

FIU

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PantherSoft

FIU BUSINESS INTELLIGENCE & ANALYTICS BEGINNER TRAINING



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FIU Business Intelligence & Analytics Training Agenda

Part I – FIU Business Intelligence

- Introduction to concepts and definitions.
- FIU “Answers” reporting tool.
- FIU “Visual Analyzer” exploration tool.

Part II – Exploring Subject Areas, Data, and Reports

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

WORKSHOP OBJECTIVES

After completing this training, you should be able to:

- Understand the concepts of Business Intelligence and its components.
- Create and modify Business Intelligence analyses.
- Administer analyses and other 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:

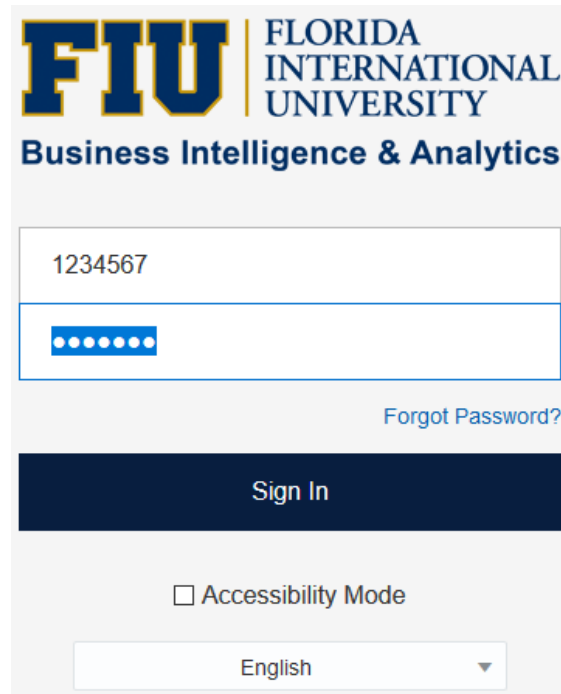
- Show me enrollment for each college by term.
- Show me the average GPA for this term.
- Compare number of admitted applicants this Fall versus last Fall.

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 able to consume and build reports based on one common data model.

SIGNING IN

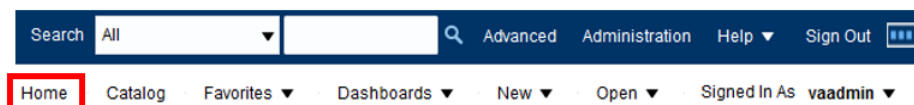
- Signing in authenticates you as a user.
- <https://bitrn.fiu.edu> (Training environment)
- <https://bi.fiu.edu> (Production environment)
- Panther ID: 7-digit ID (e.g. 1234567)
- Password: Same one you use for FIU e-mail.
- Your role would be either “Author” or “Consumer”.



The image shows the login interface for FIU Business Intelligence & Analytics. At the top left is the FIU logo, followed by the text 'FLORIDA INTERNATIONAL UNIVERSITY' and 'Business Intelligence & Analytics'. Below this is a login form with two input fields: the first contains the Panther ID '1234567' and the second is a password field with six dots. To the right of the password field is a link for 'Forgot Password?'. Below the form is a dark blue 'Sign In' button. At the bottom, there is an 'Accessibility Mode' checkbox and a language dropdown menu set to 'English'.

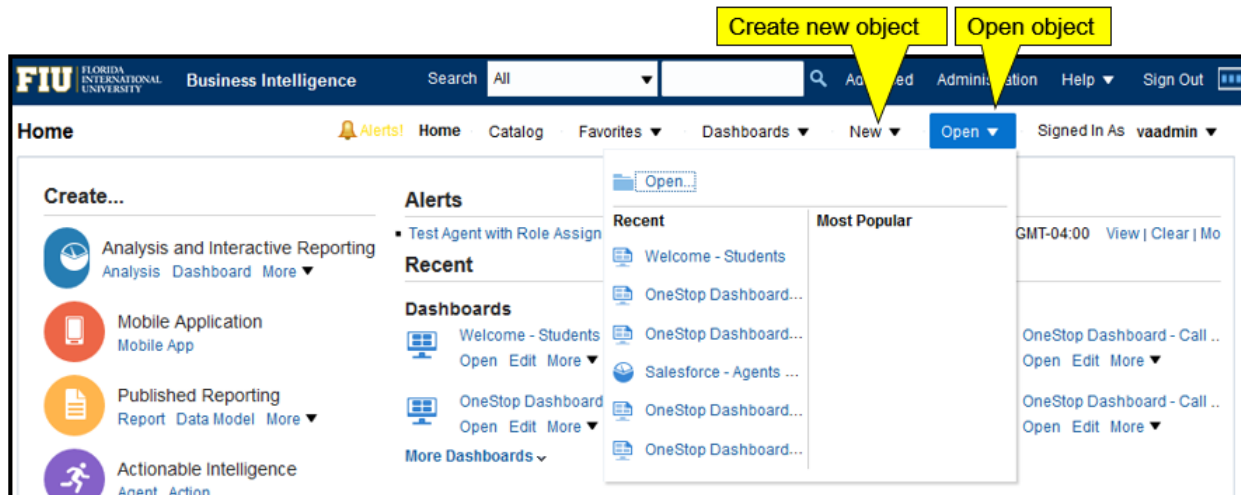
Activity

- Navigate to <https://bitrn.fiu.edu>.
- Enter your 7-digit Panther ID and password.
- Click on the Home button.



GLOBAL HEADER

Provides access throughout Presentation Services to all objects, dashboards, and the presentation catalog.

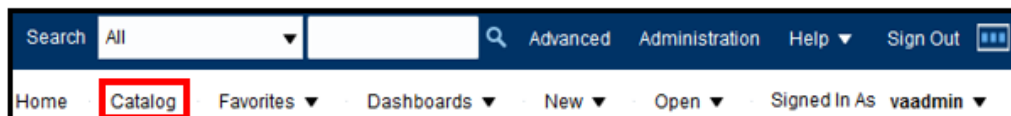


The Global Header contains links and options to begin a task or locate an object, for example, an analysis or dashboard in the Presentation Catalog. When you are working with an analysis in the Analysis Editor, you can always save your work and easily navigate from the Global Header to access saved analyses,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

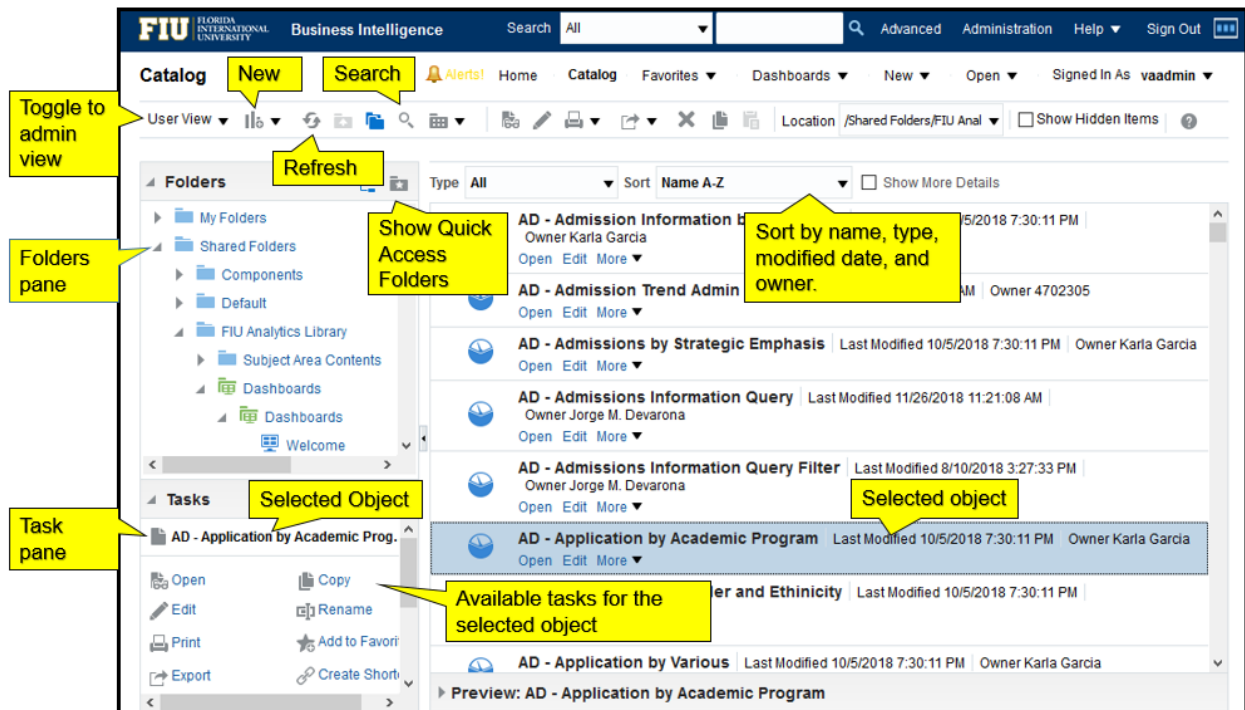
The Global Header includes the Home link, which is used to navigate to the Home page from any other part of the user interface. It also includes the Catalog link, which allows you to navigate to the Catalog page, in which you can navigate and work with objects in the Presentation Catalog.

