

## **Unit 1      Introduction to IBM Cognos Analytics - Reporting**

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IBM Training

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**Introduction to IBM Cognos Analytics - Reporting**

IBM Cognos Analytics (v11.0)

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## Unit objectives

- Examine IBM Cognos Analytics - Reporting and its interface
- Explore different report templates
- Create reports in preview or design mode
- Create a simple, sorted, and formatted report
- Examine dimensionally modelled and dimensional data sources
- Explore how data items are added queries
- Examine personal data sources and data modules

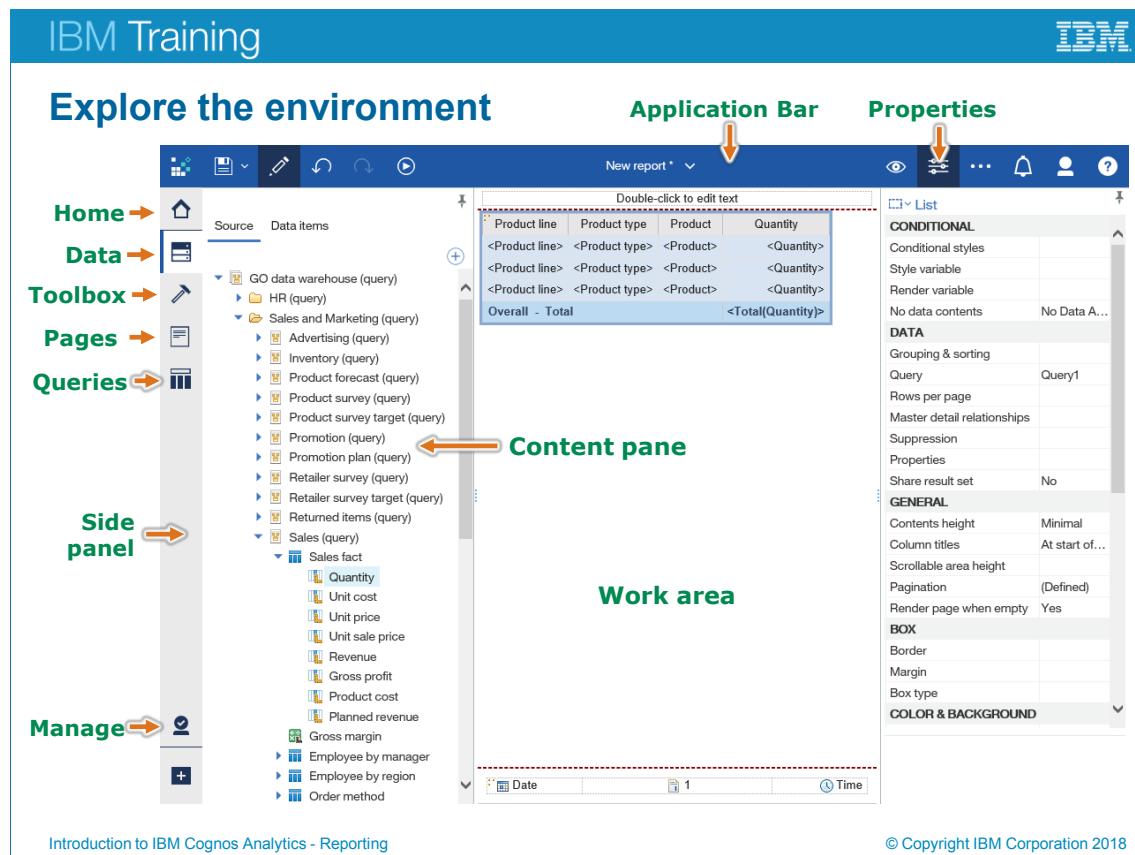
## What is IBM Cognos Analytics - Reporting?

- Reporting is a Web-based report authoring tool.
- Reporting lets you create business intelligence reports that analyze corporate data according to specific information needs.
- Reporting lets you format, present, and distribute your corporate data using many different methods.

### *What is IBM Cognos Analytics - Reporting?*

Reporting, in IBM Cognos Analytics, is the report authoring environment where you can:

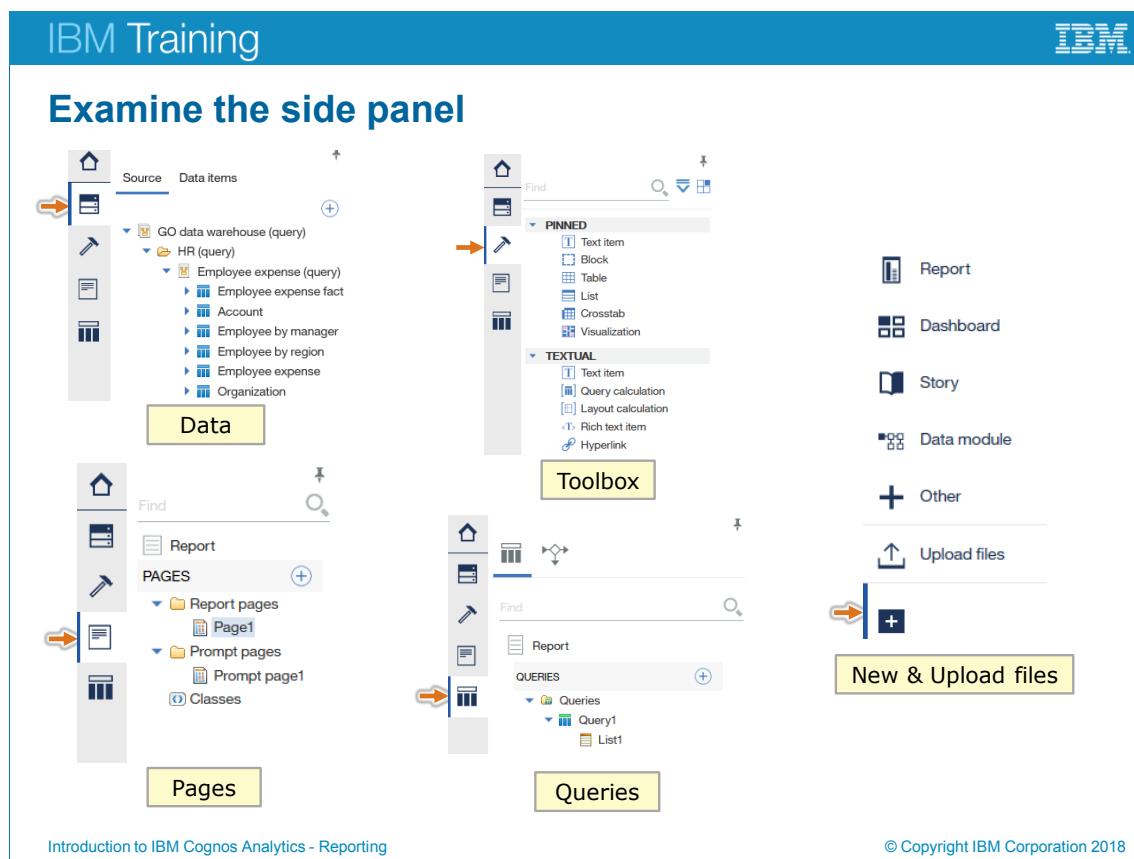
- **Create New:** Author a report with a choice from existing templates.
- **Open Existing:** Open an existing report, make changes and then save it with the same name or with a new name.



### Explore the environment

Features and components of the IBM Cognos Analytics - Reporting environment:

- The Application bar, allows you to save or run the report, switch between open reports and the Welcome page, switch between view modes of the report (Page Design, Page Structure, Preview), show properties, and more options of IBM Cognos Analytics Authoring.
- You can build reports by adding objects and data items from the content pane to the work area
- The side panel contains the Data, Toolbox, Pages, and Queries tabs. That will be discussed on the next slide. As well as the Manage and New buttons.
- Modify objects and query items using the Properties pane.



### Examine the side panel

**Data** - use this to add query items to a report page. It has two tabs:

- Source: displays the contents of the published package(s) that the report is using.  
Note: You create and change the structure of the package by using Cognos Framework Manager.
- Data items: displays data items in the queries defined in the report

**Toolbox** – Use this to modify the report by adding objects to the report, that aid in creating a professional look and feel to the report.

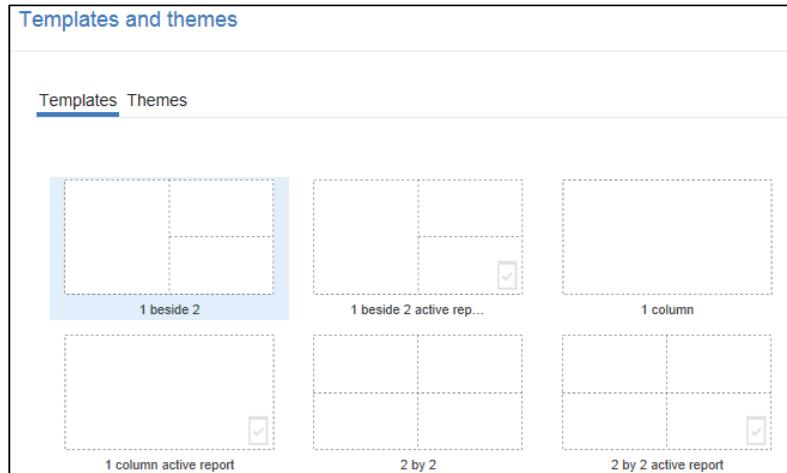
**Pages** – Use this to navigate through the different pages of the report (report pages and prompt pages), as well as classes for styling.

**Queries** – Use this to navigate through the different queries of the report, and change properties of a query, its data items, or its filters. As well as navigating between conditional variables; to define conditional variables and their values.

**New** – Use this to start creating new Reports, Dashboards, Stories, Data Modules, or upload files to the Cognos Analytics portal

## Explore authoring templates

- IBM Cognos Analytics - Reporting contains several report templates to structure your reports.



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### *Explore authoring templates*

Creating a new report gives the report author a chance to pick a layout presentation for the report screen. Combined with a Theme, the author can quickly pick a layout a set of colors that are attractive.

Once the report layout has been selected, for each section in the layout, there is the  Add button, which when clicked provides the option to add:

- List objects which are useful for presenting tabular list information.
- Crosstab objects which are useful for comparative analysis.
- Visualization objects which are useful for graphically showing comparisons, relationships, and trends.
- Text items which are useful for labeling report objects in a meaningful way.
- Blocks which are useful for extending the layout.
- Tables which are useful for organizing the layout of objects in the report.

## Design then run the report

- Design the report in different page views
  - Page design
  - Page preview
  - Page structure
- View the results by running the report in the browser
- Reports can run in two modes
  - limited interactivity
  - full interactivity



Page design

Page preview

Page structure

### List object while designing

Country	Revenue
<Country>	<Revenue>

### Results after running the report

Country	Revenue
Portugal	\$34,675,662.43

Run HTML

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### Design then run the report

While working in Page design mode, you will only see metadata, such as column labels. You will not see actual data values in the report. While working in Page preview mode, you will see sample data as you create the report. To see the final report results, you must run the report. The results appear in a separate web browser tab.

You can distribute report by email, through the Web, embed it in a Website, or you can save it on the server or on your desktop.

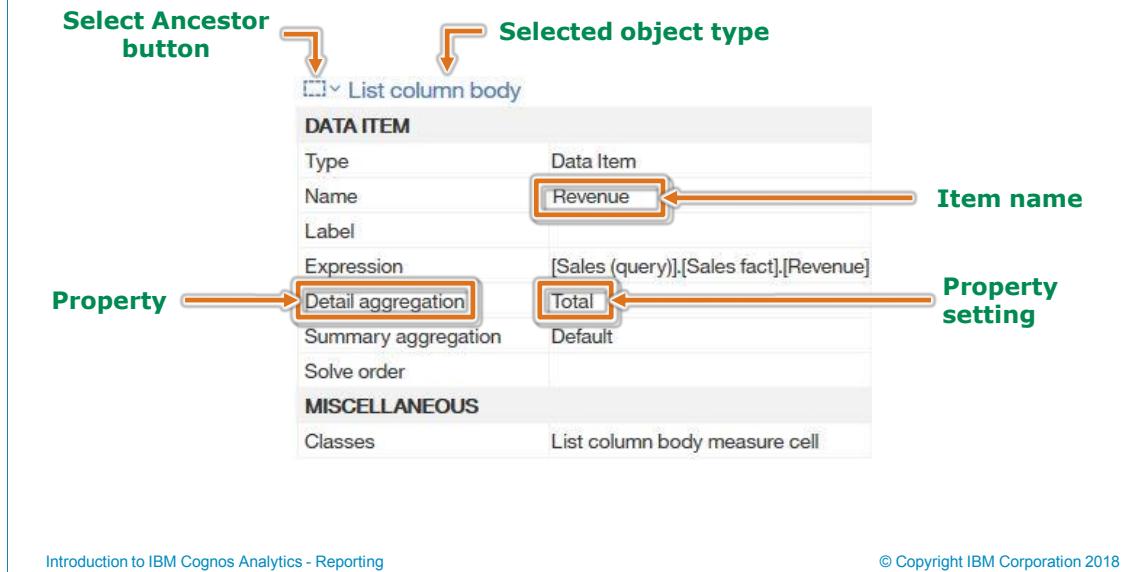
You can run the report in the format that is most suitable for your needs: HTML, PDF, Excel, Comma-Separated Values (CSV) or XML.

Reports can run in limited interactivity or full interactivity mode. You specify that by setting the report property **Run with full interactivity**. If you run a report with full interactivity (which is the default) you can do many operations in the output, like:

- filter, group, sort, and summarize data
- drill down and up in dimensional data
- share or embed the report output, preserving the current view

## Change the properties of an object

- The Properties pane lets you view and change the properties of an item or object in your work area.



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### Change the properties of an object

When you click an item or object in the report, the properties for that item appear in the Properties pane.

You can verify the object type selected by the name displayed at the top of the Properties pane. It is a best practice to verify the object type selected before making any modifications to it.

You can select an ancestor (or parent object) of the object previously selected in your work area by clicking the Select Ancestor button.

In the slide example, the Properties pane shows the properties and settings for Revenue, which is a column in a list data object. The data displayed will be summarized by total.

There are different ways to change a property setting. If there are only two options for a certain property, double-click the setting to toggle to the other option. If there are multiple options, you can click the setting and then click the ellipsis and choose the desired setting from the dialog box that appears, or choose a selection from a drop-down list.

## Demonstration and exercise start point information

This section describes in detail how to use the start point information included with the demonstrations and exercises in this course. It is particularly important for students in a self-paced learning environment to review this information before proceeding with the course.

Before you begin the steps of a demonstration or exercise, you will see start point information to help you set your environment for the tasks that you will perform in that demonstration or exercise. The start point format appears like the following:

Portal:	<b><a href="http://vclassbase/ibmcognos">http://vclassbase/ibmcognos</a></b>
User/Password:	<b>brettonf/Education1</b>
Package:	<b>Team content &gt; Samples &gt; Models &gt; GO data warehouse (query)</b>
Folder:	<b>Sales and Marketing (query)</b>
Namespace:	<b>Sales (query)</b>

This information provides you with a unique starting point for that demonstration or exercise. It tells how you will access IBM Cognos Analytics through the browser. It provides the user ID and password to use, the package to use, and within it, the folder and namespace for items to be used in your report as you build it. Use this to set your environment before beginning the first task of the demonstration or exercise.

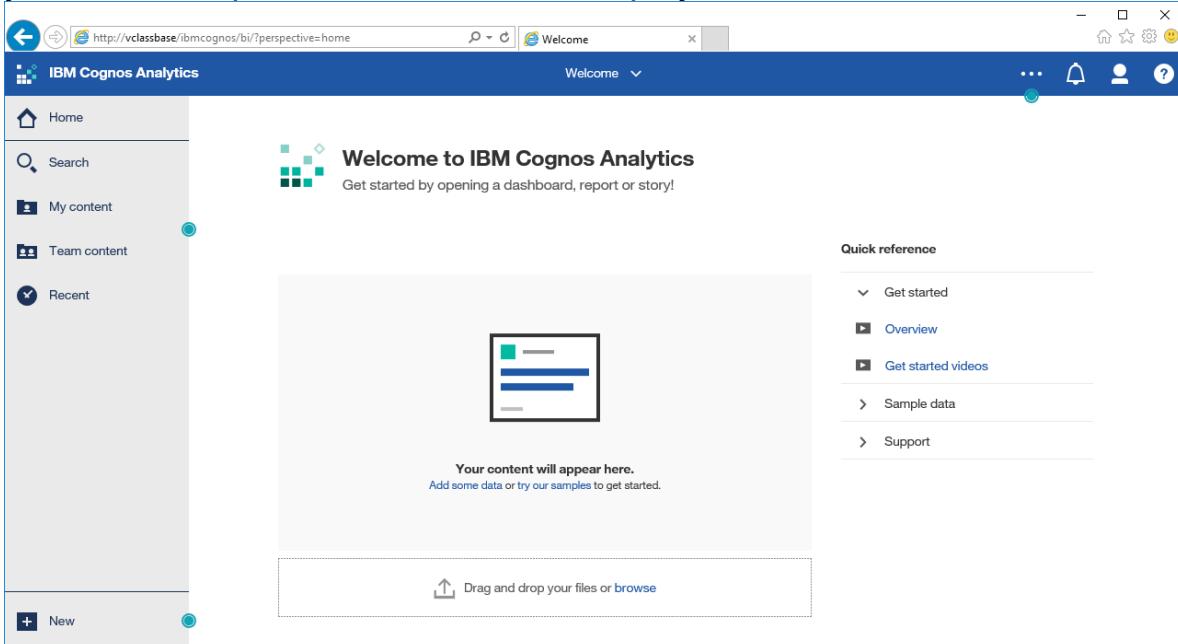
For example, if your demonstration provided the start point information above, you would do the following steps to create the List report using the Sales and Marketing (query)\Sales (query) namespace:

1. From the Windows taskbar, click the **Internet Explorer** icon to launch it.
2. In the **Address** bar, type the portal address **<http://vclassbase/ibmcognos>** and then press **Enter**.  
The login page appears in a browser tab, with a Log on dialog box prompting for a User ID and Password. You will log on with the credentials listed in the start point information.
3. In the **User ID** box type **brettonf**, in the **Password** box type **Education1**.

4. Click **Sign in.**



The IBM Cognos Analytics portal displays the features of the application that your user has permission to use are displayed.



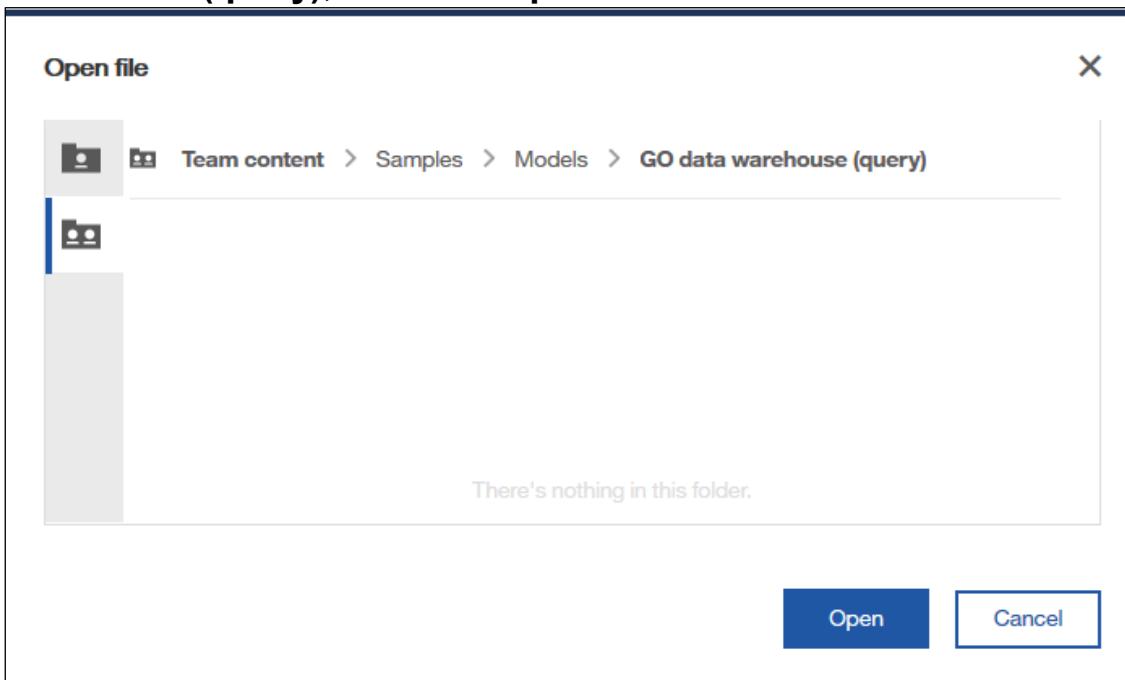
5. Click **+ New** and then click **Report**.

The Templates and themes dialog opens and allows you to choose a report template and theme.

6. Select the **Blank** template, then click **OK**.

7. In the **Data** tab, click **Add report data**

8. Browse to the required package by clicking **Samples > Models > GO data warehouse (query)**, then click **Open**.

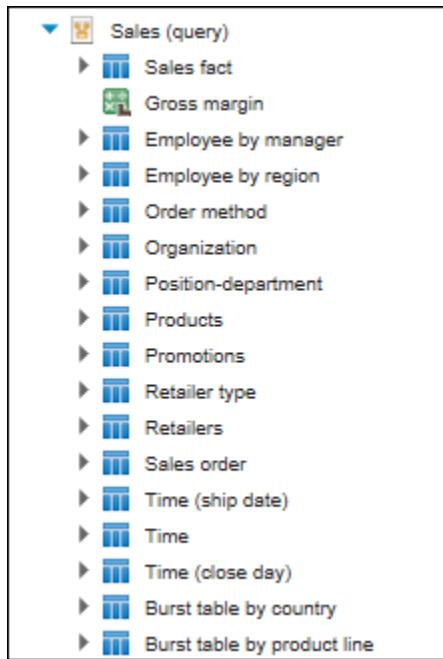


Now you have two tabs on the left: Source and Data items. The Source tab includes a package explorer for using the data in the package that you have selected, while the Data items tab contains a list of data items that are used in your report.

9. In the Source tab, expand the **Sales and Marketing (query)** folder. The expanded folder displays the namespaces that are available to you in this package. The starting point information in this example will work with the Sales (query) namespace.

10. Expand the **Sales (query)** namespace.

The results appear as follows:



A screenshot of the IBM Cognos Analytics interface showing the expanded **Sales (query)** namespace. The tree view displays the following items:

- ▶ **Sales (query)**
  - ▶ **Sales fact**
  - ▶ **Gross margin**
  - ▶ **Employee by manager**
  - ▶ **Employee by region**
  - ▶ **Order method**
  - ▶ **Organization**
  - ▶ **Position-department**
  - ▶ **Products**
  - ▶ **Promotions**
  - ▶ **Retailer type**
  - ▶ **Retailers**
  - ▶ **Sales order**
  - ▶ **Time (ship date)**
  - ▶ **Time**
  - ▶ **Time (close day)**
  - ▶ **Burst table by country**
  - ▶ **Burst table by product line**

From here, you would work with the metadata of query subjects, query items, and facts within this selected namespace unless otherwise mentioned.

Follow the start point information carefully, as there will be different logins, packages, and namespaces used for each demonstration and exercise in this course.

At the end of most of the demonstrations and exercises, you will be asked to close the report you designed. This is a best practice; to free up browser resources.

## Demonstration 1

Create a simple report

Country	City	Last name	First name	Position name	Revenue
Switzerland	Genève	Bruno	Fausta	Level 3 Sales Representative	\$79,955,838.92
Switzerland	Genève	Giordano	Fiorenza	Level 3 Sales Representative	\$72,784,594.30
Switzerland	Genève	Chambers	Warren	Level 3 Sales Representative	\$62,843,459.76
Finland	Kuopio	Lindholm	Helena	Level 3 Sales Representative	\$59,799,153.93
Korea	Seoul	Kim	Chang-ho	Level 3 Sales Representative	\$59,422,592.32
United States	Los Angeles	Laurel	Charles	Level 3 Sales Representative	\$59,406,874.73
Switzerland	Genève	Bichot	Lotta	Level 3 Sales Representative	\$54,436,904.60
Netherlands	Amsterdam	Jansen-Velasquez	Belinda	Level 3 Sales Representative	\$52,822,234.19

## Demonstration 1: Create a simple report

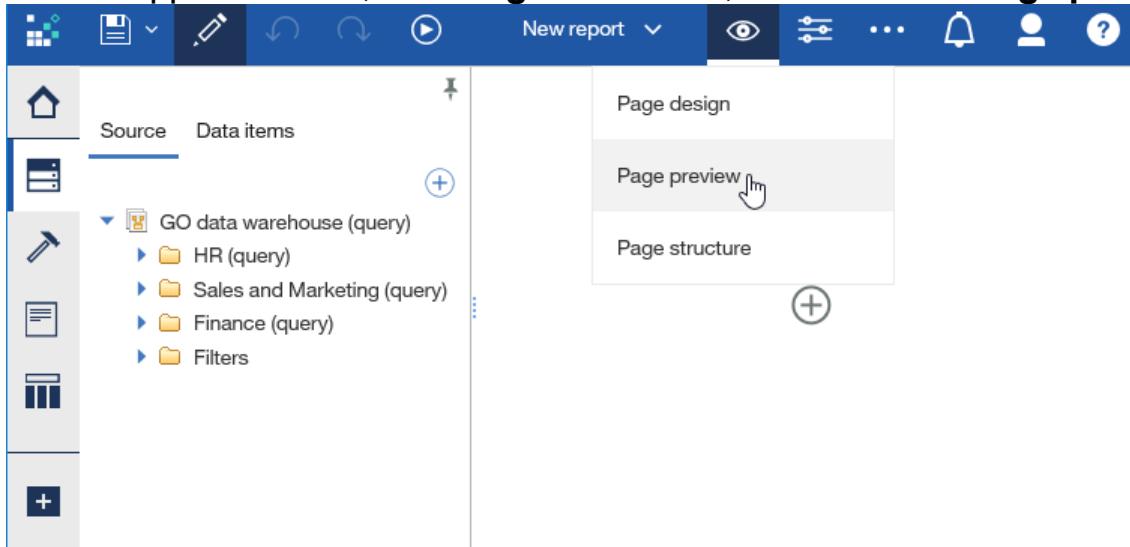
### Purpose:

Sales executives would like you to create a report that lists all of the sales representatives and the revenue they have generated to date. The report should include their name, position, city, and country. Sort the report by revenue, in descending order, and display revenue in American dollars.

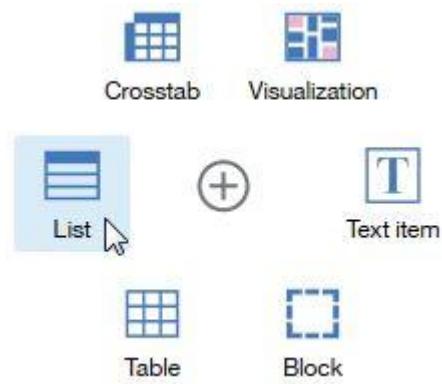
### Task 1. Add a List and add data to it

Before beginning step 1, ensure that you have logged onto the portal with the user and password identified in the starting point information above, opened a new report and selected the correct report template, package, etc. If you are unsure of how to do this, please refer to page 1-10, *Demonstration and exercise start point information* for detailed steps.

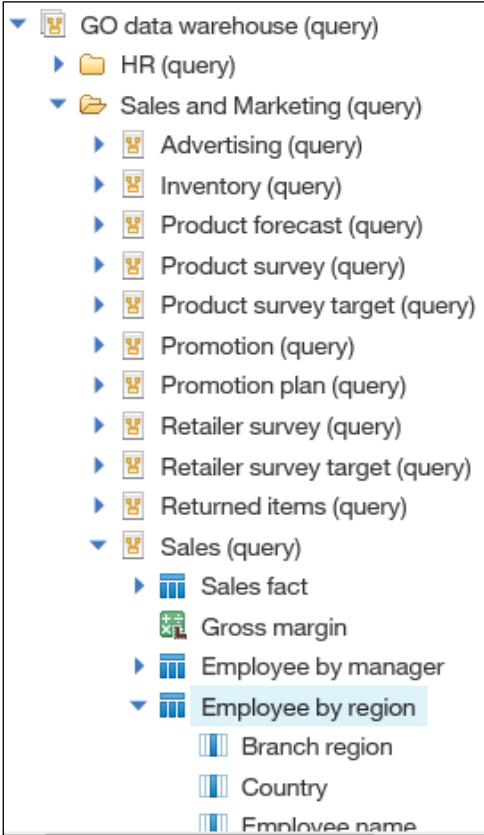
1. On the Application bar, click **Page views** , and then click **Page preview**.



2. Click **Add**  in the center of the screen.  
This will bring up a set of data container choices.



3. Click the **List**  object, and then click **OK** to accept the default options.
4. From the side panel, click the **Data**  to open it if it is not already open.
5. On the side panel, **Source** tab, expand the **Sales and Marketing (query)** folder , expand the **Sales (query)** namespace , and then expand the **Employee by region** query subject .



The screenshot shows the Data pane in IBM Cognos Analytics. The tree view displays the following structure:

- GO data warehouse (query)
  - HR (query)
  - Sales and Marketing (query)
    - Advertising (query)
    - Inventory (query)
    - Product forecast (query)
    - Product survey (query)
    - Product survey target (query)
    - Promotion (query)
    - Promotion plan (query)
    - Retailer survey (query)
    - Retailer survey target (query)
    - Returned items (query)
  - Sales (query)
    - Sales fact
    - Gross margin
    - Employee by manager
    - Employee by region** (selected item, highlighted with a blue border)
      - Branch region
      - Country
      - Employee name

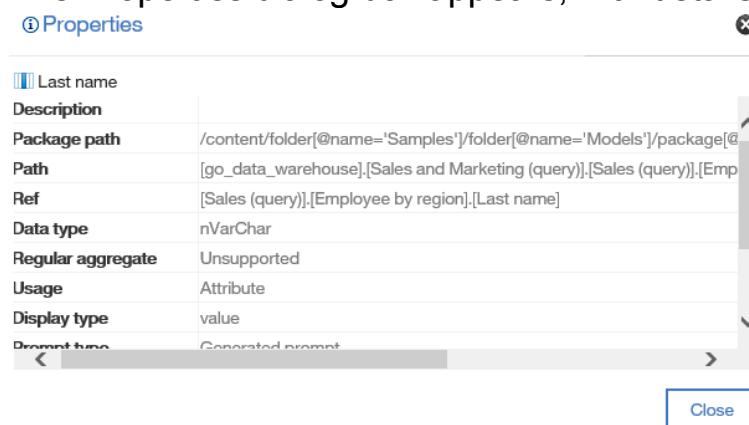
6. Double-click the **Country** query item to add it to the List object.

Now the List object has one column.

The screenshot shows the IBM Cognos Report Studio interface. On the left, there's a navigation bar with icons for Home, Source, Data items, and other report components. Below it is a tree view of data sources and queries under 'GO data warehouse (query)'. A 'Country' list object is selected, displaying a list of countries: Australia, Austria, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, Italy, Japan, Korea, Mexico, Netherlands, Singapore, Spain, Sweden, Switzerland, and United Kingdom. The 'Country' item in the list is highlighted with a blue selection bar. At the bottom of the list object, there are navigation buttons for 'Top' and 'Page'.

7. Double-click **City** to add it to the List object.  
City is automatically added to the end of the List.
8. Right-click **Last name**, and then click **Properties**.

The Properties dialog box appears, with details about the item.



9. Click **Close**.
10. Click **First name**, and then Ctrl-click **Last name**, **Employee level** and **Position name**.

11. Right-click **Position name**, and then click **Insert**.

The items are added to the list in the order in which they are selected.

A section of the results appears as follows:

Country	City	First name	Last name	Employee level	Position name
Switzerland	Genève	Aaghie	Heiman	4	Information Technology Manager
Switzerland	Genève	Aaghie	Heiman	5	Software Engineer
Switzerland	Genève	Aaltje	Hansen	6	Level 1 Sales Representative
Brazil	São Paulo	Abel	Antunes	4	Product Manager
Switzerland	Genève	Abram	Ruiz	6	Level 2 Sales Representative
Italy	Milano	Ada	Morales	6	Warehouse Worker
Italy	Milano	Adara	Cruz	5	Accountant 2

12. From the **Source** tab, expand the **Sales fact** query subject, and then click and drag **Revenue** to add it to the end of the List (you should see a flashing black bar inside of a white bar, indicating the correct drop zone).

Country	City	First name	Last name	Employee level	Position name
Switzerland	Genève	Aaghie	Heiman	4	Information Technology Manager
Switzerland	Genève	Aaghie	Heiman	5	Software Engineer
Switzerland	Genève	Aaltje	Hansen	6	Level 1 Sales Representative
Brazil	São Paulo	Abel	Antunes	4	Product Manager
Switzerland	Genève	Abram	Ruiz	6	Level 2 Sales Representative
Italy	Milano	Ada	Morales	6	Warehouse Worker
Italy	Milano	Adara	Cruz	5	Accountant 2
Switzerland	Genève	Adda	Heijman	6	Level 2 Sales Representative
Switzerland	Genève	Adelaide	Wiesinger	6	Warehouse Worker
France	Paris	Adeline	Arnaud	5	Human Resources Clerk
Italy	Milano	Adelma	Ortiz	5	Accountant 1
Switzerland	Genève	Adriaantje	Haanraads	6	Level 2 Sales Representative
Switzerland	Genève	Adriana	Iacobucci	3	Vice-President of Human Resources

If you place the query item outside of the List object you will receive a message indicating that you have created a Singleton. You instead want the new query item to be added to the end of the List, so if this is the case, undo your last action, then redo step 12.

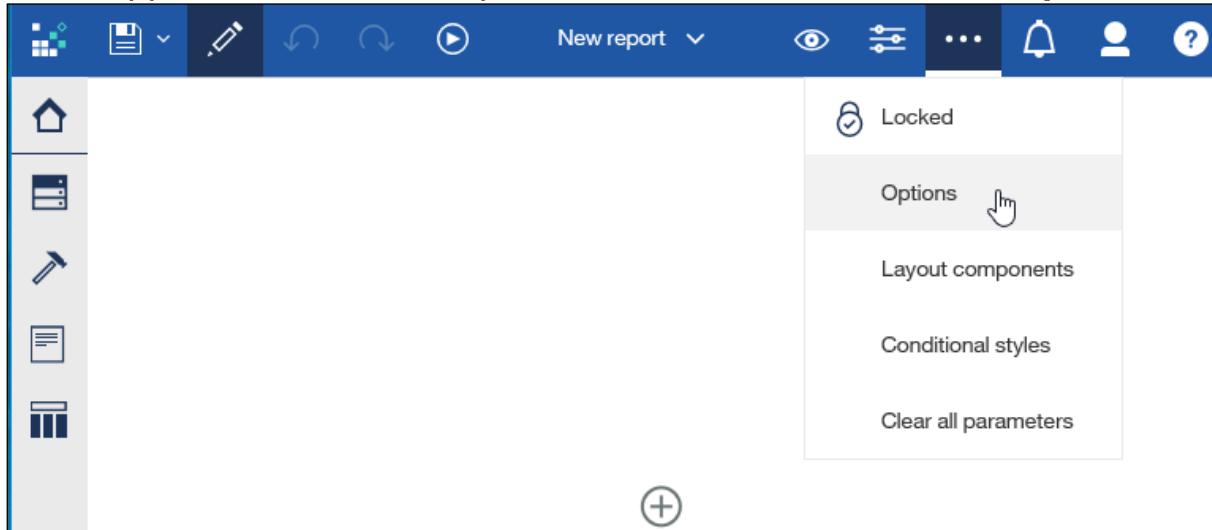
You may get a summary footer at the end of the List, like the following:

Country	City	First name	Last name	Employee level	Position name	Revenue
<Country>	<City>	<First name>	<Last name>	<Employee level>	<Position name>	<Revenue>
<Country>	<City>	<First name>	<Last name>	<Employee level>	<Position name>	<Revenue>
<Country>	<City>	<First name>	<Last name>	<Employee level>	<Position name>	<Revenue>
<b>Overall - Summary</b>						<b>&lt;Summary(Revenue)&gt;</b>

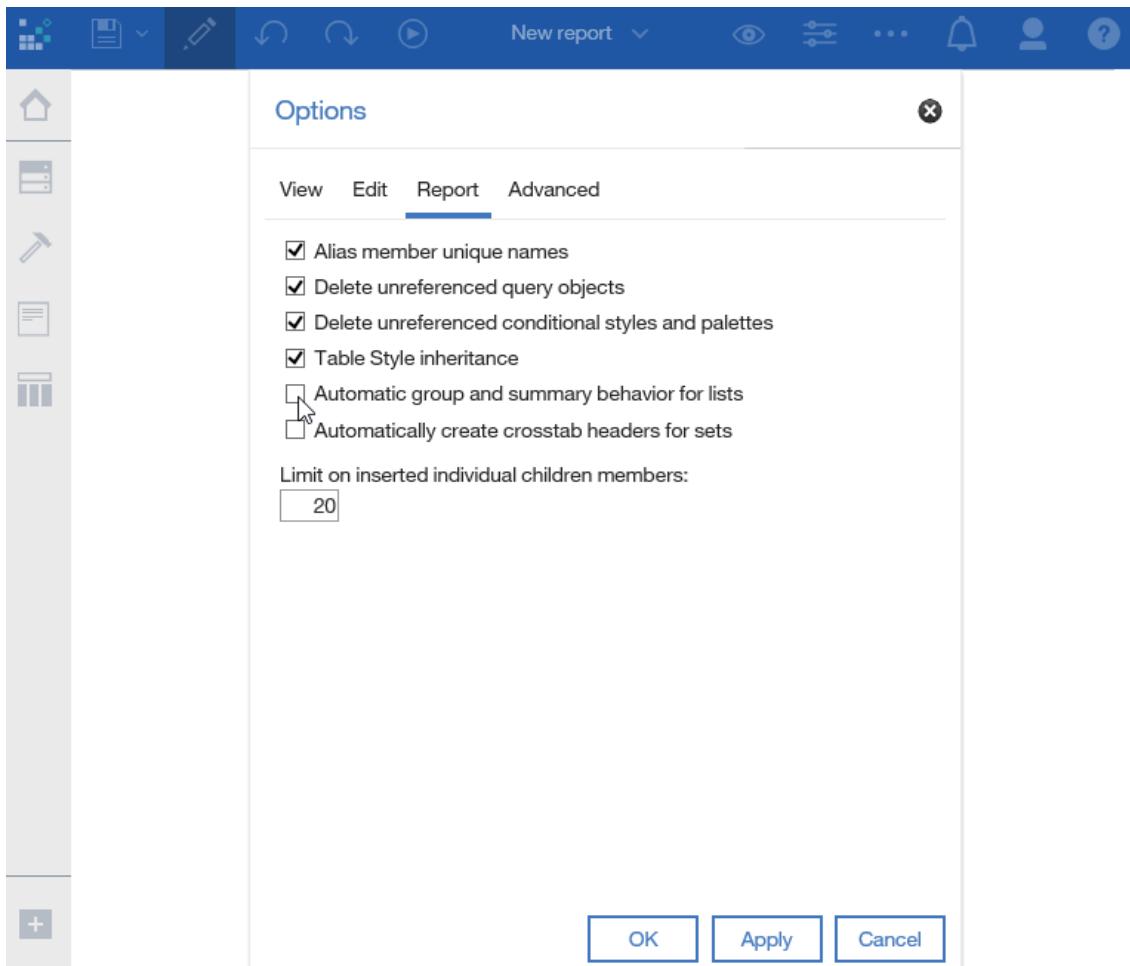
If this happens, then it means that IBM Cognos Analytics Reporting grouped and summarized the List by default. You don't want to have the summary footer by default. To turn off this option, perform the steps in Task 2.

## Task 2. Clear the Automatic group and summary behavior for lists

1. In the Application bar, click **Undo**  to remove the summary footer.
2. In the Application bar at the top, click **More** , and then click **Options**.



- Click the **Report** tab, then ensure that **Automatic group and summary behavior for lists** is deselected.



- Click **OK** to close the Options dialog.
  - Now drag the **Revenue** data item again to the List. There should be no summary.  
You would like to see Last name appearing before First name.
  - In the work area, drag the **Last name** column to the left of the **First name** column.  
Note: A flashing black bar appears when the item is over a drop zone.
  - To see what element of the report you have selected, from the Application bar, click **Show properties**.
- The title of the Properties pane is List. Which means the currently selected object is a List.

First name	Employee level	Position name	Revenue
Aaltje	6	Level 1 Sales Representative	24,998,852.45
Abram	6	Level 2 Sales Representative	50,339,838.94
Adda	6	Level 2 Sales Representative	24,590,953.64
Adriaantje	6	Level 2 Sales Representative	27,600,413.97

Now that you have built the report you can view the data items in the query.

### Task 3. View the data items in the query

1. On the side panel, click **Queries** , then on the content pane, click **Query1**. The data items you added to the list appear in the Data Items pane for the query. The names of the data items correspond to the column titles in the report layout.
2. In the **Data Items** pane, click **Position name**. You want to view information about the data the Position name data item retrieves from the data source.
3. In the **Properties** pane, double-click the **Expression** property. In the Data item expression dialog box, you can see that this data item retrieves data from the Position name query item, in the Employee by region query subject, in the Sales (query) namespace.
4. Click **OK**, and then in the **Data Items** pane, click **Last name**.
5. In the **Properties** pane, double-click the **Expression** property. The Data item expression dialog box appears. You can see that this data item retrieves data from the Last name query item, in the Employee by region query subject, in the Sales (query) namespace.
6. Click **OK** to close the dialog box.
7. On the side panel, click **Pages** , then click **Page1** to return to the work area.

### Task 4. Remove a column from the report

It has been decided that Employee level in the list report object is not needed in the report. You will remove it from the List.

1. In the list report object, click anywhere in the **Employee level** column.
2. From the Toolbar, click **More** , and then click **Cut** .

- The column is removed from the list report.
3. On the side panel, click **Queries**, and then click **Query1**.  
The Employee level data item still appears in the Data Items pane. Although you removed the Employee level data item from the report layout in Page Explorer, the data item has not been removed from the query. However, keeping the data item in the query can be useful for other tasks such as creating a calculation.  
Other examples of where you would keep a data item in the query, but remove it from the report layout are: creating an expression based on the query item, or, using this item when sorting or formatting data in the list.
  4. On the side panel, click **Pages**, and then click **Page1** to return to the work area.
  5. On the Application bar, click **Undo** .
  6. With the **Employee level** data column still selected, on the Toolbar, click **More**, and then click  **Delete**.
  7. On the side panel, click **Queries** , and then click **Query1**.  
The Employee level data item has been removed from the report layout and the query and no longer appears in the Data Items pane.

## Task 5. Format and sort the data, and then run the report

1. On the side panel, click **Pages** , then click **Page1**.  
In the List, click in the data cells of the <Revenue> column.  
The Revenue cells are highlighted to show that they are selected. The Properties pane shows the properties for this column body.
2. On the Toolbar, click **Sort** , then click **Descending**.  
Our sales reps will now be ranked starting with our top performers.
3. With the **Revenue** column still selected, in the **Properties** pane, under the DATA category, click **Data format**, and then click the **ellipsis**   
The Data Format dialog box appears.
4. In the **Format type** drop-down list, select **Currency**.
5. Under **Properties**, click **Currency**, click the down arrow button in the column to the right of **Currency**, and then select **\$ (USD) - United States of America, dollar** from the list.  
Revenue will now be displayed in American dollars. By default, it will use a comma as a Thousands separator, and two decimal places.  
Note: Changing the currency will not perform a currency conversion (for example, it will not convert one currency into the value of another). It will simply show the value with a different currency symbol, thousands separator, decimal

place, and so on. If you want to see data displayed in a particular currency, the data must be stored in the data source in that currency.

7. Click **OK** to close the Data format dialog box.
8. Click **Page views** , and then click **Page design**.

The result appears as follows:

Country	City	Last name	First name	Position name	Revenue▼
<Country>	<City>	<Last name>	<First name>	<Position name>	<Revenue>
<Country>	<City>	<Last name>	<First name>	<Position name>	<Revenue>
<Country>	<City>	<Last name>	<First name>	<Position name>	<Revenue>

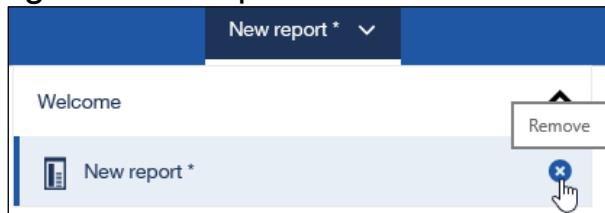
Page design mode is an alternate way to edit report objects such as the List.

9. On the Application bar, click **Run options** , and then click **Run HTML**. A section of the result appears as follows:

Country	City	Last name	First name	Position name	Revenue
Switzerland	Genève	Bruno	Fausta	Level 3 Sales Representative	\$79,955,838.92
Switzerland	Genève	Giordano	Fiorenza	Level 3 Sales Representative	\$72,784,594.30
Switzerland	Genève	Chambers	Warren	Level 3 Sales Representative	\$62,843,459.76
Finland	Kuopio	Lindholm	Helena	Level 3 Sales Representative	\$59,799,153.93
Korea	Seoul	Kim	Chang-ho	Level 3 Sales Representative	\$59,422,592.32
United States	Los Angeles	Laurel	Charles	Level 3 Sales Representative	\$59,406,874.73
Switzerland	Genève	Bichot	Lotta	Level 3 Sales Representative	\$54,436,904.60
Netherlands	Amsterdam	Jansen-Velasquez	Belinda	Level 3 Sales Representative	\$52,822,234.19

You can see that revenue is sorted in descending order.

10. At the bottom of the page, click **Page down**  to navigate to each page of the report.
11. Close the rendered report web page (tab) to return to the work area.
12. In the Application bar, click the dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



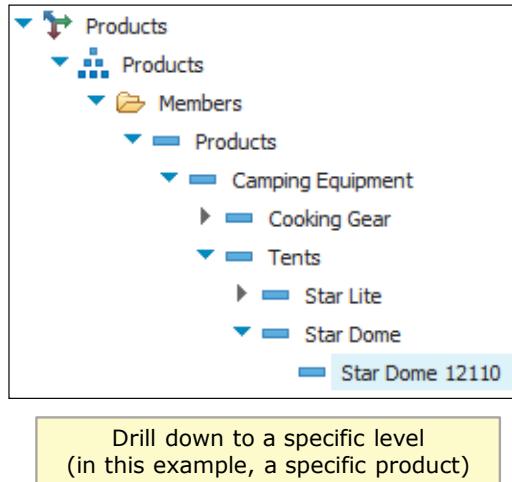
13. Leave IBM Cognos Analytics open for the next demonstration.

## Results:

**You created a List report and added the necessary items from the model as required by the sales executives. You sorted the data in descending order and formatted the revenue in American dollars.**

## Dimensionally-modeled and dimensional data sources

- In IBM Cognos Analytics, reports using dimensionally-modeled relational data sources and dimensional data sources enables you to drill down to a detailed level or drill up to a summarized level



### *Dimensionally-modeled and dimensional data sources*

Dimensionally-modeled relational metadata is data taken from a relational source and modeled as a star schema. As well, hierarchies are applied to allow for drill behavior.

Dimensionally-modeled relational data extends dimensional capabilities (such as drill-down and drill-up) to relational sources.

With dimensional analysis, your corporate data is organized in the way you think about your business so that you spend more time on value added analysis, rather than on data retrieval.

Only dimensional models allow drill up and drill down behavior in analyses and reports.

Note: The purpose of this course is to explore how Reporting can use relational data sources to create reports. The next demonstration provides an opportunity to create a report using a dimensional data source. The IBM Cognos Analytics: Author Reports with Multidimensional Data course explores, in greater detail, how IBM Cognos Analytics - Reporting can be used to analyze DMR or OLAP data sources.

## Demonstration 2

Create a report from a dimensionally-modeled relational data source

2011	Canada	Star Dome	Quantity
Q1 2011	Canada	Star Dome	621
Q2 2011	Canada	Star Dome	531
Q3 2011	Canada	Star Dome	586
Q4 2011	Canada	Star Dome	665

## Demonstration 2:

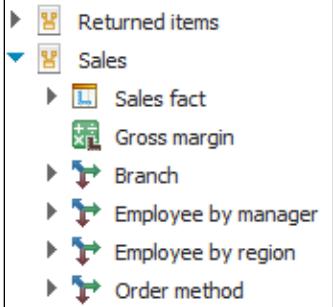
### Create a report from a dimensionally-modeled relational data source

#### Purpose:

You want to explore a dimensionally-modeled relational data source and create a report that enables you to drill down to a lower level of detail.

#### Task 1. Examine a dimensionally modelled relational data source

1. From the side panel, click **New**  **New** and then click  **Report**.
2. Select the **Blank** template and click **OK**.
3. From the side panel, click **Data** , and in the **Source** tab click **Add report data** .
4. Browse to the required package by clicking **Samples > Models > GO data warehouse (analysis)**, and then click **Open**.  
The Source tab on the left displays the folders available in the package. Notice the folder symbol .
5. Click **Add**  in the center of the work area, click **List**, and then click **OK** to accept the default options presented.
6. Expand **Sales and Marketing (analysis)**.  
You will see the namespaces  in the Sales and Marketing (analysis) folder.
7. Expand the **Sales** namespace.  
A section of the results appears as follows:



The available measures and dimensions are displayed in the data tree.

Notice the measures query subject  and the dimensions .

## Task 2. Continue examining the data source

1. Expand the **Sales** fact measures query subject.

Review the measures  available in the Sales fact measures query.

2. Expand the **Retailers** dimension  , and then expand the **Retailers** hierarchy  .

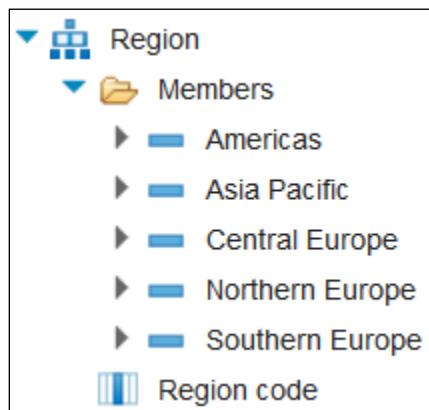
Review the **Members** folder and its five levels .

3. Expand the **Region** level  .

The Members folder and the Region code query item  display in the data tree.

4. Expand the **Members** folder (under Region) to see the five sales regions.

The results appear as follows:



## Task 3. Add items to the List object

You want to create a report that shows the quantity of Star Dome tents sold in Canada in 2011. Because this is dimensionally-modeled relational data, you can drill down to a greater level of detail than in a relational model.

1. Expand the **Time** dimension, **Time** hierarchy, **Year** level, and **Members**.
2. Drag **2011** to the list report object, in the work area.

Notice how you can add specific members to a report, instead of having all years added and filtering for only the years you want (as in relational data sources).

3. Under the **Retailers** dimension, **Retailers** hierarchy, **Region** level, **Members** folder, expand the **Americas** member, and then drag the **Canada** member to the end of the list report object, dropping when the flashing black bar appears.

