FIU BUSINESS INTELLIGENCE & ANALYTICS TRAINING

Oracle Business Intelligence & Analytics Training Agenda

Part I – Oracle Business Intelligence

- Introduction to concepts and definitions.
- Oracle "Answers" reporting tool.
- Oracle "Visual Analyzer" exploration tool.

Part II – Exploring Subject Areas, Data, and Reports

- Subject areas.
- Sample reports.
- Data dictionary.

Part III – Other

- Security access request.
- Providing feedback / Reporting issues / Request analysis.
- Q&A.
- Concluding remarks.

Workshop Objectives

After completing this training, you should be able to:

- Understand the concepts of Business Intelligence and its components.
- Create and modify Oracle Business Intelligence analyses.
- Drill columns in analyses and views.
- Administer analyses and other Oracle BI objects.
- Perform pre-aggregate filtering by using filters and prompts.
- Build and use views and charts in analyses.

What Is Business Intelligence?

It provides users with the data and tools to answer questions that are important to running the part of the organization for which they are responsible:

- Determine whether the business is running as planned.
- Identify where things are going wrong.
- Take and monitor corrective actions.
- Identify trends.

Examples include:

- Show me enrollment for each college by term.
- Show me the average GPA for this term.
- Compare number of admitted applicants this Fall versus last Fall.
- Show me the top 25 High schools where applicants come from.

Oracle BI Architecture Components

- Data sources.
- Oracle BI Server (Repository).
- Oracle BI Presentation Server (Catalog).
- Presentation Services.
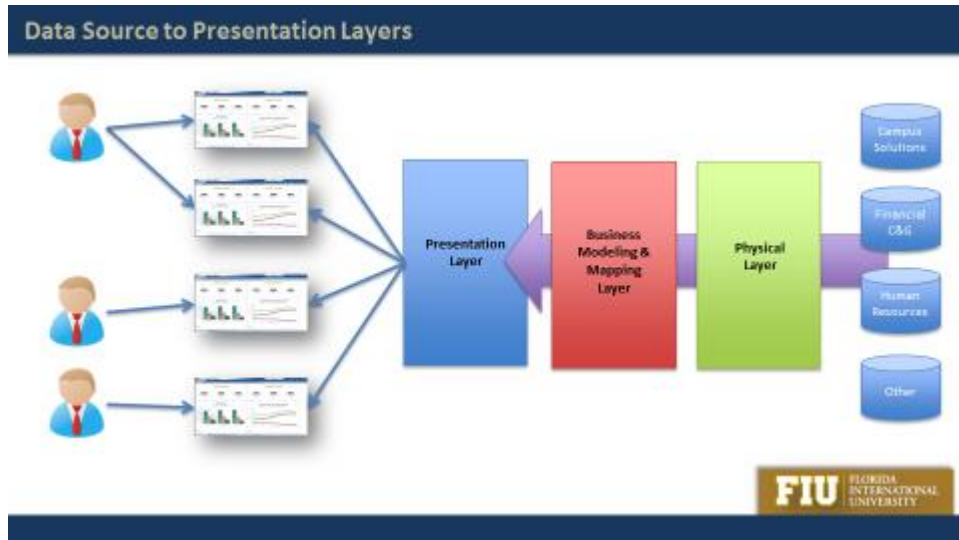
Importance of building an institutional data warehouse

- Data is extracted from a transactional system, transformed to a reporting-friendly structure, and loaded into a system solely used for reporting.
- New data structure allows to explore, slice, and drill data in a way a transactional system can't handle.
- All resources are dedicated to crunching data and reporting information in a fast, efficient, and secure way.

Importance of defining an institutional data model

- Strategic definitions become a centralized task.
- Reports yield a unified interpretation.
- Changes in the model or definitions are seen and adopted by the institution simultaneously.
- One source of truth. Same "big pie" of information sliced in multiple ways.
- All definitions, logic, and joins are modeled behind the scenes. Users don't need to know tables, fields or technicalities.
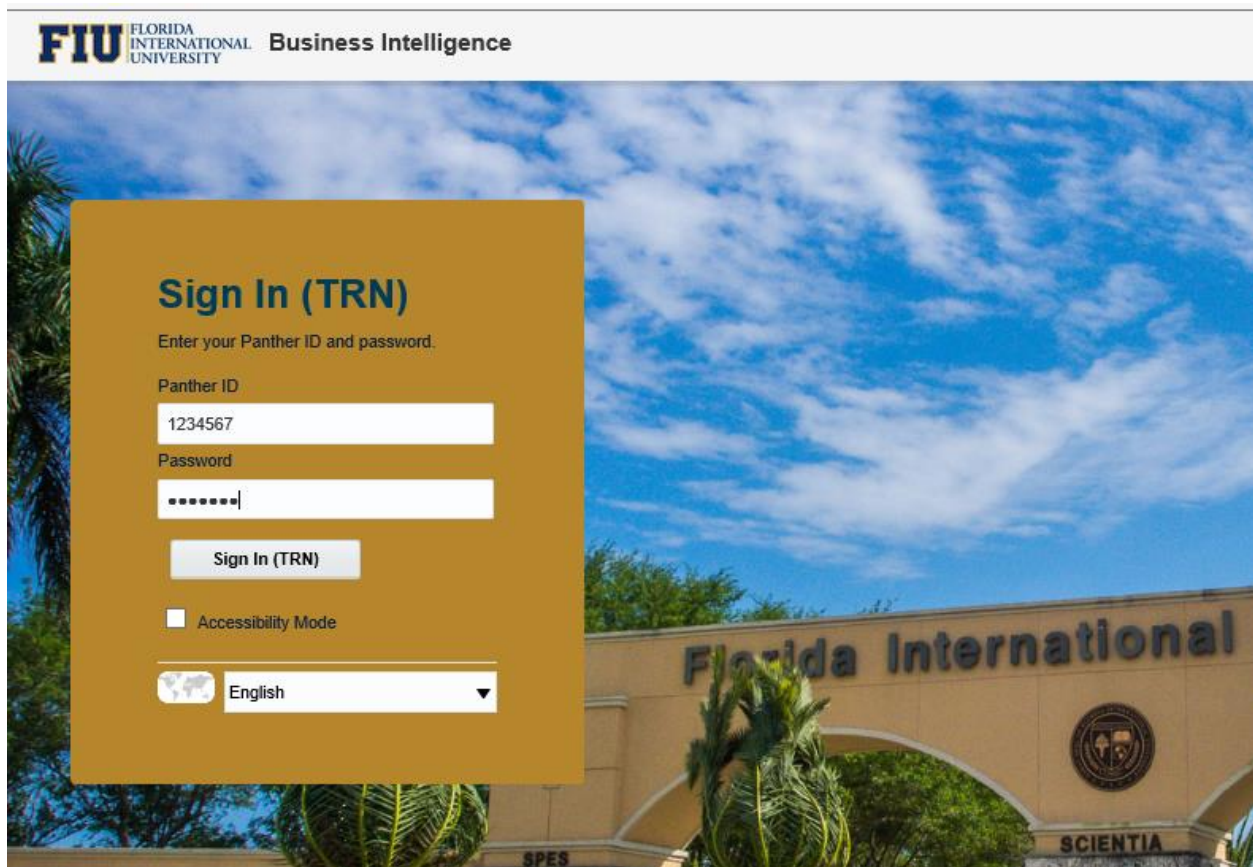
Importance of using a powerful visualization and collaboration tool

- Connect directly to data warehouse and other sources.
- Integrate seamlessly with predefined data model.
- Highly flexible, customizable, and securable.
- Extensive variety of rich graphs, tables, filters, functions, and interaction modes. Drag and drop.
- Enterprise-wide features such as sharing, e-mailing, delegating, alerts, and role-based security.
- Users are be able to consume and build reports based on one common data model.

Signing In to Presentation Services

- Signing in to Presentation Services authenticates you as a user.
- https://bitrn.fiu.edu
- Panther ID: 7 digit ID.
- Password: Same one you use for FIU e-mail.
- Your role would be either Author or Consumer.

Global Header

Provides access throughout Presentation Services to all objects, dashboards, and the Presentation Catalog.
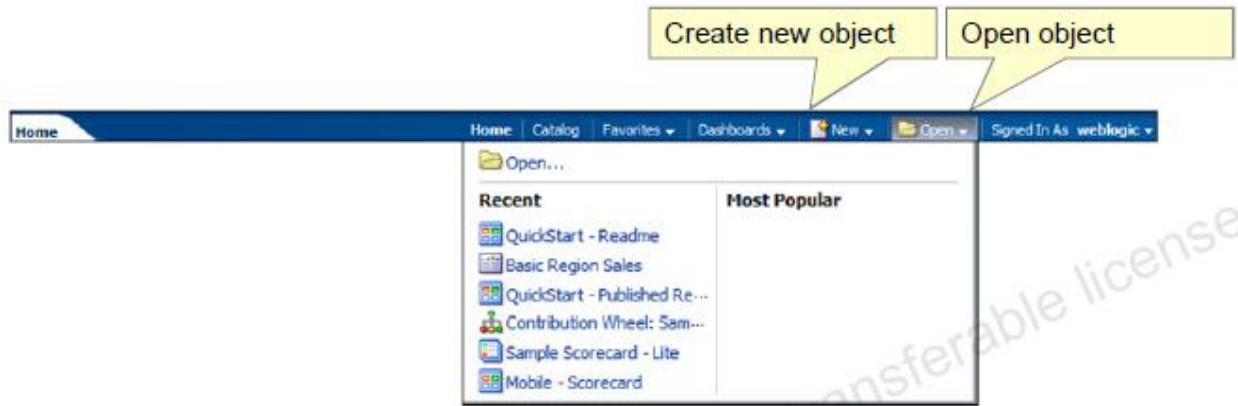
The Global Header contains links and options to begin a task or locate an object, for example, an analysis or dashboard in the Presentation Catalog. When you are working with an analysis in the Analysis Editor you can always save your work and easily navigate from the Global Header to access saved analyses, dashboards, or other content, or to create new objects.

The Global Header includes the Home link, which is used to navigate to the Home page from any other part of the user interface. It also includes the Catalog link, which allows you to navigate to the Catalog page, in which you can navigate and work with objects in the Presentation Catalog.

# Administering Objects in the Presentation Catalog
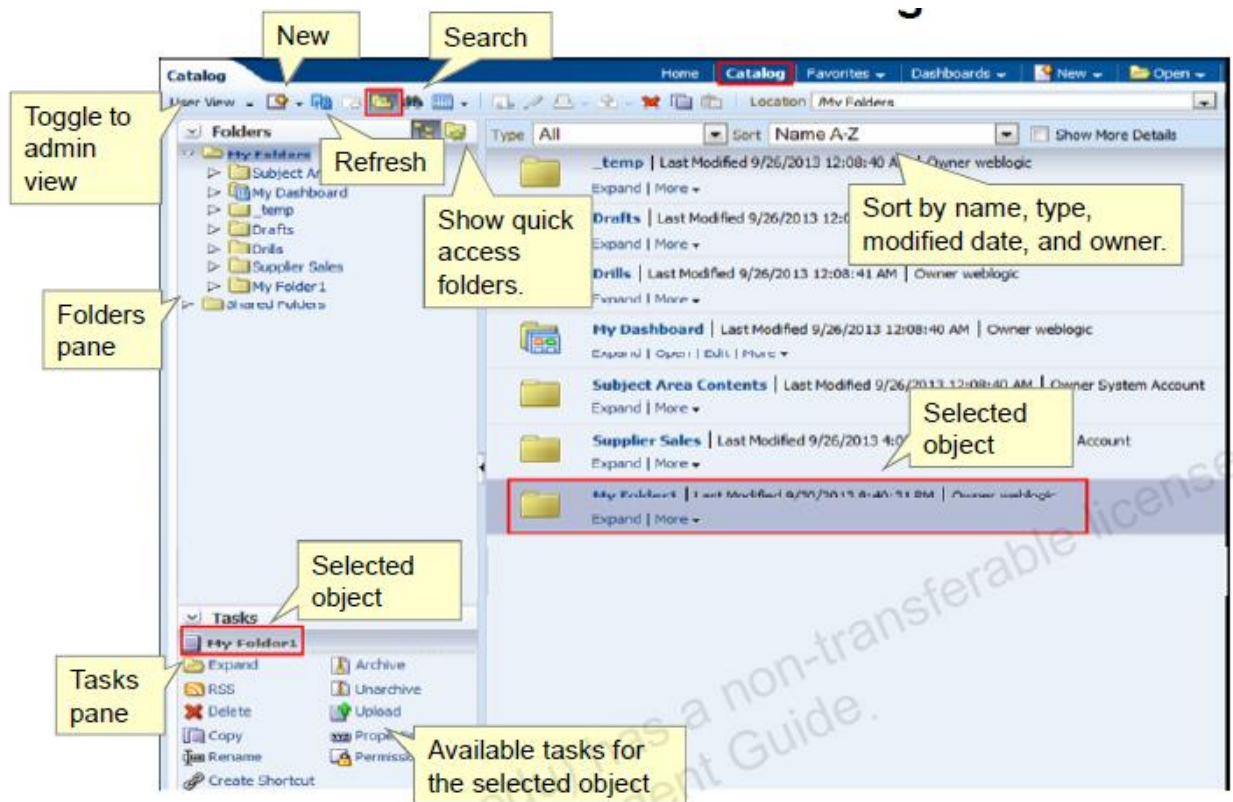
The Oracle BI Presentation Catalog stores business intelligence objects and provides an interface where users create, access, and manage objects. In this interface, users perform object-specific tasks, such as exporting, printing, editing, and setting permissions. The catalog is organized into folders that are either shared or personal. Objects in the catalog can be accessed from the Home page, the Global Header, and the Catalog page, which is accessed through the Catalog link in the Global Header. The Catalog provides a centralized place to navigate and administer catalog objects. Users of the catalog can be classified into three roles: administrators, content authors, and content consumers. Depending on their roles and the object permissions and system privileges assigned to users and roles, different options and objects are made available in the Catalog page.

You can use the tools on the Catalog page's toolbar to search, sort, navigate, and examine selected folders and catalog objects. Depending on the object selected, other tools are available from the toolbar, including, for example, printing and export of analyses. Tasks for objects are also available from the "More" link beneath each object.

Searching the Catalog

Search the catalog in one of two ways:
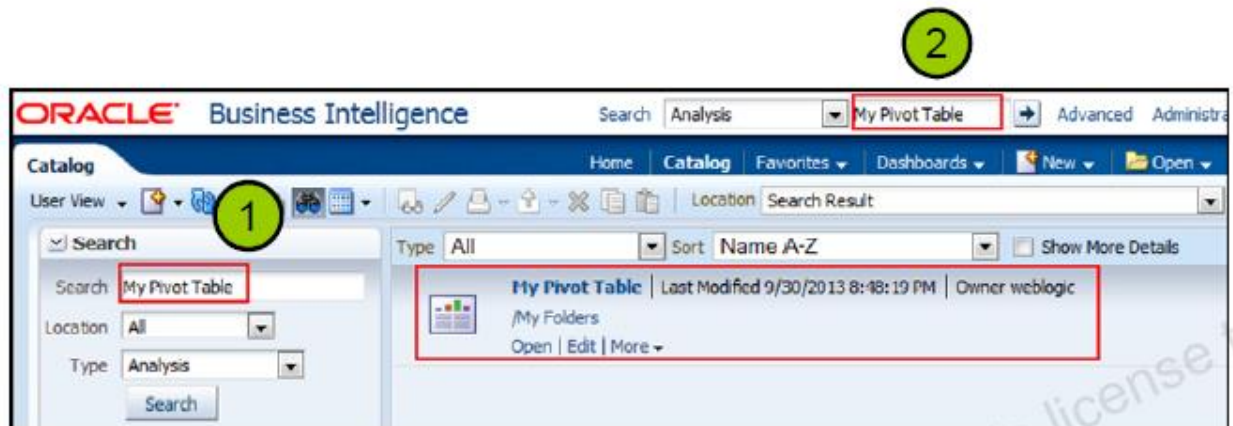
The basic catalog search allows you to search for an object from the Global Header, Home page, or Catalog page. You can search for an object by its name, location, or type only, which is similar to using a "Find" dialog box in many products. You will find only those objects for which you have the appropriate permissions. When the desired object is located, you can click it to display it for viewing or editing, as your permissions allow.

- Click the binoculars button to display the Search pane to search for objects from the Home page or Catalog page.
- Use the Global Header Search field to search for objects.

Oracle Business Intelligence Analysis Editor

- Enables you to query an organizations data.
- Provides a set of graphical tools to create and execute analyses by using subject areas and their columns.
- Saves, organizes, shares, and integrates analysis results with other content.
- Retrieves and displays analytical information through analyses.
- Provides the building blocks of dashboards.