Activity

- Click on the Catalog button



ADMINISTERING OBJECTS IN THE PRESENTATION CATALOG

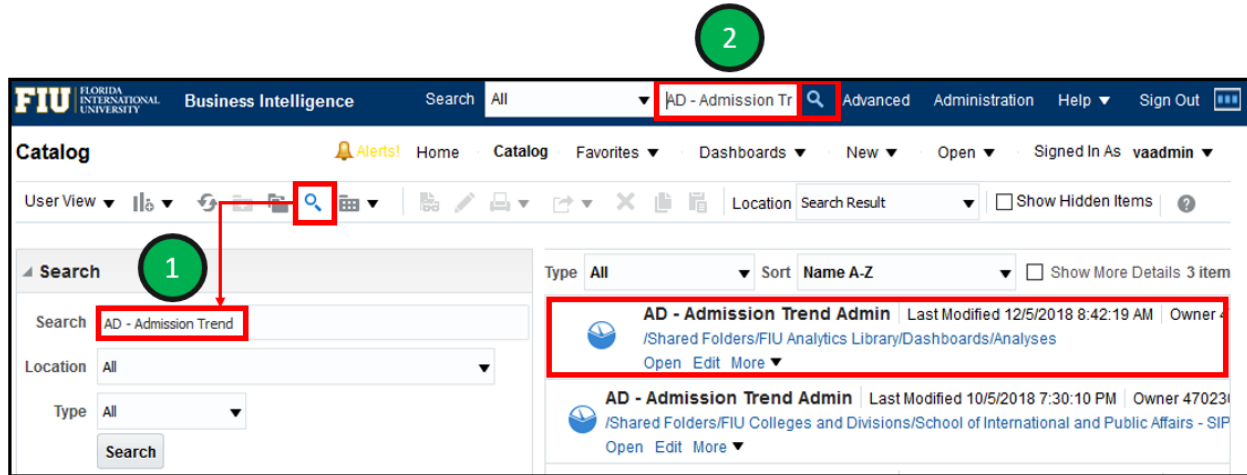


The BI Presentation Catalog stores business intelligence objects and provides an interface where users create, access, and manage objects. In this interface, users perform object-specific tasks, such as exporting, printing, editing, and setting permissions. The catalog is organized into folders that 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.

1. Click the magnifying glass button to display the Search pane to search for objects from the Home page or Catalog page.
2. Use the Global Header Search field to search for objects.

Activity

- Enter “ SR – “ in the Global Header Search
- Results should all start with SR –
- Click on the magnifying glass on the left
- Enter “ AD – “ in the Search
- Set the Location to All
- Results should all start with AD –

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 BI Presentation Catalog and integrated into any Business Intelligence dashboard. Results can be enhanced using views with graphing, varying result layouts, calculations and grouping, formatting, etc.

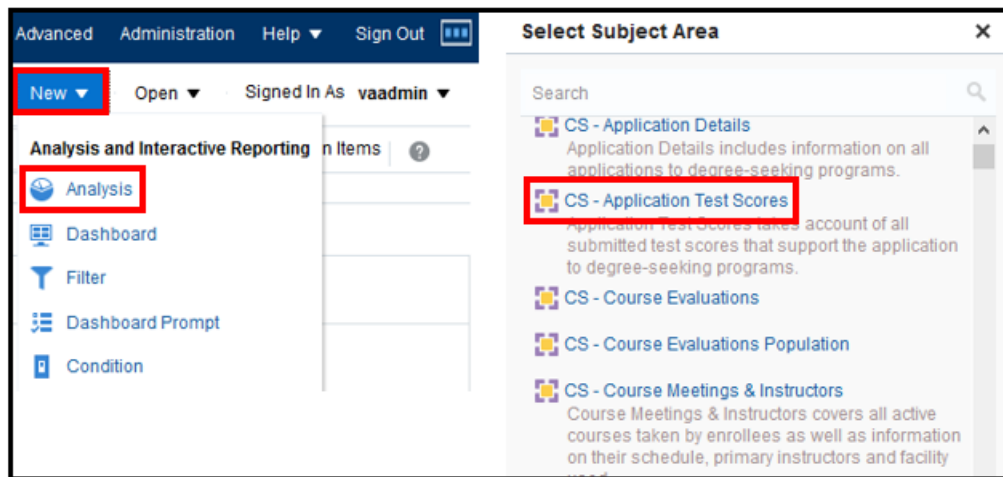
Key Terms

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

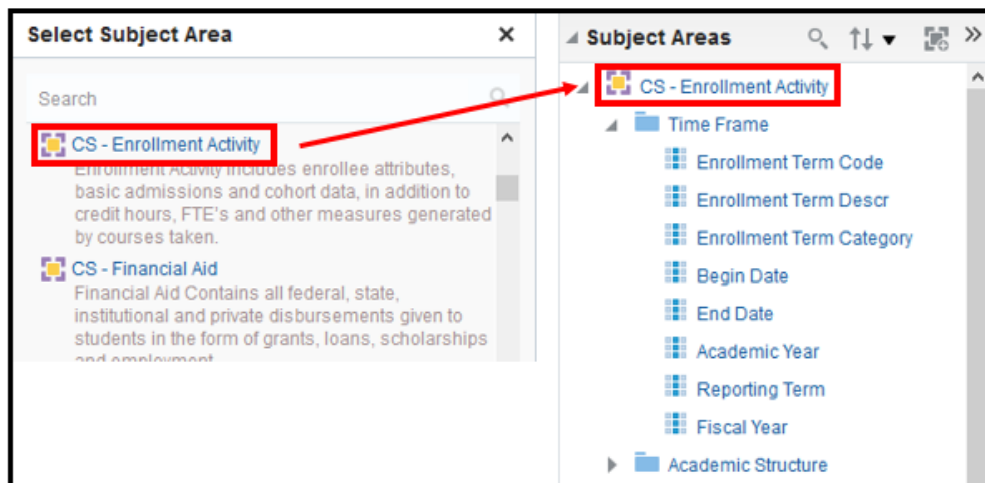
CREATING AND EDITING ANALYSES

Create or open analyses from the Home page.



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.

COLUMNS

- Represent the pieces of data that an analysis will return.
- 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.

