Banner Performance Reporting and Analytics
Introduction to COGNOS© Reporting
Report Author Training Workbook

Cognos Release 8.3
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Revision History Log

Publication Date	Summary
6/21/2010	New workbook that supports general Cognos© Report Author Workshop Workbook for Banner ODS General Person data.

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Introduction

Course goal

The goal of this course is to provide the knowledge and practice to create and run basic reports using Cognos Report Author.

Course objectives

In this course you will learn how to:

- navigate the Cognos Report Studio
- create reports using the General Person data
- format reports
- run, print or schedule completed reports
- create mailing labels
- create reports using Banner product-specific data.

Intended audience

Report writers who will use Banner Operational Data Store data in the Cognos 8 Business Intelligence (BI) Report Author © tool.

Prerequisites

To complete this course, you should have a basic understanding of

- your institution's business processes and data
- Cognos 8 Business Intelligence (BI) Consumer © tool.

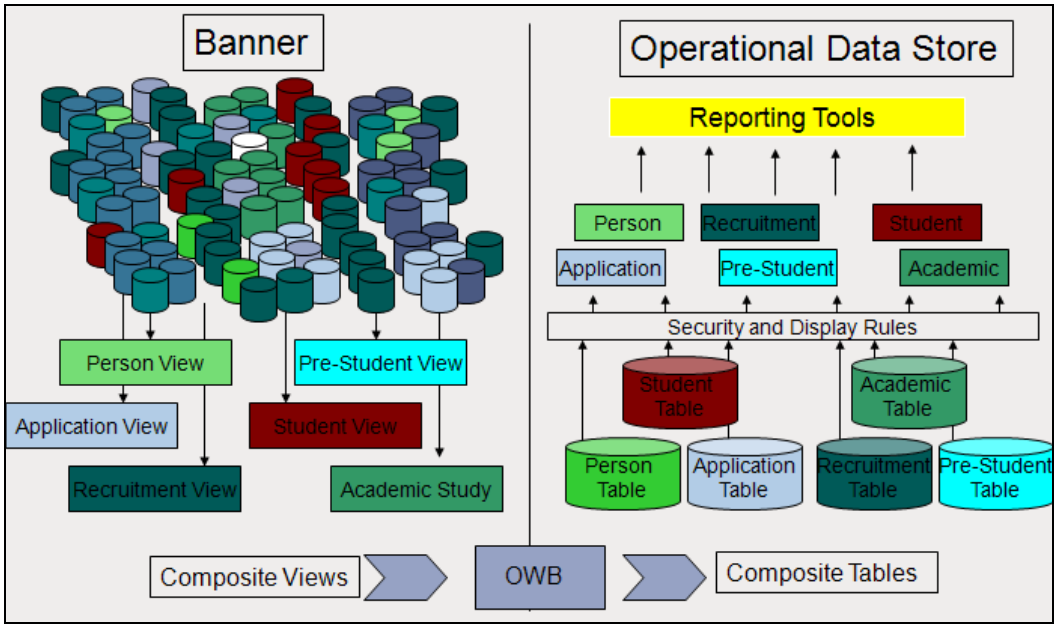
Banner ODS Overview

Introduction

Banner ODS is designed to provide increased access to operational data in a format designed for data retrieval using a common data source and business concepts designed specifically for higher education. Banner ODS key features include:

- Ability to produce reports without the overhead of a transactional system
- Provides for the freezing of data to accommodate point in time reporting
- Most upgrades to the administrative system do not affect Banner ODS
- Banner ODS resides on a separate reporting server
- Locate and validate data by using the Interactive meta data.

This diagram shows how Oracle Warehouse Builder *extracts* information from the Banner system, *transforms* it into a simplified format, and then *loads* the information in a separate database instance where end users can design and author reports. This extract, transform and load process is called ETL.



Oracle Warehouse Builder

Oracle Warehouse Builder allows you to design a complete logical model of your data warehouse. It helps to plan how to extract data from the source, transform the data into a format designed for reporting, and configure the data for loading into the ODS.

When to load and update data

When Banner ODS is first installed, the initial load process populates Banner ODS reporting views. Thereafter, the Banner ODS refresh process is run at regularly established intervals according to institutional defined business needs. It is recommended that at minimum Banner ODS be refreshed once every 24 hours. It is also recommended that Banner ODS be refreshed after all other Banner processes are run.

Banner ODS Data Flow

Introduction

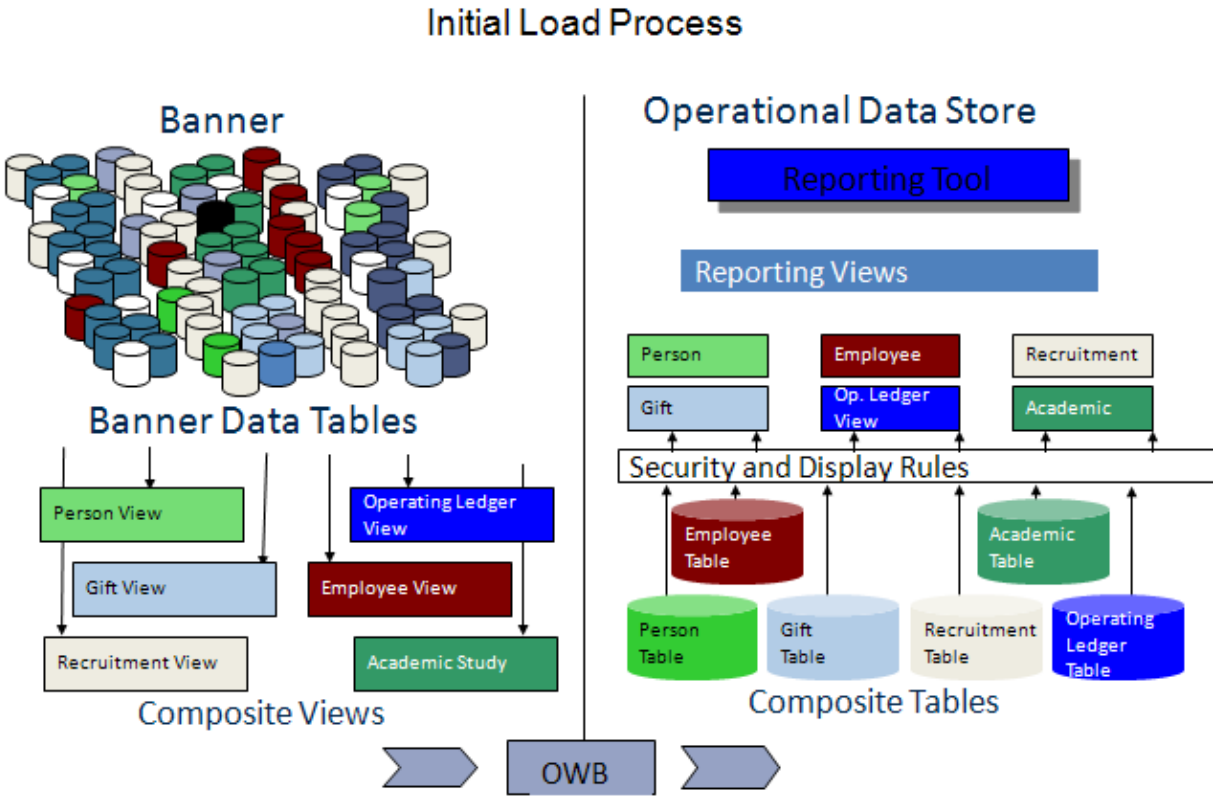
The Oracle Warehouse Builder allows you to design a complete logical model of your warehouse. It helps to plan how to EXTRACT data from the source, TRANSFORM the data, and configure the data for LOADING into the data warehouse. That's what we call it ETL – Extract, Transform, Load.

When to load and update data

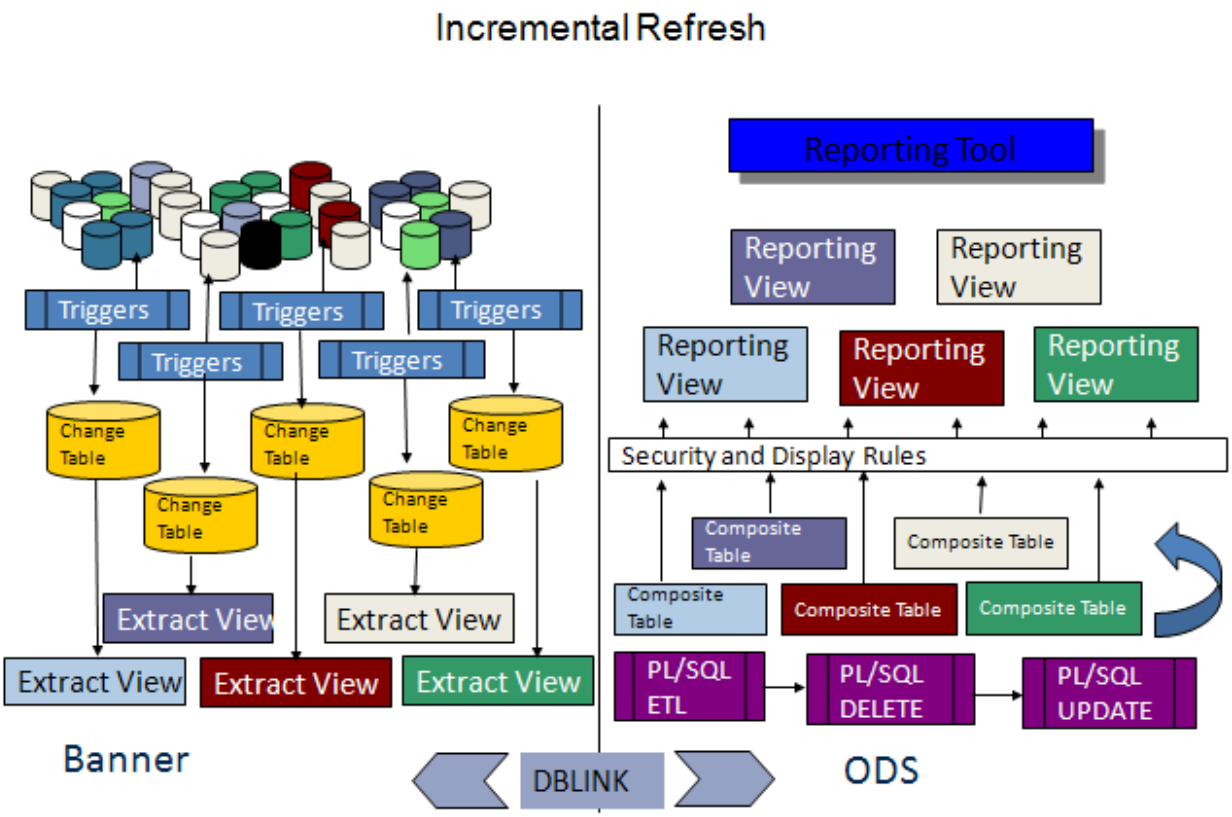
- Initial Load
- Refresh data in Banner ODS on a regular basis
    - Nightly? Weekly?
- Update specific area as needed when there is a data change in source system.

Note: SunGard Higher Education recommends that the Banner ODS be updated on a daily basis.

Banner ODS load process flow



Banner ODS incremental refresh process flow



Cognos BI Overview

Introduction

A critical factor in determining the success of a reporting solution is the existence of a well defined and useful meta data layer. The meta data layer enables you to define relationships between objects in the database. It also enables additional filtering or formatting that can be useful to you when creating reports.

You can use any reporting tool with the Banner Performance Reporting and Analytics products; however, you gain added value from using the Cognos and Discoverer meta data layers created and delivered with the products.

Cognos 8 Business Intelligence and Oracle Business Intelligence Discoverer meta data layers are delivered as part of the Banner Operational Data Store (Banner ODS). The Cognos 8 Business Intelligence meta data layer is delivered as part of the Banner Enterprise Data Warehouse (Banner EDW). Relationships between the reporting views in the Banner ODS are included in these meta data layers for the supported reporting tools. The meta data layer provides the joins used by the database to connect the views or database tables so that you do not need to define those relationships when creating queries or reports in the reporting tools.

The Banner ODS defined reporting meta data contains reporting view and column definitions within the reporting views and manages columns that are number data type either to aggregate them or to treat them as identifiers. It can contain hierarchies for drilling into aggregate number columns at different levels, and lists of values (LOV's) for which you can create drop-down lists in prompts and filters for queries on the reporting views.

In Cognos 8 Business Intelligence, the reporting meta data is defined using the Cognos 8 Business Intelligence Framework Manager (FM) to create an FM model. In Oracle Business Intelligence Discoverer, the reporting meta data is defined using the Discoverer Administrator to create the End User Layer (EUL).

Cognos 8 Business Intelligence

The Cognos 8 Business Intelligence (BI) meta data layer is delivered as part of the Banner Operational Data Store (Banner ODS). The Cognos BI meta data layer includes three layers: database view, business view and presentation view.

Framework Manager models

Databases are typically designed to store data captured through business processes. The stored data is not easily accessible for reporting and analysis for making enterprise decisions in business terms. Because of this, data requires metadata, the 'data about data', so that it can be effectively retrieved for analysis and reporting. The Cognos Framework Manager tool allows you to redefine the data in the database to answer business questions.

Cognos is designed to deliver centralized metadata via the Framework Manager model. The model provides a common definition of data in business terms that add value across the organization. The database is redefined so that you can publish metadata in a package and make it available through the Cognos Connection to the Cognos BI reporting tools Report Studio, Query Studio, and Analysis Studio to answer business questions.

The Framework Manager model presents the data using business terms and definitions. This enables you to use, build, and modify your own reports and enables consistent understanding and use of data and metrics across your institution. The logical relationships between data are defined within the model to enable complete data integration so that you spend less time gathering and organizing data.

For more information about data modeling, see the "Framework Manager User Guide" or "Metric Designer User Guide".

Metadata Layers

Cognos Framework Manager (FM) provides the ability to layer metadata as a means to insulate end users from changes made to the underlying data sources and the defined data relationships within the database. When changes to an existing model are required, Framework Manager can identify the impact to existing reports. This enables your institution to manage model changes without having to rewrite reports.

The delivered FM models use two layers to manage the metadata content: the database view and the business view. A third layer, the presentation layer, is used to publish the data in logical groupings.

Database View Metadata Layer

The database view metadata layer is the layer into which Framework Manager imports all database objects. There is no difference between the database views in this layer and the database itself. The database view contains all of the reporting views for a product including all List of Value Views coming from the ODSLOV schema.

Business View Metadata Layer

The business view metadata layer organizes content around a specific business process or processes. The business view layer references objects from the database view and

relationships among them are defined to support the associated business process.

The business view layer includes business concepts with relationships (joins) defined between related reporting views. These joins define the SQL generated behind the scenes by the various Cognos BI Reporting Tools.

The business view layer also includes a link back to the database view reporting views, which you can use to create custom SQL and queries outside of the business concepts. If you cannot create a query to answer a business question against a particular business concept, you can create reports and custom queries against the database views.

Presentation View Metadata Layer

The presentation view metadata layer is the layer in which information is reorganized into useful logical groups of data that you can use together for reporting. The query subjects in the presentation layer include data elements and folders of data elements that present the data in an intuitive fashion so it is easy for you to locate desired data for any report.

The following standards were applied when creating the presentation layer:

- Related data or query items are grouped in the same query subject.
- Subsets of data that are typically used together are organized into folders.
- Commonly used filters are defined to enhance functionality. Examples of delivered filters include Student Level Undergraduate, Student Level Graduate, and Student Level Professional.
- Commonly used calculations have been added to make reporting easier.
- Additional range and aging concepts have been added that work in conjunction with parameter maps. Each has an accompanying 'order' concept to ensure they appear in proper order when you use them.

From the presentation layer you can publish a complete package of all the data in that presentation view and or a number of smaller packages of information that target specific types of analysis and users. These packages allow you to create and use dashboards, run reports, build ad hoc reports, and analyze trends without the need to sift through large amounts of unneeded information.

Packages

A package is a subset of data designed to support a specific set of reporting needs. Packages may contain content designed within Framework Manager. They are the means by which Query Studio, Report Studio, and Analysis Studio are able to access data using the Cognos BI reporting tools. They are essentially the data sources used for reporting and analysis.

Each package defined in the Banner ODS includes attributes and measures related to one business area of reporting. Many of the packages also include pre-defined filters that you can use to narrow the information returned in a report.

Lists of Values

A list of values is a set of valid values for a column in a reporting view. List of value (LOV) views are contained within the ODSLOV schema within the Banner ODS. The LOV views get their information from the Banner ODS composite MGT_VALIDATION table.

The meta data layers are shipped containing lists of values to be used for drop-down lists or filters in queries and reports. The views contained within the ODSLOV schema provide the data which populates these lists of values. The values exist in Cognos 8 Business Intelligence with the exact same names as the LOV views, but without the underscores.

There is a Business view in Cognos 8 Business Intelligence that contains a model query subject for each of the ODSLOV views. The business view and area are called “List of Values”.

Filters

Filtering capabilities simplify and enhance reporting. When using the reporting tool metadata to write a report, you can apply a filter on any columns of the report so that specific report will retrieve a subset of the data in the database.

There are multiple ways to add filters to the metadata layer. One way is to add a query item to the metadata that will filter a subset of data that is used on a regular basis. This type of filter is referred to as a stand-alone or pre-defined filter. A stand-alone filter can be included in multiple data model packages. For example, the time filter “Current Academic Year” is included in several packages. The filter definition is the same across all packages that include it. When you place a stand-alone filter on a report, the report will select only the data defined with that filter.

Another way to define a filter is to apply it to an entire set of data, like a query subject in the Cognos FM Model. When there is a need to define a a subset of data by one of the attributes, a role based or alias query subject is defined. This type of filter would have the specific restriction embedded in the filter query item.

The Banner ODS include both types of filters. Your institution can define additional filters of either type within the Framework Manager tool to meet your specific reporting requirements.

Banner ODS Pre-defined Cognos Filters

The Banner ODS data model includes pre-defined stand-alone filters in almost all of its packages. Refer to the ods_cognos_filters.csv file to see a list of package filters and the filter definitions. This .csv file is delivered as part of your product documentation. The .csv format allows you to open the file in any spreadsheet application where you can then review the filter definitions. You can also sort the data by package or filter.

Banner ODS Business Concepts

Introduction

Business concepts are used to organize the data available for different reporting requirements. A business concept shows the relationships between the data supporting a set of business processes. Because different business processes often require different perspectives on data, the relationships among the supporting database objects need to change based on the analysis you perform.

The Cognos Framework Manager's enables you to use database objects in multiple models. These are each referred to as a namespace. In a Framework Manager namespace, database objects are defined as Cognos metadata query subjects. In that namespace the relationships between the different query subjects focus around a central, primary, or aggregated fact table. All other query subjects are related to each other through the central, primary, or aggregated fact table. All data analysis and reporting completed using the business concept use the central fact table to filter and determine what data to retrieve.

Base business concept permits reporting from a group of operational star schema. Snapshot business concept that permits reporting from a star schema that presents data at a point in time or data captured for a business event.

Creating Reports

Section goal

The goal of this section is to provide the knowledge and practice to create reports using Report Studio.

Objectives

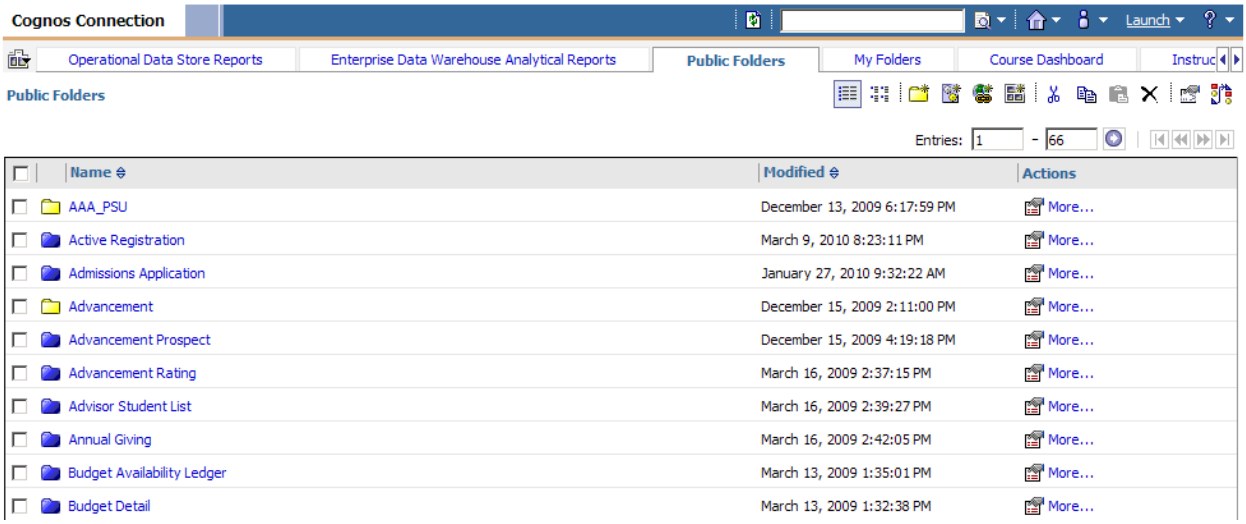
In this section you will learn how to:

- use Report Studio to create your own report using Banner ODS data
- plan your report
- create a report
- select a data package
- insert data into a report
- save a report.

Cognos Connection Navigation Basics

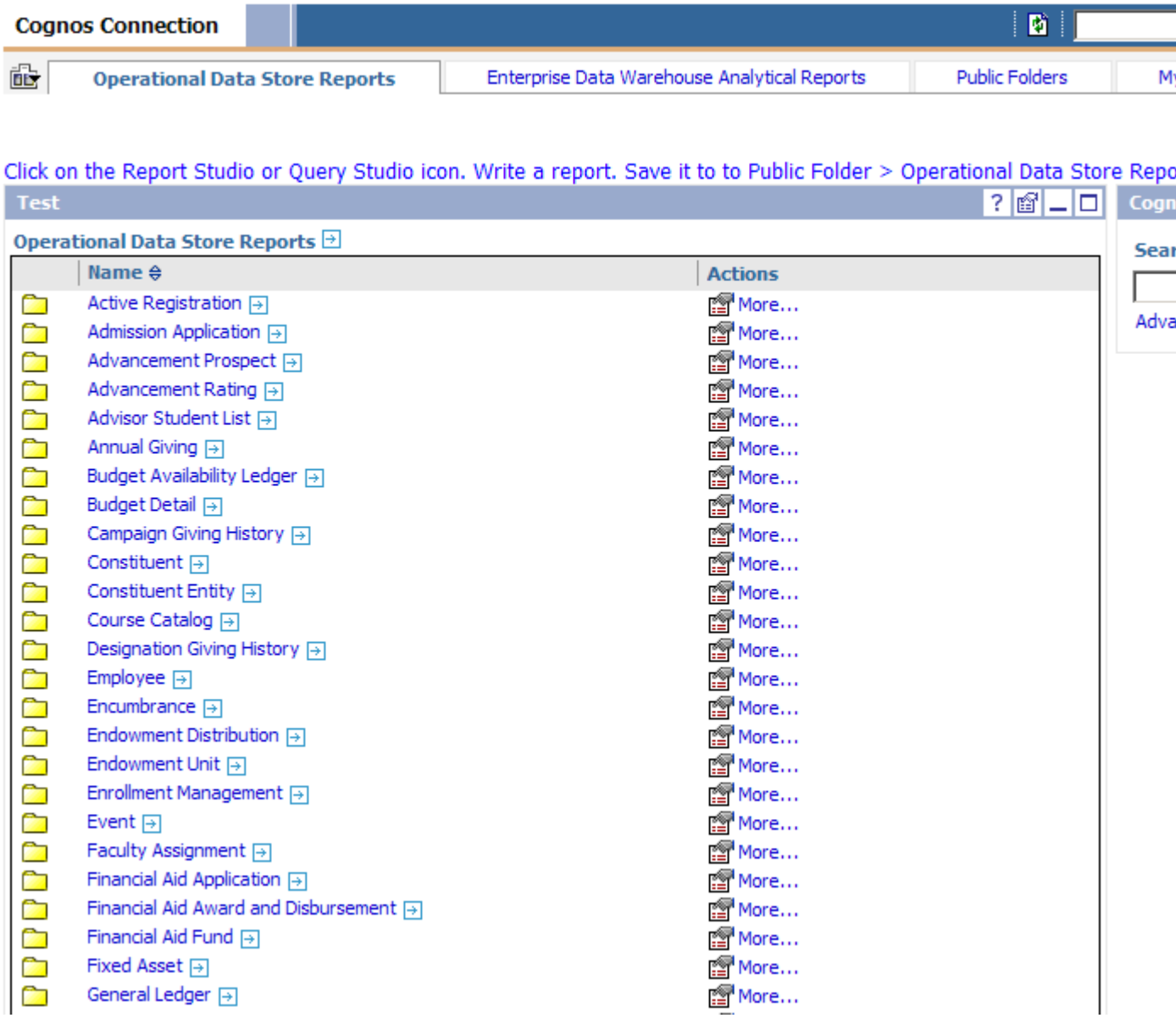
Introduction

When you open the Cognos Connection, you can create and view built from information stored in the Banner Operational Data Store. Reports can be grouped into tabs and folders. Click the folder name to open the set of reports that you want to view. Notice that some folders are blue. Blue folders represent specific data packages such as the Person Demographic.



When you first open Cognos Connection, the reports folders will be empty. As you begin to create your own reports, they will be saved in the folder you designate. You can save reports you want to share with others on the **Public Folders** tab. You can also save reports that you create to the **Operational Data Store Reports** tab. There is a empty folder for each package. By saving the reports you create using each package in the corresponding folder for the package, others can more easily find a report created using that package.

You can save reports you create that you only want yourself to have access to on the **My Folders** tab. Open each folder for a list of all the reports contained in it. You can run, view, copy, save, schedule, email, or export reports from this view.



Toolbar icons

Above the report list is a toolbar that helps you manage reports. Each toolbar icon is described below. Based on your security permissions, you may not see all of the icons.

Icon	Name	Description
	List View	The default view is the list view which displays the folders or reports by name. Notice the shaded background. This indicates that the icon is selected.
	Details View	Use this icon to view the name **and description** of the folders or reports.
	New Folder	Use this icon to create a new folder.
	New Metric Package	Use this icon to create a new metric package. A metric package is a container for models, reports, and tasks used to manage the contents of a metric store. Note: Depending on your security level, not all users will have access to this icon.
	New Job	Use this icon to set the same schedule for multiple entries by creating a job. A job identifies a collection of reports, report views, and other jobs that are scheduled together and share the same schedule settings. When a scheduled job runs, all the entries in the job run.
	New Data Integration Task	Administrators use this icon to select one of the following: • New Metric Import from Files • New Metric Maintenance • New Metric Export

Icon	Name	Description
	New URL	Use this icon to create a link to a URL such as a server stored document or a website.
	New Page	Use this icon to create your own pages to group different types of information into a single view. The information within a tab is displayed on a page.
	Cut	Use this icon to remove a folder or report from the current page. Use with the paste feature when moving a folder or report.
	Copy	Use this icon to copy a report to another folder while leaving the original report in its current location. This is useful if you want to base one report off of another.
	Paste	Use this icon to place a copy of the folder or report in the new location. Notice that this icon is completely grayed-out. This means that this icon is not available until another action (in this case cut or copy) is performed.
	Delete	Use this icon to remove a folder or report that you do not want to move.
	Set Properties	Use this icon to set general properties such as name, language, description, and screen tip for a folder. You can also set permissions for a folder.
	Order	Use this icon to specify the folders and entries to be shown at the beginning of the list and specify their display order. The default is to show them in ascending order by name. You can select one or more reports or folders to be shown at the beginning of the list followed by the remaining items in ascending order by name.

Running reports

Click the report title to run the report with the default options when the **Run** icon appears next to the report title. The icon next to the **Run** icon indicates the default format of the report such a PDF document or an html page. The report type icons are listed in the table.

Icon	Name
	Run
	HTML
	PDF
	XML
	Delimited Text (CSV)
	Excel 2000 (single sheet)
	Excel 2002

Report Actions

The Actions column next to the reports provides additional options for each report listed. Each action is described below.

Icon	Name	Description
	Set properties	Use this icon to set general properties such as name, language, description, and screen tip for a report. You can also set permissions for a report.
	Run with options	Use the **Run with options** icon in the Actions column to change the report options such as format, language, and delivery. You must use this option to select Advanced options to run the report in multiple languages or formats. Note: You can also click the report title to run the report with the default options when the **Run** icon appears next to the report title.
	Open with report studio	Report authors use this icon to open the report in Report Studio where they can modify the report structure. Business users should not use this link.
	Create a report view	Use this icon to create a new report view. You can set the view so that the report always displays according to your run options without modifying the original report.

Icon	Name	Description
	Schedule	Use the **Schedule** icon to schedule this entry to run at a recurring date and time. You can run using the default values or specify the options. You can disable the schedule without losing any of its details.
	Report Output Versions	Use this icon to view a list of report outputs and select the one that you want to view.
	Open with Query Studio	Use this icon to open an Ad Hoc query report in Query Studio.
More...	More...	Use the **More...** link to access set properties, run with options, open with report studio, new schedule, move, copy, create a shortcut, create a report view of this report, add to bookmarks, and delete. Note: Some of these options have their own action icon and others can only be accessed using the **More...** link.

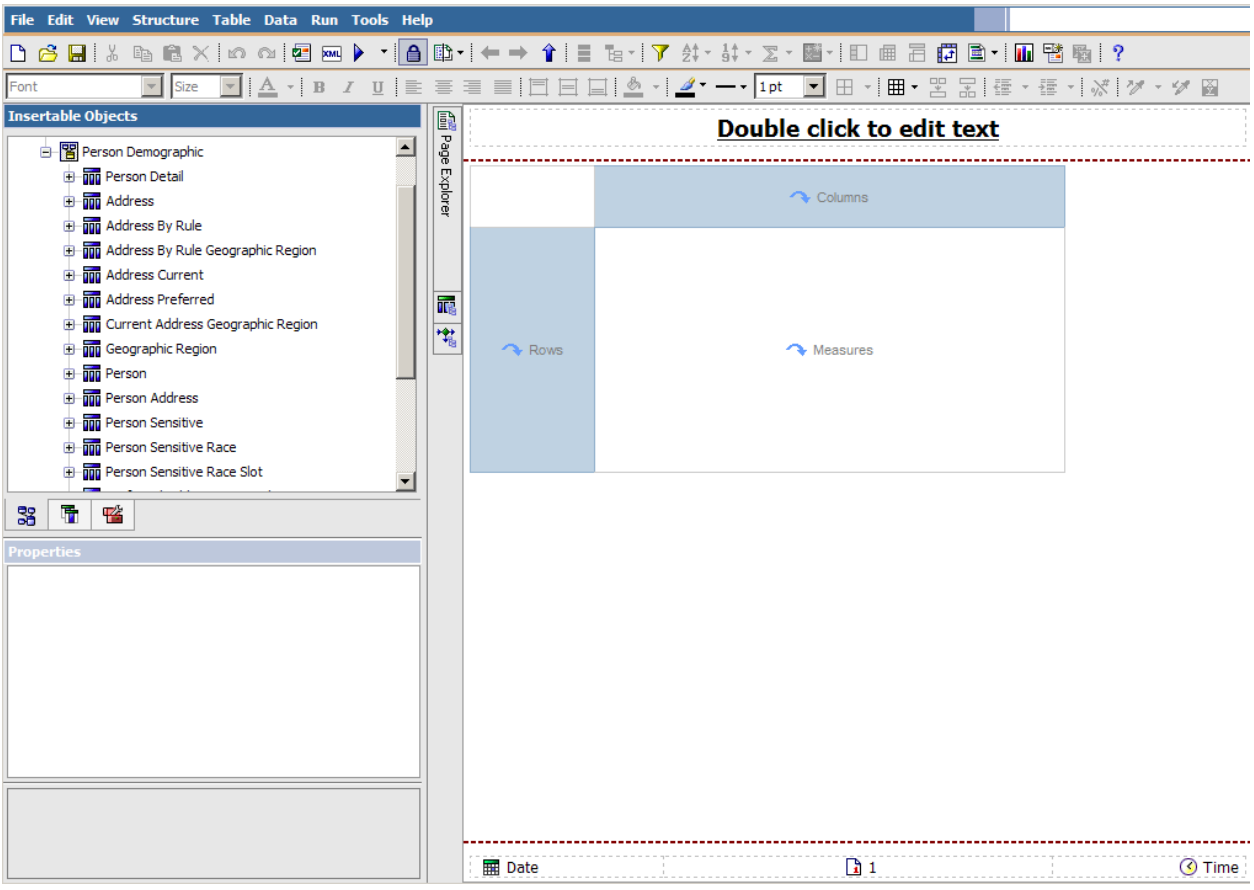
Using Report Studio

Introduction

Report Studio is a Cognos tool that helps create simple and complex reports to answer business questions. When you open Report Studio, you must select the data package and the format of your report.