4. Expand the **Products** dimension, **Products** hierarchy, **Product line** level, **Members** folder, **Camping Equipment** member, **Tents** member, and then drag **Star Dome** to the list report object.
5. Expand **Sales fact** measures (if necessary), and then drag the **Quantity** measure to the list report object.

The results appear as follows:

	2011	Canada	Star Dome	Quantity
	<2011>	<Canada>	<Star Dome>	<Quantity>
	<2011>	<Canada>	<Star Dome>	<Quantity>
	<2011>	<Canada>	<Star Dome>	<Quantity>

## Task 4. Run the report

1. On the Application bar, click **Run options**, and then click **Run HTML**.

You see that 2,403 Star Dome tents were sold in Canada in 2011.

2011	Canada	Star Dome	Quantity
2011	Canada	Star Dome	2,403

2. Click the body of the 2011 cell (notice that 2011 now appears as a hyperlink), then click **2011** to drill-down for more detail.

The results appear as follows, showing the quarterly time periods of 2011.

2011	Canada	Star Dome	Quantity
Q1 2011	Canada	Star Dome	621
Q2 2011	Canada	Star Dome	531
Q3 2011	Canada	Star Dome	586
Q4 2011	Canada	Star Dome	665

3. Close the rendered report tab (Reporting) to return to the work area.
4. In the Application bar, click the dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.
5. Leave IBM Cognos Analytics open for the next demonstration.

### Results:

You have explored a dimensionally-modeled relational data source in IBM Cognos Analytics - Reporting. You created a report that demonstrated how you can drill down to a lower level of detail in the data source.

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## Examine personal data sources and data modules

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### *Examine personal data sources and data modules*

IBM Cognos Analytics has the ability to allow you to import personal data sources like a CSV or XLS file. The personal data source can then be used as a source for a Data Module, after which it may be used as a data source for a report like any other.

The process begins by using the **Upload files** feature available from the Welcome screen. Next, the uploaded personal data source must be contained

as a data module. This is done by selecting **New > Data module**. Data can be dragged from the Selected sources pane to the Data module pane to define the data module. Once it has been defined, the data module can be renamed and saved, making it available as a data sources for report creation.

## Demonstration 3

Create a report from a personal data source

Retailer country	Order method type	Quantity
Japan	Sales visit	106,513
Germany	Telephone	61,322
United Kingdom	Mail	5,068
Denmark	Web	507,390
Singapore	Sales visit	176,874
Korea	Sales visit	343,578
Spain	Mail	31,371

*Demonstration 3: Create a report from a personal data source*

## Demonstration 3:

### Create a report from a personal data source

#### Purpose:

The purpose of this demonstration is to show you how to take a simple Microsoft Excel file and use its data as the source for a report.

#### Task 1. Upload a Microsoft Excel file.

1. In the **Application** bar, use the dropdown menu in the middle (displaying **New\***), and then click **Welcome**.
2. From the **Welcome to IBM Cognos Analytics** page, from the side panel, click **New**, then click **Upload files** .
3. In the **Choose File to Upload** dialog box, browse to: **C:\Program Files\IBM\Cognos\Samples\webcontent\samples\datasources\files**. Hint: You may need to switch the files filter to display All Files (\*.\*).
4. Click the **SampleFile\_GOSales.xls** file to select it, and then click **Open**.  
The system will take a few moments (up to 2 minutes) to load the file. When complete, a preview of the data is displayed, such as Retailer country, Order method type, Retailer type, etc.  
Note: If the upload is not complete after several minutes, restart the browser and repeat steps 1 to 4.
5. Click **OK** at the bottom of the page, once the load is complete.

#### Task 2. Create the data module.

1. Using the actions from the Step 1 of the previous task, open the **Welcome** page.
2. From the **Welcome** page, click **New > Data module** .
3. From the **Sources** list, and then click **Uploaded files**.
4. Select the checkbox for **SampleFile\_GOSales.xls** (with the **My content** designation).
5. Click the **Done** button at the bottom left of the page.
6. Under **Sources**, expand **SampleFile\_GOSales.xls**.
7. Expand **Sample File Go Sales Xls**, and then drag it under the **New Data module** area.
8. Click **Save** , and then click **My content**.
9. In the **Save as** textbox, type **Sales Data Module**, and then click **Save**.

- From the dropdown menu in the Application bar at the top, click **Remove**  to the right of **Sales Data Module**.

### Task 3. Create a report from the data module.

- Return to the **Welcome** page, and then click **New > Report**  , from the **New** dialog, select the **Blank** template, and then click **OK**.
- From the side panel, click **Data**, under the **Source** tab, click **Add report data**  , and then click **My content**.
- Click **Sales Data Module**, and then click **Open**.
- On the work area add **List** object, and then click **OK**.
- From the **Source** tab, if needed, expand **Sales Data Module > Sample File Go Sales Xls**.
- Drag **Retailer country** to the list.
- Drag **Order method type** to the right of **Retailer country**.
- Drag **Quantity** to the right of **Order method type**.
- From the application bar, click **Run options**, and then click **Run HTML**.

A section of the results appear as follows:

Retailer country	Order method type	Quantity
Japan	Sales visit	106,513
Germany	Telephone	61,322
United Kingdom	Mail	5,068
Denmark	Web	507,390
Singapore	Sales visit	176,874
Korea	Sales visit	343,578
Spain	Mail	31,371

- Close the rendered report page tab to return to the reporting work area.
- In the Application bar, click the dropdown menu, then click **Remove**  to the right of the report to close it. Then click **OK** to confirm your action.
- Leave IBM Cognos Analytics open.

#### Results:

You created a report from a Microsoft Excel file. By uploading the file, and creating a data module from it, you were then able to take that result and create a standard list report.

## Unit summary

- Examine IBM Cognos Analytics - Reporting and its interface
- Explore different report templates
- Create reports in preview or design mode
- Create a simple, sorted, and formatted report
- Examine dimensionally modelled and dimensional data sources
- Explore how data items are added queries
- Examine personal data sources and data modules

## **Unit 2      Create list reports**



The slide features a blue header bar with "IBM Training" on the left and the IBM logo on the right. The main content area has a light gray background with a subtle diagonal striped pattern. In the center, the title "Create list reports" is displayed in a large, bold, dark blue font. Below the title, the text "IBM Cognos Analytics (v11.0)" is shown in a smaller, dark blue font. At the bottom of the slide, there is a copyright notice: "© Copyright IBM Corporation 2018" followed by "Course materials may not be reproduced in whole or in part without the written permission of IBM."

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Create list reports

IBM Cognos Analytics (v11.0)

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## Unit objectives

- Group, sort, and format list reports
- Describe options for aggregating data
- Create a multi-fact query
- Create a report with repeated data structure

Create list reports

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*Unit objectives*

## Examine List reports

- You can use List reports to:
  - present tabular information
  - show detailed information from your database

Country	Employee name	Revenue
Switzerland	Adriaantje Haanraads	\$27,600,413.97
Spain	Agatha Reyes	\$24,097,530.30
Japan	Aimi Tanaka	\$16,468,860.28

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*Examine list reports*

## Group data

- Group your data and choose how often to display item names by changing the group span properties.

**Group on Country and City**

Canada	Calgary	Tammy Sherwood
		Vittorio Rizzo
	Toronto	Brendon Pike

**Group on Country and City with Group Span by City**

Canada	Calgary	Tammy Sherwood
		Vittorio Rizzo
Canada	Toronto	Brendon Pike

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### Group data

You can group on one or more columns depending on how you want to see your data.

The List should usually follow a 1:n cardinality from left to right in order to properly display the grouping. Which means that you start by the root parent level, then its children, then more children (e.g. Region, then Country, then City, ...etc).

To group related information together, select a column and click Group/Ungroup on the Toolbar.

Spanning one group of items by a second group can be helpful if the second group contains many items. You can level span grouped items only by other grouped items on the report. For example, when Country and City are both grouped, you can choose to show the country name each time the country changes (span Country by Country), each time the city changes (span Country by City), or every time there is a new record (no level spanning).

A grouped item will appear at the top of a new page regardless of level spanning. For example, when Country is spanned by City, the Country name will appear at the top of the next page, even for records in the same City.

Grouping a column in a List generates an "order by" clause in the generated SQL, so your data is returned grouped and automatically sorted ascending.

## Include headers and footers

- You can add headers and footers to a List report to provide additional information about the contents of the report.

Revenue by Retailer type		
Attention: Sales Managers		
Outdoor Protection		
Product type	Product	Revenue
First Aid	Deluxe Family Relief Kit	\$5,842,222.05
	Compact Relief Kit	\$4,054,976.36
	Insect Bite Relief	\$1,060,133.58
	Aloe Relief	\$769,757.23
	Calamine Relief	\$702,609.90
First Aid - Total		\$12,429,699.12

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### *Include list headers and footers*

List headers and footers can be placed:

- at the top or bottom of a List on each page (List page header/footer)
- at the top of the first page or bottom of the last page (List overall header/footer)
- before or after a group of details (header/footer based on a Data Item)

Choose where to place headers and footers based on your requirements.

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## Sort and format list columns

- You can sort detail records and/or groups of the report.
- You can emphasize certain data to make your reports easier to read and understand.

Product line	Year	Quantity
Golf Equipment	2010	1,092,982
	2011	1,297,793
**Golf Equipment - Total**		**2,390,775**
Camping Equipment	2010	5,895,053
	2011	6,903,764
**Camping Equipment - Total**		**12,798,817**

### Sort and format list columns

You can sort detail records and/or groups of the report.

In the slide example, if you wanted to sort the Product line column by Quantity instead of by Product line, you would drag the Quantity query item to the Sort List folder of Product line. Grouped items in a report appear under the Groups folder.

- You can modify the item used to sort a grouped item, add or remove a sort item, and determine the sort order. Click the name of a data item, then on the Toolbar, click Sort, then click Edit Layout Sorting.
- You can open the same dialog by select the List object, and then in the Properties pane, double-click the Grouping & Sorting property.

The item used to sort a report does not need to be on the report page but does need to be in the query.

You can format List report columns at different levels depending on your requirements:

- lowest level: format the cells on a List column
- higher level: format both cells and the title in a List column
- highest level: format both the cells and titles in all columns in the List

## Demonstration 1

Enhance a List report

<b>Product type Sales and Revenue by Product</b>				
Product type	Product	Retailer type	Quantity	Revenue
<b>Revenue by Retailer type</b>				
Attention: Sales Managers				
Outdoor Protection				
First Aid	Aloe Relief	<i>Department Store</i>	51,891	\$234,186.66
		<i>Direct Marketing</i>	37,792	\$196,850.32
		<i>Sports Store</i>	33,795	\$155,701.31
		<i>Outdoors Shop</i>	25,132	\$127,549.56
		<i>Warehouse Store</i>	7,359	\$38,278.37
		<i>Golf Shop</i>	2,535	\$13,258.05
		<i>Equipment Rental Store</i>	1,043	\$3,932.96
Aloe Relief - Total				\$769,757.23

Create list reports

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*Demonstration 1: Enhance a List report*

## Demonstration 1: Enhance a List report

### Purpose:

Executives want you to create and format a report to highlight and sort the product lines based on the revenue that they generated. They also want you to highlight the retailer type and sort revenue descending by quantity sold.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

Note: If you are unsure as to how to begin using the starting point information above, please refer to Unit 1, in the section titled **Demonstration and exercise start point information**.

### Task 1. Create the List

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a new **List** object, then add the following query items to it:
  - Products: **Product line**, **Product type**, **Product**
  - Retailer type: **Retailer type**
  - Sales fact: **Quantity**, **Revenue**

Product line	Product type	Product	Retailer type	Quantity	Revenue
<Product line>	<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
<Product line>	<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
<Product line>	<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>

3. From the Application bar, click **Run options**, and then click **Run HTML**. A new web browser tab opens with the rendered report.
4. Click the **Bottom** navigation button found at the bottom of the page to view the final rows of the report, noting that there is no summary data.  
Due to the complexity of the final report, you will not include any summary row in your final report. This will make it easier for the consumer to review the data.
5. Close the rendered report tab and return to the report authoring tab.

## Task 2. Group and span columns, and then add a report title

- In the List, click the <Product line> List column body, Ctrl-click the <Product type> and <Product> List column bodies, and then from the toolbar, click



Results appear as follows:

Product line	Product type	Product	Retailer type	Quantity	Revenue
<Product line>	<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
		<Product>	<Retailer type>	<Quantity>	<Revenue>
	<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
		<Product>	<Retailer type>	<Quantity>	<Revenue>
<Product line>	<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
		<Product>	<Retailer type>	<Quantity>	<Revenue>
	<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
		<Product>	<Retailer type>	<Quantity>	<Revenue>

- Click the <Product type> List column body.
- On the Application bar, click **Show properties** to open the Properties pane.
- In the Properties pane, under the DATA section, click **Group span**.
- From the drop-down list, click **Product**.
- On the side bar, click **Toolbox** , and then drag a **Block** to the left (outside) of the List, dropping it when there is a flashing black vertical bar.
- Drag a **Text item** inside the Block object that you just placed in the work area.
- In the **Text** dialog box, type **Product type Sales and Revenue by Product**, and then click **OK**.
- Click the title text, then on the Toolbar, click **Font** .
- Set Family to **Arial Black**, Size to **16pt**, and then select **Underline**.
- Click **OK** to close the font dialog.

A section of the result appears as follows:

<b>Product type Sales and Revenue by Product</b>					
Product line	Product type	Product	Retailer type	Quantity	Revenue
<Product line>	<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>

12. On the Application bar, click **Run options**, and then click **Run HTML**.  
A section of the results appear as follows:

<b>Product type Sales and Revenue by Product</b>					
Product line	Product type	Product	Retailer type	Quantity	Revenue
Camping Equipment	Cooking Gear	TrailChef Canteen	Department Store	211,339	2,426,658.9
			Direct Marketing	38,688	468,360.18
			Equipment Rental Store	6,641	72,910.87
			Outdoors Shop	222,831	2,682,916.23
			Sports Store	362,970	4,170,027.41
	Cooking Gear	TrailChef Cook Set	Warehouse Store	123,254	1,512,645.06
			Department Store	229,456	11,509,856.38
			Direct Marketing	72	0
			Equipment Rental Store	15,597	824,622.11

Product type is spanned by Product. Every time Product changes the Product type is repeated.

13. Close the rendered report tab.

### Task 3. Add a List page header, an overall header, and a group header

You want to add a List page header for the report and an overall header to add additional information to the report.

1. Click the List to select it, and then from the Toolbar, click More ..., then click on **Headers & footers**  > **List headers & footers**.
2. Select **List page header** and **Overall header**, and then click **OK**.
3. In the List, double-click **List page header**.
4. In the **Text** box, replace the default text with **Revenue by Retailer type**, and then click **OK**.
5. With the List page header still selected, on the Toolbar, click **Font**.
6. In the **Font** dialog box, change Family to **Arial Black**, change Size to **12 pt.**, and then click **OK**.
7. In the List, double-click **Overall**.
8. In the text box, replace the default text with **Attention: Sales Managers**, then click **OK**.
9. In the List, click the **<Product line>** List column body.
10. On the Toolbar, click **Headers & footers**, and then click **Create header**.

When a header is created from a column, the header stays within the list object. You cannot create a header from a spanned column. Also, the List column titles can be moved to the start of the details of the report by selecting the container object and changing the GENERAL/Column titles property to "At start of details".

- With the **<Product line>** List column body still selected, press the **Delete** key to remove the redundant column.

A section of the results appears as follows:

<b>Product type Sales and Revenue by Product</b>				
Product type	Product	Retailer type	Quantity	Revenue
<b>Revenue by Retailer type</b>				
Attention: Sales Managers				
<  Product line>				
<  Product type>	<  Product>	<Retailer type>	<Quantity>	<Revenue>

- On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears as follows:

<b>Product type Sales and Revenue by Product</b>				
Product type	Product	Retailer type	Quantity	Revenue
<b>Revenue by Retailer type</b>				
Attention: Sales Managers				
Camping Equipment				
Cooking Gear	TrailChef Canteen	Department Store	211,339	2,426,658.9
		Direct Marketing	38,688	468,360.18
		Equipment Rental Store	6,641	72,910.87

- Close the rendered report tab.

## Task 4. Format and sort a column

- In the List, click **<Revenue>**.
- On the Toolbar, click **Sort** , and then click **Descending**. When a column is sorted the Sort icon appears in the List column title cell .
- With the **<Revenue>** List column body still selected, on the Toolbar, click **Data format** .
- In the **Data format** dialog box, under **Format type**, select **Currency** from the drop-down list.
- Under Properties, click **Currency**.

- From the drop-down list, select \$ (USD) United States of America, dollar, and then click **OK**.

## Task 5. Format the List column body

- Click the <Retailer type> List column body.
- On the toolbar, click **Font A**.
- In the Font dialog, change Family to **Arial**, and change **Style** to **Italic**.
- Click **Foreground Color**, click **Purple**, click **OK**, and then click **OK** again.

The font properties are applied to the body cells in the Retailer type column.

A section of the results appears as follows:

<b>Product type Sales and Revenue by Product</b>				
Product type	Product	Retailer type	Quantity	Revenue▼
<b>Revenue by Retailer type</b>				
Attention: Sales Managers				
< Product line>	< Product type>	< Product>	<Retailer type>	<Quantity> <Revenue>
<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>

## Task 6. Format a column

- On the Properties pane title bar, click **Select ancestor ▾**, then click **List column**.
- In the Properties pane, under **FONT & TEXT**, double-click the **Font** property.
- Change the properties to **Arial, 12pt, Bold**, and then change the **Foreground Color** to **Green**.

4. Click **OK** to close the **Foreground Color** dialog box.
5. Click **OK** to close the **Font** dialog box.

A section of the results appears as follows:

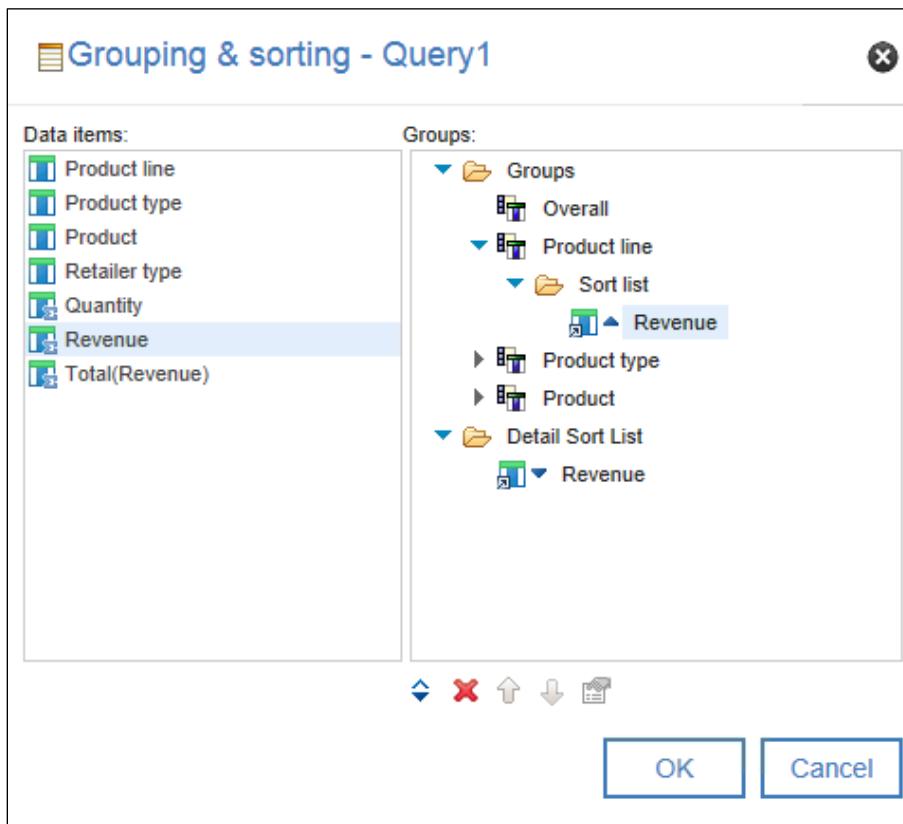
Product type	Product	Retailer type	Quantity	Revenue
<b>Revenue by Retailer type</b>				
Attention: Sales Managers				
<Product line>	<Product type>	<Retailer type>	<Quantity>	<Revenue>
<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
<Product line>				
<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>

The color property is applied only to the column title because the List column body formatting overrides the List column formatting. However, because you have not set the size or weight for the list column body, the value in the cells now appears in 12pt bold font.

## Task 7. Sort the Product line column by the Revenue generated

1. Click the **<Revenue>** List column body, then on the Toolbar click **Summarize**  $\Sigma$  then click **Total**  $\Sigma$ .
2. In the upper left corner of the **Product type** header cell, click the **Container Selector**  to select the entire List.  
You may need to click Esc to clear the Toolbar so that you can see the List column headers.
3. In the Properties pane, under DATA, double-click **Grouping & sorting**.  
Because Product line, Product type, and Product are grouped, these items appear under the Groups folder.
4. In the Groups pane, expand **Product line**, and then from the **Data items** pane, drag **Revenue** onto the **Product line / Sort list** folder.

The result appears as follows:



The Product line column will now be sorted in ascending order based on the revenue generated by each product line. The product line that generated the least revenue will appear at the beginning of the report.

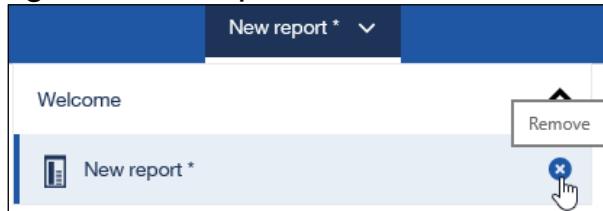
5. Click **OK**.
6. On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears as follows:

Product type	Product	Retailer type	Quantity	Revenue
<b>Revenue by Retailer type</b>				
Attention: Sales Managers				
Outdoor Protection				
First Aid	Aloe Relief	<i>Department Store</i>	51,891	\$234,186.66
		<i>Direct Marketing</i>	37,792	\$196,850.32
		<i>Sports Store</i>	33,795	\$155,701.31
		<i>Outdoors Shop</i>	25,132	\$127,549.56
		<i>Warehouse Store</i>	7,359	\$38,278.37
		<i>Golf Shop</i>	2,535	\$13,258.05
		<i>Equipment Rental Store</i>	1,043	\$3,932.96
Aloe Relief - Total				\$769,757.23

Since Outdoor Protection generated the least revenue, it appears at the beginning of the report.

- Close the rendered report tab.
- In the Application bar, click the dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



- Leave IBM Cognos Analytics open for the next demonstration.

### Results:

You have created a list report that grouped Product line, Product type, and Product name. You highlighted retailer type; and you have sorted revenue in descending order according to the quantity sold.

## Understand fact/measure data

- You can aggregate fact data to show trends or summaries.

Employee name	Product line	Revenue
Agatha Reyes	Camping Equipment	9,596,483.77
	Golf Equipment	1,966,340.45
	Mountaineering Equipment	5,546,852.83
	Outdoor Protection	991,736.35
	Personal Accessories	5,996,116.9
<b>Agatha Reyes</b>		<b>24,097,530.3</b>

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### Understand fact/measure data

You can show minimum, maximum, average, total, count, or calculated data.

The Detail aggregation property specifies the type of aggregation to apply to individual values which appear as detail rows in Lists or Crosstabs.

The Summary aggregate property specifies the type of aggregation to apply to summarize details values, so the summarized values appear at the higher levels in Lists and Crosstabs.

The setting of Automatic indicates that the aggregation applied is based on the data type of the query item. Therefore, an integer data type with rollup aggregation set to Automatic provides total aggregation. The report on the slide illustrates Summary aggregate set to Total.

These property values and many others can be set for all authors by the modelers in Framework Manager to centralize administration.

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## Understand aggregate data

- You can show your data as summarized aggregated data or as detailed non-aggregated data.

Default aggregation		
Alberto Pera	Camping Equipment	10,992,354.47
	Golf Equipment	4,216,900.77
	Mountaineering Equipment	4,101,252.31
	Outdoor Protection	722,484.15
	Personal Accessories	2,806,558.53
Alessandra Torta	Camping Equipment	17,918,023.16
	Golf Equipment	4,515,924.24
	Mountaineering Equipment	5,497,023.8
	Outdoor Protection	761,966.93
	Personal Accessories	4,843,734.56

Rollup aggregate set to Total		
Alberto Pera	Camping Equipment	10,992,354.47
	Golf Equipment	4,216,900.77
	Mountaineering Equipment	4,101,252.31
	Outdoor Protection	722,484.15
	Personal Accessories	2,806,558.53
<b>Total</b>		<b>22,839,550.21</b>
Alessandra Torta	Camping Equipment	17,918,023.16
	Golf Equipment	4,515,924.24
	Mountaineering Equipment	5,497,023.8
	Outdoor Protection	761,966.93
	Personal Accessories	4,843,734.56
<b>Total</b>		<b>33,536,672.69</b>

Auto group and summarize set to 'No'		
Employee name	Product line	Revenue
Alberto Pera	Camping Equipment	68,039.79
	Camping Equipment	8,191.18
	Camping Equipment	15,315.3
	Camping Equipment	25,833.6
	Camping Equipment	22,866.3
	Camping Equipment	90,874.08
	Camping Equipment	85,039.05
	Camping Equipment	35,438.94
	Camping Equipment	10,418.34
	Camping Equipment	10,142.1

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### Understand aggregate data

By default, the data will be grouped and summarized, at its lowest level of detail, because of the Auto Group and Summarize property that is applied to the Query. This aggregation is applied at the initial query.

Then the function specified by the Summary aggregation property summarizes grouped data and is applied after data is retrieved.

The List on the left has all default aggregation settings and no summarization applied. Detail aggregation is set to Total, by default, in the model package, Summary aggregation is set to Automatic since there is no grouping.

**Detail aggregation:** is the function that aggregates items at the lowest level of detail and is set by the data modeler for the package and can be overridden by the report author. This aggregation is applied only when the query's Auto Group and Summarize property is set to Yes.

**Summary aggregation:** is applied by the report author to grouped items, and provides a higher-level aggregation, as seen by the List report in the center.

The List on the right shows results with the query's Auto Group and Summary property set to No, it displays transactional values.

## Understand difference in aggregation

- You can use data items for your query from the Source tab or the Data Items tab.

The screenshot shows the 'Source' and 'Data items' tabs. The 'Source' tab is selected, displaying a tree view of data items under 'Sales fact'. The 'Data items' tab is also shown, displaying a tree view of data items under 'Query1'.

Source Tab Data Items	Data items Tab Data Items
<ul style="list-style-type: none"> <li>Sales fact           <ul style="list-style-type: none"> <li>Quantity</li> <li>Unit cost</li> <li><b>Unit price</b></li> <li>Unit sale price</li> <li>Revenue</li> <li>Gross profit</li> <li>Product cost</li> <li>Planned revenue</li> <li>Gross margin</li> </ul> </li> <li>Employee by manager</li> <li>Employee by region</li> </ul>	<ul style="list-style-type: none"> <li>Query1           <ul style="list-style-type: none"> <li>Product line</li> <li>Product</li> <li>Unit price</li> <li>Summary(Unit price)</li> </ul> </li> </ul>

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### *Understand difference in aggregation*

Data items selected from the source tab will be calculated and summarized prior to aggregation.

Data items selected from the Data Items tab will be calculated and summarized after aggregation.

Fact data items should be selected from the Data Items tab if they are to be used multiple times in a report or calculation, since they would not be re-aggregated based upon the entire query. This prevents any double counting of the fact data item and provides predictable results.

## Demonstration 2

### Explore data aggregation

Product line	Order method type	Revenue
Camping Equipment	E-mail	\$75,899,094.63
	Fax	\$23,054,398.48
	Mail	\$21,348,644.09
	Sales visit	\$168,611,961.87
	Special	\$12,388,989.44
	Telephone	\$153,894,892.13
	Web	\$1,133,838,683.39
<b>Camping Equipment - Average</b>		<b>\$227,005,237.72</b>
Golf Equipment	E-mail	\$47,933,933.16
	Fax	\$15,241,303.27
	Mail	\$12,693,287.48
	Sales visit	\$39,240,918.73
	Special	\$4,964,762.97
	Telephone	\$78,730,112.65
	Web	\$527,607,049.63
<b>Golf Equipment - Average</b>		<b>\$103,773,052.56</b>

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*Demonstration 2: Explore data aggregation*

## Demonstration 2: Explore data aggregation

### Purpose:

You have been asked by management to create a report that compares how different order methods are performing for each product line. This report should display the revenue that individual order methods generate for each product line and the average revenue all order methods generate for each product line. You will create this report and examine the underlying query model at various stages.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create a basic report and examine the query model

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **List** to the report.
3. From the **Source** tab, add the following query items to the List object:
  - Products: **Product line**
  - Order method: **Order method type**
  - Sales fact: **Revenue**

Product line	Order method type	Revenue
<Product line>	<Order method type>	<Revenue>
<Product line>	<Order method type>	<Revenue>
<Product line>	<Order method type>	<Revenue>

4. On the side panel, click **Queries** , and then under **Queries**, click **Query1**. Note the three data items in the Data Items pane. Each data item corresponds to an item in a column in the List.
5. In the **Data Items** pane, click **Revenue**.
6. On the Application bar, click **Show properties**  to open the Properties pane.
7. In the Properties pane notice that the Detail aggregation property is set to Total. When the query groups and summarizes data at the lowest level of detail, the query will summarize data by calculating the total revenue generated at the

lowest level of detail. In our report, the lowest level of detail is Revenue generated by each product line and order method type.

You have not yet added any aggregate revenue values for grouped data items in report layout. Therefore, the Summary aggregation, Detail property for Revenue is set to Automatic.

8. On the Application bar, click **Run options** , then click **Run HTML**.  
A section of the results appears as follows:

Product line	Order method type	Revenue
Camping Equipment	E-mail	75,899,094.63
Golf Equipment	E-mail	47,933,933.16
Mountaineering Equipment	E-mail	7,476,451.96
Outdoor Protection	E-mail	5,882,477.87
Personal Accessories	E-mail	42,651,086.54
Camping Equipment	Fax	23,054,398.48

You can examine the revenue generated by each product line using each order method.

9. Close the rendered report tab.

## Task 2. View individual records rather than data grouped and summarized at the lowest level of detail

You would like to review the amount of revenue generated by each order made using an order method type for each product line. To achieve this result, you will set the Auto Group & Summarize property for this query to No.

1. Verify that **Query1** is selected.
2. From the Properties pane, under DATA, click the **Auto group & summarize** property, and then change it to **No**.
3. On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears as shown below:

Product line	Order method type	Revenue
Golf Equipment	Telephone	10,469.76
Golf Equipment	Telephone	41,958.76
Golf Equipment	Telephone	35,949.86

The report no longer displays a single row for the total revenue generated by all sales of each product line using a specific order method type. Instead, it displays individual rows containing the revenue generated by each individual sale that used a specific order method type for each product line.

For example, a row in the report displays data for a golf equipment sale made by telephone. This sale generated \$41,958.76 in revenue.

If you wanted to display these individual records in your final report, you would group and sort this data to make it easier to read. However, you decide you would prefer to have this data grouped and summarized at the lowest level of detail.

4. Close the rendered report tab.
5. From the Properties pane for **Query1**, click the **Auto group & summarize** property, and then change it back to **Yes**.

### **Task 3. Group query items, add aggregate data, and observe the results in the query**

As requested, you will now group this data by product line and add aggregate data to display the average revenue generated by all order method types for each product line.

1. On the side bar, click **Pages** , and then click  **Page1**.
2. In the List, click the **<Revenue>** List column body, and then in the Properties pane, under DATA, double-click **Data format**.
3. Change the **Format type** to **Currency**.
4. Change the **Currency** property to **USD - United States of America, dollar**, and then click **OK**.
5. Click the **<Product line>** List column body, and then on the Toolbar, click **Group / Ungroup** .

The Product line column is grouped, and you can now include aggregate data at a higher level of detail. You want to see the average revenue generated by all order method types for each product line, and for all product lines.

6. Click the **<Revenue>** List column body.
7. On the Toolbar, click **Summarize** , and then click **Average** .

The results appear as follows:

Product line	Order method type	Revenue
<Product line>	<Order method type>	<Revenue>
<b>&lt;Product line&gt; - Average</b>		<b>&lt;Average(Revenue)&gt;</b>
<Product line>	<Order method type>	<Revenue>
<b>&lt;Product line&gt; - Average</b>		<b>&lt;Average(Revenue)&gt;</b>
Overall - Average		<Average(Revenue)>

You will examine how the aggregation you specified has changed the Rollup Aggregate Function for the Revenue data item in this query.

8. On the side pane, click **Queries** .
9. Click **Query1**, and then in the **Data Items** pane, click **Average(Revenue)**.

In the Properties pane, notice that the Summary property for Average (Revenue) is now set to Average. This is because you have specified that revenue for grouped items in the report be aggregated to display the average revenue generated.

10. On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears as follows:

Product line	Order method type	Revenue
Camping Equipment	E-mail	\$75,899,094.63
	Fax	\$23,054,398.48
	Mail	\$21,348,644.09
	Sales visit	\$168,611,961.87
	Special	\$12,388,989.44
	Telephone	\$153,894,892.13
	Web	\$1,133,838,683.39
<b>Camping Equipment - Average</b>		<b>\$227,005,237.72</b>

In this report, data is grouped by product line. Below each product line row is an aggregate row displaying the average revenue generated by all order method types for that product line.

You can see that for all product lines, revenue generated by the Web method far exceeded those of other order methods.

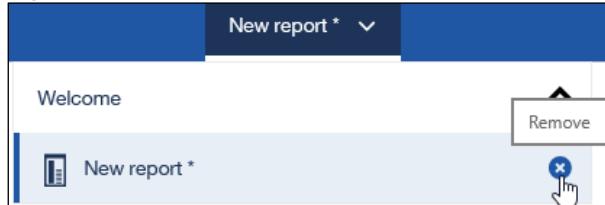
11. Close the rendered report tab.

## Task 4. View tabular data

1. In the **Query explorer** pane, right-click **Query1**, then click **View tabular data**.
2. Click **OK** to the warning message.

Notice that although you grouped the Product line data item in the report layout, in the tabular data retrieved for the query, product line data is still ungrouped. This option retrieves the data without any grouping or formatting; for the purpose of testing the Query regardless of report layout.

3. Close the rendered report tab.
4. In the Application bar, click the dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



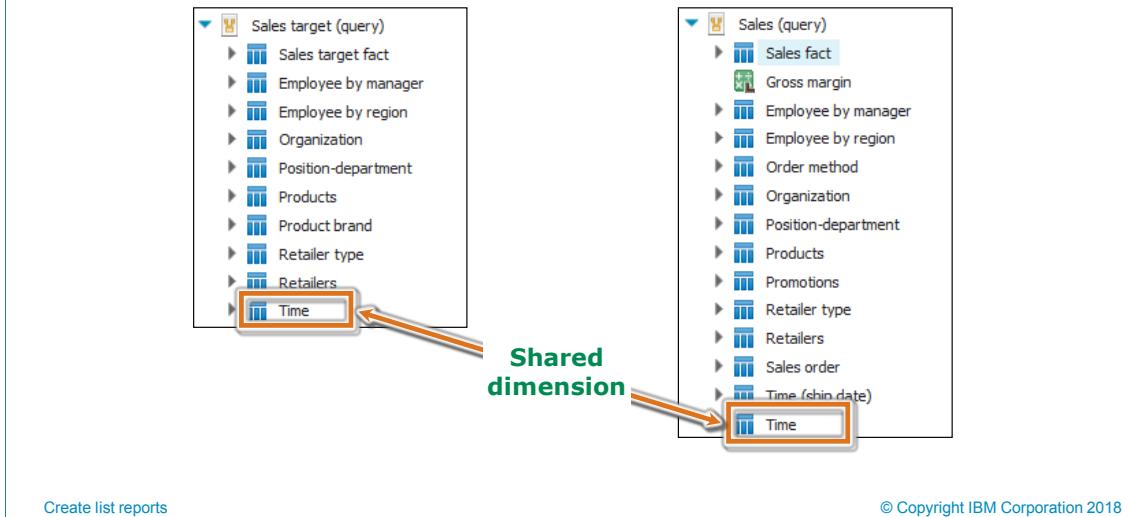
5. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You created a List report displaying revenue generated by each order method for each product line and the average revenue all order methods generate for each product line. You also specified that the query should display individual data records instead of grouped and summarized data, and you then compared the results.

## Use shared dimensions to create multi-fact queries

- When authoring reports with multiple facts across the business, it is necessary to use at least one shared dimension item to ensure correlated and predictable results.



### Use shared dimensions to create multi-fact queries

A shared dimension is created by the data modeler to provide consistent results throughout the company's different business units. When business units report with these shared query items, they communicate more efficiently as a whole by providing the same base of information.

Shared dimensions are also known as conformed dimensions.

Results of multiple-fact queries can vary if the level of granularity differs or you use a non-conformed dimension. For example, in the GO Data Warehouse (query) package, the granularity for time differs between Sales target and Revenue. Sales targets are recorded monthly, whereas, the Revenue is recorded on a daily basis. This is not an issue when reporting and will not cause confusing results if you report at a common level of granularity, such as in this case, the month level. If you report at the day level, inventory levels will simply display repeating values, the month total for every day of the month in the report. These values will not be double-counted.

## Demonstration 3

Create a multi-fact query in a List report

Year	Revenue	Sales target
2010	914,352,803.72	812,885,300
2011	1,159,195,590.16	1,036,923,300
2012	1,495,891,100.9	1,332,553,100
2013	1,117,336,274.07	1,023,006,840

*Demonstration 3: Create a multi-fact query in a List report*

## Demonstration 3: Create a multi-fact query in a List report

### Purpose:

You have been asked to create a report showing sales revenue and target revenue for each year. You will need to use conformed query items in the report to ensure the results are accurate and consistent with expected results.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content/Samples/Models/GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query) and Sales target (query)

### Task 1. Add two facts from different query subjects to a List report

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a new **List** object to the report.
3. From the **Source** tab, add the following query items to the List object:
  - Sales (query)/Sales fact: **Revenue**
  - Sales target (query)/Sales target fact: **Sales target**
4. On the Application bar, click **Run options** , then click **Run HTML**.

The results appear as follows:

Revenue	Sales target
4,686,775,768.85	4,205,368,540

These are the two distinct aggregated totals for Revenue and Sales target. These values were returned as a result of two separate Select statements.

5. Close the rendered report tab.

### Task 2. Add context to the List

You will include a query item to give context and meaning to the performance indicators that are already in the list. You will add the year in which the orders closed as a point in time to compare revenue to sales target.

1. From the **Sales (query)** namespace, add the following query item to the beginning of the report:
  - Time (close day): **Year (close date)**
2. On the Application bar, click **Run options** , then click **Run HTML**.

The results appear as follows:

Year (close date)	Revenue	Sales target
2010	907,292,137.51	4,205,368,540
2011	1,144,204,628.01	4,205,368,540
2012	1,497,596,605.86	4,205,368,540
2013	1,137,682,397.47	4,205,368,540

The Revenue values change with each year, but the Sales target values do not. This is because the Time (close day) is not a conformed dimension. This dimension is not shared by both the Revenue and Sales target facts. The Sales target fact has no relationship to Time (close day).

- Close the rendered report tab.

### Task 3. Add a query item from a shared dimension to the List report

You will add a shared dimension to the report. This dimension will have a relationship to both Revenue and Sales target.

- Under **Sales target (query)**, point to **Time**.

The Sales target (query) namespace contains a query object called Time. Notice there is no query object called Time (close date), which confirms what you already saw from running the report: Time (close date) is not shared across the facts.

- Under **Sales (query)**, point to **Time**.

Time exists in both the Sales target (query) and the Sales (query) namespaces; therefore, it is a shared dimension.

- Under **Sales (query)**, expand **Time**, and then drag **Year** to the beginning of the list.

- On the Application bar, run the report in **HTML**.

A section of the results appears as follows:

Year	Year (close date)	Revenue	Sales target
2010	2010	907,292,137.51	812,885,300
2010	2011	7,060,666.21	812,885,300
2011	2011	1,137,143,961.8	1,036,923,300

The Sales target numbers now change from year to year. In 2010, there was 7,060,666.21 worth of orders that were placed in that year, but did not close until 2011. The orders that were placed in 2010 and closed in that same year

totaled 907,292,137.51. Because Sales target has no relationship to the non-conformed dimension, Year (close date), it just repeats the value it knows for 2010. This is an example of the inaccurate results that can occur when using non-conformed query items with multi-fact reports. Therefore, you should use conformed query items.

- Close the rendered report tab.

## Task 4. Delete a query item from the List report

You want to delete the Year (close date) query item and only have the Year query item, from a conformed dimension, in the List.

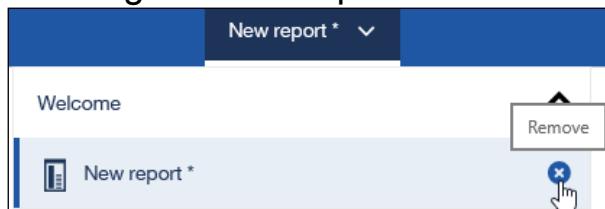
- In the List, click the **Year (close date)** List column body, then on the Toolbar, click **More**, and then click **Delete**.
- On the Application bar, click **Run options** , then click **Run HTML**.

The results appear as shown below:

Year	Revenue	Sales target
2010	914,352,803.72	812,885,300
2011	1,159,195,590.16	1,036,923,300
2012	1,495,891,100.9	1,332,553,100
2013	1,117,336,274.07	1,023,006,840

The Revenue and Sales target numbers now change from year to year. The report runs as expected.

- Close the rendered report tab.
- In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



- Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

**You created a report showing sales revenue and target revenue for each year.  
You used a conformed dimension in the report to ensure the results were  
accurate and consistent with expected results.**

## Add repeated information to reports

- You can use either repeaters or repeater tables to present repeated information.

**Repeater table**

Mailing List	
Address line 1	Address line 1
Address line 2	Address line 2
Address line 3	Address line 3
Address line 1	Address line 1
Address line 2	Address line 2
Address line 3	Address line 3

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### *Add repeated information to reports*

Use repeaters to duplicate individual item(s) across a single row without a particular structure.

Use repeater tables to repeat items in a table structure, such as mailing label information.

## Demonstration 4

### Create a mailing list report

<b>Australia</b> 2315 Queen's Ave Level 2 Melbourne VIC 2088 Australia	<b>Austria</b> Jedleser Straße 7 Wien A-1210 Austria	<b>Belgium</b> Interleuvenlaan 2 Heverlee B-3001 Belgium
<b>Brazil</b> Avenida Paulista, 333 CJ 231 2o. Andar São Paulo SP 01403-090 Brazil	<b>Canada</b> 789 Yonge Street Toronto Ontario M2M 4K8 Canada	<b>Canada</b> 7800, 756 - 6th Avenue. S.W. Calgary Alberta T2P 3Z0 Canada

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*Demonstration 4: Create a mailing list report*

## Demonstration 4:

### Create a mailing list report

**Purpose:**

You will create a mailing list for all of your sales offices. The addresses must be listed alphabetically by county with the country name appearing at the top. For easy readability, each page must contain no more than three addresses across and four down.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content/Samples/Models/GO data warehouse (query)

Folder: Sales and Marketing (query)

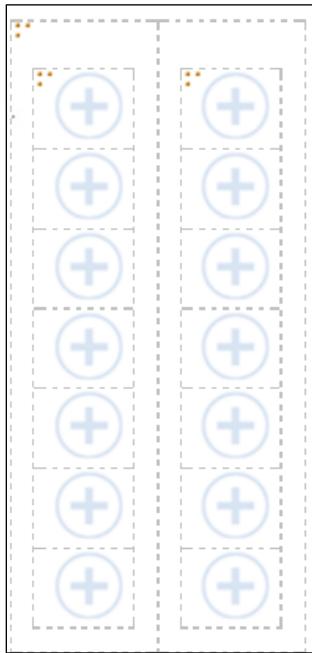
Namespace: Sales (query)

#### Task 1. Create a repeater table

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. On the side bar, click on **Toolbox**, expand **DATA CONTAINER**, then drag a **Repeater table** to the report page, and accept the defaults by clicking **OK**.
3. From the **Toolbox**, expand **LAYOUT**, and drag a **Table** to the **Repeater table** drop zone, at the top of the work area. In the **Insert table** dialog box, change:
  - Number of columns to **1**
  - Number of rows to **7**

Then click **OK**.

The results appear as follows: The work area contains a two-column, three-row repeater table containing six tables, each having one column and seven rows.



## Task 2. Add items to the tables

1. In the side bar, click **Data**.
2. From the **Source** tab, navigate to **Sales and Marketing (query)/Sales (query)**.
3. Expand **Employee by region**, and then drag **Country** into the first cell of the first 1x7 table.

4. Drag **Address 1**, **Address 2**, **City**, **Province or State**, **Postal zone**, and again **Country** into the remaining table cells.

A section of the results appears as follows:

<Country>	<Country>
<Address 1>	<Address 1>
<Address 2>	<Address 2>
<City>	<City>
<Province or State>	<Province or State>
<Postal zone>	<Postal zone>
<Country1>	<Country1>
<Country>	<Country>
<Address 1>	<Address 1>
<Address 2>	<Address 2>
<City>	<City>
<Province or State>	<Province or State>
<Postal zone>	<Postal zone>
<Country1>	<Country1>

When you add multiple instances of the same data item (as in this case when you added the same Country item twice) the second and subsequent items will be numbered to show that it is a duplicate entry. An alternative would have been to drag Country from the Data Items tab

### Task 3. List countries in alphabetical order and apply a style to the headers

- Click the **<Country>** item at the top of one of the tables, ensuring you select only the item and not the entire cell.  
All of the Country items at the top of each table are selected.
- On the Toolbar, click **Sort**, and then click **Ascending**.  
A Sort Ascending icon appears beside the Country item in the first table.
- With the **<Country>** item still selected, from the Toolbar, click **Font**, change the **Size** to **12pt**, change **Weight** to **Bold**, then click **OK**.  
The **<Country>** items appear in bold, black text.

### Task 4. Change the frequency and positioning of the tables

- Click the **Container Selector**  in the top left-hand corner of the **Repeater Table**, to select the entire container.

2. On the Application bar, click **Show properties**  to open the Properties pane.
3. In the Properties pane, under GENERAL, change the **Across** property to a value of **3**, change **Down** to **4**, and then press **Enter**.
4. In the Properties pane, under POSITIONING (you may need to scroll down), double-click **Table properties**, select **Fixed size**, and then click **OK**.  
This ensures that all labels are the same size.
5. Click the **Container Selector**  in the top left corner of the first table, to select all of the tables (you should only see the tables selected, not the entire Repeater table).
6. In the Properties pane, under the BOX section, double-click **Margin**.
7. In the **Right margin** and **Top margin** text boxes, type **10**, and then click **OK**.  
This adds the appropriate space for the printed labels.
8. On the Application bar, click **Run options** , then click **Run PDF**.  
PDF would be the appropriate run output for mailing labels.

A section of the results appears as follows:

<b>Australia</b> 2315 Queen's Ave Level 2 Melbourne VIC 2088 Australia	<b>Austria</b> Jedleser Straße 7 Wien A-1210 Austria	<b>Belgium</b> Interleuvenlaan 2 Heverlee B-3001 Belgium
<b>Brazil</b> Avenida Paulista, 333 CJ 231 2o. Andar São Paulo SP 01403-090 Brazil	<b>Canada</b> 789 Yonge Street Toronto Ontario M2M 4K8 Canada	<b>Canada</b> 7800, 756 - 6th Avenue. S.W. Calgary Alberta T2P 3Z0 Canada

9. Close the rendered report tab.
10. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.
11. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You created a mailing list and added the country name at the top of each address as a header and displayed the addresses alphabetically by country. The addresses were displayed, with no more than three addresses across and four down each page.

## Unit summary

- Group, sort, and format List reports
- Describe options for aggregating data
- Create a multi-fact query
- Create a report with repeated data structure

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*Unit summary*

## **Unit 3     Focus reports using filters**

IBM Training

**Focus reports using filters**

IBM Cognos Analytics (v11.0)

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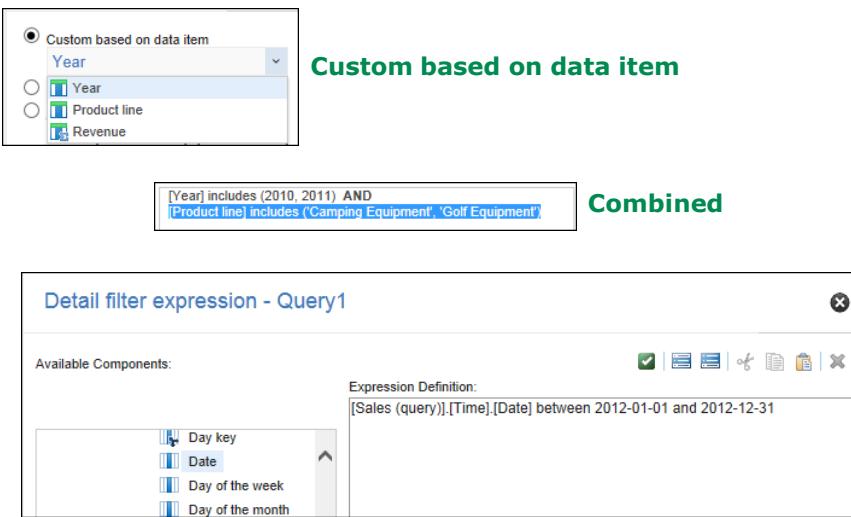
## Unit objectives

- Create filters to narrow the focus of reports
- Examine detail and summary filters
- Determine when to apply filters on aggregate data

IBM Training 

## Create filters

- To narrow the focus of your report, you can create a filter expression in three different ways:



**Custom based on data item**

**Combined**

**Advanced**

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### Create filters

There are three ways for creating filters:

- Custom based on data item:** if you want to filter based on a single data item in the query
- Combined:** if you want to combine multiple filter conditions, each of them is based on a single data item in the query, and you can combine the filters with logical operators (And, Or, and Not)
- Advanced:** if you want to write an advanced filter expression that is based on: data items from the package, data items from the query, data items from other queries, functions, parameters, and/or macros

## Filter your data with advanced detail filters

- Create a detail filter to narrow your focus and report on specific data.

### Filter to show only sales revenue greater than \$100,000

Expression Definition
[Revenue]>100000

### Filter to show only data from January to June for the year 2012

Expression Definition
[Sales (query)].[Time].[Date] between 2012-01-01 and 2012-06-30

## *Filter your data with advanced detail filters*

When you create a filter, you define conditions around query items to report on a specific subset of data.

A detail filter will be applied to all rows in the report.

For detail filters, filter any item in the package using the Source tab, or filter items in the report using the Data Items tab or Queries tab. Use the Functions tab to create filter calculations. Use the Parameters tab to use existing filters.