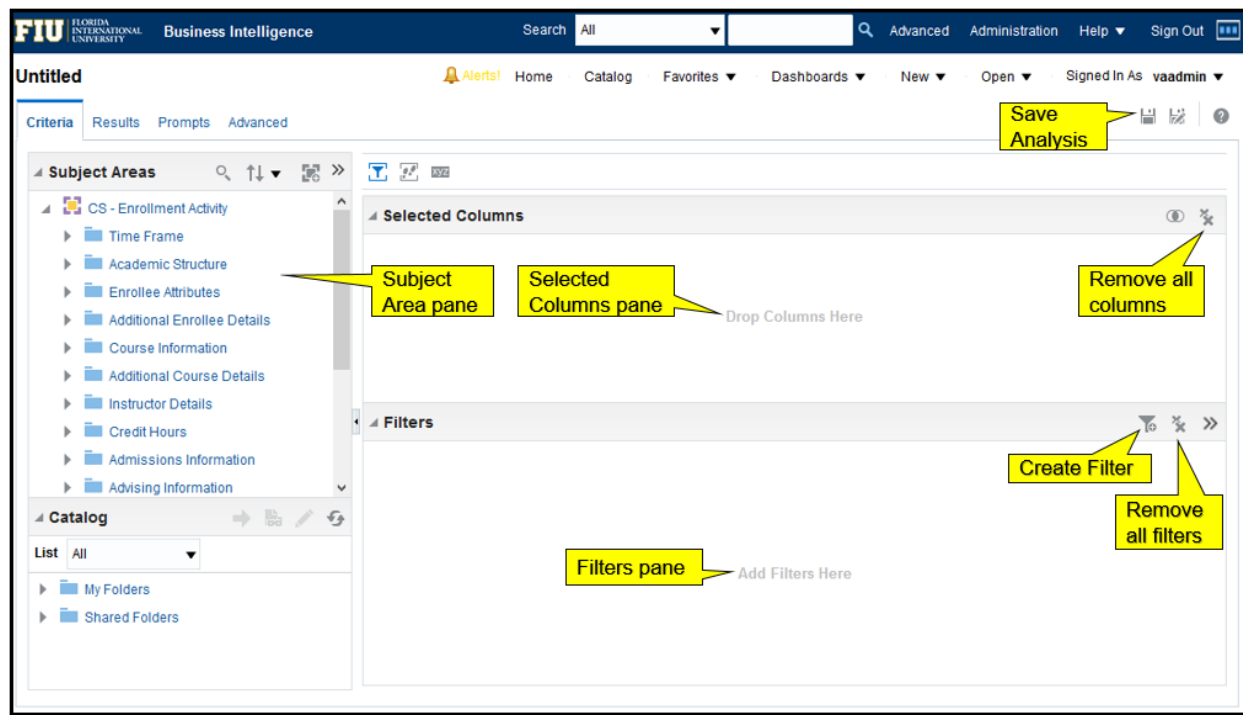
Measure columns, also called facts, contain a simple list of data values, usually numeric, of entities that can change for each record and can be added up or aggregated in some way, for example, Headcount or GPA.

Activity

- Click the New button and select Analysis.
- Select the Enrollment Activity Subject Area.

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 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.

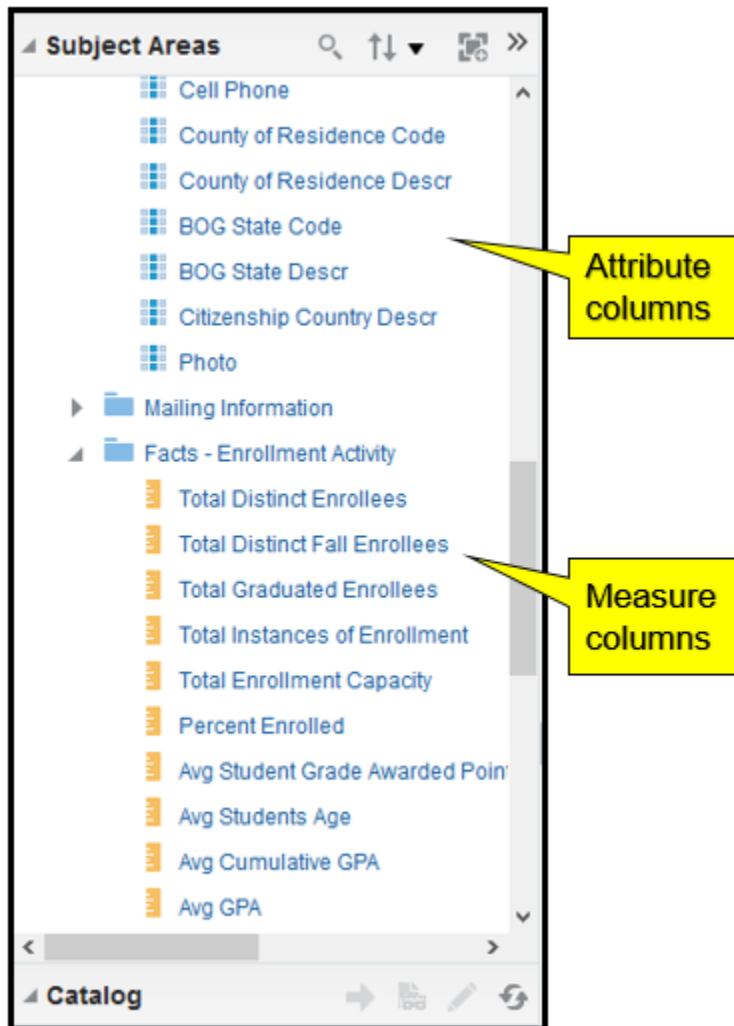
SUBJECT AREAS AND CATALOG PANES

The Subject Areas pane:

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

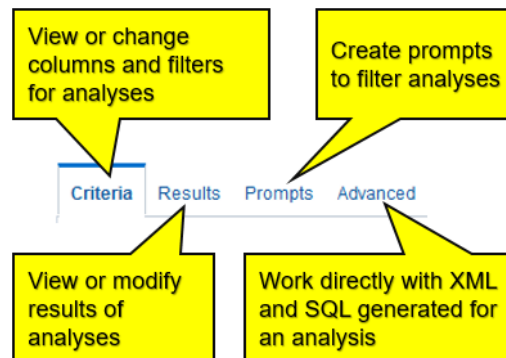
The Catalog pane:

- 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. . Criteria setting affect all views of an analysis.
- **Results tab:** To create different views of the analysis results such as graphs, tickers, and pivot tables based on the same Criteria.
- **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

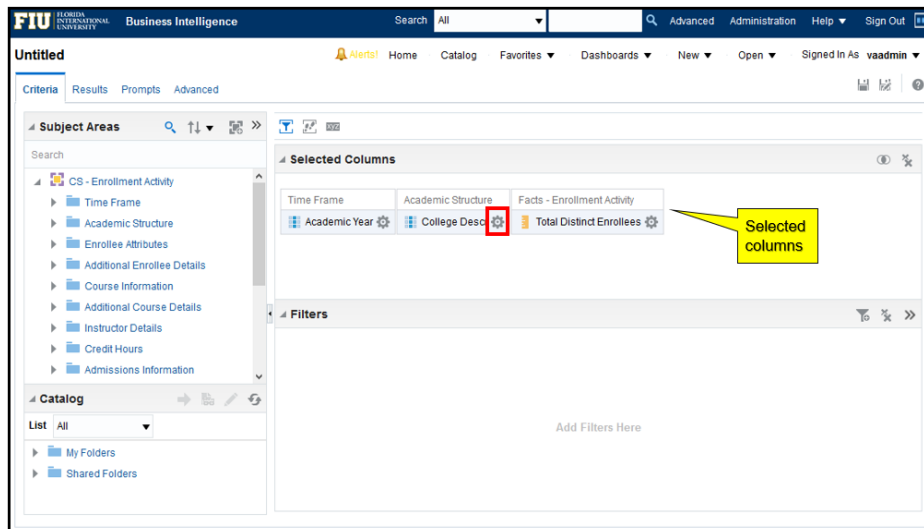
Although analysis columns, filters, and selection steps are usually created in the Criteria tab, you can also add columns and selection steps to your analyses in the Results tab.

WORKING WITH ANALYSES IN BUSINESS INTELLIGENCE

1. Construct an analysis.
2. Modify analysis criteria.
 - a) Sorting columns.
 - b) Data format.
 - c) Conditional format.
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, and 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.