Report Studio then opens with the selected report format showing you where to insert the data. In the example below, a crosstab report was selected. You can drag the data you want to use for rows and columns to the appropriate part of the report in blue. You can drag the measures to the middle white section.

Report Studio



Layout

The Cognos Report Studio contains the following layout objects.

Object	Description
Menu bar	Links to additional tasks grouped into menus.
Toolbar	Two rows of icons allow you to have easy access to tasks related to building and formatting reports.
Insertable object pane	The Insertable Objects pane displays data in nested folders from the selected data package. Click the plus sign next to a data element to expand the data. At the bottom of the pane are three tabs, the default **Source** tab (shows all available data), the **Data Items** tab (shows just the data already included in the report), and the **Toolbar** tab (which shows the objects that you can add to the report).
Properties pane	The Properties pane helps you modify objects and data items.
Explorer bar	The Explorer bar separates the panes on the left from the work area on the right. It includes three buttons that can change the view from the default page to other report pages, or open the Query Explorer and Condition Explorer.
Work Area	The largest element on the screen is the work area. In Report Studio the data from your report is **not** visible as you are building the report. The column and rows of data appear in the work area but you must run the report to see the actual data that will display.

Toolbars

Above the work area is a toolbar that helps you create reports. If you use a windows-based text editing program, you are already familiar with many of the icons such as Save, Cut, Copy, Bold, Italics, etc...

In addition to the text-editing toolbars there is also a report toolbar that contains icons you may not be familiar with. Each report toolbar icon is described below.

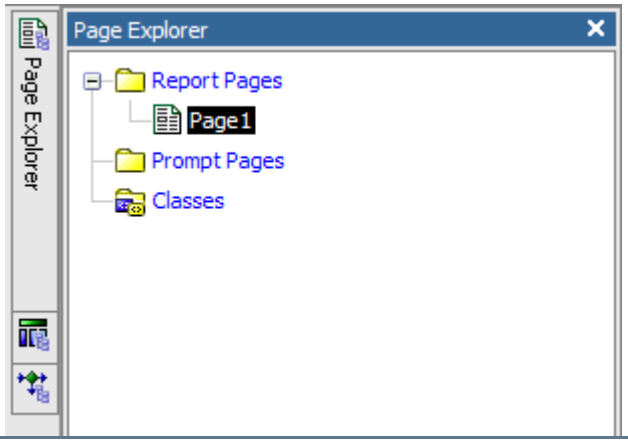
Icon	Name	Description
	Validate report	Use this icon to validate a report
	Show specification	Use this icon to show the report specifications in XML format.
	Run report	Use this icon to run with all data and test prompts for data.
	Lock	Use this icon to lock and unlock a report.
	Visual Aids	Use this icon to select the visual aids that you would like to see on the screen as you build your report such as boundary lines, headers and footers, sorting, grouping, etc...
	Create sets	Use this icon to create data sets
	Insert Single Member	Use this icon to insert a single member into a report.
	Filter	Use this icon to show a sub-set of the data.
	Sort	Use this icon to display report data in an ascending or descending alpha-numeric list.
	Sort opposite axis sets by value	Use this icon to sort the opposite axis sets by value.

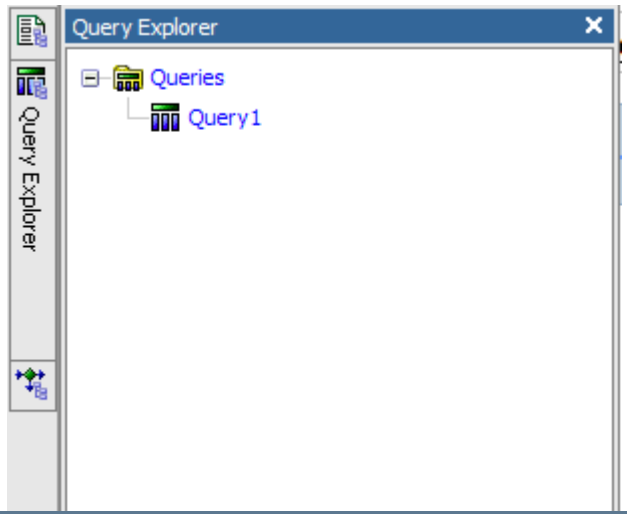
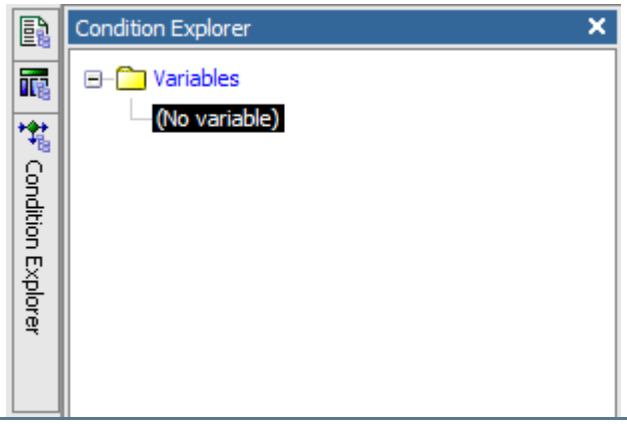
Icon	Name	Description
	Summarize	Use this icon to add a summary row to the measurable data.
	Insert Calculation	Use this icon to insert a mathematic function to the measurable data such as add, subtract, multiply, divide, round, percentage, minimize, maximum among others.
	Group/ Ungroup	Use this icon to add or remove groupings and sections.
	Pivot List to Crosstab	Use this icon to create a crosstab.
	Create sections	Use this icon to create a section header in a report.
	Swap rows and columns	Use this icon to swap the rows and columns in a pivot table.
	Headers and footers	Use this icon to add headers or footers to a report, page, or list.
	Chart	Use this icon to see the report data in a chart.
	Build Prompt Page	Use this icon to build a prompt page when running a report.
	Drill through definitions	Use this icon to set additional levels of detail in the report or link this report to another report.

Icon	Name	Description
	Merge cells	Use this icon to merge cells in a report.
	Split cells	Use this icon to split cells in a report.
	Data format	Use this icon to format data in a report.
	Pick up style	Use this icon to copy the format style from a cell.
	Apply style	Use this icon to apply the format to another cell.
	Conditional style	Use this icon to apply conditional styles to data in a report.

Explorer bar

The Explorer bar separates the panes on the left from the work area on the right. It includes three buttons that can change the view from the default page to other report pages, or open the Query Explorer and Condition Explorer. Each icon is described below.

Icon	Name	Description
	Page Explorer	Use this icon to open the Page Explorer window on top of the work area. You can select other pages contained in the report such as a report page or a prompt page. The selected page will display in the work area. 

Icon	Name	Description
	Query Explorer	Use this icon to open the Query Explorer window on top of the work area. You can click on a query to view details about the query such as data items, detail filters, summary filters, and slicer information. The selected query will display in the work area. 
	Condition Explorer	Use this icon to open the Condition Explorer window on top of the work area. You can use the Condition Explorer to find variables within a report. Variables define conditions in a report. 

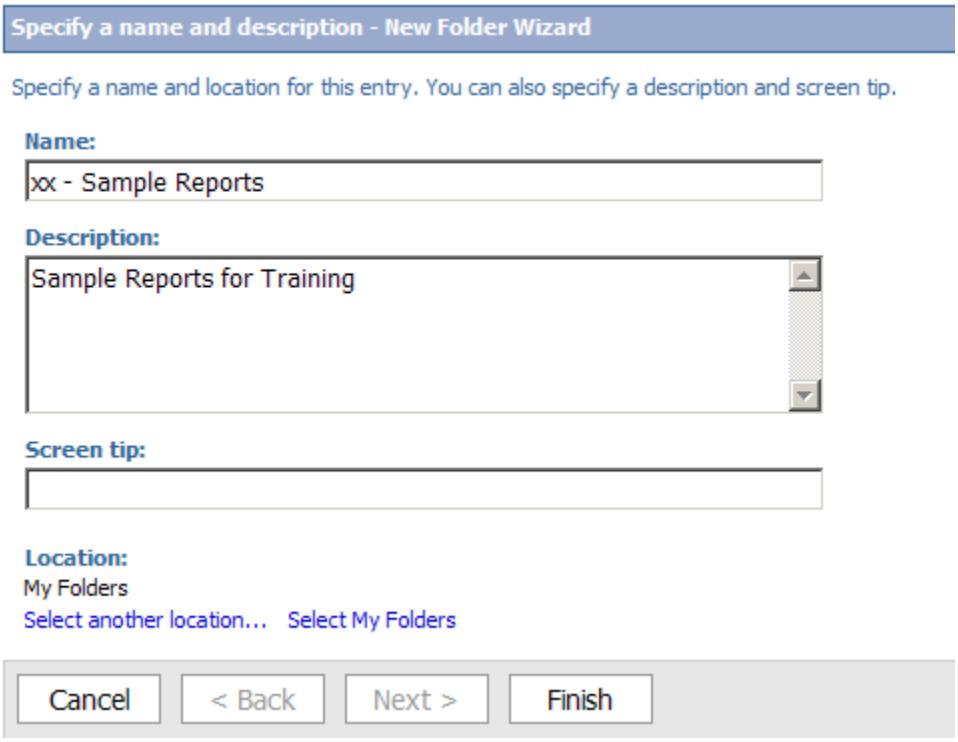
Creating a Folder

Introduction

Before you begin working in Cognos, you should create a folder into which you want to put the reports and dashboards you create or copy.

For this training class, you will create a folder called xx-**Sample Reports** where xx= your initials. The reports that you create in the training workbook will be stored in this folder.

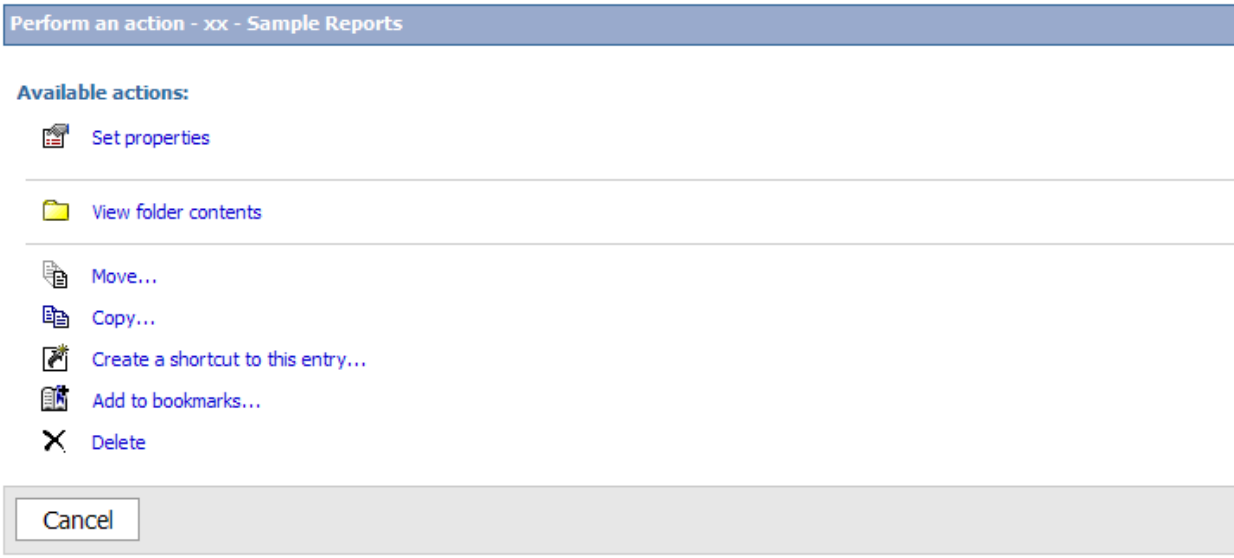
Training folder



Steps

Follow these steps to create a folder.

1. From Cognos Connection, click the **My Folders** tab.
2. Click the **New Folder** icon.
3. Enter xx-*Sample Reports* where XX = your initials in the **Name** field.
4. Enter <*your first name*> *Training Reports* in the **Description** field.
5. Click the **Finish** button.
6. Click the **More...** link at the end of the line for the folder you just created.
7. Notice the options that are available to you.



8. Click the **Cancel** button to return to the list of folders.

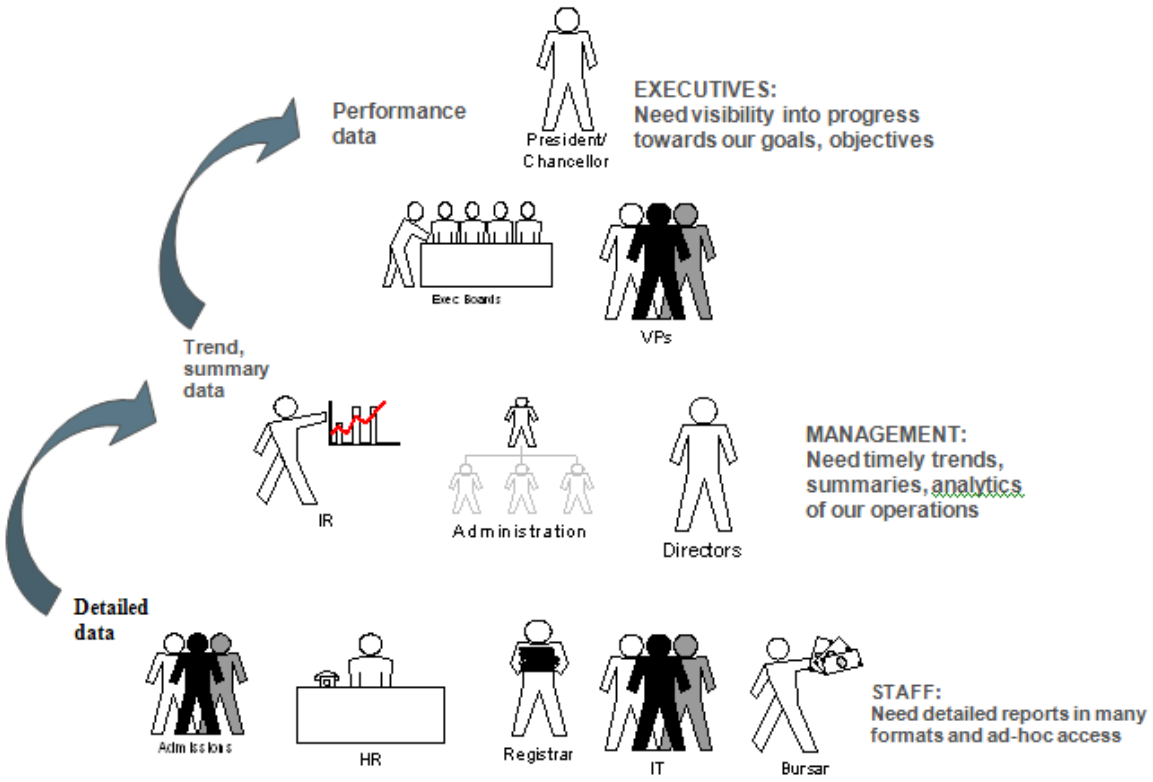
Planning Your Report

Introduction

Report Studio reports can be created almost a la carte because you can create your own reports by pulling into the report whatever fields/columns/data elements you want to, based on what information you want to analyze in the report.

The information pyramid

When planning your query report, consider: who needs the data, how often, and to answer what business questions.



Questions to consider

To plan your query, answer the following questions.

Note: All Report Requests Should Be In Writing. (This forces the requestors to organize their thoughts. They should include the following information in their requests. You determine the format!)

1. How often will this report be used and by whom? (routine vs. ad hoc)
2. Is the person authorized to have this information? (security)
3. What's the true "drop-dead date" it's needed by? (deadline)
4. How will the information be used? (purpose)
5. What data should be on the report, in both rows and columns? (specifications)
6. How are the data to be selected? (criteria)
7. How should the data be sorted and grouped? (filter)
8. How should the final output be displayed? (format)

Training Scenario

Training scenario

Your institution has contacts throughout all 50 states. You want to identify which states contribute the highest number of addresses based on the ADDRESS_COUNT measure. You want to identify opportunities to focus more regional marketing campaigns in states that traditionally have the highest count of addresses.

You want to create a report that compares counts of addresses by state and gender in a cross tab report. You would like to be prompted to review data for a single nation (using the NATION_DESC value to see the nation names spelled out). You would also like the flexibility of choosing one or more states/provinces to look at depending on your needs. You will create a single entry prompt for the nation description and a multiple entry prompt for the state that the user can select when the report is run.

You would like to be able to visually identify states that have very high or very low numbers using conditional formatting. For example, if a state has fewer than 5 addresses, you want to highlight it in red and if a state has over 200 addresses, you want to highlight it in green.

You also want to see a bar chart for each state that shows the distribution of addresses by gender.

Please note: This is a very simplistic report for training purposes. You will learn to build this report by following this business scenario throughout the *Creating Reports* and *Working with Reports* sections of this training workbook.

Creating a Report

Introduction

Report Studio is used for more complex reports and does not include a report preview window. To create a report, open Report Studio select the data package and the format of your report.

Report Studio then opens with the selected report format showing you where to insert the data. You can drag the data you want to use to the appropriate part of the report.

There are some basic steps to creating a report:

- select data package
- select report format
- insert data into the report
- edit data – filter, sort or summarize the data in the report.
- run report – run or preview the data in multiple formats.
- save the report.
- schedule the report.

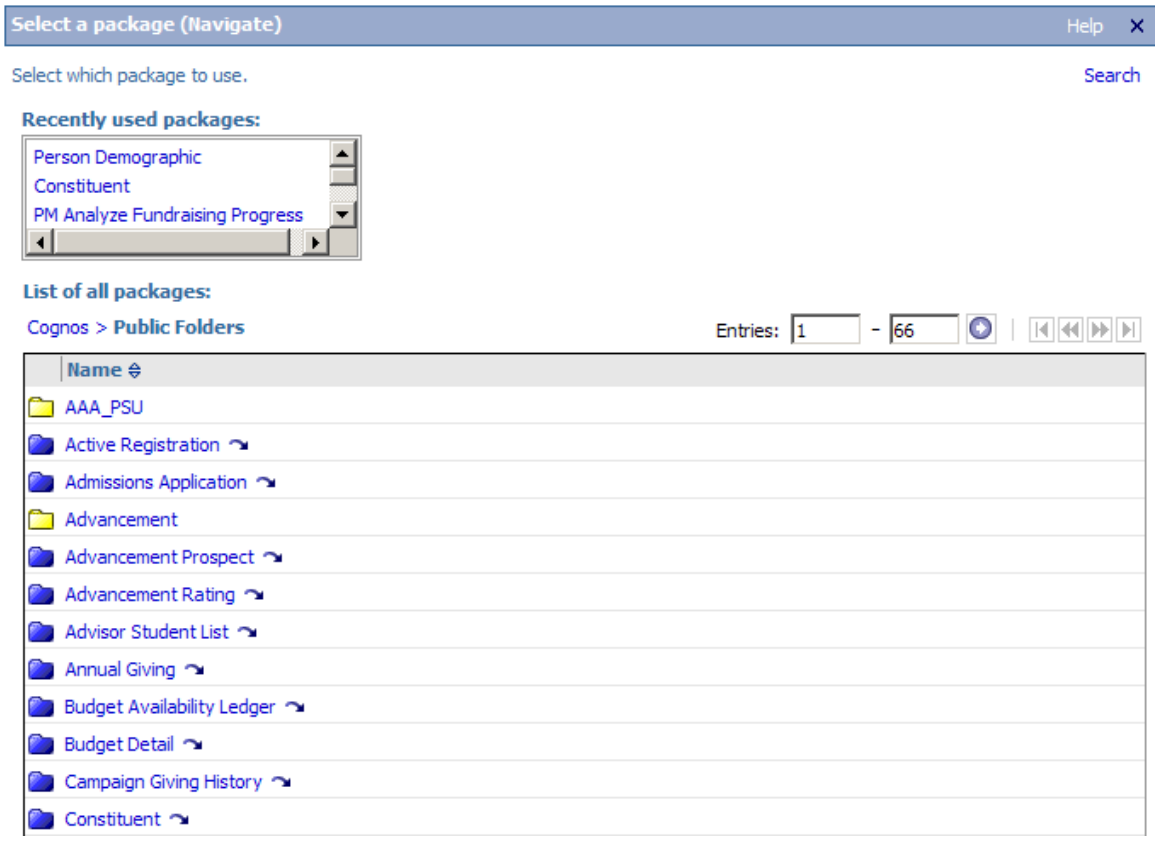
Step 1 - Selecting the right data package

Cognos uses a metadata layer defined using its Framework Manager Tool to make the data in the reporting database available to the Cognos BI Reporting Tools. The database is redefined so that the data can be published in a package made available through the Cognos Connection. The Framework Manager model structures, adds to, and manages data to provide the data in a manner that makes sense to users

After the metadata model is defined, a package is created to make metadata available to report authors. Each package contains all the information that a specific user or group of users needs to create reports.

Example: One package can contain all the data related to person demographics and a second package a different set of the data that is used for reporting on the student data.

When you are creating a report, the first thing you need to do is select the data package. The packages are based on the business concepts. The recently used packages appear first, followed by the list of all available data packages. You can scroll through the list of recently used data packages. Packages can also be accessed by selecting one of the blue folders. Each report can contain data from only one package.



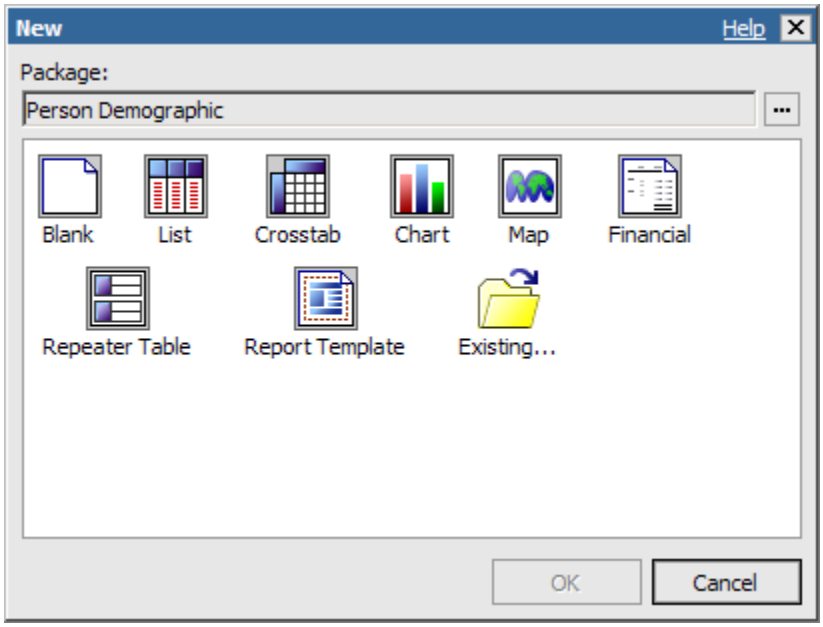
Step 2 - Selecting the report format

Report Studio provides an empty layout based on the type of report you select. You can start from scratch with a blank report, or choose some pre-existing report formats such as list, crosstab, chart, map, or financial. The Repeater Table format is used when you want to repeat fields in multiple repeating tables such as mailing labels.

A crosstab report displays a lot of information in a compact area. You can switch the rows and columns to see which way fit onto the screen better. If you know that you want to display the data in a crosstab report, you can select the Crosstab format here and then easily insert the data into the rows and columns.

Note: If you select the List format, you can change the report format to Crosstab manually later; however you cannot change a Crosstab report to a list report.

Report format selection window



Steps

Steps to follow:

1. From Cognos Connection, click the **Launch** link in the top toolbar.
2. Select **Report Studio**.
3. In the **Recently used packages** field, select the *Person Demographic* package.

   Note: You may need to wait while the Report Studio is initializing. You can also select the package by clicking the blue **Person Demographic** folder.
4. Click the **Create a New Report or Template** link.
5. Click the **Crosstab** report style.
6. Click the **OK** button.

Inserting Data into a Report

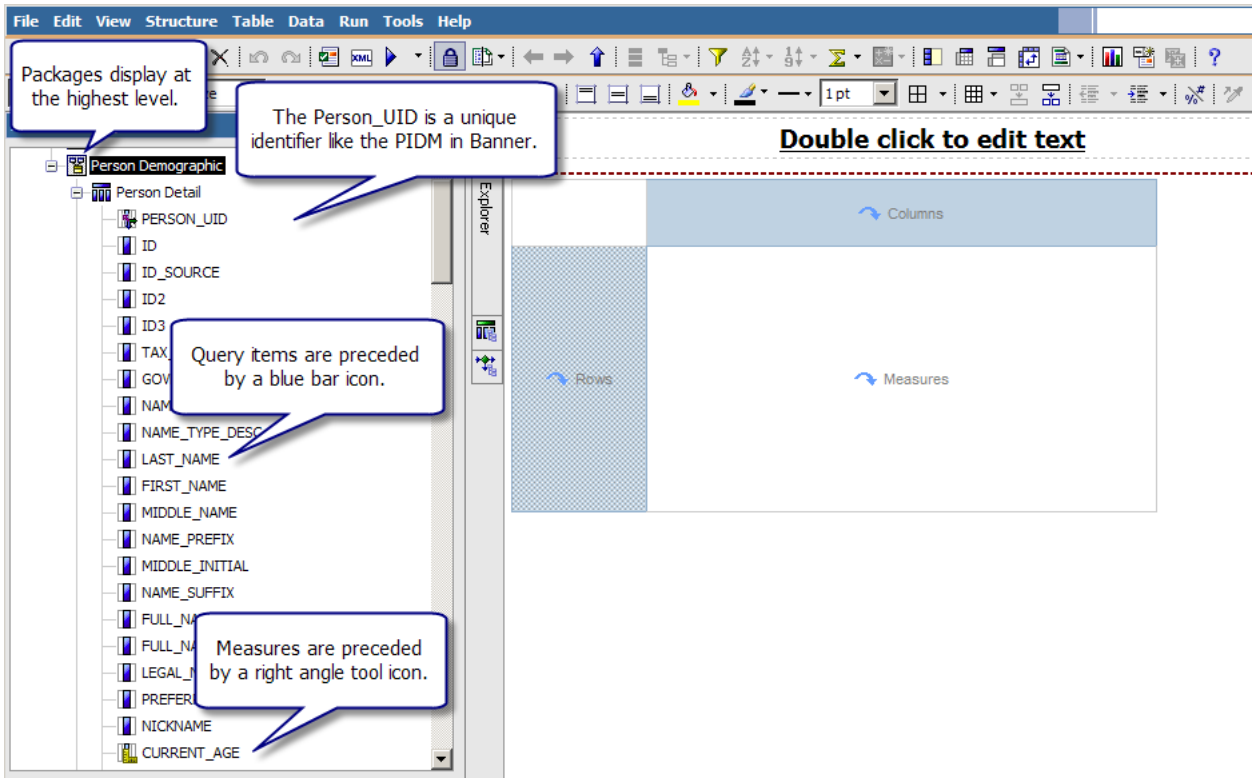
Introduction

Within the data package are query subjects, query items, measures, and pre-defined filters. The data can be stored in sub-folders within a package. Query items are things that are not measured like name, address, city, or marital status.

Measures are quantifiable data such as the count of addresses from each geographic region, count of children, or the count of people by race or ethnicity.

You can easily see which data in a package is a measure because it has a measure icon that looks like a right angle tool next to the data. As you insert data, the query items and measures display in the report preview window.

Query items and measures



Inserting data

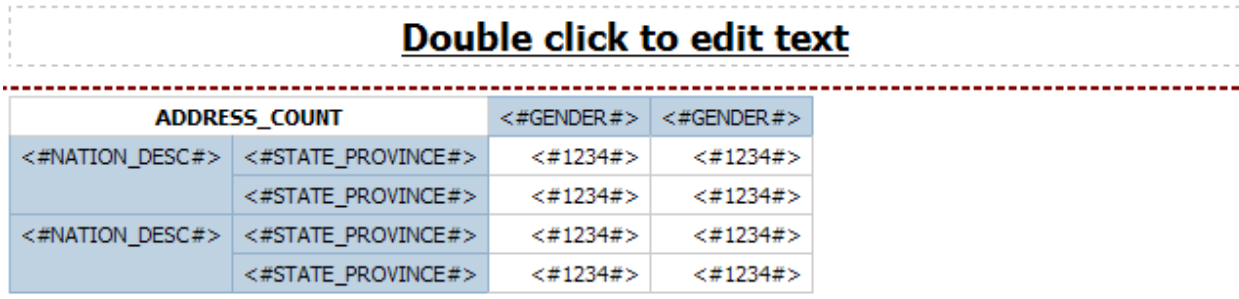
You can add data to the report in two ways:

- drag the data element from the folder to the work area
- double-click on the data element.

Steps

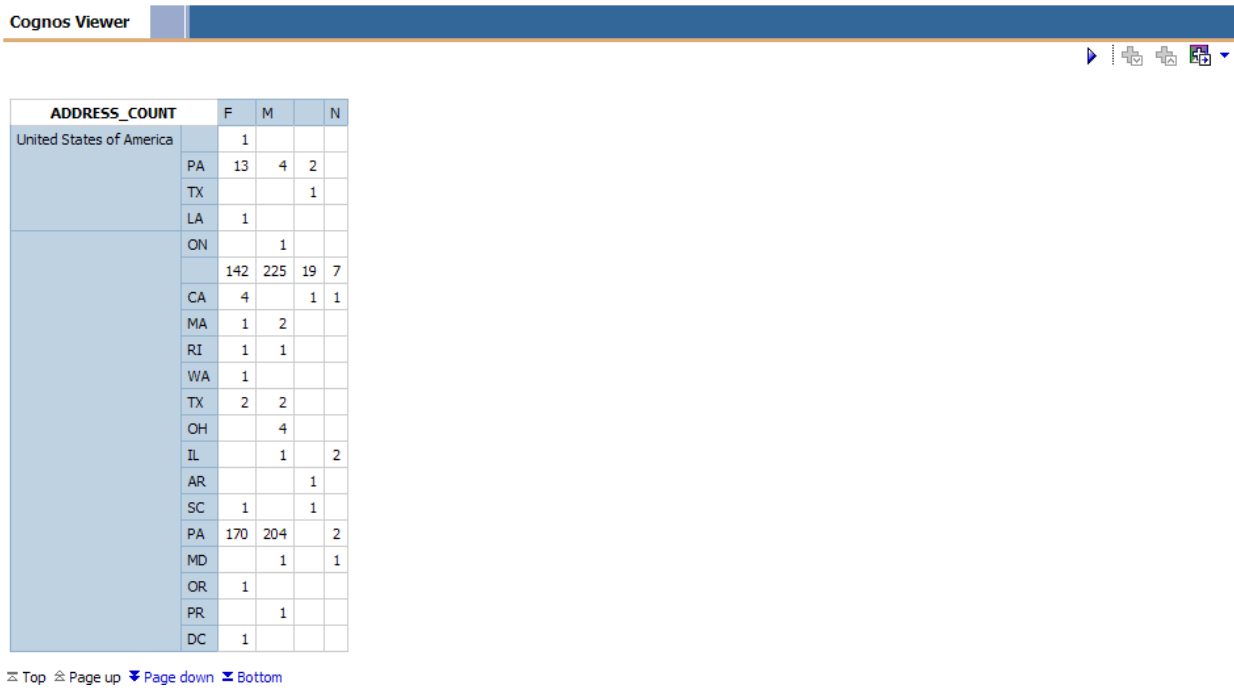
Steps to follow using the Person Demographic package:

1. From the **Insertable Objects** pane, expand the **Person Demographic** package by clicking on the plus icon.
2. Expand the **Person** query subject by clicking on the plus icon.
3. Double-click the **NATION_DESC** query item. You will note this puts the NATION_DESC Item in a row not a column, this Query Item can be moved to the columns of the crosstab, but for this exercise please leave as a row.
4. Scroll up and drag the **STATE_PROVINCE** item to the Rows container just to the right of NATION_DESC. Once you see a blinking vertical black line release your mouse and the Query Item will be inserted.
5. Scroll up and drag the **GENDER** query item to the Columns container.
6. Scroll down and drag the **ADDRESS_COUNT** measure to the Measures container.



7. Click the **Run Report** icon to preview the report.

8. Notice that there are four columns for gender: F (female), M (male), blank (missing or null data), and N for not known. You can use a filter to exclude the missing or not known data if desired.