The Analysis Editor allows users to create and edit analyses to explore and interact with information. Users can save, organize, and share results. Analyses created in the Analysis Editor can be saved in the Oracle BI Presentation Catalog and integrated into any Oracle Business Intelligence dashboard. Results can be enhanced using views with graphing, varying result layouts, calculations and grouping, formatting, etc.

Key Terms

This is a brief introduction to the terminology used in the remainder of the course.

| Term	Definition
Analysis	Answers a query against an organization's data
Column	Represents data that an analysis returns. Measure columns contain numeric measures, attribute columns contain descriptive data, and hierarchies represent relationships.
Filter	Mechanism that restricts the result set returned by an analysis
Prompt	Special kind of filter that interactively restricts the result set returned by an analysis; can be used to populate variables
Selection	Mechanism that determines column membership included in an analysis
Criteria	Set of columns, filters, formatting, and properties specified for an analysis
Results	Output returned from Oracle BI Server for a specified analysis
Subject Area	Logical object that organizes and presents data about a business
Dashboard	Page in a Business Intelligence application that displays content
Dashboard Prompt	Filter object that interactively filters all content on a dashboard page and can be used to populate variables
Query	Underlying SQL issued to the Oracle BI Server for the specified analysis

Subject Areas

- Contain information about the areas of your organization's business.
- Organized into folders and columns.
- Have names that correspond to the type of information they contain.
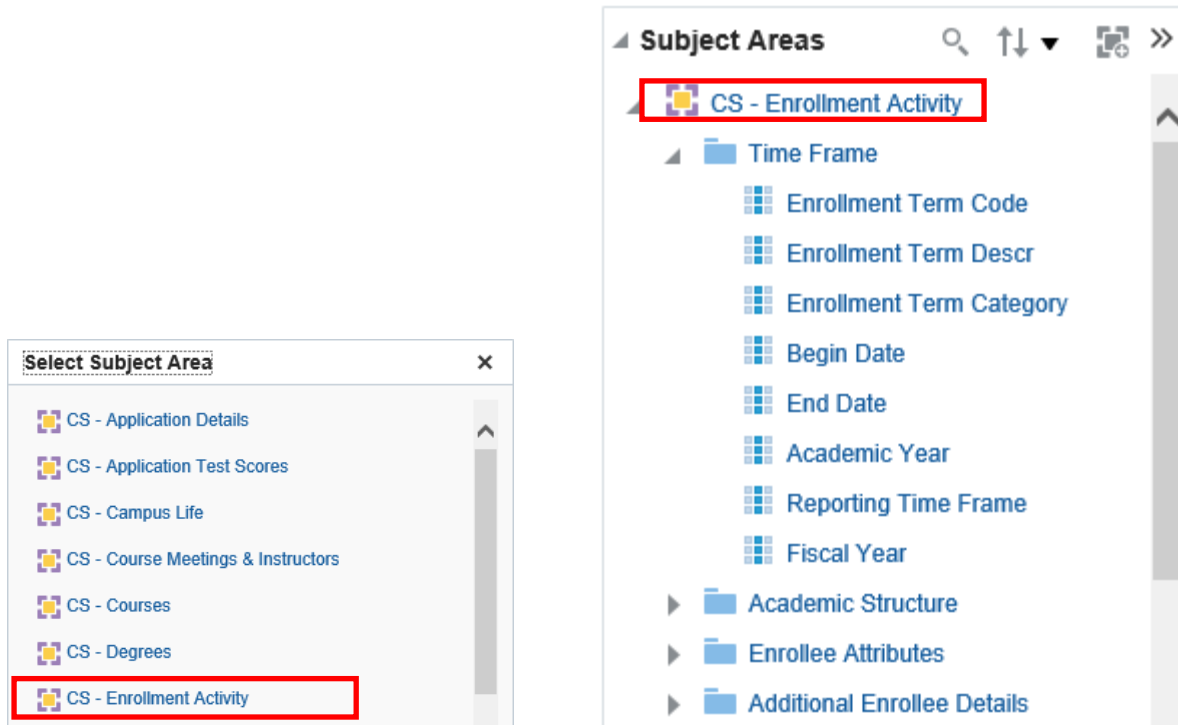
A subject area is the view of the data that end users see when they create or edit analyses. A subject area contains folders, measure columns, attribute columns, hierarchical columns, and hierarchy levels that represent information about the areas of an organization's business. Subject areas usually have names that correspond to the types of information that they contain. When you create a new analysis, filter, or dashboard prompt, you first select the subject area with which you want to work. This is known as the primary subject area and is displayed in the Subject Areas pane.

Creating and Editing Analyses

Create or open analyses from the Home page.
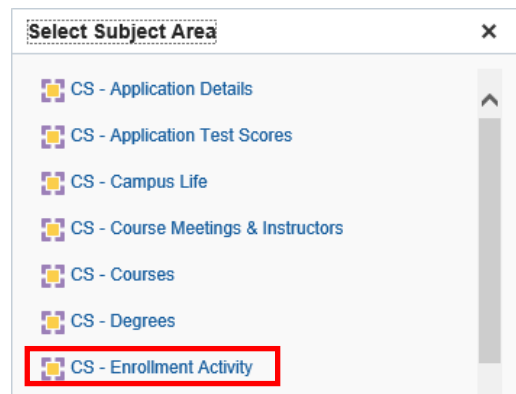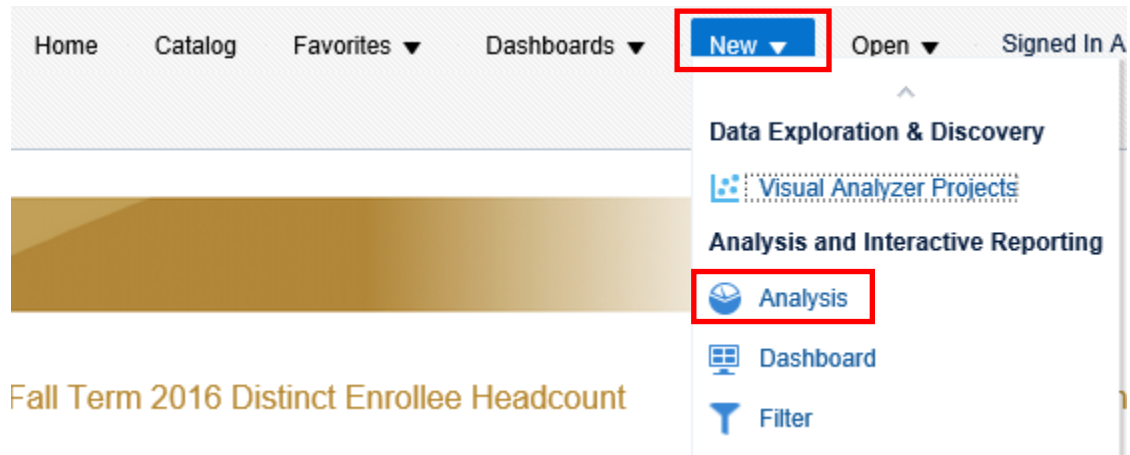
Columns

- Represent the pieces of data that an analysis will return.
- Are organized into folders and subject areas.
- Can be of two types:
    1) Attribute columns: a list of members that describe a measure
    2) Measure columns: numeric values that are aggregated for attributes

Attribute columns are similar to columns in a table in a relational data source. They contain a simple list of members, which function as attributes, similar to a dimension. They represent entities by which you can slice and dice measure data.

Measure columns, also called facts, contain a simple list of data values, usually numeric, of entities that can change for each record and can be added up or aggregated in some way, for example, Headcount or GPA.

Analysis Editor

Provides an area to create, modify, and save analyses, filters, groups, calculated items, and selections.
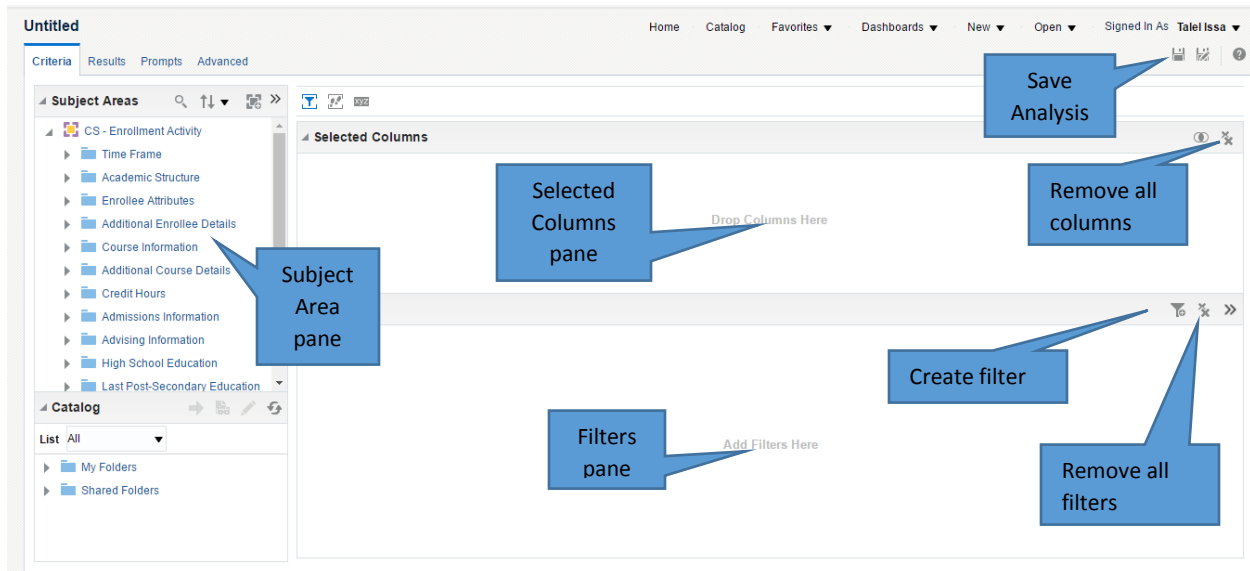
The Analysis Editor provides a list of the available subject areas in the Subject Areas pane in the Criteria and Results tabs. After selecting a subject area to work with, you can create an analysis. The subject area you selected appears in the Subject Areas pane with the folders and columns that the subject area contains.

- Folders are representative objects in the Business Intelligence metadata of physical database tables accessed by Oracle Business Intelligence.
- Expand a folder to see its columns. Double-click or drag a column to add it to the Selected Columns pane in the Criteria tab or the analysis results in the Results tab. You can use Ctrl + Click to select multiple columns in a subject area and then drag the to the Selected Columns pane.
- To remove all of the currently selected columns from your analysis, click the Remove all columns from the Criteria button in the Selected Columns pane.
- To close a folder in the Subject Areas pane, double-click or minimize the folder button next to it.
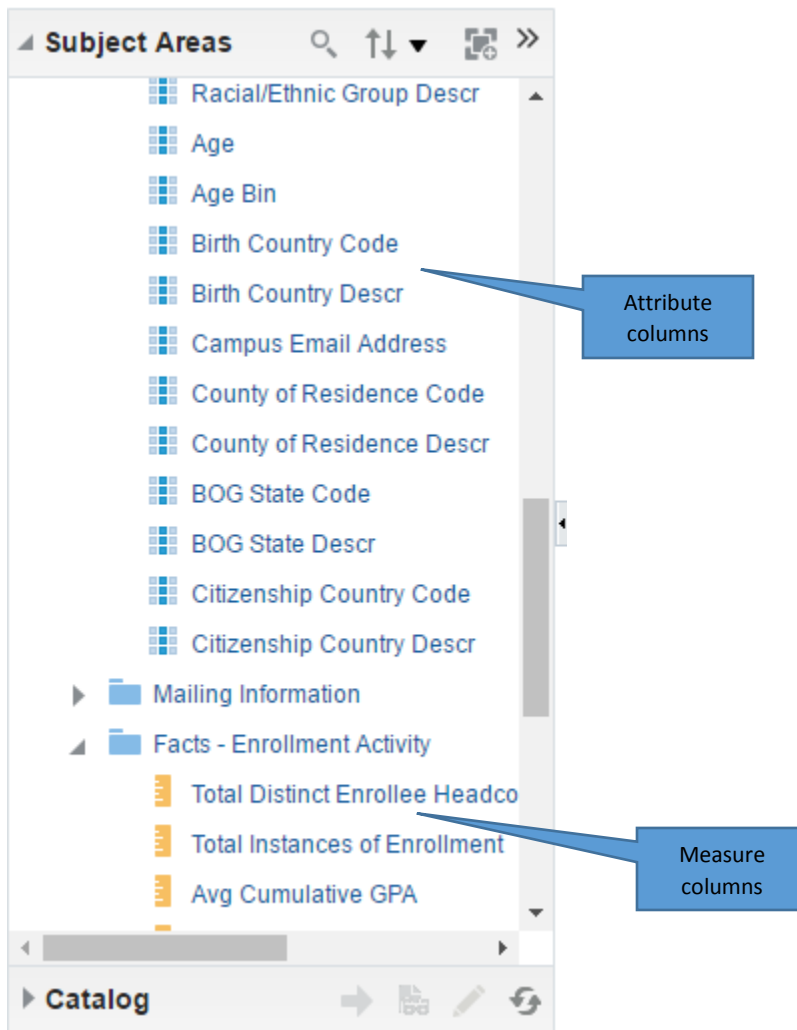
Subject Areas and Catalog Panes

The Subject Areas pane:

- Shows folders and columns to construct analyses.
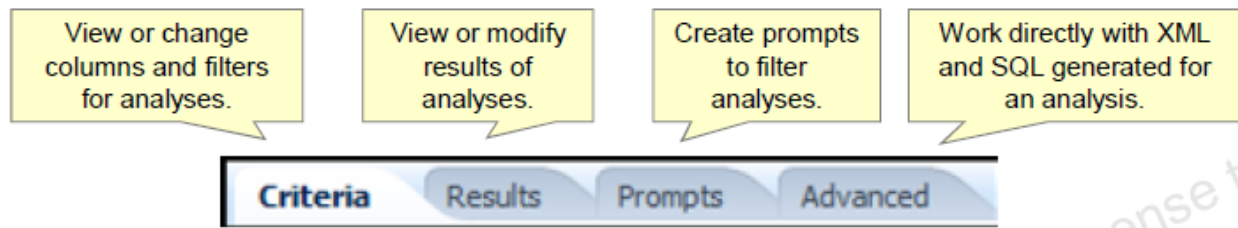- Organizes column content into presentation folders.

The Catalog pane:

- Provides access to named filters, groups, and calculated items in the Presentation Catalog.

Analysis Editor Tabs

Contain on-screen information and buttons to create, access, and manage analyses

The Analysis Editor contains the following tabs:

- Criteria tab: To specify and modify the criteria, formatting, and other aspects of an analysis, including columns, filters, and selection steps.
- Results tab: To create different views of the analysis results such as graphs, tickers, and pivot tables. Criteria setting impacts all views of an analysis.
- Prompts tab: To create prompts that allow users to select values to limit an analysis. Prompts allow users to select values that dynamically filter all views within the analysis.
- Advanced tab: To examine or edit the XML and logical SQL generated for an analysis

Although analysis columns, filters, and selection steps are usually created in the Criteria tab, you can also add columns and selection steps to your analyses in the Results tab.

Working with Analyses in Oracle Business Intelligence

1. Construct an analysis.

2. Modify analysis criteria.

    a) Sorting columns.
    b) Formulas.
    c) Style.
    d) Column format.
    e) Data format.
    f) Conditional format.
    g) Interaction.

3. Change column order.

4. Display analysis results.

5. Save an analysis.

1. Construct an Analysis

Select columns from subject area folders in the Subject Areas pane to create analysis criteria.
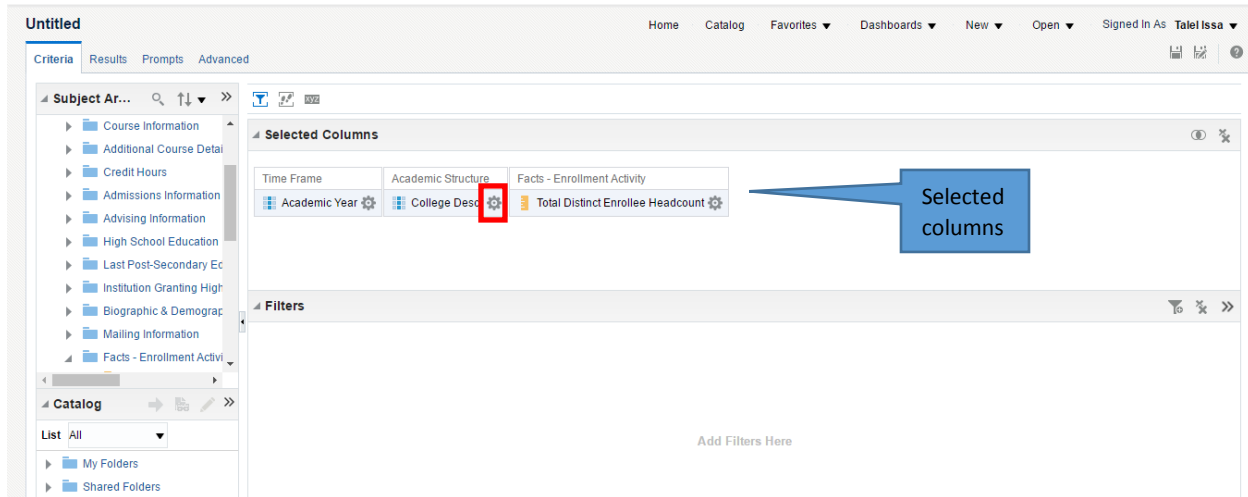
When you select a subject area, the Subject Areas pane automatically refreshes and displays the content (folders and columns) of the subject area. You construct an analysis by selecting columns from the folders in a subject area.