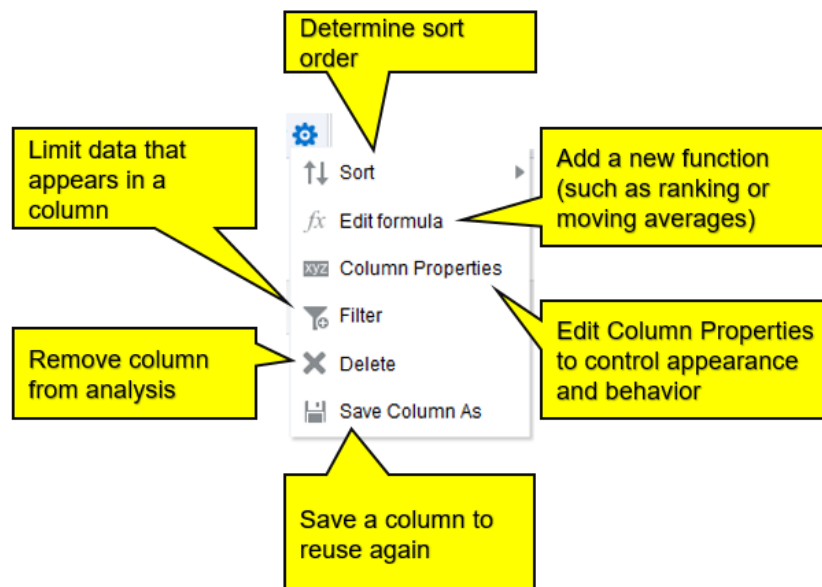
In the Selected Columns pane, to remove all selected columns, you can click the Remove all Columns from Criteria button.

Activity

- Expand the Time Frame folder and double click the field “Academic Year”.
- Click on the magnifying glass and search type the word “college”
- Double click on the word “College Descr”.
- Click on the X in the search (this should bring back the folder structure).
- Expand the folder called Academic Structure and drag the field “Department Descr” next to the College Descr field.
- Scroll down to the Facts folder and expand it.
- Double click the “Total Distinct Enrollees” field.

2. MODIFY ANALYSIS CRITERIA

Click the More Options button to modify analysis criteria by using the following options:

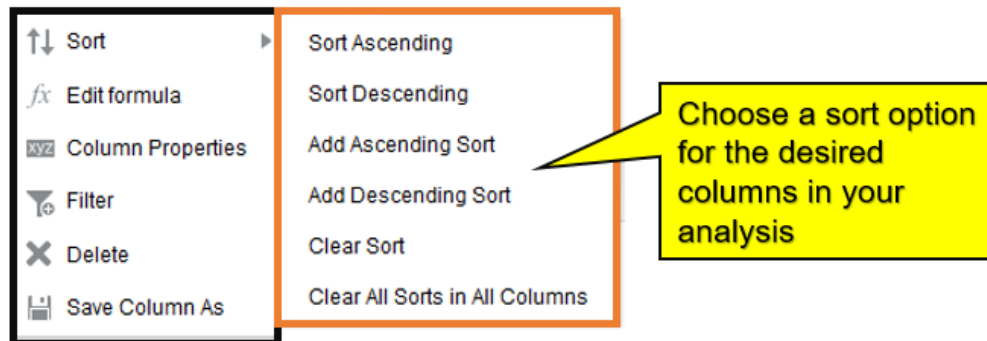


Click the More Options button for a column to open a menu of options to modify analysis criteria:

- 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 Business Intelligence Server.
- Delete removes the column from the analysis and from the Selected Columns pane.
- Save Column As allows you to save a column to use again.

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:



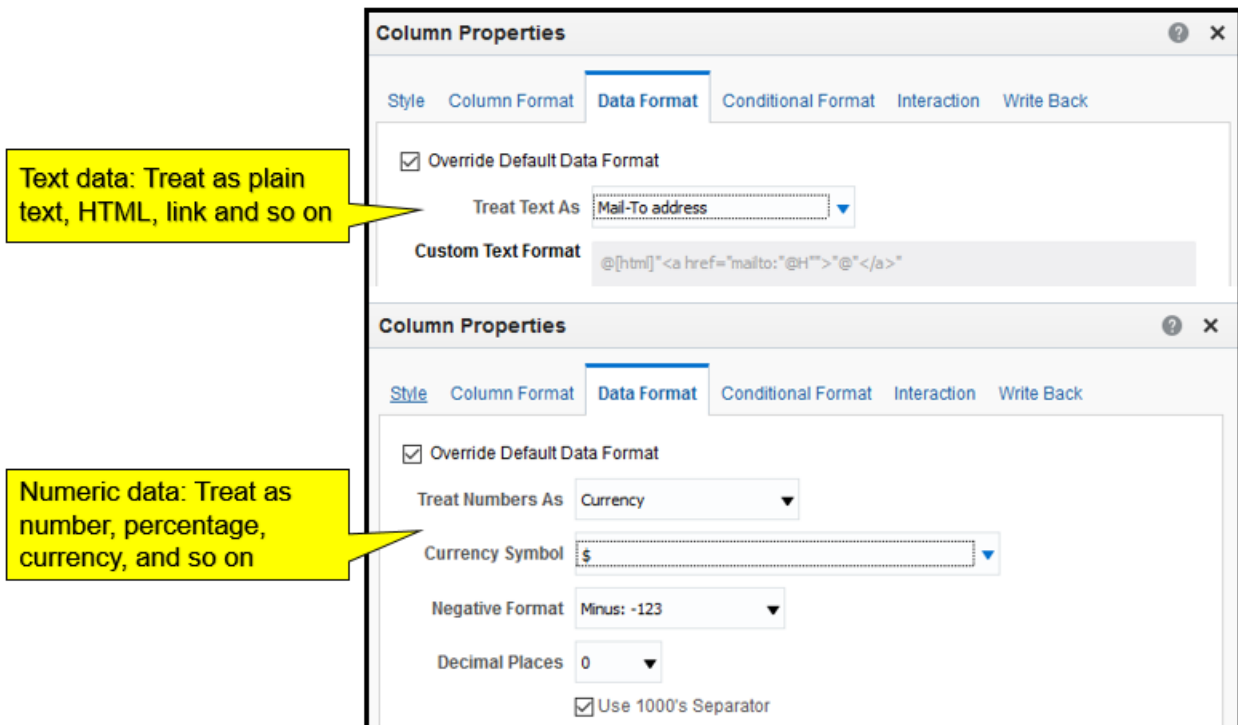
To set the primary sort, select from the first two options, depending on whether you want the sort to be ascending or descending. To add subsequent sorts on other columns in your analysis, select the Add Ascending Sort and Add Descending Sort options. To clear a sort for a particular column, select the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

Activity

- Click the More Options button for the Department Descr field.
- Select Sort and Sort Ascending

2B. MODIFY ANALYSIS CRITERIA (DATA FORMAT)

Override the way data appears based on the data type.



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.

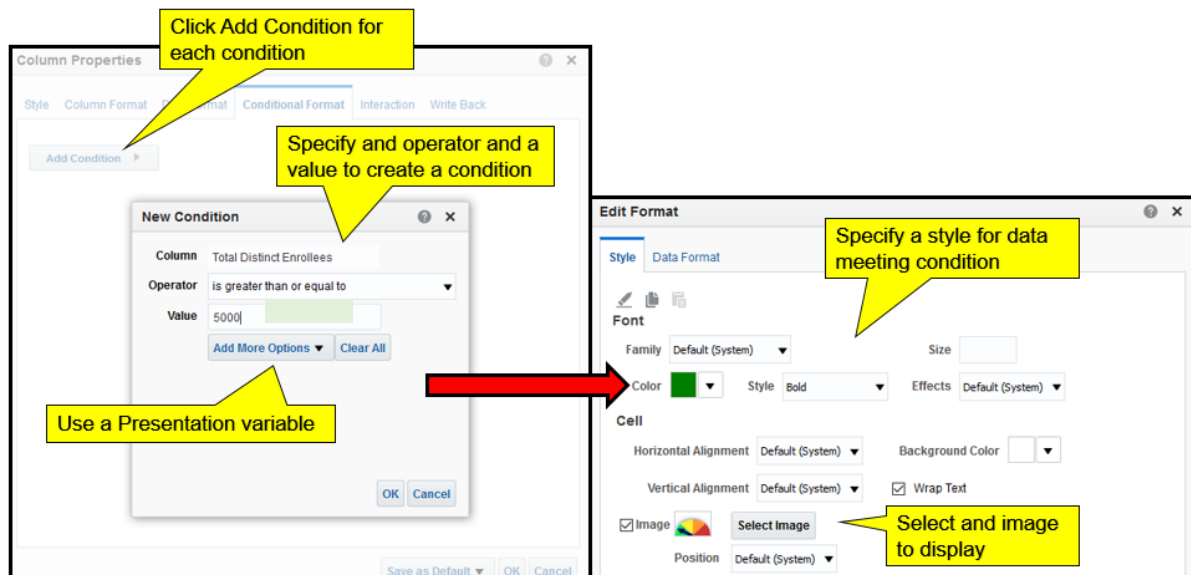
If the column contains numeric data, you can choose how you want the numbers treated (such as percentages, month names, or dates). You can choose the number of decimal places to display, the display for negative numbers, the number of digits to show, and the type of thousands separator to use.