ADDRESS_COUNT		F	M		N
United States of America		1			
	PA	13	4	2	
	TX			1	
	LA	1			
	ON		1		
		142	225	19	7
	CA	4		1	1
	MA	1	2		
	RI	1	1		
	WA	1			
	TX	2	2		
	OH		4		
	IL		1		2
	AR			1	
	SC	1		1	
	PA	170	204		2
	MD		1		1
	OR	1			
	PR		1		
	DC	1			

9. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

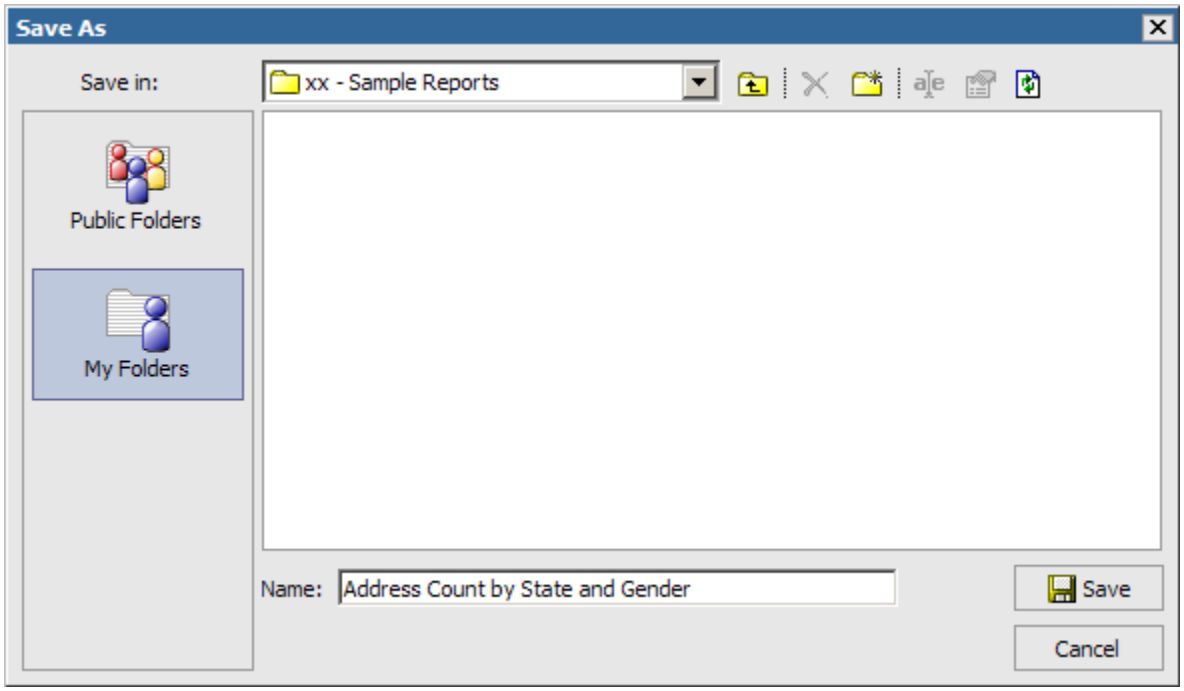
10. Go to the next page and follow the steps for saving this report

Saving a Report

Introduction

You can save your report at any time using the **Save** icon on the Report Studio toolbar. You can store your report in **My Folders** or select another location such as the **XX-Sample Reports** folder (where XX = your initials) that you created in an earlier exercise.

Save as window



Steps

Steps to follow:

1. Click the **Save** icon.
2. Navigate to the **XX-Sample Reports** folder you created in an earlier exercise.
3. Enter the name of the report in the **Name** field.

   Note: For this exercise enter *XX- Address Count by State and Gender* where XX = your initials.
4. Click the **Save** button.

   Note: You will be using this saved report in the exercises throughout the **Working with Reports** section.

Formatting Reports

Section goal

The goal of this section is to provide the knowledge and practice to format reports.

Objectives

In this section you will learn how to:

- add filters to a report
- add a prompt to a report
- add a report title and column headings
- format a report
- apply conditional formatting to values
- create a chart in a report
- validate a report
- close a report
- create a drill-through definition.

Adding Filters to a Report

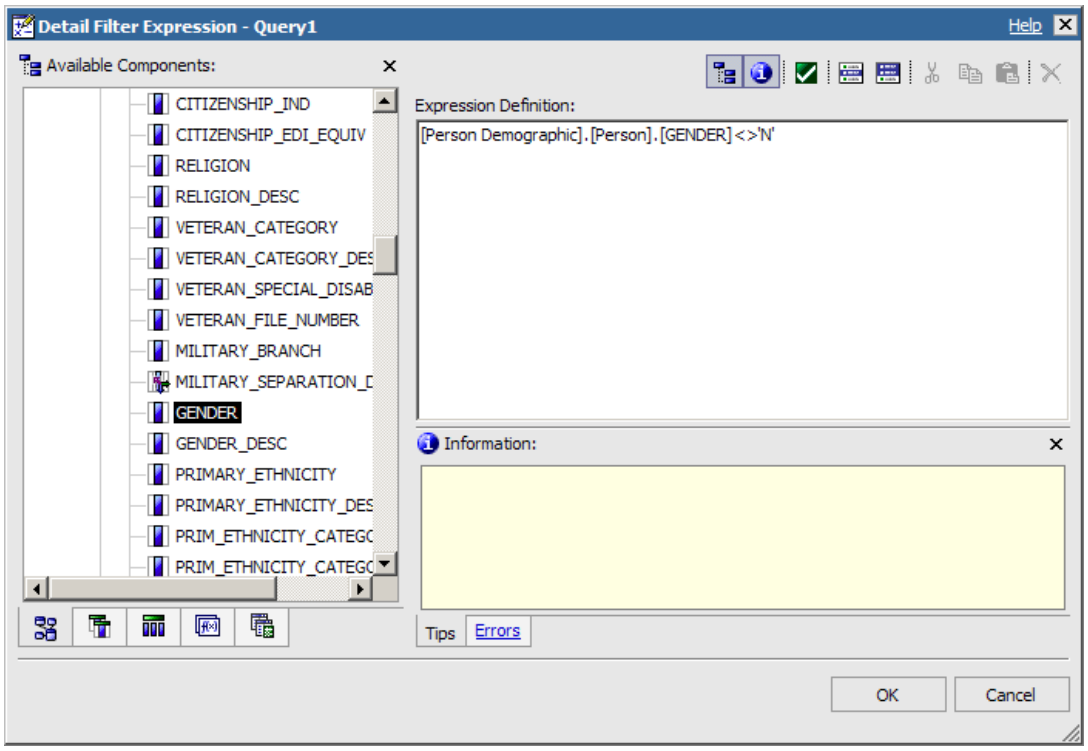
Introduction

You can use the **Filter** icon to add a filter to your report. The **Filter** icon opens the Filter Query 1 window. Click the **Add** icon to open the Detail Filter Expression window where you can build your filter. As you select the items you want to filter, add the filter operator (such as less than, equals, etc...) and select the values, the **Expression Definition** field shows the current expression for the filter you are building.

For example, in this training database, when you ran the report you created there are two columns of data that are displaying that you do not want to display. There is a column for gender called “N” for not known and a blank column that contains missing data or null data. You can use a filter to exclude these results.

Notes: The report does not show which filters have been applied. You can delete the column once you have added a filter without deleting the filter itself.

Detail Filter Expression window



Steps

Steps to follow to add a filter to a report based on excluding a specific value:

1. With the report open that you just created in the previous exercise, click in the **Gender** column in the Report work area.

   Note: Whenever you are working with an existing delivered report, ALWAYS make a copy of the report before making ANY modifications.

2. Click the **Filter** icon.

3. Click the **Add** icon.

4. Expand the **Person** query subject.

5. Double-click the **GENDER** item.

6. Enter a does not equals sign (<>) in the **Expression Definition** field.

7. Click the **Select Value** icon above the **Expression Definition** field.

8. Select *N* from the list or whatever code your institution uses for unknown gender.

   Note: You may need to use the page down arrows to find the correct value. If you know the value you want to add, you can also enter it into the expression using single quotes.

9. Click the **Insert** button and leave the Usage set at Required and the Application set at Before auto aggregation.

10. Click the **OK** button.

11. Click the **OK** button again.

    Note: You can click the **Delete** icon to remove the column. The filter is not deleted, just the column. You can see this by clicking on the filter icon again.

12. Click the **Run Report** icon to preview the report.

13. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

14. Click the **Save** icon on the toolbar

Steps

Steps to follow to add a filter to a report to exclude missing data:

1. With the report open that you just created in the previous exercise, click in the **Gender** column in the Report work area.

   Note: Whenever you are working with an existing delivered report, ALWAYS make a copy of the report before making ANY modifications.

2. Click the **Filter** icon.

3. Click the **Add** icon.

4. Expand the **Person** query subject.

5. Double-click the **GENDER** item.

6. Click the **Functions** tab.

7. Expand the **Operators** folder.

8. Scroll down and double-click the **is not missing** operator.

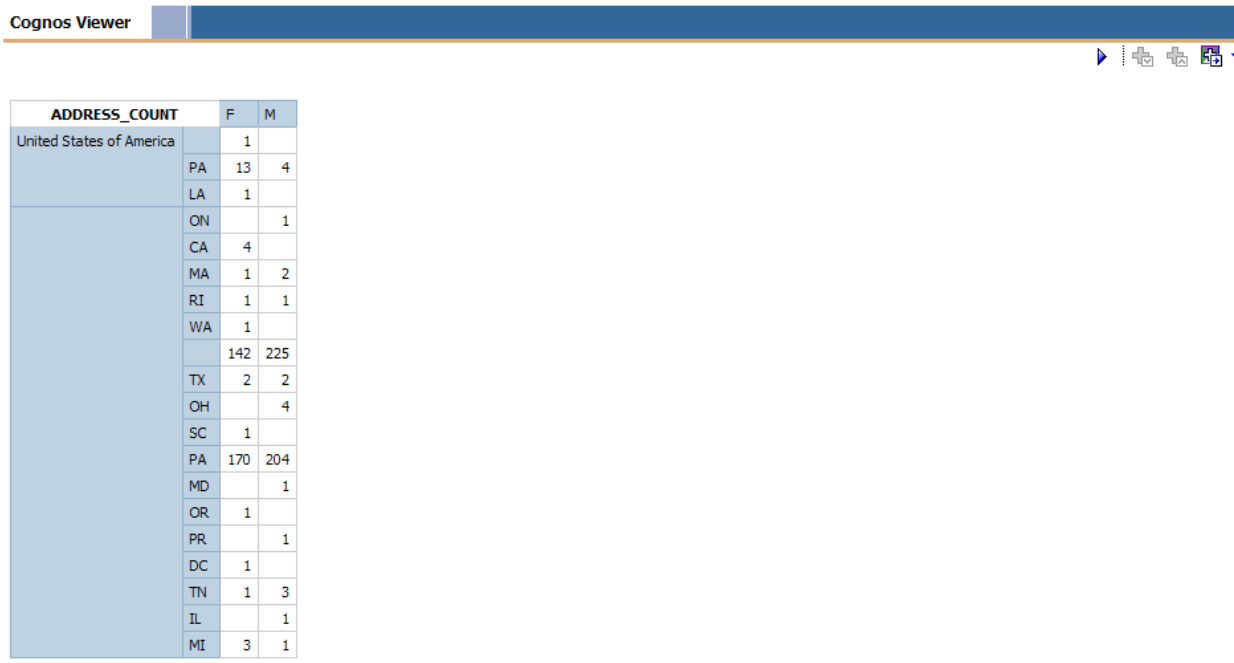
9. Click the **OK** button.

10. Click the **OK** button again.

    Note: You can click the **Delete** icon to remove the column. The filter is not deleted, just the column. You can see this by clicking on the filter icon again.

11. Click the **Run Report** icon to preview the report.

    Notice that there only two gender columns: F (female) and M (male).



ADDRESS_COUNT		F	M
United States of America		1	
	PA	13	4
	LA	1	
	ON		1
	CA	4	
	MA	1	2
	RI	1	1
	WA	1	
		142	225
	TX	2	2
	OH		4
	SC	1	
	PA	170	204
	MD		1
	OR	1	
	PR		1
	DC	1	
	TN	1	3
	IL		1
	MI	3	1

12. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

13. Click the **Save** icon on the toolbar

Steps

In this example, you want to create a filter that only selects data from a specific nation. Steps to follow to add a filter to a report to include only selected data:

14. With the report open that you just created in the previous exercise, click in the **NATION_DESC** column in the Report work area.

    Note: Whenever you are working with an existing delivered report, ALWAYS make a copy of the report before making ANY modifications.

15. Click the **Filter** icon.

16. Click the **Add** icon.

17. Expand the **Person** query subject.

18. Double-click the **NATION_DESC** item.

19. Enter an equals sign (=) in the **Expression Definition** field.

20. Click the **Select Value** icon above the **Expression Definition** field.

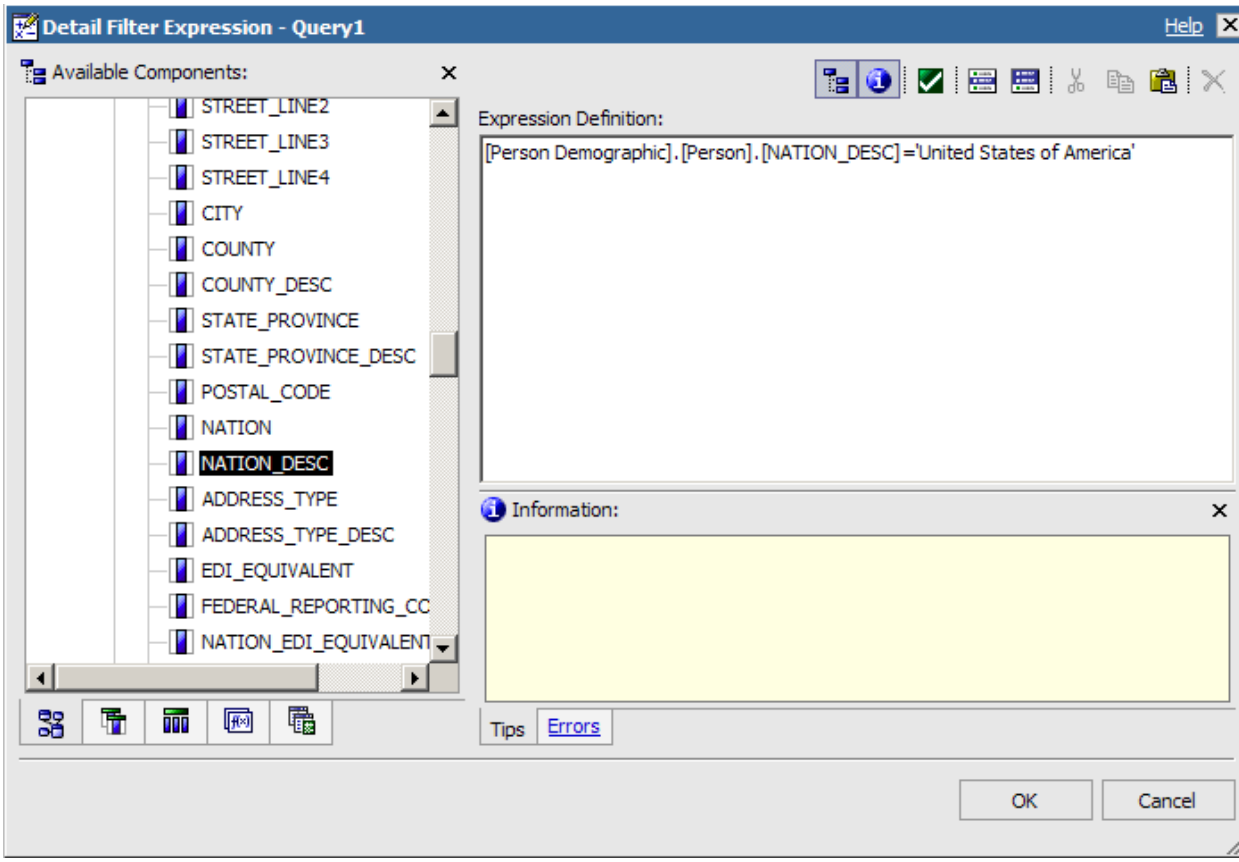
21. Select *United States of America* from the list or whatever nation you want to select.

    Note: You may need to use the page down arrows to find the correct value. If you know the value you want to add, you can also enter it into the expression using single quotes.

22. Click the **Insert** button and leave the Usage set at Required and the Application set at Before auto aggregation.

23. Click the **OK** button.

    Notice that the specific value you want to include is enclosed by single quotes.

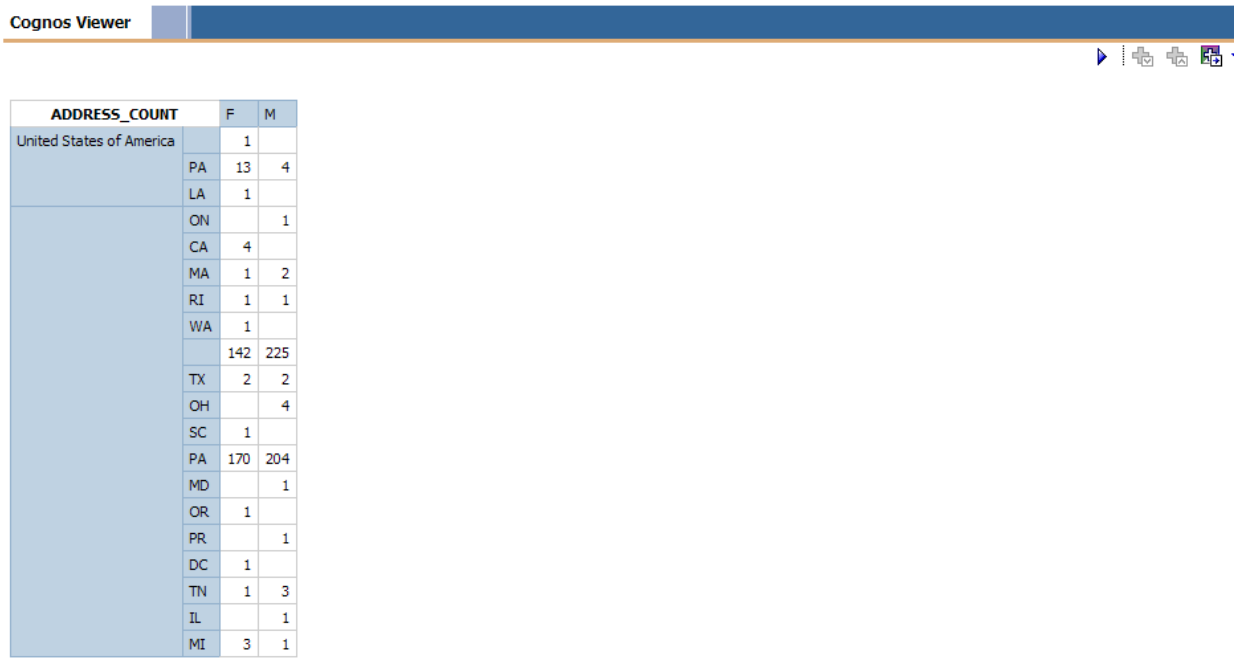


24. Click the **OK** button again.

    Note: You can click the **Delete** icon to remove the column. The filter is not deleted, just the column. You can see this by clicking on the filter icon again.

25. Click the **Run Report** icon to preview the report.

    Notice that there only two gender columns: F (female) and M (male) and that the United States of America is the only nation selected.



ADDRESS_COUNT		F	M
United States of America		1	
	PA	13	4
	LA	1	
	ON		1
	CA	4	
	MA	1	2
	RI	1	1
	WA	1	
		142	225
	TX	2	2
	OH		4
	SC	1	
	PA	170	204
	MD		1
	OR	1	
	PR		1
	DC	1	
	TN	1	3
	IL		1
	MI	3	1

26. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

27. Click the **Save** icon on the toolbar

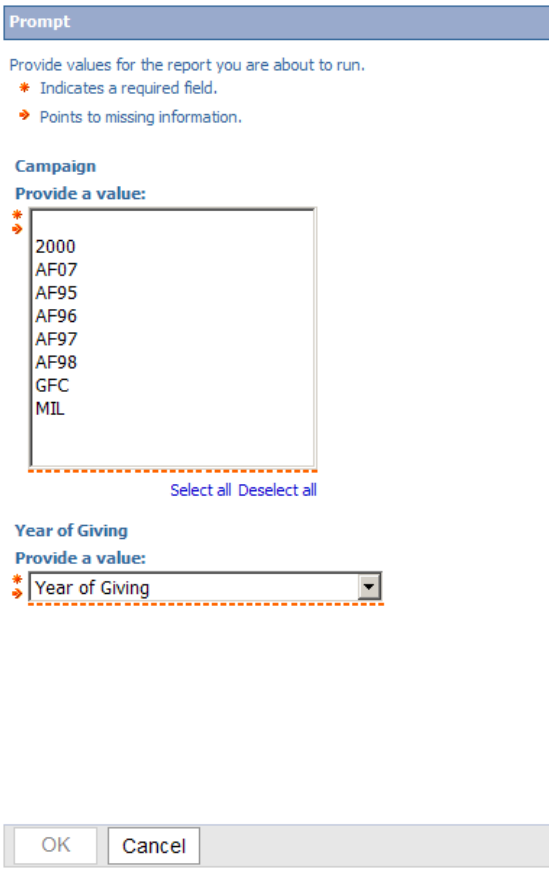
Adding a Prompt to a Report

Introduction

A prompt is a filter that the person running the report selects when the report is run. The advantage of using a prompt instead of a set filter value is that the report can be created once but used for multiple years or for multiple types of data such as selecting nations or states/provinces.

Example

In the previous exercise, you created a filter to select the nation 'United States of America'. This report would need to be modified for any other nation. Instead of updating the report for a new nation, you can use the **Filter** icon to add a filter that prompts the person running the report for the nation so that the report can be used for many nations without needing to be updated. You could also add a filter that selects one or more states or provinces when the report is run. This provides greater flexibility in selecting which data is displayed when the report is run.



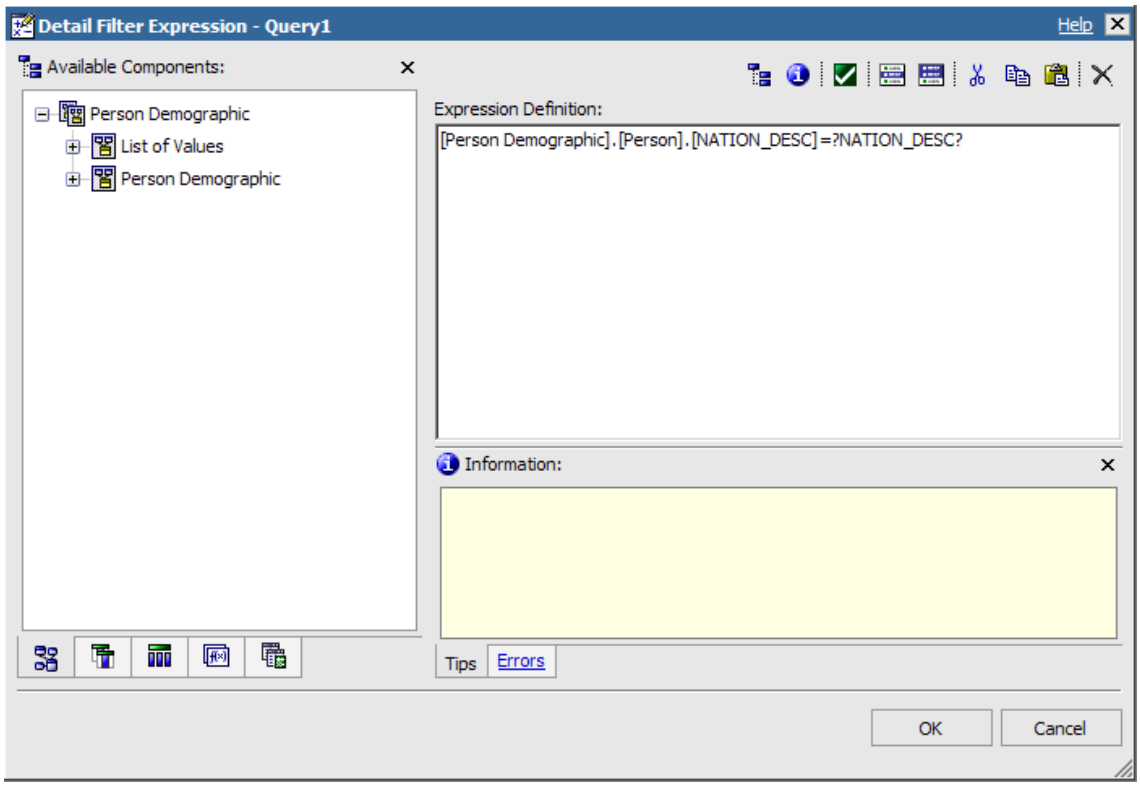
Creating the prompt

The difference between a regular filter and a prompt filter is how the expression is written. In a regular filter, you enter a specific value such as 'United States of America' enclosed in single quotes. To create a prompt, the value would be the name of the data item such as ?NATION_DESC? enclosed in question marks.

Detail Filter Expression window

Notice that the expression will prompt the person running the report for a value because the data item ?NATION_DESC? is enclosed in question marks.

Note: Use the equal (=) operator if you want the user to enter a single value in the prompt or use the word 'in' if you want the user to be able to select multiple values in a list of values.



Steps

Follow these steps to **convert** an existing filter to a prompt.

1. With the report open in design mode that you just created in the previous exercise, click in the **NATION_DESC** column in the Report work area.

   Note: If you are working with an existing delivered report, you will need to make a copy of the report.

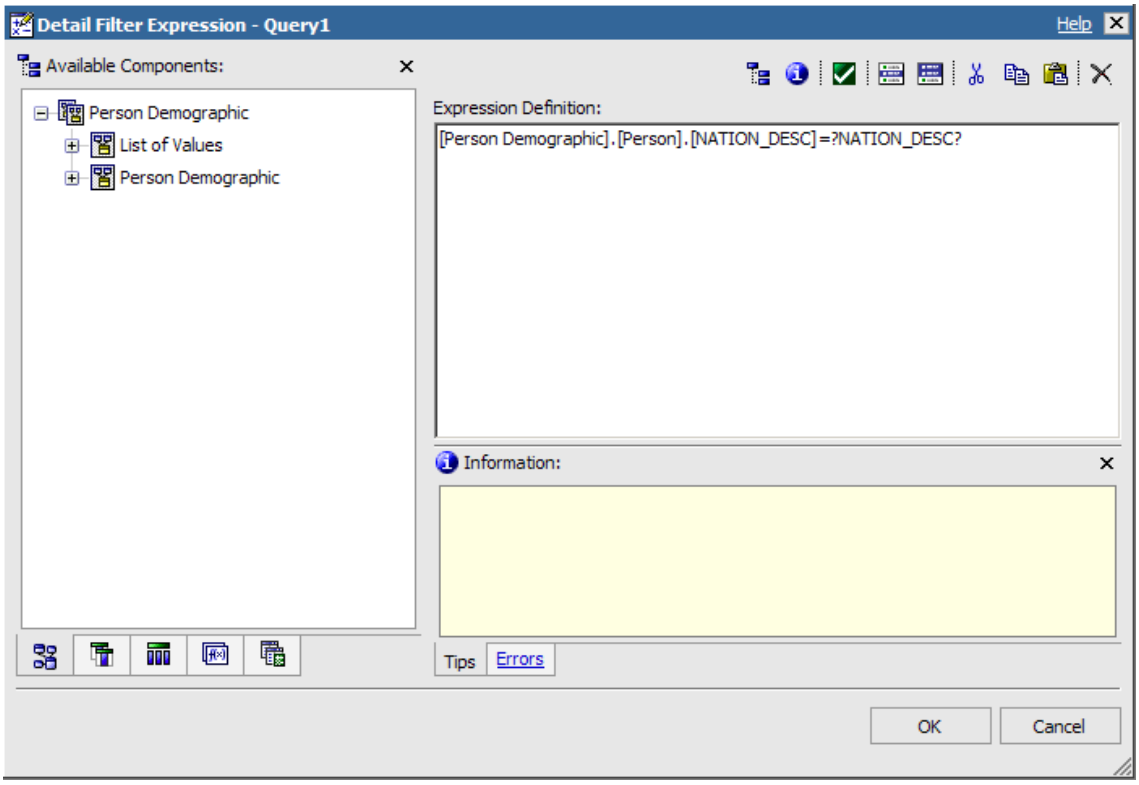
2. Click the **Filter** icon.

3. Highlight the filter that you already created that you want to convert to a prompt.

4. Click the **Edit** icon.

5. Delete **'United States of America'** at the end of the expression.

6. Add **?NATION_DESC?** to the end of the expression.



7. Click the **OK** button.

8. Click the **OK** button again.

9. Click the **Run Report** icon to preview the report and view the prompt page.

10. Select a nation in the **NATION_DESC** prompt field.

11. Click the **OK** button.

12. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

13. Since you no longer need the NATION_DESC column, you can delete the column from the report without deleting the filter. Click in the NATION_DESC column, then click the **Delete** icon.

14. Click the **Save** icon on the toolbar.

15. Click the **Run Report** icon to rerun the report and view the prompt page.

16. Select a nation in the **NATION_DESC** prompt field.

17. Click the **OK** button.

    Notice that deleting the NATION_DESC column did not delete the prompt/filter from the report.

18. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

Steps

In this exercise, you will add a new prompt to select multiple states/provinces.

Follow these steps to **add a multiple entry** prompt.

1. With the report open in design mode that you just created in the previous exercise, click in the **STATE_PROVINCE** row in the Report work area.

   Note: If you are working with an existing delivered report, you will need to make a copy of the report.

2. Click the **Filter** icon.

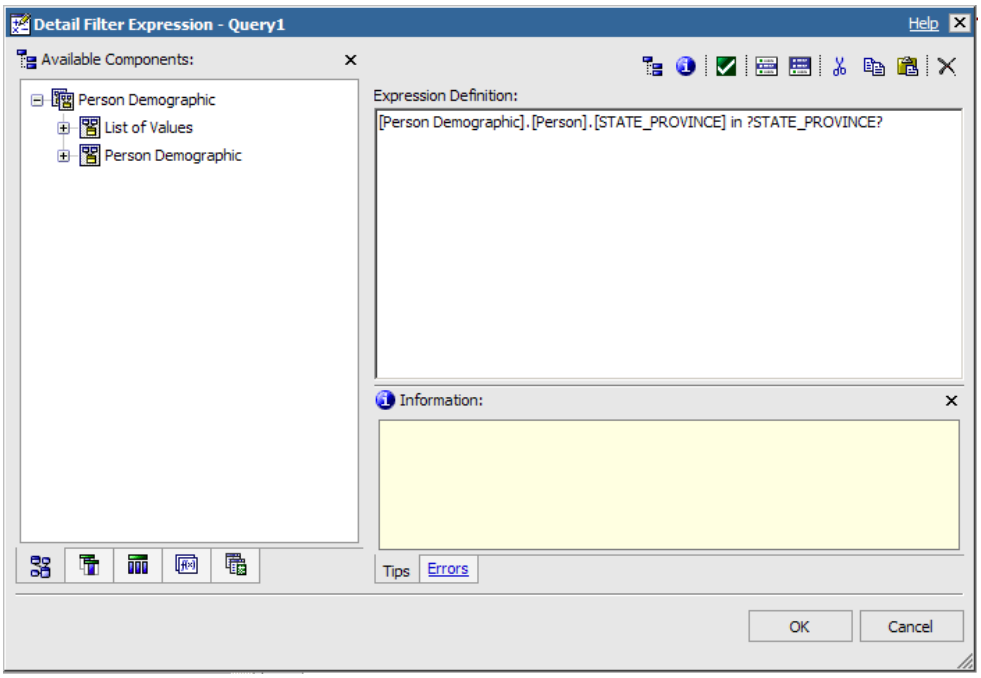
3. Click the **Add** icon.