## Demonstration 1

Apply filters to a report

City	First name	Last name	Position name	Revenue
<b>Austria</b>				
Wien	Sabine	Grüner	Level 3 Sales Representative	12,193,198.67
	Jutta	Shulz	Level 2 Sales Representative	9,938,792.37
	Thomas	Schirmer	Level 1 Sales Representative	6,216,976.62
<b>Wien - Total</b>				<b>28,348,967.66</b>
<b>Austria - Total</b>				<b>28,348,967.66</b>
<b>Italy</b>				
Milano	Mario	Esposito	Level 2 Sales Representative	11,284,621.77
	Sergio	Ferrari	Level 1 Sales Representative	9,590,004.91
	Alessandra	Torta	Level 3 Sales Representative	9,049,090.7
	Alberto	Pera	Level 1 Sales Representative	6,603,296.71
	Silvano	Allessori	Level 2 Sales Representative	4,859,409.87
	Roland	Giordano	Level 2 Sales Representative	4,235,729.57
<b>Milano - Total</b>				<b>45,622,153.53</b>
<b>Italy - Total</b>				<b>45,622,153.53</b>
<b>Spain</b>				
Bilbao	Tomás	Iglesias	Level 3 Sales Representative	11,769,059.22
	Yolanda	Torres	Level 3 Sales Representative	11,611,178.39
	Agatha	Reyes	Level 2 Sales Representative	7,475,301.46
	Anica	Torres	Level 1 Sales Representative	5,401,311.8
	Lara	Broschat	Level 1 Sales Representative	5,210,721.27
<b>Bilbao - Total</b>				<b>41,467,572.14</b>
<b>Spain - Total</b>				<b>41,467,572.14</b>
<b>Overall - Total</b>				<b>115,438,693.33</b>

Focus reports using filters

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*Demonstration 1: Apply filters to a report*

## Demonstration 1: Apply filters to a report

### Purpose:

The Vice President of Sales has requested a report that shows sales performance in each country for 2012. He wants to see the performance for representatives in Southern Europe so he can present an award to the top seller when he visits next month.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the List

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a new **List** object to the report.
3. From the **Source** tab, add the following query items to the List object:
  - Employee by region: **Country**, **City**, **First name**, **Last name**, **Position name**
  - Sales fact: **Revenue**

Country	City	First name	Last name	Position name	Revenue
<Country>	<City>	<First name>	<Last name>	<Position name>	<Revenue>
<Country>	<City>	<First name>	<Last name>	<Position name>	<Revenue>
<Country>	<City>	<First name>	<Last name>	<Position name>	<Revenue>

4. Ctrl-click **<Country>** and **<City>**, and then on the Toolbar, click **Group / Ungroup**.
5. Click **<Country>**, on the Toolbar, click **More** and click **Headers & footers**, and then click **Create header**.
6. With **<Country>** still selected, press the **Delete** key to delete the redundant **<Country>** List column body.
7. Click the **<Revenue>** List column body, on the Toolbar click **Summarize**, and then click **Total**.
8. Click the **<Revenue>** List column body, on the Toolbar click **Sort**, and then click **Descending**.

9. On the Application bar, click **Run options** , then click **Run HTML**.  
A section of the results appears as follows:

City	First name	Last name	Position name	Revenue
<b>Australia</b>				
Melbourne	Donald	Ward	Level 2 Sales Representative	19,815,234.63
	Jackie	Fulford	Level 2 Sales Representative	19,456,734.01
	Alice	Walter	Level 3 Sales Representative	19,040,701.32
	Dave	Smythe	Level 1 Sales Representative	16,652,383.41
	John	Sinden	Level 2 Sales Representative	4,965,193.22
	Jake	Cartel	Level 1 Sales Representative	4,283,418.14
	Jonathan	Farrel	Level 1 Sales Representative	2,260,515.45
	Donald	Neely	Level 1 Sales Representative	1,089,148.84
<b>Melbourne - Total</b>				<b>87,563,329.02</b>
<b>Australia - Total</b>				<b>87,563,329.02</b>

10. Close the rendered report tab.

## Task 2. Add a filter to show sales from 2012

1. Select the List data container by clicking  in the upper left corner of the List.
  2. On the Toolbar, click **Filters** , and then click **Edit Filters**.
- The Filters dialog appears. There are two tabs: one for creating filters at the detail level, and one for creating filters at the summary level.
3. In the Detail Filters tab, click **Add** .
  4. Select **Advanced**, then click **OK**.
  5. Under **Available Components**, from the **Source** tab, expand **Sales and Marketing (query)**, expand **Sales (query)**, and then expand **Time**.
  6. Create and validate the following expression using the hint outlined below (you can create the expression differently):

**[Sales (query)].[Time].[Year]=2012**

Hint:

- Drag Year from the Time query subject, into the Expression Definition pane.
- Complete the expression by typing =2012
- Click Validate  to check the syntax of the expression.

7. Click **OK** to close the **Detail filter expression** dialog box, and then click **OK** to close the Filters dialog box.

8. On the Application bar, click **Run options** , then click **Run HTML**.
9. At the bottom of the page, click **Bottom** to navigate to the end of the report.  
A section of the results appears as follows:

Seattle	George	Harrows	Level 3 Sales Representative	17,924,373.12
Bart	Scott		Level 2 Sales Representative	14,538,997.37
Audrey	Lastman		Level 3 Sales Representative	13,535,227.17
Melanie	White		Level 1 Sales Representative	6,906,978.7
<b>Seattle - Total</b>				<b>52,905,576.36</b>
<b>United States - Total</b>				<b>164,986,189.21</b>
<b>Overall - Total</b>				<b>1,495,891,100.9</b>

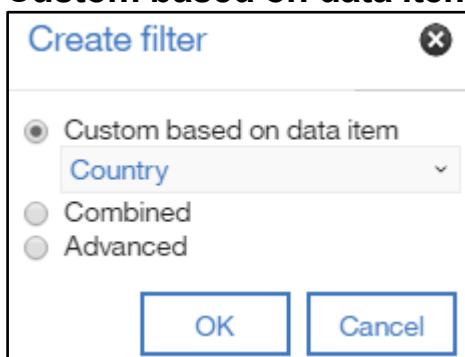
Only 2012 sales are included in the report. On the last page of the report, the Overall - Total revenue is \$1,495,891,100.90 for 2012.

10. Close the rendered report tab.

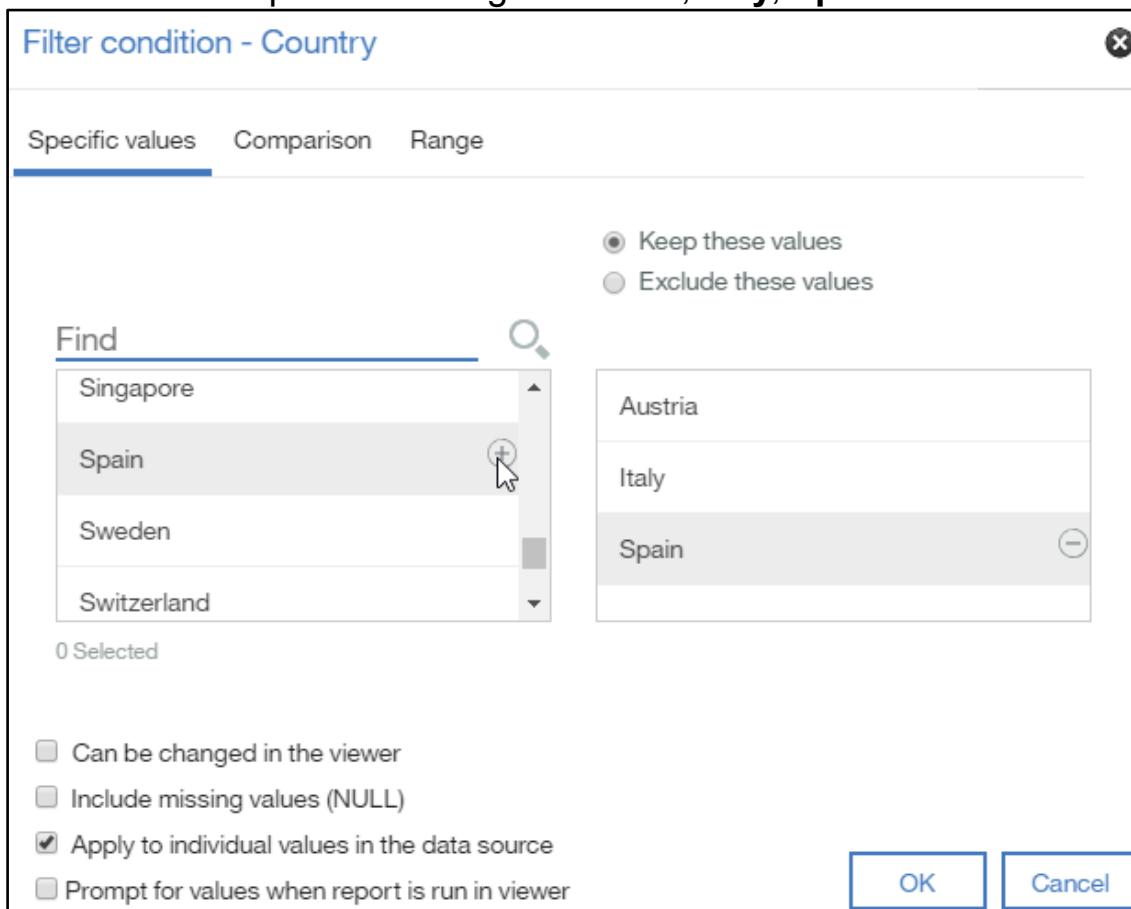
### Task 3. Filter data to show only Southern European countries.

The Southern European countries consist of Austria, Italy, and Spain.

1. Select the List, then on the Toolbar, click **Filters** , then click **Edit Filters**.  
The Filters dialog appears showing the detail filter you just created. You will create another detail filter.
2. Click **Add** , ensure that **Country** is selected under **Custom based on data item**, and then click **OK**.



3. In the **Specific values** tab, double-click the following values to add them to the Selected values pane on the right: **Austria, Italy, Spain**.



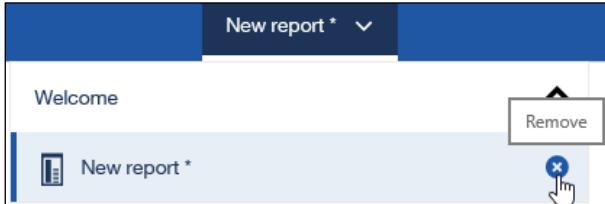
4. Click **OK** to close the **Filter condition** dialog box.  
 5. Click **OK** to close the **Filters** dialog box.  
 6. On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears as follows:

City	First name	Last name	Position name	Revenue
<b>Austria</b>				
Wien	Sabine	Grüner	Level 3 Sales Representative	12,193,198.67
	Jutta	Shultz	Level 2 Sales Representative	9,938,792.37
	Thomas	Schirmer	Level 1 Sales Representative	6,216,976.62
<b>Wien - Total</b>				<b>28,348,967.66</b>
<b>Austria - Total</b>				<b>28,348,967.66</b>

In 2012, Italy generated the most revenue of Southern European countries, and Sabine Grüner from Austria earned the top sales rep award.

7. Close the rendered report tab.
8. In the Application bar, click the report dropdown menu, then click **Remove** to the right of New report to close it. Then click **OK** to confirm your action.



9. Leave the IBM Cognos Analytics portal open for the next demonstration.

**Results:**

**You created a report with filters to show the revenue generated by the top sales representatives for 2012 in Southern Europe.**

## Determine when to apply a filter with aggregation

### Before Auto-aggregation

	Navigation	121,958.34
	Navigation	104,207.4
	Knives	100,045.74
	<b>Personal Accessories - Total</b>	<b>1,378,713.67</b>
	<b>Overall - Total</b>	<b>496,713,003.2</b>

Individual data values for Navigation product type where revenue is greater than \$100,000

### After Auto-aggregation

Personal Accessories	Knives	305,646.3
	Navigation	1,073,067.37
	<b>Personal Accessories - Total</b>	<b>1,378,713.67</b>
	<b>Overall - Total</b>	<b>496,713,003.2</b>

Summarized data values for Navigation product type where revenue is greater than \$100,000

*Determine when to apply a filter with aggregation*

Aggregated data can show totals, averages, or other formats of summarized data.

## Demonstration 2

Apply a detail filter on fact data in a report

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	1,863,445.82
	Packs	52,076,711.17
	Sleeping Bags	21,034,472.39
	Tents	282,028,081.98
Camping Equipment - Total		357,002,711.36
Golf Equipment	Irons	41,032,759.96
	Putters	1,184,967.25
	Woods	87,453,875.01
Golf Equipment - Total		129,671,602.22

*Demonstration 2: Apply a detail filter on fact data in a report*

## Demonstration 2: Apply a detail filter on fact data in a report

### Purpose:

You want to make a report displaying the total revenue produced by top performing products. To create this report, you will add several filters and examine how they affect the query.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the List

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a new **List** object to the report.
3. From the **Source** tab, add the following query items to the List:
  - Products: **Product line**, **Product type**
  - Sales fact: **Revenue**

Product line	Product type	Revenue
<Product line>	<Product type>	<Revenue>
<Product line>	<Product type>	<Revenue>
<Product line>	<Product type>	<Revenue>

4. Click the **<Product line>** List column body, and then on the Toolbar, click **Group / Ungroup** .
5. On the side bar, click **Queries** , then click  **Query1**.
6. In the Data Items pane, click **Revenue**, and then click **Show properties**  from the Application bar.  
 In the Properties pane, notice that the Detail aggregation property for Revenue is set to Total. This is because, in the Framework Manager project, the modeler has set Regular Aggregate property on the Revenue Data Item to "Sum".
7. On the side bar, click **Pages** , then click  **Page1**; to return to the page.
8. Click **<Revenue>** List column body, then on the Toolbar, click **Summarize** , then click  **Total**.

9. On the Application bar, click **Run options** , then click **Run HTML**.  
A section of the results appears as follows:

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	272,835,984.18
	Lanterns	126,925,660.64
	Packs	351,880,402.84
	Sleeping Bags	309,172,888.35
	Tents	528,221,728.02
<b>Camping Equipment - Total</b>		<b>1,589,036,664.03</b>

The Product line data is grouped, and an aggregate row displays the total revenue generated by all product types in each product line. Notice that Cooking Gear for the Camping Equipment product line generated \$272,835,984.18 in revenue. You will compare this number with the revenue number generated later in Task 3.

- Close the rendered report tab.
- On the side bar, click **Queries** , then click  **Query1**.  
In the Properties pane, you notice that the Auto group & summarize property for the query is set to Yes. You want to view each individual data record, so you will change this property to No.
- In the Properties pane, click the **Auto group & summarize** property, and then select **No** from the list.
- On the Application bar, click **Run options** , then click **Run HTML**.

Hint: The order you see displayed in the results may vary, as there has been no sorting applied.

A section of the results appears similar to the following:

Product line	Product type	Revenue
Camping Equipment	Packs	41,543.16
	Cooking Gear	10,278.44
	Cooking Gear	30,838.38
	Cooking Gear	40,776.32
	Tents	61,075.08
	Sleeping Bags	49,704.2
	Sleeping Bags	22,737.78

The report displays separate rows for revenue generated by individual sales of each product type.

- Close the rendered report tab.

## Task 2. Apply a detail filter before auto aggregation and examine the effects

You want this report to include only data from individual orders of each product type that generated more than \$100,000 in revenue. You will create a detail filter and apply it before auto aggregation.

1. On the side bar, click **Pages** , then click  **Page1**.
2. Select the List by clicking its container selector  (in the upper left corner).
3. On the Toolbar, click **Filters**, then click **Edit Filters**.
4. In the **Detail Filters** tab, click **Add** .
5. From the **Custom based on data item** list select **Revenue**, then click **OK**.
6. Ensure that the **Operator** is **>**, and then in the **Value** text box, type **100000** (100 thousands), then click **OK**.
7. Under Application, select **Before auto aggregation**.
8. Click **OK** to close the Filters dialog box.
9. On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears like the following:

Product line	Product type	Revenue
Camping Equipment	Sleeping Bags	115,144.26
	Tents	114,969.48
	Tents	111,038.25
	Tents	114,829.8

The report now displays only data for individual sales of product types that generated more than \$100,000 in revenue.

10. In the report, click **Bottom**.

The total revenue generated by product type orders of over \$100,000 is \$496,713,003.20.

11. Close the rendered report tab.

12. On the side bar, click **Queries** , then click  **Query1**.

The filter that you created appears in the Detail Filters  pane.

13. In the **Detail Filters** pane, click  **Revenue > 100000**.

In the Properties pane, the properties specified for the filter display as follows:

- Definition: displays the expression you created for this filter
- Usage: is set to Required
- Application: is set to Before Auto Aggregation

## Task 3. Set the query to group and summarize data

You want to see only one row for sales of each product type, so you will set the Auto Group & Summarize property for the query back to Yes.

1. In the side bar, click **Queries**, then click **Query 1**.
2. In the Properties pane, under DATA, change the **Auto group & summarize** property to **Yes**.
3. On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears as follows:

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	1,863,445.82
	Tents	282,028,081.98
	Sleeping Bags	21,034,472.39
	Packs	52,076,711.17
<b>Camping Equipment - Total</b>		<b>357,002,711.36</b>
Golf Equipment	Irons	41,032,759.96

There is only one row for each product type because the query will group and summarize the data at the lowest level of detail.

The revenue generated by Cooking Gear is \$1,863,445.82. When you ran this report without the filter in Task 1, the revenue generated by Cooking Gear was \$272,835,984.18. The value is different because it no longer includes individual orders that generated less than one hundred thousand dollars in revenue.

The total revenue generated by all product lines is \$496,713,003.20, which is the same as when you ran the report in Task 2 with the Auto group & summarize property for the query set to No.

Since you specified that the filter was to be applied before the query will group and summarize retrieved data, the filter will exclude the same data regardless of whether the query retrieves data that is summarized or not summarized.

4. Close the rendered report tab.

## Task 4. Apply a detail filter after auto aggregation

You want the report to display only product types for which the total revenue for all sales is greater than ten million dollars. To achieve this, you will create a detail filter and apply it after auto aggregation.

1. On the side bar, click **Pages**, then click **Page 1**.
2. Select the List by clicking its container selector (in the upper left corner).
3. On the Toolbar, click **Filters** , then click **Edit Filters**.
4. In the Detail Filters tab, click **Add** .

5. From the **Custom based on data item** list, select **Revenue**, then click **OK**.
6. Ensure that the **Operator** is **>**, and then in the **Value** text box, type **10000000** (10 million), then click **OK**.
7. Ensure that under Application, **After auto aggregation** is selected.
8. Click **OK** to close the Filters dialog box.

## Task 5. Observe the effects of the filters

1. On the Application bar, click **Run options** , then click **Run HTML**.  
The results appear as follows:

Product line	Product type	Revenue
Camping Equipment	Tents	282,028,081.98
	Sleeping Bags	21,034,472.39
	Packs	52,076,711.17
<b>Camping Equipment - Total</b>		<b>355,139,265.54</b>
Golf Equipment	Irons	41,032,759.96
	Woods	87,453,875.01
<b>Golf Equipment - Total</b>		<b>128,486,634.97</b>
<b>Overall - Total</b>		<b>483,625,900.51</b>

Only the five product types that generated total revenue greater than ten million are displayed in the report.

2. Close the rendered report tab.

You have decided to include product types in the report even if the aggregated revenue generated by all sales of the product type is less than ten million dollars. However, in case you may want to use this filter in the future, you will disable this filter instead of deleting it.

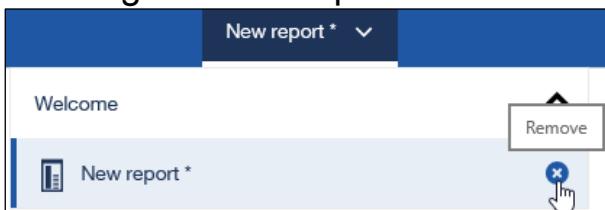
3. Select the List by clicking its container selector  (in the upper left corner).
4. On the Toolbar, click **Filters**, then click **Edit Filters**.
5. Click **Revenue > 10000000**, then under Usage, select **Disabled**.
6. Click **OK** to close the Filters dialog box.

- On the Application bar, click **Run options** , then click **Run HTML**.  
A section of the results appears as follows:

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	1,863,445.82
	Packs	52,076,711.17
	Sleeping Bags	21,034,472.39
	Tents	282,028,081.98
<b>Camping Equipment - Total</b>		<b>357,002,711.36</b>
Golf Equipment	Irons	41,032,759.96

All product types that generated over \$100,000 in revenue (in at least one order), again appear in the report - which indicates that the second filter you added has been disabled.

- Close the rendered report tab.
- On the side bar, click **Queries** , then click  **Query1**.  
Notice that the Revenue > 10000000 filter still appears in the query, though it is grayed out and unavailable to the query.
- In the  **Detail Filters** pane, click **Revenue > 10000000**.  
In the Properties pane notice that, as specified, the Usage property for the filter is set to Disabled.
- In the Application bar, click the report dropdown menu, then click **Remove**  to the right of **New report** to close it. Then click **OK** to confirm your action.



- Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You created a report that displayed the total revenue produced by top performing products. You applied detail filters to the report so that only products producing a certain amount of revenue were displayed. You disabled a filter and viewed the effects.

## Filter your data with summary filters

- Create a summary filter to filter your grouped data on summary values.

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	272,835,984.18
	Lanterns	126,925,660.64
	Packs	351,880,402.84
	Sleeping Bags	309,172,888.35
	Tents	528,221,728.02
<b>Camping Equipment - Total</b>		<b>1,589,036,664.03</b>
Personal Accessories	Binoculars	130,834,653.2
	Eyewear	867,125,198.48
	Knives	153,420,439.59
	Navigation	207,490,641.92
	Watches	526,802,374.59
<b>Personal Accessories - Total</b>		<b>1,885,673,307.78</b>
<b>Overall - Total</b>		<b>3,474,709,971.81</b>

The summary filter focuses on Product lines that generated total revenues greater than \$1,000,000,000

### Filter your data with summary filters

To add a filter that will apply to groups in the report, click the Summary Filters tab in the Filters dialog box.

When you use a summary filter, you can specify the group on which you want to filter.

When you combine detail and summary filters, be aware that the detail filter will affect the summarized numbers that you are filtering on. Be sure to check that the results are as expected.

## Demonstration 3

Apply a summary filter to a report

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	272,835,984.18
	Lanterns	126,925,660.64
	Packs	351,880,402.84
	Sleeping Bags	309,172,888.35
	Tents	528,221,728.02
<b>Camping Equipment - Total</b>		<b>1,589,036,664.03</b>
Personal Accessories	Binoculars	130,834,653.2
	Eyewear	867,125,198.48
	Knives	153,420,439.59
	Navigation	207,490,641.92
	Watches	526,802,374.59
<b>Personal Accessories - Total</b>		<b>1,885,673,307.78</b>
<b>Overall - Total</b>		<b>3,474,709,971.81</b>

*Demonstration 3: Apply a summary filter to a report*

## Demonstration 3:

### Apply a summary filter to a report

**Purpose:**

You have been asked to create a report that focuses on product lines that have generated revenues greater than \$1 billion. You will use a summary filter to focus on this data.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

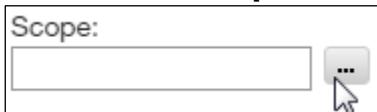
#### Task 1. Create the List and apply a summary filter

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **List** object to the report page.
3. Add the following query items to the List:
  - Products: **Product line**, **Product type**
  - Sales fact: **Revenue**

Product line	Product type	Revenue
<Product line>	<Product type>	<Revenue>

4. Click **<Product line>** List column body, then on the Toolbar, click **Group / Ungroup**.
5. Click **<Revenue>** List column body, then on the Toolbar, click **Summarize**, and then click **Total**.
6. On the Toolbar, click **Filters**, and then click **Edit Filters**.
7. Click the **Summary Filters** tab, click **Add**, choose **Advanced**, then click **OK**.
8. Create and validate the following expression:  
**Total(Revenue)>1000000000**  
 Hint:
  - drag **Total(Revenue)** from the Data items tab
  - type **1000000000** (1 billion)
9. Click **OK**.

10. Next to the **Scope**, field click the **ellipsis**.



11. Select **Product line**, click **OK** to close the **Scope** dialog box, and then click **OK** to close the **Filters** dialog box.
12. On the Application bar, click **Run options** (play icon), then click **Run HTML**.

The results appear as follows:

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	272,835,984.18
	Lanterns	126,925,660.64
	Packs	351,880,402.84
	Sleeping Bags	309,172,888.35
	Tents	528,221,728.02
<b>Camping Equipment - Total</b>		<b>1,589,036,664.03</b>
Personal Accessories	Binoculars	130,834,653.2
	Eyewear	867,125,198.48
	Knives	153,420,439.59
	Navigation	207,490,641.92
	Watches	526,802,374.59
<b>Personal Accessories - Total</b>		<b>1,885,673,307.78</b>
<b>Overall - Total</b>		<b>3,474,709,971.81</b>

Only two product lines generated total revenues greater than \$1,000,000,000: Camping Equipment and Personal Accessories.

13. Close the rendered report tab.

## Task 2. Navigate to the query explorer

- On the side bar, click **Queries**, then click **Query 1**.  
The summary filter you added appears in the Summary Filters pane.
- On the Application bar, click **Show Properties**.
- In the **Summary Filters** pane, click **[Total(Revenue)] > 1000000000**.  
In the Properties pane, the Scope property for this filter is set to Product line.
- In the Application bar, click the report dropdown menu, then click **Remove** (X) to the right of New report to close it. Then click **OK** to confirm your action.
- Leave the IBM Cognos Analytics portal open for the next exercise.

### Results:

You have created a report that used a summary filter to focus on product lines that generated total revenues greater than \$1 billion.

IBM Training IBM

## Apply pre-defined source filters

- Save time and effort by applying filters published with your source package rather than creating your own.

Pre-defined filters have been included in the package to assist in report authoring

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### Apply pre-defined source filters

The modeler can pre-define (in Framework Manager) some filters to be used by report authors.

This allows reuse; as report authors don't have to write the filter expression themselves.

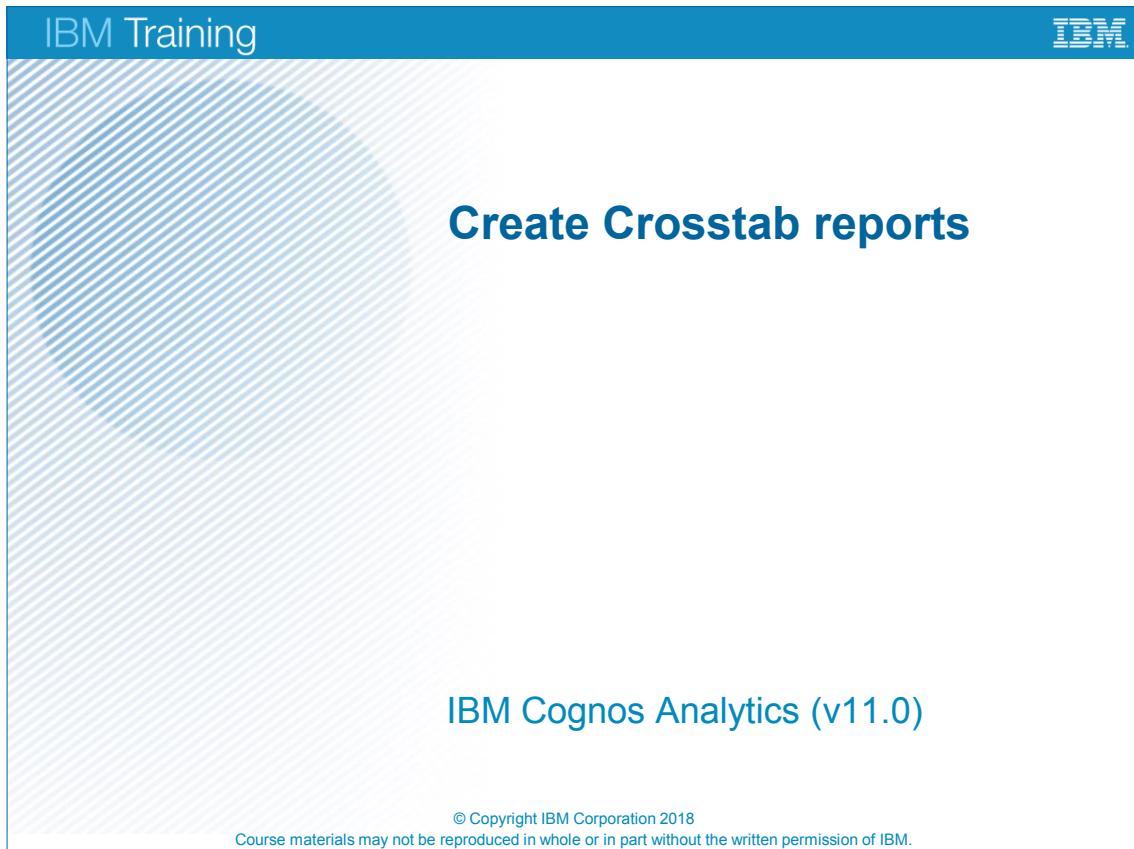
This also allows encapsulation; as report authors may not be interested in knowing the underlying expression behind a filter. The logic of the filter can be complex.

When using a pre-defined filter, you don't write the complete filter expression; you just drag the filter to the Filters pane in Query explorer, or the Expression editor.

## Unit summary

- Create filters to narrow the focus of reports
- Examine detail and summary filters
- Determine when to apply filters on aggregate data

## **Unit 4      Create Crosstab reports**



The slide has a blue header bar with "IBM Training" on the left and the IBM logo on the right. The main content area has a light gray background with a subtle diagonal striped pattern. The title "Create Crosstab reports" is centered in large blue text. Below it, the text "IBM Cognos Analytics (v11.0)" is also centered in blue. At the bottom, there is a copyright notice: "© Copyright IBM Corporation 2018" and "Course materials may not be reproduced in whole or in part without the written permission of IBM."

IBM Training

**Create Crosstab reports**

IBM Cognos Analytics (v11.0)

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## Unit objectives

- Format and sort Crosstab reports
- Create complex Crosstabs using drag and drop functionality
- Create Crosstabs using unrelated data items

Create Crosstab reports

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*Unit objectives*

## Create a Crosstab report

- Add query items to rows and columns, and measures to the body of the Crosstab.

The diagram illustrates a Crosstab report structure. At the top, the text "Query Items" is written in green, with two orange arrows pointing downwards towards the first row of the table. The table has three columns: "Revenue" (row 1), "2007" (row 1), and "2006" (row 1). The second row contains "Golf Equipment" in the first column and "\$174,740,819.29" in the second column. The third row contains "Camping Equipment" in the first column and "\$352,910,329.97" in the second column. In the bottom right corner of the table, the text "Measures" is written in green, with two orange arrows pointing upwards from the bottom of the table towards the text.

Revenue	2007	2006
Golf Equipment	\$174,740,819.29	\$230,110,270.55
Camping Equipment	\$352,910,329.97	\$500,382,422.83

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### Create a Crosstab report

A Crosstab is a tabular display of data with data items appearing on rows and columns, and is useful for analyzing and comparing summary data.

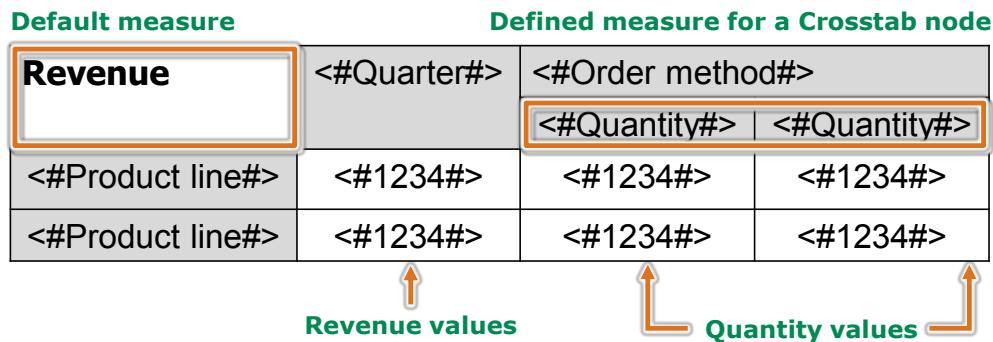
Crosstab edge cells have four drop zones: one on each side, one at the top of the cell, and one at the bottom of the cell.

Use the Crosstab drop zones to add items as parents, peers, or children of other items in the Crosstab.

Using Crosstab drop zones, you can quickly create Crosstabs using drag-and-drop functionality.

## Add measures to Crosstab reports

- You can add measures to either the row or column edges of a Crosstab report.
- You can add a default measure that is used in cells where the measure is not defined on the row or column edge.



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### Add measures to Crosstab reports

Any data item that can be aggregated can be added to the body of the Crosstab as the measure. The measure defines the data in the report, such as revenue, quantity, or profit margin.

The Crosstab fact cells contain the measure values. Default measure is a property of the Crosstab object. If the measures of the Crosstab cannot be determined by what is being rendered on the edges, then the default measure will be rendered.

In Crosstabs, you can now show values as a percentage of a summary instead of the actual values. For example, you can show the revenue that was generated by each product line as a percentage of the total revenue.

## Data sources for Crosstabs

- Relational models have a basic metadata structure that looks like tables and columns in a database.
- Dimensionally Modeled Relational (DMR) models are built from relational data sources, but are modeled with a dimensional structure (like OLAP) consisting of measures and dimensions.
- Because Crosstabs use rows and columns to define the basic structure and determine cell values, they are better suited to dimensional reporting.

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### *Data sources for Crosstabs*

Best practices to keep in mind when using Crosstab report objects:

- Crosstabs are, by design, a dimensional reporting object
- insert the query items you wish to view in the rows and columns to focus the report rather than using filters
- filters in a Crosstab may cause unpredictable results and should be used only when necessary
- Crosstabs can be used in relational data reporting, but take care to maintain predictable results

## Demonstration 1

Create a simple Crosstab report

Revenue		Camping Equipment	Golf Equipment	Outdoor Protection	Personal Accessories	Mountaineering Equipment
	2010	80,467,596.88	44,244,120.93	8,141,169.76	45,940,692.79	
Telephone	2011	47,562,256.31	27,340,352.57	3,203,287.7	18,428,095.15	10,626,292.36
	2012	17,715,451.4	6,411,233.64	507,485.63	5,979,547.46	6,586,124.67
	2013	8,149,587.54	734,405.51	76,371.43	3,173,298.96	5,698,410.37
Web	2010	125,829,519.92	49,583,401.41	13,735,716.85	284,622,826.47	
	2011	270,463,415.88	116,939,694.38	16,479,270.8	411,577,877.16	65,855,489.46
	2012	426,353,675.75	203,385,896.61	8,570,078.91	568,668,077.83	132,736,443.67
	2013	311,192,071.84	157,698,057.23	4,166,745.33	427,367,391.98	117,010,256.92

[Create Crosstab reports](#)

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*Demonstration 1: Create a simple Crosstab report*

## Demonstration 1: Create a simple Crosstab report

### Purpose:

You want to create and format a report to show revenue generated by order method for each year. You want to see yearly trends in sales for each order method.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create a Crosstab

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **Crosstab** object to the report page.
3. From the **Data/Source** tab, use the click and drag method to add the following query items to the new Crosstab data container object:

#### Rows:

- Products: **Product line**

#### Columns:

- Order method: **Order method type**

#### Measures:

- Sales fact: **Revenue**

Revenue	<#Order method type#>	<#Order method type#>
<#Product line#>	<#1234#>	<#1234#>
<#Product line#>	<#1234#>	<#1234#>

4. On the Application bar, click **Run options** , then click **Run HTML**.

The results appear as follows:

Revenue	E-mail	Fax	Mail	Sales visit	Special	Telephone	Web
Camping Equipment	75,899,094.63	23,054,398.48	21,348,644.09	168,611,961.87	12,388,989.44	153,894,892.13	1,133,838,683.39
Golf Equipment	47,933,933.16	15,241,303.27	12,693,287.48	39,240,918.73	4,964,762.97	78,730,112.65	527,607,049.63
Mountaineering Equipment	7,476,451.96	11,848,370.08	3,531,658.66	44,616,626.64	3,674,008.11	22,910,827.4	315,602,190.05
Outdoor Protection	5,882,477.87	1,966,484.72	2,098,391.71	10,029,884.31	1,136,931.23	11,928,314.52	42,951,811.89
Personal Accessories	42,651,086.54	17,962,985.46	6,419,357.03	47,695,442.45	5,186,628.5	73,521,634.36	1,692,236,173.44

Your report shows the revenue generated for each product line by each order method. You want to add relevancy to the revenue items by adding years to the report to compare revenue generated in each year.

- Close the rendered report tab.

## Task 2. Add Year to the Crosstab report and sort on Year

- Expand the **Time** query subject, and then drag **Year** to the **Columns**, nested under **<#Order method type#>** as a child (or nested) cell.

Revenue	<#Order method type#>	<#Order method type#>
<#Product line#>	<#1234#>	<#1234#>
<#Product line#>	<#1234#>	<#1234#>

- Click the **<#Year#>** column title.
- From the toolbar, click **Sort**, and then click **Ascending**.
- On the Application bar, click **Run options** , then click **Run HTML**.

Your report is very wide. When consumers are viewing the report, they will always have to scroll horizontally. You can swap the rows and columns to make it easier for consumers to read the report.

- Close the rendered report tab.
- Select the entire Crosstab by clicking the container selector of the Crosstab.
- On the Toolbar, click **Swap Rows and Columns** .
- On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears as follows:

Revenue		Camping Equipment	Golf Equipment	Outdoor Protection	Personal Accessories	Mountaineering Equipment
E-mail	2010	39,124,634.73	29,322,537.92	4,135,915.35	22,819,708.21	
	2011	21,291,005.31	8,851,232.61	1,406,531.47	10,253,053.91	2,517,063.13
	2012	10,612,304.02	5,401,733.78	289,343.01	5,568,561.15	1,829,100.61
	2013	4,871,150.57	4,358,428.85	50,688.04	4,009,763.27	3,130,288.22
Fax	2010	9,634,763.39	6,255,930.08	1,435,512.2	11,313,266.47	
	2011	6,228,274.27	3,539,563.59	385,329.2	3,613,228.75	6,129,791.95
	2012	5,226,451.57	2,408,222.14	123,028.48	2,149,810.49	3,538,047.25
	2013	1,964,909.25	3,037,587.46	22,614.84	886,679.75	2,180,530.88

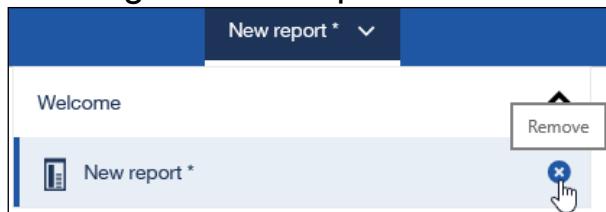
- Click **Page down** to view the rest of the report.

Your report shows that Web sales have been increasing while Telephone sales have been decreasing. (Be aware that the 2013 values are based on only 7 months of data, not 12 months of data like the others)

Revenue		Camping Equipment	Golf Equipment	Outdoor Protection	Personal Accessories	Mountaineering Equipment
Telephone	2010	80,467,596.88	44,244,120.93	8,141,169.76	45,940,692.79	
	2011	47,562,256.31	27,340,352.57	3,203,287.7	18,428,095.15	10,626,292.36
	2012	17,715,451.4	6,411,233.64	507,485.63	5,979,547.46	6,586,124.67
	2013	8,149,587.54	734,405.51	76,371.43	3,173,298.96	5,698,410.37
Web	2010	125,829,519.92	49,583,401.41	13,735,716.85	284,622,826.47	
	2011	270,463,415.88	116,939,694.38	16,479,270.8	411,577,877.16	65,855,489.46
	2012	426,353,675.75	203,385,896.61	8,570,078.91	568,668,077.83	132,736,443.67
	2013	311,192,071.84	157,698,057.23	4,166,745.33	427,367,391.98	117,010,256.92

10. Close the rendered report tab.

11. In the Application bar, click the report dropdown menu, then click **Remove** to the right of New report to close it. Then click **OK** to confirm your action.



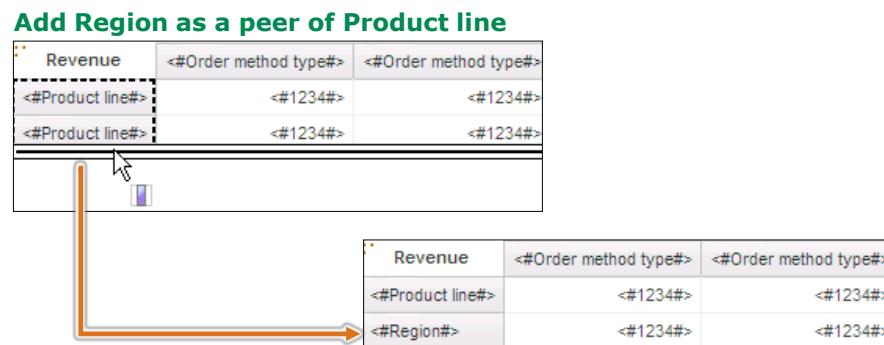
12. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You created and formatted a report to show revenue generated by order method for each year. The report displayed yearly trends in telephone sales for each order method.

## Create complex Crosstab reports

- Crosstab drop zones let you create a wide variety of Crosstab layouts to meet your business requirements.



[Create Crosstab reports](#)

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### Create complex Crosstab reports

To add a second item as a peer below an existing item, drop the new item below the bottom instance of the item on the row edge. To add a second item as a peer above the existing item, drop the new item above either instance of the item on the row edge.

To add a second item as a peer to the right of the existing item, drop the new item to the right of the far right instance of the item on the column edge. To add a second item as a peer to the left of the existing item, drop the new item to the left of either instance of the item on the column edge.

## Create Crosstab nodes and Crosstab node members

- When you add items to Crosstabs, you create Crosstab nodes and Crosstab node members.

**This Crosstab node contains two Crosstab node members:  
Region and City**

Revenue		<#Order method type#>		<#Order method type#>	
		<#Country#>	Total	<#Country#>	Total
Average Product line		<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Region#>	<#City#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
	<#City#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Product line#>		<#1234#>	<#1234#>	<#1234#>	<#1234#>

### Create Crosstab nodes and Crosstab node members

The row and column edges of a Crosstab are composed of sets of Crosstab nodes. A Crosstab node contains one Crosstab node member, as well as any Crosstab node members nested under it.

Each Crosstab node member refers to a data item.

Crosstab nodes and Crosstab node members let you easily create and modify complex Crosstabs.

## Demonstration 2

### Create complex Crosstab reports

		2010	2011	2012	2013	E-mail
Camping Equipment	Revenue	332,986,338.06	402,757,573.17	500,382,422.83	352,910,329.97	75,899,094.63
	Quantity	5,895,053	6,903,764	8,399,156	6,103,176	1,413,084
Golf Equipment	Revenue	153,553,850.98	168,006,427.07	230,110,270.55	174,740,819.29	47,933,933.16
	Quantity	1,092,982	1,297,793	1,536,772	1,186,154	333,300
Outdoor Protection	Revenue	36,165,521.07	25,008,574.08	10,349,175.84	4,471,025.26	5,882,477.87
	Quantity	5,614,356	4,111,058	1,599,585	689,446	905,156
Personal Accessories	Revenue	391,647,093.61	456,323,355.9	594,009,408.42	443,693,449.85	42,651,086.54
	Quantity	7,572,339	8,567,357	10,706,015	8,061,994	791,905
Mountaineering Equipment	Revenue		107,099,659.94	161,039,823.26	141,520,649.7	7,476,451.96
	Quantity		2,644,713	3,700,262	3,555,116	199,214
Canada	Revenue	41,468,882.87	49,366,410.09	67,341,094.59	53,511,041.09	40,596,757.97
France	Revenue	50,546,272.09	45,745,704.79	53,967,275.85	43,928,088.57	365,839.79
Germany	Revenue	41,462,245.81	43,631,063.98	55,037,217.04	41,352,298.31	37,914,506.54
Italy	Revenue	22,227,856.92	31,113,988.15	45,622,153.53	33,788,864.66	22,658,934.4

Create Crosstab reports

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*Demonstration 2: Create complex Crosstab reports*

## Demonstration 2: Create complex Crosstab reports

### Purpose:

Management needs you to create a Crosstab report for users to analyze the revenue generated and the quantity sold for different order methods. You will add data to examine the revenue generated by different order methods in the countries where your products are sold. You will also add order year data to the report and explore the flexibility of layout options using the Crosstab drop zones.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create a Crosstab report

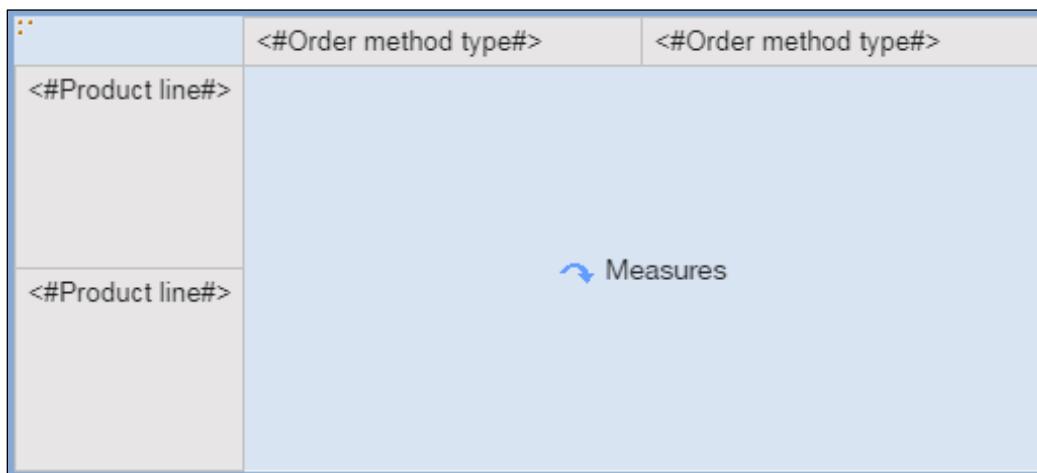
1. Open a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **Crosstab** to the page body.
3. From the **Data/Source** tab, add the following query items to the new Crosstab report object:

#### Rows:

- Products: **Product line**

#### Columns:

- Order method: **Order method type**



## Task 2. Nest on a Crosstab edge

You want to examine the revenue generated and quantity sold by each order method for each product line. To do this, you will nest both of these measures in the rows of the report.

- From the **Source** tab, expand **Sales fact**, and then drag **Revenue** to the **Rows** area as a child of <#Product line#>.

Revenue is nested in the Product line rows of the Crosstab.

The results appear as follows:

		<#Order method type#>	<#Order method type#>
<#Product line#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Revenue#>	<#1234#>	<#1234#>
<#Product line#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Revenue#>	<#1234#>	<#1234#>

You also want to nest Quantity in the Product line rows.

- From the **Source** tab, from Sales fact, drag **Quantity** to the **Rows** area as a peer of <#Revenue#>.

Both Revenue and Quantity are now nested in the Product line rows of the Crosstab.

The results appear as follows:

		<#Order method type#>	<#Order method type#>
<#Product line#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Quantity#>	<#1234#>	<#1234#>
<#Product line#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Quantity#>	<#1234#>	<#1234#>

3. Run the report in **HTML**.

A section of the results appear as follows:

		E-mail	Fax	Mail
Camping Equipment	Revenue	75,899,094.63	23,054,398.48	21,348,644.09
	Quantity	1,413,084	413,958	348,058
Golf Equipment	Revenue	47,933,933.16	15,241,303.27	12,693,287.48
	Quantity	333,300	102,651	80,432

You can analyze the revenue generated and the quantity sold by each order method for each product line.

4. Close the rendered report tab.

### Task 3. Add items as peers on a Crosstab edge

You are also interested in how revenue generated by different order methods varies from country to country.

1. From the **Source** tab, expand **Employee by region**, and then drag **Country** to the **Rows** area, as a peer of **<#Product line#>**.

		<#Order method type#>	<#Order method type#>
<#Product line#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Quantity#>	<#1234#>	<#1234#>
<#Product line#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Quantity#>	<#1234#>	<#1234#>

Both Product line and Country now appear on the rows edge of the Crosstab.

The results appear as follows:

		<#Order method type#>	<#Order method type#>
<#Product line#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Quantity#>	<#1234#>	<#1234#>
<#Country#>		<#1234#>	<#1234#>

Country has no measure associated with it, since Revenue and Quantity are children of Product line only.

- From the **Data Items** tab, drag **Revenue** to the **Rows** area as a child of **<#Country#>**.

		<#Order method type#>	<#Order method type#>
<#Product line#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Quantity#>	<#1234#>	<#1234#>
<#Country#>		<#1234#>	<#1234#>

Revenue is nested within the Country rows of the Crosstab.

The results appear as follows:

		<#Order method type#>	<#Order method type#>
<#Product line#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Quantity#>	<#1234#>	<#1234#>
<#Country#>	<#Revenue#>	<#1234#>	<#1234#>
	<#Revenue#>	<#1234#>	<#1234#>

- On the Application bar, click **Run options** , then click **Run HTML**. A section of the results appears as follows:

		E-mail	Fax	Mail
Camping Equipment	Revenue	75,899,094.63	23,054,398.48	21,348,644.09
	Quantity	1,413,084	413,958	348,058
Golf Equipment	Revenue	47,933,933.16	15,241,303.27	12,693,287.48
	Quantity	333,300	102,651	80,432
Mountaineering Equipment	Revenue	7,476,451.96	11,848,370.08	3,531,658.66
	Quantity	199,214	292,408	81,259
Outdoor Protection	Revenue	5,882,477.87	1,966,484.72	2,098,391.71
	Quantity	905,156	311,583	328,098
Personal Accessories	Revenue	42,651,086.54	17,962,985.46	6,419,357.03
	Quantity	791,905	359,414	115,208
Australia	Revenue	600,979.72		127,908.29
Brazil	Revenue	330,436.43	2,473,209.49	

You can examine the revenue generated by each order method in different countries as well as the revenue generated and the quantity sold by each order method for each product line.

- Close the rendered report tab.

You now want to examine data for years and order method types. To do this, you will add Year to the column edge of the Crosstab.

5. From the **Source** tab, expand **Time**, and then drag **Year** to the left of **<#Order method type#>** in the **Columns** area of the Crosstab.