Activity

- Click the More Options button for the Total Distinct Enrollees field.
- Select Column Properties
- Select the Data Format tab
- Click on the Override Default Data Format
- Make sure the Use 1000's Separator is checked
- Click the OK button

2C. 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. You could also display an image, such as a trophy or finish flag, next to the name of each salesperson who exceeds quota by a certain percentage. Also, 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. The application is delivered with several different images that can be used for graphically representing data.

Activity

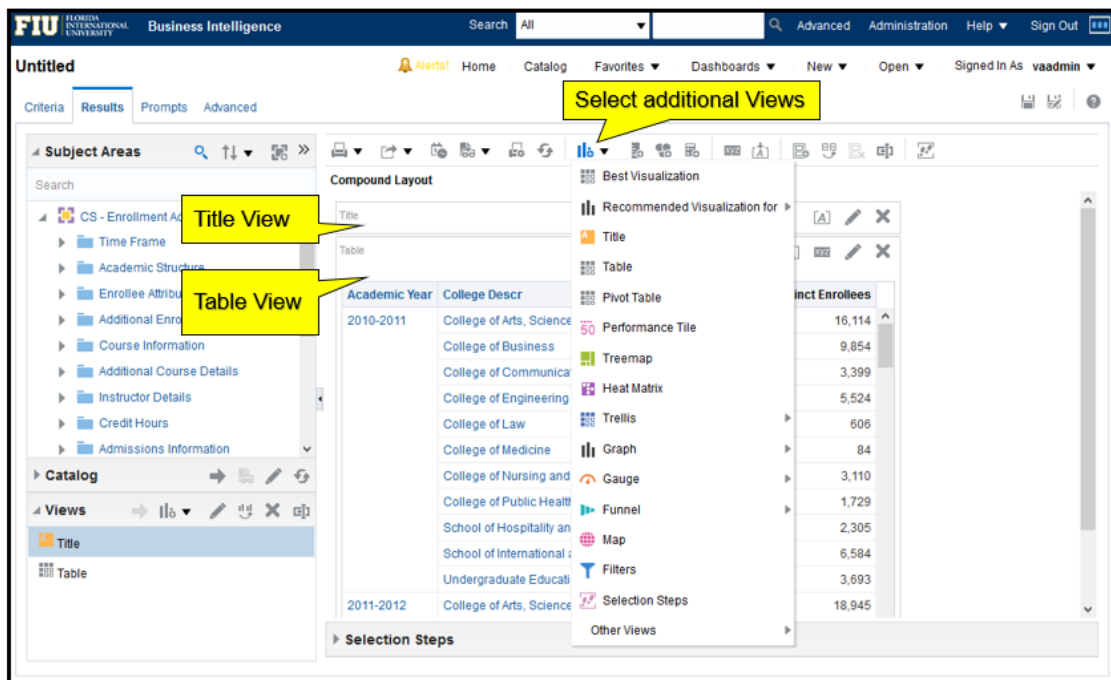
- Click the More Options button for the Total Distinct Enrollees field.
- Select Column Properties
- Select the Conditional Format tab and click the Add Condition button
- Click on Total Distinct Enrollees
- Change the Operator to is less than and put a value of 1000
- Click OK
- Under the Font section, change the color to black and the style to bold
- Under the Cell section, change the background Color to red
- Click the OK button twice

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.

Activity

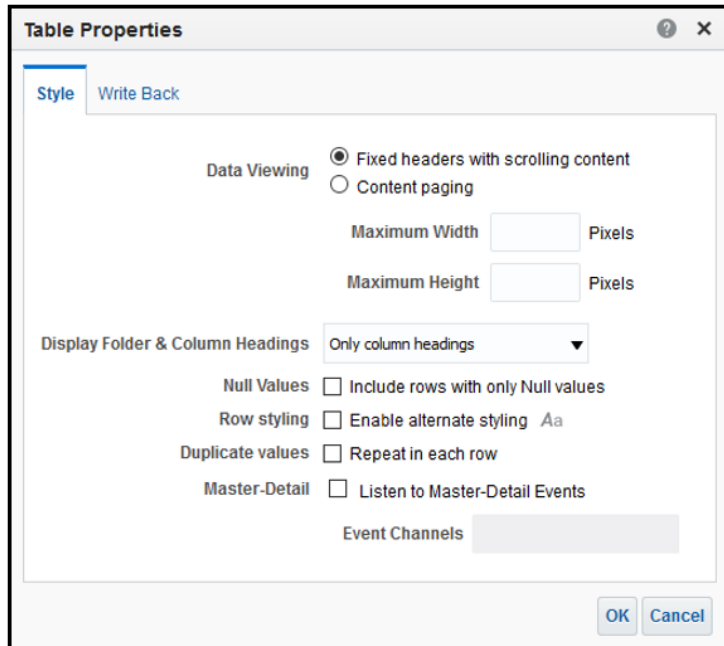
- Click the save button on the upper right hand corner 
- Select the My Folders under the Folders pane
- Change the Name from Untitled to “My First Analysis”
- Click the OK button

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.

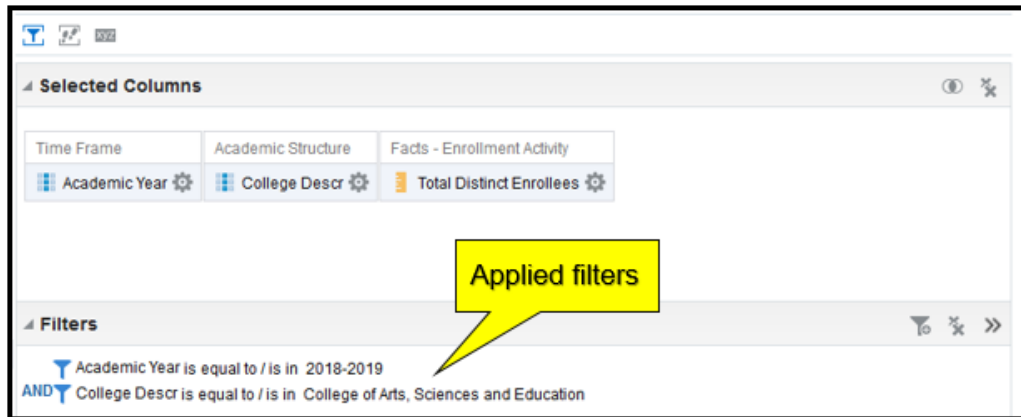
Activity

- Click the Results tab and on the Table view select the xyz (table properties) button
- Select the radio button labeled Content paging
- Set rows per Page to 25
- Check the box labeled Row styling
- Click the Enabled alternate styling button Aa
- Change the Background Color to #EEEEEE
- Click OK three times

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.