4. Expand the **Person** query subject.

5. Double-click the **STATE_PROVINCE** item.

6. Enter the word **in** to select multiple values in the **Expression Definition** field.

7. Add **?STATE_PROVINCE?** to the end of the expression.



8. Click the **OK** button.

9. Click the **OK** button again.

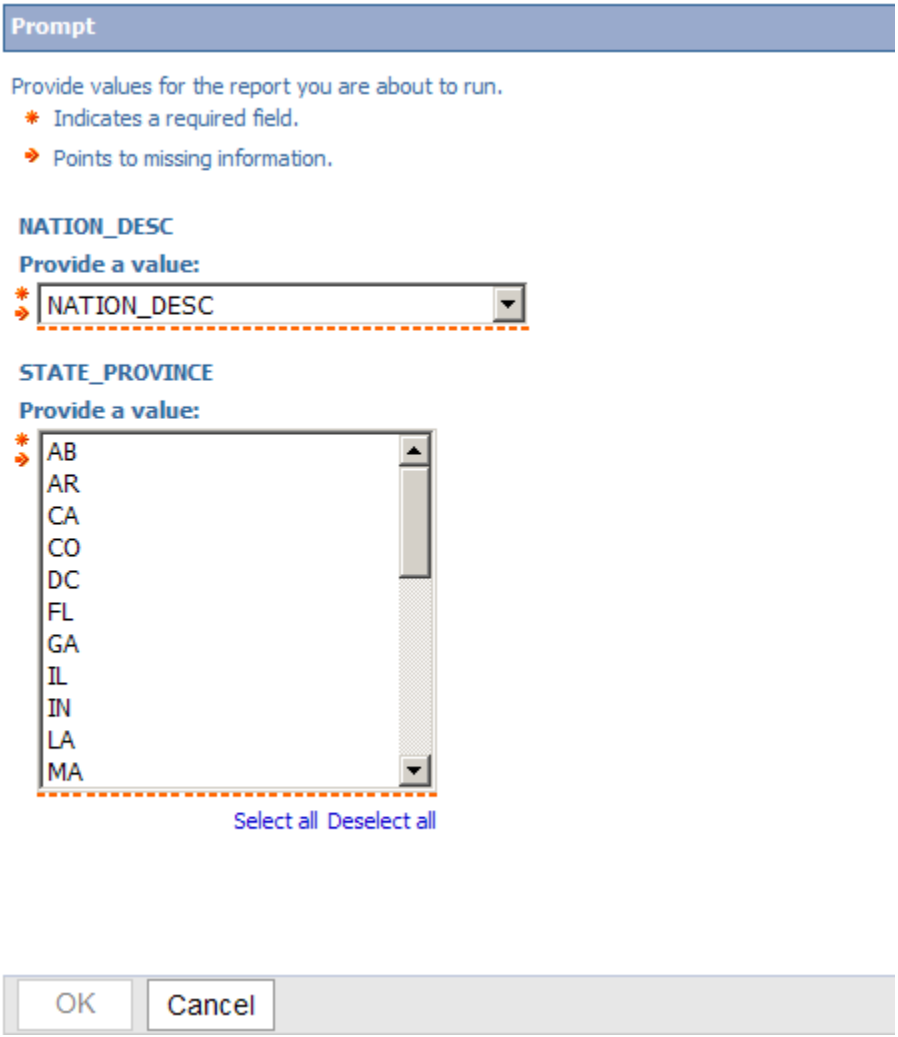
10. Click the **Save** icon.

11. Click the **Run Report** icon to preview the report and view the prompt page.

12. Select a nation in the **NATION_DESC** prompt field.

13. Click the **Select All** link below the **STATE_PROVINCE** prompt field.

    Note: You can select a single state/province by clicking on it or you can select several by holding down the Ctrl key on your keyboard while selecting multiple states/provinces.



14. Click the **OK** button.

15. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

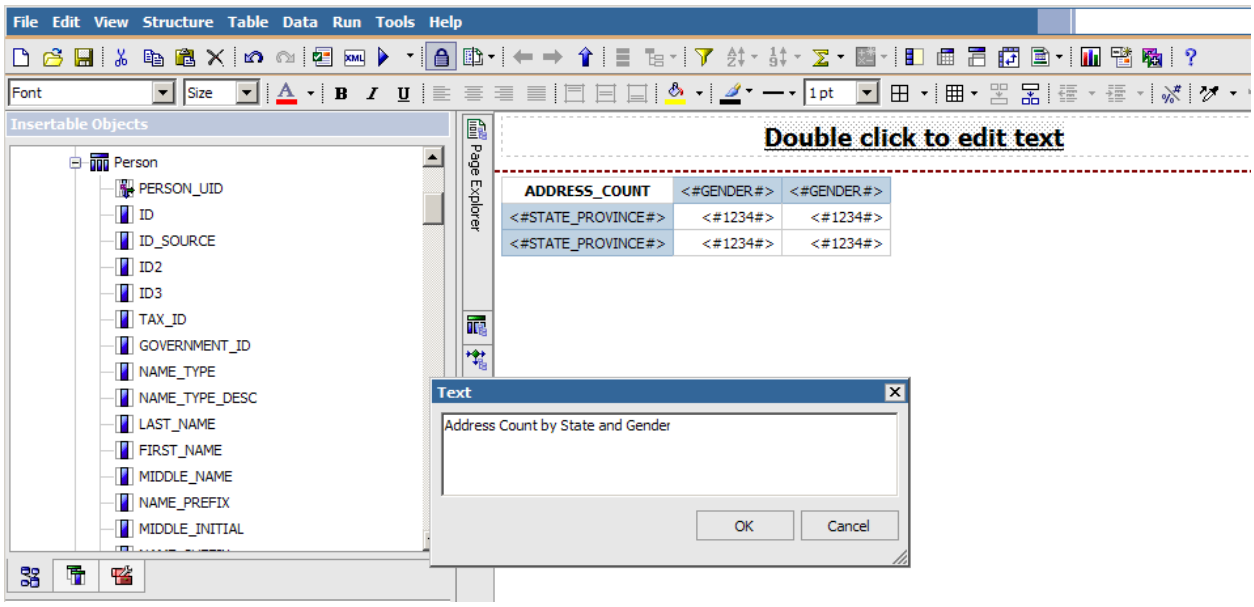
Adding a Report Title & Column Headings

Introduction

You can add a report title to your report by double-clicking the report title at the top of the page which by default says “Double click to edit text.” If you have added a filter to your report, you should include that information in the report title since the filter itself does not display.

Note: Remember to use the naming conventions established at your institution.

Report work area



Steps

Follow these steps to add a report title.

1. From the Report work area, double-click the text “Double click to edit text.”
2. Enter the title for your report in the **Text** field.

   Note: For this training class enter *Address Count by State and Gender*.
3. Click the **OK** button.

Steps

Follow these steps to add column headings.

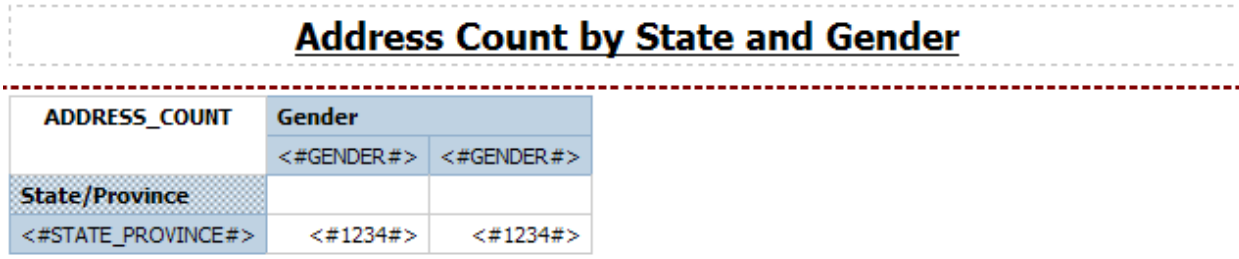
1. From the Insertable Objects column, click on the **Toolbox** tab below the Insertable objects.

2. Select the **Text Item** insertable object and drag it to just above the STATE_PROVINCE row/column of data and below the ADDRESS_COUNT header. When you see the blinking bar release. A text box will appear, type *State/Province*.

3. Select the **Text Item** insertable object and drag it to just above the GENDER columns of data. When you see the blinking bar release. A text box will appear, type *Gender*.

4. Click in the header you just created for Gender, click the **Bold** icon to bold your headings.

5. Click in the header you just created for State/Province, click the **Bold** icon to bold your headings.



6. Click the **Save** icon.

7. Click the **Run Report** icon to preview the report.

8. Select a nation in the **NATION_DESC** prompt field.

9. Click the **Select All** link below the **STATE_PROVINCE** prompt field.

10. Click the **OK** button.

11. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

12. Click the **Save** icon.

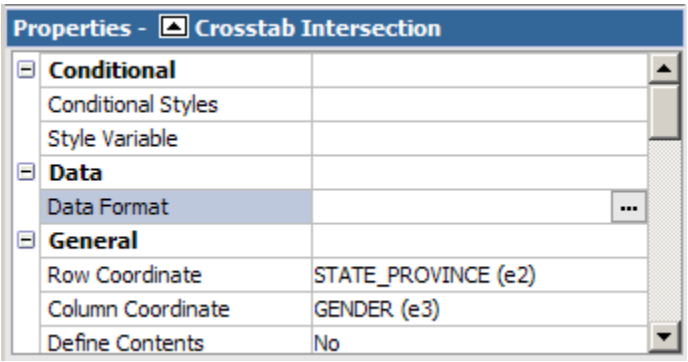
Formatting a Report

Introduction

You can format your report to change the font style and size. You can change the font style of the title and/or the data in the report. You can click in the title of the column and click one of the formatting icons such as **Bold**, ***Italic***, or **Underline**.

Properties pane

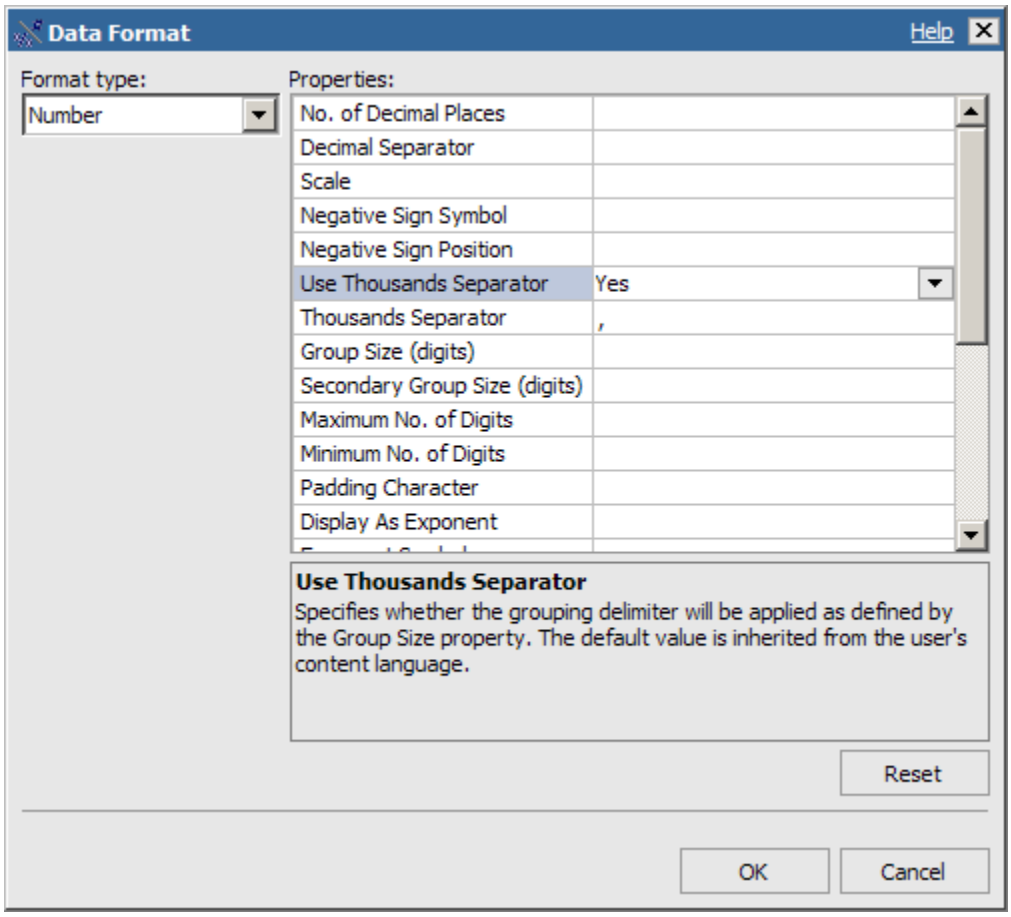
You can also use the Properties pane to open a window where you can apply additional formatting to the data such as number styles. Click **Data Format** to highlight the row. When the **ellipse** (...) icon appears, click the icon to open the Data Format window.



Data format icon

The **Data Format** icon will also open the Data Format window with a single click if you do not want to use the Properties pane.

Data Format window



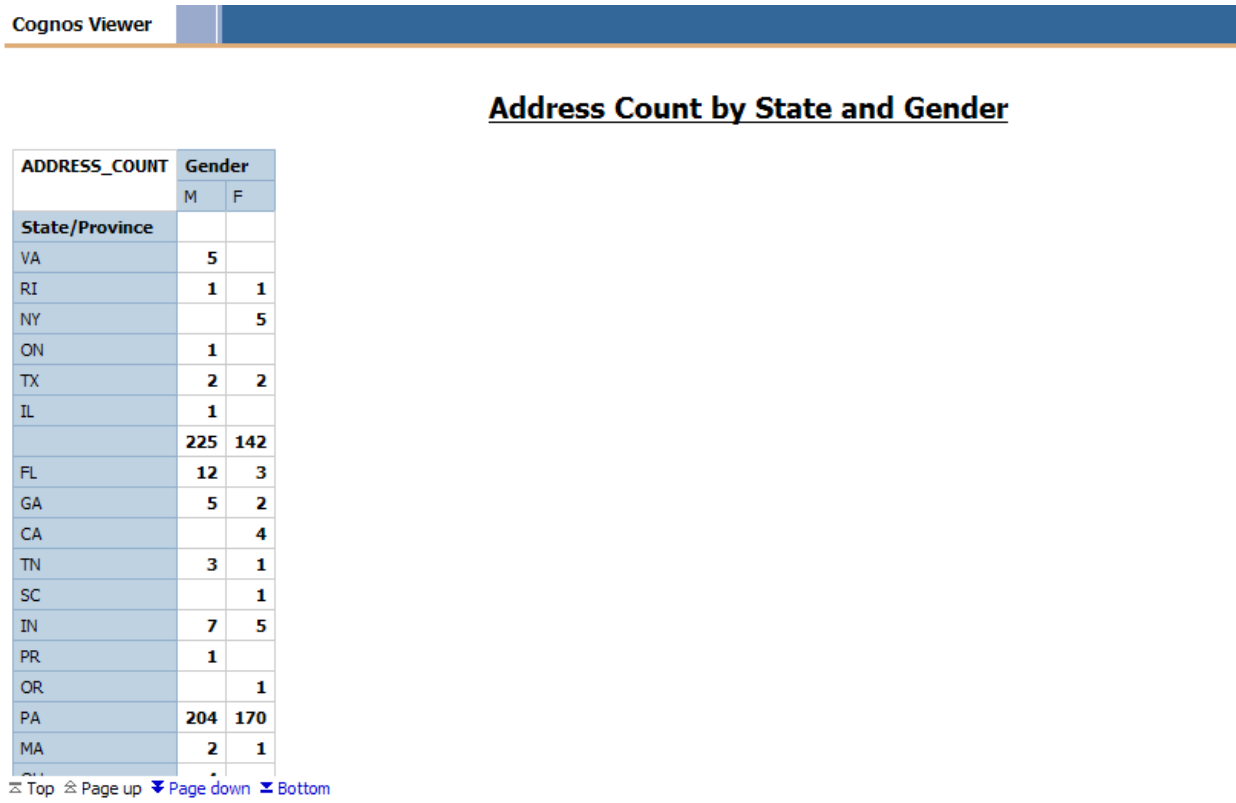
Steps

Follow these steps to format data.

1. Click in the **ADDRESS_COUNT** column (not column heading).
2. Click the **Bold** icon.
3. Click the **Data Format** icon.

   Note: You can also use the Properties pane to open the window by clicking **Data Format** to highlight the row. When the **ellipse** (...) icon appears, click the icon to open the Data Format window.
4. Select *Number* in the **Format Type** field.
5. Click in the **Use Thousands Separator** field.

6. Select *Yes* from the list.
7. Click in the **Thousands Separator** field.
8. Select the comma from the list.
9. Click the **OK** button.
10. Click the **Run Report** icon to preview the report.
11. Select a nation in the **NATION_DESC** prompt field.
12. Click the **Select All** link below the **STATE_PROVINCE** prompt field.
13. Click the **OK** button.



14. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.
15. Click the **Save** icon.

Applying Conditional Formatting to Values

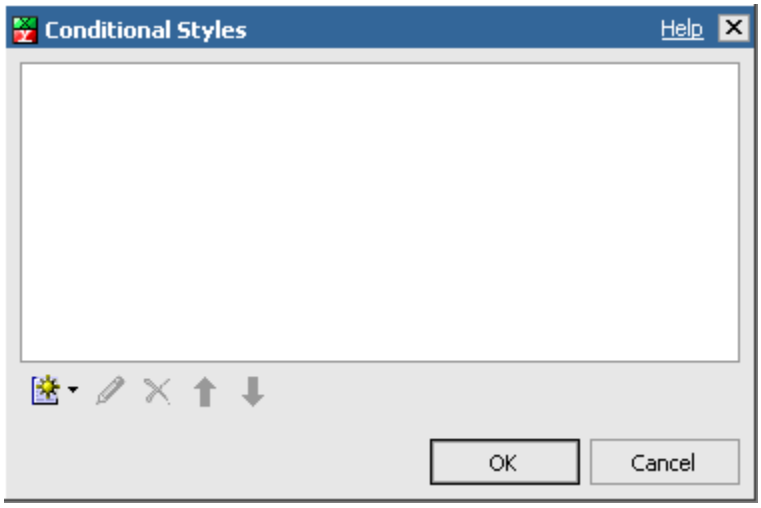
Introduction

You can also apply conditional formatting to values in the report if they meet certain criteria that you set. In this way you can color code values that you want to review because they are either too high or too low. The colors are automatically added when you select a default style from poor (red) to excellent (green).

Note: The color is automatically selected based on the style you choose. You can use the small **Edit** icon next to the color example to change the color if desired.

Conditional styles window

The **Conditional Style** icon opens an empty Conditional Styles window. Click the **New** icon at the bottom of the window to build your conditions.

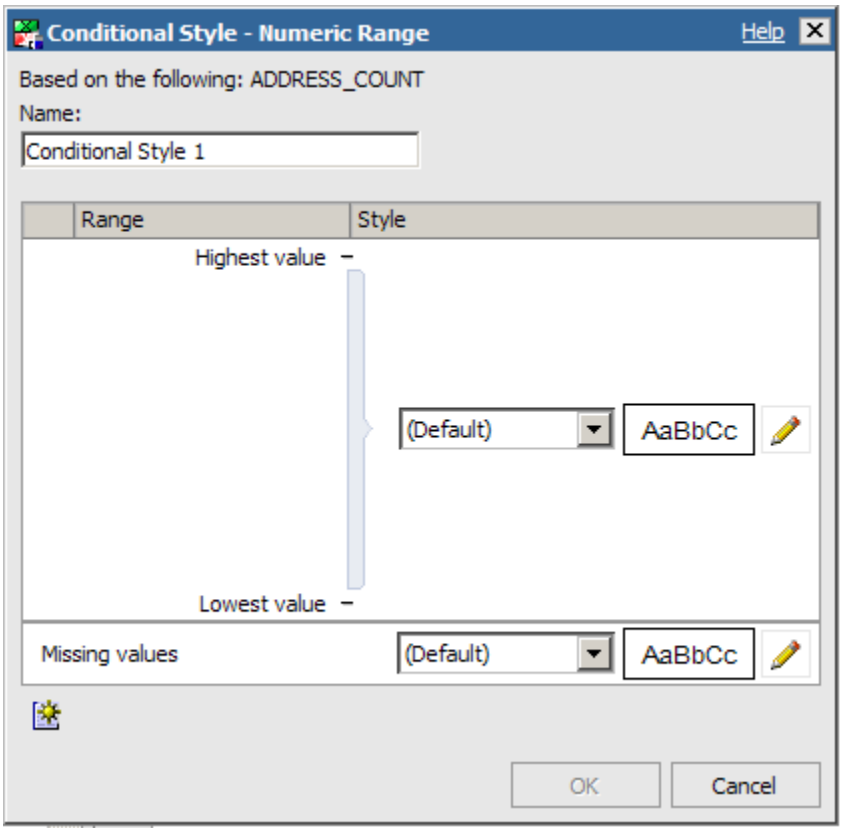


Steps

In this training exercise, you want to format the report so that values above 200 are highlighted in green and values below 5 are highlighted in red. Follow these steps to add a conditional style.

1. Click in the **ADDRESS_COUNT** column (not column heading).
2. Click the **Conditional Styles** icon.
3. Click the **New** icon.
4. Select **New Conditional style**.
5. Select **ADDRESS_COUNT**.
6. Click the **OK** button.

   Result: The Conditional Style – Numeric Range window opens.

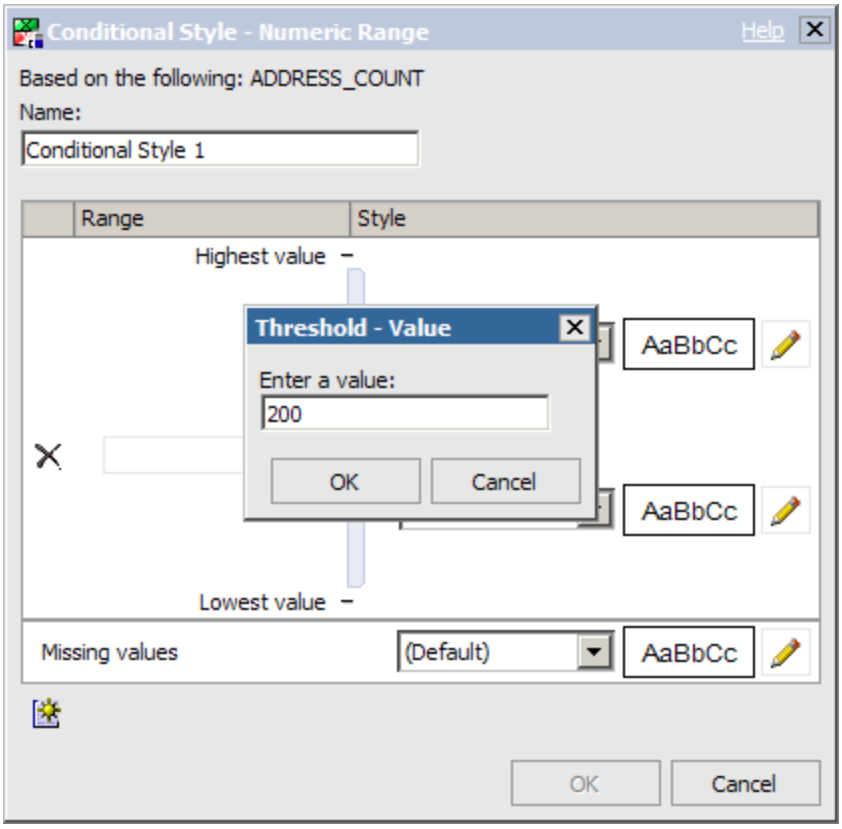


7. Click the **New** icon at the bottom of the window.
8. Enter *5* in the **Enter a value** field.

9. Click the **OK** button.

10. Click the **New** icon to enter a second value.

11. Enter *200* in the **Enter a value** field.

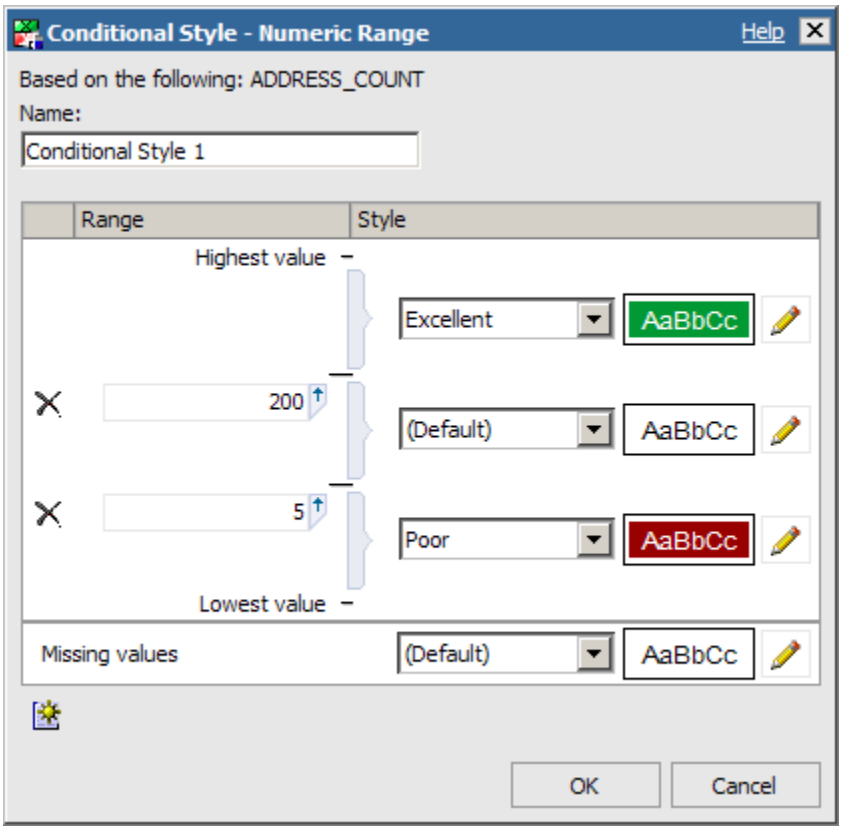


12. Click the **OK** button.

13. Select *Excellent* in the highest value **Style** field.

14. Select *Poor* in the lowest value **Style** field.

    Result: The highest and lowest values will be color coded green and red when the report is run.



15. Click the **OK** button.

16. Click the **OK** button again.

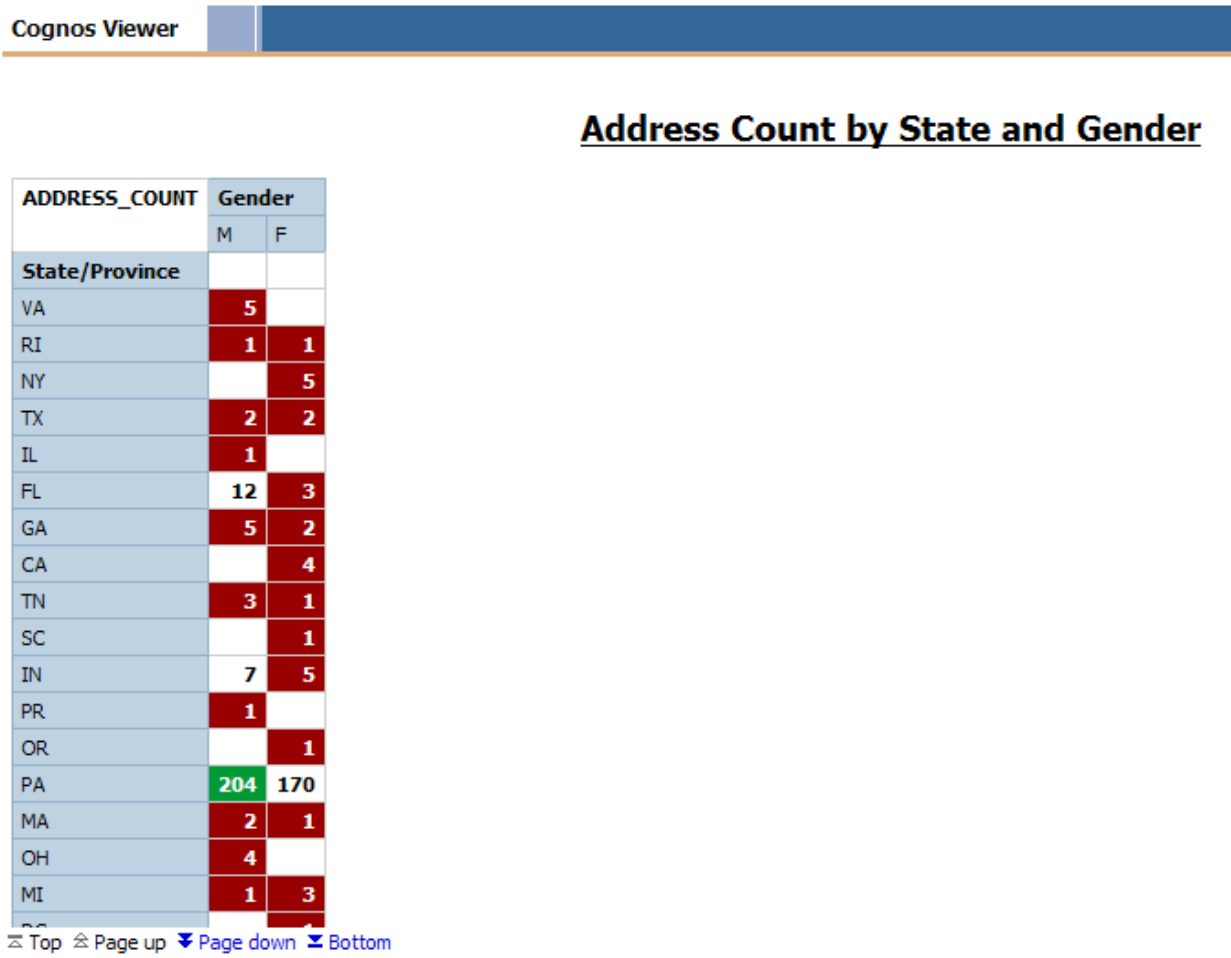
17. Click the **Run Report** icon to preview the report.

18. Select a nation in the **NATION_DESC** prompt field.

19. Click the **Select All** link below the **STATE_PROVINCE** prompt field.

20. Click the **OK** button.

    Notice that the count of addresses per state greater than 200 are highlighted in green while the count of addresses per state below 5 are red.



21. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

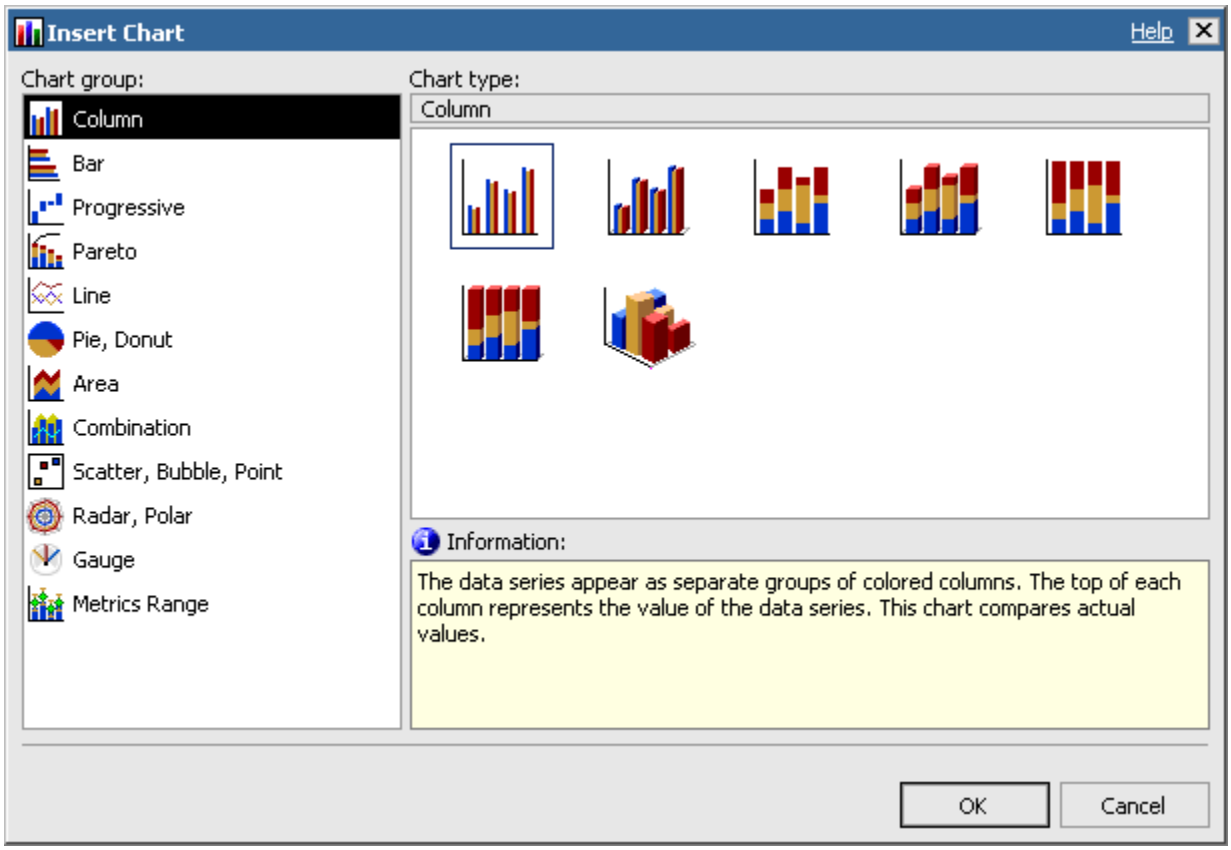
22. Click the **Save** icon to save your changes.

Creating a Chart in a Report

Introduction

You can add a chart to a report by dragging a **Chart** onto the report window from the **Toolbox** tab. You can then select from many types of charts in the Chart Group list. Once the empty chart is in place, you can drag the query items and/or measures that you want to display onto the chart.