<#Product line#>		<#Revenue#>	<#Order method type#>	<#Order method type#>
		<#Quantity#>	<#1234#>	<#1234#>
<#Country#>		<#Revenue#>	<#1234#>	<#1234#>
		<#Revenue#>	<#1234#>	<#1234#>

Both Year and Order method types appear on the column edge of the Crosstab. The results appear as follows:

<#Year#>		<#Order method type#>
<#Product line#>	<#Revenue#>	<#1234#>
	<#Quantity#>	<#1234#>
<#Country#>	<#Revenue#>	<#1234#>
	<#Revenue#>	<#1234#>

6. Click the **<#Year#>** column header.  
 7. On the Toolbar, click **Sort**, and then click **Ascending**.  
 8. On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears as follows:

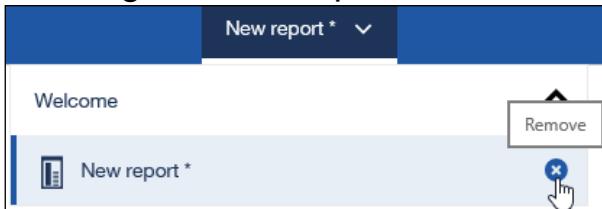
		2010	2011	2012	2013	E-mail
Camping Equipment	Revenue	332,986,338.06	402,757,573.17	500,382,422.83	352,910,329.97	75,899,094.63
	Quantity	5,895,053	6,903,764	8,399,156	6,103,176	1,413,084
Golf Equipment	Revenue	153,553,850.98	168,006,427.07	230,110,270.55	174,740,819.29	47,933,933.16
	Quantity	1,092,982	1,297,793	1,536,772	1,186,154	333,300
Outdoor Protection	Revenue	36,165,521.07	25,008,574.08	10,349,175.84	4,471,025.26	5,882,477.87
	Quantity	5,614,356	4,111,058	1,599,585	689,446	905,156
Personal Accessories	Revenue	391,647,093.61	456,323,355.9	594,009,408.42	443,693,449.85	42,651,086.54
	Quantity	7,572,339	8,567,357	10,706,015	8,061,994	791,905
Mountaineering Equipment	Revenue		107,099,659.94	161,039,823.26	141,520,649.7	7,476,451.96
	Quantity		2,644,713	3,700,262	3,555,116	199,214
Canada	Revenue	41,468,882.87	49,366,410.09	67,341,094.59	53,511,041.09	40,596,757.97
France	Revenue	50,546,272.09	45,745,704.79	53,967,275.85	43,928,088.57	365,839.79
Germany	Revenue	41,462,245.81	43,631,063.98	55,037,217.04	41,352,298.31	37,914,506.54
Italy	Revenue	22,227,856.92	31,113,988.15	45,622,153.53	33,788,864.66	22,658,934.4

You can examine revenue generated and quantity sold for your product lines as well as by different order methods. You can also examine the revenue generated in different countries by different order methods. For example, you can see that no Mountaineering Equipment was sold in 2010.

9. Close the rendered report tab.



10. In the Application bar, click the report dropdown menu, then click **Remove** to the right of New report to close it. Then click **OK** to confirm your action.



11. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You created a report that displayed revenue generated and quantity sold by your product lines in different years and by different order methods. The report also displayed the revenue generated in different countries in different years and by different order methods. You explored the flexibility of layout options using the Crosstab drop zones.

## Format Crosstab reports

- You can specify formatting for cells displaying data for a specific row or column edge item, such as Product line or Region.

Gross Profit	2011
Personal Accessories	<b>186,535,159.07</b>
Asia Pacific	<b>118,203,277.67</b>

**No formatting applied**      **Formatting applied to Crosstab Fact Cells**

← **Bold, Blue**  
← **Bold, Italic, and Green**

Create Crosstab reports

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*Format Crosstab reports*

## Add unrelated items to Crosstab edges

- You can create discontinuous Crosstabs that have unrelated data in the row and column edges.

The screenshot shows a crosstab report with two main sections: 'Node' and 'Different Nodes'. The 'Node' section contains a single row for 'Gross profit' with columns for '2013' and '2012'. The 'Different Nodes' section contains a row for 'Asia Pacific' with columns for 'Web' and 'Sales visit'. A legend on the left indicates that orange boxes represent 'Node' and green boxes represent 'Different Nodes'. Arrows point from the text labels to their respective sections in the report. To the right is the 'Options' dialog box, specifically the 'Edit' tab. The 'Allow crosstab nesting beside individual items' checkbox is highlighted with an orange border.

Gross profit		2013	2012	Asia Pacific	
				Web	Sales visit
Camping Equipment	132,630,896.65	188,942,774.28	76,607,740.43	4,119,205.21	
Mountaineering Equipment	56,718,814.19	64,233,527.4	27,637,142.47	1,184,152.17	
Outdoor Protection	2,745,257.18	6,387,192.95	2,060,501.53	165,605.68	
Personal Accessories	186,535,159.07	247,731,864.8	102,076,237.5	755,820.22	
Golf Equipment	86,642,694.9	115,965,213.04	44,464,784.66	3,330,714.85	
Outdoors Shop	484,120.49	728,163.87	1,212,284.36		
1 for 1 Sports shop					
Accapamento	701,788.7	1,100,243.6			
AcquaVerde	1,178,508.6	1,185,922.36			
Air frais	652,922.53	706,412.19			

**Options**

View Edit Report Advanced

Wrap text in editors  
 Automatically populate values list  
 Automatically validate expressions: Off  
 In-place edit  
 Allow crosstab nesting beside individual items (highlighted)  
 Enable drill-up or drill-down links  
 Drop replace on crosstab and chart nodes: No replace  
 Double-click on member action: Drill up or down

[Create Crosstab reports](#)

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### Add unrelated items to Crosstabs edges

Creating discontinuous Crosstabs lets you present a wide variety of information in one report and customize the way it is displayed.

If you want items on the edges of your Crosstab to be discontinuous (contain different nested items), you can turn on the “Allow Crosstab nesting beside individual items” option. This can be found under the Options dialog, the Edit tab. It is turned on by default.

If you want items on the edges of your Crosstab to be related (contain the same nested items), you can turn off that option.

## Demonstration 3

Sort and format a Crosstab report

Revenue		2010	2011	2012	2013	Total
Personal Accessories	Binoculars	29,246,444.08	30,310,573.76	39,974,426.94	31,303,208.42	130,834,653.2
	Eyewear	154,310,479.02	208,648,605.39	282,226,165.14	221,939,948.93	867,125,198.48
	Knives	36,374,634.09	33,164,183.25	47,704,144.36	36,177,477.89	153,420,439.59
	Navigation	51,598,510.99	43,724,569.8	62,330,073.61	49,837,487.52	207,490,641.92
	Watches	120,117,025.43	140,475,423.7	161,774,598.37	104,435,327.09	526,802,374.59
	Total(Product type)	391,647,093.61	456,323,355.9	594,009,408.42	443,693,449.85	1,885,673,307.78
Central Europe		428,821,196.74	539,235,928.65	675,574,387.12	499,863,272.05	2,143,494,784.56
Americas		192,230,456.3	239,213,647.85	312,037,992.91	233,605,783.74	977,087,880.8
Asia Pacific		166,746,977.65	212,250,513.92	275,691,959.9	204,564,826.67	859,254,278.14
Northern Europe		70,230,147.41	90,215,646.65	117,148,067.64	91,945,289.26	369,539,150.96
Southern Europe		56,324,025.62	78,279,853.09	115,438,693.33	87,357,102.35	337,399,674.39

Create Crosstab reports

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*Demonstration 3: Sort and format a Crosstab report*

## Demonstration 3: Sort and format a Crosstab report

### Purpose:

Sales Managers want you to create a Crosstab report with data in which users can easily understand the sort order and can distinguish between data based on appearance. The report should show revenue for each year of operation for each Product type within each Product line. In the same Crosstab, you want to display Revenue for each Branch Region.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create and sort a Crosstab

1. Create a new **Blank** report, using the **GO data warehouse (query)** package.
2. Add a **Crosstab** object to the report page.
3. From the **Source** tab, add the following query items to the new Crosstab:

#### Rows:

- Products: **Product line**
- Employee by region: **Branch region** as a peer of **<#Product line#>**.

#### Columns:

- Time: **Year**

#### Measures:

- Sales fact: **Revenue**

The results appear as follows:

Revenue	<#Year#>	<#Year#>
<#Product line#>	<#1234#>	<#1234#>
<#Branch region#>	<#1234#>	<#1234#>

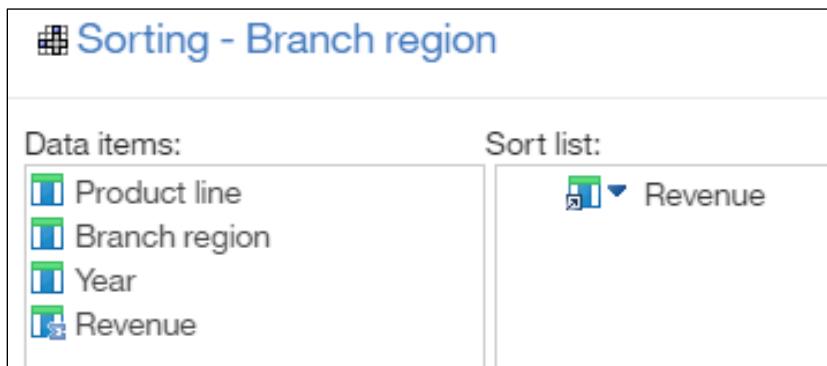
4. Click **<#Year#>**.
5. On the Toolbar, click **Sort**, and then click **Ascending**.
6. Click **<#Product line#>**.
7. On the Toolbar, click **Sort**, and then click **Ascending**.

### Task 2. Format the Crosstab and perform advanced sorting

1. Click **<#Product line#>**, and then on the toolbar click **More**.

2. Click **Select Member Fact Cells**.
3. On the Toolbar, click **Font A**, then click **Foreground Color**, then double-click **Blue**.
4. Click **OK** again to close the Font dialog box.
5. Click **<#Branch region#>**, then on the Application bar, click **Show properties**.
6. In the Properties pane, under DATA, double-click the **Sorting** property.
7. In the **Sorting** dialog box, from the **Data items** pane, drag **Revenue** to the **Sort List** pane.
8. Double-click the **Revenue** item that you just added, to change the sort order from ascending to descending (arrow pointing down).

The results appear as follows:



9. Click **OK**.
10. Click **<#Year#>**.
11. On the Toolbar, click **Summarize Σ**, and then click **Total Σ**.

### Task 3. Add aggregate data to the Crosstab

1. From the Source tab, under **Products**, drag **Product type** to the **Rows** as a child of **<#Product line#>**.

The results appear as follows:

Revenue		<#Year#>▲	Total
<#Product line#>▲	<#Product type#>	<#1234#>	<#1234#>
	<#Product type#>	<#1234#>	<#1234#>
	<#Branch region#>▼	<#1234#>	<#1234#>

2. Click **<#Product type#>**.
3. On the Toolbar, click **Summarize Σ**, and then click **Total Σ**.
4. In the Crosstab, under **<#Product type#>**, click **Total**.
5. In the Properties pane, under **TEXT SOURCE**, click the **Source type** property, and then from the list, select **Data item value**.
6. On the Application bar, click **Run options O**, then click **Run HTML**.

- Click **Page down** to view the rest of the report.  
A section of the results appears as follows:

Revenue		2010	2011	2012	2013	Total
Personal Accessories	Binoculars	29,246,444.08	30,310,573.76	39,974,426.94	31,303,208.42	130,834,653.2
	Eyewear	154,310,479.02	208,648,605.39	282,226,165.14	221,939,948.93	867,125,198.48
	Knives	36,374,634.09	33,164,183.25	47,704,144.36	36,177,477.89	153,420,439.59
	Navigation	51,598,510.99	43,724,569.8	62,330,073.61	49,837,487.52	207,490,641.92
	Watches	120,117,025.43	140,475,423.7	161,774,598.37	104,435,327.09	526,802,374.59
	Total(Product type)	391,647,093.61	456,323,355.9	594,009,408.42	443,693,449.85	1,885,673,307.78
Central Europe		428,821,196.74	539,235,928.65	675,574,387.12	499,863,272.05	2,143,494,784.56
Americas		192,230,456.3	239,213,647.85	312,037,992.91	233,605,783.74	977,087,880.8
Asia Pacific		166,746,977.65	212,250,513.92	275,691,959.9	204,564,826.67	859,254,278.14
Northern Europe		70,230,147.41	90,215,646.65	117,148,067.64	91,945,289.26	369,539,150.96
Southern Europe		56,324,025.62	78,279,853.09	115,438,693.33	87,357,102.35	337,399,674.39

- Close the rendered report tab.

## Task 4. Examine Crosstab nodes and Crosstab node members.

- Click the **<#Product line#>** row, and then drag it below the **<#Branch region#>** row.

The results appear as follows:

Revenue	<#Year#> ▲	Total
<#Product type#>	<#1234#>	<#1234#>
<Total(Product type)>	<#1234#>	<#1234#>
<#Branch region#> ▼	<#1234#>	<#1234#>
<#Product line#> ▲	<#1234#>	<#1234#>

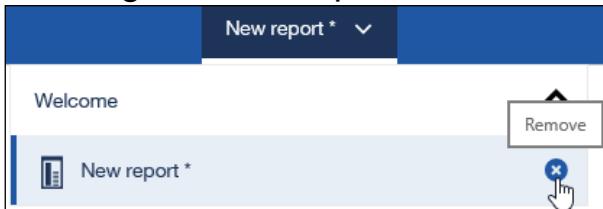
- On the Application bar, click **Undo** .
- Click the **<#Branch region#>** row and drag it above the **<#Product line#>** row.

The results appear as follows:

Revenue	<#Year#> ▲	Total
<#Branch region#> ▼	<#1234#>	<#1234#>
<#Product line#> ▲	<#1234#>	<#1234#>
<Total(Product type)>	<#1234#>	<#1234#>



4. In the Application bar, click the report dropdown menu, then click **Remove** to the right of New report to close it. Then click **OK** to confirm your action.



5. Leave the IBM Cognos Analytics portal open for the next exercise.

### Results:

You have created a Crosstab report with data in which users can easily understand the sort order and can distinguish between data based on appearance. The report now shows revenue for each year of operation for each Product type within each Product line. In the same Crosstab, you have displayed Revenue for each Branch Region.

## Unit summary

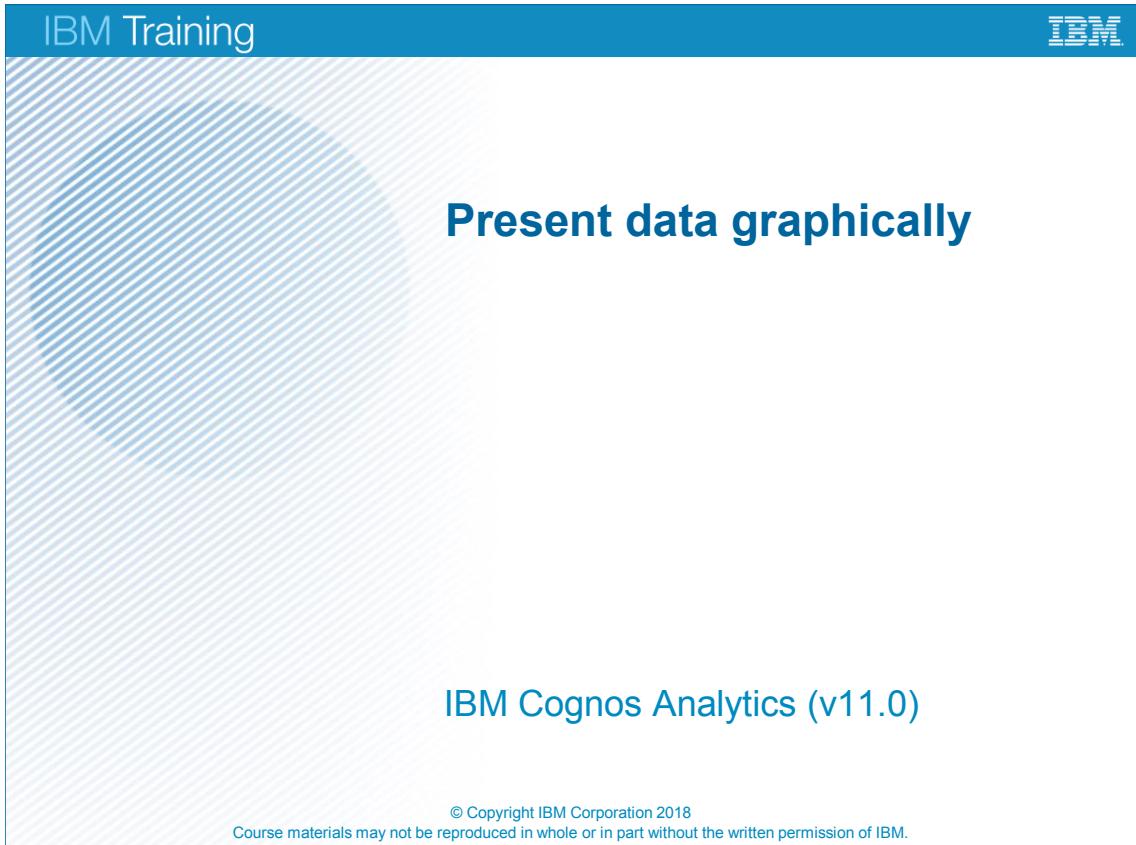
- Format and sort Crosstab reports
- Create complex Crosstabs using drag and drop functionality
- Create Crosstabs using unrelated data items

[Create Crosstab reports](#)

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*Unit summary*

## **Unit 5     Present data graphically**



The slide features a blue header bar with 'IBM Training' on the left and the IBM logo on the right. The main content area has a light blue diagonal striped background. The title 'Present data graphically' is centered in large blue text. Below it, 'IBM Cognos Analytics (v11.0)' is also centered in blue text. At the bottom, a small copyright notice reads: © Copyright IBM Corporation 2018 Course materials may not be reproduced in whole or in part without the written permission of IBM.

IBM Training

**Present data graphically**

IBM Cognos Analytics (v11.0)

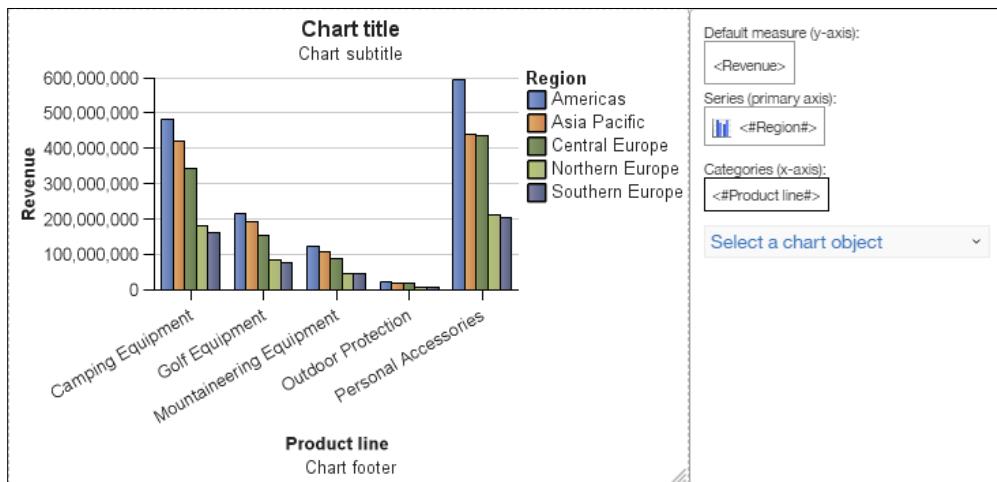
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## Unit objectives

- Create charts containing peer and nested columns
- Present data using different chart types
- Create and reuse custom chart palettes
- Use microcharts for quick overview of data inside other data containers
- Describe RAVE visualizations and their features
- Present key data in a single dashboard report

## Create a Visualization report



Present data graphically

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### Create a Visualization report

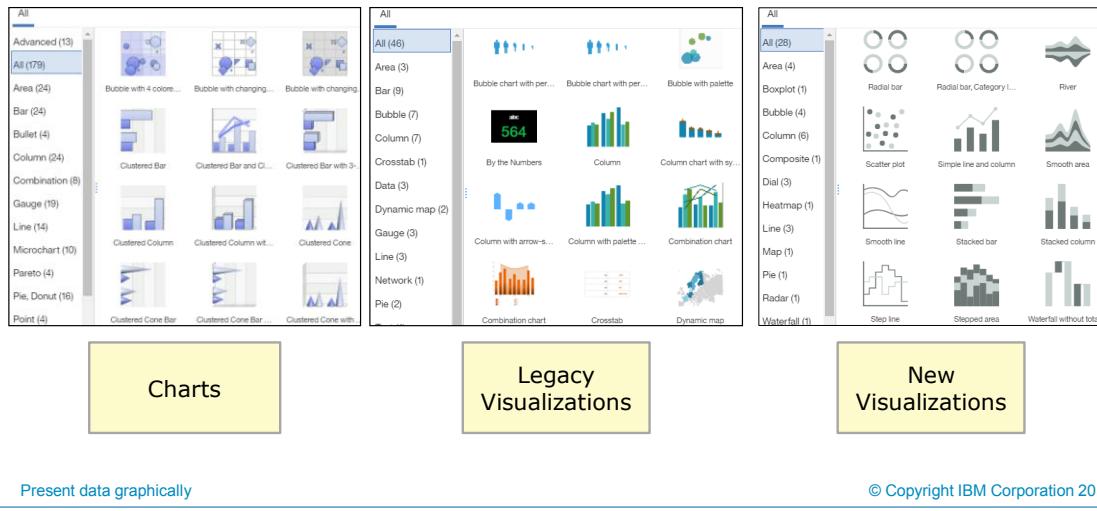
The Visualization object lets you display data graphically to effectively show comparisons, relationships, and trends using available charts and visualizations.

The features and benefits of each visualization or chart are displayed at the bottom of the Visualization gallery dialog box when you add a visualization or a chart. Many chart aspects can be customized including the title, the axes, 2D and 3D properties, and adding baselines.

The slide example shows designing a Chart in Page preview mode

## Different Visualization options

- In the Visualization gallery dialog, you can select between:
  - Charts
  - Legacy visualizations
  - New visualizations



### Different chart options

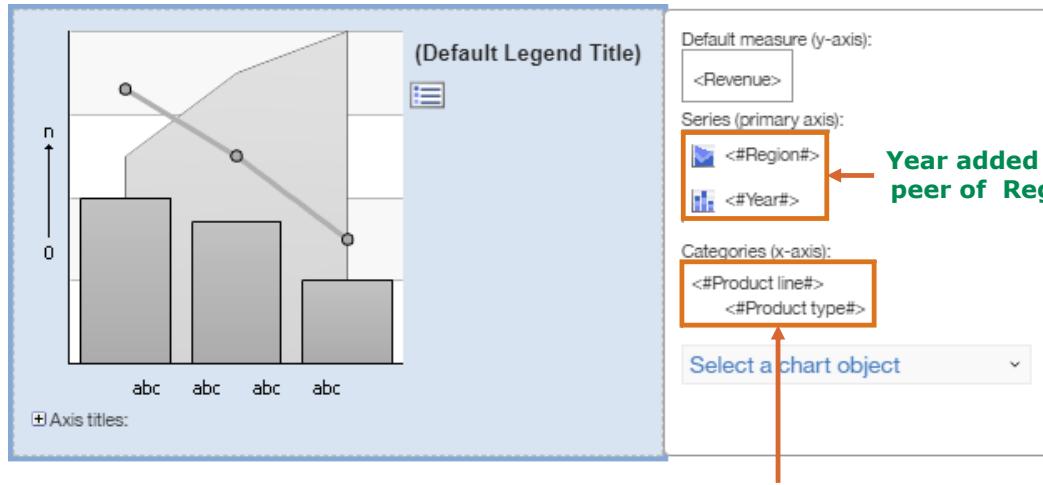
When you add a Visualization object to the report, you can choose between the following in the Visualization gallery dialog box:

- Charts: built-in standard charts
- Legacy visualizations: RAVE1 extensible visualizations
- New visualizations: RAVE2 extensible visualizations

IBM Cognos Analytics comes with a set of RAVE visualizations, and the administrator can import more visualizations to the visualizations library.

We will start by discussing features of the built-in charts, then will discuss RAVE visualizations.

## Create charts containing peer and nested items



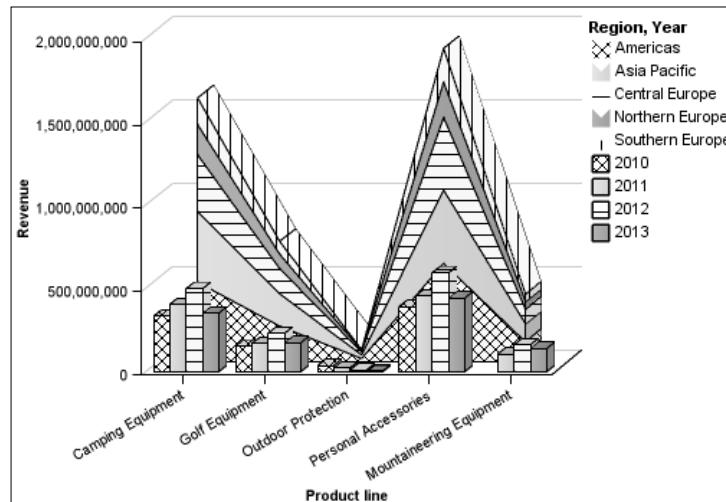
### Create charts containing peer and nested items

You can use chart drop zones to add items as parents, peers or children of other items in the chart, allowing you to quickly create and customize charts to meet your business needs.

Since multiple items are often added to the vertical axis of a chart, the Series area of chart types contains an additional drop zone that can be used to create peer unions between items.

Even though there is no additional drop zone shown for the horizontal axis, you can create peer unions between items on the horizontal axis.

## Create and reuse custom chart palettes



Present data graphically

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### *Create and reuse custom chart palettes*

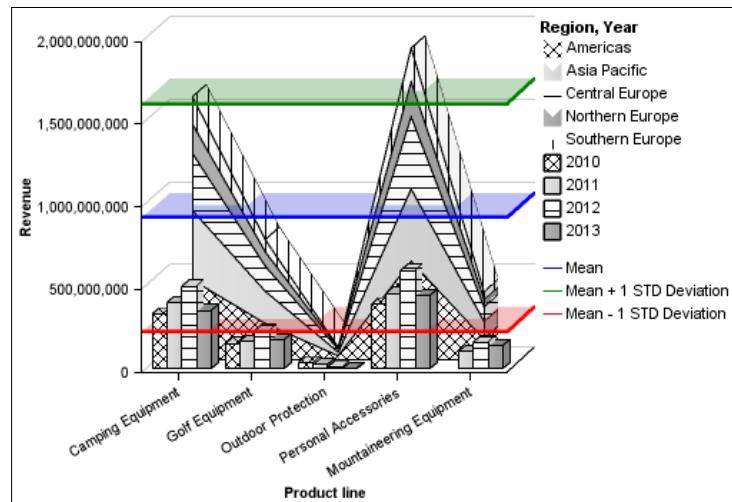
You can use the chart palette to control the colors or patterns used in the columns, lines, data markers or areas in a chart. There are ready-made palettes to save time, and you can create custom chart palettes.

There is a ready-made Patterns palette that is useful when users want to print charts in black and white. When using patterns in charts, the chart displays best when you include borders for chart elements such as the bars or pie slices.

You can change the foreground and background colors for patterns in the palette. For example, you could change the foreground color of a pattern to white and the background of the pattern to black.

You can create a chart palette that contains only patterns, or you can create a palette that contains a combination of patterns, colors, and gradients.

## Add baselines and markers to charts



Present data graphically

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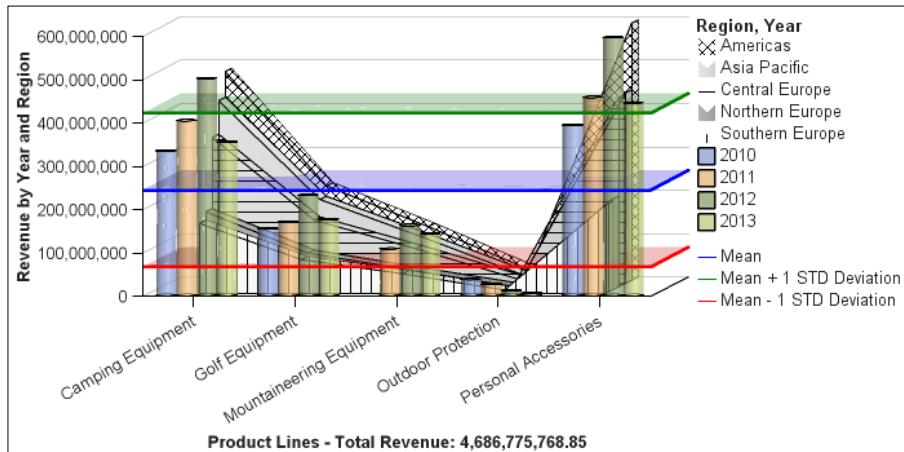
### Add data-driven baselines and markers to charts

To help consumers analyze data, you can add data-driven baselines to charts.

Baselines help report consumers to quickly identify target or threshold values in charts.

## Demonstration 1

Create and format a chart report



*Demonstration 1: Create and format a chart report*

## Demonstration 1: Create and format a chart report

### Purpose:

You will create a combination chart displaying yearly revenue generated by different regions, product lines. You want users to easily distinguish between regional data and yearly data. Because this report will be printed in black and white, you will create a custom palette for the chart and then reuse it for the second series chart. You will add baselines for this chart to display the mean, and plus or minus one standard deviation.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

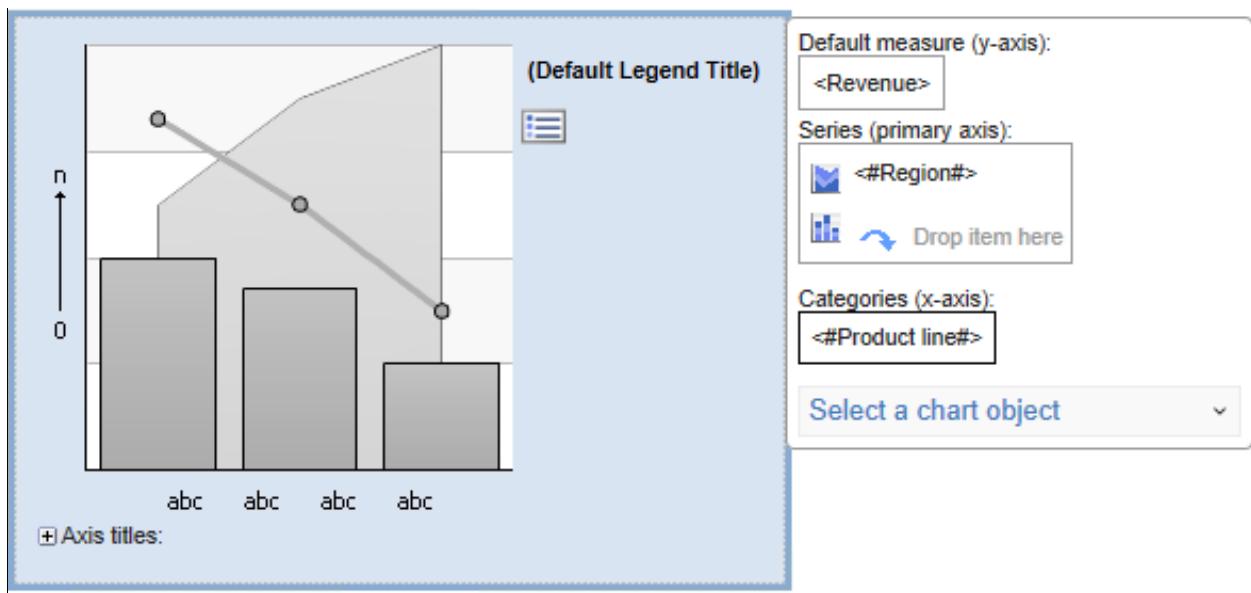
Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the combination chart

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. In the work area, click **Add** , then click **Visualization** .
3. In Visualization gallery dialog, click the filter icon  on the top right corner, then select **Charts**.
4. From the left pane, click **Combination**, then from the right pane, double-click **Stacked Bar and Stacked Area** .
5. From the **Source** tab, add the following query items to the Chart:
  - Default measure (y-axis)** drop zone:
    - Sales fact: **Revenue**
  - Categories (x-axis)** drop zone:
    - Products: **Product line**
  - Series (primary axis)** drop zone (drop in the upper area of this drop zone):
    - Retailers: **Region**



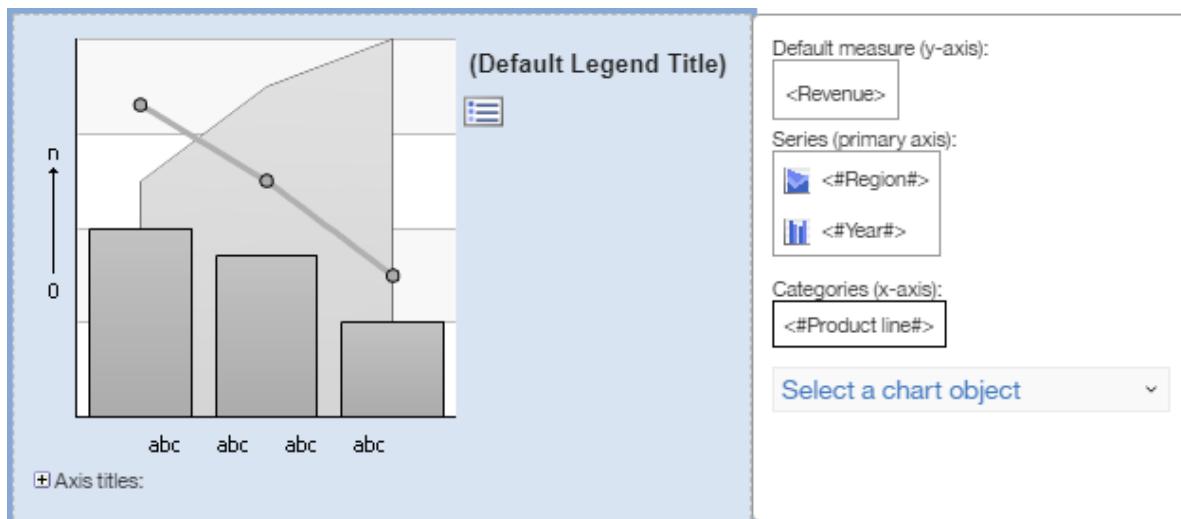
## Task 2. Combine area and bar charts in a single presentation

You want the Region to appear as an area clustered chart rather than an area stacked chart.

1. In the work area, in the **Series (primary axis)** area of the chart object, click the icon next to <#Region#>.
2. In the Application bar, click **Show properties** .
3. In the Properties pane, under GENERAL, click the **Series type** property and then select **Clustered** from the list.
4. You also want to add a clustered bar chart to display the revenue generated for each product line by year.  
From the **Source** tab, expand **Time**, and then drag **Year** to the empty **Series (primary axis)** drop zone beneath <#Region#>.
5. Click the icon for the <#Year#> series.

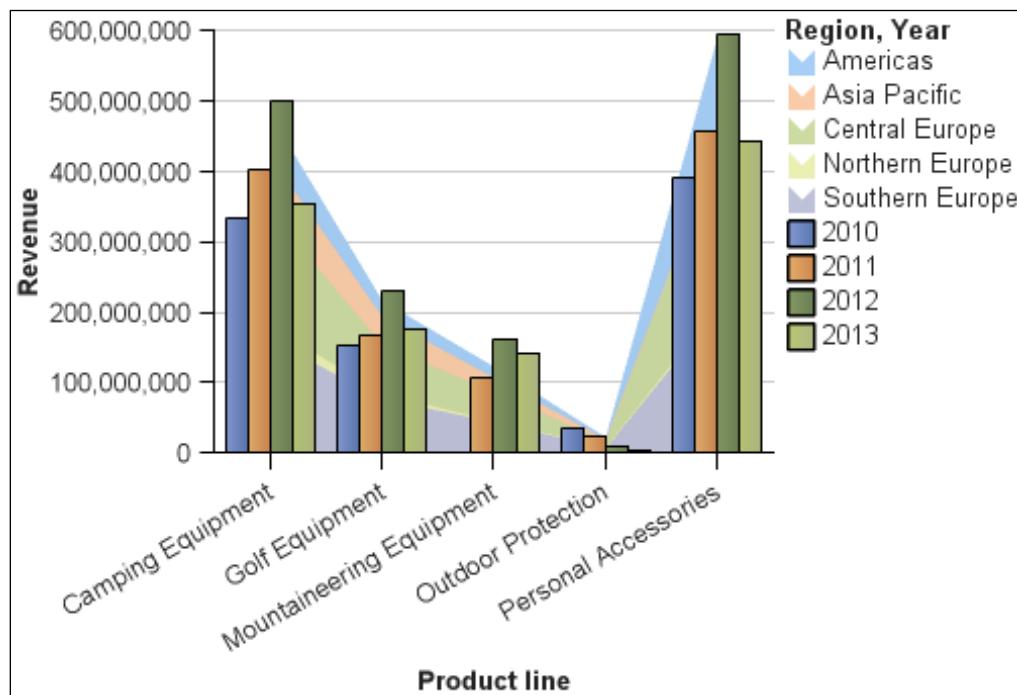
6. In the Properties pane, under GENERAL, click **Series type**, and then select **Clustered** from the list.

The results appear as follows:



7. Run the report in **HTML**.

The results appear as follows:



Both the region and the year data appear on the chart, however it is difficult to see the values of the different regions. The chart can be customized further in order to provide a better view of the data.

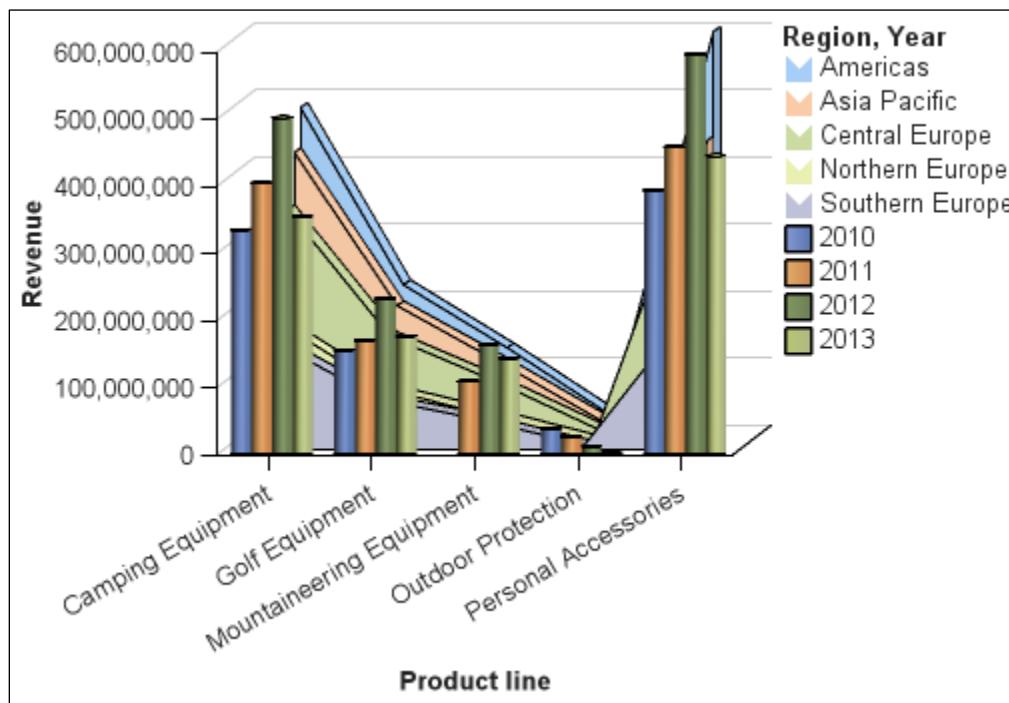
8. Close the rendered report tab.

### Task 3. Modify by sorting and by changing bar shape

- In the Series area, click the <#Region#> text.

2. On the Toolbar, click **Sort**, and then click **Ascending**.
3. In the Series area, click the <#Region#> chart icon, and then in the Properties pane, under BOX, click **Borders**, and then select **Show** from the list.
4. In the Series area, click the <#Year#> text.
5. On the Toolbar, click **Sort**, and then click **Ascending**.
6. In the Series area, click the <#Year#> chart icon, then in the Properties pane, under GENERAL, click **Bar shape**, and then select **Cylinder**.
7. Click the chart background; to select it.
8. In the Properties pane, under GENERAL, click **Depth**, and then select **75**.
9. Run the report in **HTML**.

The results appear as follows:



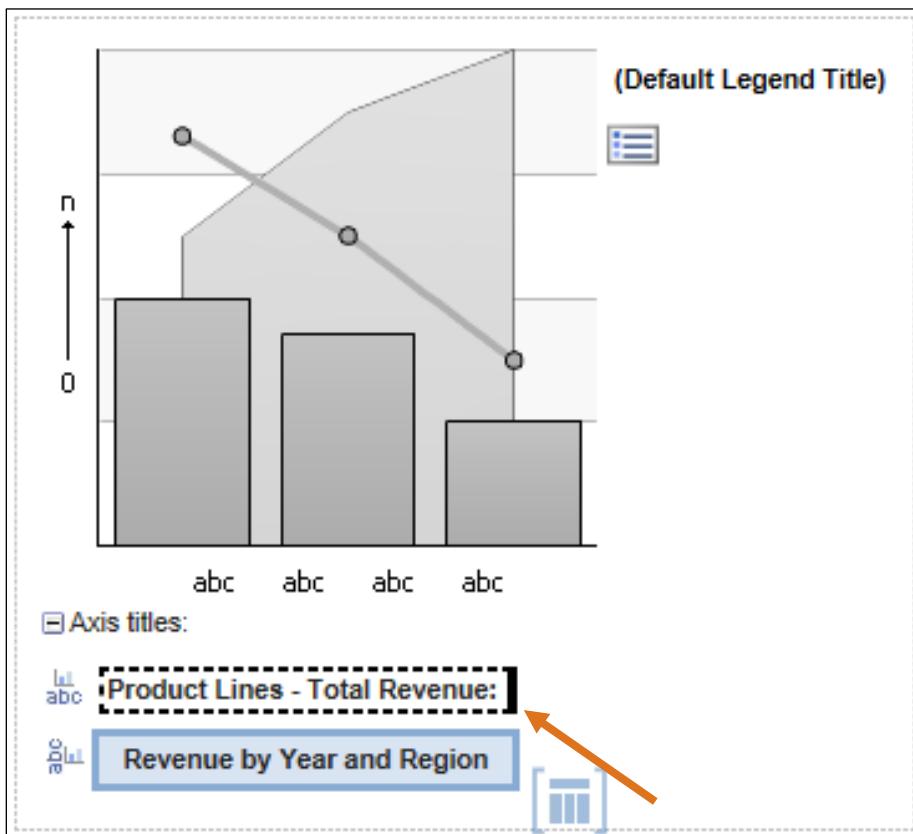
The year data appears as a bar chart and the region data appears as an area chart. This allows the yearly revenue generated by each product line to be compared with the revenue generated by each region.

10. Close the rendered report tab.

## Task 4. Format an axis title.

1. In the chart area, expand **Axis titles**.
2. Click **(Default category axis title)** .
3. From the Properties pane, under GENERAL, change **Default title** to **No.**
4. Double-click on **Double-click to edit text**, to open the **Text** dialog box.

5. In the **Text** dialog box, type **Product Lines - Total Revenue:**, press the space bar, and then click **OK**.
6. Repeat steps 2 to 5 to add the title **Revenue by Year and Region** to the **Primary Axis Title**.
7. Click **Toolbox** , and then expand **TEXTUAL**.
8. Drag a **Query calculation** to the end of the text in the horizontal axis title drop zone.



Note: Insert a query calculation into your report to add a new row or column with values that are based on a calculation.

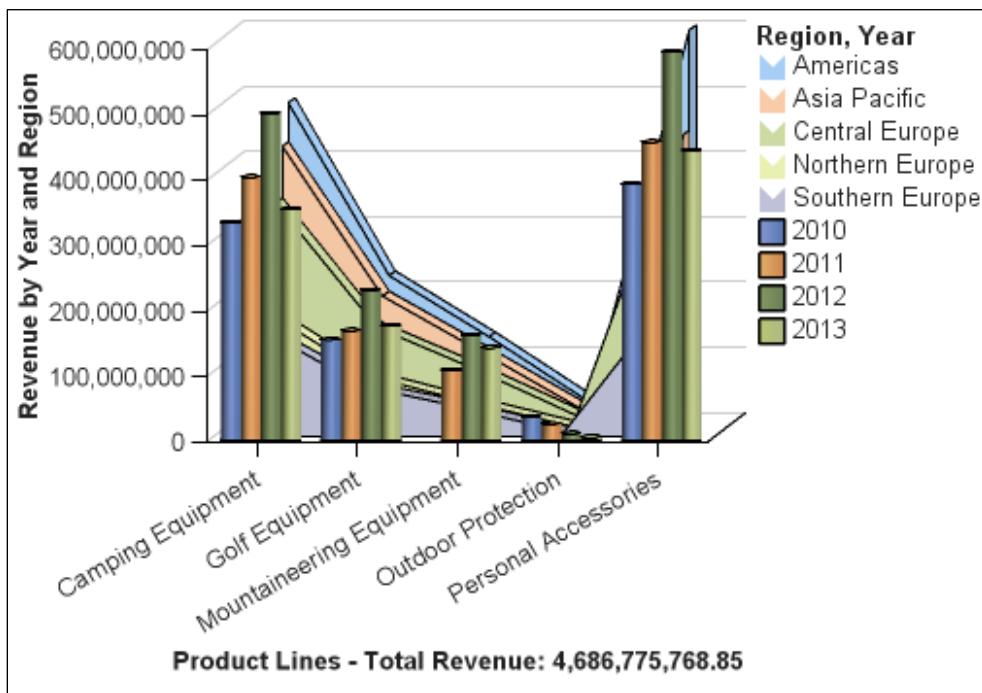
Insert a layout calculation to add run-time information, such as current date, current time, and user name.

Calculations will be discussed in details in Unit 7.

9. In the **Name** box, replace the text with **Total Revenue for Product Lines**, and then create and validate the following expression:  
**total([Revenue])**  
Hint: drag Revenue from the Data Items tab.
10. Click **OK** to close the dialog box.

## 11. Run the report in **HTML**.

The results appear as follows:



The total product line revenue displays under the horizontal axis.

## 12. Close rendered report tab.

### Task 5. Create a custom palette (optional)

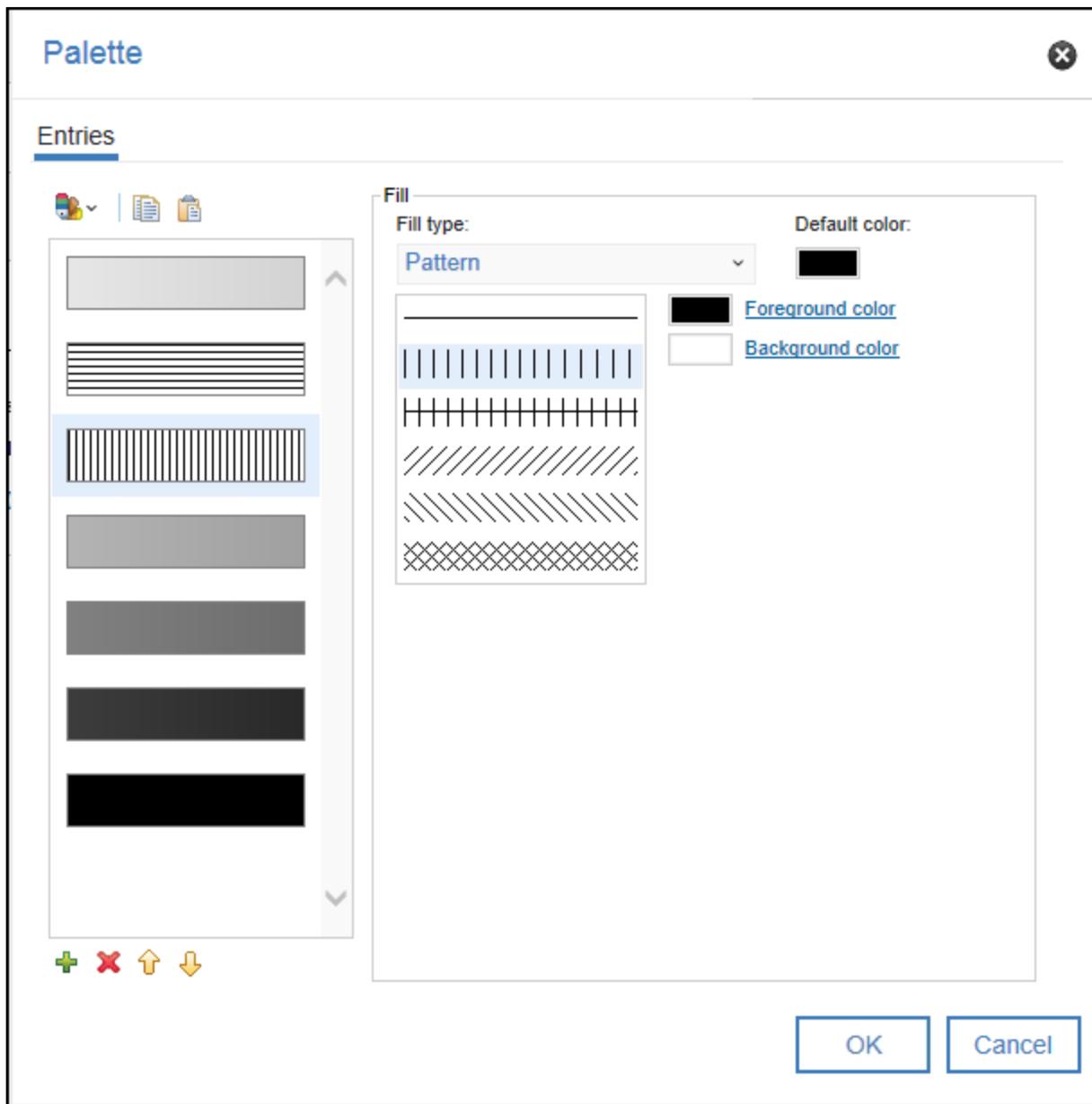
Tasks 5-7 are optional; however, all tasks must be completed - otherwise, they should not be done at all.

This chart will be printed in black and white, therefore, you will create a custom palette that uses the Gray Scale palette and patterns.

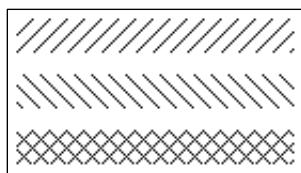
1. Click the <**#Region#>** series chart icon, then in the Properties pane, under COLOR & BACKGROUND, double-click the **Palette** property.
2. In the **Chart palette presets** list, select **Gray Scale** .
3. Under the left pane, click **New** .
4. In the **Fill type** list, select **Pattern**, change the **Default color** and **Foreground color** properties to the Basic color **Black**, and then change the **Background color** to **White**.
- A new pattern entry (horizontal line) is added to the palette.
- You will now add four additional entries.
5. Click **New**.

6. In the **Fill type** list, select **Pattern**, in the **Pattern** pane, click the second option (vertical lines), change the **Default color** and **Foreground color** to **Black**, and then change the **Background color** to **White**.

