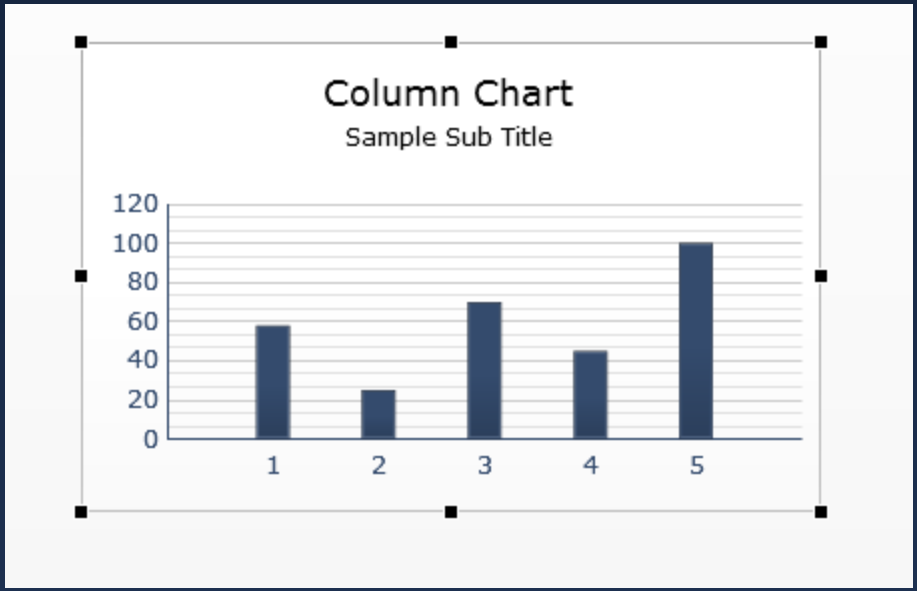


How to add Chart Components

- Since every chart have different parameters to set up. Here we use column chart as an example to show the process:

Step-by-step

1. Drag chart to the canvas
2. Adjust titles
3. Bind data
4. Adjust scaling
5. Adjust layout



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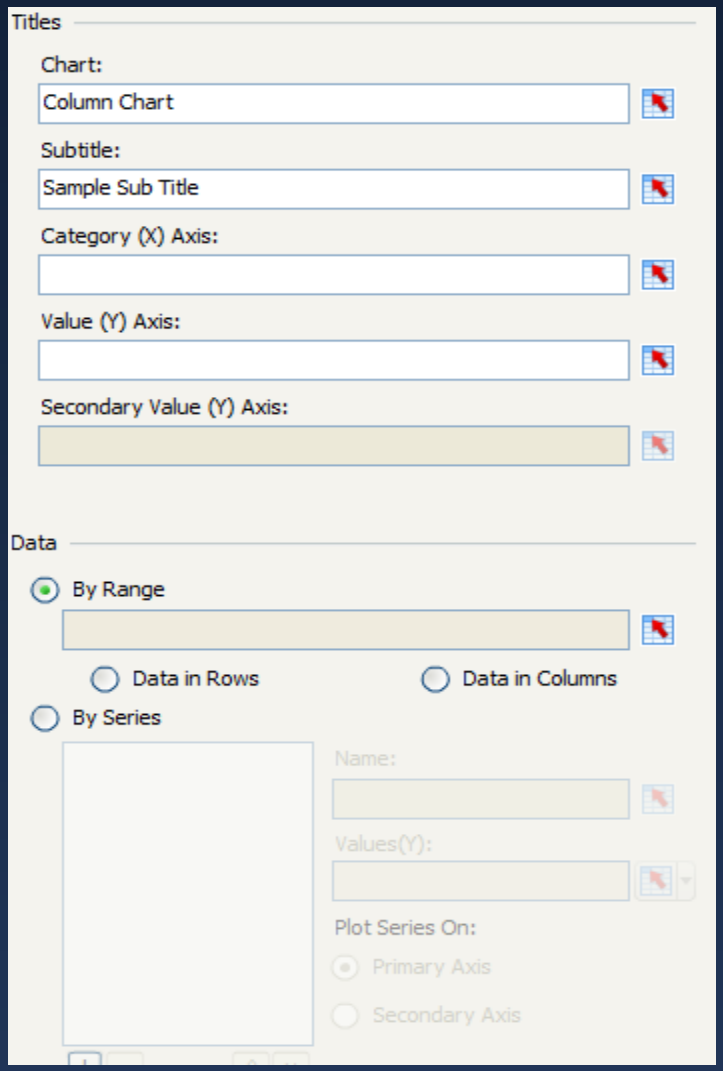
General View