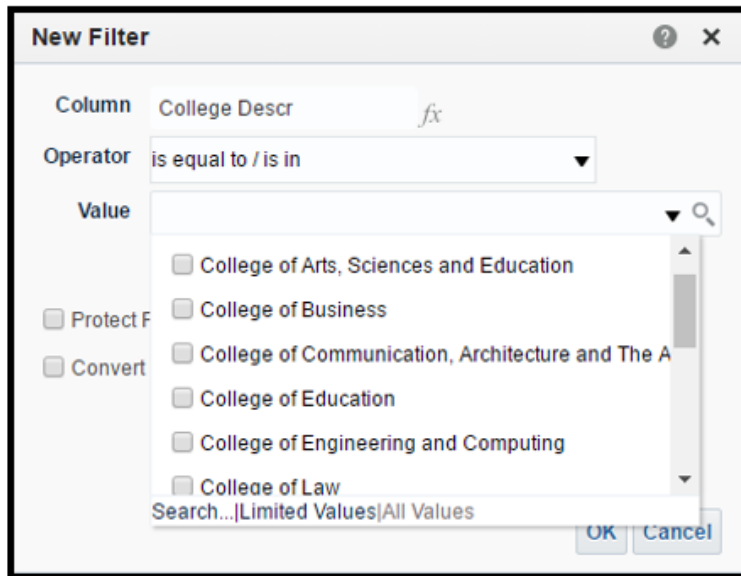
A filter is used to limit results. Based on the filter criteria that you define, the application shows only those results that match your criteria.

Filters are applied on a per-column basis.

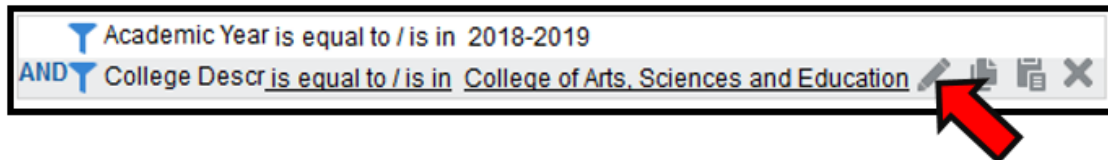
The filter is translated into a WHERE clause in the SQL SELECT statement that is issued to the Business Intelligence Server. The WHERE clause is used to limit the returned rows to those that fit the specified constraints. Advanced users can type the SQL for a filter directly.

CREATING AND EDITING FILTERS

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



Activity

- Click the More Options button for the Academic Year field.
- Select to filter.
- Select the Value drop down and select the 2017-2018 academic year.
- Click OK.
- Click the More Options button for the College Descr field.
- Select to filter.
- Select the Value drop down and select the College of Arts, Sciences and Education.
- Click OK.

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 information that is more detailed, explanatory text, a list of filters, 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

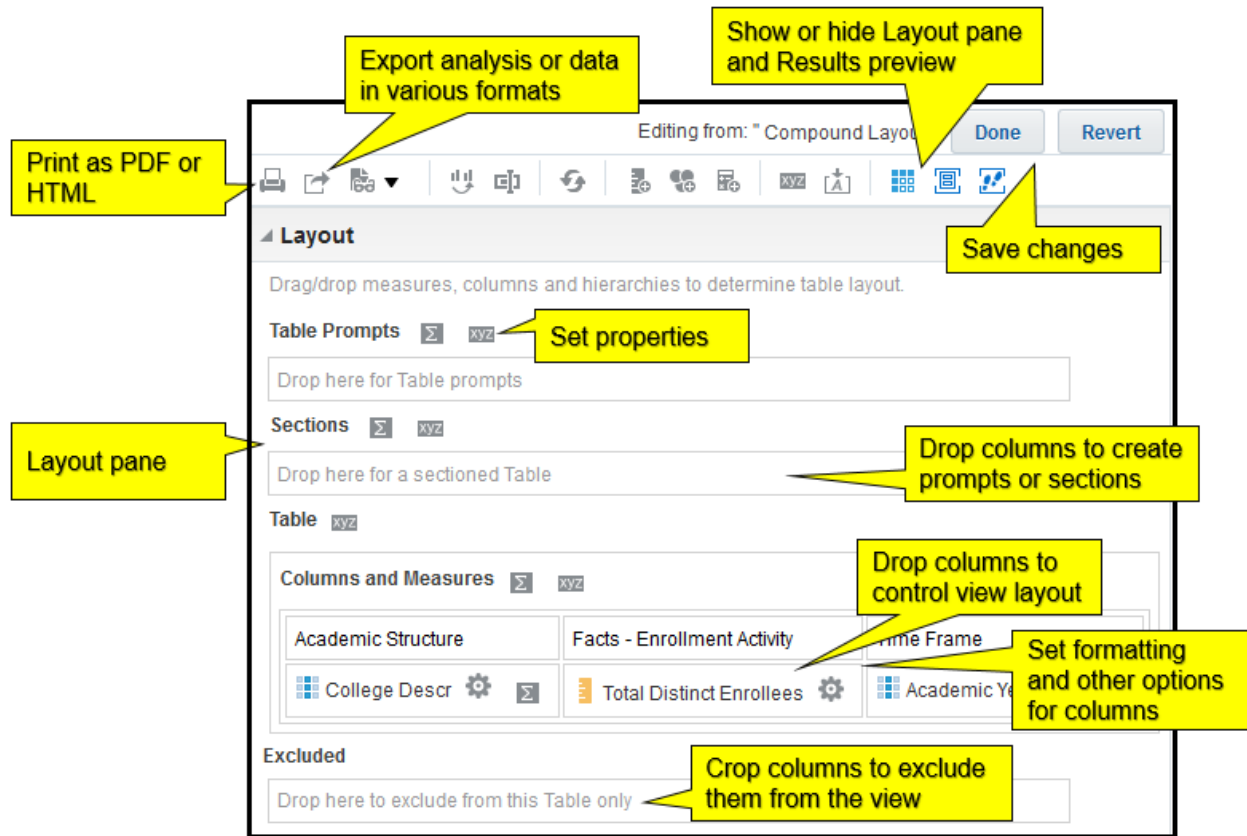
- Graph: Displays numeric information visually, in a variety of graph types, which makes it easier to understand large quantities of data.
- Funnel: Displays results as a three-dimensional graph that represents target and actual values using volume, level, and color.
- Gauge: Shows results of a single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

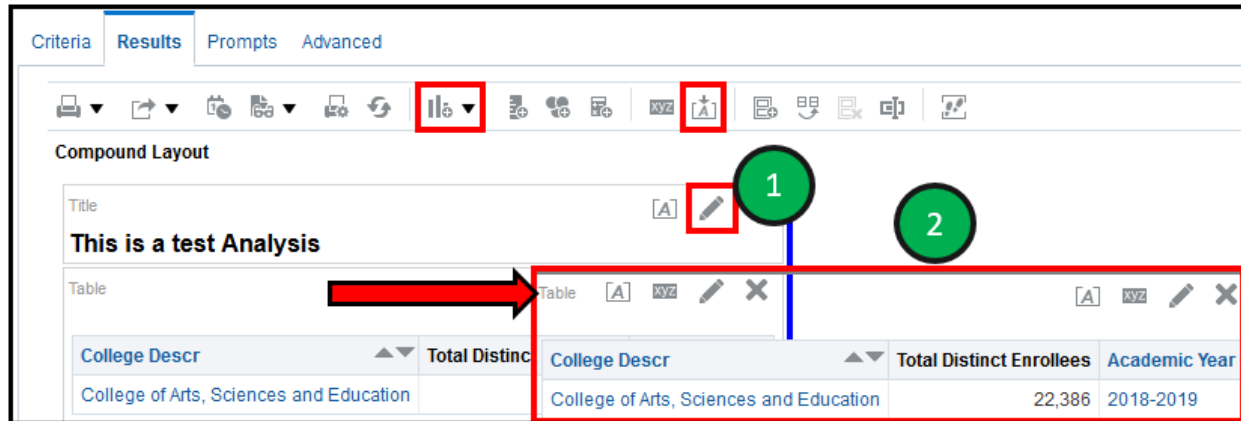
You can add a variety of views to results: graphs and pivot tables (to enable drilldown to more detailed information), explanatory text, a list of filters that were used to limit the results, and more.