Insert Chart window



Steps

Follow these steps to add a column chart to the report:

1. From the report work area, click the **Toolbox** tab.

2. Drag the **Chart** insertable object onto the report in the position you want it to display.

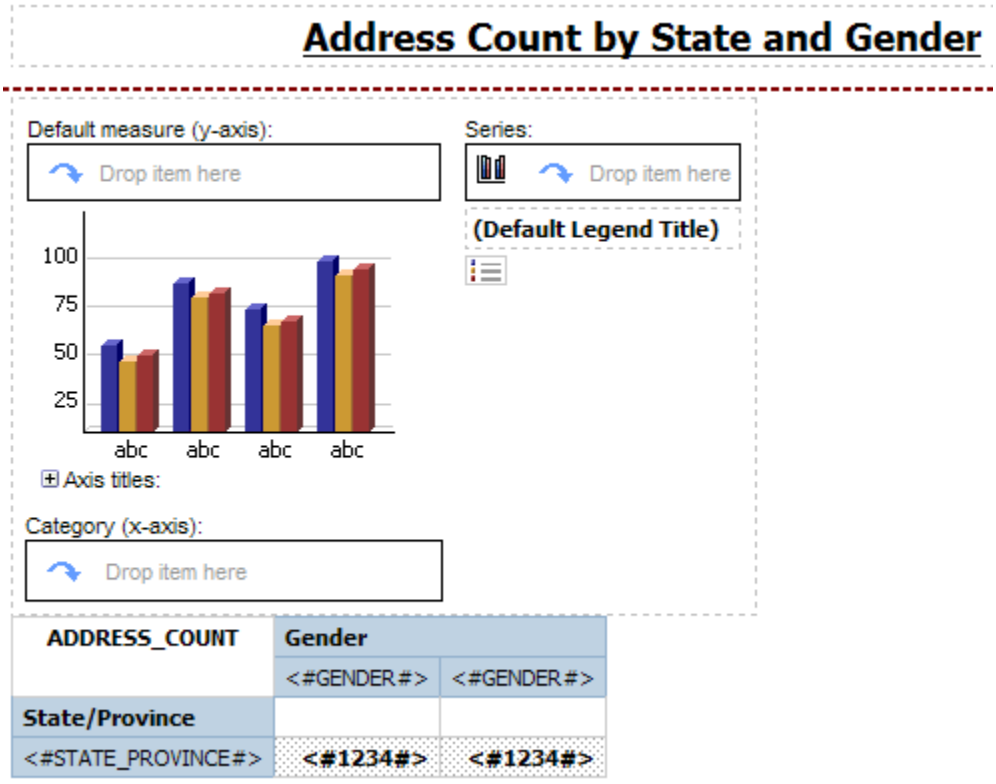
   Note: To position the chart above the crosstab, drag the **Chart** insertable object to the left of the crosstab. When you see the blinking bar, release the mouse.

3. Click any type of chart in the Chart Group list.

   Note: For this exercise, click the **Column chart** in the Chart Group list and accept the **Column with 3-D Visual Effect** chart.

4. Click the **OK** button.

   Result: The empty chart type is located at the top of your report work area. Next you will add the category and series information.



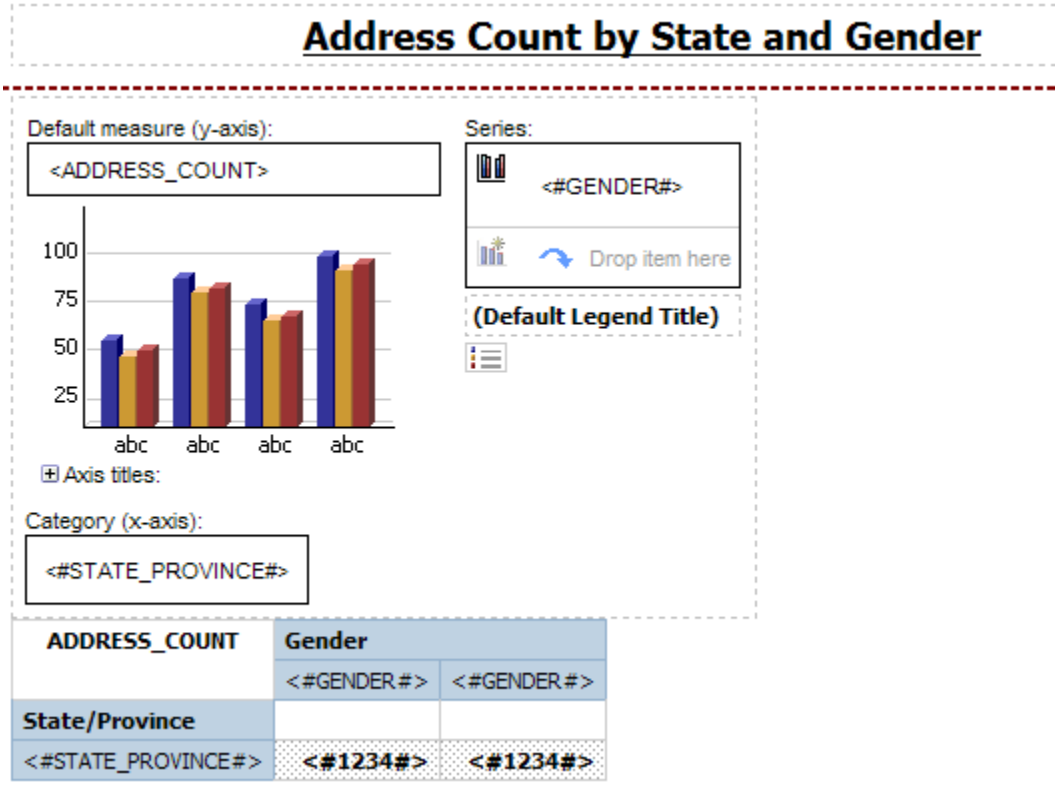
5. Click the **Source** tab.

6. From the **Insertable Objects** pane, expand the **Person** query subject

7. Drag the **GENDER** item to the Series container in the Chart. Once you see a blinking vertical black line release your mouse and the Query Item will be inserted.

8. Drag the **STATE_PROVINCE** query item to the Categories container.

9. Drag the **ADDRESS_COUNT** measure to the Default Measures container in the chart.



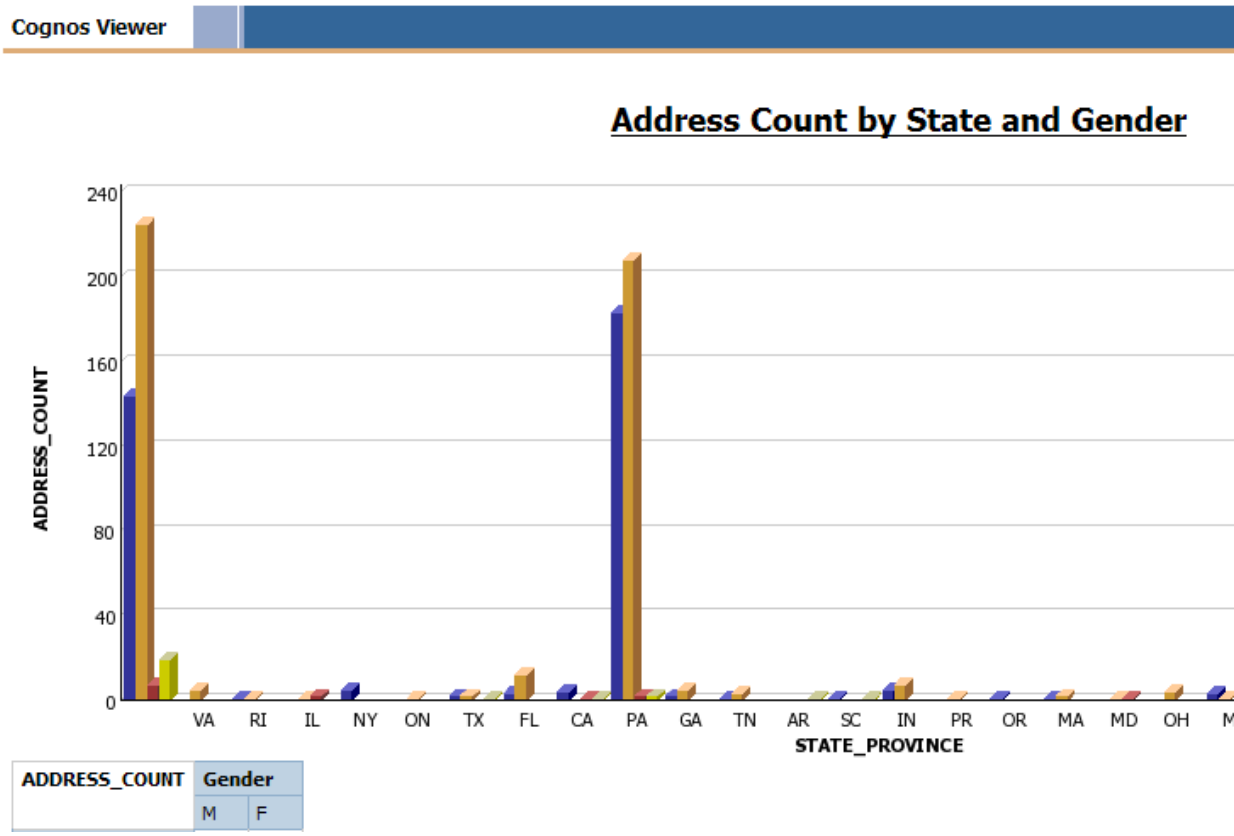
10. Click the **Run Report** icon to preview the chart with data.

11. Select a nation in the **NATION_DESC** prompt field.

12. Click the **Select All** link below the **STATE_PROVINCE** prompt field.

13. Click the **OK** button.

    Notice that each state/province (category) displays as an individual column chart. Each gender (series) is a separate column in the chart based on the address count measure (ADDRESS_COUNT). Notice that the filter for the crosstab table did not apply to the chart. You would need to click on the chart and re-create manually each filter you want for the chart (see the lesson on Adding Filters to a Report).



14. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

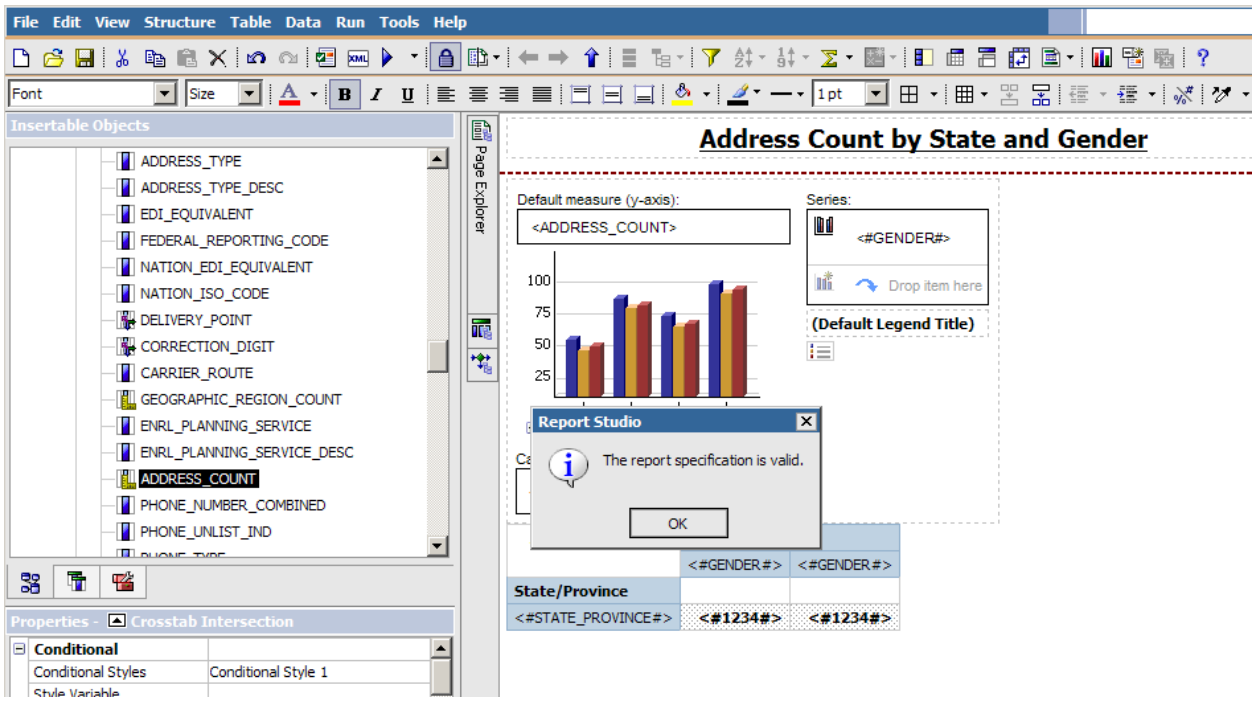
15. Click the **Save** icon to save the report.

Validating a Report

Introduction

Use the **Validate** icon on the toolbar to validate your report. If there are no logic errors present, you will receive a message that says the report specification is valid. If you forgot to put in a measure, or if you used a measure that could not be returned based on the rows and columns selected in the crosstab report, you would get an error message.

Validation message



Steps

Follow these steps to validate the report.

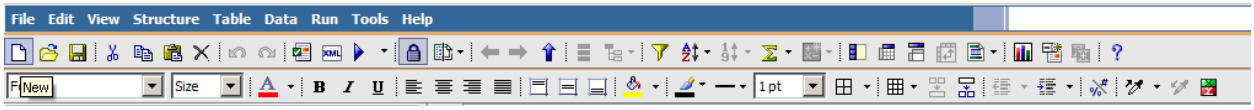
1. Click the **Validate** icon.
2. Enter prompt values if required.
3. Click the **OK** button to acknowledge the message.

Opening a New Report

Introduction

When you are ready to open a new report in Report Studio, you can open a new report by clicking the **New** icon on the toolbar or selecting **New** from the **File** menu. By default, the new report will use the same data package as the current one.

New icon



Steps

Follow these steps to open a new report.

1. From Report Studio, click the **New** icon.
2. Select the type of report you want to open.
3. Click the **OK** button.

Performing Calculations

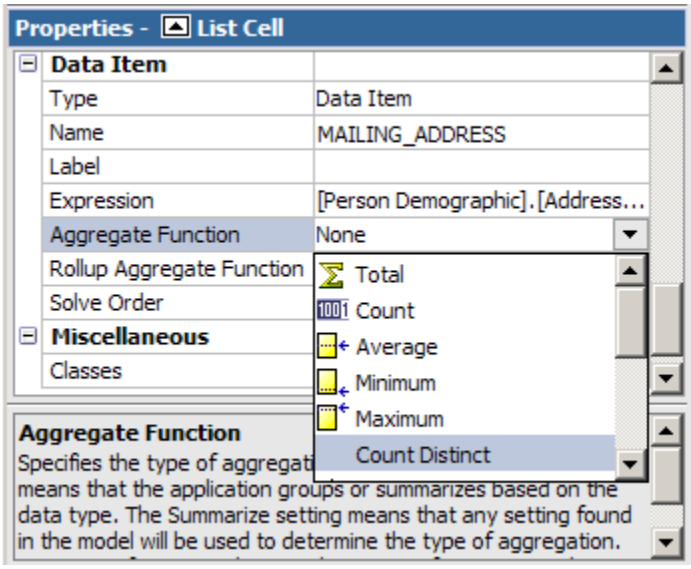
Introduction

In the previous example in this training workbook, you selected a query item (ADDRESS_COUNT) that already has a calculation applied to it. You can also perform calculations manually using the **Aggregate** icon and/or the Properties pane.

In the Properties pane, you want to use the **Aggregate Function** and **Rollup Aggregate Function** fields to create your calculation. In the **Aggregate Function** field you can select how you want to calculate the value such as a total, count (which counts each row or item each time it appears), count distinct (which counts an item only if it is the first time it appears but not subsequent), minimum, maximum, median, etc... In the **Rollup Aggregate Function** field, you have similar choices. The difference is when the aggregation is applied.

For example, if you want to count how many addresses are your report you can add the MAILING_ADDRESS query item to your report. If you highlight the data column for MAILING_ADDRESS and click the **Aggregate** icon, by default, it will count the total number of addresses in the report. However, some IDs may have multiple addresses, such as a temporary, billing, or permanent address. If you wanted to count each person only once even though they might have multiple addresses, you would use the *Count Distinct* option in the **Aggregate Function** field and the *Count* option in the **Rollup Aggregate Function** field.

Properties pane



Steps

Follow these steps to open and new report and perform a calculation

1. From Report Studio, click the **New** icon to open a new report.
2. Select the type of report you want to open.

   Note: For this exercise, select the list report.
3. Click the **OK** button.
4. Expand the **Address Current** query subject by clicking on the plus icon.
5. Double-click the **ENTITY_UID** query item to add it to the report.
6. Double-click the **ID** query item to add it to the report.
7. Double-click the **MAILING_ADDRESS** query item to add it to the report.
8. Click in the **MAILING_ADDRESS** column body.
9. Click the **Aggregate** icon on the toolbar.

   Notice that a Summary row for MAILING_ADDRESS displays on the report.

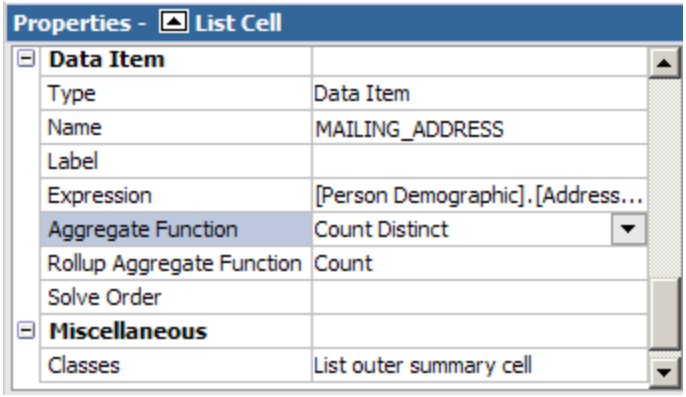
ENTITY_UID	ID	MAILING_ADDRESS
<ENTITY_UID>	<ID>	<MAILING_ADDRESS>
<ENTITY_UID>	<ID>	<MAILING_ADDRESS>
<ENTITY_UID>	<ID>	<MAILING_ADDRESS>
Summary		**<MAILING_ADDRESS>**

10. Click the **Run Report** icon to preview the report.
11. Click the **Bottom** link to view the total number of addresses in the report.

    Note: You may need to scroll to the end of the report.
12. Close the report preview window.
13. Scroll through the Properties pane and click the **Aggregate Function** field.

14. Select *Count Distinct* from the **Aggregate Function** drop-down list.

15. Notice that the **Rollup Aggregate Function** field was set to “Count” when you clicked the **Aggregate** icon.



16. Click the **Run Report** icon to preview the report.

17. Click the **Bottom** link to view the total number of addresses in the report.

    Note: You may need to scroll to the end of the report. If anyone in your report has multiple addresses, this number will be lower than the number the first time you previewed the report.

18. Close the report preview window.

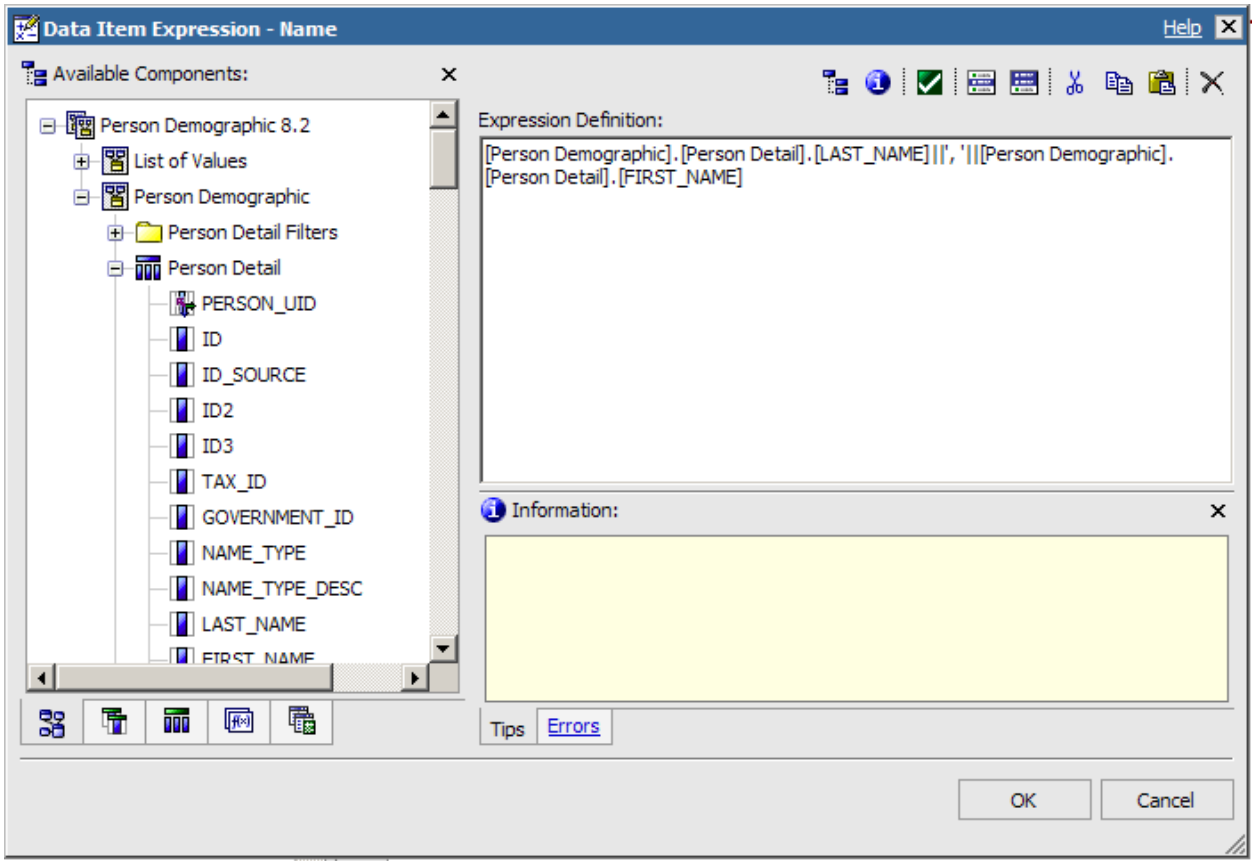
Concatenating Data

Introduction

You can add multiple query items to a single column by concatenating the data. To concatenate items, you must use the **Query Calculation** item from the **Toolbox** tab. Within the Query Calculation, you can name the column and then add query items. To add query items, you can drag to the **Expression Definition** field. The **Expression Definition** field should be continuous. Use double straight lines to separate query items or text items like commas and spaces. Text items should be enclosed in single-quotes. For example, a comma and space would look like **||', '||** with the quotation marks in the middle as single-quotes surrounded by double straight lines.

In this example you will concatenate the **LAST_NAME** and **FIRST_NAME** query items into a single column called “Name” which will display the name like this: Last Name, First Name.

Adding data to the column



Steps

Follow these steps to concatenate data to create a name column.

1. From Report Studio, click the **Toolbox** tab.
2. Drag the **Query Calculation** item onto the report.

   Note: If you are using the report from the previous lesson, drag the **Query Calculation** item to after ID and before ADDRESS.
3. Enter a name for the new column in the **Name** field.
4. Click the **OK** button.
5. Expand the **Person Demographic** package.
6. Expand the **Person Detail** query subject by clicking the plus icon.
7. Drag the **LAST_NAME** query item to the **Expression Definition** field.
8. After the **LAST_NAME** query item, type double straight lines to separate query items.
9. Type a single quote, then add a comma and a space followed by a second set of double-straight lines. It should look like **||', '||** with the quotation marks in the middle as single-quotes surrounded by double straight lines.
10. Drag the **FIRST_NAME** query item to the **Expression Definition** field immediately after the double-straight lines.

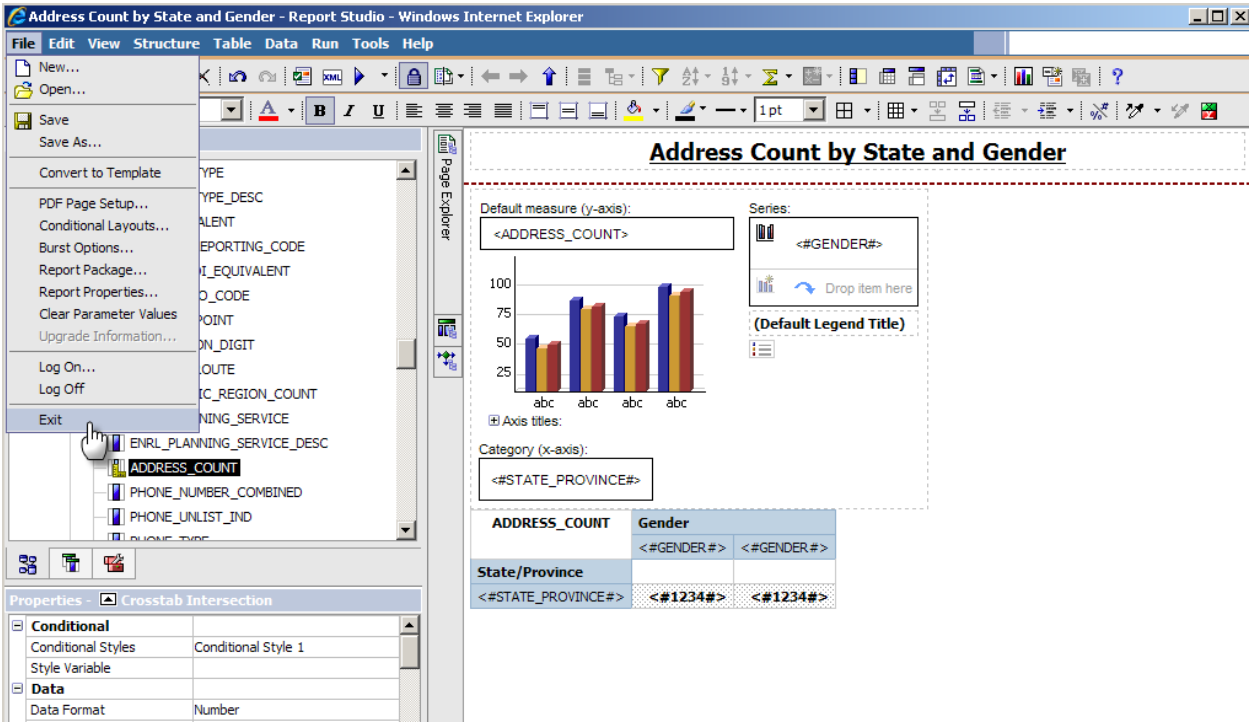
    Note: The Expression Definition field should read: [Person Demographic].[Person Detail].[LAST_NAME]||', '||[Person Demographic].[Person Detail].[FIRST_NAME]. By dragging the two query item names, you only need to type the syntax in the middle that separates the two query items.
11. Click the **OK** button.
12. Click the **Run Report** icon to preview the report.
13. Close the report preview window.

Closing a Report in Report Studio

Introduction

When you are done working with your report in Report Studio, you can close the report by selecting **Exit** from the **File** menu.

File menu



Steps

Steps to follow:

1. From Report Studio, click the **File** menu.
2. Select **Exit**.

Exercise 1: Creating a Summary Report

Business scenario

You want to create a summary report that shows a count of addresses by state or province and city. You would like to display this information in a simple list. You want to prompt the person running the report to select a single state. For training purposes you will name this report “xx - Summary Report” where xx = your initials.

Try it yourself

Try to create this report yourself in Report Studio. If you get stuck, the steps to create this report begin on the next page.

Steps

Follow these steps to create a summary report for this exercise.

1. From Cognos Connection, click the **Launch** link.
2. Select **Report Studio**.
3. Select the *Person Demographic* package in the **Recently used packages** field.
4. Click the **Create a new report or template** link.
5. Click the **List** format.
6. Click the **OK** button.
7. From the Insertable Objects pane, expand the **Person Demographic** package.
8. Expand the **Person** query subject.
9. Double-click the **STATE_PROVINCE** query item.
10. Double-click the **CITY** query item.
11. Drag the **ADDRESS_COUNT** item to the report window.
12. Click in the **STATE_PROVINCE** column (not column header).
13. Click the **Sort** icon and select **Sort Ascending**.
14. With the **STATE_PROVINCE** column highlighted, click the **Group** icon.
15. Click the **Filter** icon.
16. Click the **Add** icon.
17. Expand the **Person Demographic** package in the Available Components area.
18. Expand the **Person** query subject.
19. Double-click the **STATE_PROVINCE** item.
20. Enter an equals sign (=) to select a single value in the **Expression Definition** field.
21. Add **?STATE_PROVINCE?** to the end of the expression to prompt the person running the report to select a state or province.

22. Click the **OK** button.

23. Click the **OK** button again.

24. Click in the **CITY** column (not column header).

25. Click the **Sort** icon and select **Sort Ascending**.

26. In the top of the report preview space double-click the **Double-click to edit text** link to rename the report.

27. Enter *XX-Summary Report* (where XX= your initials) in the **Text** field.

28. Click the **OK** button.

29. Click the **Save** button.

30. Navigate to the *XX – Sample Reports* folder (where XX= your initials) in the **Save in** field.

31. Enter *XX-Summary Report* in the **Name** field.

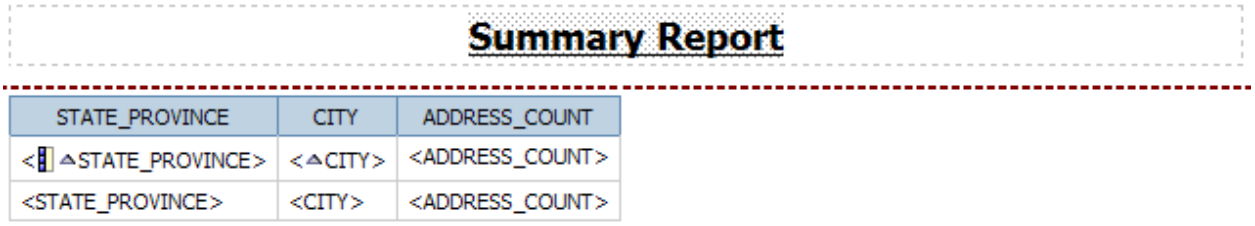
32. Click the **Run Report** icon to preview the report.

33. Select a state or province in the **STATE_PROVINCE** prompt field.

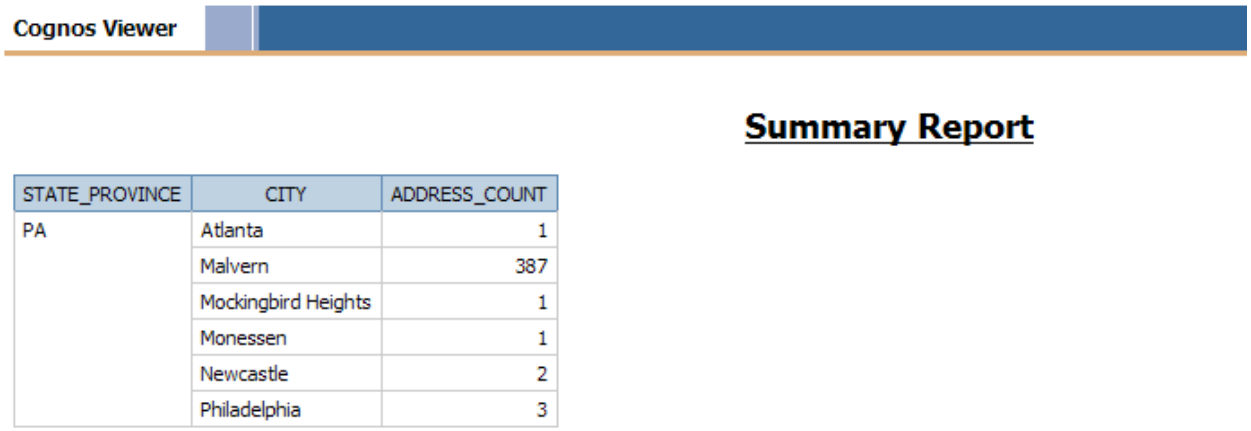
34. Click the **OK** button.

35. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

Sample report



Sample report with sample data



Exercise 2: Creating a Detail Report

Business scenario

You want to create a detail report in a simple list format that displays the name and address of each person by state. You want the person running the report to select a single state when they run the report. You want the addresses to be sorted and grouped by city. Within each city, the names should then be sorted alphabetically by last name. Next to the last name you want to display the corresponding first name and street address of each person.

Try it yourself

Try to create this report yourself in Report Studio. If you get stuck, the steps to create this report begin on the next page.

Steps

Follow these steps to create a detail report:

1. From Cognos Connection, click the **Launch** link.
2. Select **Report Studio**.
3. Select the *Person Demographic* package in the **Recently used packages** field.
4. Click the **Create a new report or template** link.
5. Click the **List** format.
6. Click the **OK** button.
7. From the Insertable Objects pane, expand the **Person Demographic** package.
8. Expand the **Person** query subject.
9. Double-click the **STATE_PROVINCE** query item.
10. Double-click the **CITY** query item.
11. Drag the **LAST_NAME** item to the report window.