1. Expand the folder to display the corresponding columns. You can also double-click elements in the pane to expand and collapse them or, in the case of columns, to add them to your criteria.

2. Drag the appropriate columns to select analysis criteria. The columns appear in the Selected Columns pane. You can also double-click columns to add them.

In the right pane, each column box has two sections. The upper section displays the name of the folder (Time Frame and Academic Structure in this example). The lower section shows the name of the column (Academic Year, College Descr, Total Distinct Enrollee Headcount in this example) and the More Options button, which provides access to options for formatting, adding formulas, and setting other properties of analysis columns. Click the More Options button to view or modify the properties of the column.

In the Selected Columns pane, to remove all selected columns, you can click the Remove all Columns from Criteria button.

2. Modify Analysis Criteria

Click the More Options button to modify analysis criteria by using the following options:
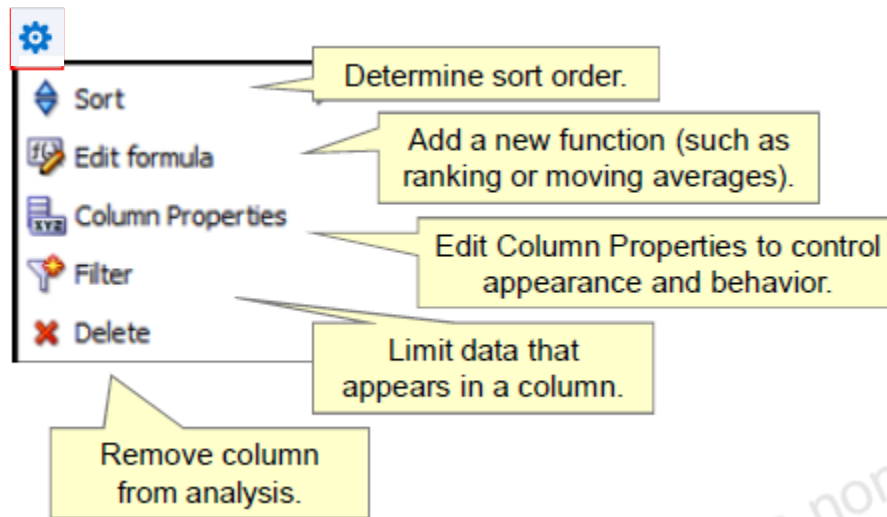
Click the More Options button for a column to open a menu of options to modify analysis criteria:

- Sort specifies the order in which results should be returned: ascending or descending. You can order results by more than one column by selecting the Additional Sort options after you have set an initial sort. If you choose more than one column, a different image appears on the columns to indicate primary and secondary sorting.
- Edit formula enables you to change the folder and column headings as well as any formula that was applied to the column. Formulas are functions and conditional expressions that present result data in a variety of ways.
- Column Properties enable you to edit the format for a column. For example, you can change the folder and column headings, the number of decimal places, the alignment, and so on.
- Filter enables you to create a filter for the column. In the background, the filter is translated into a WHERE clause in the SELECT statement that is issued to the Oracle Business Intelligence Server.
- Delete removes the column from the analysis and from the Selected Columns pane.

## 2a. Modify Analysis Criteria (Sorting Columns)

Use the Sort option to choose a sort order for the desired column. Select the appropriate option to set the sort order:

To set the primary sort, select from the first two options, depending on whether you want the sort to be ascending or descending. To add subsequent sorts on other columns in your analysis, select the Add Ascending Sort and Add Descending Sort options. To clear a sort for a particular column, select the Clear Sort option for a specific column. To clear all sorts for the analysis, select Clear All Sorts in All Columns.

2b. Modify Analysis Criteria (Formulas)

Use complex formulas in your analyses (operators, functions, filters, and variables).
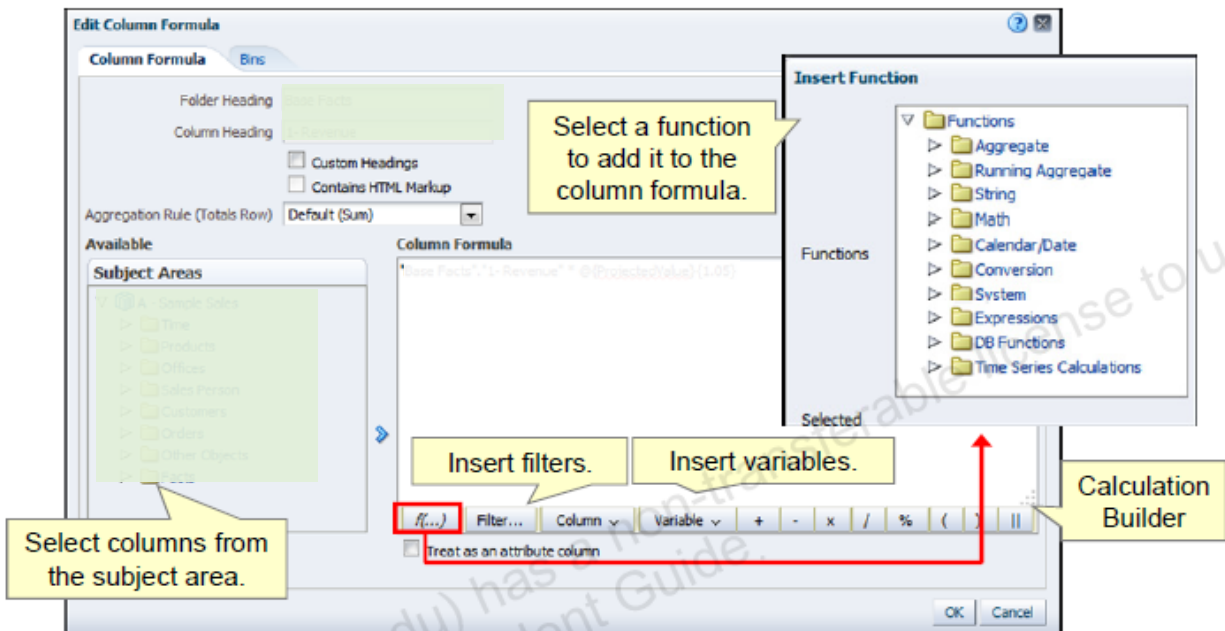
Formulas support a wide variety of functionality. Using the elements available in the Calculation Builder, you can create complex logic for the column that you are modifying in your analysis. For detailed explanations of an available function, click the Function button and select the desired function in the Insert Function dialog box. Syntax and a description are displayed. To apply a function to an expression in the Edit Column Formula dialog box, select the expression in the Formula field and then apply the function using the Insert Function dialog box.

- Click the Filter button to build column filters in your formula. You can create filters on a column by selecting them in the selection pane on the left.
- Click the Column button to quickly access columns that are already included in your analysis criteria for use in your formula. You can also select columns from the selection pane to add them to your formula.

2c. Modify Analysis Criteria (Style)

Override formatting and style defaults for font, cell (including alignment), border, and style sheets.
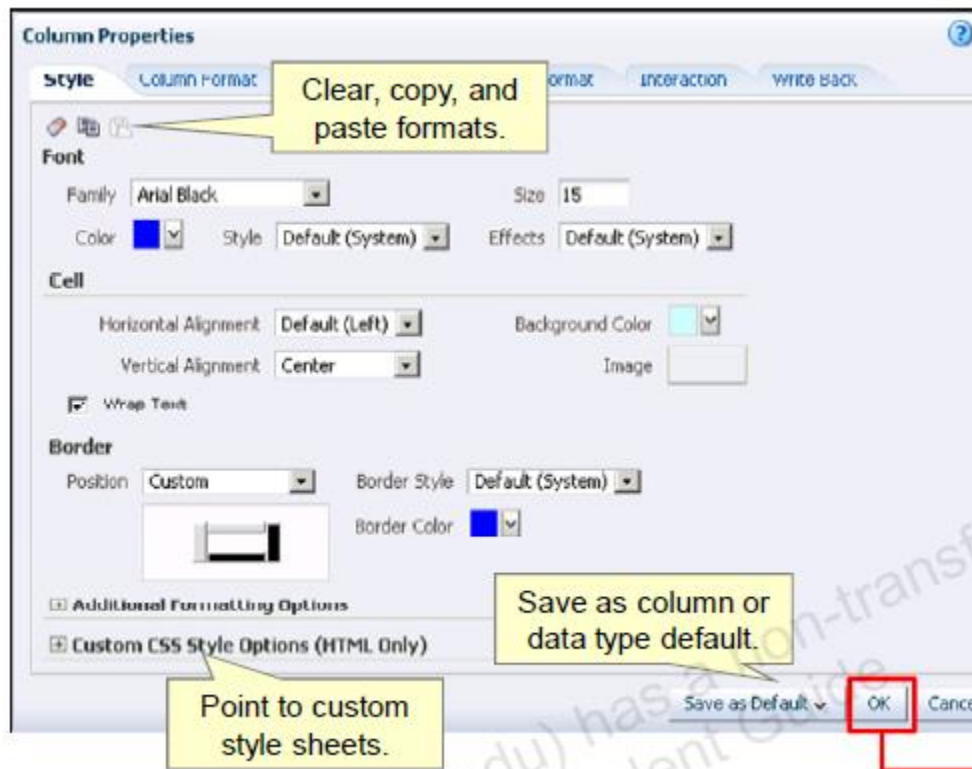
You can set formatting and style options for columns. Formatting options applied on this tab are static and apply globally to all views based on the analysis.

The options you select in the Style tab of the Column Properties dialog box apply to all the contents of the selected column, but not the column headers; you set styles for column headers on the Column Format tab. The Style tab includes the following options:

- In the Font area, you can specify the font family, size, and color, as well as style and effect options such as bold, italic, underline, and strikethrough.
- In the Cell area, you can specify text alignment (both horizontal and vertical), cell background color or image, whether to wrap text, and cell borders.
- In the Additional Formatting Options, you can specify cell width, height, and padding.
- In the Advanced Style Options (CSS) area, you can override style and class elements that are specified in Oracle Business Intelligence style sheets. This capability is for users who know how to work with cascading style sheets. Click the settings you want to use, and then provide the location of the class, style, or style sheet.

Additionally, the icons at the top of the tab enable you to clear formats (restore defaults), copy custom formats, and paste formats copied from another column.

2d. Modify Analysis Criteria (Column Format)

Override formatting defaults for column visibility, headings, data duplication, and interaction.
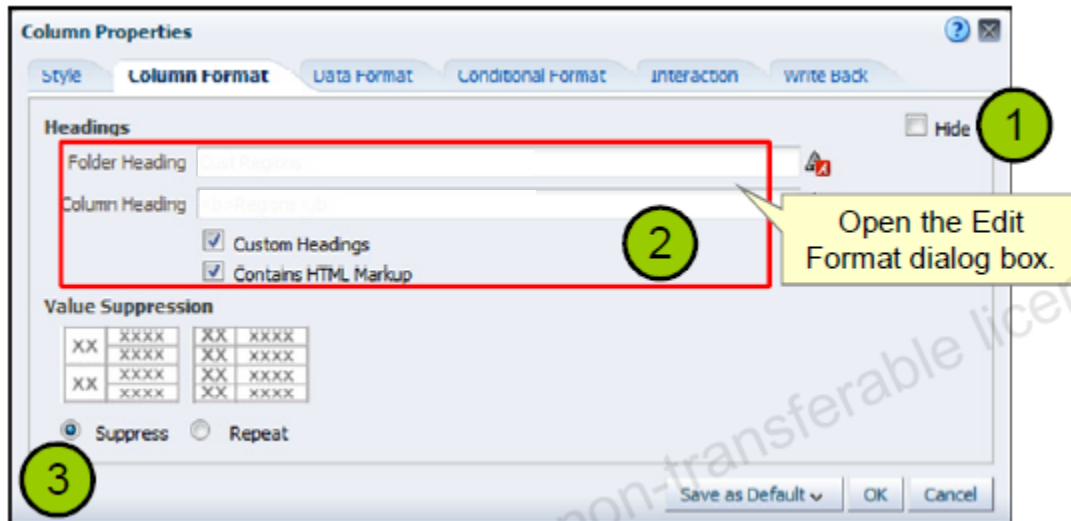
- Select the Hide option to hide the column in the analysis results.
- Select the Custom Headings check box, and perform at least one of the following actions to change the default folder and column headings:

Enter custom text in the Folder Heading or Column Heading text boxes to change the column or heading text.

Click the button to the right of the text field to open the Edit Format dialog box and change the formatting options for the Folder Heading or Column Heading. The Edit Format dialog box contains the same formatting options found on the Style tab, but the options you select only apply to the selected heading text.

Select the Contains HTML Markup option to include HTML tags in your text. You can add HTML that contains formatted text and, depending on the security settings of the servers, Active-X controls or Java scripts, sound bites, animation, a background image, and so on. The HTML code can contain anything that is supported by the browser.
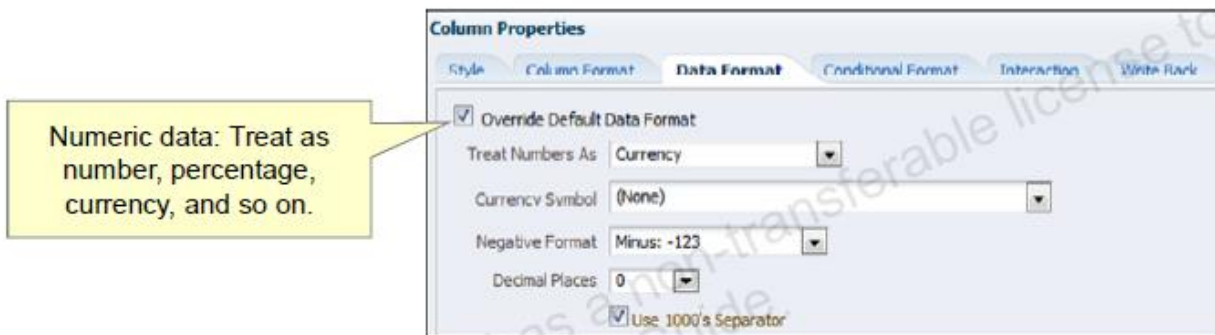
- In the Value Suppression area, choose the appropriate option to control the display of duplicate data:

Select Suppress to display repeating data only once and suppress duplicate rows.

Select Repeat to display repeating data for every row.

2e. Modify Analysis Criteria (Data Format)

Override the way data appears based on the data type.

Text data: Treat as plain text, HTML, link, and so on.

Numeric data: Treat as number, percentage, currency, and so on.

Select the Override Default Data Format option to override the default display characteristics. The selections that you see will vary based on the data type.

If the column contains text, you can choose how to treat the text (such as plain text, HTML, or a link). Based on your selection, the Custom Text Format text box displays the applicable HTML string that is used to display the data.

If the column contains numeric data, you can choose how you want the numbers treated (such as percentages, month names, or dates). You can choose the number of decimal places to display, the display for negative numbers, the number of digits to show, and the type of thousands separator to use.