- Title, subtitle, axis values can include fixed value or values from the spreadsheet model
- Bind data:
- Use Range option if data is a range of continuous cells
- Use Series option if data series are segregated

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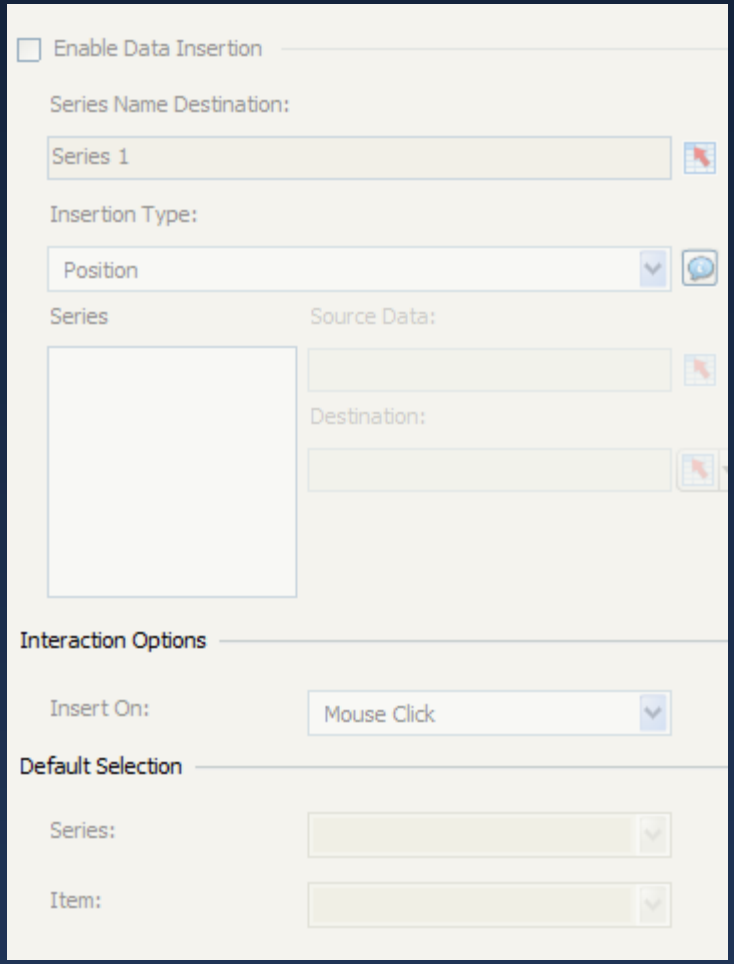
Insertion View

- The Insertion view is available for some charts, and for the hierarchical table. Use this view to configure charts to act as selectors, so that clicking a chart element inserts more detailed information into the embedded spreadsheet, which can then be used by another component to create drilldown behavior.



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Behavior View

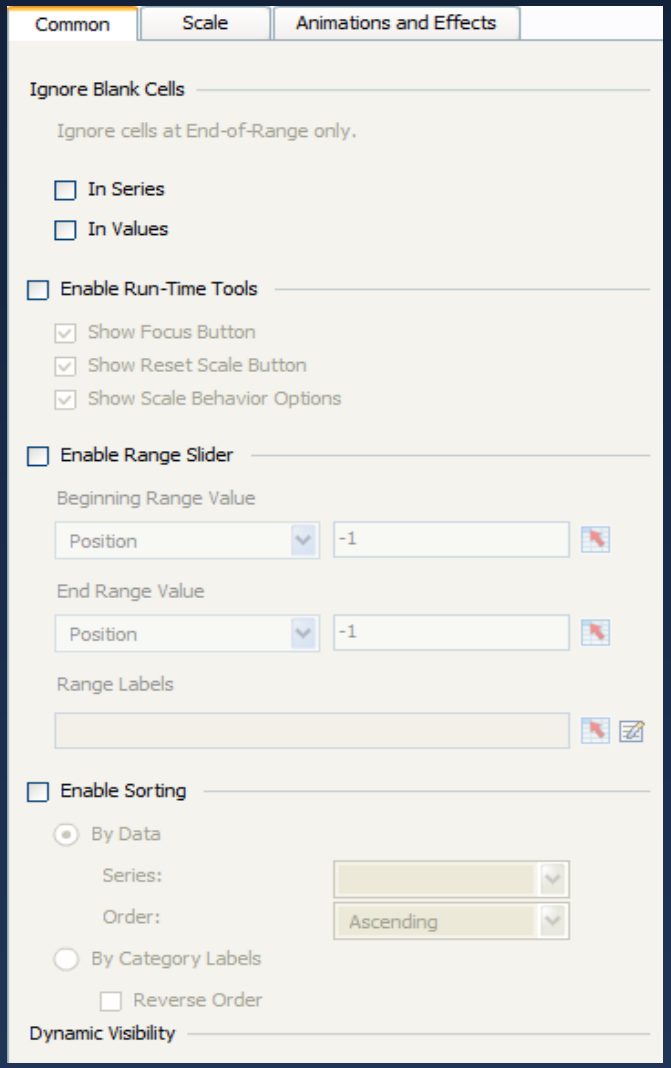
- Use the Behavior view to set up how the component works within the model. For example, you can set limits, interactivity, and visibility;