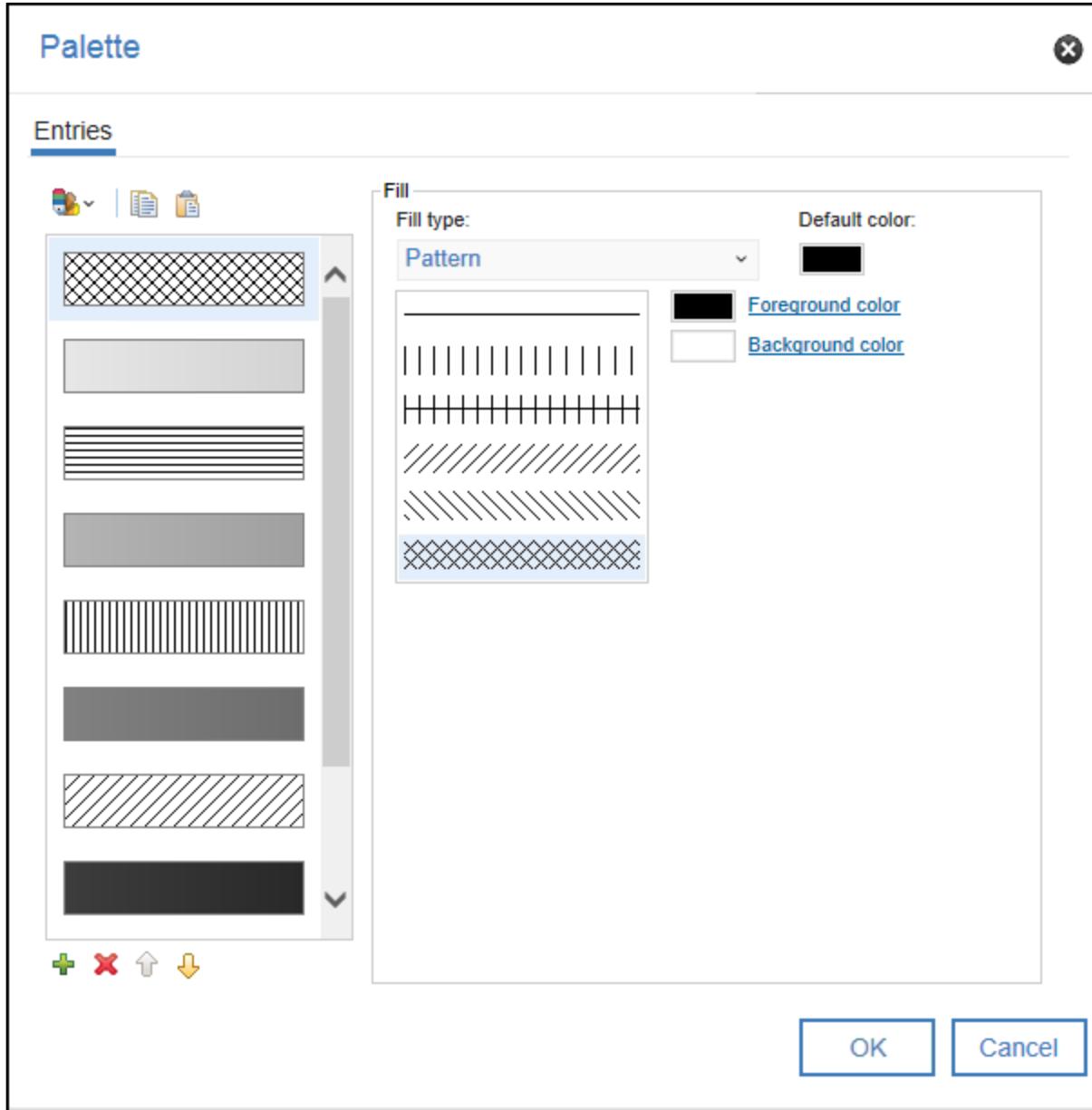
The results appear as follows:



7. With the new vertical line pattern still selected, under the left pane, click **Move Down** to move the new pattern below the second gray scale entry.  
 8. Repeat steps 5 to 7, to add these three additional patterns to the palette:



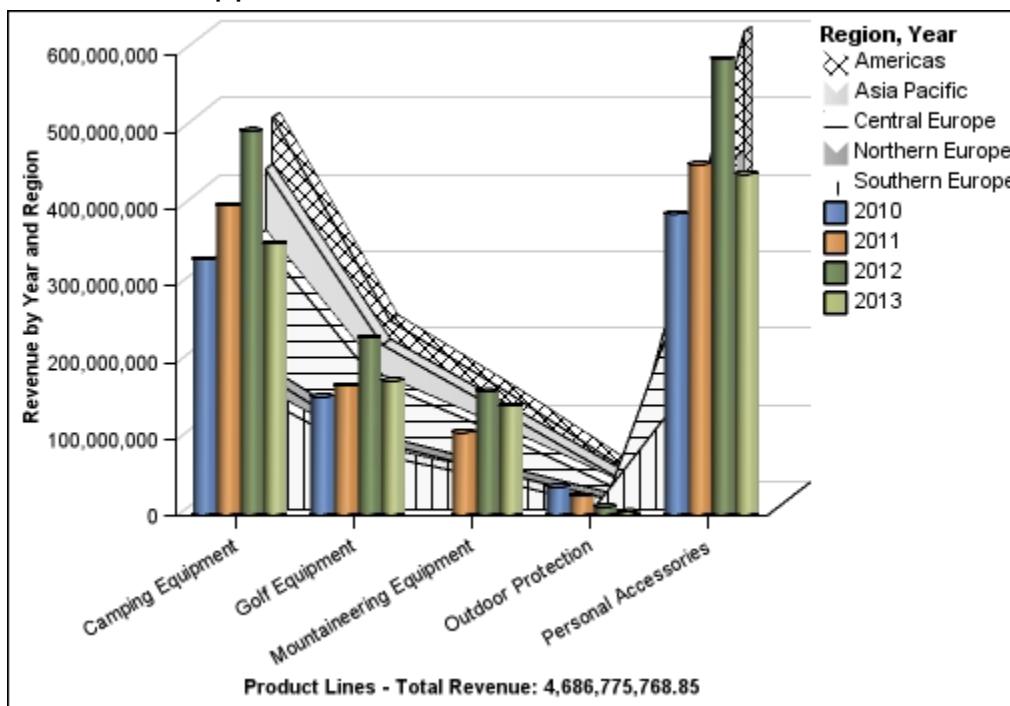
9. For the last pattern created, click **Move Up**  until the new pattern (hash marks), that you just added, appears at the top of the list of palette entries. The results appear as follows (note you will not see one of the patterns, due to scrolling...but it is there...):



10. Click **OK** to close the **Palette** dialog box.

## 11. Run the report in **HTML**.

The results appear as follows:



## 12. Close the rendered report tab.

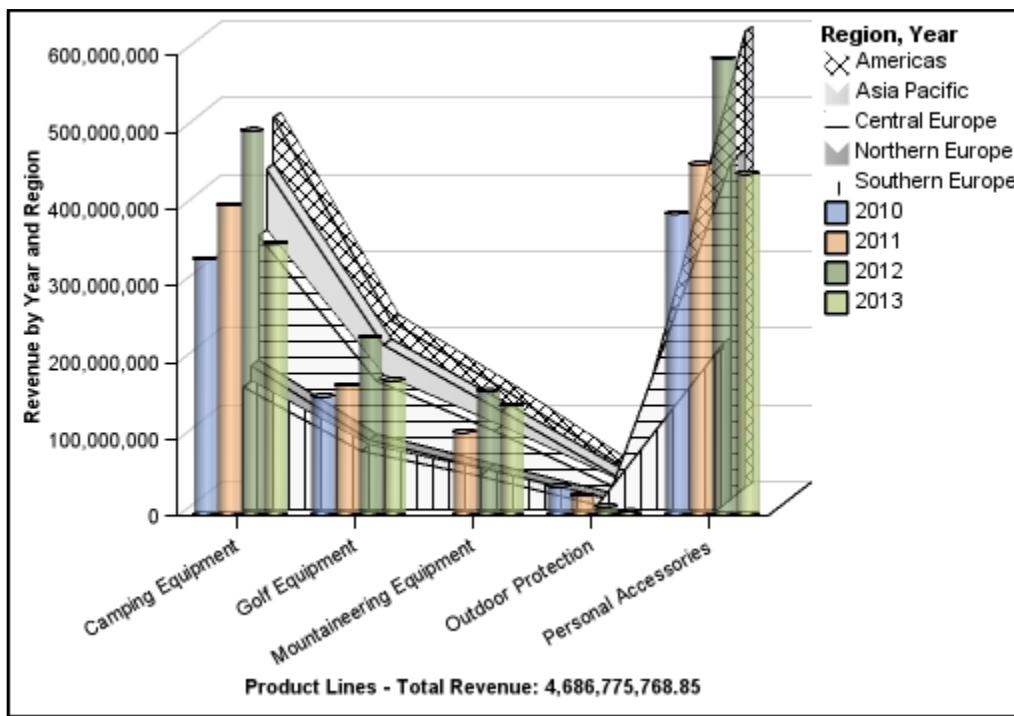
### Task 6. Use transparent colors

We want to be able to clearly see both the regions and the years without the two different types of palettes obscuring the chart. To do this, we will change the Year data (vertical cylinders) to use transparent colors.

1. Click the background of the chart, and then click the <#Year#> series chart icon.
2. In the Properties pane, double-click the **Palette** value.
3. With the top color selected, change the **Fill type** to **Color**, and then change the **Transparency (%)** to **30**.
4. Click the second color (orange), and then change the **Fill type** to **Color**.
5. Change the **Transparency (%)** to **30**.
6. Click the third color (dark green), and then change the **Fill type** to **Color**.
7. Change the **Transparency (%)** to **30**.
8. Click the fourth color (light green), and then change the **Fill type** to **Color**.
9. Change the **Transparency (%)** to **30**, and then click **OK** in the **Palette** dialog.

10. Run the report in **HTML**.

The results appear as follows:



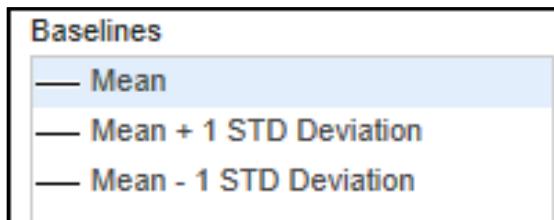
11. Close the rendered report tab.

## Task 7. Add baselines to the chart

- Click the chart background, and then in the Properties pane, under CHART ANNOTATIONS, double-click the **Numeric baselines** property. You will add a baseline to display the mean revenue based on year.
  - In the **Baselines** dialog box, click **New**, and then from the list, select **Mean**.
  - Ensure that the following properties are set as follows:
    - Based on: **Year, Year**
    - \* Number of standard deviations: **0**
    - Baseline Label: **Mean**
    - Line Styles: Weight: **2 px**, Color: **Blue**
 \* Note: Do not use the Delete key when modifying the Number of standard deviations input field as it might delete the newly created baseline. Instead, select the contents of the input field and then enter 0 or use the Backspace key to clear the default number and then enter 0.
  - Click **OK** to close the **Line styles** dialog box.
- You will add a baseline to display a +1 standard deviation from the mean revenue based on Year.

5. In the **Baselines** dialog box, click **New**, and then from the list, select **Mean**.
6. Ensure that the following properties are set as follows:
  - Based on: **Year, Year**
  - Number of standard deviations: **1**
  - Baseline Label: **Mean + 1 STD Deviation**
  - Line Styles: Weight: **2 px**, Color: **Green**
7. Click **OK** to close the **Line styles** dialog box.  
You will add a baseline to display a -1 standard deviation from the mean revenue based on Year.
8. In the **Baselines** dialog box, click **New**, and then from the list, select **Mean**.
9. Ensure that the following properties are set as follows:
  - Based on: **Year, Year**
  - Number of standard deviations: **-1**
  - Baseline Label: **Mean - 1 STD Deviation**
  - Line Styles: Weight: **2 px**, Color: **Red**
10. Click **OK** to close the **Line styles** dialog box.

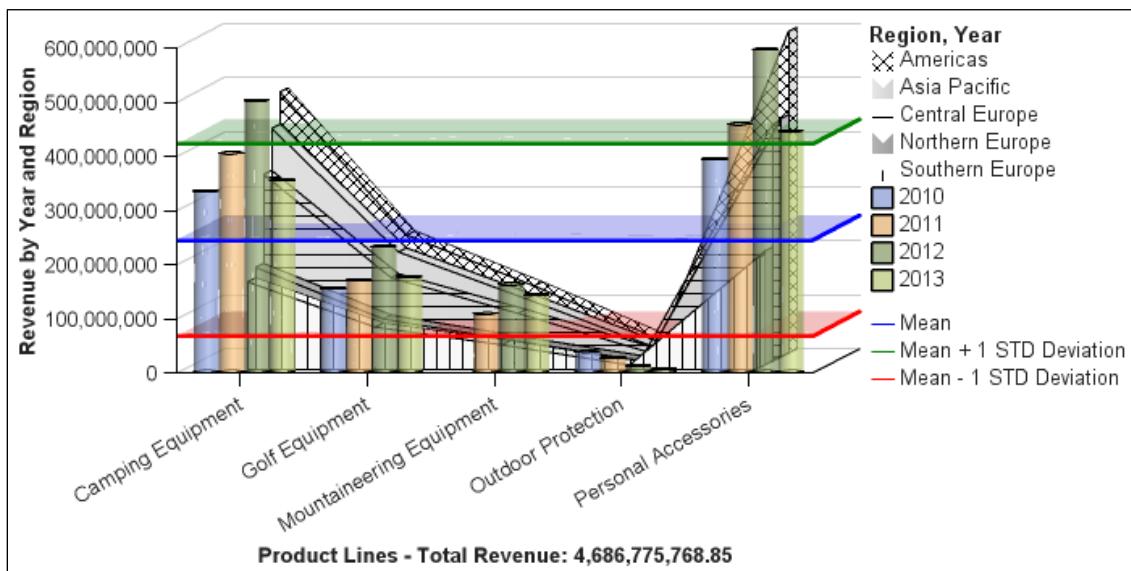
The results appear as follows:



11. Click **OK** to close the **Baselines** dialog box.
12. In the Properties pane, under POSITIONING, double-click the **Size & overflow** property.
13. Set Width to **700px**, then click **OK**.

**14. Run the report in **HTML**.**

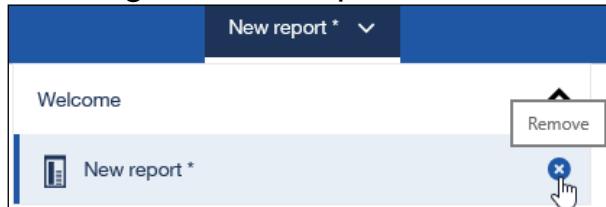
The results appear as follows:



The chart uses a custom palette and displays the baselines you specified.

**15. Close the rendered report tab.**

**16. In the Application bar, click the report dropdown menu, then click **Remove** to the right of New report to close it. Then click **OK** to confirm your action.**

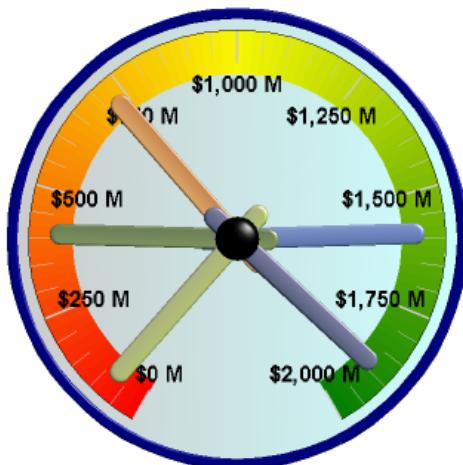


**17. Leave the IBM Cognos Analytics portal open for the next demonstration.**

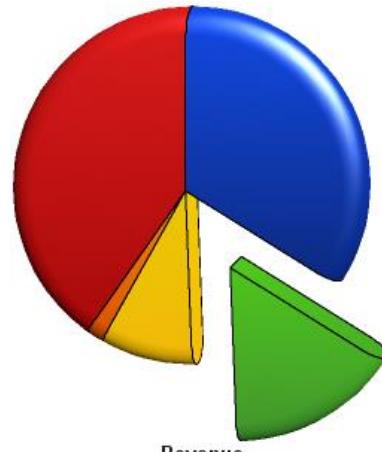
**Results:**

You created a report using a combination chart to display revenue generated in different regions as an area chart, and a bar chart displaying revenue generated for different years. You added data to the horizontal axis title displaying the total revenue generated by all product lines and created a custom palette for the region area chart. You then reused this palette for the year bar chart, and then added data-driven baselines to this chart.

## Compare values and highlight proportions using gauge charts and pie charts



Gauge Chart



Pie Chart

Present data graphically

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### Compare values and highlight proportions using gauge charts and pie charts

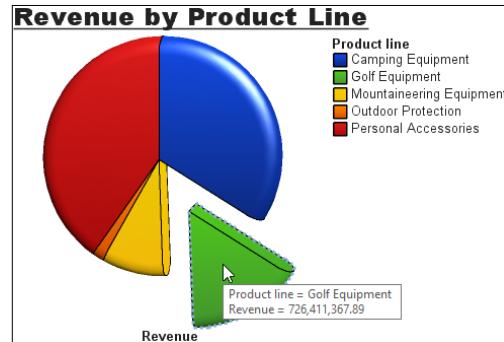
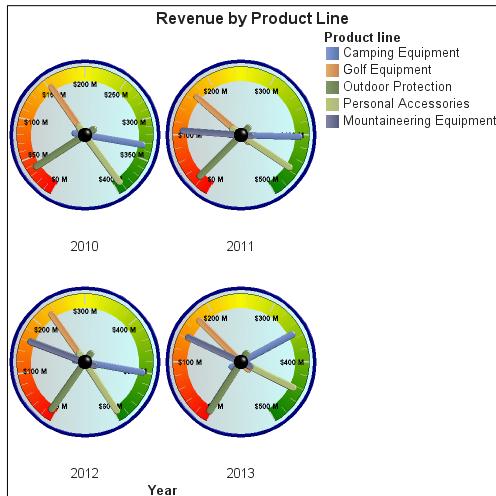
Gauge charts are useful for comparing values between a small number of variables.

A gauge chart plots a data series against a measure using a dial or gauge for the measure, and needles or indicators for the series members.

Pie charts highlight data proportionally against a measure, allowing for quick identification of major performers.

## Demonstration 2

Create a gauge report and a pie chart report



*Demonstration 2: Create a gauge report and a pie chart report*

## Demonstration 2: Create a gauge report and a pie chart report

### Purpose:

You want to create a chart for users to quickly compare how different product lines are selling. You would also like to see this data represented proportionally. A gauge chart is a good way to show comparisons between multiple variables, while a pie chart will show the data proportionally.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

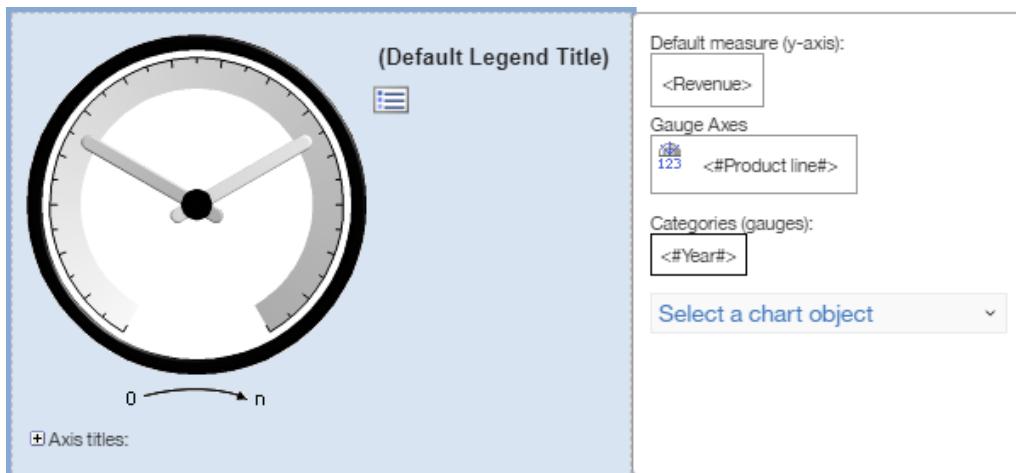
Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create a gauge chart

1. Create a new Blank report using the **GO data warehouse (query)** package.
2. In the work area, click **Add** , then click **Visualization** .
3. In Visualization gallery dialog, click the filter icon  on the top right corner, then select **Charts**.
4. From the left pane click **Gauge**, and then on the right pane, double-click **Gauge chart with beveled border**.
5. From the Source tab, add the following query items to the new chart:
  - **Default measure (y-axis)** drop zone:
    - Sales fact: **Revenue**
  - **Categories (gauges)** drop zone:
    - Time: **Year**
  - **Gauge Axes** drop zone:
    - Products: **Product line**



6. On the Application bar, click **Show properties**.
7. In the Properties pane, under CHART TITLES, set **Title** to **Show**.
8. Double-click **Double-click to edit text**, at the top of the chart.
9. In the **Text** dialog box, type **Revenue by Product Line**, and then click **OK**.
10. Click the chart background, and then in the Properties pane, under POSITIONING (note: you may have to scroll down to find the property), double-click the **Size & overflow** property.
11. Set **Width** and **Height** to **500px**, then click **OK**.

## Task 2. Modify the axis labels and gauge properties

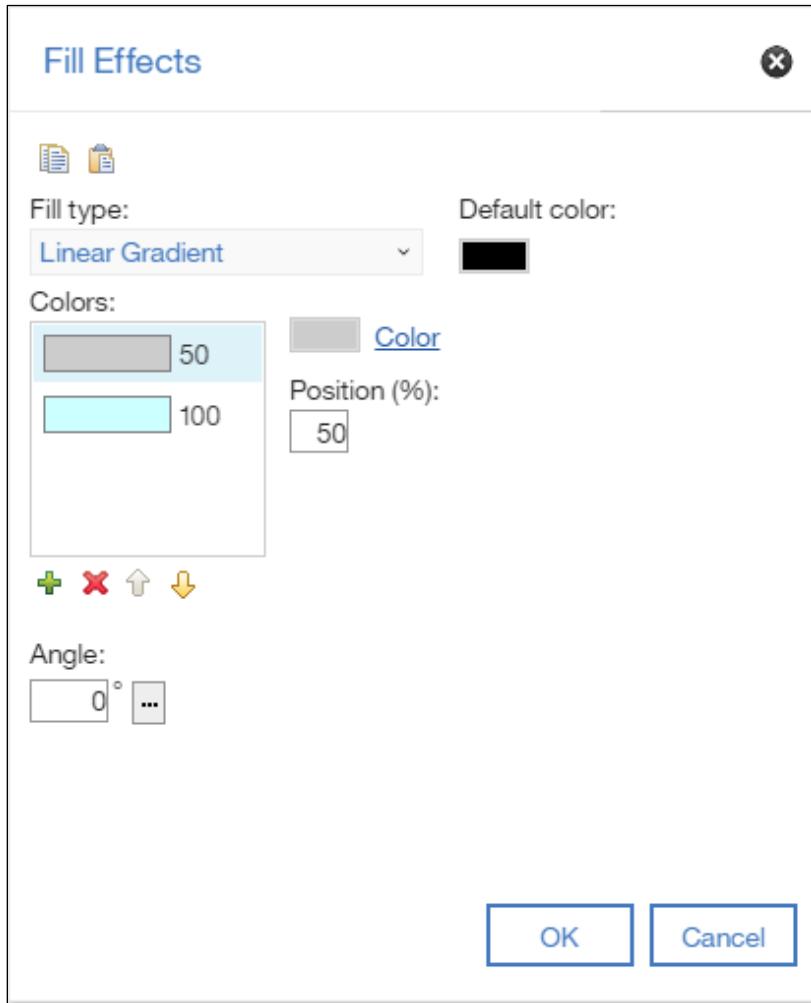
1. Click the **Axis labels** , then in the Toolbar, click **Font A**.
2. Click **Foreground Color**, then double-click **Black**.
3. Set **Weight** to **Bold**, then click **OK**.
4. In the Properties pane, under DATA, double-click the **Data format** property.
5. Change the **Format type** to **Number**.
6. Change the **Scale** to **-6**.
7. In the **Pattern** box (scroll down), enter **\$###,### M**.
8. Click **OK**.

## Task 3. Modify the gauge properties

1. Click the chart.
2. In the Properties pane, under GENERAL, double-click **Gauge border**.
3. Click **Color**, then double-click **Navy**.
4. Click **OK** to close the **Gauge border** dialog box.
5. Under COLOR & BACKGROUND (scroll down), double-click **Dial face fill**.
6. From **Fill type**, select **Linear Gradient**.
7. Under **Colors**, click the first color, and then click **Color**.

8. In the **Custom color** tab, under #RGB, type **CCCCCC**, then click **OK**.
9. Under **Colors**, click the second color option, and then click **Color**.
10. In the **Custom color** tab, under #RGB, type **CCFFFF**, then click **OK**.
11. In the **Position (%)** box, change the value to **50**.

The results appear as follows:



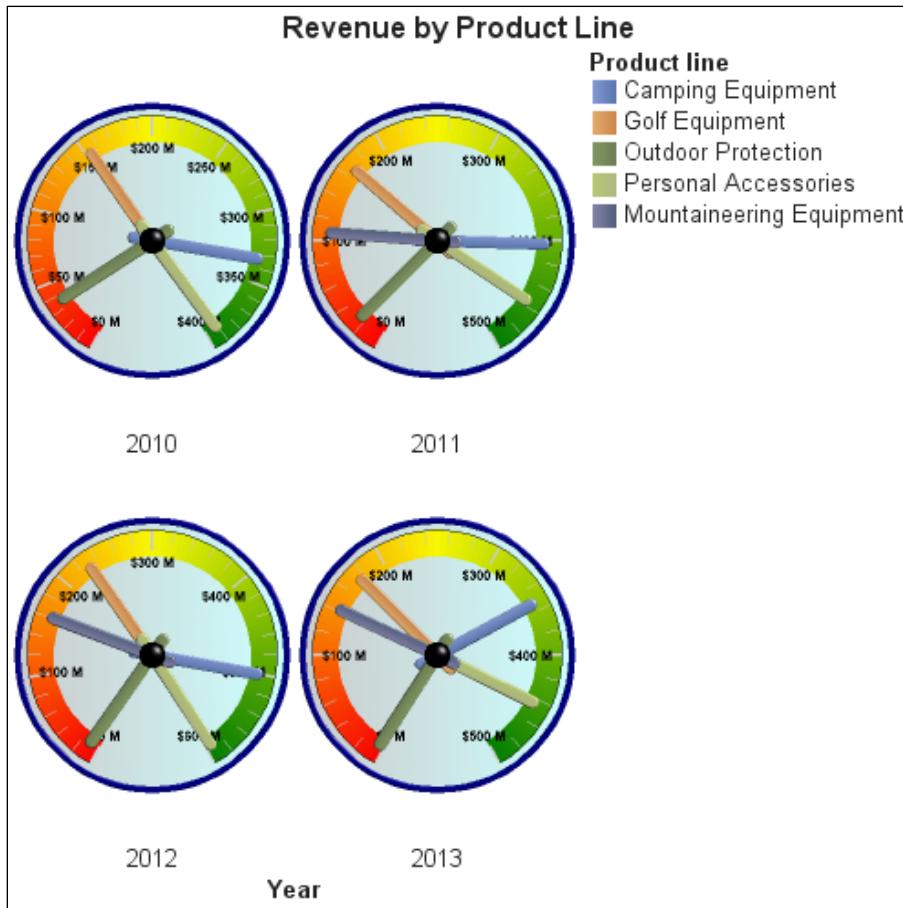
12. Click **OK** to close the **Fill Effects** dialog box.

#### Task 4. Modify the arc colors

1. Click the icon under **Gauge Axes**, for <#Product line#>.
2. In the Properties pane, under COLOR & BACKGROUND, double-click **Gauge axis colors**.  
To indicate product lines that are selling poorly, the low end of the arc will appear in red.
3. In the **Gauge axis Colors** dialog box, click the top color, and then click **Color**.
4. From the **Basic colors** tab, double-click **Red**.
5. In the **Gauge axis Colors** dialog box, click the middle color, then click **Color**.

6. From the **Basic colors** tab, double-click **Yellow**.
7. Change the position percentage to **50%**.
8. In the **Gauge axis Colors** dialog box, click the bottom color, then click **Color**.
9. From the **Basic colors** tab, double-click **Green**.
10. Click **OK** to close the **Gauge axis Colors** dialog box.
11. Run the report in **HTML**.

The results appear as follows:



12. Close the rendered report tab.

## Task 5. Create a pie chart

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. In the work area, click **Add** , then click **Visualization** .
3. In Visualization gallery dialog, click the filter icon on the top right corner, then select **Charts**.
4. From the left pane, click **Pie, Donut**, then from the right pane, double-click **Pie with 3-D Effects and Rounded Bevel** .
5. Add the following query items to the pie chart:

- **Default measure:** Sales fact: **Revenue**
  - **Series (pie slices):** Products: **Product line**
- Reminder: It only takes two values to define a chart.

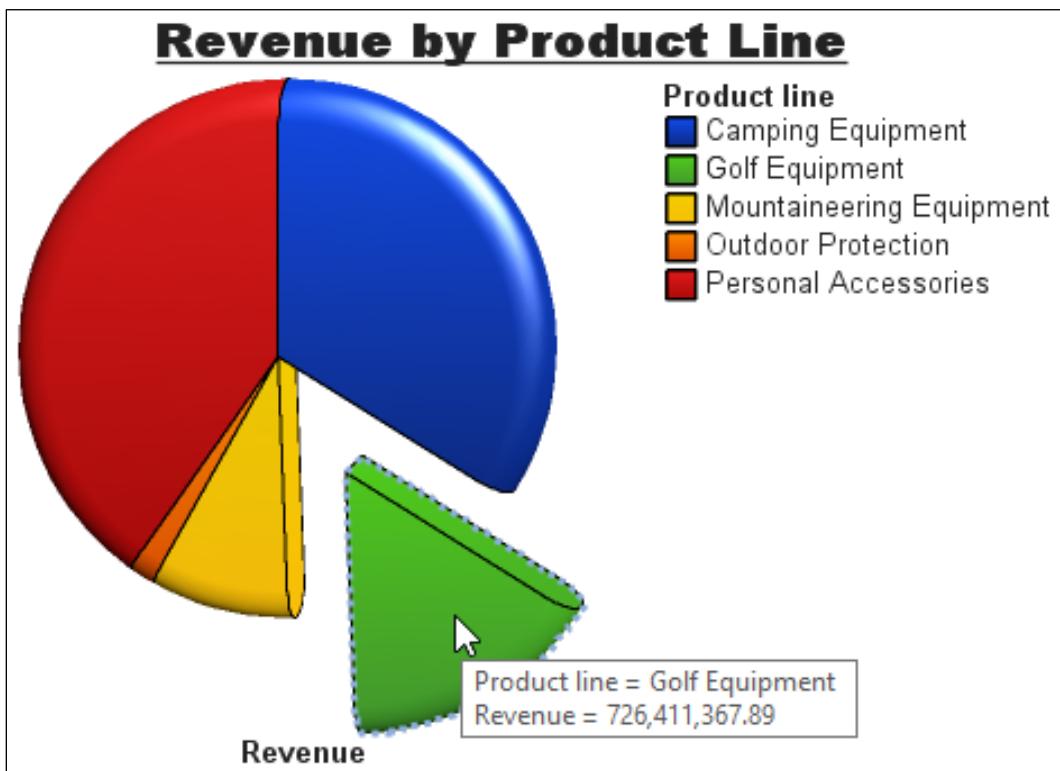
## Task 6. Set the properties of the chart

1. On the Application bar, click **Show properties**.
2. In the Properties pane, under GENERAL, double-click the **Exploded slices** property.
3. Click **New +**, then change the **Slice number** to **2**.
4. Click **OK** to close the **Exploded slice** dialog box.
5. Click **OK** to close the **Exploded slices** dialog box.
6. In the Properties pane, under BOX, change **Borders** to **Show**.
7. In the Toolbar, click **Chart palette presets** , then click **Dynamic**.

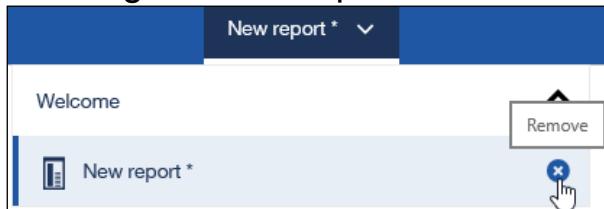
## Task 7. Create chart title

1. In the Properties pane, under CHART TITLES, set **Title** to **Show**.
2. Double-click the chart title box labeled **Double-click to edit text**.
3. In the text dialog box, type **Revenue by Product Line**, then press **Enter**.
4. From the **Select a chart object** menu, select **Chart title**.
5. In the Toolbar, click **Font**.
6. Set **Family** to **Arial Black**, **Size** to **16pt**, and under Effects, check **Underlined**, then click **OK**.
7. Run the report in **HTML**.

8. Move the cursor over the expanded green slice to view the tooltip.  
The results are as follows:



9. Close the rendered report tab.  
10. In the Application bar, click the report dropdown menu, then click **Remove** to the right of New report to close it. Then click **OK** to confirm your action.

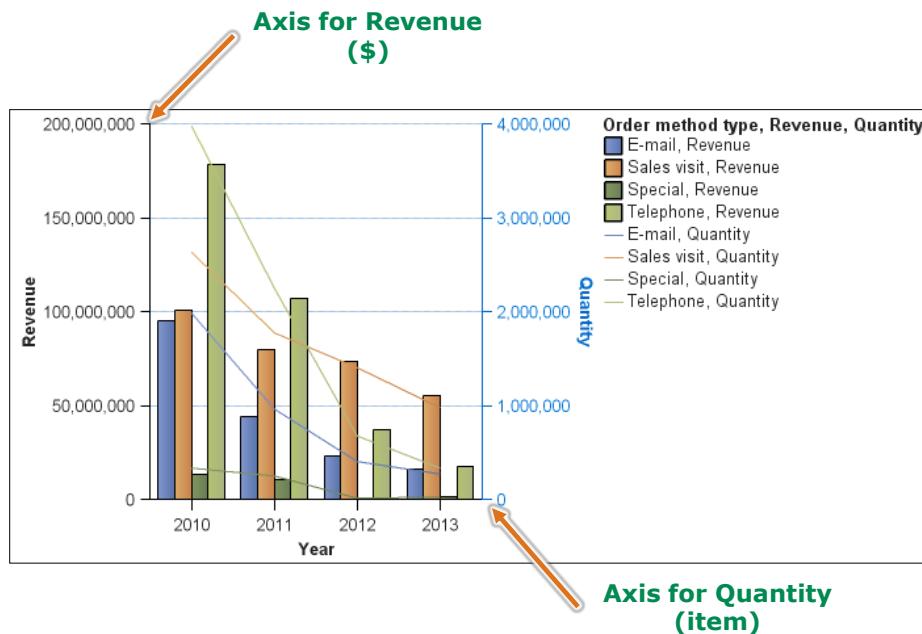


11. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You have created a gauge chart for users to quickly compare how different product lines are selling. You have also created a pie chart to show the data proportionally.

## Display items on separate axes



Present data graphically

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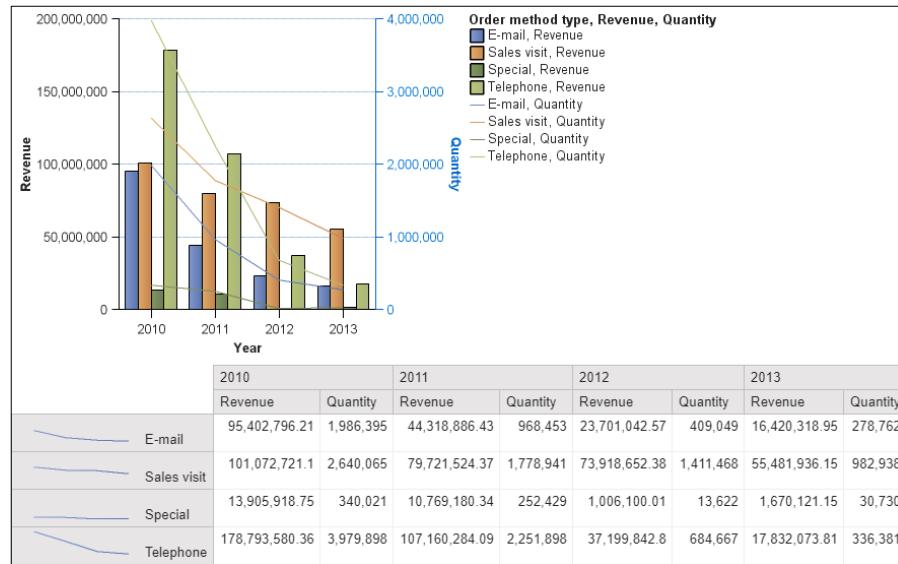
### Display items on separate axes

You can improve the clarity of charts by displaying values for different items on separate axes.

Using separate axes is useful when the value ranges for different items displayed in the chart are significantly different, or the values of data items are not comparable because they are of different units (e.g. dollars vs. items).

## Demonstration 3

Show the same data graphically and numerically



Present data graphically

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*Demonstration 3: Show the same data graphically and numerically*

## Demonstration 3:

### Show the same data graphically and numerically

#### Purpose:

You want to create a report that shows revenue and quantity by Product line and Region. You want the report to focus on Camping Equipment, Mountaineering Equipment, and Personal Accessories sales for the three European sales regions. You will build a crosstab report and add a combination chart that reports on the same information. You will add a microchart to the crosstab for a quick overview of specified regions and product lines.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

#### Task 1. Add query items to a new Crosstab

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **Crosstab** to the work area.
3. Add the following query items to the Crosstab:
  - Rows:
    - Order method: **Order method type**
  - Columns:
    - Time: **Year**
    - Sales fact: **Revenue, Quantity** (nested under Year)

The Crosstab design looks like the following:

	<#Year#>		<#Year#>	
	<#Revenue#>	<#Quantity#>	<#Revenue#>	<#Quantity#>
<#Order method type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Order method type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

#### Task 2. Create a combination chart

1. On the sidebar, from the **Toolbox** tab, drag a **Visualization** to the left of the Crosstab.

The Visualization gallery dialog opens.

2. On the top right corner, click the filter icon , and make sure that you filtered for Charts.
3. In the left pane, click **Combination**, and then double-click **Clustered Bar and Clustered Line**.

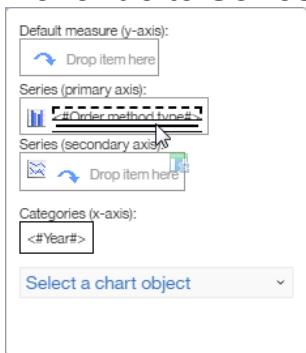


A new chart is added, but it has created a new Query (called Query2) for itself.

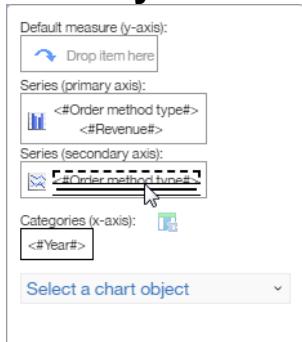
4. Select the chart, then on the Application bar, click **Show properties**. You want the chart to use the same query as the Crosstab and to show the Revenue and the Quantity on separate y axes.
5. In the Properties pane, under DATA, change **Query** from **Query2** to **Query1**.
6. In the Properties pane, under POSITIONING, double-click **Size & overflow**, set **Width** to **700px**, then click **OK**.

### Task 3. Show two measures on different y axes

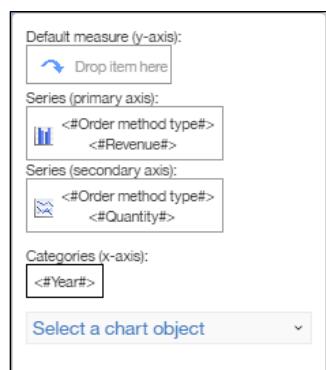
1. In the Properties pane, under GENERAL, double-click **Combinations**.
2. Under Combinations, click **Clustered line**, then click **Delete** .
3. Under Numeric axes, click **Secondary Axis** checkbox to select it. A chart object will be added under Combinations.
4. Under Combinations, click **Edit** .
5. Select **Line**, then click **OK** to close the **Combination Element** dialog box, then **OK** to close the **Combinations** dialog box.
6. On the sidebar, click **Data** , then from the **Data items** tab, drag the following:
  - **Year to Categories (x-axis)**
  - **Order method type to Series (primary axis)**
  - **Revenue to Series (primary axis)**, nested under Order method type.



- Order method type to Series (secondary axis)
- Quantity to Series (secondary axis), nested under Order method type.

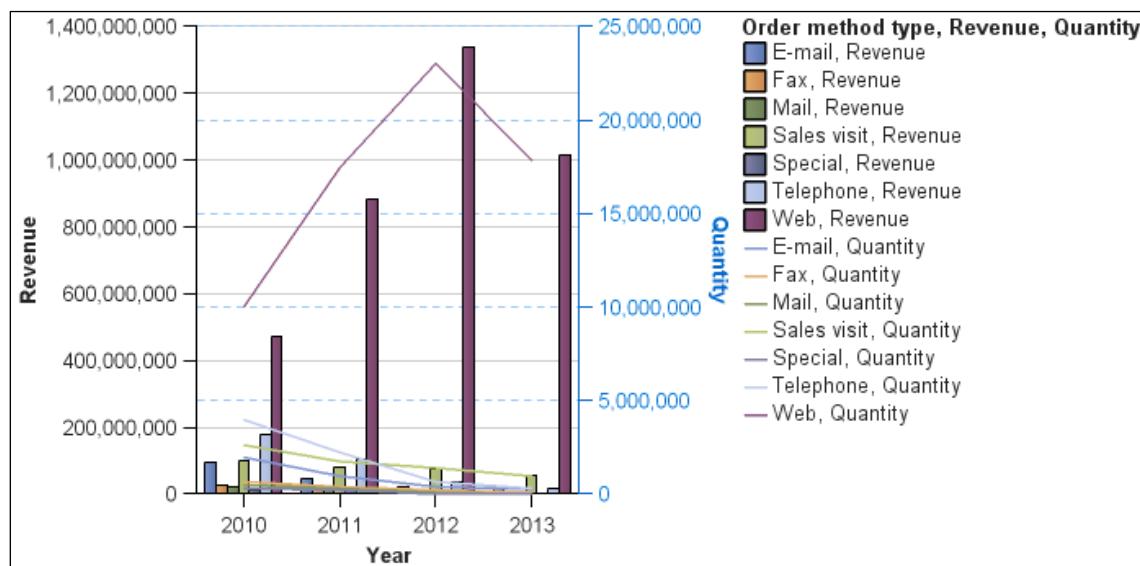


The results appear as follows:



## 7. Run the report in **HTML**.

A section of the results appears as follows:



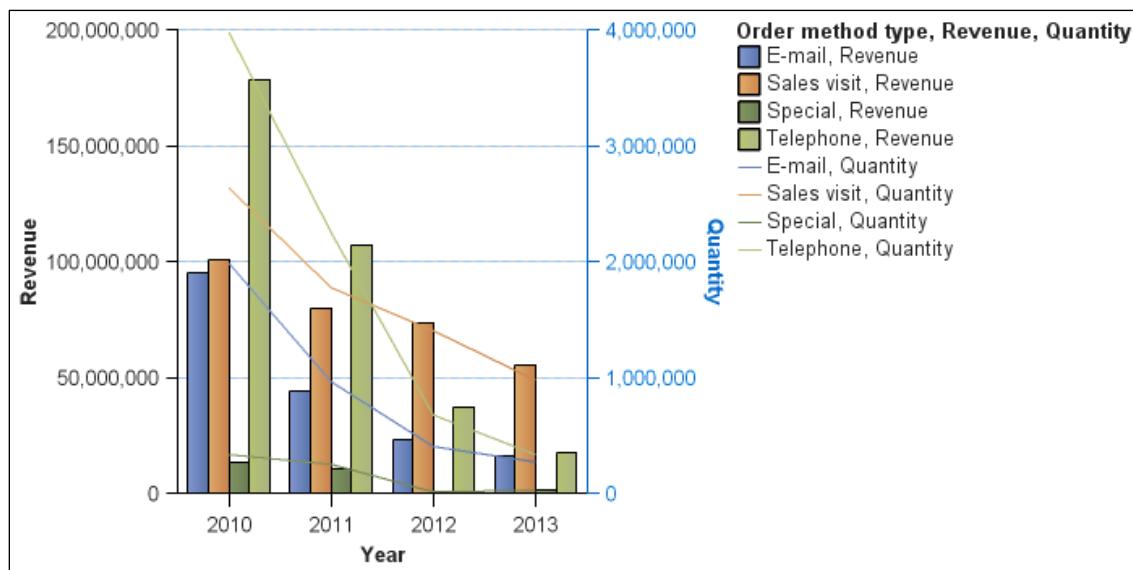
This chart may be too complicated for your consumers to read clearly. In Task 4 you will add filters to report only on E-mail, Sales visits, and Telephone. Web will not be included since it is the clear winner for Revenue and Quantity.

## 8. Close the rendered report tab.

## Task 4. Add filters to focus the data

1. Click the Combination chart to select it.
2. On the Toolbar, click **Filters**, and then click **Edit Filters**.
3. Click **Add**, then keep the default selections of **Custom based on data item**, and **Order method type**, then click **OK**.
4. From the **Values** box, move the following to the **Selected values** box: **E-mail**, **Sales visit**, **Special**, and **Telephone**, and then click **OK**, and then click **OK** to close the **Filters** dialog box.
5. Run the report in **HTML**.

A section of the result appears as shown below:



6. Close the rendered report tab.

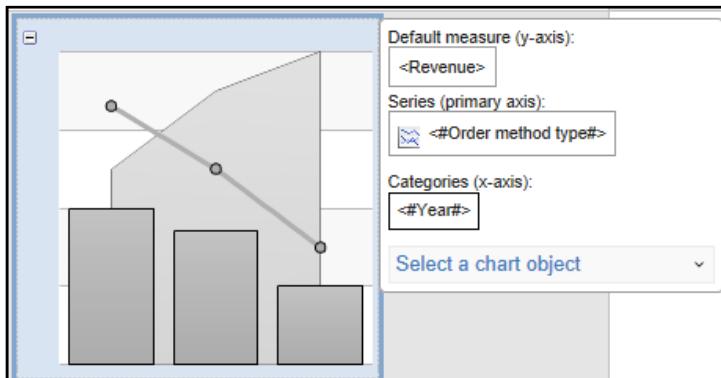
## Task 5. Add a microchart to the crosstab to preview data in a chart

1. In the crosstab, click **<#Order method type#>**, on the Toolbar click **More**, then click **Insert chart for Row Data**.
2. In the left pane, verify that **Microchart** is selected, and then click **OK** to accept the default **Line** microchart.
3. In the **Categories (x-axis)** section of the microchart, drag **<#Revenue#>** to the **Default Measure (y-axis)**.

4. In the **Categories (x-axis)** section of the microchart, click **Quantity**, and then press **Delete**.

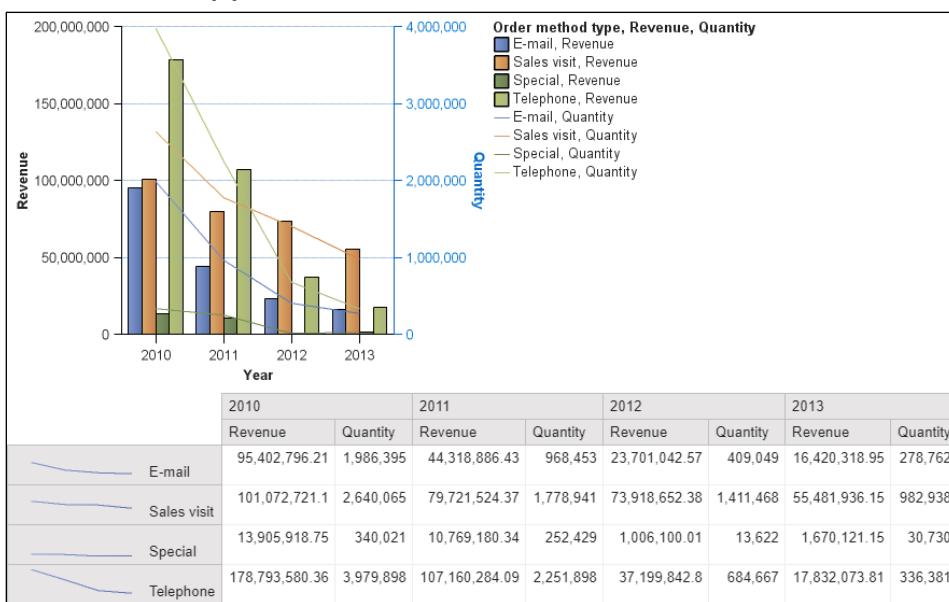
The entire section may disappear. If it does, you may need to click the chart background again, to see the results of your Delete action just performed.

The results appear as follows:



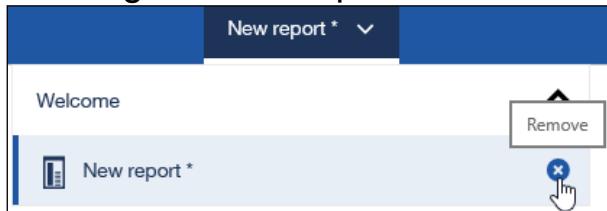
5. Run the report in **HTML**.

The results appear as follows:



6. Close the rendered report tab.

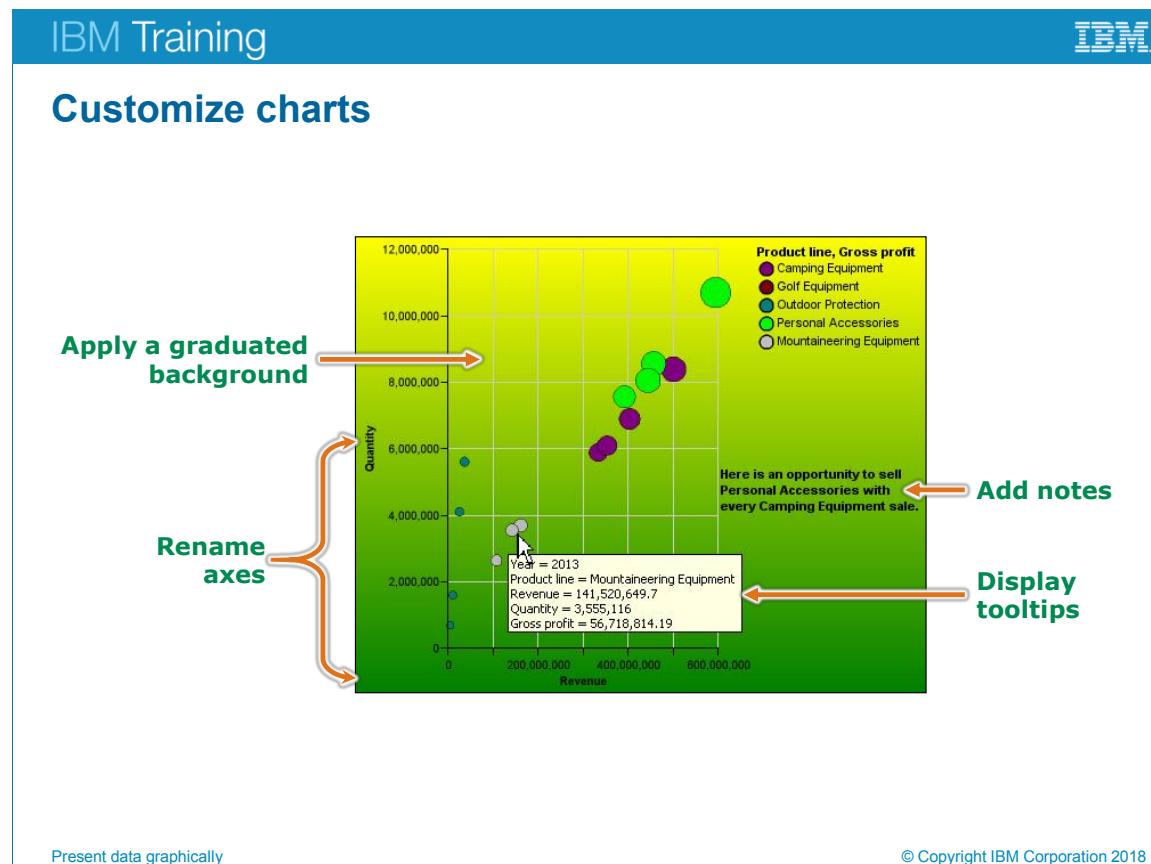
7. In the Application bar, click the report dropdown menu, then click **Remove** to the right of New report to close it. Then click **OK** to confirm your action.