2f. Modify Analysis Criteria (Conditional Format)

Direct attention to a data element that meets a certain condition.
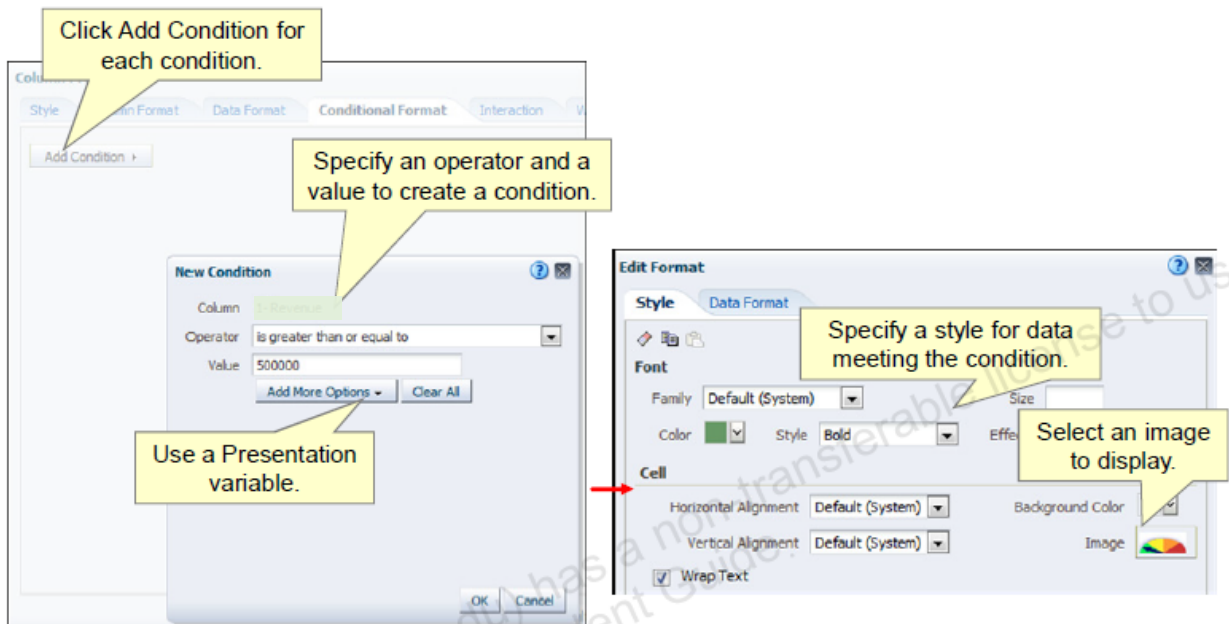
Conditional formatting helps direct attention to a data element if it meets a certain condition. For example, you can show below-quota sales figures in a certain color. Or you can display an image, such as a trophy or finish flag, next to the name of each salesperson who exceeds quota by a certain percentage. Or you can color part of a graph green if it exceeds goals, or another part red if it falls below a threshold.

Select one or more columns in the analysis to use, specify the condition to meet, and then make selections for font, cell, border, and style sheet options to apply when the condition is met. Conditional formats can include colors, fonts, images and so on for the data and for the table cell that contains the data. In addition, you can use the Data Format tab in the Edit Format dialog box to specify a non-default data format for elements that meet the condition.

The example in the slide shows a graphic image being used conditionally. Oracle BI is shipped with several different images that can be used for graphically representing data.

2g. Modify Analysis Criteria (Interaction)

Specify behavior when a user drills on a column heading or a data value.
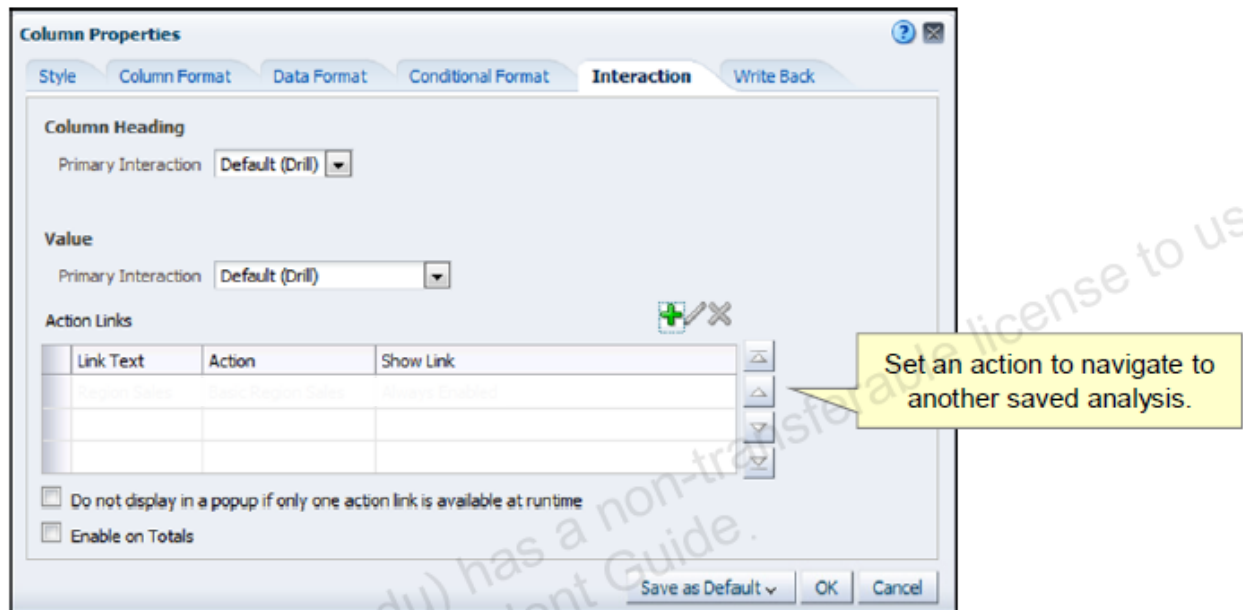
Specify what you want to happen when a user clicks a heading or value in an analysis. To specify what should happen when users click the column headings or column values, select the appropriate option:

- Default: Performs the default interaction, which is initially set to drill system wide.
- None: Disables drilling or navigation.
- Drill: Drills or expands to the next level in a hierarchy through a path for an attribute column.
- Action Links: Enables you to specify a variety of interactions, including navigating to other BI analyses in the Presentation Catalog or, for example, navigating to a webpage

Note: The Value section of the Interaction tab is only displayed for columns that include numeric data.

3. Change Column Order

- Drag columns to change column order.
- Drag a column to change the order in which columns appear. If sorting has been set explicitly using the Sort button, changing the order of the columns does not change the sorting.
- You can also drag an entire folder to change the order of the columns.

4. Display Analysis Results

- Click the Results tab to see the results of an analysis.
- An analysis can be displayed in many formats.
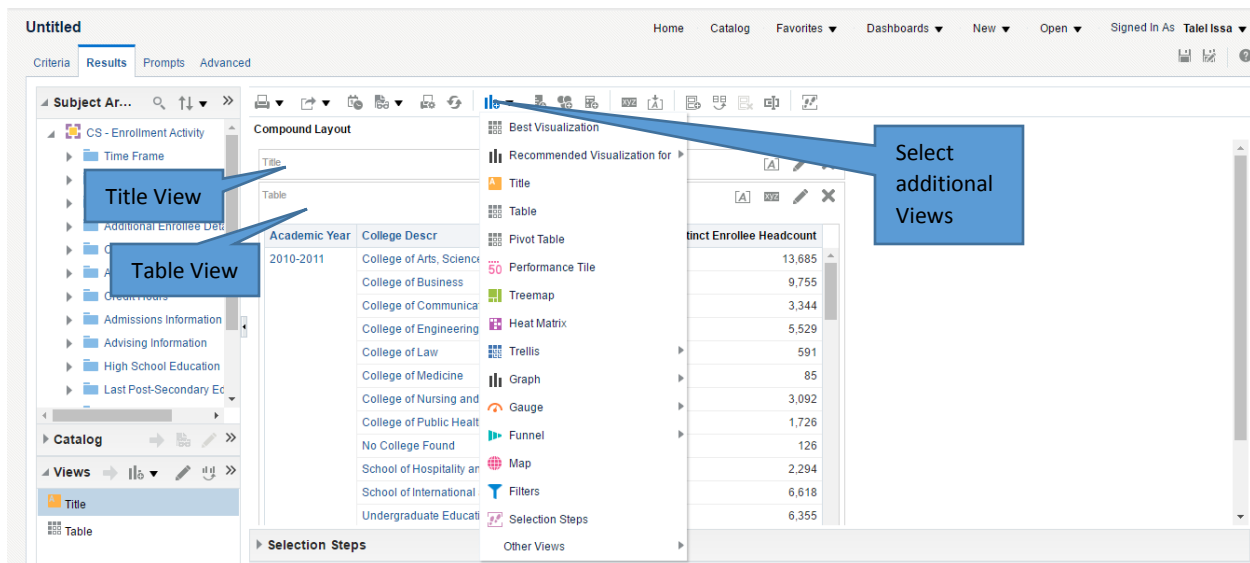
After constructing an analysis by selecting columns, click the Results tab in the right pane to view the results.

When you run an analysis, its logical SQL is sent to the Business Intelligence Server, which uses the BI metadata to execute physical SQL statements against its data sources, returning results to Presentation Services, which are displayed by default in a Compound Layout. The Compound Layout consists of a Title view and a Table view in the case of analyses containing attribute and measure columns.

You can add more views and formatting of the results by using the New View button or by using the Views pane.

For performance reasons, a subset of any large data set is initially returned. You can use the scroll bar to display more results. By default, the data is sorted by the first column and then sorted by the second column, but you can override the default behavior by creating column specific sort rules. Repeating values are suppressed by default.

5. Save an Analysis

- Click the Save Analysis button on the toolbar.
- Analyses are saved in folders that are either personal or shared. To save an analysis:

1. Click the Save button to display the Save As dialog box. You can also click the Save As button to the right of the Save button to save an analysis with a new name or location.

2. Select a folder in which to save the analysis, using the left selection pane and the folders and objects list.

3. In the Name field, enter a name for the analysis and click OK.

- In the Catalog pane, expand the catalog folders to locate and verify the saved analysis.
- When an analysis is saved in one of the personal folders, only the owner can access it. When it is saved in a shared folder, any user with permission to access that folder can access it.
- The top-level personal folder is called My Folders. Every user with a unique username has a folder with the same My Folders name.

Formatting Containers
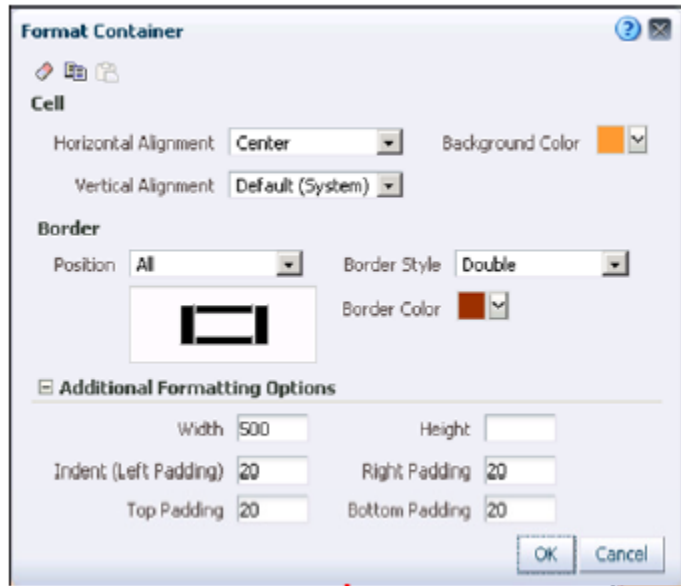
To format a view container:

1. On the Results tab, click the Format Container button for the view.

2. In the Format Container dialog box, define custom cell and border styles, and then click OK.

Formatting Column Headers and Values
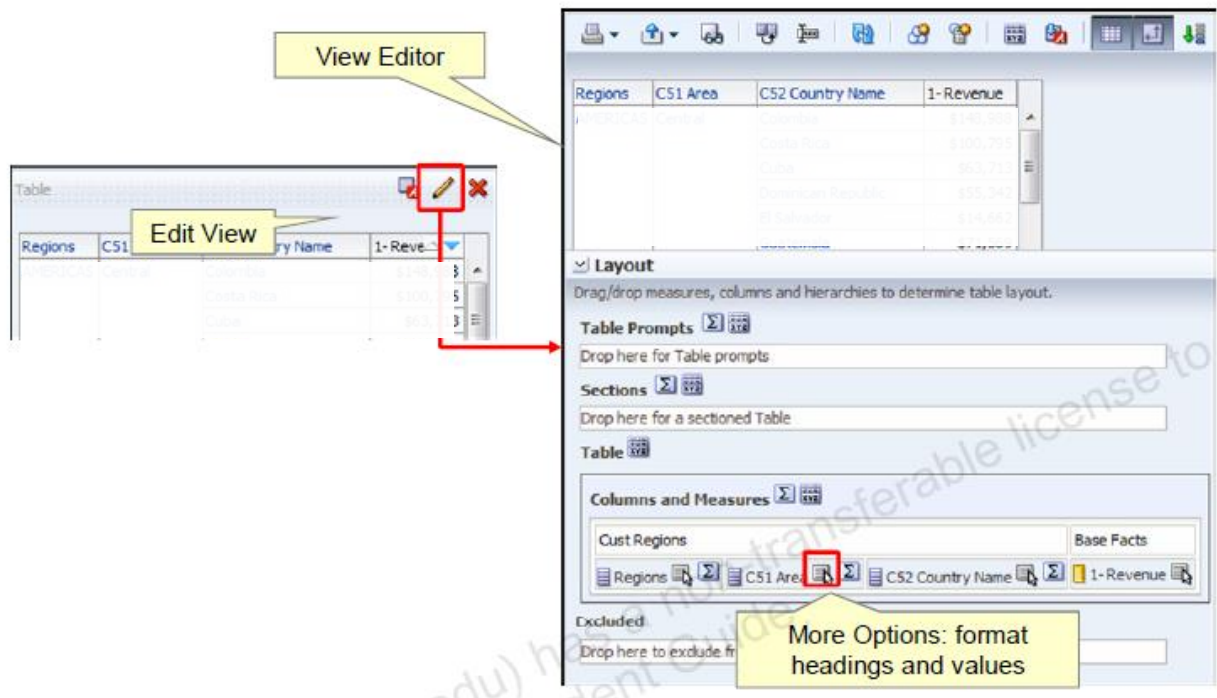

To format table column heading and values:

1. On the Results tab, click the Edit View button for the table.

2. The View editor is displayed. In the Layout pane, under Columns and Measures, click the More Options button for a column and select one of the following options:

- Format Headings.
- Format Values.

3. In the Edit Format dialog box, define custom font, cell, or border styles, and then click OK.

4. At the top-right corner of the View editor, click "Done" to return to the Results tab.

Setting Table Properties

Access Table Properties from the toolbar in the Table editor.

Style tab.

- Fixed headers or content paging.
- Folder and column headings.
- Null value display.
- Other options.
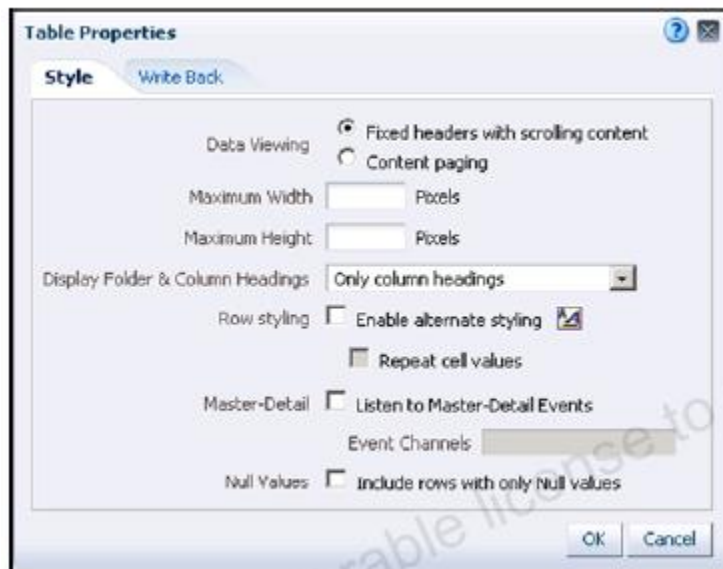
You can control how data is displayed in tables by editing the table properties. You can access the table properties button by opening the View Editor:

1. On the Results tab, click the Edit View button for the table.

2. The Table editor is displayed. In the editor toolbar, click the Table View Properties icon.

Data Viewing Properties

Fixed headers with scrolling content.

Content paging.
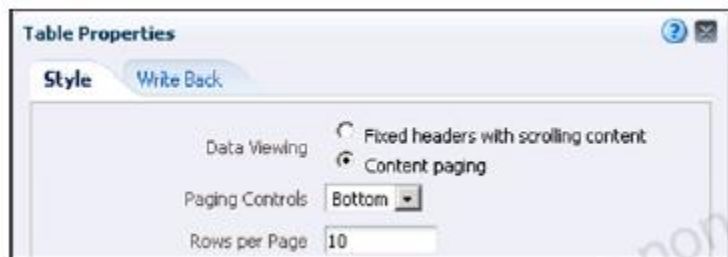
You can use data viewing properties to control how the rows in your table are displayed:

- Fixed headers with scrolling content: This is the default display. Table data is displayed in a default table area with a maximum height and width of 700 pixels. For rows or columns that do not fit in the default table area, horizontal and vertical scroll bars are displayed as necessary.
- Content paging: Table data is displayed in multiple pages with a fixed number of rows. The default number of rows per page is 25, but you can customize the number of rows. You can also control where to display the paging controls (Bottom, Top, or Hide).