- In the scaling tab, we can choose way to scale data;

Manual Scaling:
If data doesn't require the scales to change

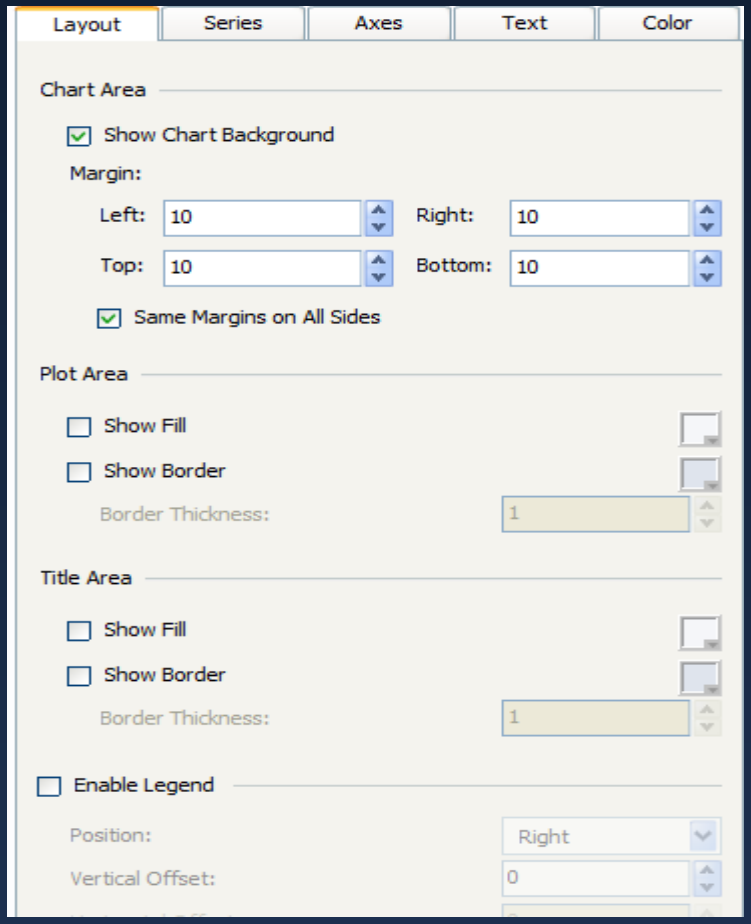
Auto Scaling:
If data feeds of the chart change and scaling has to be adjusted automatically

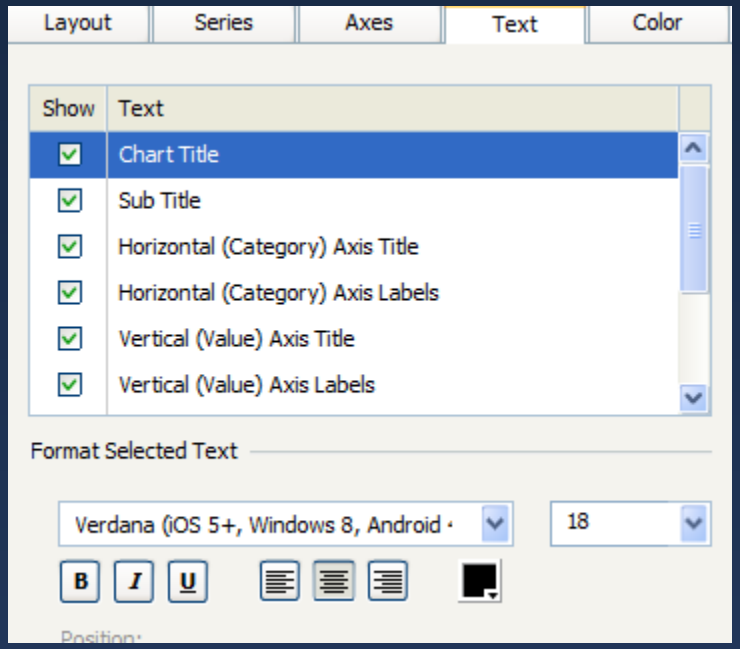
- You can also set the entry effect type in the Animations and Effects tab;