    Note: The MAILING_NAME_PREFERRED item is a combination of first and last name. You may want to use it for mailing labels but you cannot use it to sort by last name.
12. Drag the **FIRST_NAME** item to the report window.
13. Double-click the **STREET_LINE1** item to add it to the report window.
14. Double-click the **STREET_LINE2** item to add it to the report window.
15. Double-click the **STREET_LINE3** item to add it to the report window.
16. Double-click the **STREET_LINE4** item to add it to the report window.
17. Click in the **STATE_PROVINCE** column (not column header).
18. Click the **Sort** icon and select **Sort Ascending**.
19. With the **STATE_PROVINCE** column highlighted, click the **Group** icon.
20. Click the **Filter** icon.

21. Click the **Add** icon.

22. Expand the **Person Demographic** package in the Available Components area.

23. Expand the **Person** query subject.

24. Double-click the **STATE_PROVINCE** item.

25. Enter an equals sign (=) to select a single value in the **Expression Definition** field.

26. Add **?STATE_PROVINCE?** to the end of the expression to prompt the person running the report to select a state or province.

27. Click the **OK** button.

28. Click the **OK** button again.

29. Click in the **CITY** column (not column header).

30. Click the **Sort** icon and select **Sort Ascending**.

31. With the **CITY** column highlighted, click the **Group** icon.

32. Click in the **LAST_NAME** column (not column header).

33. Click the **Sort** icon and select **Sort Ascending**.

34. In the top of the report preview space double-click the **Double-click to edit text** link to rename the report.

35. Enter *XX-Detail Report* (where XX= your initials) in the **Text** field.

36. Click the **OK** button.

37. Click the **Save** button.

38. Navigate to the *XX – Sample Reports* folder (where XX= your initials) in the **Save in** field.

39. Enter *XX-Detail Report* in the **Name** field.

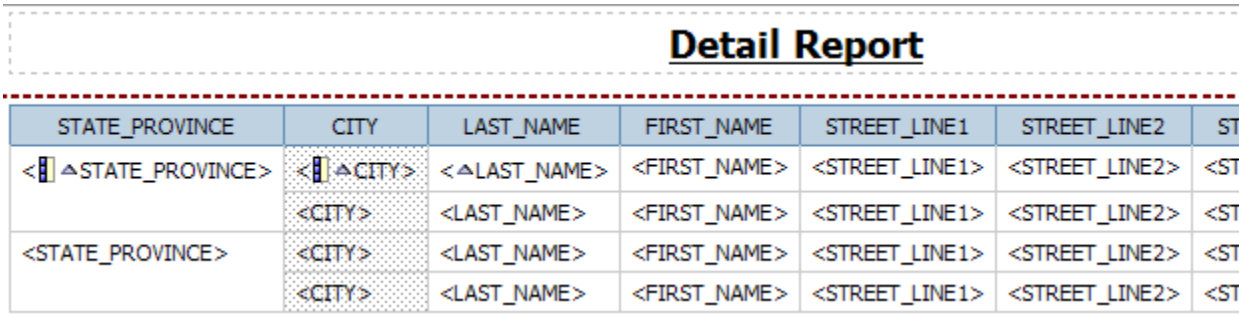
40. Click the **Run Report** icon to preview the report.

41. Select a state or province in the **STATE_PROVINCE** prompt field.

42. Click the **OK** button.

43. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

Sample report



Sample report with sample data

Detail Report

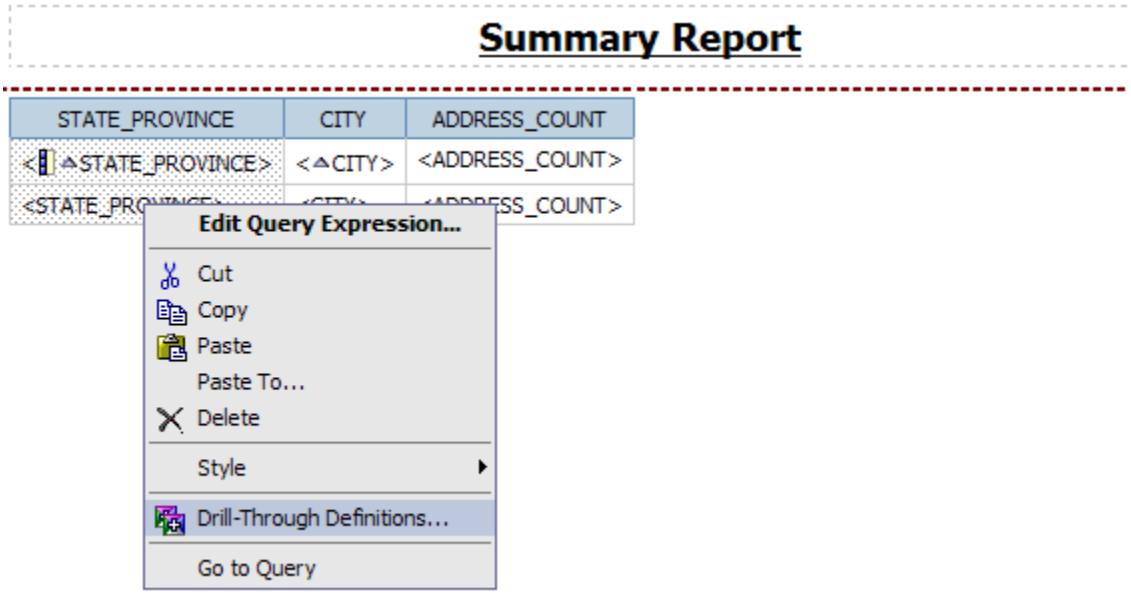
STATE_PROVINCE	CITY	LAST_NAME	FIRST_NAME	STREET_LINE1	STREET_LINE2	STREET_LINE3	STREET_LINE4
PA	Malvern	Alexander	Jesse	96 Main Street			
		Allen	Nathan	27 Main Street			
		Finn	Hannah	104 Main Street			
		Martinez	Jessica	119 Main Street			
		Rivera	Trinity	161 Main Street			
		Smith	Jacob	201 Main Street			
		White	Grace	114 Main Street			

Exercise 3: Creating a Drill-Through Definition

Introduction

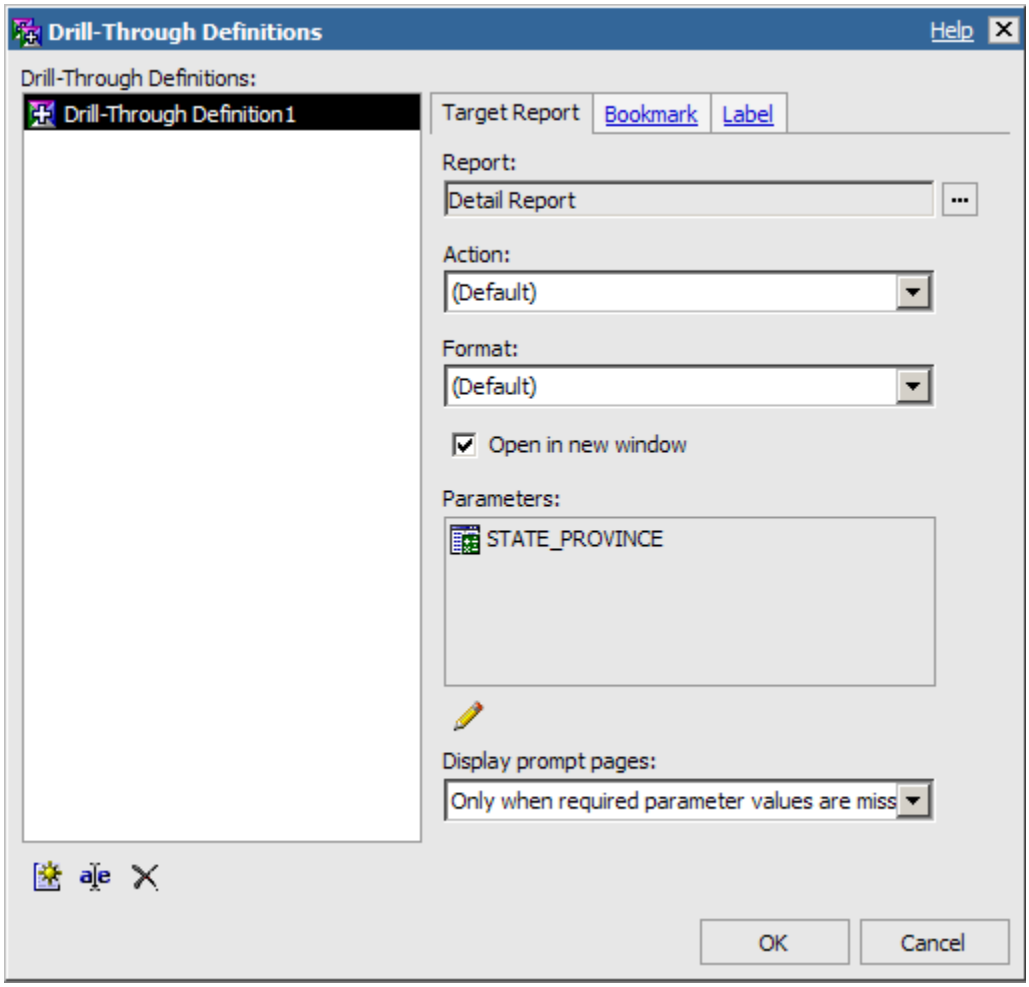
You can create a drill-through definition that allows you to link data in a summary report to additional information in a detail report. To create a drill-through definition, you can right-click on the data in a column and then select **Drill-Through Definitions** from the pop-up menu.

Once the Drill-through definition is in place, the text of the data in the column will have a standard blue font and underline to indicate it is a clickable link.



Drill-though Definition window

In the window, you can select a detail report that is already created. The **Edit** (pencil) icon below the Parameters area allows you to select the data that is passed from one report to another in the drill-through definition. You can select from the parameter(s) or filter(s) available in the drill-through report.



Steps

Note: To complete this exercise you will need to have a summary report and a detail report that contains a filtered valued based on the summary report. This exercise assumes that the Summary and Detail Reports created in Exercises 1 and 2 have already been completed.

1. Within the **My Folders** tab, navigate to the Summary Report you created in Exercise 1.

2. Click on the **Open with Report Studio** icon next to the summary report in which you want to add a drill-through definition.

3. Right-click in the column (not column header) of the **State** column.

4. Select **Drill-Through Definitions** from the pop-up menu.

5. Click the **Add** icon

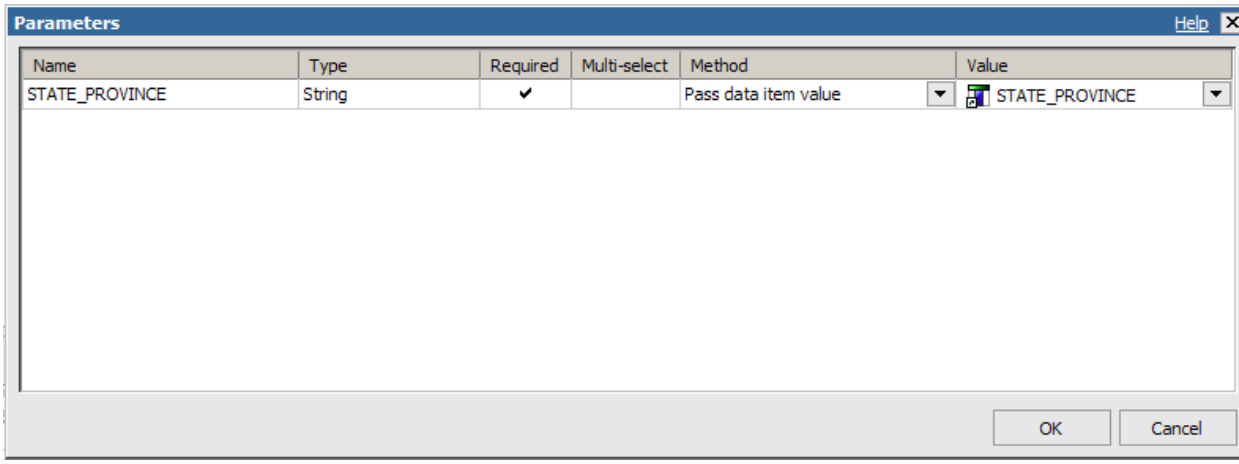
6. Click the **Ellipse** icon in the **Report Name** field to navigate to the detail report to which you want to drill-through.

   Note: For this exercise, navigate to the XX-Detail Report (where XX = your initials) that you created in the previous exercise.

7. Click on the check box **Open in a new window.**

8. Click the **Edit** (pencil) icon below the Parameters area.

9. Select *Pass data item value* in the **Method** field.



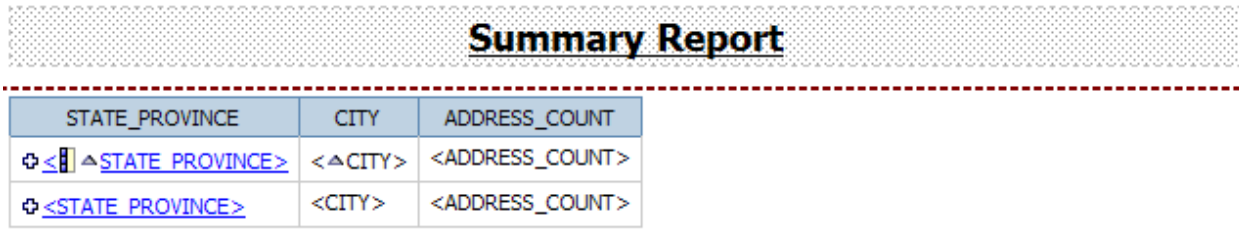
10. Select *STATE_PROVINCE* in the **Value** field.

11. Click the **OK** button.

12. Select *Only when required parameter values are missing* in the **Display prompt pages** field.

13. Click the **OK** button.

    Note: A plus symbol displays when a drill-through definition has been added to a column.



14. Click the **Run Report** icon to preview the report.

15. Select a state or province in the **STATE_PROVINCE** prompt field for the summary report.

16. Click the **OK** button.

17. Click on a state or province in the list to preview the data in the detail report.

18. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to the summary report.

19. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

20. Click the **Save** icon.

21. Select *Exit* from the **File** menu to close the report.

Working with Reports

Section goal

The goal of this section is to provide the knowledge and practice to work with reports.

Objectives

In this section you will learn how to:

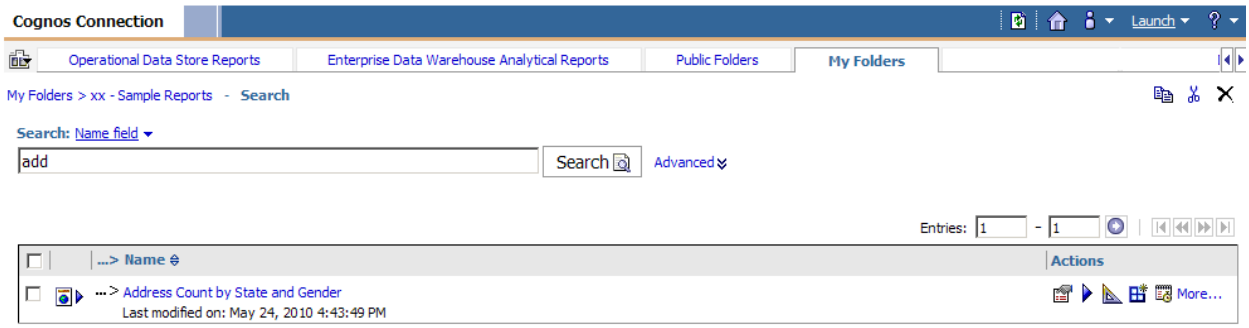
- search for a report
- run a report
- save a report
- print a report
- close a report
- schedule a report
- run a report in multiple formats and languages
- view a report in multiple formats.

Searching for a Report

Introduction

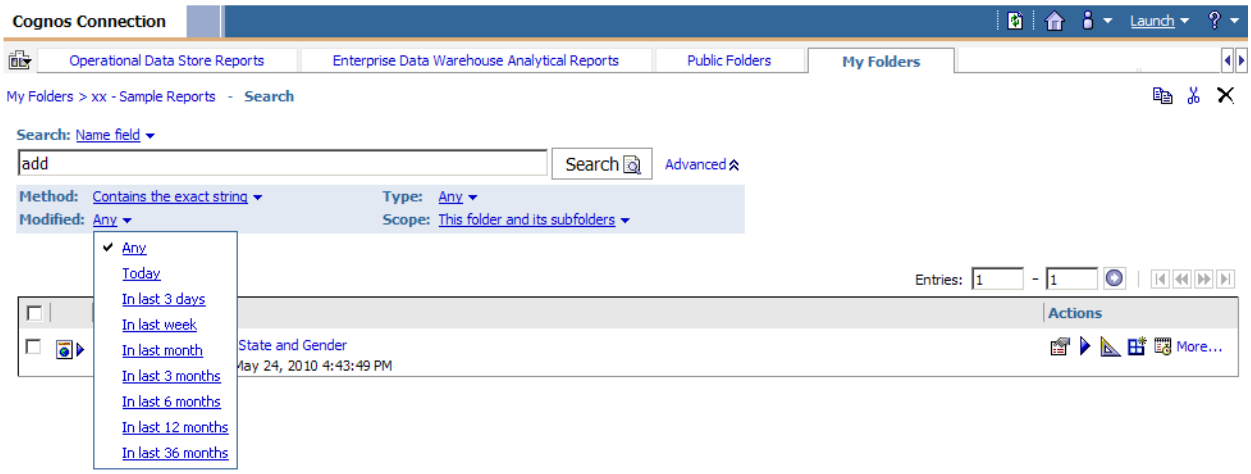
You can use the **Search** field at the top of the Cognos Connection window to find a report. Type the name or partial name of the report you want to find and click the **Search** icon to the right of the **Search** field to display a list of reports that match your criteria. Wildcard characters are not necessary when using a partial name.

You can click on the report title from the Search Results list (see example below). If the report contains selection prompts, select the data you want to include in the report. If the report does not contain selection prompts, the report will run and open.



You can also perform an advanced search from the search results list if you want to add more search criteria. Notice in the example above that the search word “Add” returned the report you created in an earlier exercise called “Address Count by State and Gender.”

To perform an advanced search, click the **Advanced** link to display additional search criteria. In this example, by clicking the **Any** link next to **Modified**, you can select from multiple timeframes for which your report was modified.



Steps

Follow these steps to perform a basic search.

1. Type a report name or partial report name in the **Search** field at the top of the Cognos Connection portal.
2. Click the **Search** icon.
3. Click the report title from the search results list to run the report.

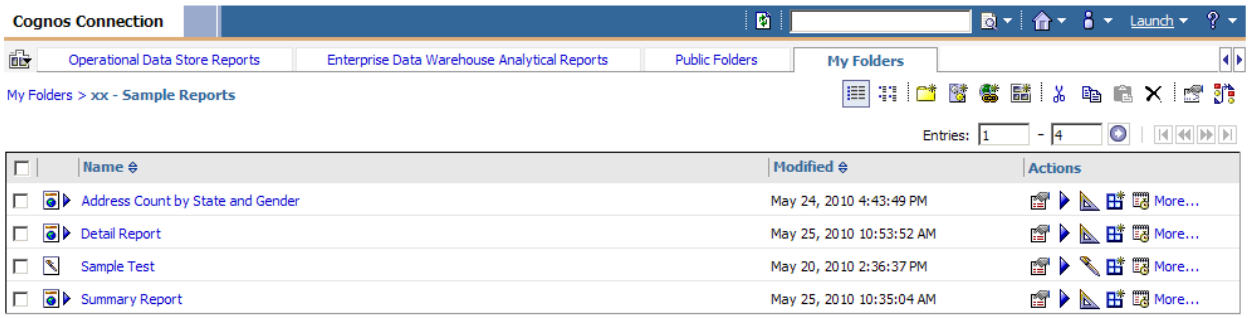
Running a Report

Introduction

To run a report, click the title of the report. If the report contains selection prompts, select the data you want to include in the report. You can click on the report title from the reports list or the Search Results list. If the report does not contain selection prompts, the report will run and open.

Report list in the My Folders view

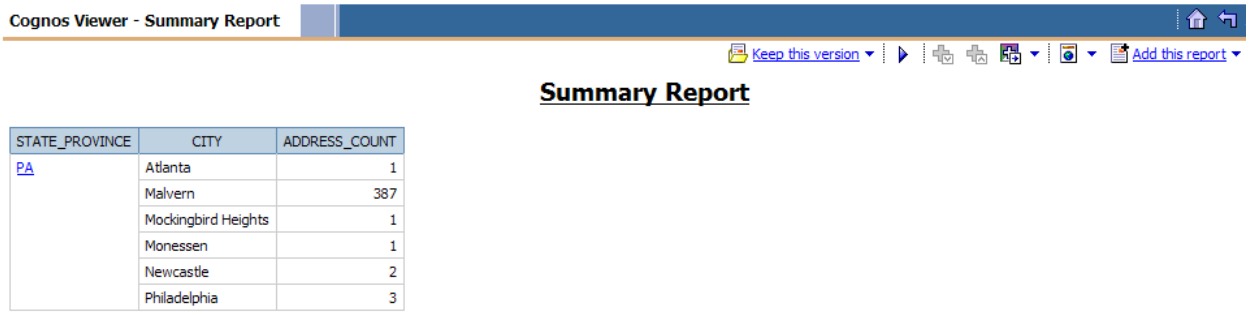
If you see a **Run** icon next to a report title, you can run the report using the default output type. If you want to change the report output, you can click the **Run with options** icon in the Actions column.



Drilling through a report

Some summary reports have additional levels of detail. If this functionality is built into the report, you can hold your mouse over a spot and a hand with point index finger appears. If the report links to additional details, the text in the column will be a link to the detail information. Click on the data in the report to see a supporting report with more detailed information.

Example: Notice that in the Summary report you created, there is a link to additional information. To drill-down to the next level, click on one of the **State** links.



STATE_PROVINCE	CITY	ADDRESS_COUNT
PA	Atlanta	1
	Malvern	387
	Mockingbird Heights	1
	Monessen	1
	Newcastle	2
	Philadelphia	3

Steps

Steps to follow:

1. Click the title of the report you want to run.
2. Select or highlight the desired prompt values, if needed.
3. Click the **OK** button.

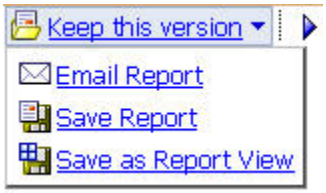
   Note: If all required values have not been selected, the **OK** button will not be available to click. If there are no prompts, the report will open when the report title is clicked.
4. Review the data in the report.
5. Click on a link (if available) in the summary report data to view additional data in the detail report.
6. Click the **Close** [**X**] icon in the upper-right corner of the browser window to close the detail report window and return to the summary report.

Saving a Report

Introduction

Once you run a report, you can save a copy. At the top of the report window, the **Keep this version** link lets you choose to Email Report, Save Report, or Save as Report View.

Keep this version list



Steps

Steps to follow:

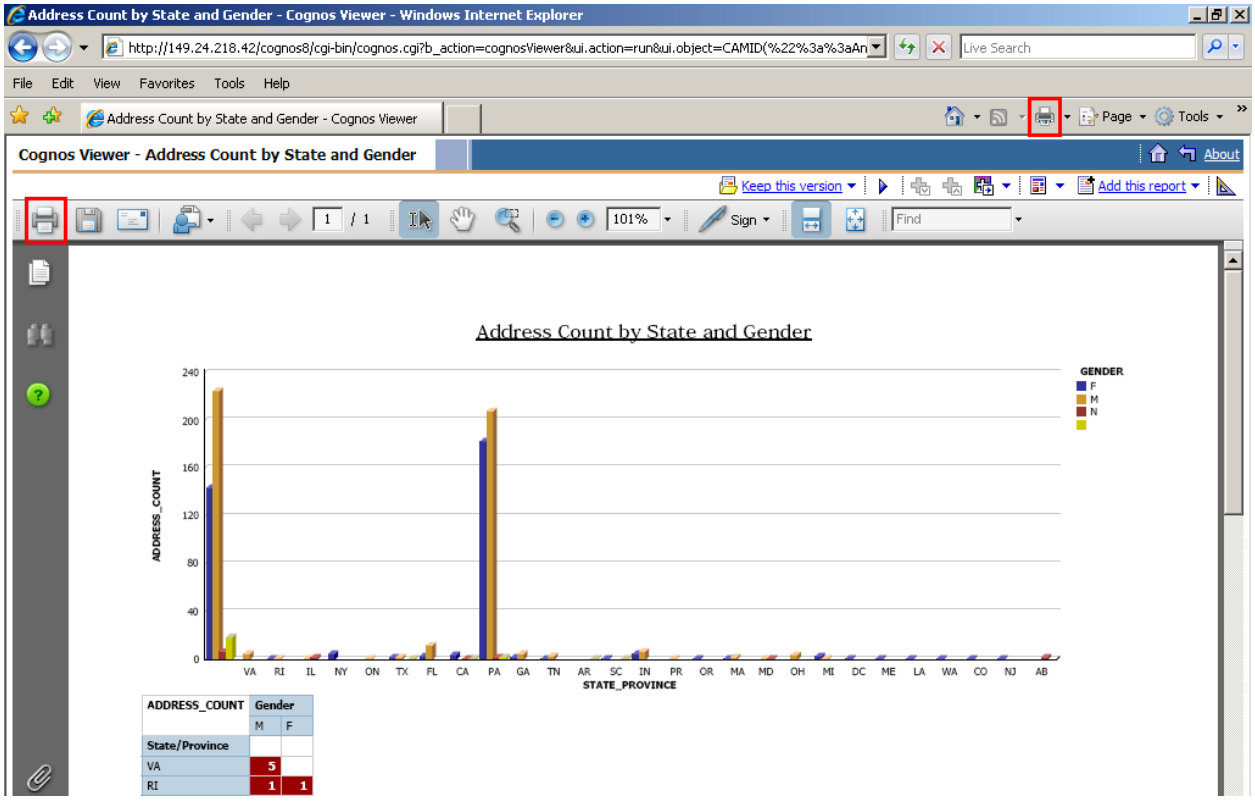
7. Run the report.
8. Click the **Keep this version** link.
9. Click **Save Report**.

Printing a Report

Introduction

You can print a report in two ways. First, you can use the **Print** icon on your web browser. The second is to view the report in PDF format, then use the **Print** icon to print the entire document or just selected pages.

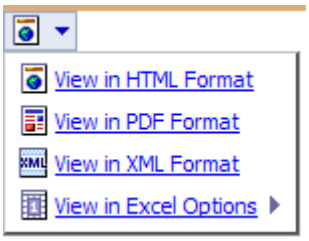
A report in PDF view



Steps

Steps to follow:

10. Select a report and run it.
11. Once the report has displayed results, select the arrow next to the **View in HTML format** icon in the upper right corner of your display.



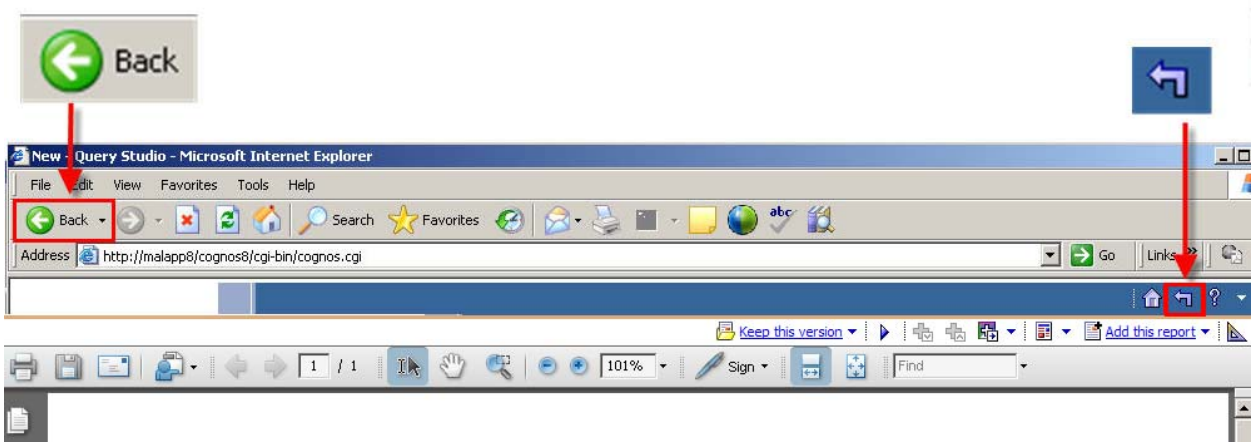
12. Select the **View in PDF format** link.
13. Click the **Open** button.
14. Click the **Print** icon on the PDF toolbar.
15. Select the entire document or selected pages.
16. Click the **OK** button.

Closing a Report

Introduction

When you are done viewing a report, you can close the report by clicking the **Return** icon on the Cognos Connection toolbar or by clicking the **Back** button on your browser. Since this is a web-based application, there is no file close option.

Close options



Steps

Steps to follow:

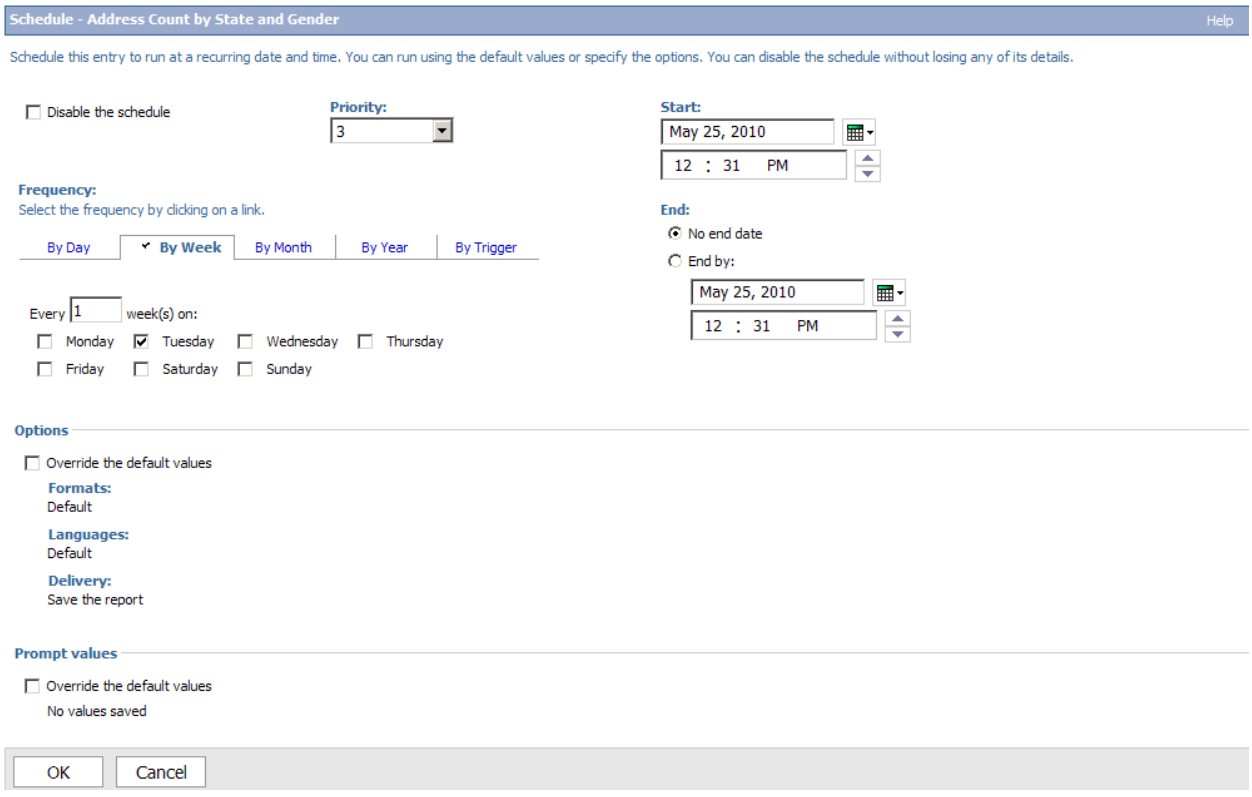
1. Run the report.
2. Click the **Back** button on your browser or click the **Return** button on the Cognos Connection toolbar.

Scheduling a Report

Introduction

You can schedule a report to run daily, weekly, monthly, or yearly. You can select the timing and format for the report. You can schedule the report from the report list using the **Schedule** icon in the Actions column.

Schedule window



Steps

Follow these steps to schedule a report.

1. From the report list, click the **Schedule** icon in the Action Column to the right of the report you have been working on in this training workbook.

2. Select the **By Day, By Week, By Month, By Year, or By Trigger** tab.

   Note: For this exercise select the **By Week** tab. You will need the help of an administrator to set up a Trigger-based report because the trigger occurrence must also be set up on a server. An administrator can link the external occurrence, such as a database refresh or an email, with a trigger on the server that causes the entry to run.

3. Select the day(s) of the week that you want to run the report.

   Note: If you would like to see how this report runs in a testing or training environment, select a time 2 minutes from the current time.