Other Style Properties

- Display folder and column headings.
- Enable alternate row styling.
- Listen to Master-Detail events.
- Include rows with only Null values.

In addition to data viewing properties, the Style tab enables you to:

- Control how column headings are displayed, and whether to display the folder name with the column name
- Add alternate "green bar" styling to the view (show alternating rows or columns in a light green or custom color)
- Include null values in your table when the entire row contains all nulls

Using Filters to Limit Data in Analyses

Filters limit results when an analysis is run.

- Only those results that match filter criteria are included.
- Filters are applied before the query is aggregated.
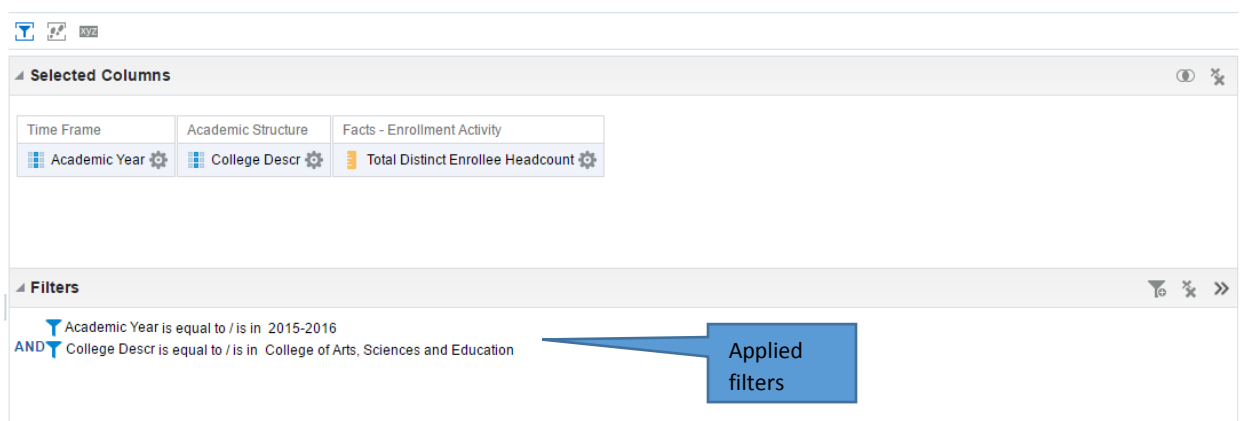
A filter is used to limit results. Based on the filter criteria that you define, Oracle Business Intelligence shows only those results that match your criteria.

Filters are applied on a per-column basis.

The filter is translated into a WHERE clause in the SQL SELECT statement that is issued to the Oracle Business Intelligence Server. The WHERE clause is used to limit the returned rows to those that fit the specified constraints. Advanced users can type the SQL for a filter directly.

Creating and Editing Filters

- Named filters are created using the "New" button in the Global Header or saved from within analysis criteria.
- Inline filters are created, displayed, and managed in the Filters pane for the analysis that they are associated with.
- Use the Create/Edit Filter dialog box to create and edit both named and inline filters.
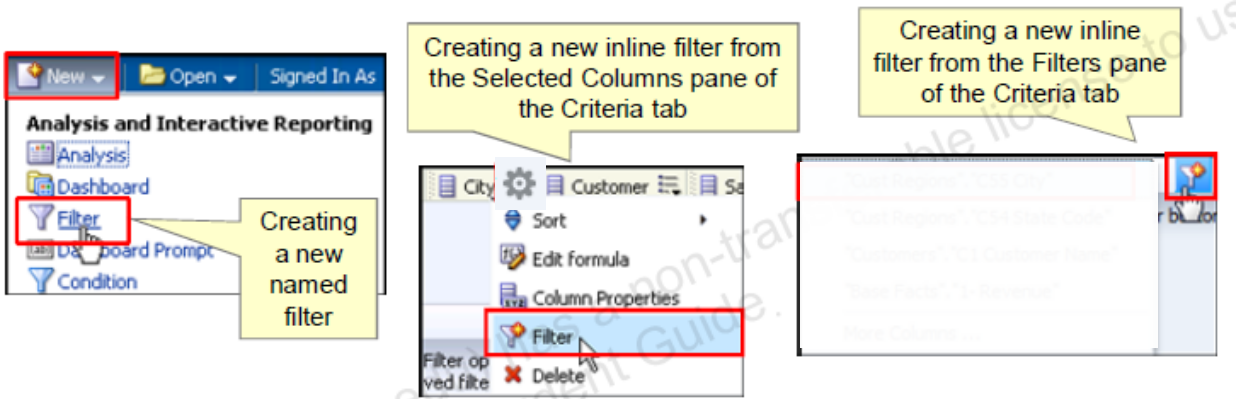
Both named and inline filters are created using the Create/Edit Filter dialog box.

Named Filter

A named filter is a saved filter in the Presentation Catalog, which can be applied to an analysis that shares the same subject area. To create a new named filter, click "New" in the Global Header and select Filter. You are prompted to select a subject area, which appears in the Subject Areas pane. You can then double-click columns from the subject area to filter on, and build and edit the filter in the New Filter dialog box. When you save a named filter, you save it in a folder in the Presentation Catalog reserved for its subject area, so that you can easily use the filter with other analyses.

Inline Filter

An inline filter is created in the Criteria tab of an analysis. To create a filter on a column, select the More Options button for the column in your analysis and select Filter. Alternatively, in the Filters pane, you can click the funnel icon and select the analysis column. Note that you can save an inline filter as a named filter for use with other analyses. To do this, click the More Options icon in the Filters pane in the Criteria tab and select Save Filters. After you have saved a filter, it can be opened and edited in the same way as any other named filter.

Creating and Editing Filters

Use the Create/Edit Filter dialog box to create and edit both named and inline filters.
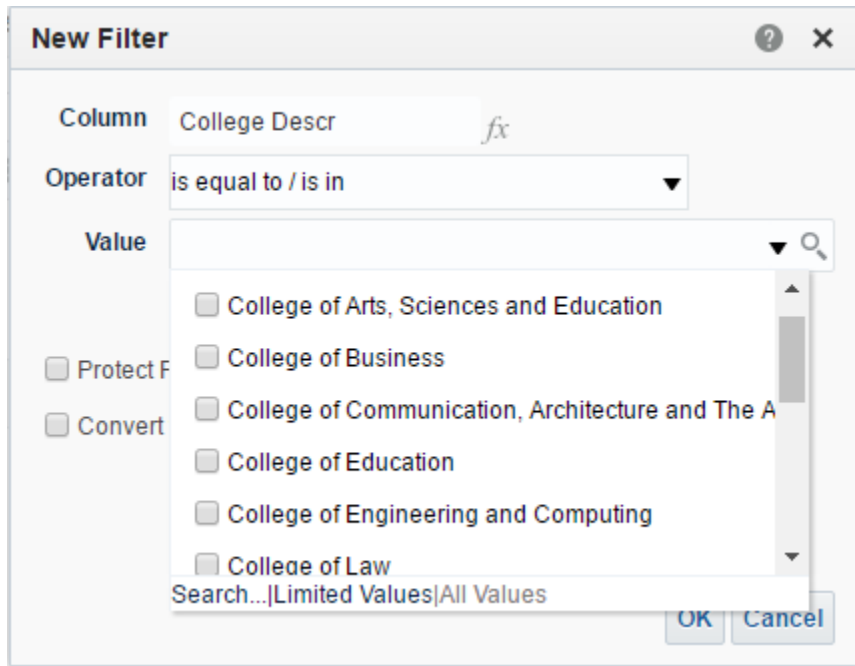

The New Filter dialog box appears when you create a new named or inline filter. The Edit Filter dialog box appears when you edit an existing inline or named filter. To edit a filter in the Edit Filter dialog box, place the cursor over a named or inline filter and click the Edit Filter icon. A column filter consists of the following elements:
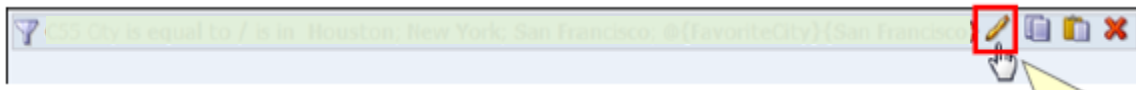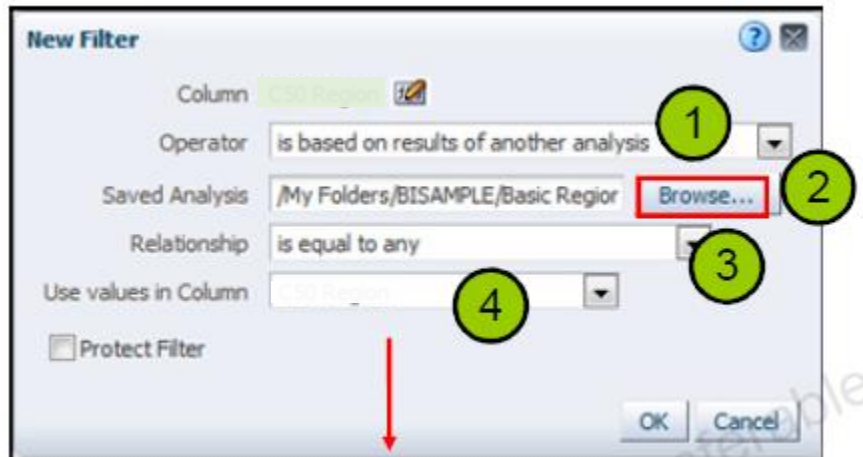
Grouping Filters

- Grouping filters allows you to create nested filters with an AND operator.
- The OR operator enables you to build complex ungrouped filters.
- Grouped filters appear in a bounded box.
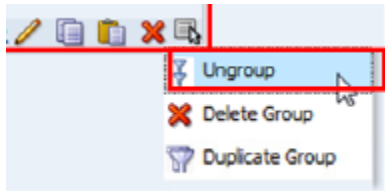
Using a Saved Analysis as a Filter

Use any saved analysis that returns a column of values to filter a selected column in an analysis.

Filters can be combined with other filters, and they can also be based on the values returned by another analysis. Any saved analysis that returns a column of values can be used to filter the selected column in your analysis. To create a filter based on the results of another saved analysis, perform the following steps:

1. Select is based on results of another analysis as the operator.

2. For saved analysis, click Browse to select an analysis in the Presentation Catalog.

3. In the Relationship drop-down list, select the appropriate relationship between the results and the column to be filtered.

4. In the Use values in Column drop-down list, select the appropriate column to compare from the saved analysis. If the saved analysis contains a matching column name, it appears by default. If you want to use another column, select it instead.

Oracle Business Intelligence Views

- Help users look at results in meaningful ways.
- Help identify trends and relationships in data when you use multiple views.
- Have a many-to-one relationship with analyses.
- Can be added to Compound Layouts for display.
- Are available for selection in the Analysis Editor: On the Results tab toolbar or in the Views pane.

Views present analysis data in meaningful, intuitive ways. An analysis that is created on the Criteria tab of the Analysis Editor can be displayed on the Results tab in multiple formats by adding or changing views. You can add a variety of views to analysis results, such as graphs and maps that allow drilling down to more detailed information, explanatory text, a list of filters that were used to limit the results, and more.

When you display the results of a new analysis, the following views are displayed by default in the Compound Layout in the Results tab:

- A title view, which displays the name of the saved analysis.
- A table view, which displays the results of the analysis.

Descriptions of Views

Table view types

- Table
- Pivot Table

Graphical view types

- Graph
- Funnel
- Gauge
- Trellis
- Performance Tile
- Map

Other view types

- Title
- Filters
- Selection Steps
- Column Selector
- View Selector
- Legend
- Narrative
- Ticker
- Static Text
- Logical SQL

Table View Types

- Table: Displays results in a visual representation of data organized by rows and columns. A table provides a summary view of data and enables users to see different views of data by dragging and dropping rows and columns.
- Pivot Table: Displays results in a pivot table, which provides a summary view of data in cross-tab format and enables users to see different views of data by dragging and dropping rows and columns.

Graphical View Types

- Graph: Displays numeric information visually, in a variety of graph types, which makes it easier to understand large quantities of data.
- Funnel: Displays results as a three-dimensional graph that represents target and actual values using volume, level, and color.
- Gauge: Shows results of a single data value as dial-, bar-, and bulb-style gauges.

- Trellis: Displays multidimensional data shown as a set of cells in a grid, where each cell represents a subset of data using a particular graph type.
- Performance Tile: Displays a single aggregate measure value in a simple tile.
- Map: Displays results overlaid on a map. Depending on the data, the results can be overlaid on top of a map as formats such as images, color fill areas, bar and pie graphs, and variably sized markers.

Other View Types

- Title: Displays a title, subtitle, logo, link to Help page, and time stamp.
- Filters: Displays the filters that are in effect for an analysis.
- Selection Steps: Displays the selection steps in effect for an analysis.
- Column Selector: Enables users to dynamically change the columns that appear in the results.
- View Selector: Enables users to select a specific view of the results from among the saved views.
- Legend: Documents the meaning of special formatting used in results.
- Narrative: Displays results as one or more paragraphs of text.
- Ticker: Displays analysis results as a ticker or marquee (similar to stock market tickers).
- Static Text: Adds static text to the results.
- Logical SQL: Displays the logical SQL that is generated for an analysis.

View Editors
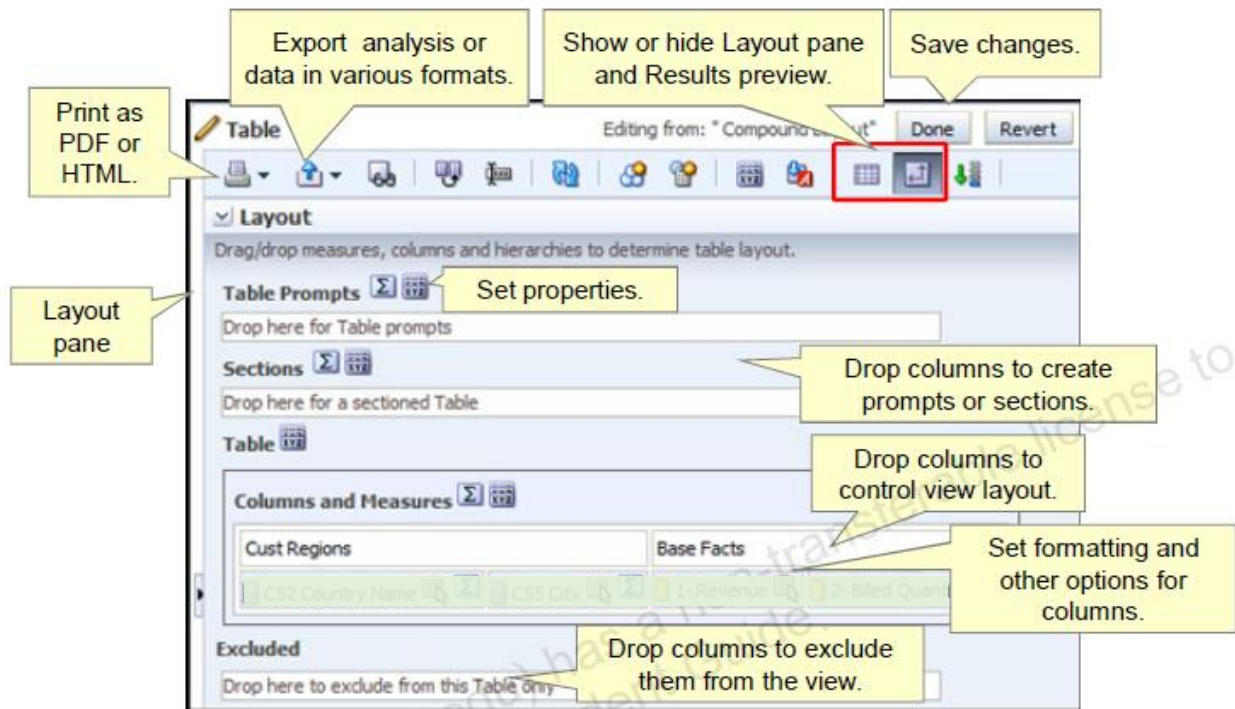
To open a view editor, click the Edit View button for a view in the Compound Layout in the Results tab. Alternatively you can select an analysis view in the Views pane in the Results tab and click the Edit View button on that pane. Editors share common elements, including, where appropriate, the Layout pane and its drop targets, which allow you to arrange columns and data elements.

The editor toolbar contains relevant tool buttons depending on the editor. Note that you can print PDF or HTML formats or export your analysis in a variety of common formats, including saving in Microsoft Office formats, or as XML, or tab-delimited formatted data.

When you are done making changes in a view editor, click "Done" to save your changes and close the editor. Click Revert to discard your changes and revert to the saved or default version of the view and continue working in the editor.