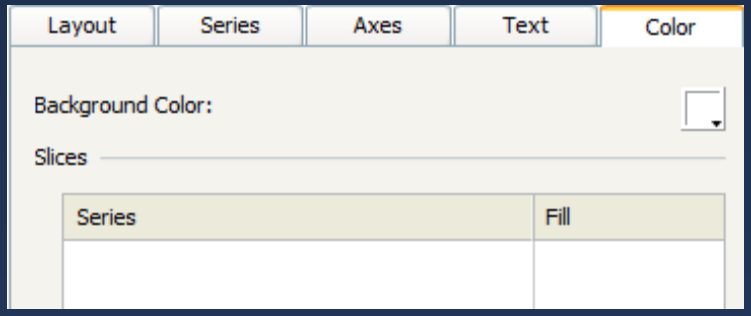


Appearance View

- Use the Appearance view to format the look of components, including font size, title locations, chart background, plot area, legends, colors, and so on.







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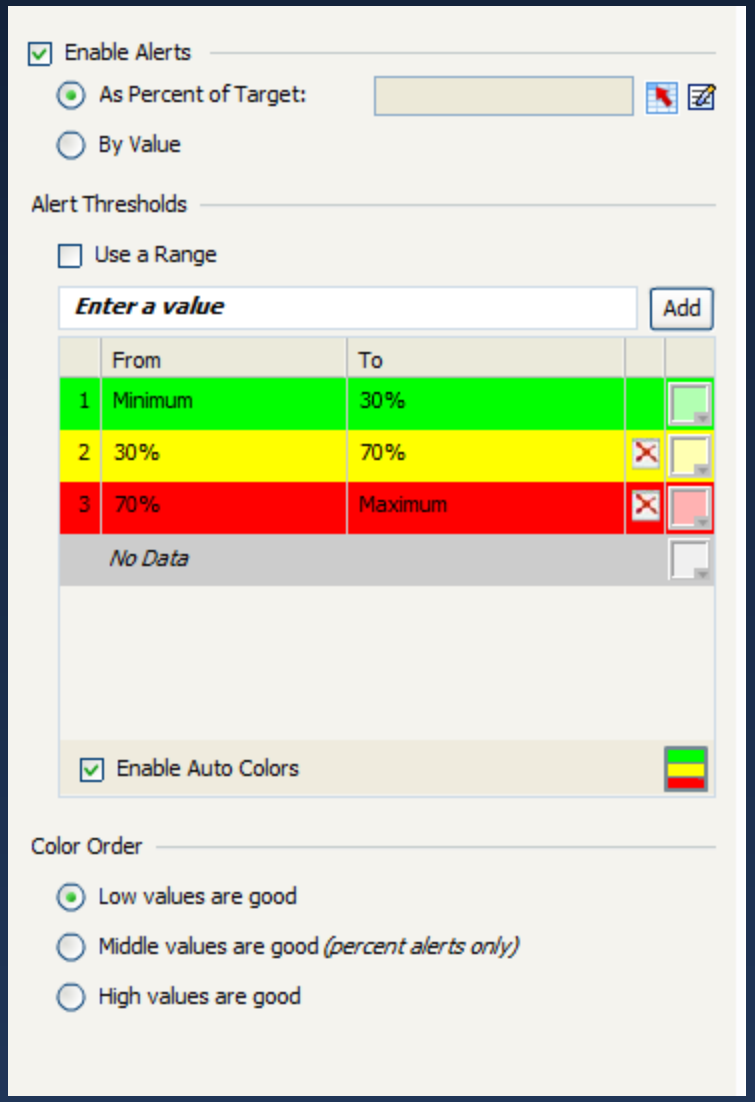
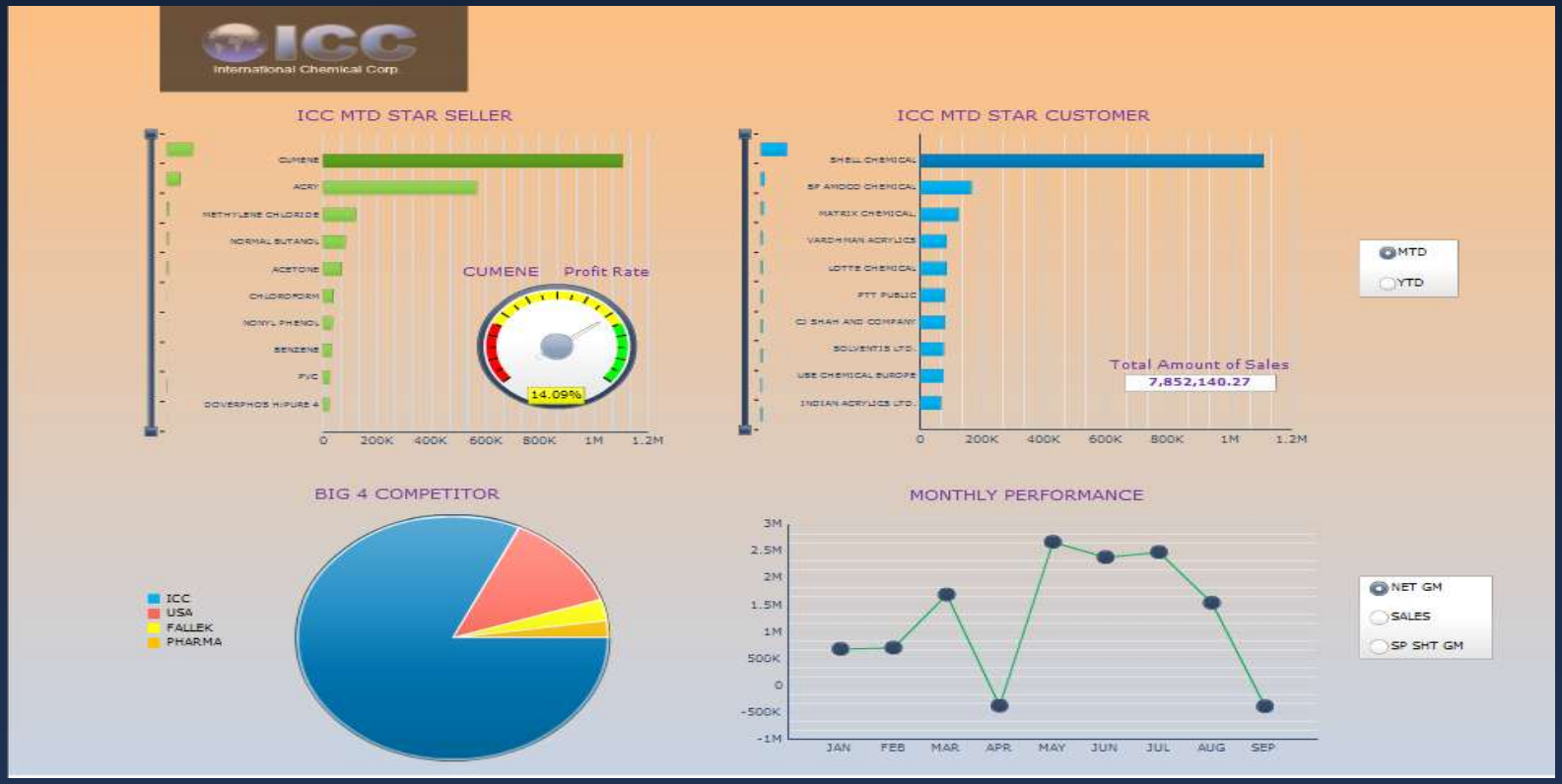
Alert View

- Use the Alerts view to set up visual notifications regarding the data values. Alerts help identify values that are acceptable and ones that require attention, for instance. You can turn alerts on, set the target values, and configure colors for different alert levels.



Demo

- Here is a demo designed by myself. You can take a look and get a concept Click it. You will find how to combine several charts to achieve a goal.



PS: Please download and use AdobeReader to open the pdf.file so that you can see the perfo rmance of the demo dashboard

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