8. Leave the IBM Cognos Analytics portal open for the next demonstration.

**Results:**

You created a combination chart with two measures on different Y axes and then added a crosstab to see product line sales revenue and quantity by region. You focused on Camping Equipment, Mountaineering Equipment, and Personal Accessories sales for the three European sales regions. You added a microchart to the crosstab for a quick overview of product line revenue for all regions specified.



### Customize charts

Custom elements such as color schemes, rescaling of axes numbers, renaming axes, and displaying details can enhance reports.

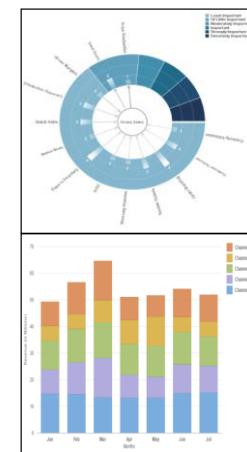
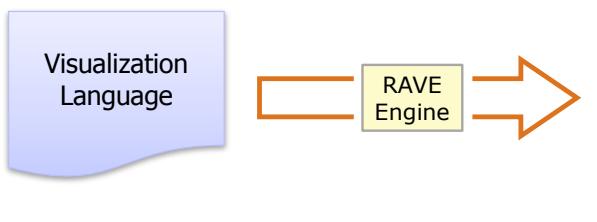
Fills and Background customization can greatly enhance the visual appeal of charts.

Tooltips are available in charts by default, and provide additional information while adding a level of interaction to the chart.

Notes can hide whatever is under them, so it is important to properly position them in the chart in order not to hide other important information.

## What is RAVE?

- RAVE: Rapidly Adaptive Visualization Engine
- globalized and accessible
- uses visJSON language to describe visualization
- flexible and extensible
- interacts with animations



Present data graphically

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### What is RAVE?

The Rapidly Adaptive Visualization Engine (RAVE) is being used to enable advanced visualization technology in many different IBM projects and products today. The declarative language for visualizations (charts, interactivity, events, etc.), is a cross-IBM standard.

It is not a traditional charting engine with pre-defined chart types (such as column, and pie charts). Rather, it is a general-purpose visualization engine that can produce both traditional and new charts and visualizations.

RAVE does not describe charts by type (bar chart, line chart, histogram, and so on) but by mapping. For example:

- bar chart: basic 2D coordinates, categorical x numeric displayed with intervals dropped from locations
- line chart: basic 2D coordinates, any x numeric displayed with lines connecting locations

RAVE supports statistical operations (such as sum, count), and styling (such as color). The grammar-based approach provides flexibility: new charts, or chart attributes, can be added without requiring the product to be updated.

IBM Training

IBM

## Demonstration 4

Display RAVE visualizations

# Personal Accessories

Outdoor Passion

## Camping Equipment

Mountaineering Equipment

Golf Equipment

Present data graphically

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*Demonstration 4: Display RAVE visualizations*

## Demonstration 4: Display visualizations

### Purpose:

You have been asked to create a report that compares some performance indicators for all product lines. Users need to be able to quickly identify product line performance. You will use a visualization that was made available in the portal Library to accomplish this task.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

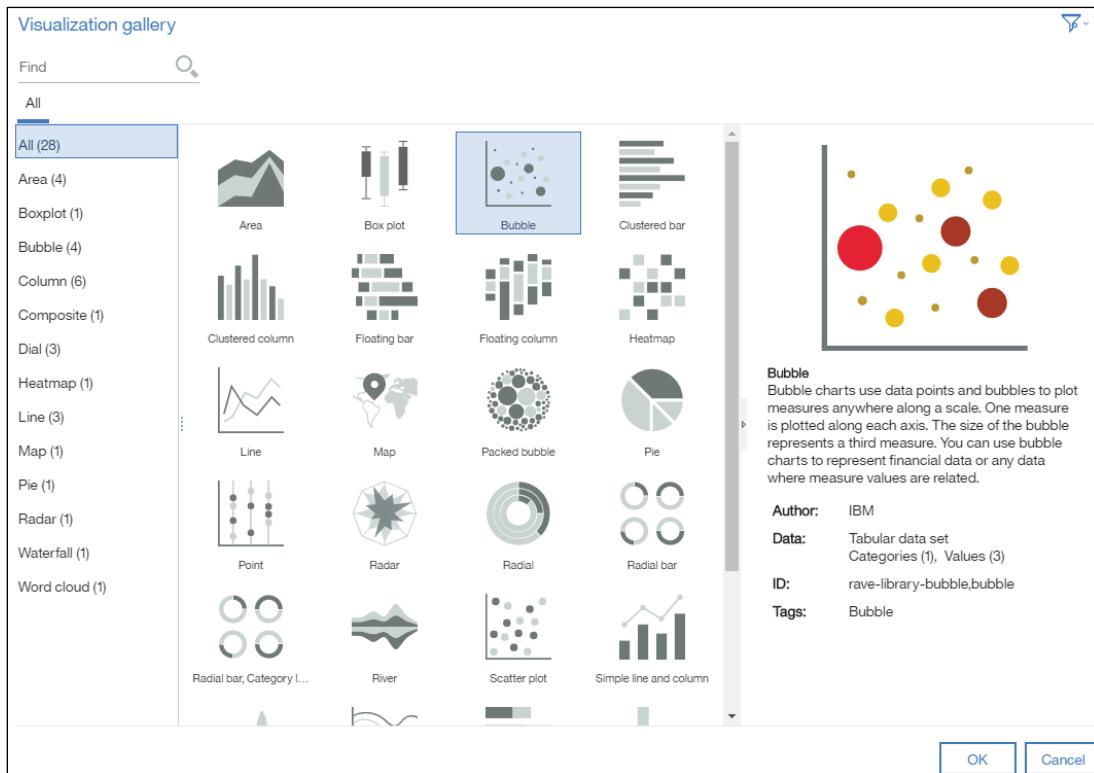
Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Select a visualization

1. Create a new Blank report using the **GO data warehouse (query)** package.
2. Add a **Visualization** object to the work area.
3. On the top right corner, click the filter icon  , then select **New visualizations**.  
The Visualization gallery dialog displays the visualizations that are available.



You could directly double-click the visualization that you want, from those available in the center panel, but if you have many items to choose from, you will want to filter on a specific type to make it easier to find.

4. In the **Refine by** pane on the left, click **Bubble**.

The number displayed for each type, indicates how many visualizations tagged with that type are available in the gallery. Notice how many bubble visualizations are available in the center pane.

5. In the **Refine by** pane, click **All**.

All filters have been removed, and all visualizations are displayed in the center pane.

6. In the **Refine by** pane, click **Word cloud**.

7. In the center pane, click **Word cloud**.

Notice the description of the visualization in the right pane.

8. Click **OK** to add the visualization.

You could have also double-clicked directly on Word cloud in the center pane instead of filtering it first.

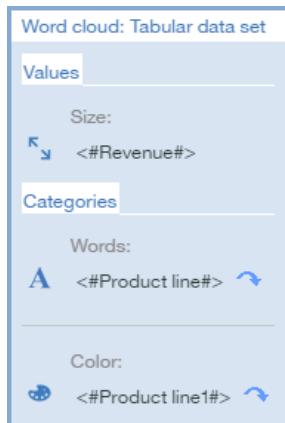
9. Click **OK** to accept the default values for the **Object and query names** dialog box.

## Task 2. Populate the word cloud visualization and run the report

1. From the **Source** tab, add the following query items to the visualization:

- Values > **Size**: Sales fact: **Revenue**
- Categories > **Words**: Products: **Product line**
- Categories > **Color**: Products: **Product line**

A section of the results appear as follows:



2. Click the visualization background.
3. In the Application bar, click **Show properties**.

4. In the Properties pane, under the COMMON section, set **Width** to **700**.
5. In the Properties pane, under the LEGEND section, set **Show legend** to **No**.
6. Run the report as **HTML**.
7. Once the report is generated, hover the cursor over one of the words.  
The results will appear similar to the following:



In this visualization, you can very quickly identify that Personal Accessories has achieved the highest revenue, followed by Camping Equipment. You can hover the mouse over words to see the details in tooltips. However, you would need an additional detail report to see details of the revenue achieved.

8. Close the rendered report tab.
9. In the Application bar, click the report dropdown menu, then click **Remove** to the right of New report to close it. Then click **OK** to confirm your action.



10. Leave the IBM Cognos Analytics portal open for the next exercise.

### Results:

You used IBM Cognos Analytics - Reporting to create a word cloud visualization report, based on an existing visualization that was made available in the Library. You also successfully added data to the visualization, and ran the report to display the results.

## Unit summary

- Create charts containing peer and nested columns
- Present data using different chart types
- Create and reuse custom chart palettes
- Use microcharts for quick overview of data inside other data containers
- Describe RAVE visualizations and their features
- Present key data in a single dashboard report

## **Unit 6     Focus reports using prompts**

IBM Training



### **Focus reports using prompts**

**IBM Cognos Analytics (v11.0)**

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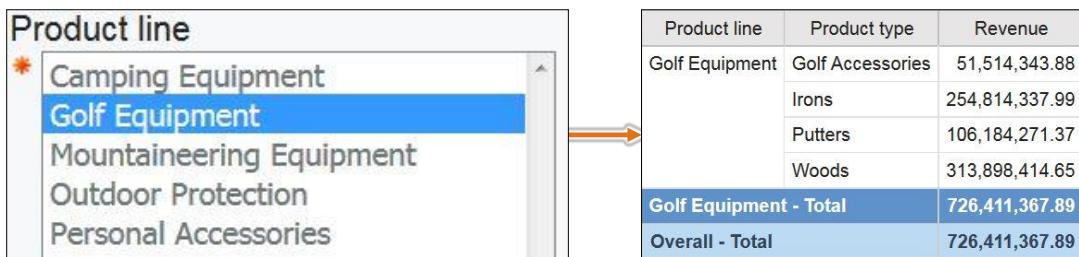


## Unit objectives

- Identify various prompt types
- Use parameters and prompts to focus data
- Choose between prompt types
- Navigate between pages

## Examine parameters and prompts

- Prompts ask the user to provide the value for the parameter that will filter the report by specific values.



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### Examine parameters and prompts

There are multiple ways to ask (prompt) the user for values, some of them are:

- create a parameter for an item on the report
- add a prompt page to the report containing one or more prompt items
- add a prompt item to the report

Parameters are placeholders that require a value to determine what data to report on.

Prompts function as dynamic filters.

Parameters are based on parameterized filters. The filter consists of a query item and operator. The operator you choose will determine some of the default properties of the prompt. For example, if you choose the = operator the user will only be able to select a single option from the prompt (Multi-Select: No). If you choose the 'in' operator, the user will be able to select multiple options from the prompt (Multi-Select: Yes).

A prompt is nothing more than a dynamic (parameterized) filter.

## Create a parameter item on the report

- Use a parameterized filter to create a prompt.



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### *Create a parameter item on the report*

Reporting can automatically generate prompted reports based on parameters you create. When you run the report, Reporting can generate a prompt for each unassigned (unanswered) parameter depending on whether the Prompt run option is selected or not.

If you create a parameter for an item on a report, when you run the report you will be prompted to specify a value for that item. The report displays the information according to the value given in the prompt. The prompt is created automatically and must be answered in order to view the report.

List report

Region	Date	Order number	Product line	Revenue
<Region>	<Date>	<Order number>	<Product line>	<Revenue>
<Region>	<Date>	<Order number>	<Product line>	<Revenue>
<Region>	<Date>	<Order number>	<Product line>	<Revenue>

Prompting tools

- PROMPTING
  - Text box prompt
  - Value prompt
  - Select & search prompt
  - Date & time prompt
  - Date prompt
  - Time prompt
  - Interval prompt
  - Tree prompt
  - Generated prompt
  - Prompt button

Layout

Text box prompt

Date prompt

Value prompt

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### Build a prompt page

You can create a blank prompt page by adding a new page to the Prompt Pages section in Pages. Once on the new prompt page, you can drag prompt items from the Toolbox onto the work area to control how prompts appear in the report.

You can also use the Build prompt page button to generate a Prompt page on a specific data items that you select in your report.

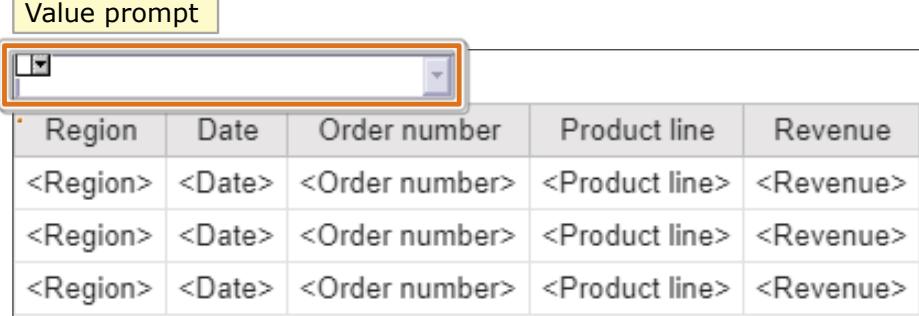
A date item will automatically generate a Date prompt, a number item generates a Text box prompt, and a value item will generate a Value prompt.

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## Add a prompt item to a report

- When a prompt item is dragged onto a report a prompt wizard walks the report author through the prompt building process.

**Value prompt**



Region	Date	Order number	Product line	Revenue
<Region>	<Date>	<Order number>	<Product line>	<Revenue>
<Region>	<Date>	<Order number>	<Product line>	<Revenue>
<Region>	<Date>	<Order number>	<Product line>	<Revenue>
<Region>	<Date>	<Order number>	<Product line>	<Revenue>

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### Add a prompt item to a report

A prompt item can be added directly to a report. When added, a prompt wizard dialog box appears and steps you through building the prompt. Prompt customization can be done at this time.

The wizard will add a prompt control and a parameterized filter to the report:

1. Create a parameter.
2. Add a filter to the data container with the parameter.
3. Create a query for the prompt.
4. Add the query and the parameter to the prompt.

If you add a prompt directly onto a report page, you will either need to set the prompt to automatically submit the selection, or add a Finish prompt button to the report so that the report will rerun using the new criteria.

## Demonstration 1

Create a prompt by adding a parameter

Order number	Date	Product	Revenue
104734	Jan 8, 2013	Blue Steel Max Putter	34,320
104734	Jan 8, 2013	Course Pro Gloves	5,974.5
104734	Jan 8, 2013	Lady Hailstorm Titanium Irons	73,477.59
104735	Jan 8, 2013	Course Pro Putter	38,178.52
104735	Jan 8, 2013	Firefly Multi-light	7,670.06
104735	Jan 8, 2013	Hailstorm Steel Irons	22,773.4
104735	Jan 8, 2013	Hailstorm Steel Woods Set	52,234.8
104735	Jan 8, 2013	Lady Hailstorm Steel Irons	43,525.46

*Demonstration 1: Create a prompt by adding a parameter*

## Demonstration 1:

### Create a prompt by adding a parameter

#### Purpose:

You have been asked to provide a report showing product sales by date to determine the revenue generated by each individual order. Because the report contains detailed information, you want to be able to filter the report to show only orders made after a specified date. You will create a parameter to prompt a user for a date and the report will return all dates greater than the one specified.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

#### Task 1. Create the List

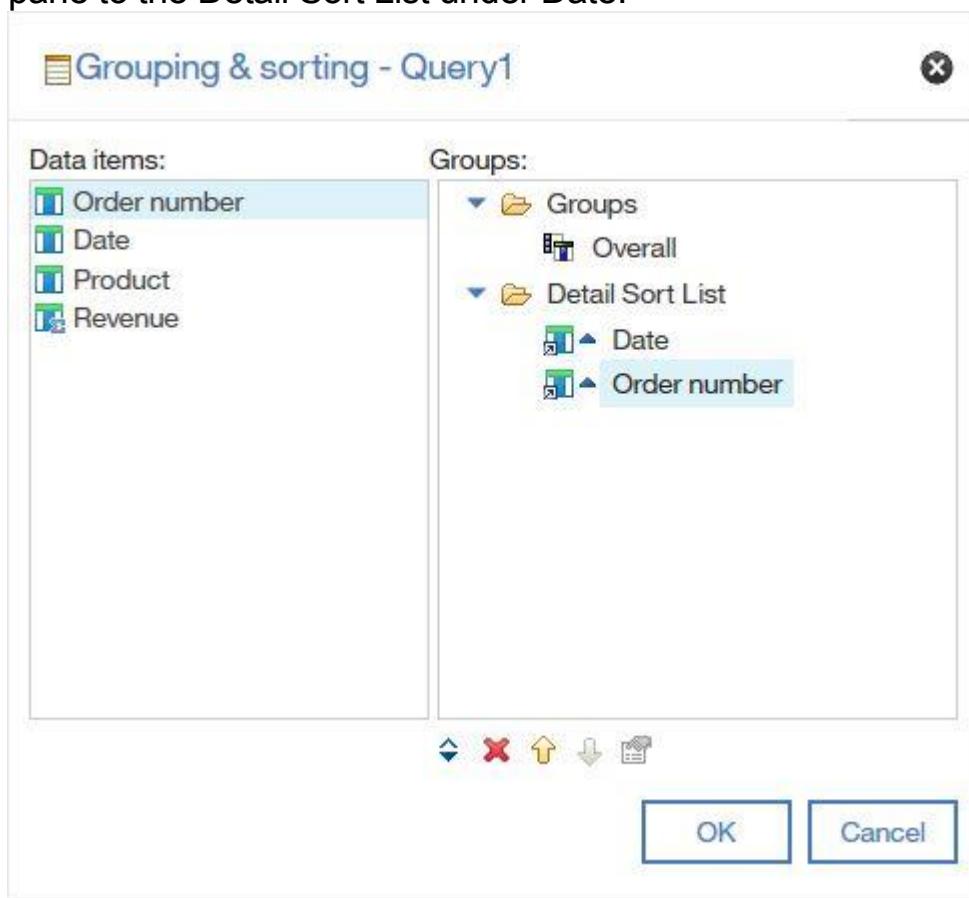
1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **List** object to the report.
3. From the **Source** tab, add the following query items to the new List:
  - Sales order: **Order number**
  - Time: **Date**
  - Products: **Product**
  - Sales fact: **Revenue**

The results appear as follows:

Order number	Date	Product	Revenue
<Order number>	<Date>	<Product>	<Revenue>
<Order number>	<Date>	<Product>	<Revenue>
<Order number>	<Date>	<Product>	<Revenue>

4. Click the **<Date>** List column body, then on the Toolbar click **Sort**, and then click **Ascending**.
5. This will sort the result by the order date only, to have more control over the results you will sort it by the order number as well.  
Click the **<Order number>** List column body, then on the Toolbar click **Sort**, then click **Edit Layout Sorting**.

6. In the **Grouping and sorting** dialog, drag **Order number** from the Data items pane to the Detail Sort List under Date.



7. Then click **OK**.  
8. Run the report in **HTML**.

A section of the results appears as follows:

Order number	Date	Product	Revenue
100001	Jan 12, 2010	Flicker Lantern	8,624.64
100001	Jan 12, 2010	Polar Ice	9,411.6
100002	Jan 12, 2010	Bear Edge	6,690.8
100002	Jan 12, 2010	Edge Extreme	18,032.22

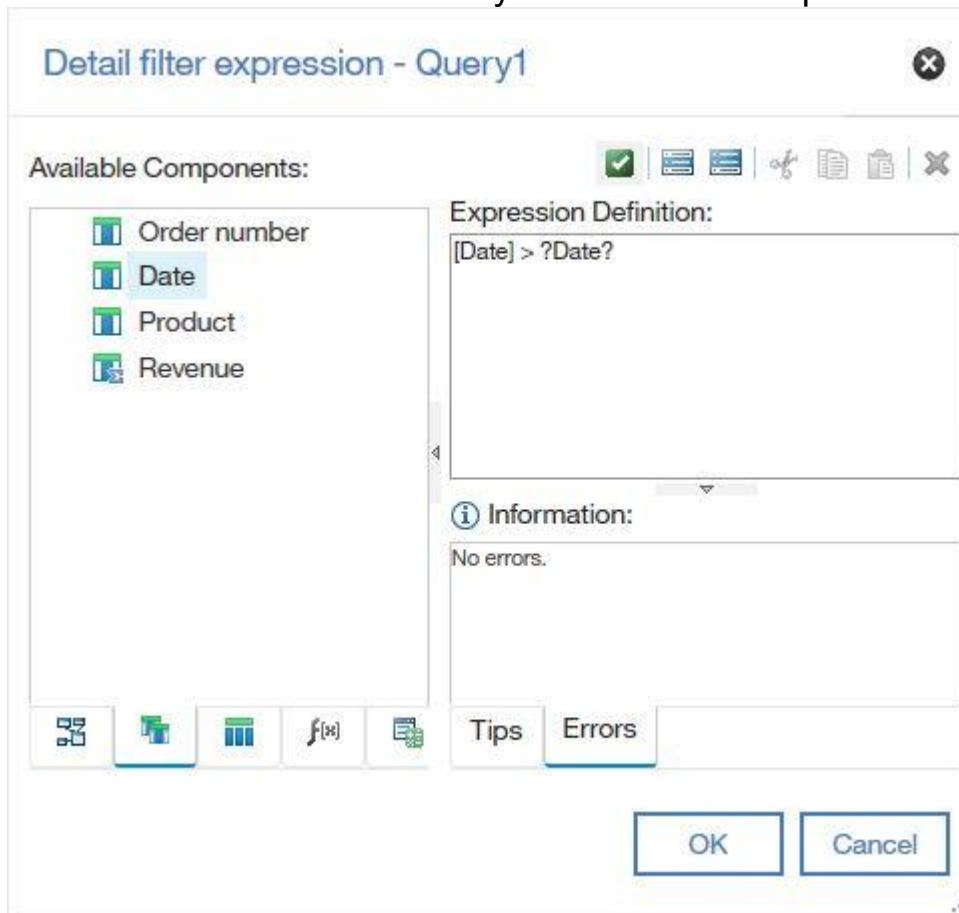
The earliest date is Jan 12, 2010.

9. Click **Bottom** to see the last page of the report.  
The last date is Jul 20, 2013.  
10. Close the rendered report tab.

## Task 2. Add a date parameter and run the report.

1. On the Toolbar, click **Filters** > **Edit Filters**, and then click **Add** .
2. Click **Advanced**, and then click **OK**.

3. Drag **Date** from the Data Items tab, then complete the following expression:  
**[Date] > ?Date?**
4. Click **Validate** to validate the syntax of the filter expression.



The report will only retrieve data where the order date is greater than the date specified by the user.

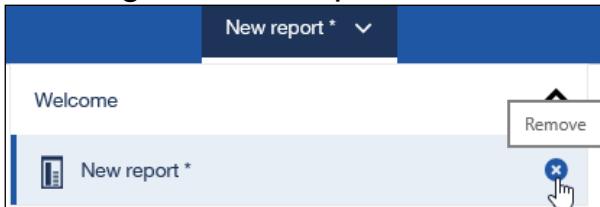
5. Click **OK** to close the **Detail filter expression** dialog box.
  6. Click **OK** to close the **Filters** dialog box.
  7. Run the report in **HTML**.
- You are prompted to select a date and time.
8. Select **2013-Jan-1**, accept the default time, and then click **OK**.

A section of the results appears as follows:

Order number	Date	Product	Revenue
104734	Jan 8, 2013	Blue Steel Max Putter	34,320
104734	Jan 8, 2013	Course Pro Gloves	5,974.5
104734	Jan 8, 2013	Lady Hailstorm Titanium Irons	73,477.59
104735	Jan 8, 2013	Course Pro Putter	38,178.52

9. Click **Bottom** to see the last page of the report.

- The report displays results from Jan 8, 2013 to Jul 20, 2013.
10. Close the rendered report tab.
  11. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



12. Leave the IBM Cognos Analytics portal open for the next demonstration.

**Results:**

You created a parameter to prompt a user for a date, and when the list report ran, it returned information based on the response to the prompt.

## Identify prompt type

- Choose the appropriate prompt type and style for your reporting requirements.

Text box prompt	Time prompt
Value prompt	Interval prompt
Select & search prompt	Tree prompt
Date & time prompt	Generated prompt
Date prompt	Prompt button

### *Identify prompt type*

If you add prompt items to a report or prompt page, you can choose from the different types of prompts available in the Toolbox tab according to your needs. If you select items on a report and then create a prompt page, Reporting will choose an appropriate prompt type for you.

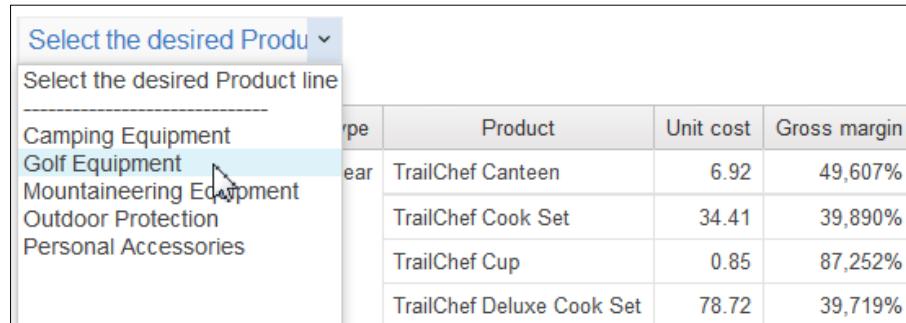
If there are many choices available (such as employee names), then Select & search is a good option. This saves time in scrolling to look for the desired option. If the exact name or spelling of an item is unknown, then avoid using the Text Box prompt as the value must be typed in exactly as it is in the data source.

Interval prompts are valuable for reporting on very specific time frames as they let you choose lowest to highest time intervals in days, hours, and minutes.

A generated prompt acts as a placeholder in the work area, but when the report is run, Reporting selects the appropriate prompt type for that report.

## Demonstration 2

Add a value prompt to a report



The screenshot shows a report interface with a dropdown menu titled "Select the desired Product line". The menu lists several categories: Camping Equipment, Golf Equipment, Mountaineering Equipment, Outdoor Protection, and Personal Accessories. The "Golf Equipment" option is currently selected, indicated by a blue highlight and a cursor pointing at it. Below the dropdown is a table with four columns: Type, Product, Unit cost, and Gross margin. The table contains five rows of data, each corresponding to a product from the selected category.

Type	Product	Unit cost	Gross margin
Camping Equipment	TrailChef Canteen	6.92	49,607%
Golf Equipment	TrailChef Cook Set	34.41	39,890%
Mountaineering Equipment	TrailChef Cup	0.85	87,252%
Outdoor Protection	TrailChef Deluxe Cook Set	78.72	39,719%

Focus reports using prompts

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*Demonstration 2: Add a value prompt to a report*

## Demonstration 2: Add a value prompt to a report

### Purpose:

You will create a report to help reduce production costs. Because you have many products, you will add a prompt so that users can view product data within a specified product line.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the List

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **List** object to the report.
3. From the **Source** tab, add the following query items to the List object:
  - Products: **Product line**, **Product type**, **Product**
  - Sales fact: **Unit cost**
  - **Gross margin** (calculated fact under Sales (query))
4. In the report, click **<Product line>**, Ctrl-click **<Product type>**, and then click **Group / Ungroup** on the Toolbar.

The results appear as follows:

Product line	Product type	Product	Unit cost	Gross margin
<Product line>	<Product type>	<Product>	<Unit cost>	<Gross margin>
	<Product type>	<Product>	<Unit cost>	<Gross margin>
<Product line>	<Product type>	<Product>	<Unit cost>	<Gross margin>
	<Product type>	<Product>	<Unit cost>	<Gross margin>

5. From the **Toolbox** tab, drag a **Table** object to the left of the **List** object, clear the **Maximize width** checkbox, and then click **OK**.

### Task 2. Add a product line prompt to the report page

1. From the **Toolbox** tab, expand **PROMPTING**, and then drag a **Value prompt** into the left table cell.

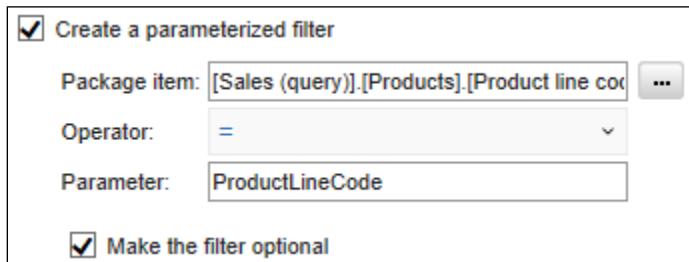
You want the prompt to filter on product line code to make the query more efficient. However, the prompt will display product line names, not codes, to make selections easier.

2. In the **Prompt Wizard - Value prompt** dialog box, change the parameter name to **ProductLineCode**, and then click **Next**.
3. On the **Create Filter** page, ensure that **Create a parameterized filter** is selected, and then beside **Package item**, click the **ellipsis**.
4. Expand the **Sales and Marketing (query)** folder, **Sales (query)** namespace, **Products**, and then **Codes** folder.
5. Click **Product line code**, and then click **OK**.

Product line code is used because it is an indexed field. Querying on an indexed field is much faster and more efficient.

6. Select **Make the filter optional**.

A section of the results appear as follows:



7. Click **Next**, and then beside **Values to display**, click the **ellipsis**.
8. Expand the **Sales and Marketing (query)** folder, expand the **Sales (query)** namespace, and then expand **Products**.
9. Click **Product line**, click **OK**, and then click **Finish**.

The results appear as follows:

Product line	Product type	Product	Unit cost	Gross margin
<Product line>	<Product type>	<Product>	<Unit cost>	<Gross margin>
		<Product>	<Unit cost>	<Gross margin>
<Product line>	<Product type>	<Product>	<Unit cost>	<Gross margin>
		<Product>	<Unit cost>	<Gross margin>

## Task 3. Add a prompt button and set the properties for the value prompt

1. From the **Toolbox** tab, under the PROMPTING section, drag a **Prompt button** into the right table cell.
2. From the Application bar, click **Show properties**  (if they are not shown).
3. In the Properties pane, under GENERAL, click **Type**, and then from the list, select **Finish**.
4. Run the report in **HTML**.

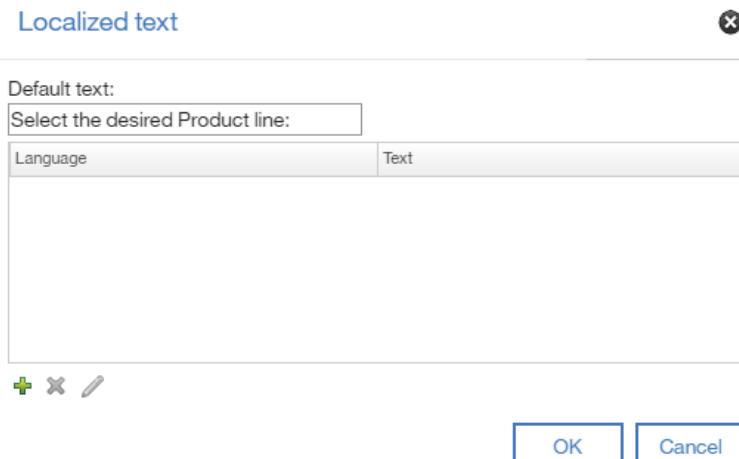
The report opens in the browser, displaying data for all product lines. The report can run before answering the prompt because the prompt and the filter are defined as optional. To control the usage of your prompt between required or optional, make the change directly on your filter through your filters Usage property instead of changing this setting on your prompt. The filters Usage property overrides the prompt's Required property.

5. From the **Product line** prompt list, select **Golf Equipment**, and then click **Finish**.  
Only Golf Equipment product line information is displayed.
6. Close the rendered report tab.
7. Click the **Finish** prompt button, and then press **Delete**.
8. Click the **Value Prompt**, to select it.
9. In the Properties pane, under GENERAL, change the **Auto-submit** property to **Yes**.

## Task 4. Customize the prompt

You want to customize the prompt header to provide instructions on how to use the prompt.

1. With the value prompt selected, in the Properties pane, under PROMPT TEXT, click **Header Text**, and then click the **ellipsis** .
2. Select **Specified text**, and then click the **ellipsis** to the right of the text box.
3. Type the following in the **Default text** box: **Select the desired Product line:**  
The results appear as follows:



You can add information here as well for localization.

4. Click **OK** to close the **Localized Text** dialog box.
5. Click **OK** to close the **Header Text** dialog box.

You want to have the value prompt separate from the list. You will add a space between the prompt and the list by increasing the top margin of the list.

6. Click the List Container selector  to select the entire List.
7. From the Properties pane, under BOX, double-click the **Margin** property.
8. Type **20** in the **Top** margin cell, and then click **OK**.

## Task 5. Run the report

1. Run the report in **HTML**.

The report opens in the browser displaying data for all product lines. The report can run because the parameterized filter is defined as optional.

Type	Product	Unit cost	Gross margin
Camping Equipment	TrailChef Canteen	6.92	49,607%
Golf Equipment	TrailChef Cook Set	34.41	39,890%
Mountaineering Equipment	TrailChef Cup	0.85	87,252%
Outdoor Protection	TrailChef Deluxe Cook Set	78.72	39,719%
Personal Accessories	TrailChef Double Flame	75.00	61,272%
	TrailChef Kettle	5.07	65,813%
	TrailChef Kitchen Kit	15.78	36,018%

2. In the list, select **Golf Equipment**.

A section of the results appears as follows:

Golf Equipment				
Product line	Product type	Product	Unit cost	Gross margin
Golf Equipment	Golf Accessories	Course Pro Gloves	2.54	84,172%
		Course Pro Golf and Tee Set	2.88	84,291%
		Course Pro Golf Bag	79.70	92,830%
		Course Pro Umbrella	6.08	62,910%

With the Auto-submit property set to Yes, you can use the Product line list to select which Product line data you want to display without having to click an additional button to submit your selection.

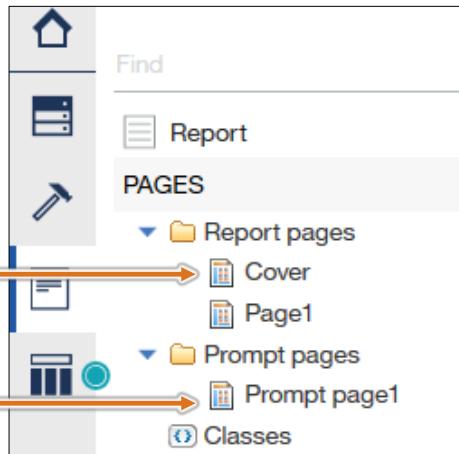
3. Close the rendered report tab.
4. From the **Application** bar, click **Save**, navigate to **My content**, and then save the report as **Unit 6-Prompt**.
5. Leave the report authoring tab open as it will be used for the next demonstration.

### Results:

You created a report to show cost and gross margin for each product. You added a prompt so that users can view product data within a specified product line.

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## Add pages to a report



The screenshot shows the IBM Page Explorer interface. On the left, there's a sidebar with icons for Home, Find, Report, and PAGES. Under PAGES, there are two main categories: 'Report pages' containing 'Cover' and 'Page1', and 'Prompt pages' containing 'Prompt page1' and 'Classes'. Two green arrows point from the text labels below to the respective sections in the sidebar. The first arrow points to the 'Report pages' section, and the second arrow points to the 'Prompt pages' section.

**Add a cover page to a report**

**Add a prompt page to a report**

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### *Add pages to a report*

Enhance your report by adding multiple report and prompt pages.

By accessing Page Explorer from the Pages tab, you can navigate between report pages and prompt pages. You can also add or delete report pages and prompt pages by clicking the Report Pages link or the Prompt Pages link.

## Demonstration 3

Add a Select & search prompt to a report

Product line	Product type	Product	Unit cost	Gross margin
Camping Equipment	Lanterns	EverGlow Butane	40.63	49,092%
		EverGlow Kerosene	20.00	41,057%
		Firefly 2	16.38	48,909%
		Firefly 4	17.84	44,545%
		Firefly Extreme	29.10	51,590%
		Firefly Lite	6.75	62,846%
		Firefly Mapreader	7.50	62,146%
		Firefly Multi-light	17.78	37,673%
Mountaineering Equipment	Climbing Accessories	Firefly Charger	22.36	55,479%
		Firefly Climbing Lamp	21.57	38,336%
		Firefly Rechargeable Battery	3.15	54,869%

*Demonstration 3: Add a Select & search prompt to a report*

## Demonstration 3: Add a Select & search prompt to a report

### Purpose:

You want to change your current report to allow users to select multiple products to show in the report. To do this you must delete the current value prompt and replace it with the Select & search prompt.

Note: Before starting this demonstration, be sure to complete Demonstration 2. The report ('Unit 6-Prompt') from Demonstration 2 is used for Demonstration 3.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Run the report

- With the report from the previous demonstration still open (My content\Unit 6-Prompt), run the report in **HTML**.
- In the **Product line** list, select **Camping Equipment**.

A section of the results appears as follows:

Camping Equipment				
Product line	Product type	Product	Unit cost	Gross margin
Camping Equipment	Cooking Gear	TrailChef Canteen	6.92	49,607%
		TrailChef Cook Set	34.41	39,890%
		TrailChef Cup	0.85	87,252%
		TrailChef Deluxe Cook Set	78.72	39,719%
		TrailChef Double Flame	75.00	61,272%
		TrailChef Kettle	5.07	65,813%
		TrailChef Kitchen Kit	15.78	36,018%
		TrailChef Single Flame	46.38	30,905%
		TrailChef Utensils	9.68	54,689%
	Lanterns	TrailChef Water Bag	2.77	61,039%
		EverGlow Butane	40.63	49,092%
		EverGlow Double	28.75	55,443%

The report includes information on only one product line. You will now modify the prompt to let users search and select one or more product names.

- Close the rendered report tab.

### Task 2. Add a Select & search prompt on a prompt page

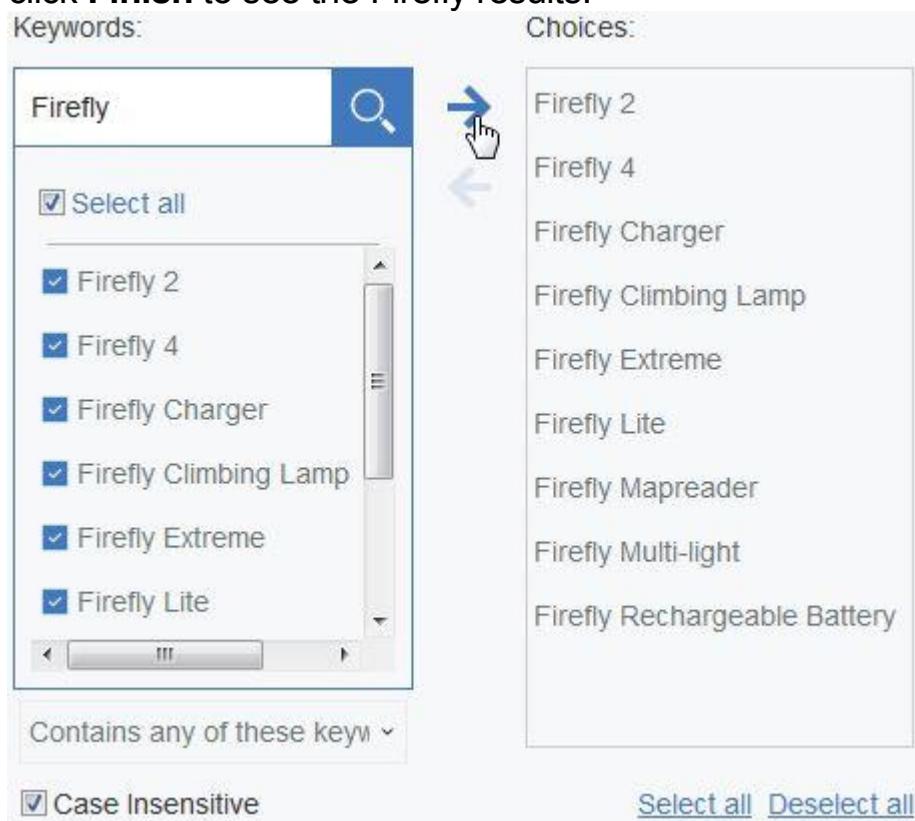
- In the work area, click the Value prompt, and then delete it.

2. Click the List data container, then from the Toolbar, click **Filters**, and then click **Edit Filters**.  
Notice that the prompt filter remained even when the Value prompt was deleted.
3. Select the filter, click **Delete** , and then click **OK**.
4. In the Pages tab, click **Prompt pages**, then click the **Add page** .
5. Click **Prompt page1**,
6. Expand the **Toolbox**, then from the **PROMPTING** section, drag a **Select & search prompt** object onto the prompt page.
7. In the **Choose Parameter** page, change the parameter name to **ProductNames**, and then click **Next**.
8. In the **Create Filter** page, ensure that **Create a parameterized filter** is selected, and then beside **Package item**, click the **ellipsis**.
9. Expand the **Sales and Marketing (query)** folder, **Sales (query)** namespace, **Products** folder, click **Product**, and then click **OK**.  
In the **Operator** list, select **in**.  
You use the 'in' operator to allow for multiple selections. If you used the '=' operator, the prompt would allow for only a single selection.
10. Select **Make the filter optional** checkbox, then click **Next**, then click **Finish**.  
The report appears with the Select & search prompt on the prompt page.

### Task 3. Run the report.

1. Run the report in **HTML**.
2. Click **Finish** to accept the default of all product lines.  
You can navigate to view product data on other pages. The report ran because you made the prompt optional. The name of the product you want to search for contains the keyword "Firefly".
3. Click **Run**  to run the report again.
4. In the **Keywords** text box, type **Firefly** (no other text should appear in the text box), and then expand the options drop down list at the bottom.  
The list of search options allows you to refine your search.
5. Select **Contains any of these keywords**, and then click **Search** .  
All product lines with "Firefly" in the name appear in the Results box.

6. Click **Select all**, and then click **Add selected items to your choices** →, then click **Finish** to see the Firefly results.



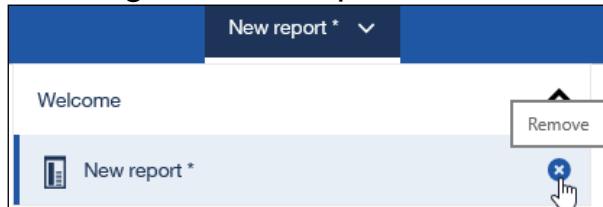
7. Click **Run Report** → to run the report again.  
 8. In the **Keywords** text box, type **Firefly Butane Kerosene**.  
 9. Select **Contains any of these keywords**, and then click **Search**.  
 10. Click **Select all**, and then click **Add selected items to your choices**, and then click **Finish**.

The results appear as follows:

Product line	Product type	Product	Unit cost	Gross margin
Camping Equipment	Lanterns	EverGlow Butane	40.63	49,092%
		EverGlow Kerosene	20.00	41,057%
		Firefly 2	16.38	48,909%
		Firefly 4	17.84	44,545%
		Firefly Extreme	29.10	51,590%
		Firefly Lite	6.75	62,846%
		Firefly Mapreader	7.50	62,146%
		Firefly Multi-light	17.78	37,673%
Mountaineering Equipment	Climbing Accessories	Firefly Charger	22.36	55,479%
		Firefly Climbing Lamp	21.57	38,336%
		Firefly Rechargeable Battery	3.15	54,869%

The report runs and is filtered to display only the data associated with the products that you selected based on your search.

11. Close the rendered report tab.
12. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



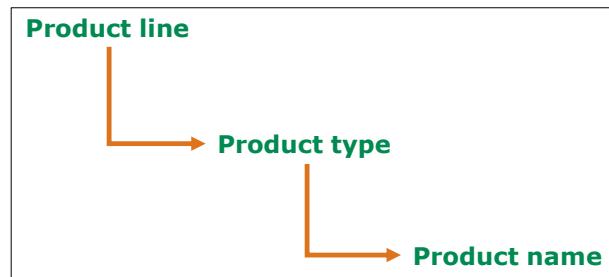
13. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You removed the existing value prompt and filter and updated the existing report with a Select & search prompt. This allowed users to search for and select from, a list of product names based on keyword options.

## Create a cascading prompt

- Use values from a previous prompt to filter the values in the current prompt or picklist.



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### *Create a cascading prompt*

In the slide example, the selection that the user makes for Product line determines what is populated in the Product type prompt. Then the selection made for Product type determines what is populated in the Product prompt.

When you create a series of prompts that have a hierarchical relationship, you can define them as cascading, so that a prompt selection is determined by the choice of the user in the previous prompt.

## Demonstration 4

### Create a cascading prompt

**Product line**

- Camping Equipment
- Golf Equipment
- Mountaineering Equipment
- Outdoor Protection
- Personal Accessories

**Product type**

- Cooking Gear
- Lanterns
- Packs
- Sleeping Bags
- Tents

[Select all](#) [Deselect all](#)

**Order method type**

- ALL
- E-mail
- Fax
- Mail
- Sales visit
- Special
- Telephone
- Web

**Product type by Product line for all order methods**

Product line	Product type	Order method type	Return quantity	
Camping Equipment	Lanterns	E-mail	1,527	
		Fax	1,089	
		Mail	335	
		Sales visit	7,408	
		Special	169	
		Telephone	4,902	
		Web	50,160	
<b>Lanterns - Total</b>			<b>65,590</b>	
Tents	Tents	E-mail	648	
		Fax	216	
		Mail	240	
		Sales visit	5,977	
		Telephone	4,631	
		Web	27,794	
<b>Tents - Total</b>			<b>39,506</b>	
<b>Camping Equipment - Total</b>			<b>105,096</b>	
<b>Overall - Total</b>			<b>105,096</b>	

Focus reports using prompts

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*Demonstration 4: Create a cascading prompt*

## Demonstration 4: Create a cascading prompt

### Purpose:

Executives need a report that lets them analyze product returns. They want a report that enables them to focus on specific product lines and product types within those product lines for all order methods. This report will be delivered to the shareholders during their monthly meeting, so the executives would like a cover page to add a more official look.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query), Returned items (query)

### Task 1. Create a List with title, and then create a prompt page with a cascading prompt

1. Create a new Blank report using the **GO data warehouse (query)** package.
2. Click the page body, then from the toolbar, click **More > Headers and footers > Page header and footer**, check the **Header**, and click **OK**.
3. Click Add in the Page Header and add a Text item with the following text: **Product type by Product line for all Order methods**.
4. In the Page header, click **Add** , then click **Text item** .
5. In the Text dialog, type **Product type by Product line for all Order methods**, then press **Enter**.
6. Click the Text item, then from the Toolbar, click **Font** .
7. Set **Family** to **Arial Black**, **Size** to **14pt**.
8. Add a **List** object to the page body.
9. From the **Data\Source** tab, add the following query items to the List object:
  - Returned items (query) > Products: **Product line** and **Product type**
  - Returned items (query) > Order method: **Order method type**
  - Returned items (query) > Returned items fact: **Return quantity**

Product line	Product type	Order method type	Return quantity
<Product line>	<Product type>	<Order method type>	<Return quantity>
<Product line>	<Product type>	<Order method type>	<Return quantity>
<Product line>	<Product type>	<Order method type>	<Return quantity>

10. Ctrl-click <Product line> and <Product type>, then on the Toolbar, click **Group / Ungroup** .
11. Click <Return quantity>, on the Toolbar click **Summarize**, then click **Total**.
12. Click <Product line>, then Ctrl-click <Product type> and <Order method type>.
13. On the Toolbar, click **More > Build prompt page**.  
Reporting creates a prompt page that asks the user about data items that you selected, and creates filters for these prompts, and opens the new prompt page.

## Task 2. Set behavior patterns for prompts

1. In the work area of the new prompt page, click the **Product type** value prompt.
2. From the Application bar, click **Show properties**  (if they are not shown).  
In the Properties pane, under GENERAL, double-click **Cascade source**, from the list, select **Product line**, and then click **OK**.  
The Product types available to choose from will depend on the Product line selected when the prompt submits.
3. In the Properties pane, under GENERAL, ensure that **Multi-select** is set to **Yes**, and that **Auto-submit** is set to **No**.  
The user can select multiple product types, but the selection will not submit automatically. Once all selections for the prompts are complete, the user must submit the request by clicking **Finish**.
4. In the work area, click the **Product line** value prompt.
5. In the Properties pane, under GENERAL, in the **Multi-select** list, select **No**.
6. Under GENERAL, set the **Auto-submit** property to **Yes**.  
The user can only select one product line, and the selection will be submitted automatically.
7. In the work area, click the **Order method type** value prompt.
8. In the Properties pane, under GENERAL, in the **Multi-select** list, click **No**.

## Task 3. Create a static value to select all order method type values

1. With the **Order method type** value prompt still selected, under DATA, double-click **Static choices**, and then click **Add** .

2. Type **ALL** for both the **Use** and **Display** values, click **OK** to close the **Edit** dialog box. And then click **OK** to close the **Static choices** dialog box.  
The value entered for static choices is case sensitive and should be entered the exact same way in your filter expression.  
You will specify what values to return when ALL is selected in the Order method prompt.
3. On the sidebar, click **Pages** , then click **Page1**.
4. Click anywhere in the List, from the Toolbar, click **Filters > Edit Filters**.
5. Click the **Order method type** filter, and then click **Edit**.
6. Replace and validate the existing expression with the following:  
`if (?Order method type?='ALL') then ([Order method type]=[Order method type]) else([Sales (query)].[Order method].[Order method type] = ?Order method type?)`  
 Hint: Drag ?Order method type? from the **Parameters** tab, and drag [Order method type] from the **Data items** tab.
7. Choose any options for the prompts, then click **OK** to close the validation box.
8. Click **OK** to close the **Detail filter** expression dialog box, and then click **OK** to close the **Filters** dialog box.

## Task 4. Create a cover page

1. On the **Pages** tab, click **Report pages**, then click **Add page** .
2. Drag the new Page (**Page2**) above **Page1**.
3. In the Properties pane, under **MISCELLANEOUS**, modify the **Name** property to **CoverPage**, and then press **Enter**.
4. Double-click **CoverPage** to open it.
5. In the Page body, click **Add**, then click **Table** . Accept the defaults and click **OK**.
6. Click the left table cell, and then Ctrl-click the right table cell.
7. On the Toolbar, click the arrow beside **Horizontal alignment options** , then click **Center** .
8. Click the page body (anywhere on the page below the table), and then on the Toolbar, click the arrow beside **Vertical alignment options** , then click **Middle** .