Compound Layout Pane

- Contains one or more Compound Layouts, which contain and arrange views.
- Includes, by default, Title and Table.
- Enables the display of analysis results in multiple formats

You can add a variety of views to results: graphs and pivot tables (to enable drilldown to more detailed information), explanatory text, a list of filters that were used to limit the results, and more.

When you run a new analysis, Oracle Business Intelligence displays results in the Compound Layout pane.

- Initially, the Compound Layout displays a Title and a Table view for analyses with attribute columns and measures. By default, the Title view displays the name of the saved analysis.
- You can customize or delete these existing views for an analysis, add other views to the layout, and combine and position views anywhere in the workspace.
- Preparing multiple views of results can help you identify trends and relationships in data. If you are customizing results for display on a dashboard, you can preview how the combination and position of views look when viewed on a dashboard.

Working with Views in Compound Layouts

- Use the New View button to create another view.
- Edit or drag views as necessary.
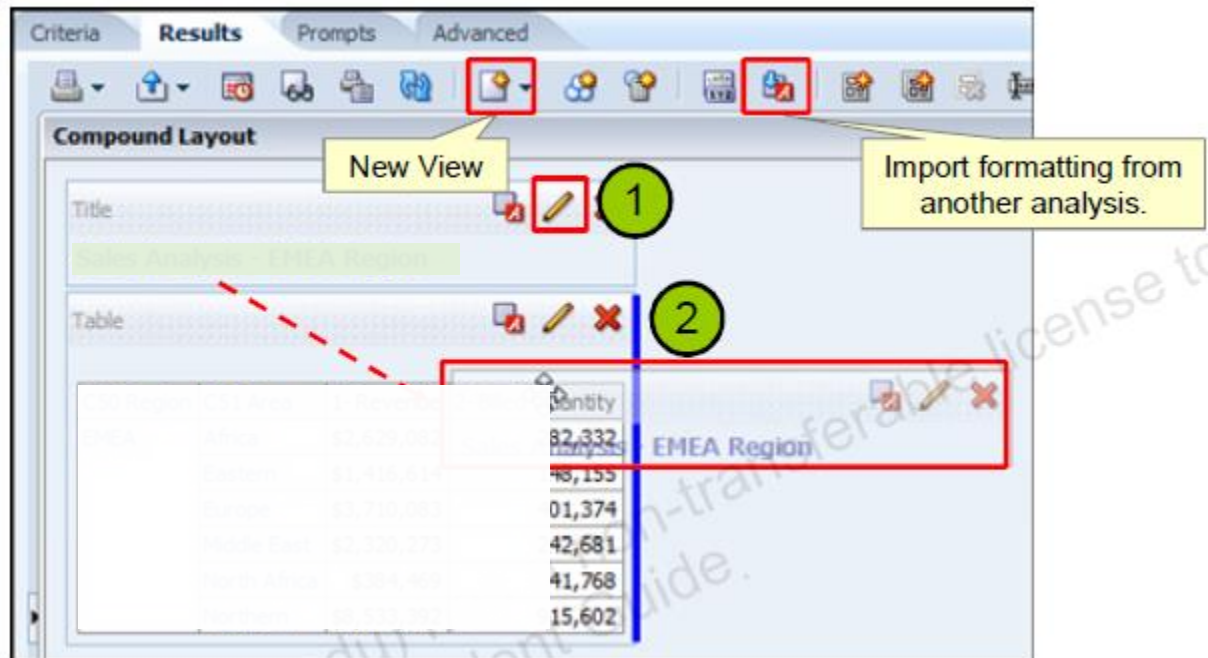
You can use the New View button in either the Results tab toolbar or the Views pane to add a view to an analysis. When you add a view by using the New View button in the Results tab toolbar, it is added to the analysis as well as the currently active Compound Layout.

1. Click the Edit View button to work with the properties that are specific to a view in a Compound Layout. The view is opened in its editor.

2. Drag views within the Compound Layout to adjust the layout. In the example in the slide, the title is moved from the top of the Table view to the right of it in the Compound Layout. When you drag an element, a bar indicates where it will appear.

Views Pane

- Lists views associated with the analysis.
- Allows you to add, edit, duplicate, delete, and rename views.
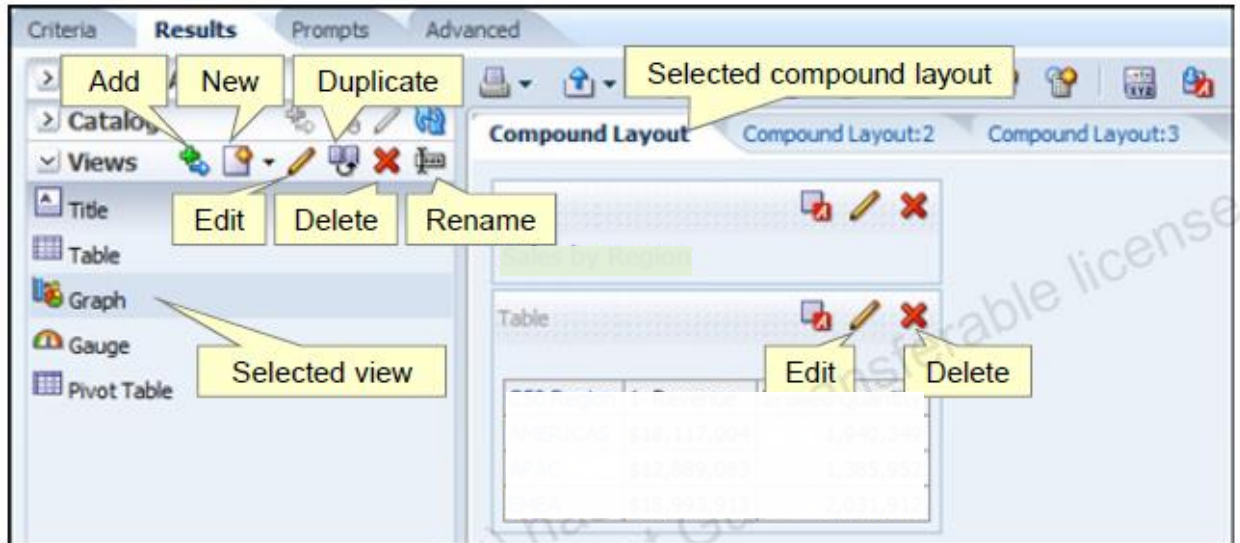
Use the Views pane to add views to or remove views from an analysis. Analysis views can then be associated with one or more Compound Layouts. Each view associated with an analysis is listed in the Views pane. In the example, notice that though the Views pane lists many views associated with the analysis, only two of these, the default Title and Table views, are currently associated with the selected Compound Layout. Analysis views may be associated with one or more Compound Layouts. Use the Compound Layout's tools to edit and remove analysis views that are associated with it. The Views pane toolbar contains the following buttons:

- Add View: Add a view selected in the Views pane's list of analysis views, to a Compound Layout selected in the Compound Layout pane.
- New View: Add a new view to the analysis. Click New View and then select the type of view that you want to add. The new view is opened in its editor, where you can edit and save the view, which is then added to the Views list. This button is also available in the Results tab toolbar.
- Edit View: Open a view selected in the View list in its respective View editor.
- Duplicate View: Create a copy of a view selected in the View list. When you create a duplicate, it is appended with a numeral 2. Duplication of views is useful when you want to make changes to a view while preserving the original view, or when you want to create a new view based on an existing view.
- Remove View from Analysis: Remove a view selected in the View list from the analysis. The view is removed from the analysis as well as from any Compound Layout to which it belongs.
- Rename View: Provide a new name for the view.

Descriptions of Graph Views

- Bar
- Line
- Area
- Pie
- Time Series Line
- Line-Bar
- Pareto
- Scatter
- Bubble
- Radar
- Microchart
- Waterfall

Many of the available views that you can add to an analysis and its Compound Layouts are graphs. There are a variety of different available graphs, each of which is edited using the Graph editor, whose tools and layout vary slightly depending on the requirements of the graph being designed or edited.

- Bar: Shows quantities associated with categories. Bar graphs show quantities as bar lengths and categories as bars or groups of bars. Bar graphs are useful for comparing differences among like items; for example, competing product sales, same product sales over different time periods, or same product sales over different markets. You can use bar graphs to compare measure columns by showing bars in a horizontal or vertical direction.
- Line: Shows quantities over time or by category. Line graphs are useful for showing trends over time and you can use them to plot multiple measure columns.
- Area: Shows the trend of the contribution of each value over time or by category. An area graph is a line graph for which the regions between lines are filled in. Regions are stacked up, adding up to the total value for each time period or category. In 100% stacked graphs, each category is displayed as a percentage contribution to the total value.
- Pie: Shows data sets as percentages of a whole.
- Time Series Line: Plots time series data, scaling the X-axis based on the time that has elapsed between data points.
- Line-Bar: Plots two sets of data with different ranges, one set as bars, and one set as lines overlaid on the bars. Line-bar graphs are useful for showing trend relationships between data sets.
- Pareto: Displays criteria in descending order in a form of bar graph and line graph, with the line showing a cumulative total of the percentages. Pareto graphs are useful for identifying significant elements, such as best and worst or most and least.
- Scatter: Displays x-y axis values as discrete points, scattered within an x-y grid. Scatter graphs plot data points based on two independent variables. This enables you to plot large numbers of data points and observe the clustering of data points. Scatter graphs are useful for observing relationships and trends in large data sets.

- Bubble: Displays data elements as circles. In a variation of a scatter graph, bubble graphs show three variables in two dimensions. One value is represented by the location of the circle on the horizontal axis. Another value is represented by the location of the circle on the vertical axis. The third value is represented by the radius of the circle. Bubble graphs are useful for plotting data with three variables, and for displaying financial data over a period of time.
- Radar: Plots the same information as a bar graph, but instead displays data radiating from the center of the graph. Each data element has its own value axis. Radar graphs are useful for examining overlap and distribution.
- Microchart: A text-sized graphic (of similar size to a piece of nearby text) that displays only in the context of the trellis view and that is ideal for showing trend information. A microchart graph type is useful within an advanced trellis, where data is displayed as a mixture of spark graphs and numbers. A microchart does not have axes or legends. Like larger graphs, a microchart's measure values are rendered as relatively sized bars (or lines, or area). Each measure name is displayed in its column header. Further details of the measure appear as tooltip text when you move the cursor over a data cell.
- Waterfall: A waterfall graph lets you visualize how a value increases or decreases sequentially and cumulatively. Waterfall graphs focus the user's attention on how each measure contributes to the overall total and communicates through simple formatting by using color. In a waterfall graph, an initial value is summed with subsequent values (both negative and positive changes) to arrive at a total. There is only one total per waterfall graph and subtotals can be added.

Graph Editor
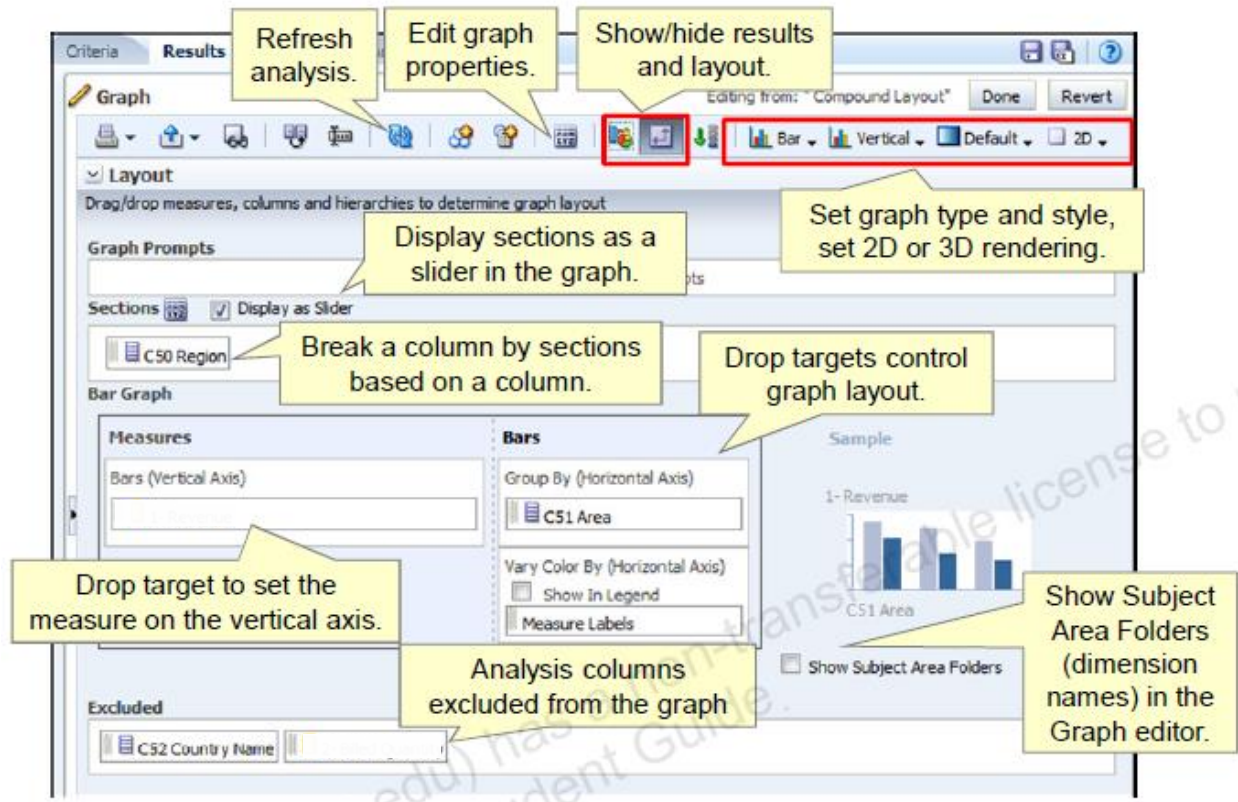
The Graph editor's appearance and behavior varies slightly depending on the type of graph that is selected. To select another graph type or subtype, use the buttons on the right of the editor's toolbar. Using these buttons you can also specify, for appropriate graphs, shapes and gradients as well as change the default setting of 2D to 3D display.

To create or edit a graph, specify its type and then drag analysis columns to the appropriate drop targets to specify what is being measured and the grouping for the graph.

Using sliders with sections can save space on a Compound Layout and consequently, analyses and dashboards.

Notice that as appropriate for the view type, similar tools are available throughout View editors, and shared with the Results tab toolbar. For example, similar to the earlier example of the Table editor, you can show or hide the Layout pane of the editor as well as the Results preview to manage space while working in the editor.

Graph Properties: General

Enables you to set canvas size, overall appearance, and zooming and scrolling.
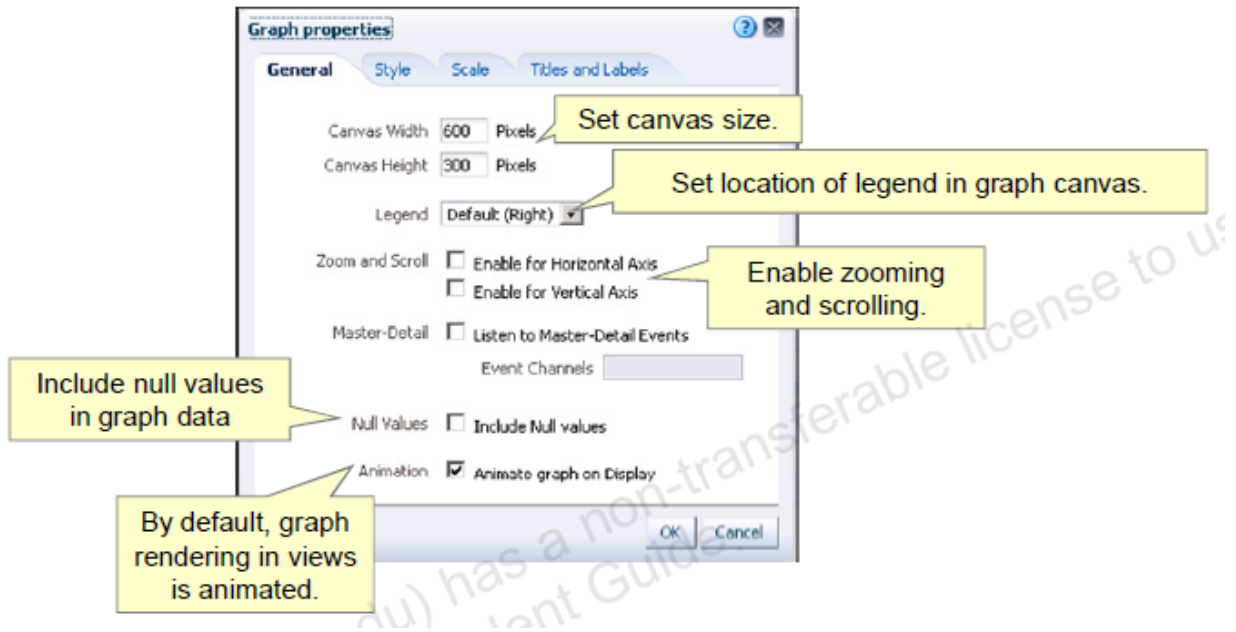
To open the Graph properties dialog box, click the Edit Graph Properties button in the View editor toolbar.