4. Scroll to the bottom of the page.

5. Click the **OK** button.

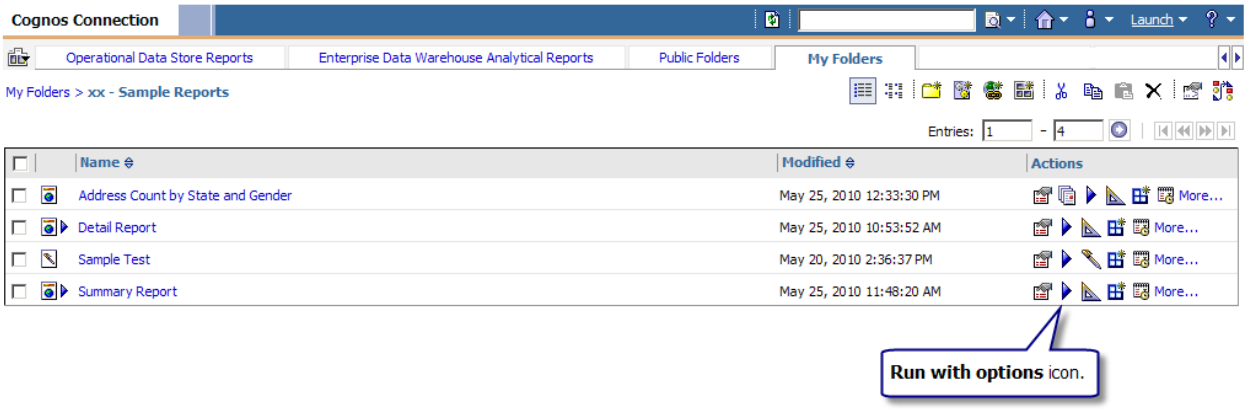
Running a Report in Multiple Formats and Languages

Introduction

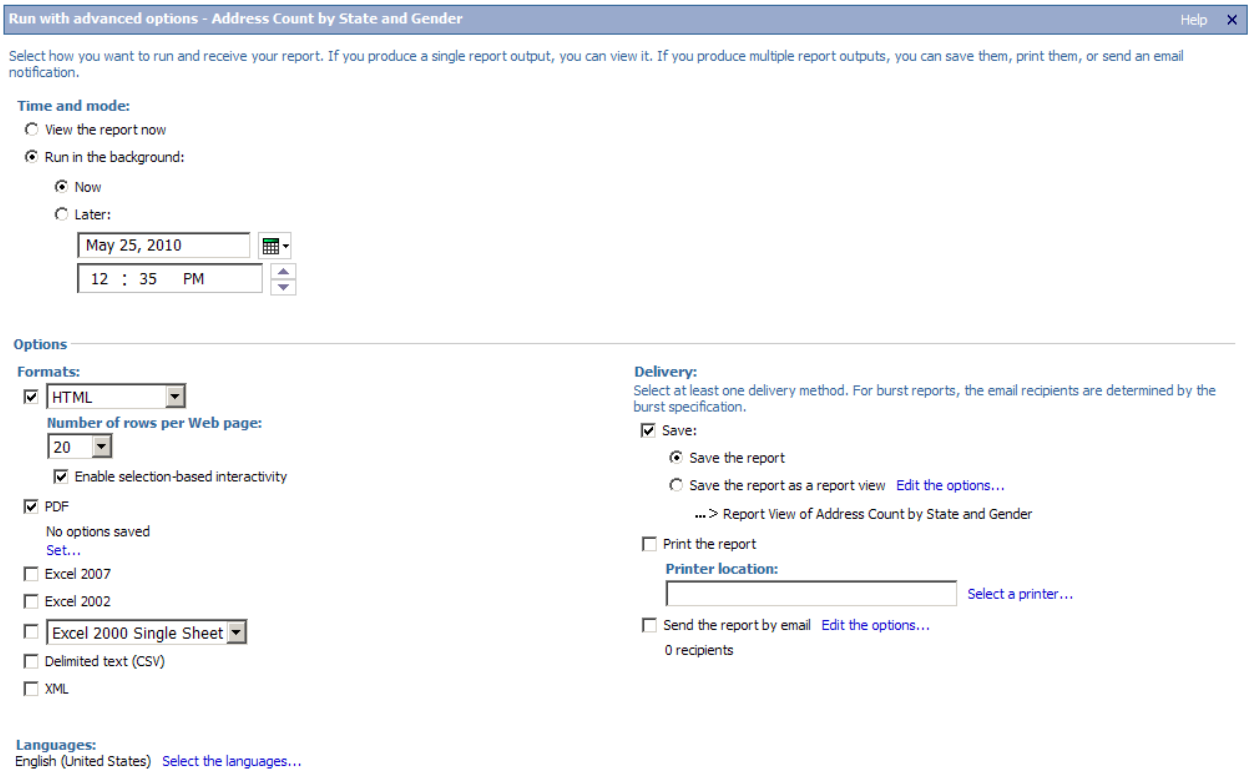
You can use the **Run with options** icon in the Actions column to set multiple formats or languages for the report. To set multiple formats and languages, select the **Advanced options** link. For example, if you are a bi-lingual institution you can set the report to run in both English and French Canadian or English and Spanish. You can choose to run the report in HTML, PDF, Excel, XML, or Delimited text (CSV) format.

Run with options icon

Notice that the **Run with options** icon is in the Actions column on the right side of the screen.



Advanced options



Steps

Follow these steps to set multiple options.

1. From the report list, click the **Run with options** icon in the Action Column to the right of the report you have selected.

2. Click the **Advanced options** link.

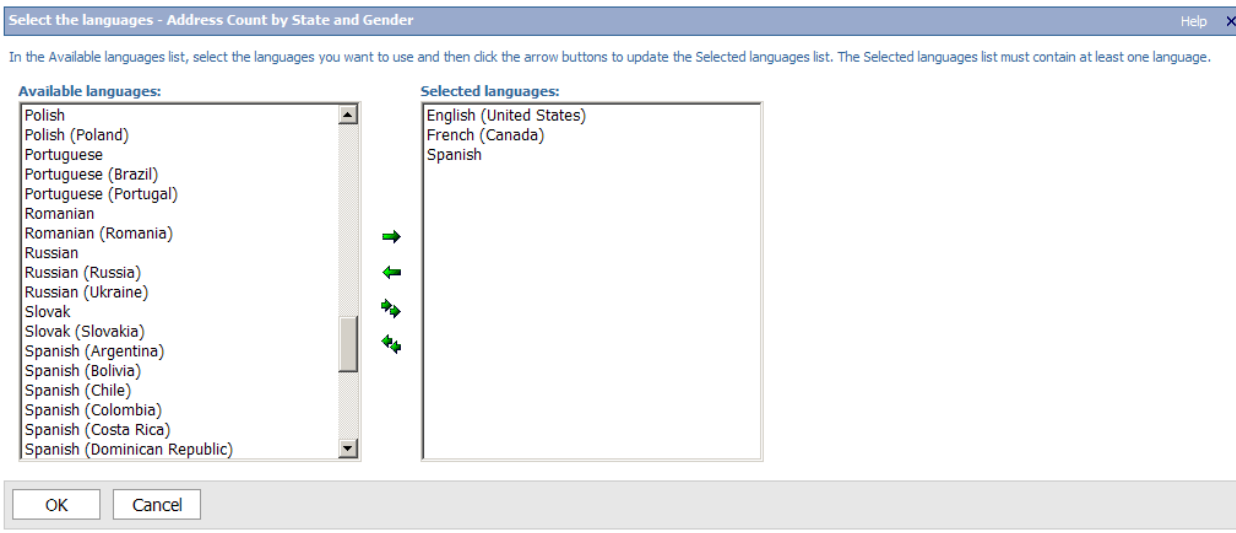
3. Click the **Run in the background** radio button.

   Note: You must click the **Run in the background** radio button to access the multiple format options. Even though the report is running in the background you should be able to see the results within a few minutes depending on report size.

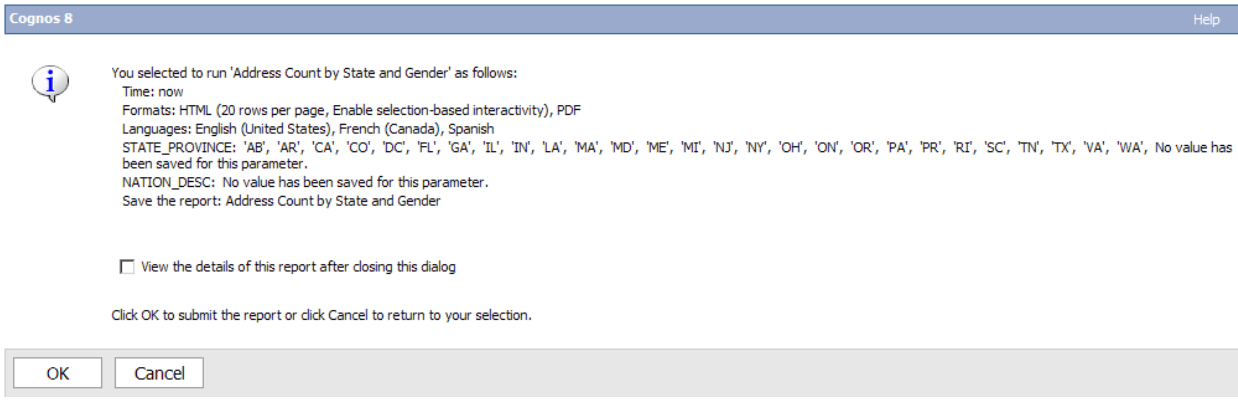
4. Select the Formats you want the report to display.

5. Click the **Select the languages** link.

   Result: the Select the languages window opens.



6. Scroll through the list and highlight the language you want to add.
7. Click the **Insert** (right green arrow) icon.
8. Click the **OK** button.
9. Scroll to the bottom of the page.
10. Click the **Run** button.
11. Enter the prompt values.
12. Click the **OK** button.



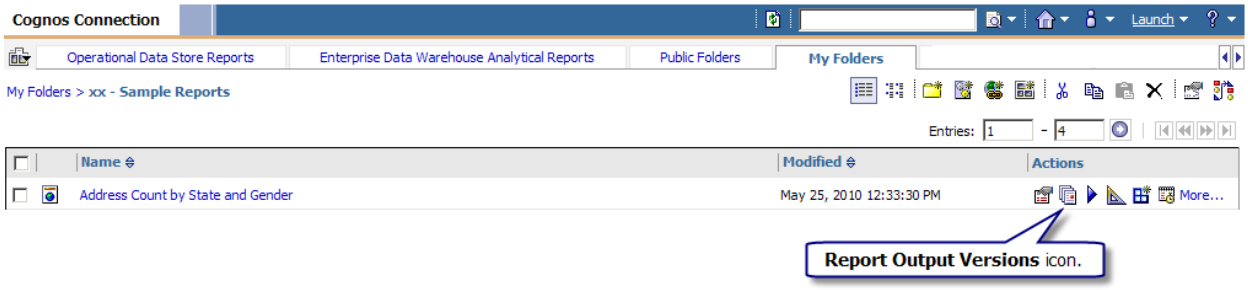
Viewing Multiple Formats

Introduction

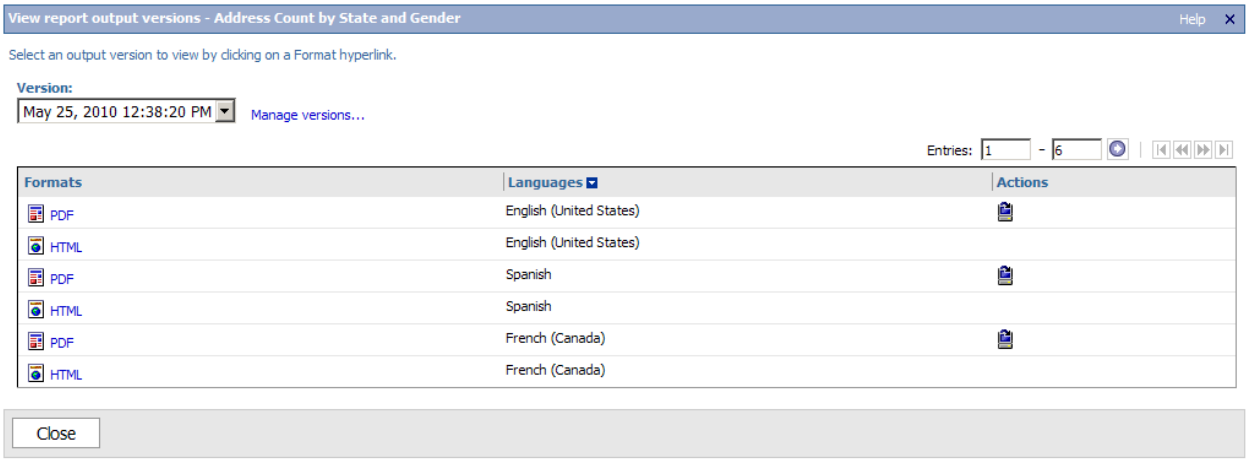
To view multiple formats, click the **Refresh** icon on the toolbar so that the **Report Output Versions** icon appears. You can select the version date and which language(s) to show. The arrow at the top of the Languages column lets you choose to display one language or all languages. To view a report, click the format link for the language you want to view.

Report Output Version icon

Notice that the **Report Output Versions** icon appears in the Action column when available. The **Refresh** icon is the first icon to the right of Cognos Connection in the blue bar at the top of the Cognos Connection window.



View report output versions window



Steps

Follow these steps to view multiple formats.

1. From the reports list, click the **Refresh** icon in the blue bar at the top of the Cognos Connection window.
2. Click the **Report Output Versions** icon.
3. Select the date of the report in the **Version** field.
4. Click the arrow at the top Languages column.
5. Select **All languages**.
6. Click the format link for the language you want to view.

Creating Mailing Labels

Section goal

The goal of this section is to provide the knowledge and practice to create and print mailing labels.

Objectives

In this section you will learn how to:

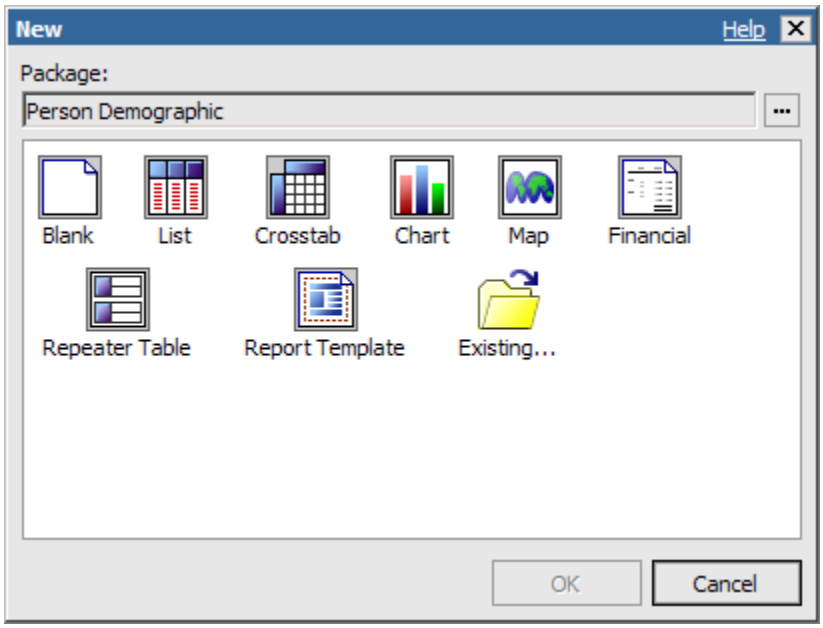
- create a mailing label
- filter data in a mailing label list
- sort data in a mailing label list
- save the mailing labels as a PDF file
- print the mailing labels.

Creating a Mailing Label Report

Introduction

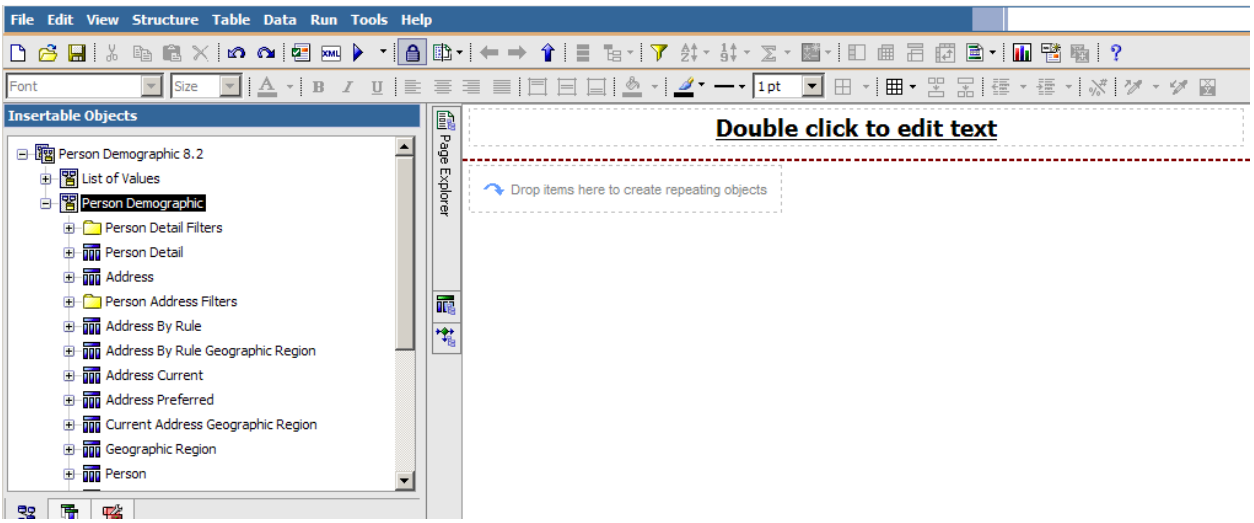
You can use Repeater Table style or report to create mailing labels or name tags. Repeater tables are used whenever you want to display multiple small pieces of information on a single page. For example, when you use the Repeater Table report style, you can select the number of columns and rows in which you want your data to display. You then add query items to the first cell in the repeater table and all the remaining cells will contain the same query item.

Report format selection window

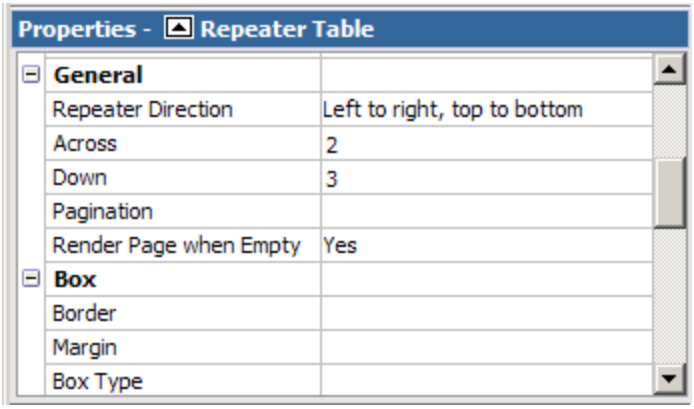


Numbers of rows and columns

When you open a repeater table, there is only one block displayed. As you add query items, a default number of cells display. You can manually change this to any number of columns and rows you want to use for your mailing labels.



In the Properties pane, click the **Properties** arrow and select **Repeater Table**. Then scroll through the list to the **General** properties. Enter the number of columns across you want in the **Across** field. Enter the number of rows down you want in the **Down** field.



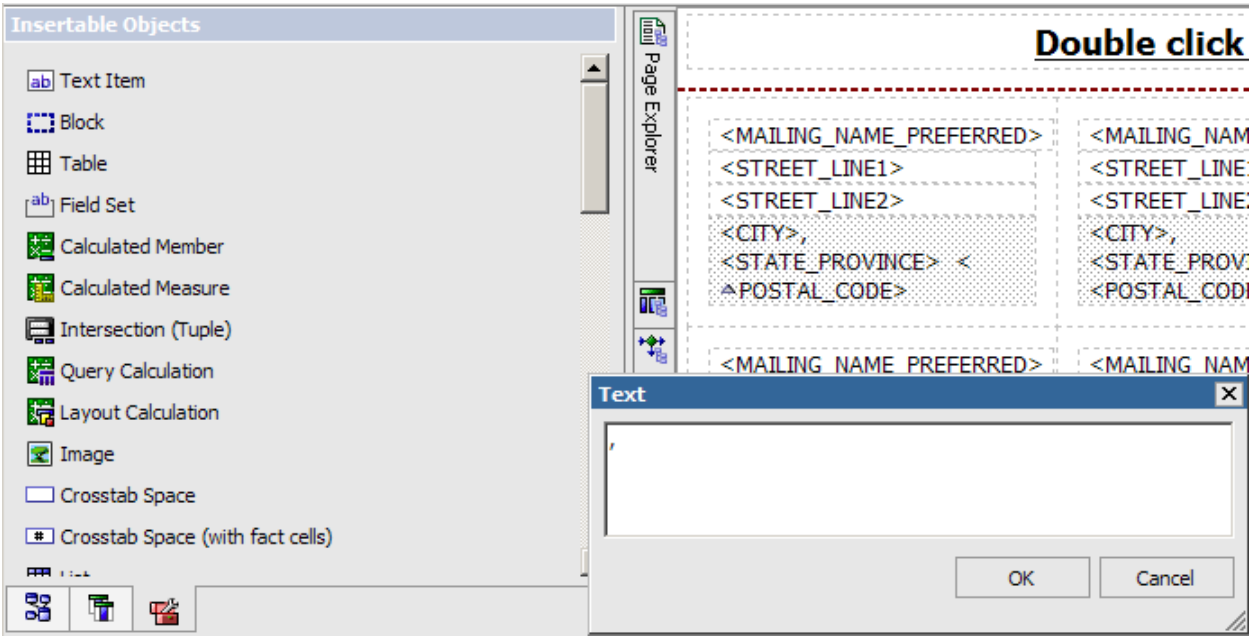
Blocks within a cell

When you create mailing labels, you may want to display your information in blocks with a cell. Each cell is the actual mailing label. The blocks are how you format information within each individual mailing label. For example, if you want to display the name on the first line, have two address lines, followed by the city, state/province and postal code, you would need to manually insert 4 separate blocks within a cell. Because it is a repeater table, what you do to one cell will apply to all.

Spaces between query items

Within each individual block, you may also want to include spaces or commas to separate the values. For example, adding a comma and a space between the city and space or province. In order to add spaces, you must use the **Toolbox** tab and insert a Text Item next to the query item where you want the space or comma to display. Type either a comma or a space (or both) in the **Text** field, then press **OK**. The next query item will begin after the comma and space.

Note: If you did not want to sort on any of the items in this block, you could do a concatenation instead. In this example, you will sort by POSTAL_CODE so the query items will be added individually.



Steps

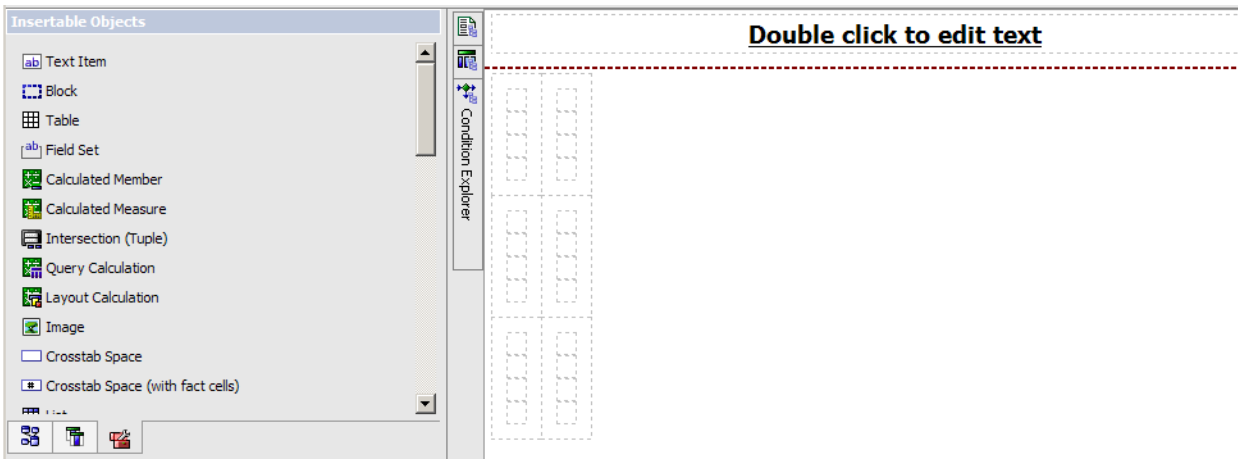
Follow these steps to create a new Repeater Table report for mailing labels. In this example, you will produce mailing labels that print 3 columns of data in 10 rows per page.

1. From Cognos Connection, click the **Launch** link in the top toolbar.
2. Select **Report Studio**.
3. In the **Recently used packages** field, select the **Person Demographic** package.

   Note: You may need to wait while the Report Studio is initializing. You can also select the package by clicking the blue **Person Demographic** folder.
4. Click the **Create a New Report or Template** link.
5. Click the **Repeater Table** report style.
6. Click the **OK** button.
7. Click the **Toolbox** tab to add blocks to hold query items on separate lines.
8. Drag the **Block** item repeating objects container. This will hold the name data.

   Notice that as you add data, a default number of rows and columns are created. You can change the number of rows and columns that display.
9. Drag the **Block** item to the cell three more times to hold the two address line and the city, state/province, and postal code query items.

   You should have four blocks that look like the example below. As you add data, the blocks will expand.

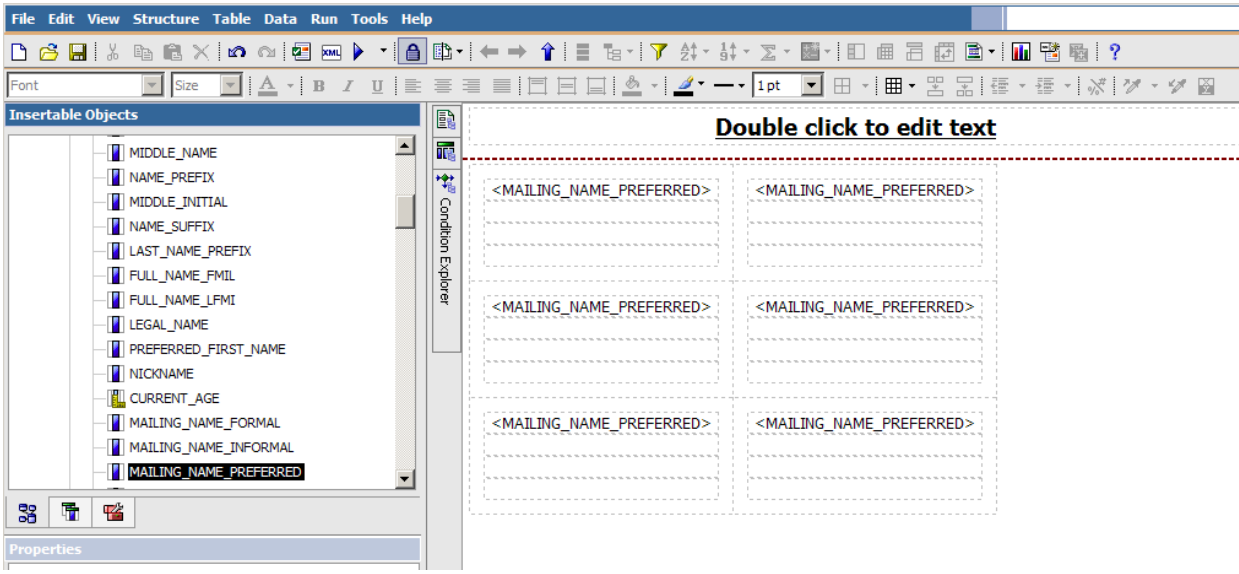


10. Click the **Source** tab to add query items to the blocks.

11. From the Insertable Objects pane, expand the **Person Demographic** package by clicking on the plus icon.

12. Expand the **Person Detail** query subject by clicking on the plus icon.

13. Drag the **MAILING_NAME_PREFERRED** item to the top block in the cell.



14. Collapse the **Person Detail** query subject by clicking on the minus icon

15. Expand the **ADDRESS_CURRENT** query subject by clicking on the plus icon.

16. Drag the **STREET_LINE_1** query item to the second block in the cell.

17. Drag the **STREET_LINE_2** query item to the third block in the cell.

    Note: If there is no STREET_LINE_2 data, the mailing label will automatically move the City line up so that there are no blank lines within the address.

18. Drag the **CITY** query item to the fourth block in the cell.

19. Click the **Toolbox** tab to add a text box after the CITY item.

20. Drag the **Text Item** next to the query item where you want the space or comma to display.

21. Type a comma and a space in the **Text** field, then press **OK**. The next query item will begin after the comma and space.

22. Click the **Source** tab to add query items to the blocks.

23. From the Insertable Objects pane, drag the **STATE_PROVINCE** item to the

fourth block just to the right of text field containing the comma. Once you see a blinking vertical black line release your mouse and the Query Item will be inserted.

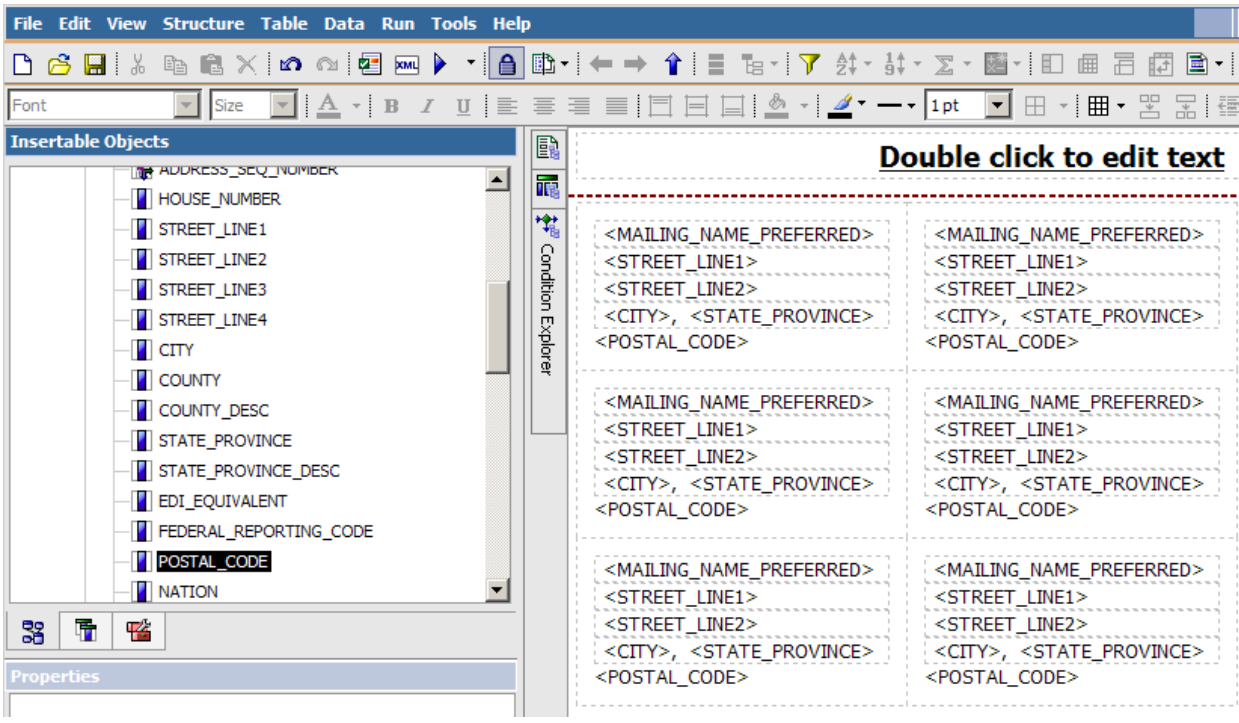
24. Click the **Toolbox** tab again to add a text box after the STATE_PROVINCE item.

25. Drag the **Text Item** after the STATE_PROVINCE item where you want the space to display.

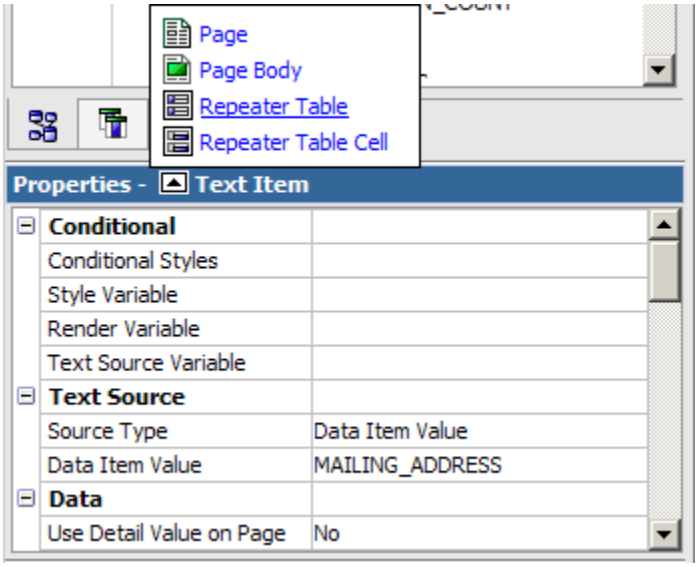
26. Type a space in the **Text** field, then press **OK**. The next query item will begin after the space.