When you run a new analysis, the application 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.

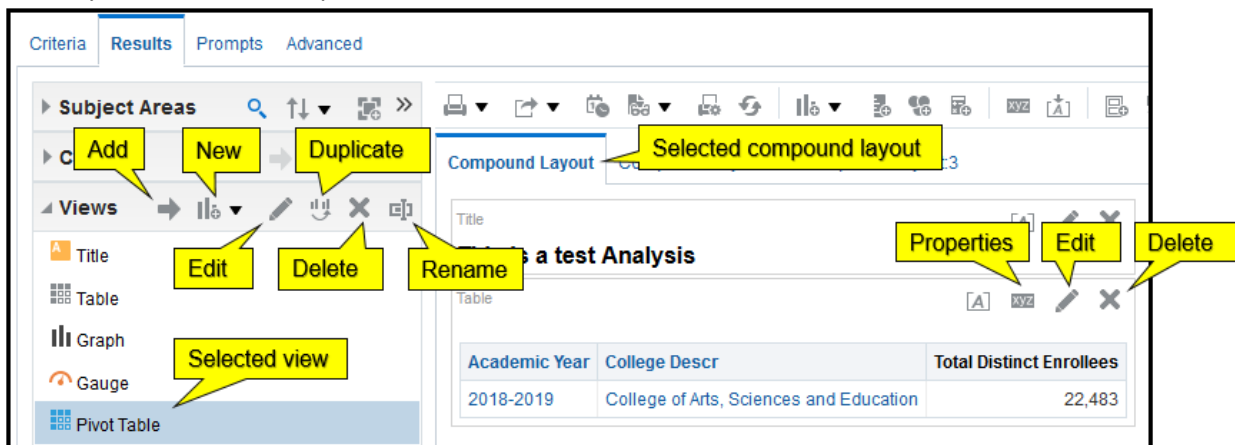
1. Click the Edit View button to work with the properties that are specific to a view in a Compound Layout. The view is opened in its editor.
2. Drag views within the Compound Layout to adjust the layout. In the example in the slide, the Table is moved from the bottom of the Title view to the right of it in the Compound Layout. When you drag an element, a bar indicates where it will appear.

Activity

- Click the New View button
- Move down to Graph, Bar and select Vertical

VIEWS PANE

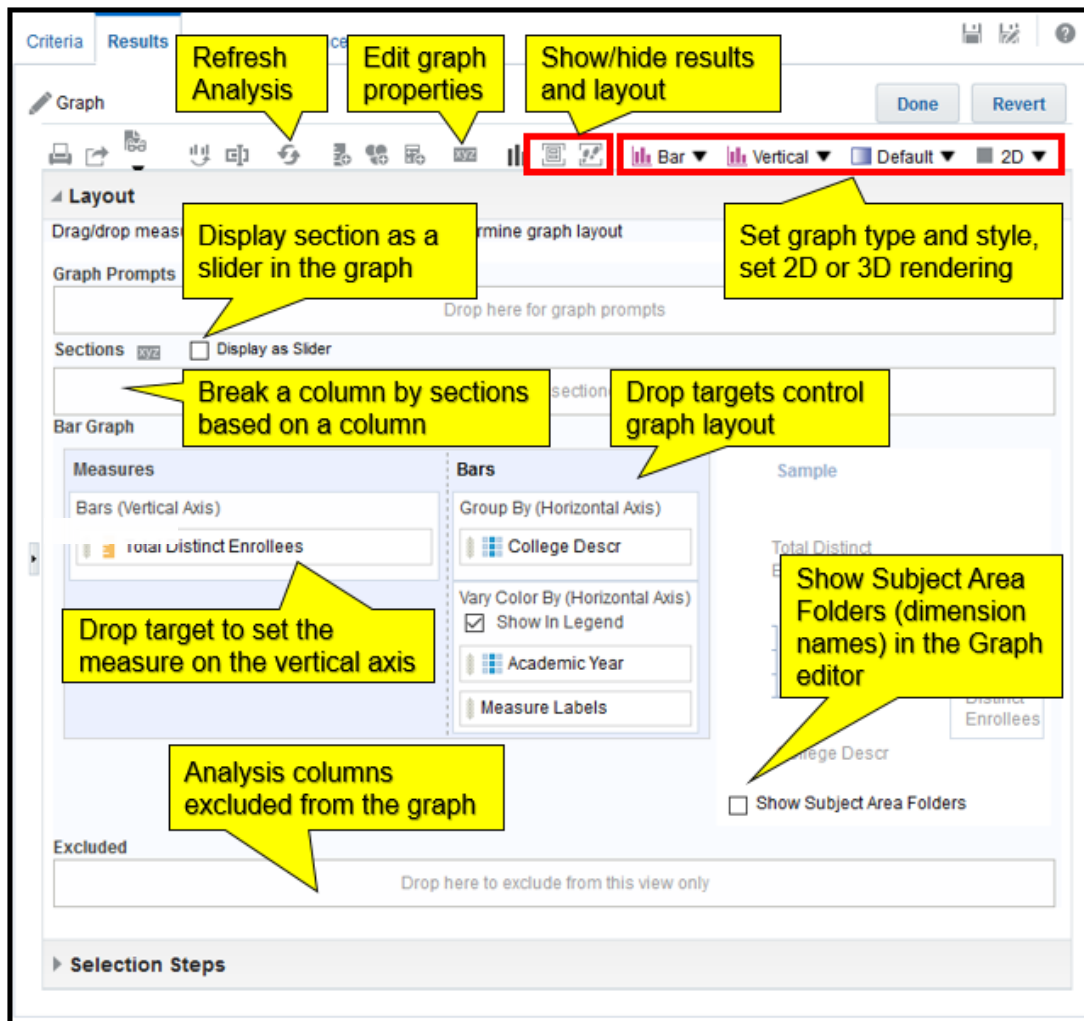
- Lists views associated with the analysis.
- Allows you to add, edit, duplicate, delete, and rename views.



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.

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.

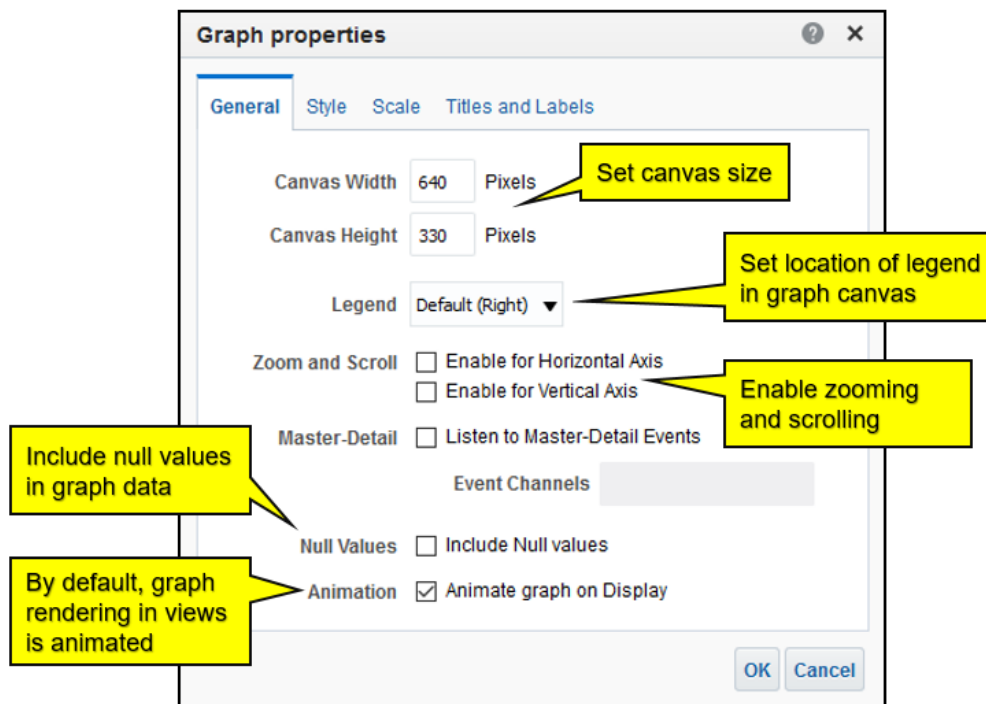
To create or edit a graph, specify its type and then drag analysis columns to the appropriate drop targets to specify what is being measured and the grouping for the graph.