In the General tab of the Graph properties dialog box, you can set the size of the graph canvas and specify the location of the Legend.

When you enable zooming and scrolling for an axis, the Zoom button appears in the graph area when you place the cursor over the graph. To zoom and scroll, click the Zoom button, select an axis, and select the Zoom In or Zoom Out option. When you zoom in on an axis, a scroll bar appears that you can use to scroll through elements on the zoomed axis.

Graph Properties: Style

Enables you to set graph data style and plot area, legend, and canvas colors.
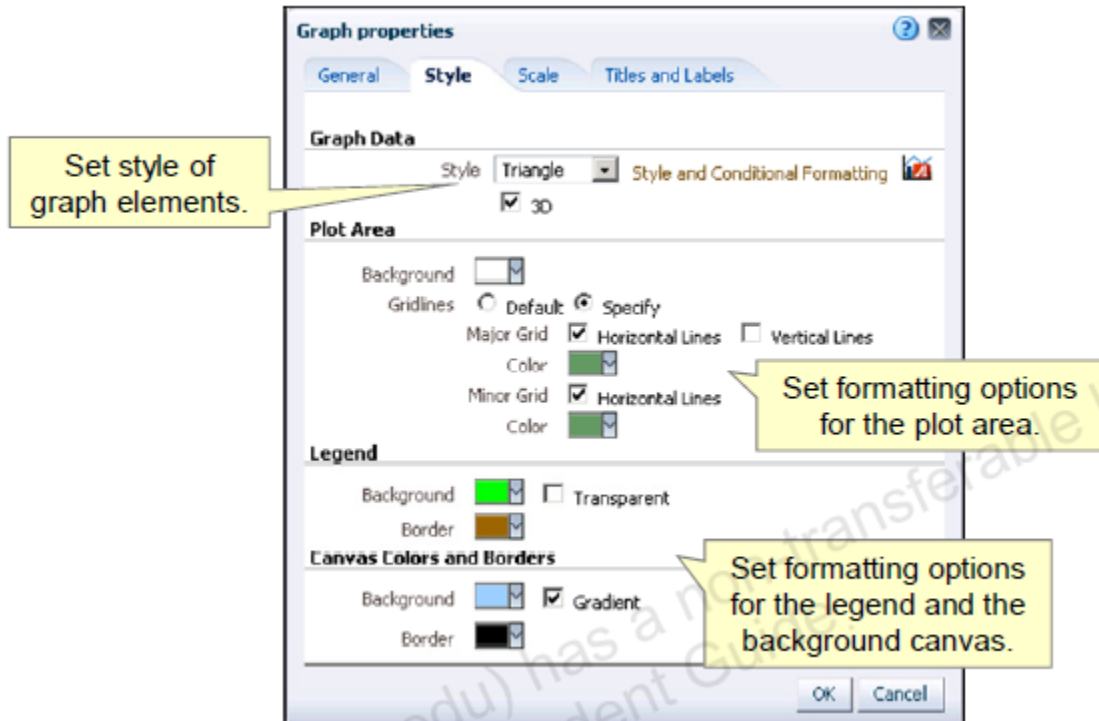
In the Style tab of the Graph properties dialog box, you can set properties that control the appearance of the graph. Each section of the dialog box has options to control different aspects of the graph, including data style and the available 3D rendering, which can also be set in the Graph editor's toolbar.

In the Plot Area section, you can specify and format colors for the graph's background and any horizontal or vertical grid lines. In the Legend and Canvas Colors and Borders sections, you can determine the colors and settings for backgrounds and borders. Select the Transparent option to make the Legends background transparent so that the graphs plot area and canvas is not interrupted. Set the Gradient option if you want the canvas background color to gradually fade from the specified color at the top to white at the bottom.

You can also set position and conditional formatting on graph data in the Style tab. These options are covered in detail later in this lesson.

Graph Properties: Scale

Enables you to specify scale, markers, and tick marks in the graph.
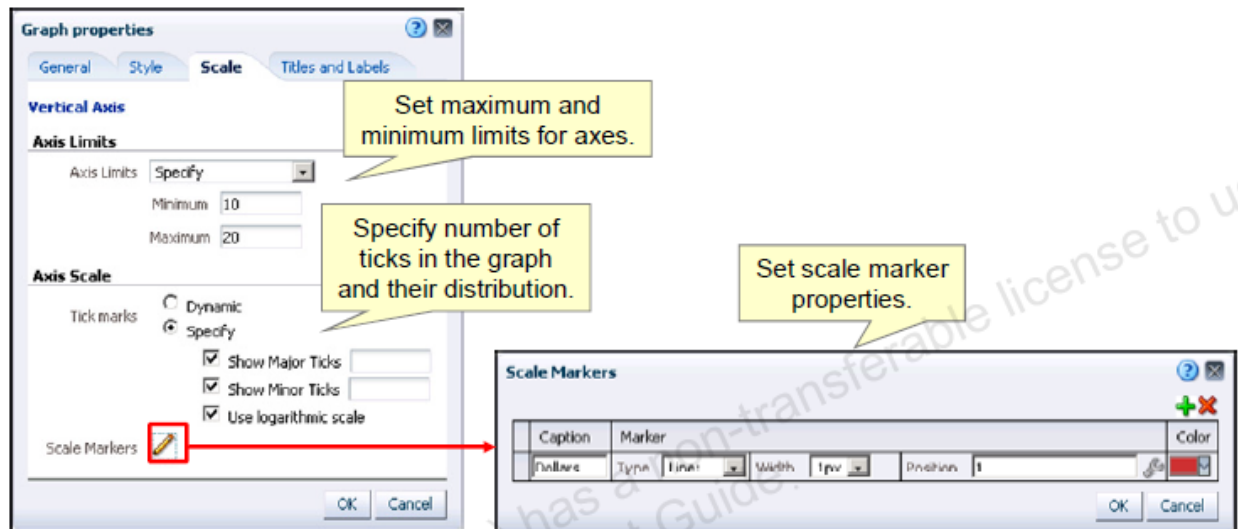
In the Scale tab of the Graph properties dialog box, you can set properties that control axis limits and tick marks. Axis limits are the minimum and maximum points on the vertical and horizontal axes. Tick marks are value markers along the axes of the graph that can identify regular intervals, for example, from the minimum value to the maximum value. If you leave the defaults set to Dynamic for these options, the graph will automatically be scaled by the system.

Use the options in the Scale and Limits section to set a specific range for the graphs possible scale. In the Scale Type and Tick Marks section, you can choose to specify required numbers of both major and minor tick marks for the graph. You can also apply a logarithmic scale to your graph.

Click the Scale Markers Edit button to open the Scale Markers dialog box, where you can specify advanced settings for the tick markers, including custom captions, settings for the type of marker, line or shaded range, and reference static values, column names, and variables to specify the location and length of line or range ticks.

Graph Properties: Titles and Labels

Enables you to customize graph titles, axis titles, and labels.
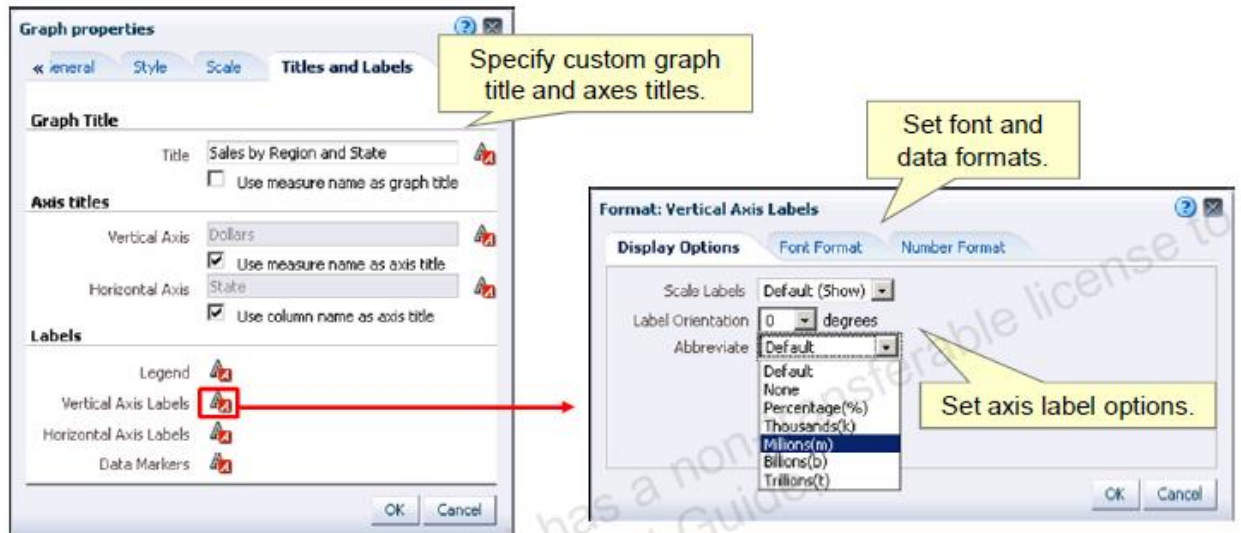
In the Titles and Labels tab of the Graph properties dialog box, you can customize the graph title, axis titles, and format and customize graph labels. Click the Format buttons for the different labels to specify fonts and styling. In the example in the slide, you can see that the Vertical axis labels include options pertaining to numeric values, including the Number Format tab, which allows you to override default data formats similarly to setting column properties. In addition, in the Display Options tab of the Format: Vertical Axis Labels dialog box, where appropriate for the label being edited, you can set label orientation in degrees and use the Abbreviate drop-down list to select an abbreviation for numeric data labels.

Formatting Graphs by Position

You can format graphs based on position.

Using the Style and Conditional Formatting option in the Style tab of the Graph properties dialog box, you can set position and conditional formatting. In the example in the slide, three positions are defined for the graph, each with different bar colors. The available formatting options depend on the type of graph you are working with.

To set position formatting in the Graph Properties dialog box, perform the following steps:

1. Click the Style tab.

2. Click the Style and Conditional Formatting button.

3. In the Style and Conditional Formatting dialog box, click the Style Formatting tab and click the Add New Position button to add each position you want to format.

4. Set the color for each position.

5. Verify your results.

Formatting Graphs Conditionally

You can format graphs based on conditions.
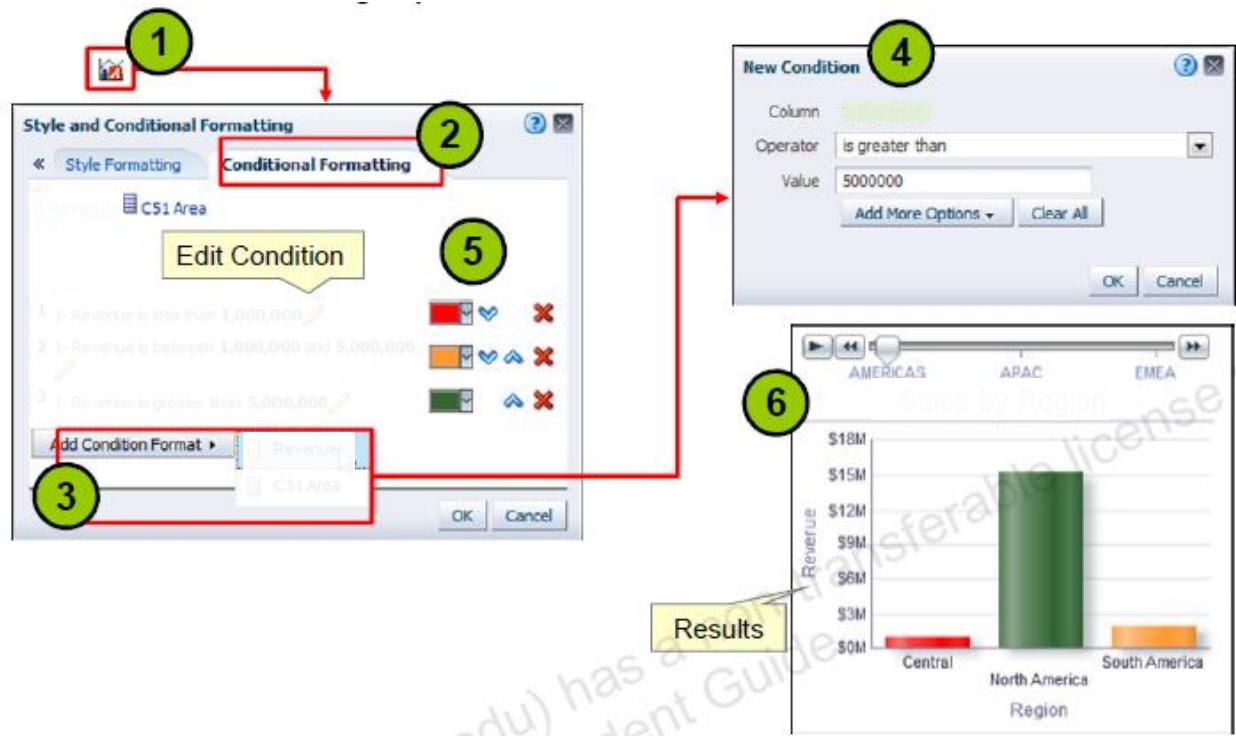
To set conditional formatting in the Style tab of the Graph Properties dialog box, perform the following steps:

1. Click the Style and Conditional Formatting button.

2. In the Style and Conditional Formatting dialog box, select the Conditional Formatting tab.

3. Click the Add Condition Format button and select an analysis column to base the condition on.

4. In the New Condition dialog box, specify a condition operator and a value.

5. Set a color for each condition you define.

6. Verify your results.

Specifying Totals

Specify grand totals or totals for attribute columns.

To add grand totals or column totals to a result, use Total buttons in the Layout pane of the Table and Pivot Table editors. Break total values are calculated every time the value in the selected column changes.

Combining Values into Bins

Use bins to combine multiple values or ranges of values from a given column.

The first bin combines day dollar values for the first half of January 2008.

The second bin combines day dollar values for the second half of January 2008.
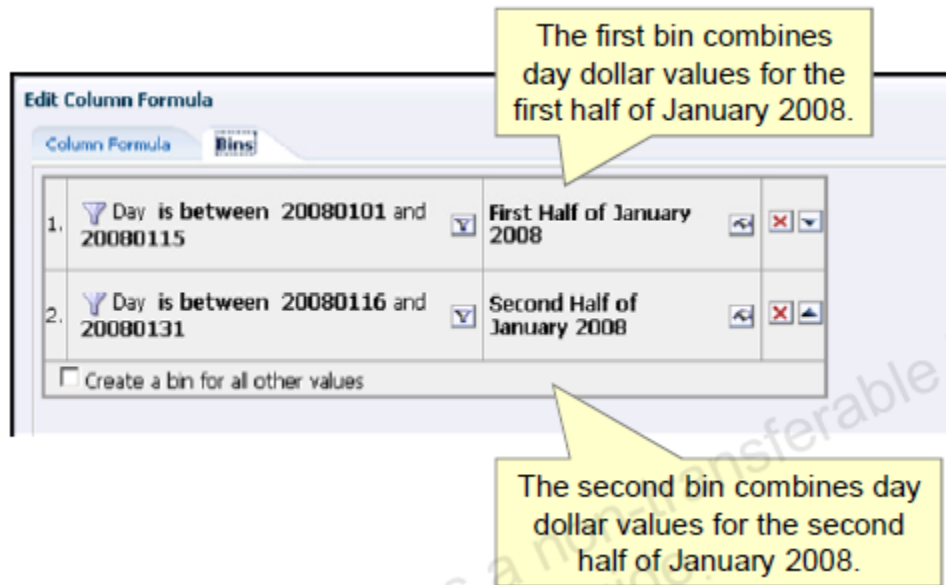
On the Bins tab of the Edit Column Formula dialog box, you can combine multiple values or ranges of values from a given column into bins. You can name the bins, and then the bin name replaces all instances of the different values that make up the bin in the result set. Note that aggregations are performed at the bin level in the analysis.