## Task 5. Create title and image for cover page

1. In the left table cell, click **Add**, then click **Text item**.

2. In the **Text** dialog box, type **GO Data Warehouse - Revenue Generated**, and then click **OK**.
3. In the Toolbar, click **Font**, then set **Family** to **Arial Black**, **Size** to **16pt**, and **Weight** to **Bold**, then click **OK**.
4. From the Toolbox, expand **LAYOUT**, and then drag an **Image** object into the right table cell.
5. Double-click the Image object, then in the Image Picker dialog, open the menu beside the Browse button, then select **samples/images**.
6. Scroll down and double-click **cover2.jpg**.
7. In the Properties pane, under POSITIONING, double-click the **Size & overflow** property.
8. Set the **Width** to **150** pixels, the **Height** to **75** pixels, and then click **OK**.

## **Task 6. Run the report and view details for specific products.**

1. Run the report in **HTML**.

A section of the results appears as follows:

<b>Product line</b> * Camping Equipment Golf Equipment Mountaineering Equipment Outdoor Protection Personal Accessories	
--	--

The Prompt page appears prompting for a Product line. The star icon indicates that this selection is mandatory.

2. In the Product line prompt, click **Camping Equipment**.

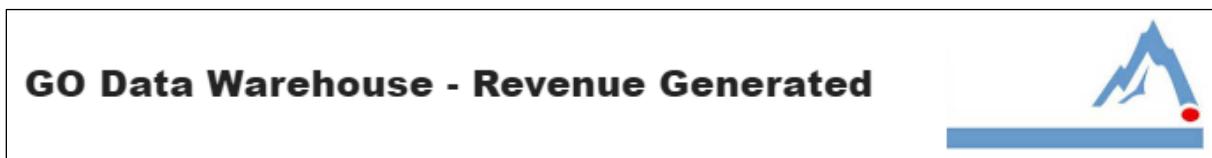
The results for the **Product type** prompt update and appear as follows:

<b>Product type</b> * Cooking Gear Lanterns Packs Sleeping Bags Tents	
<a href="#">Select all</a> <a href="#">Deselect all</a>	

3. Under **Product type**, click **Lanterns**, and then Ctrl-click **Tents**.  
The results for the Order method type prompt appear as follows:

Order method type
<input checked="" type="checkbox"/> ALL
E-mail
Fax
Mail
Sales visit
Special
Telephone
Web

4. In the **Order method type** prompt, click **ALL**, and then click **Finish**.  
The report cover page appears.



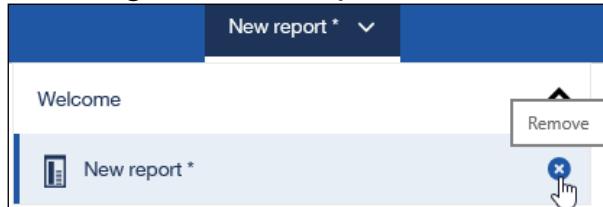
5. Click **Page down**.

The results appear as follows:

<b>Product type by Product line for all Order methods</b>				
Product line	Product type	Order method type	Return quantity	
Camping Equipment	Lanterns	E-mail	1,527	
		Fax	1,089	
		Mail	335	
		Sales visit	7,408	
		Special	169	
		Telephone	4,902	
		Web	50,160	
<b>Lanterns - Total</b>		<b>65,590</b>		
Camping Equipment	Tents	E-mail	648	
		Fax	216	
		Mail	240	
		Sales visit	5,977	
		Telephone	4,631	
		Web	27,794	
<b>Tents - Total</b>		<b>39,506</b>		
<b>Camping Equipment - Total</b>		<b>105,096</b>		
<b>Overall - Total</b>		<b>105,096</b>		

6. Close the rendered report tab.

7. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



8. Leave the IBM Cognos Analytics portal open for the next exercise.

**Results:**

You created a report that lets you analyze product returns. The report enabled users to focus on specific product lines and product types within those product lines. In particular, you focused on tent and lantern returns for all order methods. You gave the report a cover page for a more professional look.

## Unit summary

- Identify various prompt types
- Use parameters and prompts to focus data
- Choose between prompt types
- Navigate between pages

## **Unit 7 Extend reports using calculations**

IBM Training



### **Extend reports using calculations**

**IBM Cognos Analytics (v11.0)**

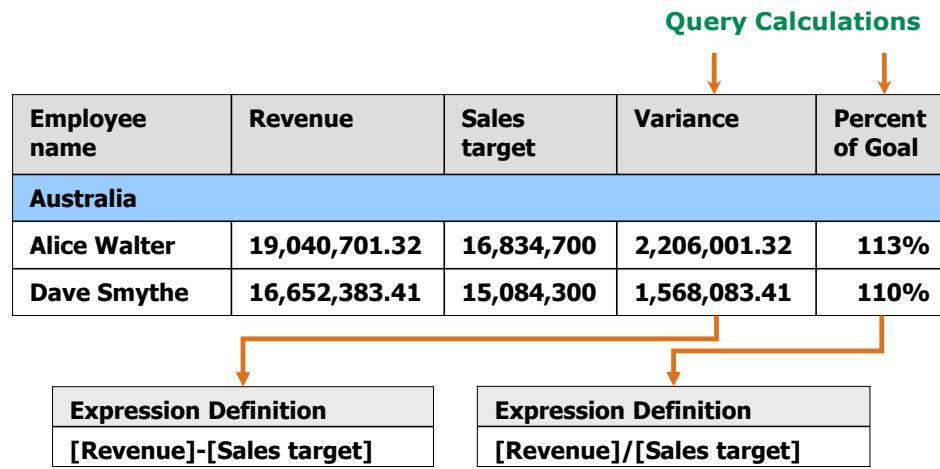
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## Unit objectives

- Create calculations based on data in the data source
- Add run-time information to reports
- Create expressions using functions

## Derive additional information from the data source



### Derive additional information from the data source

Create calculated columns based on existing items in the model using query calculations.

Calculations can be added to a list, crosstab, or chart, as well as to the body, headers, and footers.

Including calculated data items can help provide further insight into your data.

Create a calculated column to make a report more meaningful by deriving additional information from the data source. For example, you create an invoice report, and you want to see the total sale amount for each product ordered. Create a calculated column that multiplies the product price by the quantity ordered.

If an expression is used in multiple reports, or used by different report authors, ask your modeler to create the expression as a standalone object in the model and include it in the relevant package.

## Add run-time information to your report

**2010-First Quarter Sales Figures**

Report run date: <%AsOfDate ()%>

Date	Product line	Revenue	Planned revenue
<Date>	<Product line>	<Revenue>	<Planned revenue>
<Date>	<Product line>	<Revenue>	<Planned revenue>
<Date>	<Product line>	<Revenue>	<Planned revenue>

Layout calculation returns the run date for this report

Extend reports using calculations

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### Add run-time information to your report

Use a layout calculation to add runtime information to your report.

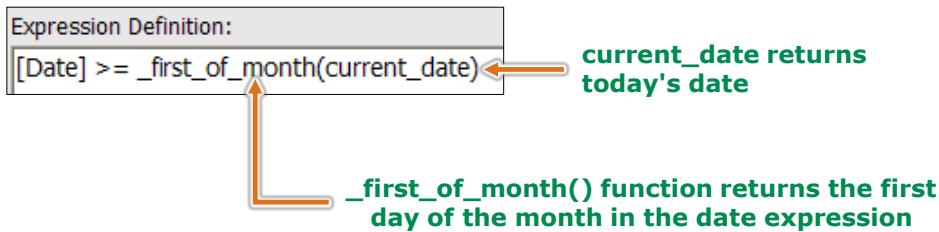
Layout calculations can include run-time information such as current date, current time, and user name.

You can create a query or layout calculation by inserting a calculation in to your report and then writing the expression in the Expression Editor.

To build the expression use the:

- **Source** tab to find all query items available from the package.
- **Data Items** tab to find the query items in your current query.
- **Queries** tab to find the query items in other queries.
- **Functions** tab to find operators, summaries, constants, constructs, and other functions used to manipulate your data.
- **Parameters** tab to find parameters used for prompts within the report.
- **Macros** tab to find macro functions and session parameters.

## Add Date/Time functions to your report



### Add Date/Time functions to your report

Use date and time functions in calculations and filters to query on specific dates and times in your report.

Date/Time functions can be used to build dates, or to filter the report for specific dates.

A useful date/time function is the extract() function which returns an integer representing the value of datepart (year, month, day, hour, minute, second) in your datetime expression.

Date/Time functions can be found under the Business Date/Time Functions folder, Vendor Specific Functions folder or the Common Functions folder. If you are going to use vendor specific functions, ensure that they are specific to the database that is currently being queried.

Not all data sources support functions the same way. The data modeler can set a quality of service indicator (icon appearing beside some functions) on functions to give a visual clue about the behavior of the functions. Report authors can use the quality of service indicators to determine which functions to use in a report. The quality of service indicators are:

- (**X**) not available -This function is not available for any data sources in the package.
- (**!!**) limited availability -The function is not available for some data sources in the package.
- (**!**) poor performance -The function is available for all data sources in the package but may have poor performance in some data sources.
- (**no symbol**) unconstrained -The function is available for all data sources.

## Add string functions to your report

- Use string functions in calculations and filters in your report to manipulate text data.

Expression Definition:  
trim(TRAILING ' ',[Product line])

Trim() function being used to remove spaces from the end of each product line.

### *Add string functions to your report*

Use string functions in calculations and filters in your report to manipulate text data..

Some examples of string functions include:

- [substring\(\)](#) function to return a part of a string
- [trim\(\)](#) function removes specific characters from the beginning or end of a specific text data item
- [upper\(\)](#) function changes the text returned to be in uppercase
- [lower\(\)](#) function changes the text returned to be in lowercase

String functions can be found under the Common Functions folder, or Vendor Specific Functions folder. For the above slide, if the product line is 'Golf Equipment ' (with a space at the end) in the database, the report author would get unexpected results if they queried the database and was doing a comparison against 'Golf Equipment' (without a space at the end). This is a real world example where the trim() function should be used to remove trailing spaces before doing a comparison.

## Demonstration 1

Add calculations to a report

### 2010-First Quarter Sales Figures and Overall Calculated Percent of Goal

Report run date: Mar 4, 2016

Date	Product line	Revenue	Planned revenue	Percent of Goal
Jan 12, 2010	Camping Equipment	20,217,372.98	21,714,739.59	93%
Jan 12, 2010	Golf Equipment	9,141,599.89	9,815,894.17	93%
Jan 12, 2010	Outdoor Protection	2,263,380.47	2,393,032.12	95%
Jan 12, 2010	Personal Accessories	7,414,443.06	7,797,859.04	95%
Jan 13, 2010	Camping Equipment	5,000,710.6	5,350,515.31	93%
Jan 13, 2010	Golf Equipment	2,536,524.65	2,723,837.61	93%
Jan 13, 2010	Outdoor Protection	474,025.75	496,960.85	95%
Jan 13, 2010	Personal Accessories	3,477,197.59	3,586,395.95	97%

Extend reports using calculations

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*Demonstration 1: Add calculations to a report*

## Demonstration 1: Add calculations to a report

### Purpose:

You have been asked to create a report that will return revenue and planned revenue for product lines for January 2010. In addition to looking at actual revenue versus planned revenue, users want to see a percentage for how much of the planned revenue was met. The report should also display the date that the report is run.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content \Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the List and include a calculated column for percent of goal

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a new **List** object to the report.
3. From the **Source** tab, add the following query items to the List object:
  - Time: **Date**
  - Products: **Product line**
  - Sales fact: **Revenue, Planned revenue**

Date	Product line	Revenue	Planned revenue
<Date>	<Product line>	<Revenue>	<Planned revenue>
<Date>	<Product line>	<Revenue>	<Planned revenue>
<Date>	<Product line>	<Revenue>	<Planned revenue>

4. From the **Toolbox**, expand **TEXTUAL**, and then drag a **Query calculation** to make it the last column.  
The Data item expression dialog box appears.
5. In the **Name** field, type **Percent of Goal**, and then create and validate the following expression:  
**[Revenue]/[Planned revenue]**  
Hint: Drag **Revenue** and **Planned revenue** from the **Data Items** tab.
6. Click **OK**.

This column will show the percentage of revenue achieved for each product line on each day.

## Task 2. Add a detail filter to filter dates

1. On the Toolbar, click **Filters > Edit Filters**, and then click **Add**.
2. Select **Advanced**, and then **OK**.
3. Create and validate the following expression:

**[Date] between \_first\_of\_month(2010-01-01) and \_last\_of\_month  
(2010-03-31)**

Hint: Drag **Date** from the **Data items** tab. Drag **between** from the **Operators** folder in the **Functions** tab. And drag **\_first\_of\_month** and **\_last\_of\_month** from the **Functions** tab, from the **Business Date/Time Functions** folder.

Data items selected from the Source tab will be calculated and summarized after aggregation, whereas data items selected from the Data Items tab will be calculated and summarized before aggregation.

This filter will return dates between January 1, 2010 and March 31, 2010 (First quarter of 2010). The **\_first\_of\_month()** function returns the first day of the month in the date expression, while the **\_last\_of\_month()** function returns the last day of the month in the date expression. You can use any date for the expression as long as it's in the proper format. Make sure that there is a space between each function.

4. Click **OK** to close the expression dialog box.
5. Click **OK** to close the Filters dialog box.

## Task 3. Format the data in the List

1. Click the **<Date>** List column body.
2. On the Toolbar, click **Sort > Edit Layout Sorting**, and sort by **Date** then **Product line** by dragging them from Data items pane, then click **OK**.

Data items:		Groups:
Date	Groups	
Product line	Overall	
Revenue		
Planned revenue		
Percent of Goal	Detail Sort List	
Calculated(Percent of Goal)	Date	

3. Click the **<Percent of Goal>** List column body, then on the Toolbar click **Summarize**, and then click **Calculated**

Date	Product line	Revenue	Planned revenue	Percent of Goal
<Date>	<Product line>	<Revenue>	<Planned revenue>	<Percent of Goal>
<Date>	<Product line>	<Revenue>	<Planned revenue>	<Percent of Goal>
<Date>	<Product line>	<Revenue>	<Planned revenue>	<Percent of Goal>
<b>Overall - Calculated</b>				<b>&lt;Calculated(Percent of Goal)&gt;</b>

Calculated is applied if the data item expression:

- contains a summary function
  - is an 'if then else' or 'case' expression that contains a reference to at least a modeled measure in its condition
  - contains a reference to a model calculation or to a measure that has the Detail aggregation property set to a value other than Unsupported
  - contains a reference to at least one data item that has the Summary aggregation property set to a value other than None
4. Click the **<Percent of Goal>** List column body, and Ctrl-click the **<Calculated(Percent of Goal)>** footer.
  5. From the Toolbar, click **Data format** .
  6. In the **Format type** drop-down list, select **Percent**, and then click **OK**.

## Task 4. Add run-time information to the report

You want to display the run date of the report under the title of the report.

1. To add the page header, click anywhere in the work area around the list, then from the toolbar click **More > Headers & footers > Page header & footer**, check **Header**, and click **OK**.
2. In the page header, click **Add** , then click **Table** , with 1 column and 2 rows, and click **OK**.
3. In the top cell, click **Add** , then click **Text item** . Type **2010-First Quarter Sales Figures and Overall Calculated Percent of Goal**, and click **OK**.
4. Click the Text item, and from the toolbar, click **Font**, and set size to **14pt**.
5. Add a **Text item** into the bottom table cell, type **Report run date:**, press the spacebar, and then click **OK**.
6. From the **Toolbox**, under **TEXTUAL**, drag a **Layout calculation** to the right of the text item.
7. Create and validate the following expression:  
**AsOfDate()**  
Hint: Drag AsOfDate from the Report Functions folder in the Functions tab.
8. Click **OK**.

9. On the Application bar, click **Run options** , then click **Run HTML**.  
A section of the results appears as follows:

2010-First Quarter Sales Figures and Overall Calculated Percent of Goal				
Report run date: Mar 4, 2016				
Date	Product line	Revenue	Planned revenue	Percent of Goal
Jan 12, 2010	Camping Equipment	20,217,372.98	21,714,739.59	93%
Jan 12, 2010	Golf Equipment	9,141,599.89	9,815,894.17	93%
Jan 12, 2010	Outdoor Protection	2,263,380.47	2,393,032.12	95%
Jan 12, 2010	Personal Accessories	7,414,443.06	7,797,859.04	95%
Jan 13, 2010	Camping Equipment	5,000,710.6	5,350,515.31	93%
Jan 13, 2010	Golf Equipment	2,536,524.65	2,723,837.61	93%
Jan 13, 2010	Outdoor Protection	474,025.75	496,960.85	95%
Jan 13, 2010	Personal Accessories	3,477,197.59	3,586,395.95	97%

10. Click **Bottom** to see that the report includes all of the months of the first quarter, and the overall calculated percent of goal.  
11. Close the rendered report tab.

## Task 5. Overwrite query expression

- Double-click the **<Percent of Goal>** List column body to open the Expression editor dialog.
- Using query items from the **Source** tab, overwrite the current expression as follows: **[Sales (query)].[Sales fact].[Revenue] / [Sales (query)].[Sales fact].[Planned revenue]**  
Hint: Drag the data items from the Source tab.
- Validate**, and then click **OK**.
- On the Application bar, click **Run options** , then click **Run HTML**.

A section of the results appears as follows:

Date	Product line	Revenue	Planned revenue	Percent of Goal
Jan 12, 2010	Camping Equipment	20,217,372.98	21,714,739.59	66,858%
Jan 12, 2010	Golf Equipment	9,141,599.89	9,815,894.17	24,356%
Jan 12, 2010	Outdoor Protection	2,263,380.47	2,393,032.12	25,745%
Jan 12, 2010	Personal Accessories	7,414,443.06	7,797,859.04	80,525%
Jan 13, 2010	Camping Equipment	5,000,710.6	5,350,515.31	20,130%
Jan 13, 2010	Golf Equipment	2,536,524.65	2,723,837.61	7,577%
Jan 13, 2010	Outdoor Protection	474,025.75	496,960.85	6,954%

The Percent of Goal calculation does not match because the timing of the aggregation is different.

5. Close the rendered report tab.
6. Click <Percent of Goal> List column body.
7. On the Application bar, click **Show properties**  to open the Properties pane.
8. In the Properties pane, under the DATA ITEM section, change the **Detail aggregation** function to **Calculated**.
9. On the Application bar, click **Run options** , then click **Run HTML**.

Now the expression returns the correct results.

### 2010-First Quarter Sales Figures and Overall Calculated Percent of Goal

Report run date: Dec 10, 2017

Date	Product line	Revenue	Planned revenue	Percent of Goal
Jan 12, 2010	Camping Equipment	20,217,372.98	21,714,739.59	93%
Jan 12, 2010	Golf Equipment	9,141,599.89	9,815,894.17	93%
Jan 12, 2010	Outdoor Protection	2,263,380.47	2,393,032.12	95%
Jan 12, 2010	Personal Accessories	7,414,443.06	7,797,859.04	95%
Jan 13, 2010	Camping Equipment	5,000,710.6	5,350,515.31	93%
Jan 13, 2010	Golf Equipment	2,536,524.65	2,723,837.61	93%

10. Close the rendered report tab.
11. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.
12. Leave the IBM Cognos Analytics portal open for the next demonstration.

#### Results:

You created a report to show revenue and planned revenue and the percentage of planned revenue that was achieved for product lines for the first quarter of 2010. You also included the date when the report was run.

## Display prompt selections in report titles

- You should display information in the report title that describes the prompt option a user selects.



Report title: if the user selects to view only data for the Asia Pacific sales region

**Quantity Sold in Asia Pacific**

Report title: if the user does not select a prompt option and therefore views data for all sales regions

**Quantity Sold in All Sales Regions**

### *Display prompt selections in report titles*

Usually, you will display the selected prompt option in the report title; to remind the user about selected options that resulted in this report output.

Add a layout calculation to the report title that returns a different value depending on the prompt option a user selects.

## Demonstration 2

Display prompt selections in the report title

<b>Quantity Sold in Asia Pacific</b>					
Quantity		2010	2011	2012	2013
PERSONAL ACCESSORIES	Binoculars	43,340	45,626	62,144	49,788
	Eyewear	22,252	50,760	79,760	69,607
	Knives	396,185	275,620	388,653	307,093
	Navigation	117,074	84,358	107,223	113,107
	Watches	33,936	46,015	60,211	44,995
	<b>PERSONAL ACCESSORIES</b>	<b>612,787</b>	<b>502,379</b>	<b>697,991</b>	<b>584,590</b>
MOUNTAINEERING EQUIPMENT	Climbing Accessories		410,155	526,482	573,585
	Rope		30,530	45,981	38,024
	Safety		85,114	104,518	87,855
	Tools		187,255	245,019	236,781
	<b>MOUNTAINEERING EQUIPMENT</b>	<b>713,054</b>	<b>922,000</b>	<b>936,245</b>	

## Demonstration 2: Display prompt selections in the report title

### Purpose:

You have been asked for a report that displays the quantity of products sold for each order year. You also need to display all product lines in uppercase. The report should contain an optional prompt that lets users view data by sales region. Add a report title that indicates which sales region users select in the prompt. It should also indicate if they do not select a region as well. You will use a layout calculation to display the report title.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the Crosstab and edit the expression to return product line values in uppercase

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **Crosstab** object to report page.
3. From the **Source** tab, add the following query items to the new crosstab report object:
  - **Rows** area:
    - Products: **Product line**, **Product type** (nested to the right of Product line)
  - **Columns** area:
    - Time: **Year**
  - **Measures** area:
    - Sales fact: **Quantity**
4. Click the **<#Year#>** crosstab node member, then from the Toolbar, click **Sort > Ascending**.

Quantity		<#Year#>	<#Year#>
<#Product line#>	<#Product type#>	<#1234#>	<#1234#>
<#Product line#>	<#Product type#>	<#1234#>	<#1234#>
	<#Product type#>	<#1234#>	<#1234#>
<#Product line#>	<#Product type#>	<#1234#>	<#1234#>
	<#Product type#>	<#1234#>	<#1234#>

5. Click the <**#Product type#>** crosstab node member, then from the Toolbar, click **Summarize**, and then click **Total**.
6. On the Crosstab, click **Total**.
7. On the Application bar, click **Show properties**  to open the Properties pane.
8. In the **Properties** pane, under TEXT SOURCE, change **Source type** to **Data item value**.
9. In the **Properties** pane, under TEXT SOURCE, change **Data item value** to **Product line**.
10. In the Crosstab, double-click <**#Product line#>**.
11. Update and validate the existing expression as follows:  
**upper([Sales (query)].[Products].[Product line])**
12. Click **OK**.

## Task 2. Add an optional parameter

You will now add an optional filter containing a parameter that lets users specify the sales region for which they want to view data.

1. Select the entire Crosstab, then on the Toolbar, click **Filters** > **Edit Filters**.
2. In the **Detail Filters** tab, click **Add**, select **Advanced**, and then click **OK**.
3. From the **Available Components** pane, expand **Sales and Marketing (query)**, **Sales (query)**, and then expand **Employee by region**.
4. Create and validate the following expression (validate using Americas):  
**[Sales (query)].[Employee by region].[Branch region]=?Region?**
5. Click **OK** to close the validation dialog box, and then **OK** to close the **Detail filter expression** dialog box.
6. In the **Filters** dialog, select the filter you added, click **Optional**, then click **OK**. You will run this report to test the prompt.
7. On the Application bar, click **Run options** , then click **Run HTML**.
8. At the prompt, select **Asia Pacific**, and then click **OK**.

A section of the results appears as follows:

Quantity		2010	2011	2012	2013
PERSONAL ACCESSORIES	Binoculars	43,340	45,626	62,144	49,788
	Eyewear	22,252	50,760	79,760	69,607
	Knives	396,185	275,620	388,653	307,093
	Navigation	117,074	84,358	107,223	113,107
	Watches	33,936	46,015	60,211	44,995
	PERSONAL ACCESSORIES	612,787	502,379	697,991	584,590
MOUNTAINEERING EQUIPMENT	Climbing Accessories		410,155	526,482	573,585
	Rope		30,530	45,981	38,024
	Safety		85,114	104,518	87,855
	Tools		187,255	245,019	236,781
	MOUNTAINEERING EQUIPMENT	713,054	922,000	936,245	

The report displays data only for the Asia Pacific region.

Notice that the Total line caption now reflects the product line that it summarizes and that all Product line titles are uppercase.

- Close the rendered report tab.

### Task 3. Display the parameter value in the report title

To give this report some context, you want the region selected to appear in the report title. If no region is selected, you want the report title to indicate that the data displayed represents quantity sold in all regions.

- To add the page header, click anywhere in the work area around the crosstab, then from the toolbar click **More > Headers & footers > Page header & footer**, check **Header**, and click **OK**.
- In the page header, click **Add** , then click **Text item** .
- Type **Quantity Sold in**, press the spacebar, and then click **OK**.  
You will create a layout calculation to display the prompt option selected in the report title.
- From the **Toolbox**, expand **TEXTUAL**, and then drag a **Layout calculation** object to the end of the report title.  
You will create an expression that specifies that if a parameter value is selected, the layout calculation should show the display value for the selected parameter value. Otherwise, the layout calculation should show All Regions.

5. Create and validate the following expression:

```
if(ParamDisplayValue('Region')<> ' ') then (ParamDisplayValue('Region'))  
else ('All Regions')
```

Hint: Drag ‘if then else’ from the Functions tab, under the Constructs folder. And Drag the ‘Region’ parameter from the Parameter tab  to get ParamDisplayValue('Region'). Note that there is a blank space within the single quotation marks after the <>. Complete the expression by typing in “else ('All Regions') ”

The empty quotes represent no display value. This will be the case when the prompt is optional and the user does not select anything.

6. Click **OK** to close the expression editor dialog box.

You will format the layout calculation text to look like the report title text.

7. Click an empty space in the page header, then from the Toolbar click **Font**.

8. Set **Family** to **Arial Black**, **Size** to **16pt**, and **Weight** to **Bold**, then click **OK**.

## Task 4. Test the prompt

1. On the Application bar, click **Run options** , then click **Run HTML**.
2. On the prompt page, ensure that **Branch region** is selected, and then click **OK**. A section of the results appears as follows:

<b>Quantity Sold in All Regions</b>		2010	2011	2012	2013
		Quantity			
PERSONAL ACCESSORIES	Binoculars	242,233	260,220	328,175	244,459
	Eyewear	4,066,410	5,180,407	6,354,258	4,710,321
	Knives	1,727,090	1,639,228	2,183,581	1,679,415
	Navigation	495,710	404,836	574,517	517,650
	Watches	1,040,896	1,082,666	1,265,484	910,149
	<b>PERSONAL ACCESSORIES</b>	<b>7,572,339</b>	<b>8,567,357</b>	<b>10,706,015</b>	<b>8,061,994</b>
MOUNTAINEERING EQUIPMENT	Climbing Accessories		1,571,481	2,101,101	2,177,669
	Rope		105,488	169,221	143,851
	Safety		311,141	437,813	386,240
	Tools		656,603	992,127	847,356
	<b>MOUNTAINEERING EQUIPMENT</b>		<b>2,644,713</b>	<b>3,700,262</b>	<b>3,555,116</b>

The report title explains that this report contains data about quantity sold in all regions.

3. Close the rendered report tab.
4. On the Application bar, click **Run options** , then click **Run HTML**.
5. On the prompt page, select **Asia Pacific**, and then click **OK**.

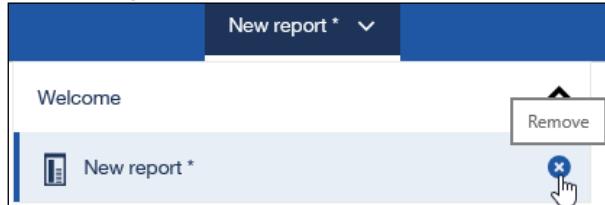
A section of the results appears as follows:

### Quantity Sold in Asia Pacific

Quantity		2010	2011	2012	2013
PERSONAL ACCESSORIES	Binoculars	43,340	45,626	62,144	49,788
	Eyewear	22,252	50,760	79,760	69,607
	Knives	396,185	275,620	388,653	307,093
	Navigation	117,074	84,358	107,223	113,107
	Watches	33,936	46,015	60,211	44,995
	PERSONAL ACCESSORIES	612,787	502,379	697,991	584,590
MOUNTAINEERING EQUIPMENT	Climbing Accessories		410,155	526,482	573,585
	Rope		30,530	45,981	38,024
	Safety		85,114	104,518	87,855
	Tools		187,255	245,019	236,781
	MOUNTAINEERING EQUIPMENT	713,054	922,000	936,245	

The report title explains that this report contains data about quantity sold in Asia Pacific.

6. Close the rendered report tab.
7. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



8. Leave the IBM Cognos Analytics portal open for the next exercise.

#### Results:

You created a report that displays the quantity sold for products by order year. You also displayed all product lines in uppercase. Users have the option to select a region for which to view data. To add context to the report, the user's prompt selection appears in the report title, by using a layout calculation.

## Unit summary

- Create calculations based on data in the data source
- Add run-time information to reports
- Create expressions using functions

## **Unit 8     Use additional report building techniques**

IBM Training



### **Use additional report building techniques**

IBM Cognos Analytics (v11.0)

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## Unit objectives

- Enhance report design with report objects
- Reuse objects within the same report
- Share layout components among separate reports
- Discuss report templates
- Handle reports with no available data

Use additional report building techniques

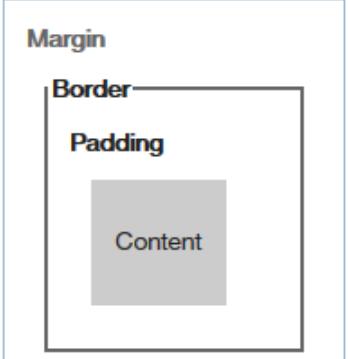
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*Unit objectives*

IBM Training 

## Enhance report design

- Use padding, margins, and blocks to create white spaces
- set properties on the highest level item
- avoid fixed size objects



A diagram showing a nested structure of report components. At the outermost level is the **Margin**, represented by a light gray border. Inside the margin is the **Border**, represented by a dark blue border. Inside the border is the **Padding**, represented by a thin white space. The innermost part is the **Content**, represented by a solid gray square.

**40%**



A screenshot of a report titled "Gross Profit by Product". The report has a dark blue border and a white content area. Below the report, three callout boxes point to its components: "Padding" points to the white space inside the border; "Border" points to the dark blue border itself; and "Margin" points to the outermost light gray border.

Use additional report building techniques 

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Reports may have headers and footers. Determine what objects to use based on the kind of information you want to display, and how it should appear. If information applies to the entire report and should appear on every page, place it in the header or footer.

Properties applied to an object will also be applied to any child items (this is called: Property Inheritance). Therefore, it is best to set styling properties at the highest level.

Use the Select Ancestor button on the title bar of Properties pane to help determine the level at which to apply settings.

Applying properties at the highest level saves time and effort. For example, if you set the font type for a list object then all items in the list or added to the list will inherit the same font.

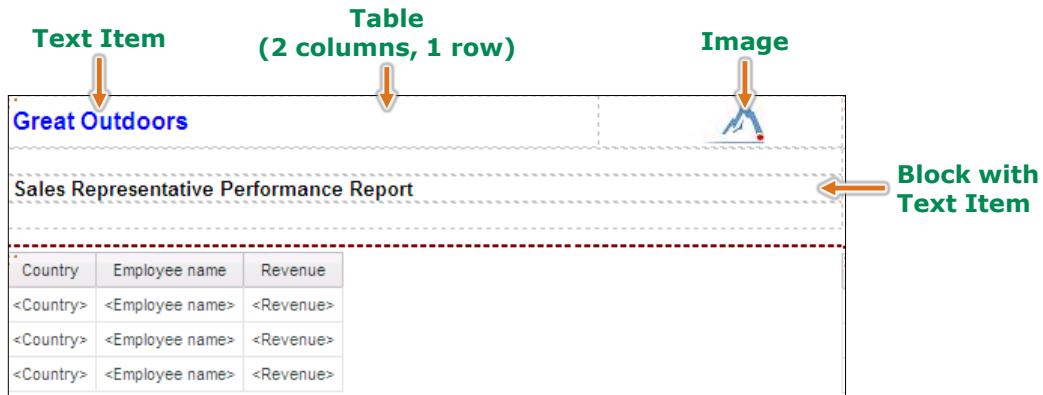
Avoid fixed size objects because they are rigid (not flexible) and may not work with your overall design.

If objects have borders, use margins to make the objects look spaced apart.

An empty block does not add space between objects. The block must contain an object, or you must specify the padding of the block to use the block for spacing.

## Add objects

- Add, format, and organize objects to enhance the appearance of reports.



Use additional report building techniques

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### Add objects

You can format items and objects to change their size, shape, location, and behavior according to your needs.

You can use text items to communicate relevant information about the report to its users.

You can add a background image to a data frame object like a list or crosstab, a cell in a table, or to the entire page. It is important to be aware that a background image can obscure the data in the report to some degree.

## Organize objects using tables

- Add a table to a page to hold and organize objects such as titles, list, images, and charts.



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### Organize objects using tables

On report pages you add data frame objects (lists, crosstabs, charts, etc.) along with other objects. Tables are used to organize objects, such as text beside an image.

You need tables to control where objects are placed. Unlike some graphics software, you cannot place objects anywhere on the work area.

## Break a report into sections

### Grouping

Product line	Year	Revenue
<b>Brazil</b>		
Camping Equipment	2010	9,494,552.59
	2011	11,613,962.19
Personal Accessories	2010	2,541,678.59
	2011	2,684,077.49
<b>Canada</b>		
Camping Equipment	2010	22,512,613.08
	2011	25,194,281.56
Personal Accessories	2010	6,181,816.42
	2011	5,816,967.63

### Sectioning

#### Country: Brazil

Product line	Year	Revenue
Camping Equipment	2011	11,613,962.19
	2010	9,494,552.59
Personal Accessories	2011	2,684,077.49
	2010	2,541,678.59

#### Country: Canada

Product line	Year	Revenue
Camping Equipment	2010	22,512,613.08
	2011	25,194,281.56
Personal Accessories	2011	5,816,967.63
	2010	6,181,816.42

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### Break a report into sections

Create sections in a report to show grouped information in separate report objects. This makes information easier to locate, and lets you view data for one group of items at a time.

Creating sections is similar to grouping on a query item. The difference is that section headers and footers appear outside the list, crosstab, or chart.

Create separate lists, crosstabs, or charts for specific query items by creating a section header.

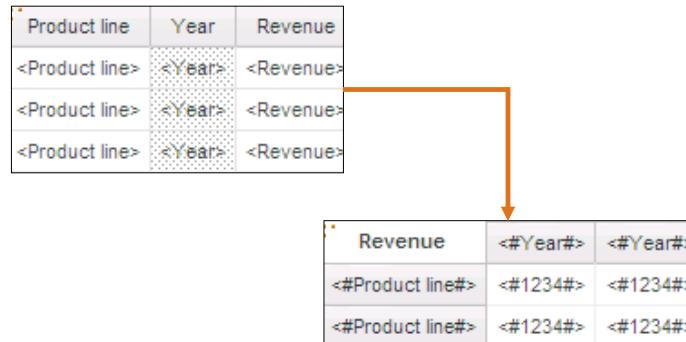
When you run the report, separate sections appear for each value.

To remove section headers or footers, click the header or footer, and then from the Structure menu, click List Headers & Footers, clear the appropriate checkboxes, then the item will disappear from the report.

## Convert a list to a crosstab

- Condense a report and view data from a different perspective by converting a List to a Crosstab.

Convert a list object to a crosstab object



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### Convert a list to a crosstab

When you convert a List to a Crosstab, the List columns you select become columns and nested columns in the Crosstab, and the unselected columns become rows and nested rows.

If you have one measure, it becomes the cells of the Crosstab. If you have more than one measure, then the measures will appear as columns.

## Reuse objects within the same report

- Reuse objects using the Layout Component Reference
- You can change the contents of a reused object by overriding the child components and replacing them with other objects.



Use additional report building techniques

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### Reuse objects within the same report

To reuse an object, it must have a name.

You can reuse objects from the same report, or from another report.

If you reuse an object that contains other (child) objects, you can replace (override) the child objects with different objects to customize your report, but these child objects must have names. You can override (replace) an object with another object of a different type, e.g. replacing an Image with a Text item.

## Demonstration 1

Reuse objects within the same report

**Product Line Sales by Year**

Country: <input type="button" value="Country">

Revenue	<#Year#>	Summary
<#Product line#>	<#1234#>	<#1234#>
Summary	<#1234#>	<#1234#>

Please contact Sales Manager for more details

Use additional report building techniques

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*Demonstration 1: Reuse objects within the same report*

## Demonstration 1: Reuse objects within the same report

### Purpose:

You have been asked to add some descriptive information to a sectioned report. The report must include a title on each page describing the contents of the report, and information about whom to contact if users have any questions.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Add a List to a blank page.

1. Create a new Blank report using the **GO data warehouse (query)** package.
2. On the work area, click **Add** , and then click **List** .
3. Click **OK** to accept the **Object and query name** defaults.
4. From the **Data/Source** tab, add the following query items to the new List object:
  - Employee by region: **Country**
  - Products: **Product line**
  - Time: **Year**
  - Sales fact: **Revenue**
5. Click the **<Revenue>** List column body, then on the Toolbar, click **Summarize > Total**.

Country	Product line	Year	Revenue
<Country>	<Product line>	<Year>	<Revenue>
<Country>	<Product line>	<Year>	<Revenue>
<Country>	<Product line>	<Year>	<Revenue>
Overall - Total			<Total(Revenue)>

### Task 2. Section data and convert to a Crosstab

1. Click the **<Country>** List column body, then on the Toolbar, click **Section / unsection**  >  **Section / unsection**.  
There is now a separate List displayed for each country.
2. Run the report in **HTML**.

The report is sectioned at the Country level; however, it is difficult to interpret.

Country: Australia		
Product line	Year	Revenue
Camping Equipment	2011	9,752,591.01
Golf Equipment	2011	4,094,643.54
Mountaineering Equipment	2011	2,691,279.15
Outdoor Protection	2011	600,956.77
Personal Accessories	2011	2,131,381.68
Camping Equipment	2012	19,175,957.2
Golf Equipment	2012	8,482,438.67
Mountaineering Equipment	2012	5,861,253.12
Outdoor Protection	2012	367,636.38
Personal Accessories	2012	5,081,517.25
Camping Equipment	2013	13,007,383.98
Golf Equipment	2013	6,502,474.22
Mountaineering Equipment	2013	5,380,587.79
Outdoor Protection	2013	171,750.41
Personal Accessories	2013	4,261,477.85

Country: Austria		
Product line	Year	Revenue
Camping Equipment	2010	7,431,795.17
Golf Equipment	2010	3,411,617.12
Outdoor Protection	2010	824,026.84
Personal Accessories	2010	2,198,565.39
Camping Equipment	2011	9,163,419.93

3. Close the rendered report tab.
4. Click the <Year> List column body, then on the Toolbar, click **More > Pivot List to Crosstab.**

5. Run the report in **HTML**.

A section of the results appears as follows:

Country: Australia					
Revenue	2011	2012	2013	Summary	
Camping Equipment	9,752,591.01	19,175,957.2	13,007,383.98	41,935,932.19	
Golf Equipment	4,094,643.54	8,482,438.67	6,502,474.22	19,079,556.43	
Mountaineering Equipment	2,691,279.15	5,861,253.12	5,380,587.79	13,933,120.06	
Outdoor Protection	600,956.77	367,636.38	171,750.41	1,140,343.56	
Personal Accessories	2,131,381.68	5,081,517.25	4,261,477.85	11,474,376.78	
<b>Summary</b>	<b>19,270,852.15</b>	<b>38,968,802.62</b>	<b>29,323,674.25</b>	<b>87,563,329.02</b>	

Country: Austria					
Revenue	2010	2011	2012	2013	Summary
Camping Equipment	7,431,795.17	9,163,419.93	13,471,100.17	9,731,648.11	39,797,963.38
Golf Equipment	3,411,617.12	4,465,999.47	6,234,620.98	5,009,903.66	19,122,141.23
Outdoor Protection	824,026.84	640,221.64	294,954.55	130,312.39	1,889,515.42
Personal Accessories	2,198,565.39	2,458,706.23	3,754,115.48	3,182,909.11	11,594,296.21
Mountaineering Equipment		2,615,339.21	4,594,176.48	3,926,993.16	11,136,508.85
<b>Summary</b>	<b>13,866,004.52</b>	<b>19,343,686.48</b>	<b>28,348,967.66</b>	<b>21,981,766.43</b>	<b>83,540,425.09</b>

Because you selected Year before you converted the List into a Crosstab, it now appears in columns. Product line appears on rows, and Revenue, because it can be aggregated, appears as measures on the report. You can now interpret the data more quickly.

6. Close the rendered report tab.

### Task 3. Add a header and footer, and add objects to the header

1. Click below the Crosstab to select the Page body.
2. From the Toolbar, click **Headers & footers** > **Page header & footer**, select the **Header** and **Footer** checkboxes, and then click **OK**.
3. In the Page header, click **Add** , then click **Block**.
4. From the **Toolbox**, drag a **Text Item** onto the **Block** object in the **Page header**.
5. In the **Text** field, type **Product Line Sales by Year**, and then click **OK**.

### Task 4. Apply style to the header block and text

You will format the objects that you added to the header.

1. With the Text item still selected, from Toolbar, click **Font**, and change the **Family** to **Arial Black**, **Size** to **16pt**, and **Foreground Color** to **White**.
2. Click the Page header block, then on the Toolbar, click the **Background color options** arrow  next to , click the **Basic colors** tab, and then click **Teal**.

The result appears as follows:

Revenue	<#Year#>	Total
<#Product line#>	<#1234#>	<#1234#>
<b>Total</b>	<#1234#>	<#1234#>

The report contains a header with the title that you specified. It has been formatted according to the properties you have set.

You now want to reuse the objects that you created and formatted to avoid repeating steps in building the footer.

## Task 5. Specify unique object names

1. In the Application bar, click **Show properties**
2. Click the header block, then in the **Properties** pane, under MISCELLANEOUS, in the **Name** property, type **Title Block**, and then press **Enter**.
3. Click the header text, in the Properties pane, under MISCELLANEOUS, in the **Name** property, type **Title Text**, and then press **Enter**.

If you try to assign a name that is not unique, Reporting displays a warning message informing you that the name must be unique.

Hint: If you select an element of the report, such as a column in a list, and want to deselect it, press **Esc** on your keyboard.

## Task 6. Reuse the header block and change the text in the footer

1. From the Toolbox, expand the **ADVANCED** section, drag a **Layout component reference** object into the footer.

To reuse an object in the footer, you need to specify the object to be referenced. You can choose from the two objects to which you have previously assigned names, as well as the list containing the crosstab. In this case, you will select the block object because it also contains the text item object.

2. Under **Available components to reference**, click **Title Block**, and then click **OK**.

The footer now contains the same object and formatting as the header.

3. Click the text in the footer.

In the Properties pane you can only select the layout component reference object and not the Block nor the Text item objects individually. This is because it is referencing the Block object in the header. Remember, the Block object in the header is where the Text item is defined, it is not defined in the footer.

You want to change the text in the footer to include contact information.

4. In the Properties pane, click **Overrides**, and then click the **ellipsis** .
5. In the **Overrides** dialog box, select the **Title Text** checkbox, and then click **OK**.  
The layout component reference object in the footer no longer contains text.  
Only the referenced block object remains.
6. Drag a **Text item** object into the component override area of the footer block, type **Please contact Sales Manager for more details**, and then click **OK**.
7. Click the text item object in the footer, and then change the font to **12 pt, Bold**, and **Foreground color of White**.
8. Run the report in **HTML**, and then click **Bottom** to view the footer.

A section of the results appears as follows:

Country: United States					
Revenue	2010	2011	2012	2013	Summary
Camping Equipment	60,143,498.08	67,317,788.98	79,318,144.45	56,492,359.55	263,271,791.06
Golf Equipment	27,818,341.51	27,136,551.74	36,462,554.7	27,985,723.39	119,403,171.34
Outdoor Protection	6,540,425.46	3,942,571.55	1,668,409.49	719,154.19	12,870,560.69
Personal Accessories	16,332,709.27	15,719,103.65	21,964,680.23	18,508,851.48	72,525,344.63
Mountaineering Equipment		17,561,055.77	25,572,400.34	22,599,638.02	65,733,094.13
<b>Summary</b>	<b>110,834,974.32</b>	<b>131,677,071.69</b>	<b>164,986,189.21</b>	<b>126,305,726.63</b>	<b>533,803,961.85</b>

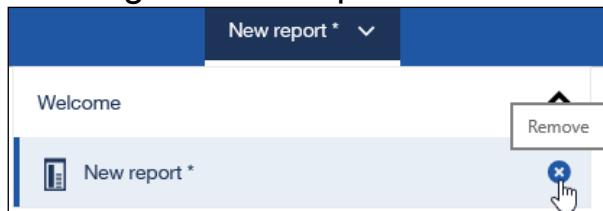
  

**Please contact Sales Manager for more details**

This is a simplified example of reusing report objects. This technique might be best for reusing an object with numerous format properties applied.

You can also reuse objects between different reports, this will be presented later in this unit.

9. Close the rendered report tab.
10. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



11. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You enhanced the Product Line Sales by Year report by adding a header and footer. To build the footer and to minimize your work, you reused objects from the header.

## Share layout components among separate reports

- In Reporting, you can reuse layout components in different reports.
- You can choose to update shared layout objects manually or automatically.
- Be sure to name each layout component you want to reuse in other reports.
- Create a report containing all the objects you want to reuse in different reports, and then use it as an object library.

[Use additional report building techniques](#)

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### *Share layout components among separate reports*

Instead of creating new layout components (such as page headers) for each report, you can create an object in one report and then reuse it in different reports. Reusing layout components saves you time and lets you apply standard company formatting to multiple reports.

By default, reused objects are automatically updated each time the report is run. This means that when you open or run a report containing a reused object, if the object has been changed in the source report, this change will reflect in your report.

If you want a reused object to be updated manually instead of automatically, change the Embed property of the Layout component reference from Reference to Copy.

When you reuse a layout object in a different report, you can override child objects within this object (such as a Text item in a page header object) if the child objects have been named in the source report.

Shared objects are stored in the layout component cache. The cache contains the definitions of the shared objects. When you open a report that contains Layout component reference objects, the report(s) containing the shared layout objects is opened and the definitions are copied into the Reporting cache. Object names cannot contain white spaces and must begin with a letter. When you override child objects, you can replace the child object with any other object, not just an object of the same type. For example, if the child object is a Text item, you can replace it with an Image.

## Demonstration 2

Reuse layout components in a different report

Quantity by Order Method		<%AsOfDate ()%>
Order method type	Quantity	
<Order method type>	<Quantity>	
<Order method type>	<Quantity>	
<Order method type>	<Quantity>	

Use additional report building techniques

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*Demonstration 2: Reuse layout components in a different report*

## Demonstration 2:

### Reuse layout components in a different report

#### Purpose:

To save time when creating new reports, you will create one report containing a standard page header that can be used in many. Next, you will create one report that will reuse this page header.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

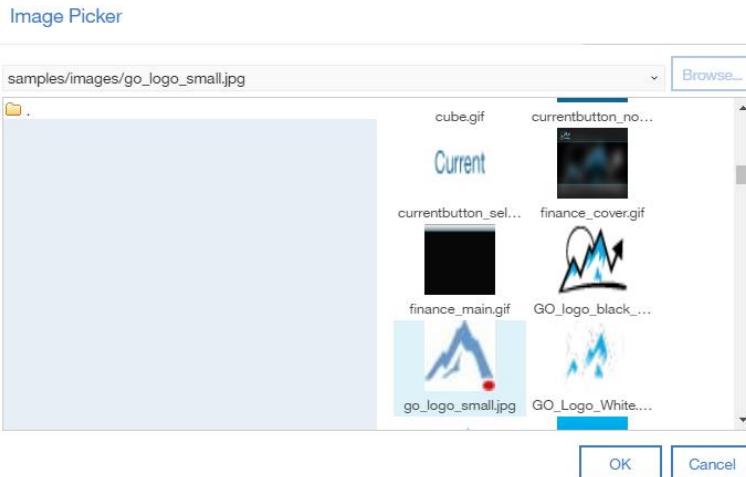
Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

#### Task 1. Create a report with a page header that can be reused in other reports

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. On the work area, click **Add** , and then click **Table**.
3. Create a table with **3 columns** and **1 row**.  
Because you want to reuse this table as a page header in other reports, you will name the table object.
4. In the Application bar, click **Show properties** .
5. In the Properties pane, under MISCELLANEOUS, in the **Name** property, type **StandardPageHeader**, and then press **Enter**.  
You want to add your company logo to the left side of the page header.
6. From the **Toolbox**, expand **LAYOUT**, and then drag an **Image** object to the left cell of the table.
7. Double-click the **Image** object.
8. In the **Image Picker** dialog, from the drop-down list, select **samples/images**.
9. In the images, scroll down and double-click **go\_logo\_small.jpg**.



10. Click the center cell of the table, then from the Toolbar, click **Font A**.
11. In the Font dialog, set **Family** to **Arial Black**, **Size** to **16pt**, and **Weight** to **Bold**, then click **OK**.  
You want to add a text item in the middle of the page header that can be used to add a report title.
12. In the center cell of the table, click **Add**, then click **Text item**, then click **OK** to close the **Text** dialog box without adding any text.  
You will not specify the text to be used yet, because this will be different for each report. You will name this text object so that it can be overridden when the page header is reused in other reports.
13. With the **Text Item** selected, in the Properties pane, under MISCELLANEOUS, set the **Name** property to: **ReportTitle**, then press **Enter**.

## Task 2. Add additional details to the page header, and save the report

You want to add date and time information to the report header.

1. In the right cell of the table, click **Add**, then click **Table**.
2. Set **Number of columns** to **1**, **Number of rows** to **2**, and then click **OK**.
3. From the **Toolbox**, from the **TEXTUAL** section, drag a **Layout calculation** to the first cell of the Table you added in the previous step.
4. In the **Report expression** dialog box, click the **Functions** tab, expand **Report Functions**, then drag **AsOfDate** to the **Expression Definition** pane.
5. Validate the expression, and then click **OK** to close the **Report expression** dialog box.  
You want to add a time stamp, to appear in the bottom-right corner of the page header.
6. From the **Toolbox**, drag another **Layout calculation** object to the bottom cell of the table you added previously.

7. Click the **Functions** tab, expand **Report Functions**, and then drag **AsOfTime** to the **Expression Definition** pane.
8. Validate the expression, and then click **OK** to close the **Report expression** dialog box.
9. From the Application bar, click **Save** .
10. Navigate to **My content**, in the **Save as** box type **Layout Library**, and then click **Save**.

### Task 3. Create a second report that reuses the standard page header

1. In the side bar, click **Home**  to return to the Welcome page.
2. Create a new **Blank** report using the **GO data warehouse (query)** package.
3. Click in the work area, then in the Toolbar, click **More ... > Headers & footers > Page header & footer**.
4. In the Page header & footer dialog, select **Header**, then click **OK**.
5. From **Toolbox**, expand **ADVANCED**, then drag a **Layout component reference** object to the page header.
6. In the Component reference dialog, select **Another report**, then click the **ellipsis** , and then navigate to **My Folders**.
7. Click **Layout Library**, and then click **Open**.
8. Under Available components to reference, click **StandardPageHeader**, then click **OK**.

The Table from the Layout Library report appears. You want to customize the report.