27. Click the **Source** tab to add query items to the blocks.

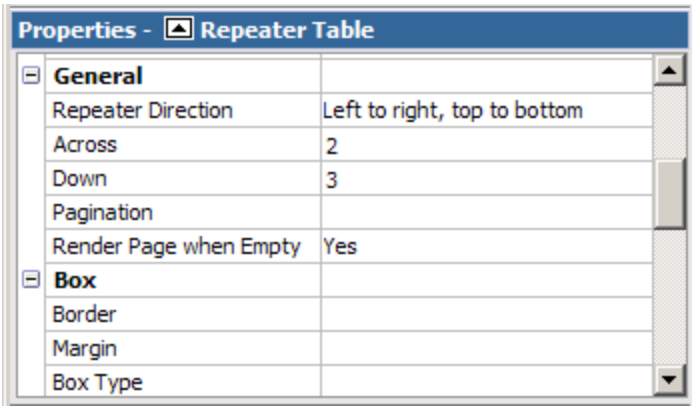
28. From the Insertable Objects pane, drag the **POSTAL_CODE** item to the fourth block just to the right of text field containing the space. Once you see a blinking vertical black line release your mouse and the Query Item will be inserted.



29. The mailing labels are in 2 columns by 3 rows by default. You want to change the default to print mailing labels in 3 columns by 10 rows. In the Properties pane, click the **Properties** arrow and select **Repeater Table**.



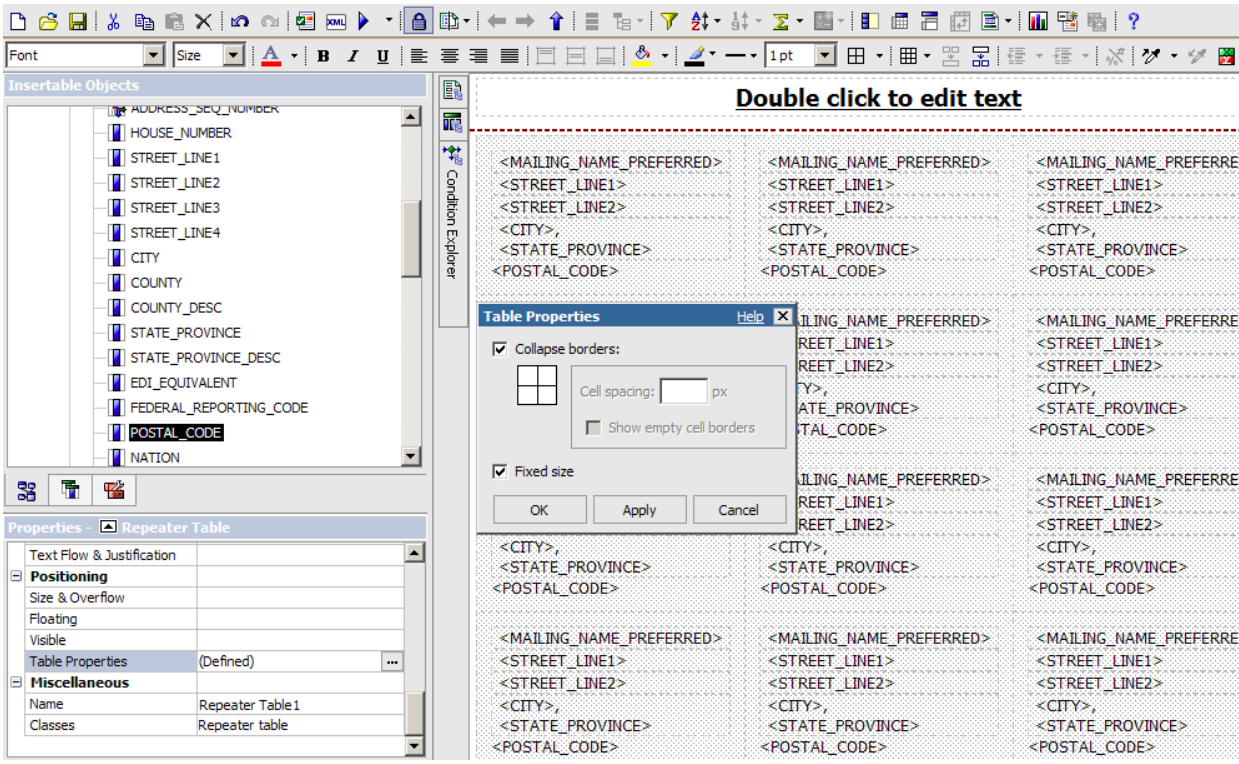
30. Scroll through the list to the **General** properties.



31. Enter the number of columns across you want in the **Across** field.

32. Enter the number of rows down you want in the **Down** field.

33. Scroll to the **Properties** field. Double-click **Table Properties** or click Table Properties once then click the ellipse (...) icon.



34. Click the **Fixed size** checkbox.

35. Click the **Apply** button.

36. Click the **OK** button.

37. Click the **Run Report** icon to preview the mailing label report.

38. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

39. Click the **Save** icon to save your work.

40. Enter a descriptive title such as *3 x 10 Mailing Labels* in the **Name** field.

41. Click the **Save** button.

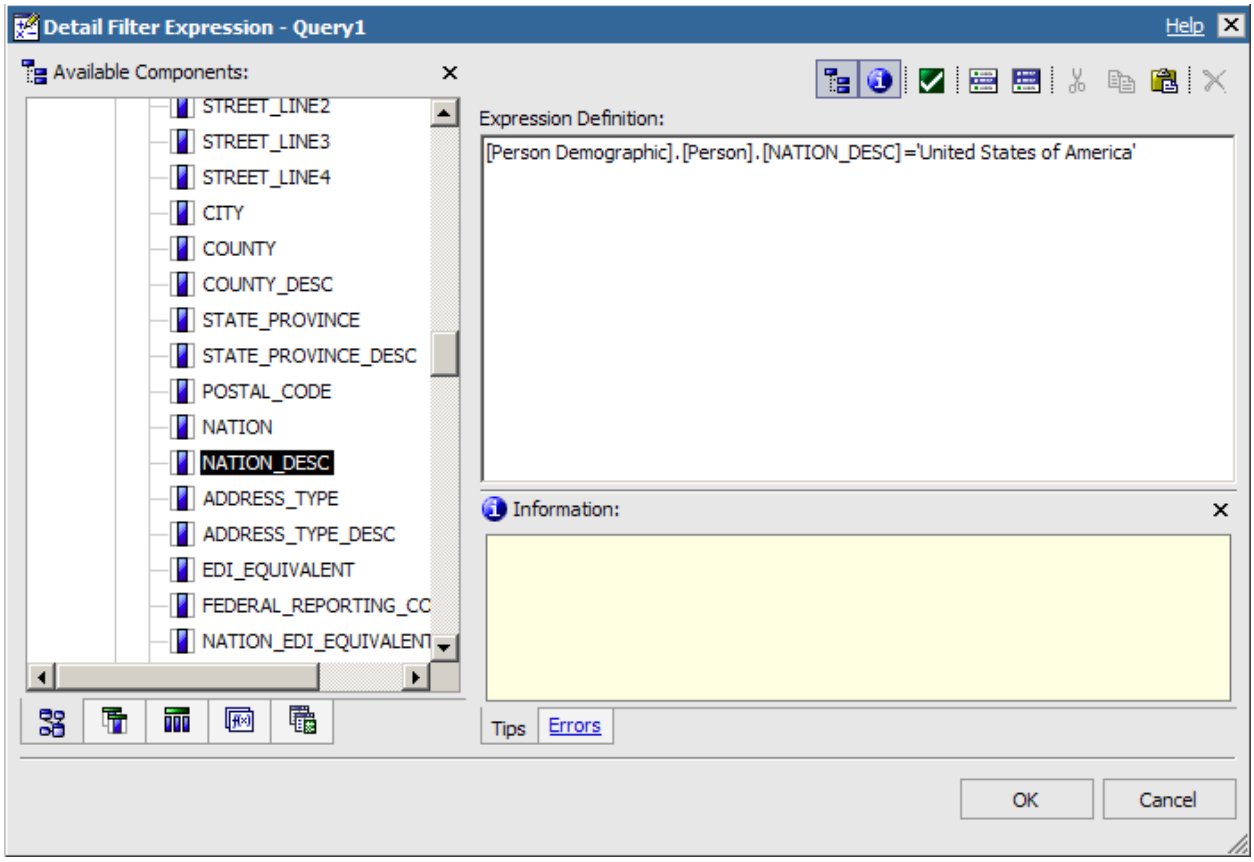
Filtering Data in a Mailing Label

Introduction

You can use the **Filter** icon to add a filter to your mailing label report. This allows you to select just the addresses you want based on your criteria. The **Filter** icon opens the Filter Query 1 window. Click the **Add** icon to open the Detail Filter Expression window where you can build your filter. As you select the items you want to filter, add the filter operator (such as less than, equals, etc...) and select the values, the **Expression Definition** field shows the current expression for the filter you are building.

Notes: The report does not show which filters have been applied. You can add a filter without adding the data you are filtering on to the mailing label report. For example, you can add just MAILING_NAME_PREFERRED and mailing address data but filter data based on nation, alumni or student status.

Detail Filter Expression window



Steps

In this example, you want to create a filter that only selects data from a specific nation. Steps to follow to add a filter to a report to include only selected data:

1. With the mailing label report open that you just created in the previous exercise, click the **Filter** icon.

2. Click the **Add** icon.

3. Expand the **Address Current** query subject.

4. Double-click the **NATION_DESC** item.

5. Enter an equals sign (=) in the **Expression Definition** field.

6. Click the **Select Value** icon above the **Expression Definition** field.

7. Select *United States of America* from the list or whatever nation you want to select.

   Note: You may need to use the page down arrows to find the correct value. If you know the value you want to add, you can also enter it into the expression using single quotes.

8. Click the **Insert** button and leave the Usage set at Required and the Application set at Before auto aggregation.

9. Click the **OK** button.

   Notice that the specific value you want to include is enclosed by single quotes.

10. Click the **OK** button again.

11. Click the **Run Report** icon to preview the mailing label report.

12. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

13. Click the **Save** icon on the toolbar.

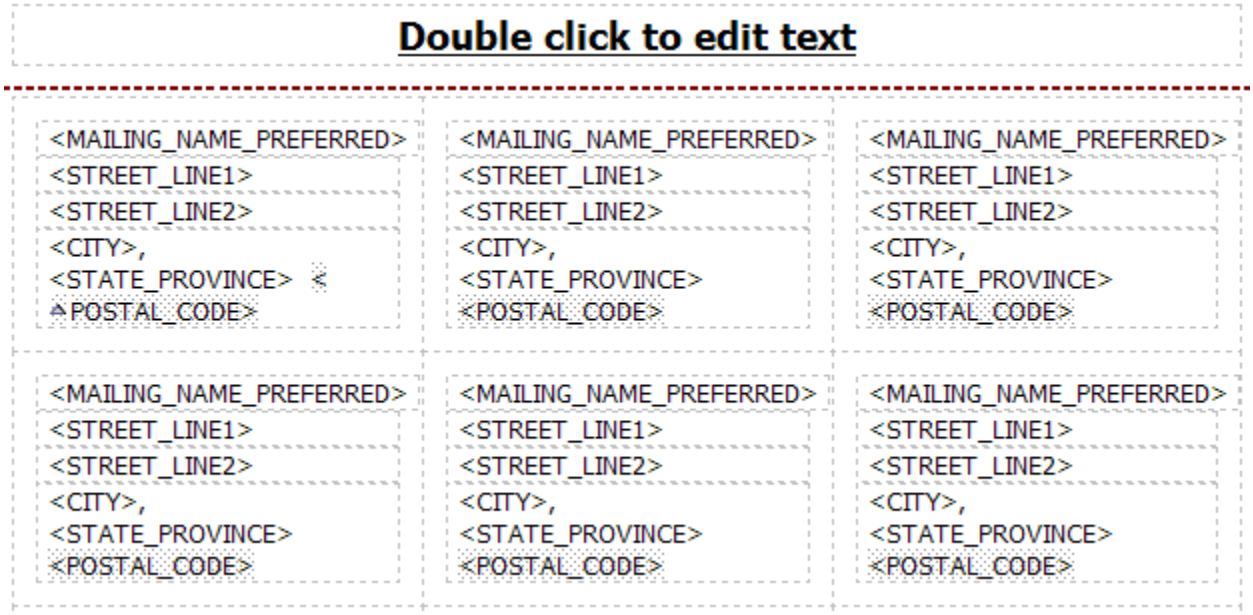
Sorting Data in a Mailing Label

Introduction

You can use the **Sort** icon at the top of the Cognos Connection window to sort the data in a mailing label. For instance, you may want to sort the mailing labels by postal code. In order to sort by a query item, you must have added the query item to the report.

For example, in the mailing labels that you are building in this section, you can sort by postal code because that is a value you added to the report. However, you cannot sort by last name because you are using the MAILING_ADDRESS_PREFERRED query item which displays the name starting with the first name. If you were to sort on the MAILING_ADDRESS_PREFERRED query item, you would sort by first name only.

Notice that once the query item is sorted, you can see a directional (sort ascending or sort descending) arrow next to the item that sorted. Notice that the sort arrow only appears in the first cell but will be applied to all.



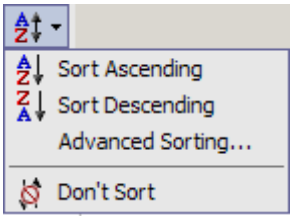
Steps

Follow these steps to sort data in a mailing label report.

1. With the mailing label report open that you just created in the previous exercise, click the item you want to sort.

2. Click the **Sort** icon.

3. Select **Sort Ascending** or **Sort Descending**.



4. Click the **Run Report** icon to preview the mailing label report. Notice that the mailing labels are now sorted by postal code.

5. Click the **Close** [**X**] icon in the upper-right corner of the browser window to return to Report Studio.

6. Click the **Save** icon on the toolbar.

7. To close the mailing label report, select **Exit** from the **File** menu.

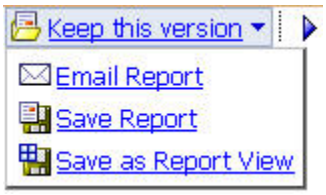
Saving the Mailing Labels as a PDF File

Introduction

Once you create the mailing labels report, you can run the report and save the mailing labels that you produced for later use. You can also save the mailing labels as a PDF file that you can e-mail to a mailing fulfillment house.

At the top of the report window, the **Keep this version** link lets you choose to Email Report, Save Report, or Save as Report View.

Keep this version list



Steps

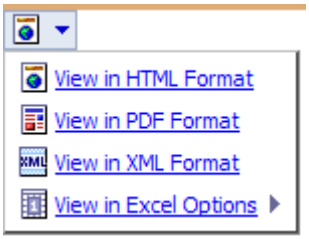
Steps to follow if the report is already in PDF format:

1. From the **xx- Sample Report** folder (or whatever folder you saved the report in), click the title to run the report.
2. Click the **Keep this version** link.
3. Click **Save Report**.

Steps

Steps to follow if the report is in HTML format:

1. Select a report and run it.
2. Once the report has displayed results, select the arrow next to the **View in HTML format** icon in the upper right corner of your display.



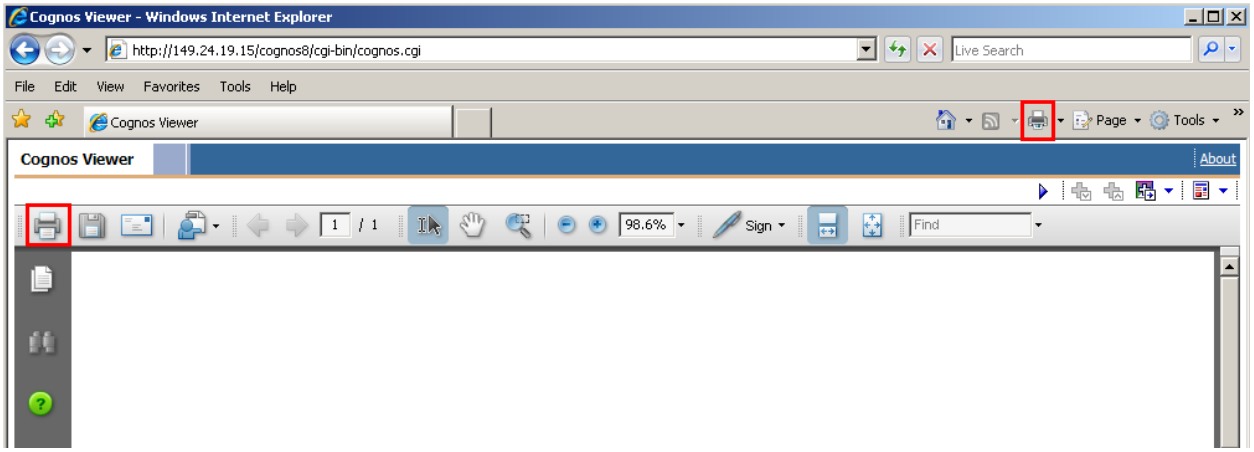
3. Select the **View in PDF format** link.
4. Click the **Save** button.
5. Save the report to your desktop or other location.

Printing the Mailing Labels

Introduction

Once you created the mailing labels, you can print the mailing labels in two ways. First, you can use the **Print** icon on your web browser. The second is to view the report in PDF format, then use the **Print** icon to print the entire document or just selected pages.

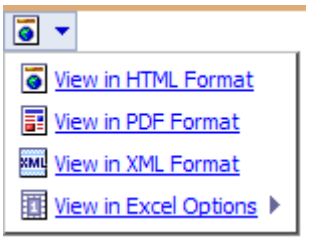
Print icons in PDF view



Steps

Steps to follow:

1. Select a report and run it.
2. Once the report has displayed results, select the arrow next to the **View in HTML format** icon in the upper right corner of your display.



3. Select the **View in PDF format** link.
4. Click the **Open** button.
5. Click the **Print** icon on the PDF toolbar.
6. Select the entire document or selected pages.
7. Click the **OK** button.

Appendix

Terminology

Attribute

A building block of information within a view. Many of the attributes in a view come directly from fields in the source database. Other attributes are derived from database fields either through calculations or the logic defined in a function.

Base View

A view of a primary or secondary composite table, which. A base view is used to add fields not extracted from the source database, or ERP, but required for the view, such as counts or other function-based values. In addition, the base view serves to insulate the user from changes to the architecture of the composite tables. Any changes to the underlying table can be handled through the creation of the base view. The Banner ODS builds all access to data via the base views

Business Intelligence

A term adopted within the technology industry to represent a broad category of applications for gathering, storing, analyzing, and providing access to data to help users make better business decisions. Applications within a business intelligence environment allow users to monitor the operations and financial soundness of the institution – they may preserve the organization's fiscal history, display its current state, and forecast future results using business intelligence data.

Change File

A file that captures and records key information about the updates, additions, and deletions of data in a master file. The creation of the Change File starts the incremental refresh process in the Banner ODS.

Change Tables

In Banner, Oracle tables that capture key information when data is changed. Change tables drive the incremental refresh of the Banner ODS process. They identify which information needs to be updated in the Banner ODS.

Cleansing

The process of translating, decoding, or resolving anomalies within source information that resides in Banner Operational Data Store.

Composite Table

A table within the Banner ODS that groups information from the source system's database tables to form the foundation from which views will be built.

Composite View

Views within Banner that contain the information that will be extracted into the Banner ODS. The ETL process pulls the information from the composite views into the composite tables of the Banner ODS.

Control report

In the Banner ODS, a report generated after a refresh process that indicates the status of the refresh. The report identifies whether the refresh process was successful, the elapsed time of the refresh, and any errors that might have occurred.

CSV

Comma Separated Values file. CSV is a normal format for files as they are downloaded or exported from an application. A CSV file can be opened and manipulated in common tools like Microsoft Excel.

Cube

A cube is a multidimensional data structure used to store presorted information that has been aggregated based on an underlying data relationship. Data structured in this way can be quickly processed and analyzed, because multiple dimensions can be examined at one time.

Customer Support Center

The Customer Support Center is our centralized support site where clients can access support resources for SunGard Higher Education (SGHE) products, and where they can go for support of UDC solutions. The support center itself is not part of the Unified Digital Campus.

Data

Recording facts or instructions on a storage medium for communication, retrieval, processing, or presentation.

Data Element

The smallest individual component part of data. A field's literal, technical name.

Data Link

A reference to a remote database, located on a completely different system from the local database.

Data Mart

A subset of a data warehouse that is designed for a particular subject area or branch of the organization's business, such as for the Admissions or Human Resource areas. Data marts are typically built and controlled by a single department in an organization.

Data Model

A map that displays the data elements that are included in the Banner ODS, and the transition of each data element from its origin in the ERP database to its location in the Banner ODS composite tables and views and Banner EDW star schemata.

Data Store

Also called Banner Operational Data Store (Banner ODS). A place that stores significant types and pieces of information for an organization, in a format that promotes ease of retrieval and analysis. Banner Operational Data Store (Banner ODS) facilitates operational ad hoc reporting by gathering, transforming, and storing data. The Data Store deals with information that is transactional in nature. It's short-lived, and may be here today and gone tomorrow. See Data Warehouse.

Data Transformation

The process of converting pieces of raw data into information that is logical, such as by decoding production data and merging information from multiple sources and formats.

Data Warehouse

Also called Enterprise Data Warehouse (Banner EDW). An informational database that stores data provided and shared by multiple databases. It enables an institution to keep “time slices” of data over time, over history, stored for easy retrieval and comparison. The data warehouse is an extension of the Data Store, which is the primary source of aggregated and detailed data. Partner applications can also be used to feed detailed data into the Banner EDW through the Banner ODS. The data warehouse is separated from the transaction stores, offering scalable performance, product independence and a streamlined extraction process to support the reporting, query or uses of the data warehouse.

Of an Enterprise Data Warehouse (Banner EDW) an institution can ask the question, “How are we doing this month as compared to last month?” See Data Store.

Denormalized

Describes data that does not conform to any “normalized” form. Normalized data is data in its simplest format, without redundant attributes or keys. Data is normalized for ease when transporting it to another environment, or retrieving it for reporting purposes.

Dimension

A structural attribute of data that consists of pieces of information of a similar type. A Geography dimension, for example, may contain data about regions, countries, cities, states. A time dimension contains year, month, day and hour members. A multidimensional data structure allows data to be organized and analyzed in a concise, efficient way.

Dimension Table

A table that contains all the attributes (dimensions) or characteristics that describe observations and their associated measures (related numbers). Characteristics of the people, places, or things represented in the data are stored in the dimension tables. One row represents a unique combination of the characteristics in a particular dimension table. The unique combination is assigned a surrogate (sequential) key.

Dynamic Data

Data that is automatically updated every time something changes in the Oracle database.

Banner EDW (Banner Enterprise Data Warehouse)

See Data Warehouse.

Enterprise Resource Planning (ERP)

ERP is the term used to describe the transactional system. It's the combination of the major components of these systems (Student, Financial Aid, Human Resource, Finance, and Alumni/Advancement). It provides the core of information for the Banner ODS and the EDW.

Extract, Transform and Load (ETL)

In managing databases, Extract, Transformation, Load (ETL) refers to three separate functions combined into a single programming tool.

The Extract function reads the data from a specified source database, and extracts a desired subset of data. Next, the Transformation function works with the acquired data, using rules or lookup tables, or creating combinations with other data to convert it to the desired state. Finally, the Load function writes the resulting data (either all of the subset or just the changes) to a target database, which may or may not previously exist.

The ETL process is used to populate Banner Operational Data Store (Banner ODS) from the source database. Another set of ETL processes is used to populate the enterprise data warehouse (Banner EDW) from Banner Operational Data Store (Banner ODS).

ETL Map Package Parameter

In the Administration tool, a parameter used to group mappings together into a job.

Facts/Measures

Numbers that are related to the attributes. Facts and measures (the terms are synonymous) generally represent counts, sums or percentages and other ratios. They may be stored and retrieved. They may be calculated from stored measures as the query is executed. Examples of facts/measures are total enrollment, or the number of employees, or the amount of all gifts to the institution.

Fact Table

A table that contains measures or numerical information used to perform an analysis. Detailed Fact tables store the most granular level detail in the data warehouse, and support information audit when linked to the source database. Summary Fact tables provide faster responses for queries.

Fine Grained Access

Terminology used by Oracle to identify how security can be applied to different tables and

views. The Banner ODS use fine grained access security to manage user profile access.

Freeze Process

A process maintained within the Administration tool that allows you to identify what file(s) to capture at a specific moment in time, or “freeze,” and store inside the Banner ODS as new tables for later access. You can use the freeze process to create ad hoc or scheduled “snapshot” database tables.

Function

A small piece of code that uses specified logic to get information from the source database that isn’t stored as a single field. For example, “Age” may not be stored as a field. Using a function that subtracts birth date from today’s date and then determines whether the birth month has passed, Age can be provided as an attribute in a view.

The Banner ODS is designed to use functions where practical to calculate values, or determine the location of information within the Presentation Views.

Grant, Revoke and Privileges

While DDL statements such as Grant and Revoke can’t be used directly in PL/SQL, they do have an effect on which SQL statements are legal. In order to Insert or Delete information on an Oracle table, you need permission. Permissions are manipulated via the Grant and Revoke SQL commands.

Job Killer

Gives you the ability to stop a process while it is running using the JOB KILLER parameter.

Key Attribute

Attributes that determine the level of information returned by the view. It is important for you to know the level at which information in a view is returned. For example, key attributes can determine whether a view returns one row of information for each person per condition, or simply one row for each person.

Incremental Refresh

Data in the Banner ODS is updated, or refreshed, at predetermined intervals of time. Only the data that has changed in the source database since the last refresh is updated.

Information

Data that human beings assimilate and evaluate to solve problems or make decisions.

Mapping

The activity of associating elements in the source system with their corresponding elements in the Banner ODS. When you run a job (schedule a process via the Administration Tool), it calls the related mappings and loads or updates the data defined by them.

The Banner ODS includes two main categories of mappings:

- LOAD mappings: load data from the source system into the Banner ODS. These mapping names have the prefix LOAD_.
- REFRESH mappings: update the Banner ODS with data that has changed in the source database. Mappings in this category have the prefix UPDATE_ or DELETE_.

Typically, these mappings exist in pairs. To completely refresh the data, run the DELETE mapping followed by its associated UPDATE mapping.

SunGard Higher Education delivers the Banner ODS with hundreds of mappings already defined. LOAD and REFRESH mappings exist for each composite table in the Banner ODS. To make them easier to work with, they are organized into groups by product areas. This gives you the ability to run one job that includes a group of mappings, say all of the Finance-related mappings, at one time. You can also run a single mapping, if desired.

Master Instance

The database where production data are located. This is also the location where the snapshot logs are run. The master instance is also called the master database or the production database.

Measure/Fact

See Facts/Measures.

Meta data

Literally, data about data. Descriptions of what kind of information is stored where,

how it is encoded, how it is related to other information, where it comes from, and

how it is related to your institution. The information describes data and other

structures, such as objects, business rules, and processes.

Multidimensional Cube

See Cube.

Multidimensional Database

A Database Management System (DBMS) optimized to support multi-dimensional

data.

Normalize

See Denormalized.

ODBC

Open Database Connectivity. A product is considered to be ODBC compliant if it allows you to access a relational database in a client/server environment. An example would be using your PC in your office to retrieve information in a database stored in another location.

Online Analytical Processing (OLAP)

Dynamic, multi-dimensional analysis of historical data which supports activities such as:

- Calculating across dimensions and through hierarchies
- Analyzing trends
- Drilling up and down through hierarchies
- Rotating to change the dimensional orientation

Banner Operational Data Store (Banner ODS)

See Data Store.

Banner ODS Instance

The database where all the Banner ODS functions, composite tables, and views are run.

OLAP

Online Analytical Processing. OLAP enables you to perform multi-dimensional analysis by allowing you to drill up, down, across and through information to see varying levels of detail.

Oracle Data Dictionary

Oracle stores information about the structure of the database in the Oracle data dictionary. The data itself is located in other areas and the data dictionary describes how the actual data is organized. The dictionary consists of tables and views that you can query in the same way you query any other database tables or views (the views are owned by Oracle user SYS).

Oracle Warehouse Builder (OWB)

OWB is the ETL tool used to extract data from the ERP and move it to composite tables in the Banner ODS. It is also the tool used to extract the data from the Banner ODS and load it into the Banner EDW.

It is designed to move and transform data, develop and implement data warehouses, perform meta data management, or create and manage Oracle databases and meta data. In addition to its graphical user interface (GUI), Warehouse Builder provides an API in the form of Oracle MetaBase Plus (OMB Plus), where all Warehouse Builder functionality can be accessed using the OMB Scripting Language.

Package

A collection of functions and/or procedures that are managed and owned by a single object.

Physical Table

A table where data is actually stored in a database.

PL/SQL

The 3GL Oracle procedural language extension of SQL. PL/SQL enables you to mix SQL statements with procedural constructs. PL/SQL combines the ease and flexibility of SQL with the procedural functionality of a structured programming language, such as IF...THEN, WHILE, and LOOP. Even when PL/SQL is not stored in the database, applications can send blocks of PL/SQL to the database rather than individual SQL statements, thereby reducing network traffic. With PL/SQL, you can define and execute PL/SQL program units such as procedures, functions, and packages. PL/SQL is interpreted and parsed at runtime; it does not need to be compiled.

Presentation View

A view that joins together multiple base views to make the information easier to access and report from. The primary purpose of a presentation view is to eliminate the need to join base views, and add in display defaults when present. The presentation view invokes

Oracle's fine grained access to ensure proper access to data by a user.

Presentation View and Reporting View are synonymous terms.

Primary Composite Table

A composite table that manages its stored data using a "unique row per key" format. Typically, these tables are the owners of data, and are supported by secondary composite tables.

Privilege: Object vs. System

An object privilege allows an operation on a particular object (such as a table). A system privilege allows operations on an entire class of objects.

Procedure

A database object that is designed to perform a designated process. A procedure is similar to a function -- it is written using rules that are typically difficult for a report developer to create within a reporting tool. The primary difference between a procedure and a function is that a procedure is used to update data in the database whereas functions can only return values.

The Banner ODS uses procedures within the ETL process of populating the Composite Tables.

Reporting Views

See Presentation View.

Relational Online Analytical Processing (ROLAP)

A form of Online Analytical Processing (OLAP) that performs dynamic multidimensional analysis of data stored in a relational database rather than in a multidimensional database (which is usually considered the OLAP standard).

Role Based Security

Security provided within the Banner ODS that permits you to control who can access reporting information based on each person's role at the institution. The Banner ODS uses Oracle's fine grained access to implement its security.

Secondary Composite Table

A composite table that manages its information on a “many per key” format. Typically, these tables are used to support primary composites because the data can be associated with a specific value within the primary composite tables.

A secondary composite view is also referred to as a repeating view. It is a building block that contains a defined set of data that has an unlimited number of records in the ERP. It is passed through a display rule filter that slots a limited number of the repeating items for use in reporting. It is usually used in combination with other base composite views, but it may be used alone.

Slotted View A view that brings back user-defined information from the source database rather than all information.

Source Code

The all_source, dba_source, and user_source views contain the source code for stored procedures, functions, packages, and package bodies. Trigger source code is in the all_triggers, dba_triggers, and user_triggers views. If the stored object is wrapped, these views contain the encoded source rather than clear text.

Note: Within the Banner ODS DED, when you view source code, you see the encoded source.

Star Join

An optimal, denormalized form of organizing data to access a group of people, usually a department. Star joins are usually associated with data marts.

Star Schema

A standard technique for designing the tables of a data warehouse. It is a collection of related database objects, including logical structures such as tables, views, sequences, stored procedures, synonyms, indexes, clusters, and database links.

Star schemata are made up of fact tables, dimension tables and surrogate or calculate keys.

Fact tables each join to a larger number of independent dimension tables. The tables may be partially denormalized for performance, but most queries still need to join in one or more of the star tables.

A schema is owned by a database user and has the same name as that user; relational schemata are grouped by database user ID.

Synonym

A renaming of a table reference, similar to an alias for a select list item. A synonym is a data dictionary object and is created by the CREATE SYNONYM DDL statement.

Table

The object within the database where data is stored in a row and column format.

Translating Code

A code that associates a code in the source database with different code values in the Banner EDW. A translating code can translate one-to-one, or by range. More than one code in the source database can be associated with one code in the Banner EDW.

Trigger

Triggers are used to populate the change tables which aid in the incremental refresh process.

View

A grouping of information, also called “logical view.” A view is “logical” because the information in the view is grouped in a logical order, putting related information in the same section of the view. For instance, in the people-related views, you find all the name information together at the beginning of the view, followed by personal, biographical, and demographic information.

Most of the information in a view comes from fields within the source database tables. Some information is calculated from database fields or retrieved using an Oracle function. A single view can include up to 255 pieces of information, called attributes.