Creating Bins: Add Bins

Use the Bins tab in the Edit Column Formula dialog box.
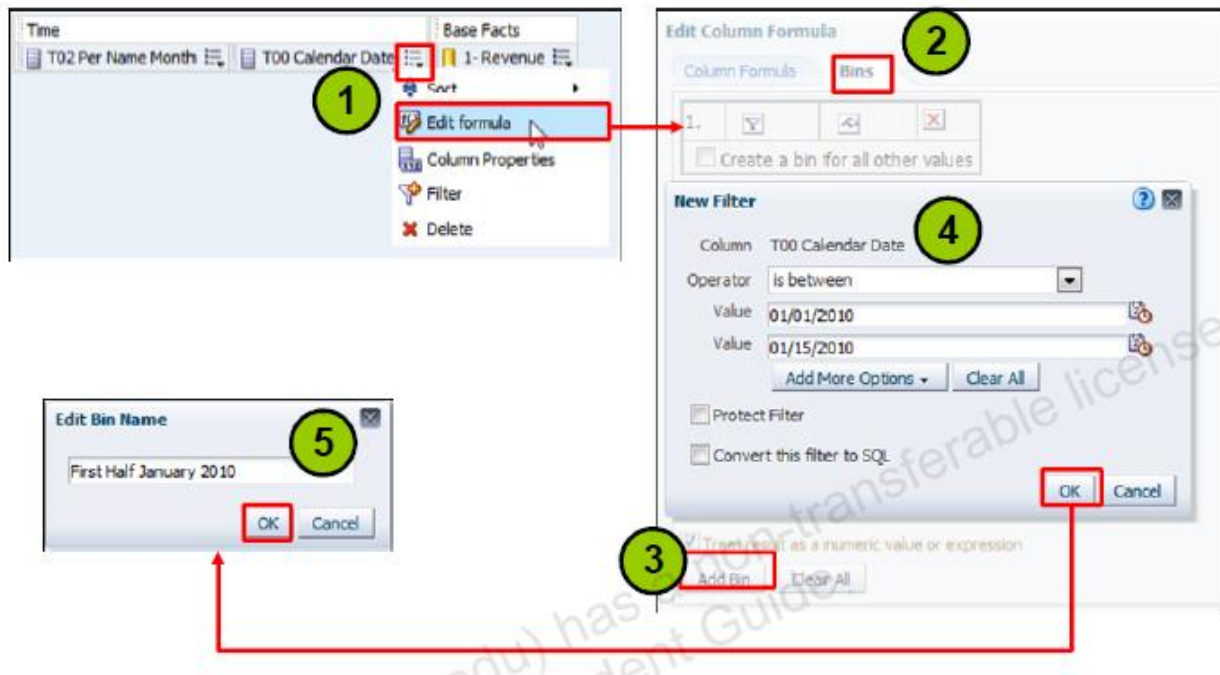
To add bins, perform the following steps:

1. On the Criteria tab, click the Edit Formula button for a column.

2. In the Edit Column Formula dialog box, click the Bins tab.

3. Click Add Bin.

4. In the New Filter dialog box, create a bin filter and click OK.

5. In the Edit Bin Name dialog box, enter a name for the bin and click OK

Creating Bins: Name and Configure Bins

Add, edit, delete, rename, and change the order of bins.
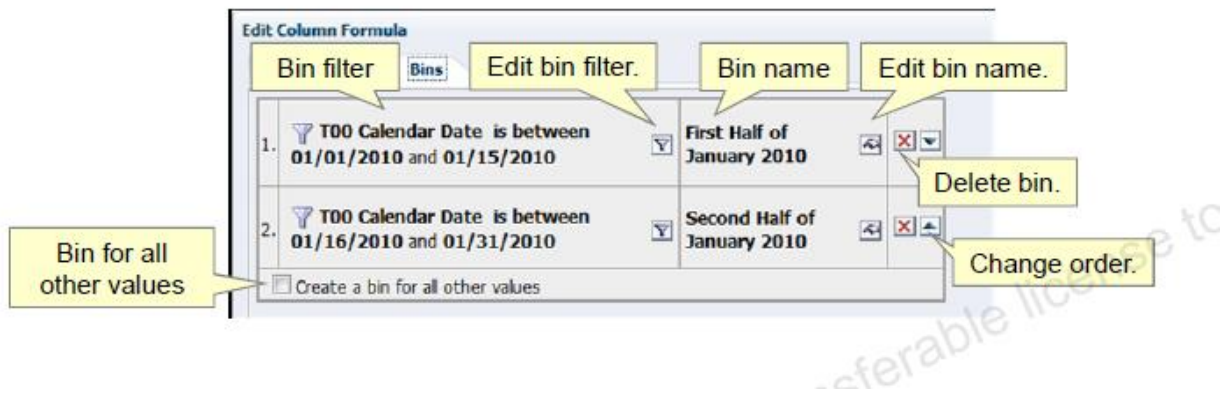
After you create your bins, they appear in an ordered list on the Bins tab. You can do the following:

- Click the Edit Filter button to edit the bin filter for a bin.
- Click the Edit Bin Name button to edit a bins name.
- Use the Move Up and Move Down buttons to change the order of the bins.
- Select the Create a bin for all other values option to create a bin to contain all values that are excluded by the named bins filters.

After you create the bins, you can click the Column Formula tab in the Edit Column Formula dialog box to examine the column formula that is generated by your bins. Bins are represented in SQL as CASE statements, which allow if/then logic in queries. When bins generate a CASE statement in the column formula, the Calculation Builder buttons do not appear.
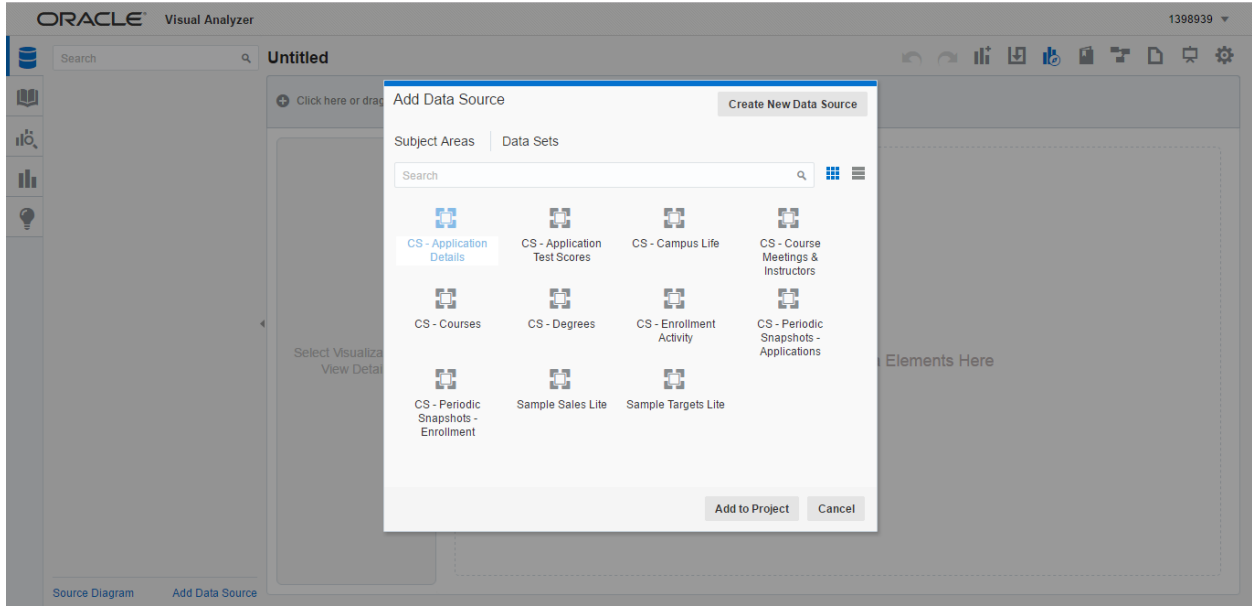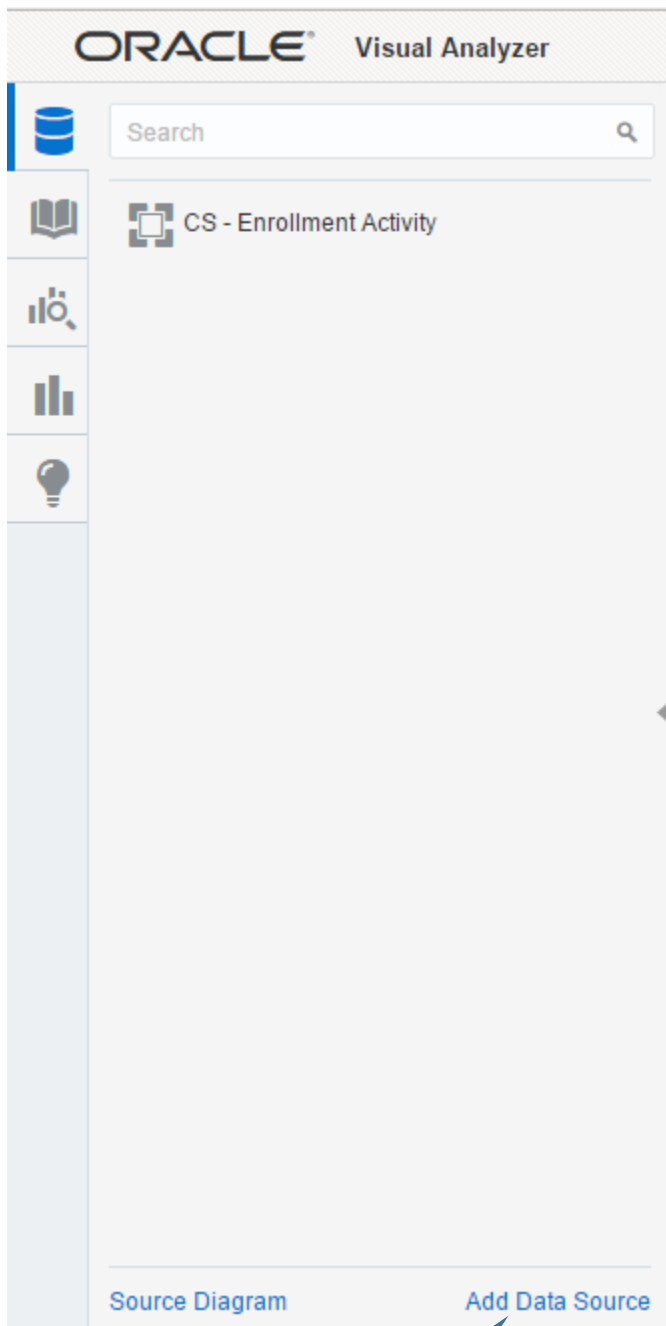
Dashboards

Visual Analyzer

- Panther ID: 7 digit ID.
- Password: Same one you use for e-mail.
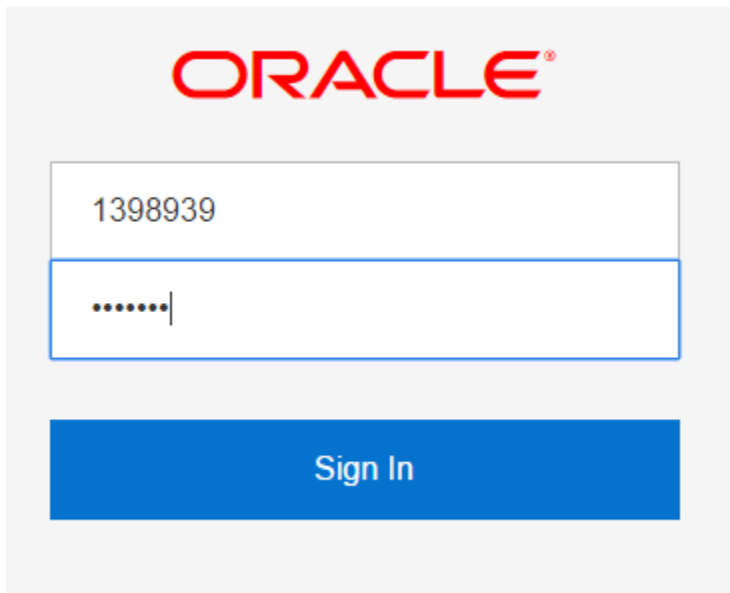
- Select Subject Area

- Inspect subject area content

To add a new
data source
(Spreadsheet)

- Pick a file

Create New Data Source

From a File

Select an Excel file containing data you want to analyze by clicking the button above or dragging the file into this window.

From Oracle Applications

Select an Analysis containing the data you want to visualize.

From Database

Select a database containing the data you want to visualize.

Cancel
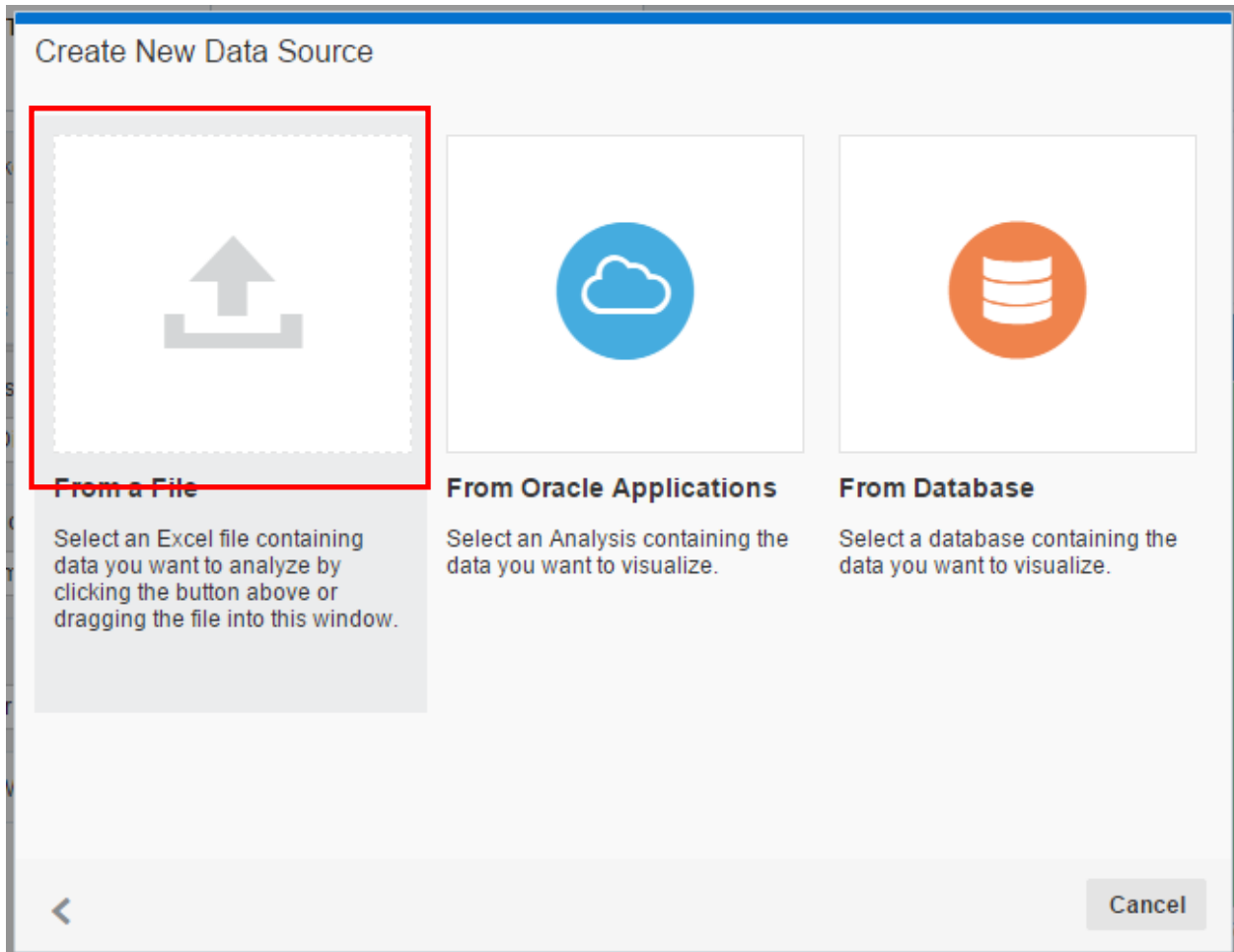
- Last revision, then Add to Project

Upload a File

Source Name: BI_HR_TEST_FILE_TALEL   File: BI_HR_TEST_FILE_TALEL.xlsx

Description: Uploaded from BI_HR_TEST_FILE_TALE...   Sheet: Sheet 1

EMPLID	EMPL_RCD	AS_OF_DATE	COMPANY	BUSINESS_U
Match	Measure	Attribute	Attribute	Attribute
Emplid	Sum			
0001107	0	06-10-2016	FIU	AAHOS
0001113	0	06-10-2016	FIU	HUMRE
0001173	0	06-10-2016	FIU	FCLTS
0001215	0	06-10-2016	FIU	FCLTS
0001225	0	06-10-2016	FIU	AAFRM
0001225	1	06-10-2016	FIU	AAFRM
0001226	0	06-10-2016	FIU	AACOM
0001225	0	06-10-2016	FIU	FCLTS

File Data will Add Facts   **Add to Project** | Cancel