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.



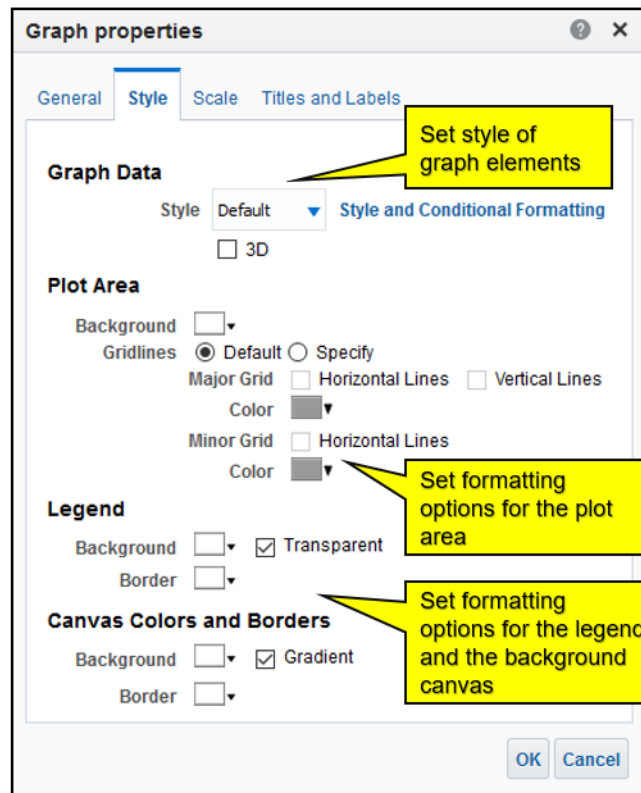
To open the Graph properties dialog box, click the Edit Graph Properties button in the View editor toolbar.

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.



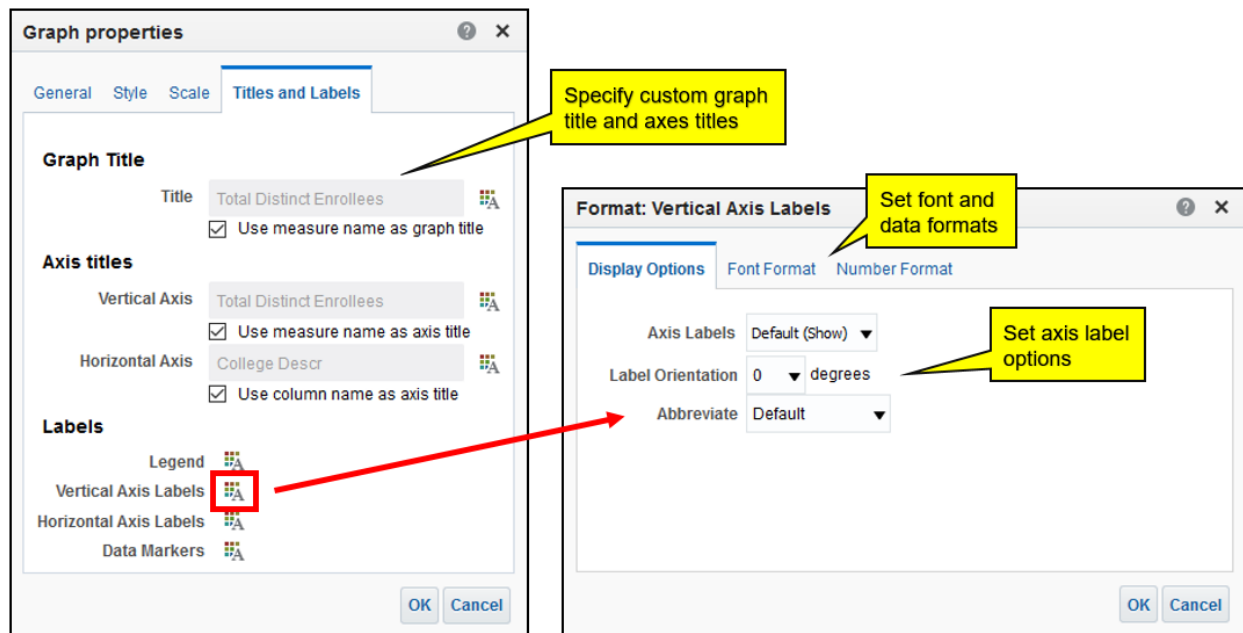
In the Style tab of the Graph properties dialog box, you can set properties that control the appearance of the graph. Each section of the dialog box has options to control different aspects of the graph, including data style and the available 3D rendering, which can also be set in the Graph editor's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

SPECIFYING TOTALS

Specify grand totals or totals for attribute columns.

The screenshot shows the 'Columns and Measures' pane with the following configuration:

- Columns:** Academic Year, College Code, Total Distinct Enrollees
- Measures:** Total Distinct Enrollees

Callouts explain the settings:

- Set grand total for entire analysis:** Points to the sigma icon in the Columns and Measures header.
- Totals are available only for hierarchy and attribute columns that describe measures:** Points to the sigma icon in the Measure configuration area.
- Set break total for a column:** Points to the 'After' option in the 'Total' dropdown menu.
- Format labels and values:** Points to the 'Format Labels...' and 'Format Values...' options in the dropdown menu.
- Formatted values:** Points to the total values in the table.
- Formatted labels:** Points to the total labels in the table.

Academic Year	College Code	Total Distinct Enrollees
2017-2018	CARTA	4,981
	CASE	23,357
	CBADM	13,124
	CENGR	6,863
2017-2018 Total		47,330
2018-2019	CARTA	4,868
	CASE	22,483
	CBADM	12,667
	CENGR	7,113
2018-2019 Total		46,243
Grand Total		61,510

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.

Activity

- Click the Criteria tab.
- Update the Academic Year filter to include the 2018-2019 Academic Year.
- Remove the filter for the College Descr by clicking on the X when you hover over the filter.
- Click the Results tab.
- Click the Edit View on the Table view.
- Exclude the Department Descr by moving the field to the Excluded section.
- On the Columns and Measures, area click the sigma sign and select after.
- On the field Academic Year select the sigma sign and select after.
- On the field Academic Year select the sigma sign and select Format Labels.
- In the Font section, change the color to white #FFFFFF.
- In the Cell section, change the Background Color to dark blue #003366.

PIVOT TABLES

A pivot table is a table of statistics that summarizes the data of a more extensive table (such as from a database, spreadsheet, or business intelligence program). This summary might include sums, averages, or other statistics, which the pivot table groups together in a meaningful way.

To create a pivot table, click on the new view button and select Pivot Table.

	2017-2018	2018-2019	Total Distinct Enrollees
Department Descr	Total Distinct Enrollees	Total Distinct Enrollees	
African Studies	9	10	12
Architecture	506	550	681
Art and Art History	708	694	944
Asian Studies	118	122	170

Layout

Drop here for a sectioned Pivot

Pivot Table xyz

Columns xyz

Time Frame: Academic Year

Measure Labels

Rows xyz

Academic Structure

Department Descr

Measures

Facts - Enrollment Activity

Total Distinct Enrollees

Row Totals

Column Totals

Pivot Table View Properties

Activity

- Under the views section, click on the new view button and select Pivot Table.
- On the Rows section, move the College Descr field to the excluded section.
- Click on the xyz (Pivot Table View Properties) button.
- Select the Content Paging radio button.
- Set Rows per Page to 100.
- Click OK.
- Under the Rows section, click on the sigma sign and select After.
- Under the Columns section, click on the sigma sign and select After.
- Click Done.
- Under the Views area, make sure Pivot Table is selected and click on the Add View button (arrow).