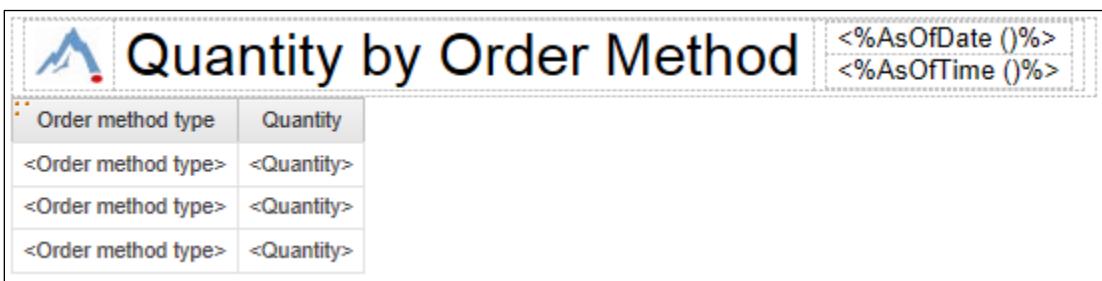


9. In the Application bar, click **Show properties** .
10. In the Properties pane, under **GENERAL**, double-click the **Overrides** property. The Overrides dialog box appears. Because you gave the report title text object a distinct name, you can now override its contents in the shared page header.
11. Select the **ReportTitle** checkbox, and then click **OK**.
12. From the **Toolbox**, drag a **Text Item** onto **Drop item to override component child** in the center cell of the header.
13. In the **Text** dialog box, type **Quantity by Order Method**, and then click **OK**.

### Task 4. Add data to the new report and format the report

1. In the Page body, click **Add** , then click **List** , then click **OK**.

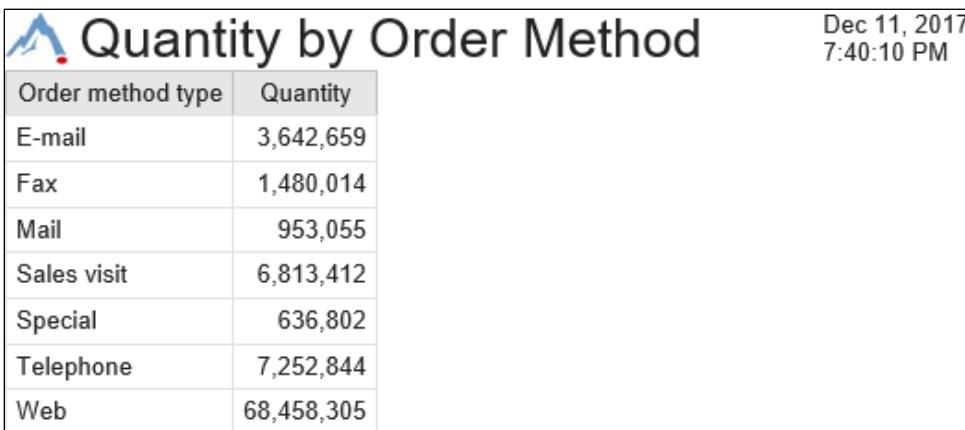
2. From **Data**  > **Source** tab, expand the **Sales and Marketing (query)** folder, and then expand the **Sales (query)** namespace.
3. Add the following query items to the List:
  - Order method: Order method type
  - Sales fact: Quantity



Quantity by Order Method		<%AsOfDate()%>	<%AsOfTime()%>
Order method type	Quantity		
<Order method type>	<Quantity>		
<Order method type>	<Quantity>		
<Order method type>	<Quantity>		

4. Save the report to the **My content** folder, as **Quantity by Order Method**.
5. Run the report in **HTML**.

The results appear as follows:



Quantity by Order Method		Dec 11, 2017 7:40:10 PM
Order method type	Quantity	
E-mail	3,642,659	
Fax	1,480,014	
Mail	953,055	
Sales visit	6,813,412	
Special	636,802	
Telephone	7,252,844	
Web	68,458,305	

The header you created in the Layout Library report displays the title that you added to this report.

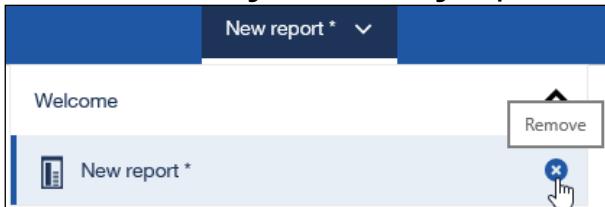
6. Close the rendered report tab.

## Task 5. Modify the shared page header and observe the results

1. In the **Page header** of the List report, click the **Layout component reference** object.

In the Properties pane, the Embed property is set to Reference. This means any changes made to the shared page header in the Layout Library source report will be automatically applied in this report. You will now modify the shared page header in the source report.

2. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action and return to the **Layout Library** report.



3. In the **Page header**, click `<%AsOfTime()%>`, and then press **Delete**.
  4. On the Application bar, click **Save**.
  5. In the side bar, click **Home**  to return to the Welcome page.
  6. Click **My content** , then right-click the **Quantity by Order Method**, then click **Edit report**.
- When the report is opened, you can see that changes in the **Library Report** have reflected automatically in your report, as seen in the top right corner.
7. Run the report in **HTML**.

The result appears as follows:

 <b>Quantity by Order Method</b>		Jan 8, 2018
Order method type	Quantity	
E-mail	3,642,659	
Fax	1,480,014	
Mail	953,055	
Sales visit	6,813,412	
Special	636,802	
Telephone	7,252,844	
Web	68,458,305	

8. Close the rendered report tab.

## Task 6. Manually update changes to the shared page header

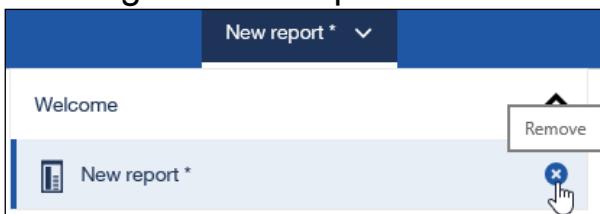
You decide you do not want changes to the page header in this report to be applied automatically when the header changes in the source (Layout Library) report.

1. In the **Quantity by Order Method** report, in the page header, click the **Layout component reference** object.
2. In the Application bar, click **Show properties** .
3. In the Properties pane, under GENERAL, change the **Embed** property to **Copy**.
4. Save the report.
5. Open the **Layout Library** report, from **My content**.

6. In the **Page header**, drag the **Image** object from the left cell, to the center cell, so that it appears to the right of the title.
7. In the table, in the center cell, click and drag the **Text** object into the left cell.
8. Save the report.
9. Open the **Quantity by Order Method** report from **My content**.

Although you switched the order of the image and text objects in the source report, this change is not reflected in the page header in this report. To make the page header in the Quantity by Order Method report consistent with the standard page header you created in the Layout Library report, you will now manually update the shared page header.

10. In the report, in the **Page header**, click the **Layout component reference** object, from the **Properties** pane, under **GENERAL**, change the **Embed** property to **Reference**.
- The page header is now updated with the changes made in the Layout Library.
11. Close the rendered report tab.
  12. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



13. Leave the IBM Cognos Analytics portal open for the next demonstration.

**Results:**

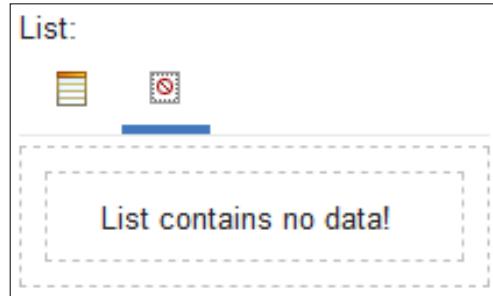
You created and reused a standard page header and then compared automatically and manually updating the reused page header when it changed in the source report.

## Handle reports with no data

- When a query returns no data, you can provide alternate content or remove the data frame from the report.

List:

Product line	Year	Revenue
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>



Use additional report building techniques

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### Handle reports with no data

Each data frame (e.g. List, Crosstab, Chart.. etc.) has a property called *No data contents*. When this is set to *Content specified in the no data tab*, a new tab appears that you can populate with a text message, or an alternate content, and so on.

Each data frame also has a *Render page when empty* property. When this property is set to *No* on all data containers on the page, and they all have no data to display, the page does not render, and Cognos Analytics will skip it to the next page.

## Demonstration 3

Explore options for reports that contain no data

### Page 3 - Show Custom Message When No Data is Returned

List: List contains no data!	Crosstab: Crosstab contains no data!
---------------------------------	---

*Demonstration 3: Explore options for reports that contain no data*

## Demonstration 3:

### Explore options for reports that contain no data

#### Purpose:

You want to create a report with three pages showing different methods of handling no data being returned. The first page will show default data handling, the second page will not display when the list is empty, and the third page will generate a custom message to replace the empty container.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

#### Task 1. Create a List and a Crosstab

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Click **Add** , then **List**  to add a List to the page body.
3. From the **Data > Source** tab, add the following query items to the new List:
  - Products: **Product line**
  - Time: **Year**
  - Sales fact: **Revenue**

Product line	Year	Revenue
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>

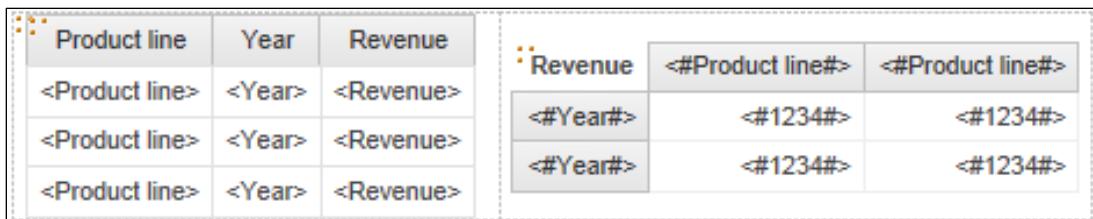
4. From the **Toolbox**, add a new **Crosstab** to the right of the List.
5. From the **Query Name** list, click **Query1**, and then click **OK**.
6. From **Data > Data Items**, add the following query items to the new Crosstab:
  - **Rows area:**
    - Time: **Year**
  - **Column area:**
    - Products: **Product line**
  - **Measure area:**
    - Sales fact: **Revenue**

Revenue	<#Product line#>	<#Product line#>
<#Year#>	<#1234#>	<#1234#>
<#Year#>	<#1234#>	<#1234#>

7. From the **Toolbox**, drag a **Table** to the page below the Crosstab.
8. Clear the **Maximize width** checkbox, and then click **OK**.
9. In the Application bar, click **Show properties** .
10. Click inside the left table cell (but not the Add icon), and then in the **Properties** pane, under **BOX**, double-click **Padding**.
11. In the **Right padding** box, type **10**, and then click **OK**.

## Task 2. Modify the layout

1. Click the List **Container Selector** , then drag the List into the left table cell.
2. Click the Crosstab **Container Selector**, and then drag the Crosstab into the right table cell.



Product line	Year	Revenue
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>

Revenue	<#Product line#>	<#Product line#>
<#Year#>	<#1234#>	<#1234#>
<#Year#>	<#1234#>	<#1234#>

3. From the **Toolbox** tab, drag a **Text Item** to the left of the List - but within the **left Table cell**.
  4. Type **List:**, and then click **OK**.
  5. From the **Toolbox** tab, drag a **Text Item** to the left of the Crosstab, within the **right table cell**.
  6. Type **Crosstab:** then click **OK**.
  7. Ctrl-click the two table cells, then on the Toolbar, click **Vertical alignment options** > **Top** .
  8. Click in the page body under the Table, then from the Toolbar, click **More** > **Headers & footers** > **Page header & footer**.
  9. Check the **Header**, and click **OK**.
  10. In the page header, click **Add**, then click **Text item**, type **Page 1 - Default Behavior**, and then click **OK**.
  11. In the Toolbar, click **Font**, then change **Family** to **Arial**, **Size** to **16pt**, and **Weight** to **Bold**, then click **OK**.
- The results appear as follows:

<b>Page 1 - Default Behavior</b>																							
List:	Crosstab:																						
<table border="1"> <thead> <tr> <th>Product line</th><th>Year</th><th>Revenue</th></tr> </thead> <tbody> <tr> <td>&lt;Product line&gt;</td><td>&lt;Year&gt;</td><td>&lt;Revenue&gt;</td></tr> <tr> <td>&lt;Product line&gt;</td><td>&lt;Year&gt;</td><td>&lt;Revenue&gt;</td></tr> <tr> <td>&lt;Product line&gt;</td><td>&lt;Year&gt;</td><td>&lt;Revenue&gt;</td></tr> </tbody> </table>	Product line	Year	Revenue	<Product line>	<Year>	<Revenue>	<Product line>	<Year>	<Revenue>	<Product line>	<Year>	<Revenue>	<table border="1"> <thead> <tr> <th>Revenue</th><th>&lt;#Product line#&gt;</th><th>&lt;#Product line#&gt;</th></tr> </thead> <tbody> <tr> <td>&lt;#Year#&gt;</td><td>&lt;#1234#&gt;</td><td>&lt;#1234#&gt;</td></tr> <tr> <td>&lt;#Year#&gt;</td><td>&lt;#1234#&gt;</td><td>&lt;#1234#&gt;</td></tr> </tbody> </table>	Revenue	<#Product line#>	<#Product line#>	<#Year#>	<#1234#>	<#1234#>	<#Year#>	<#1234#>	<#1234#>	
Product line	Year	Revenue																					
<Product line>	<Year>	<Revenue>																					
<Product line>	<Year>	<Revenue>																					
<Product line>	<Year>	<Revenue>																					
Revenue	<#Product line#>	<#Product line#>																					
<#Year#>	<#1234#>	<#1234#>																					
<#Year#>	<#1234#>	<#1234#>																					

### Task 3. Add filters to the List and the Crosstab

Both reporting objects are linked to Query1, so only one set of filters will be needed.

1. Click anywhere in the List, then from the Toolbar, click **Filters > Edit Filters**.
2. Click **Add**, then click **Advanced**, and then click **OK**.
3. Create and validate the following expression:

**[Year] =?pYear?**

Hint: Drag **Year** from the **Data Items** tab.

4. Click **Validate** , and validate using 2011.
5. Click **OK** to close the **Detail filter expression** dialog box.
6. Create and validate another detail filter (using Advanced), as follows:  
**[Product line]=?PL?**
7. Click **Validate** , and validate using Camping Equipment.
8. Click **OK** to close the **Detail filter expression** dialog box.
9. Click **OK** to close the **Filters** dialog box.

### Task 4. Create additional pages

1. On the side panel, click **Pages**, and then click **Report pages**.
2. In the **Report pages** pane, right-click **Page1**, and then click **Copy**.
3. Right-click in the **Report pages** pane, and then click **Paste** to create **Page2**.
4. Right-click in the **Report pages** pane, and then click **Paste** to create **Page3**.

### Task 5. Configure a page that does not display when the List is empty

You do not want Page2 to render when the List is empty.

1. Double-click **Page2** to open it.
2. Double-click the text in the page header to edit the text.
3. Type **Page 2 - Do Not Render Page if No Data is Returned in the List**, and then click **OK**.
4. Click the List Container Selector  to select the entire List.

5. From the **Properties** pane, under **GENERAL**, set the **Render page when empty** property to **No**.

## Task 6. Configure a page with a custom No Data Handler that replaces an empty container with a message

You want to display a custom message when the list or crosstab is empty.

1. In the **Pages** tab, click **Page 3**.
2. Double-click the text item in the Page header, and then update the text to: **Page 3 - Show Custom Message When No Data is Returned**.
3. Click **OK**.
4. Click the List Container Selector  to select the entire List.
5. From the **Properties** pane, under **CONDITIONAL**, double-click the **No data contents** property.
6. Select **Content specified in the No data tab**, and then click **OK**.

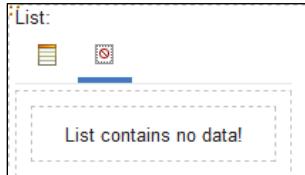
The *No data contents* property specifies whether to show the No Data Contents tab for the selected query frame. When set to *Content specified in the No data tab*, you can specify on this tab what to show when there is no data. When set to *No content*, the tab is hidden, and the query frame reverts to the default behavior.

Your List should now appear as follows, with a new No Contents tab:



7. Double-click the object showing No Data Available, update the text to **List contains no data!**, and then click **OK**.

The results appear as follows:



8. Click the Crosstab's Container Selector  to select the entire Crosstab.
9. From the **Properties** pane, under **CONDITIONAL**, double-click the **No data contents** property.
10. Select **Content specified in the No data tab**, and then click **OK**.
11. Double-click the object showing No Data Available, update the text to **Crosstab contains no data!**, and then click **OK**.

## Task 7. Add a prompt page

1. In the **Pages** tab, click **Prompt pages**, then click Add .
2. Click **Prompt page1** from the Pages tree to open it.
3. Add a **Table of 2 rows by 2 columns** into the work area.
4. Add a **Text Item** in the top left cell, type **Select a Product Line:**, press the space bar, and then click **OK**.
5. Add a **Text item** in the bottom left cell, type **Select a Year:**, press the space bar, and then click **OK**.
6. From the Toolbox, expand **PROMPTING**, and then drag a **Value prompt** in the top right cell.
7. Select **Use existing parameter**, select **PL** from the list, click **Next**, and then click **Finish**.
8. Insert a **Value prompt** in the bottom left cell.
9. Select **Use existing parameter**, select **pYear** from the list, click **Next**, and then click **Finish**.
10. Click the top left cell
11. In the **Properties** window, under **POSITIONING**, double-click **Size & overflow**.
12. Type **150** for the **Width**, and then click **OK**.

## Task 8. Run report displaying data, and with no data to display.

1. Run the report in **HTML**.
  2. When prompted, next to **Select a Product Line:**, select **Camping Equipment**, next to **Select a Year:**, select **2010**, and then click **Finish**.
- The results for page 1 appear as follows:

<b>Page 1 - Default Behavior</b>					
List:			Crosstab:		
Product line	Year	Revenue	Revenue	Camping Equipment	
Camping Equipment	2010	332,986,338.06	2010	332,986,338.06	

Since all of the queries in this report are filtered by the same parameters, all lists and crosstabs on the three report pages should look the same when data is returned. The page numbers refer to the pages in Pages tab and not in the report output.

3. Click **Page down** to see the Page 2 - Do Not Render Page if No Data is Returned in the List page.
4. Click **Page down** to see the Page 3 - Show Custom Message When No Data is Returned page.

Notice that all three pages appear with a List and Crosstab.

5. Click the **Run** button to run the report again.
6. When prompted, select **Mountaineering Equipment**, select **2010**, and then click **Finish**.

The results for page 1 appear as follows:

## Page 1 - Default Behavior

List: No Data Available	Crosstab: No Data Available
----------------------------	--------------------------------

Notice how the individual pages are affected in the report since there is no data for 2010 for the product line Mountaineering Equipment.

The first page shows default behavior for the List and Crosstab when there is no data returned.

7. Click **Page down**.

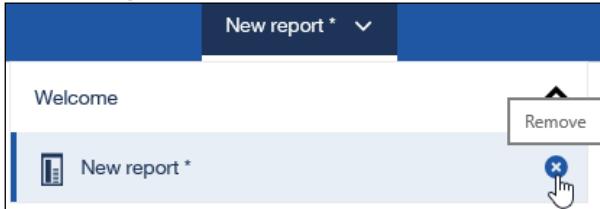
Notice that the Page 2 - Do Not Render Page if No Data is Returned in the List page did not display at all. This List contains no data and the List's property Render page when empty is set to No, so the page did not render. You are taken directly to the Page 3 - Show Custom Message When No Data is Returned page, where both the List and Crosstab are showing the custom message you created when no data is returned.

The results appear as follows:

## Page 3 - Show Custom Message When No Data is Returned

List: List contains no data!	Crosstab: Crosstab contains no data!
---------------------------------	---

8. Close the rendered report tab.
9. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



10. Leave the IBM Cognos Analytics portal open for the next exercise.

### Results:

**You created a report with three pages showing different methods of handling no data being returned. The first page showed default data handling, the second page did not display when the list was empty, and the third page generated a custom message to replace the empty container.**

## Unit summary

- Enhance report design with report objects
- Reuse objects within the same report
- Share layout components among separate reports
- Discuss report templates
- Handle reports with no available data

Use additional report building techniques

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*Unit summary*

## **Unit 9      Customize reports with conditional formatting**

IBM Training

IBM

# **Customize reports with conditional formatting**

IBM Cognos Analytics (v11.0)

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## Unit objectives

- Highlight exceptional data
- Create multilingual reports
- Show and hide data based on business conditions
- Conditionally render objects in reports
- Conditionally format data items based on other data items

## Change displays based on conditions

**Display conditional text  
depending on language**

<u>Rapport sur les produits</u>		
Lignes de produits	Types de produit	Revenus
Accessoires personnels	Couteaux	153 420 439,59
	Jumelles	130 834 653,2
	Lunettes	867 125 198,48
	Matériel d'orientation	207 490 641,92
	Montres	526 802 374,59
<b>Accessoires personnels - Total</b>		<b>1 885 673 307,78</b>

**Display conditional styles  
depending on data**

### Change displays based on conditions

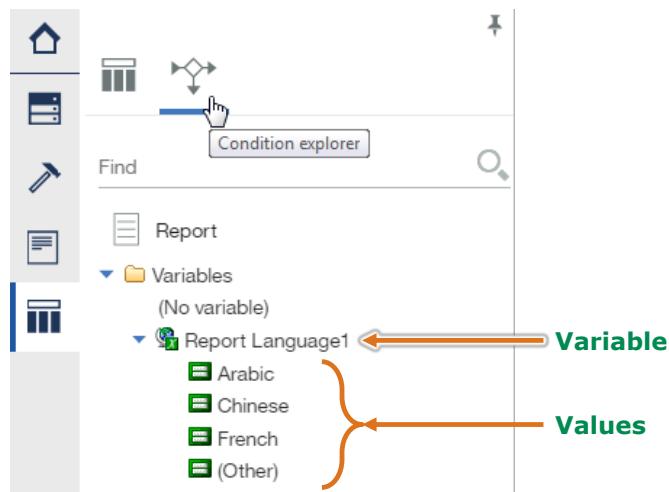
With conditional formatting you can control the style, the content, and the visibility of an object in the report based on a business condition that you define.

## 3 steps for conditional formatting

1. Create a conditional variable.
  - Define the variable and create values
2. Assign the variable to an object in the report
  - Properties pane, under Conditional, assign variable to object
3. Apply formatting to the object based on condition's value
  - Select specific value and apply formatting to object.

## Step 1. Create a variable (1 of 2)

- Create variables and values that represent the possible outcomes of the variables



Customize reports with conditional formatting

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### Step 1. Create a variable

This step can be performed in Condition explorer.

Language variables are used when the values are different languages.

Boolean variables are used if there are only two possible outcomes, where the values will be Yes or No.

String variables are used if there is more than one outcome, based on string or numeric values you will specify.

The variable determines what will affect the report. For example, the report will vary depending on revenue, product line or the language in which the report is run.

The values define the possible scenarios or outcomes for the variable. For example, revenue is either above \$150,000 ('yes') or not ('no'), product line is 'Camping Equipment', 'Golf Equipment', or the language may be 'Chinese' or 'Dutch', and so on.

## Step 1. Create a variable (2 of 2)

- Define the condition and create values.

**Boolean**

**Expression Definition:**  
`[Gross profit] > 150000`

**Report Language**

Languages  
 Finnish (Finland)  
 French  
 French (Belgium)

**String**

**Expression Definition:**  
`IF ([Revenue]>1000000) THEN  
 ('High')  
 ELSE IF ([Revenue]<25000) THEN  
 ('Low')  
 ELSE IF ([Revenue] between 300000 and 600000) THEN  
 ('Medium')`

**String Values:**  
High / Medium / Low / Other

**Language Values:**  
French / Other

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If you create a Boolean or string variable, you must define the condition.

If you create a language variable, you do not need to define the condition. You just choose the languages you want to support.

In the slide example for the string variable, revenue will be deemed 'High' if it is more than \$1,000,000 or 'Low' if it is less than \$25,000.

The string variable's condition does not need to test all possible cases, nor the language variable hold all the possible languages; because they have a built-in 'Other' value. For example, in the slide string Expression Definition above, revenue between \$25,000 and \$300,000 is 'Other'.

## Step 2. Assign the variable to a report object

- Assign the variable to the object that you wish to conditionally format
  - Specify the variable that controls the style, text, or visibility of the object
- Or specify conditional styles based on ranges

Product line	Gross profit	Revenue
<Product line>	<Gross profit>	<Revenue>
<Product line>	<Gross profit>	<Revenue>
<Product line>	<Gross profit>	<Revenue>

**List column body**

**CONDITIONAL**

Conditional styles

Style variable RevenueRange ...

Text source variable

### Step 2. Assign the variable to a report object

After you have created your variable, you must define how the report will appear for each value. To do this, select your object in the report layout that you want to conditionally format. Then, in the Properties pane, set conditional formatting properties on the object:

**Style variable:** Specifies the variable that determines the style of the object.

**Text source variable:** Specifies the variable that determines the text of the object.

**Render variable:** Specifies the variable that determines the visibility of the object (whether to render the object or not).

**Conditional styles:** Add conditional styles to your report based on set ranges.

Not all properties apply to all objects. In the screenshot, the Render variable property does not appear; because it is not applicable objects of type List column body.

If you wish to create conditional formatting for only some values, you can deselect the others.

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## Step 3. Apply formatting to object based on condition value

- Select the condition value, and apply formatting to the object.

String variable "RevenueRange" is set to "High".

Find

- Report
- Variables
  - (No variable)
  - RevenueRange**
    - High**
    - Low
    - Medium
    - Others

<Product line> <Gross profit> <Revenue>

<Product line> <Gross profit> <Revenue>

COLOR & BACKGROUND		
Background image		
Background effects		
Background color	Green	...
Foreground color		

Apply desired formatting to the object based on selected condition value

Customize reports with conditional formatting

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### Step 3. Apply formatting to object based on condition value

Once the report element has been designated as conditional, set the display for that value by modifying the report to appear the way you want it to look if that condition is satisfied.

This step is performed in Condition explorer.

When you create a String or Report language variable, an additional value called (Other) appears by default. A Boolean variable does not have the (Other) value because it can only be Yes or No.

This step does not apply when working with the Render variable property.

When you select a value in the Condition explorer, a notification message will appear; to notify you that conditional formatting is turned on, and to remind you that all changes you make to the report only apply to the case you selected.

After you have set the display for each value, turn the conditional formatting off by clicking **(No Variable)** from the Condition explorer.

## Demonstration 1

Create a multilingual report (optional)

### Rapport sur les produits

Lignes de produits	Types de produit	Revenus
Accessoires personnels	Couteaux	153 420 439,59
	Jumelles	130 834 653,2
	Lunettes	867 125 198,48
	Matériel d'orientation	207 490 641,92
	Montres	526 802 374,59
Accessoires personnels - Total		1 885 673 307,78

*Demonstration 1: Create a multilingual report (optional)*

## Demonstration 1: Create a multilingual report (optional)

### Purpose:

Your regional sales managers want to examine the revenue for all of your product types to promote the most profitable ones. Because this report will be distributed to offices in Germany, France, and the United States, you must run the report in different languages.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the List

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **List** to the report page.
3. From **Source**, add the following query items to the new list data container:
  - Products: **Product line**, **Product type**
  - Sales fact: **Revenue**

Product line	Product type	Revenue
<Product line>	<Product type>	<Revenue>
<Product line>	<Product type>	<Revenue>
<Product line>	<Product type>	<Revenue>

4. Click the **<Product line>** List column body, and then click **Group / Ungroup**.
5. Click the **<Revenue>** List column body, click **Summarize**, and then click **Total**.
6. Run the report in **HTML** to examine the report.
7. Close the rendered report tab.

### Task 2. Create a language variable and choose the languages

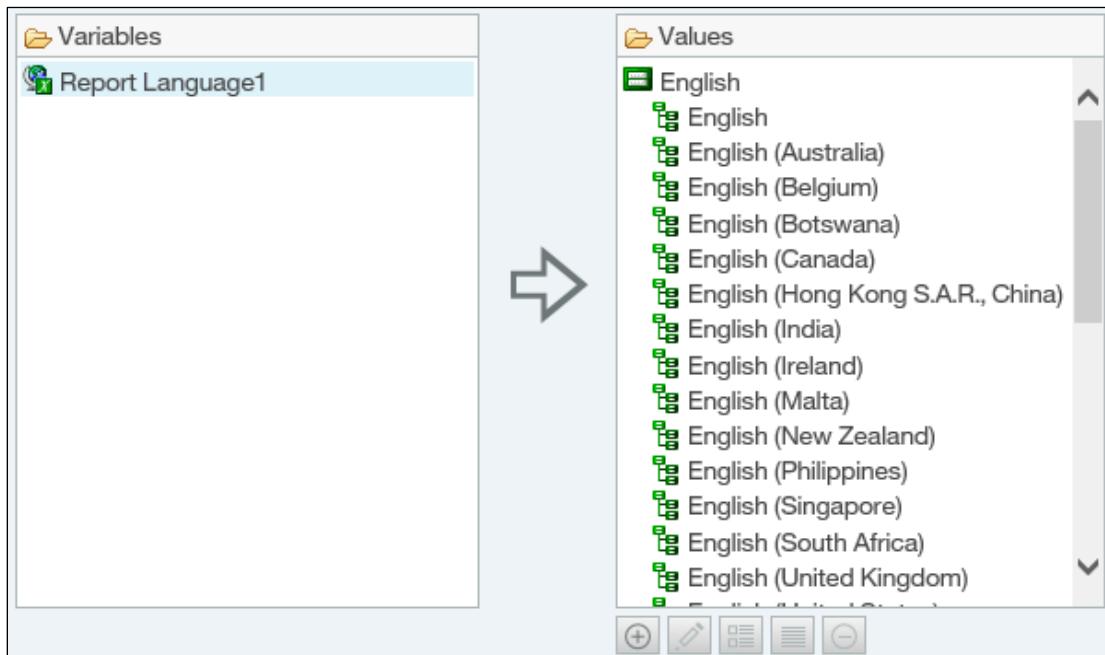
You will apply conditional formatting to the header text so that a report title will appear in the language in which the report is run.

1. Create a page Header by clicking under the List, then from the Toolbar click **More > Headers & footers > Page header & footer**.
2. Select **Header**, then click **OK**.
3. Click **Queries**  tab, then click **Condition explorer** .

The Condition explorer pane shows that there are currently no variables for this report.

4. Click  **Variables**.
5. From the **Toolbox** , drag **Report Language Variable** to the **Variables** pane.
6. Scroll through the list to locate and select the checkboxes beside all of the **English**, **French**, and **German** languages, and then click **OK**.
7. In the **Values** pane, click **English**, shift-click **English (Zimbabwe)**, and then click **Group Values** .
8. Repeat Step 5 to group all **French** languages together.
9. Repeat Step 5 to group all **German** languages together.

The results appear as follows:



The screenshot shows the SSRS Condition Explorer interface. On the left, the **Variables** pane displays a single item: **Report Language1**. An arrow points to the right, leading to the **Values** pane. The **Values** pane lists 17 English language variants under the heading **English**, including English, English (Australia), English (Belgium), English (Botswana), English (Canada), English (Hong Kong S.A.R., China), English (India), English (Ireland), English (Malta), English (New Zealand), English (Philippines), English (Singapore), English (South Africa), and English (United Kingdom). Below the list are standard toolbar icons for adding, editing, grouping, and deleting items.

There are seventeen English languages, six French, and six German. You want to select all of these languages so that you can group them together. That way you only have to format the report for three grouped values, rather than for each individual language.

The report now has one variable with three grouped values, one for each language in which the report will be run. Because you created a language variable, the expression is created for you.

10. On the Application bar, click **Show properties**  to open the Properties pane.

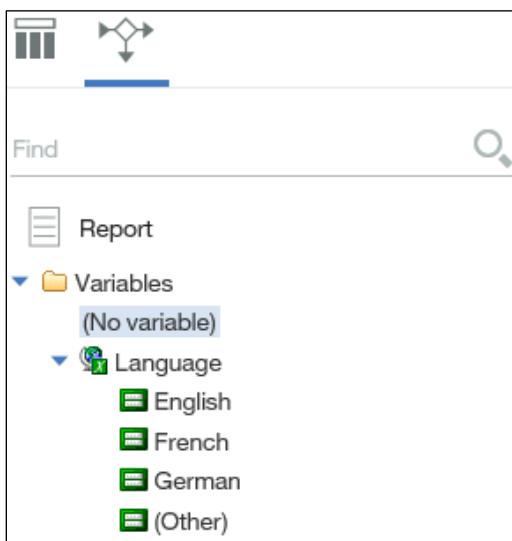
11. In the Properties pane, under MISCELLANEOUS, in the Name box, replace **Report Language1** with **Language**, and then press **Enter**.
12. On the side bar, click **Pages** , then click **Page1**.

### **Task 3. Define the title as conditional text**

1. In the page Header, click **Add** , then click **Text item** .
2. Enter the following text: **Product Report Title**, then click **OK**.
3. In the Toolbar, click **Font**, then change **Family** to **Arial**, **Size** to **16pt**, and **Weight** to **Bold**, then click **OK**.
4. In the Properties pane, under CONDITIONAL, double-click **Text source variable**.  
The Text source variable dialog box appears.
5. From the **Variable** drop-down list, select **Language**.  
The Values pane shows the three languages you chose, plus an option called (Other). The three languages are selected by default so that you can use the Condition explorer to perform conditional authoring for any of them.
6. Click **OK**.

### **Task 4. Set the display for each value**

1. On the side bar, click **Queries** .
2. In the **Condition explorer**  tab, click **English**.  
A notification message appears to state that the Language variable is set to "English". The previous title also disappears because you must specify the text for this value.
3. Change the title text to **Products Report**.
4. Within the **Condition explorer** tab, click **French**.
5. Change the title text to **Rapport sur les produits**.
6. Within the **Condition explorer** tab, click **German**.
7. Change the title text to **Produkte Bericht**.
8. Turn off conditional formatting by clicking **(No variable)** in the **Condition explorer** tab.



To run a report in different languages, the data source must be multilingual. Your browser must also be able to support multilingual characters, or else the characters will appear as boxes.

Now you can run the report in various languages.

## Task 5. Run the report in various languages

- Run the report in **HTML**.

Your report appears in English as this is our current default language. The report title appears as you created it for the English value. You will now run the report in French to see the results.

- Close the rendered report tab.
- On the Application bar, click **Run options** , then click **Show run options**. You want to choose a language other than our current default.
- Under **Language**, scroll down to select **French (France)**, and then click **OK**.
- Run the report in **HTML**.

A section of the results appears as follows:

<b>Rapport sur les produits</b>		
Lignes de produits	Types de produit	Revenus
Accessoires personnels	Couteaux	153 420 439,59
	Jumelles	130 834 653,2
	Lunettes	867 125 198,48
	Matériel d'orientation	207 490 641,92
	Montres	526 802 374,59
<b>Accessoires personnels - Total</b>		<b>1 885 673 307,78</b>

The report appears in French, including the title you created.

Note: IBM Cognos Analytics does not translate the data returned by the query. This must be done as part of data modeling and must be included in the published package.

6. Close the rendered report tab.
7. Repeat Steps 3 to 6 to run the report in **German (Austria)** and in **English (Zimbabwe)**.

A section of the results appears as follows:

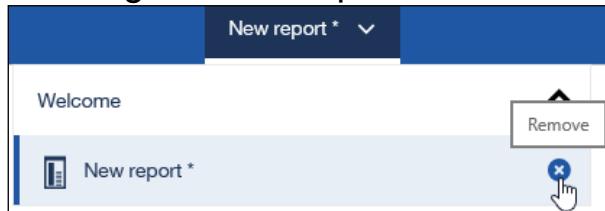
### Produkte Bericht

Produktreihe	Produkttyp	Einnahmen
Accessoires	Ferngläser	130.834.653,2
	Messer	153.420.439,59
	Orientierung	207.490.641,92
	Sonnenbrillen	867.125.198,48
	Uhren	526.802.374,59
<b>Accessoires - Total</b>		<b>1.885.673.307,78</b>

### Products Report

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	272,835,984.18
	Lanterns	126,925,660.64
	Packs	351,880,402.84
	Sleeping Bags	309,172,888.35
	Tents	528,221,728.02
<b>Camping Equipment - Total</b>		<b>1,589,036,664.03</b>

8. Close the rendered report tab.
9. Click **Run options**, and then click **Show run options**.
10. Under **Language**, scroll up to the top, select **(Default)**, and then click **OK**.
11. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



12. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

**Regional Sales managers can examine the revenue for all of your product types to promote the most profitable products. This report can be distributed to offices in German, French, and English speaking countries in the appropriate languages.**

## Demonstration 2

### Highlight exceptional data

Revenue		Americas			
		2010	2011	2012	2013
Personal Accessories	Binoculars	8,848,023.06	9,284,403.09	11,564,283.97	9,698,328.44
	Eyewear	51,804,488.86	64,364,796.83	89,687,954.94	68,629,625.09
	Knives	11,328,869.94	10,661,897.75	15,047,283.69	10,513,594.42
	Navigation	15,667,887.05	13,943,283.78	19,757,626.39	14,382,780.56
	Watches	40,906,913.37	44,372,804.39	51,213,306.66	32,018,631.1
Mountaineering Equipment	Climbing Accessories		6,928,733.67	8,238,351.85	8,576,743.95
	Rope		8,065,619.48	13,952,404.12	11,568,118.68
	Safety		6,881,659.98	10,137,737.5	9,410,543
	Tools		10,178,540.49	16,831,986.21	12,356,958.95
Camping Equipment	Cooking Gear	18,885,808.93	20,265,504.57	22,792,659.65	16,933,277.29
	Lanterns	9,550,941.78	9,516,880.22	12,274,847.87	8,136,831.6
	Packs	20,705,015.1	25,822,181.45	35,164,708.35	24,019,882.74
	Sleeping Bags	19,652,376.81	23,629,479.94	29,724,358.26	19,755,089.84
	Tents	35,466,023.41	43,218,510.95	49,900,030.23	36,031,372.05
Outdoor Protection	First Aid	2,122,816.09	841,085.19	536,893.86	256,402.95
	Insect Repellents	5,872,450.6	3,410,019.19	1,644,331.12	634,775.13
	Sunscreen	3,324,848.67	2,937,932.68	980,915.8	440,176.4

Customize reports with conditional formatting

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### Demonstration 2: Highlight exceptional data

## Demonstration 2: Highlight exceptional data

### Purpose:

A manager wants to quickly identify revenue greater than \$20,000,000 and less than \$5,000,000 to identify high and low revenue-generating product types in all sales regions. You need to create a report that displays revenue data in different colors depending on revenue values.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the Crosstab

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **Crosstab** to the report page, and click **OK** to accept the defaults.
3. From the **Source** tab, add the following query items to the new Crosstab:
  - **Rows** area:
    - Products: **Product line**, **Product type** (nested as a child)
  - **Columns** area:
    - Retailers: **Region**
    - Time: **Year** (nested under Region)
  - **Measure** area:
    - Sales fact: **Revenue**

Revenue		<#Region#>		<#Region#>	
		<#Year#>	<#Year#>	<#Year#>	<#Year#>
<#Product line#>	<#Product type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
	<#Product type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Product line#>	<#Product type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
	<#Product type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

You will create a variable to define revenue as 'high' or 'low' if the amount is above or below specified amounts.

4. On the side bar, click **Queries** , then click the **Condition explorer**  tab.
5. In the Condition explorer tab, click **Variables** .
6. From the **Toolbox** , drag a **String Variable** to the **Variables** pane.

Because you are creating a string variable, you must specify the condition on which revenue will change, and then create values for the possible outcomes.

7. Create and validate the following expression:

```
IF ( [Query1].[Revenue]>20000000 ) THEN
  ( 'High' )
ELSE IF ( [Query1].[Revenue]<5000000 ) THEN
  ( 'Low' )
```

Hint: You can drag an 'if then else' block from the **Constructs** folder, in the **Functions** tab, and drag **Revenue** from the **Queries** tab to add it to the expression.

8. Click **OK**.

9. Under the **Values** box, click **Add** .

10. In the **Add** dialog box, type **High**, and then click **OK**.

11. Repeat steps 9 and 10 to add a second value called **Low**.

The values created in previous steps must be spelled exactly as they are spelled in the expression definition for the variable.

12. On the Application bar, click **Show properties**  to open the Properties pane.
13. In the Properties pane, under MISCELLANEOUS, change the **Name** property to **Revenue\_High\_Low**, and then press **Enter**.
14. On the side bar, click **Pages** , then click **Page1**.

Now that you have created a variable and specified its values, you must format the revenue cells for each value.

## Task 2. Define the measures as conditional and set the display for each value

1. Click any of the **Revenue (<#1234#>)** cells in the Crosstab.
2. On the Toolbar, click **Select Ancestor** , then click **Crosstab fact cells**.
3. In the Properties pane, under CONDITIONAL, double-click **Style variable**.  
The Style variable dialog box appears.
4. From the **Variable** drop-down list, select **Revenue\_High\_Low**, then click **OK**.  
The measures cells are now conditionally formatted using the variable you just created. You must now set the display for each value.
5. On the side bar, click **Queries** .
6. In the **Condition explorer**  tab, click **High**.  
A notification message appears to state that the Language variable is set to "English"..

7. With the **Revenue** cells still selected, on the Toolbar, click **Font A**, then set **Foreground Color** to **Green**, set **Weight** to **Bold**, then click **OK**.
8. Repeat steps **4 - 6** to change the **Foreground** color for the **Low** value to **Red**.
9. Click **(No variable)** to turn the conditional formatting off.
10. Run the report in **HTML**.

A section of the results appears as follows:

Revenue		Americas			
		2010	2011	2012	2013
Personal Accessories	Binoculars	8,848,023.06	9,284,403.09	11,564,283.97	9,698,328.44
	Eyewear	51,804,488.86	64,364,796.83	89,687,954.94	68,629,625.09
	Knives	11,328,869.94	10,661,897.75	15,047,283.69	10,513,594.42
	Navigation	15,667,887.05	13,943,283.78	19,757,626.39	14,382,780.56
	Watches	40,906,913.37	44,372,804.39	51,213,306.66	32,018,631.1
Mountaineering Equipment	Climbing Accessories		6,928,733.67	8,238,351.85	8,576,743.95
	Rope		8,065,619.48	13,952,404.12	11,568,118.68
	Safety		6,881,659.98	10,137,737.5	9,410,543
	Tools		10,178,540.49	16,831,986.21	12,356,958.95
Camping Equipment	Cooking Gear	18,885,808.93	20,265,504.57	22,792,659.65	16,933,277.29
	Lanterns	9,550,941.78	9,516,880.22	12,274,847.87	8,136,831.6
	Packs	20,705,015.1	25,822,181.45	35,164,708.35	24,019,882.74
	Sleeping Bags	19,652,376.81	23,629,479.94	29,724,358.26	19,755,089.84
	Tents	35,466,023.41	43,218,510.95	49,900,030.23	36,031,372.05
Outdoor Protection	First Aid	2,122,816.09	841,085.19	536,893.86	256,402.95
	Insect Repellents	5,872,450.6	3,410,019.19	1,644,331.12	634,775.13
	Sunscreen	3,324,848.67	2,937,932.68	980,915.8	440,176.4

You can see that some Camping Equipment product types generated high revenue over a four-year period in Central Europe, whereas Outdoor Protection generated low revenue. Notice that when the revenue condition is not satisfied (when it is neither high nor low) revenue appears in black (default formatting).

11. Close the rendered report tab.
12. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.
13. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

**You created a report that compares product line revenue for all sales regions to quickly identify by color the product type revenues greater than \$20,000,000 and less than \$5,000,000.**

## Conditionally render objects in reports

- Using conditional rendering, you can determine whether certain objects will be included in a report when the report is run.

Order Details				
Date: Jan 12, 2010				
Order number	Product	Product description	Revenue	
100001	Flicker Lantern	Simple to use, just requires a candle to be inserted and lit. Windproof, lasts for hours.	8,624.64	
	Polar Ice	Polar Ice sunglasses have polarized lenses to combat glare from snow. Unbreakable nylon frame.		9,411.6

At runtime, decide whether or not to include the product description column in the report

Customize reports with conditional formatting

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### Conditionally render objects in reports

If objects are not rendered, they do not take up space in the report when it is run.

Conditional rendering is useful when your report contains sensitive data or data that may be relevant for some consumers but not for others.

When conditional rendering is applied to a column in a List report, the conditional rendering applies to all portions of the column including the title, the body cells, and header and footer cells.

In the slide example, the product description column is rendered because the report was run in HTML format. An expression was created on the product description column to only render if the report output is HTML.

## Demonstration 3

Create a report with a conditionally rendered column

Date: Jan 12, 2010			
Order number	Product	Product description	Revenue
100001	Flicker Lantern	Simple to use, just requires a candle to be inserted and lit. Windproof, lasts for hours.	8,624.64
	Polar Ice	Polar Ice sunglasses have polarized lenses to combat glare from snow. Unbreakable nylon frame.	9,411.6
<b>100001 - Total</b>			<b>18,036.24</b>
100002	Bear Edge	Knife is 33 cm long with a 20 cm blade made of surgical stainless steel. The handle is laminated wood. The custom made sheath is black leather.	6,690.8
	Edge Extreme	Multi-purpose pocketknife ruggedly constructed of stainless steel. Includes 4 different blades, corkscrew, saw, scissors, pliers and more.	18,032.22
	Glacier GPS Extreme	Hand held GPS receiver with color display. Incredibly easy to use, three user-friendly navigation screens, and saves two routes. Up to 20 hours of battery life just on two AA batteries.	24,747.82
	Insect Bite Relief	The Insect Bite Relief helps the itching and swelling caused by most insect bites.	2,532
	Mountain Man Deluxe	Tough rubber strap, precision Swiss quartz movement, imbedded digital face, luminous hands and markers, hardened mineral crystal, start and stop buttons, water-resistant to 50 meters.	6,825.6
<b>100002 - Total</b>			<b>58,828.44</b>

Customize reports with conditional formatting

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*Demonstration 3: Create a report with a conditionally rendered column*

## Demonstration 3:

### Create a report with a conditionally rendered column

#### Purpose:

Some users want a report to include descriptions of each product, while others are familiar with the products and do not want these descriptions in the report. You will create a report that can be run with or without a column displaying product descriptions based on the format in which you run the report.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

#### Task 1. Create the List

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **List** to the report page, and accept the defaults.
3. From the **Source** tab, add the following query items to the new list data container:
  - Time: **Date**
  - Sales order: **Order number**
  - Products: **Product, Product Description**
  - Sales fact: **Revenue**

Date	Order number	Product	Product description	Revenue
<Date>	<Order number>	<Product>	<Product description>	<Revenue>
<Date>	<Order number>	<Product>	<Product description>	<Revenue>
<Date>	<Order number>	<Product>	<Product description>	<Revenue>

4. Click **<Date>**, and then on the Toolbar, click **Section / unsection**  **Section / unsection** .
5. Click **<Order number>**, and then on the Toolbar, click **Group / Ungroup**.
6. Click **<Revenue>**, then on the Toolbar click **Summarize** , then click **Total** .
7. On the Toolbar, click **Filters**, and then click **Edit Filters**.
8. Click **Add**, click **Advanced**, and then click **OK**.

9. Create and validate the following expression:  
**[Sales (query)].[Time].[Month key]=201001**
10. Click **OK** to close the **Detail filter expression** dialog.
11. Click **OK** to close the **Filters** dialog box.  
The report runs more efficiently with this filter.
12. Create a page Header by clicking under the List, then from the Toolbar click **More > Headers & footers > Page header & footer**, select **Header**, and click **OK**.
13. Add a **Text item** to the header, with the text: **Order Details**.
14. On the Toolbar, click **Font**, then set **Family** to **Arial**, **Size** to **16pt**, set **Weight** to **Bold**, and under **Effects** check **Underline**, then click **OK**.

## Task 2. Add a Boolean variable

1. Click **<Product description>**.
2. In the Toolbar, click **Select Ancestor** , then click **List column** at the bottom of the list.
3. On the Application bar, click **Show properties**  to open the Properties pane.
4. In the Properties pane, under **CONDITIONAL**, double-click the **Render variable** property.
5. From the **Variable** drop-down list, select **New boolean variable**.
6. In the **New variable** dialog box, type **ShowDescrip**, and then click **OK**.
7. Create and validate the following expression:  
**ReportOutput ()='HTML'**  
Hint: Drag the ReportOutput() function from the **Functions**  tab, Report Functions folder.
8. Click **OK** until all dialog boxes are closed.

## Task 3. Run the report in HTML, and then in PDF

1. Run the report in **HTML**.

A section of the results appears as follows:

<u>Order Details</u>				
Date: Jan 12, 2010				
Order number	Product	Product description	Revenue	
100001	Flicker Lantern	Simple to use, just requires a candle to be inserted and lit. Windproof, lasts for hours.	8,624.64	9,411.6
	Polar Ice	Polar Ice sunglasses have polarized lenses to combat glare from snow. Unbreakable nylon frame.		

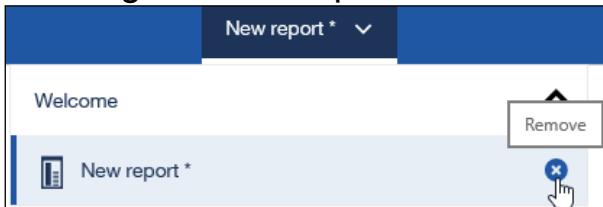
The report contains a column displaying a description of each product.

2. On the Application bar, click **Run Options** , then click **Run PDF**.  
A section of the results appears as follows:

<b>Order Details</b>		
Date: Jan 12, 2010		
Order number	Product	Revenue
100001	Flicker Lantern	8,624.64
	Polar Ice	9,411.6
<b>100001 - Total</b>		<b>18,036.24</b>
100002	Bear Edge	6,690.8
	Edge Extreme	18,032.22
	Glacier GPS Extreme	24,747.82
	Insect Bite Relief	2,532
	Mountain Man Deluxe	6,825.6
<b>100002 - Total</b>		<b>58,828.44</b>

When the report is rendered in PDF format, Product description is not rendered.

3. Close the rendered report tab.  
4. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



5. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You created a report you can run with or without a column displaying product descriptions based on the format in which you run the report.

## Conditionally format one crosstab measure based on another

	2010		2011	
	Gross profit	Revenue	Gross profit	Revenue
Camping Equipment	117,156,311.6	332,986,338.06	148,069,111.12	402,757,573.17
Golf Equipment	70,766,389.29	153,553,850.98	78,819,344.94	168,006,427.07
Outdoor Protection	21,349,297.72	36,165,521.07	15,501,534.93	25,008,574.08
Personal Accessories	158,345,909.96	391,647,093.61	183,970,133.46	456,323,355.9
Mountaineering Equipment			42,323,567.2	107,099,659.94

Revenue formatting  
based on Gross profit values

### Conditionally format one crosstab measure based on another

You can conditionally format one Crosstab measure based on another Crosstab measure using the Conditional Styles dialog box.

## Demonstration 4

Conditionally format one crosstab measure based on another

	2010		2011		2012		2013	
	Gross profit	Revenue						
Camping Equipment	117,156,311.6	332,986,338.06	148,069,111.12	402,757,573.17	188,942,774.28	500,382,422.83	132,630,896.65	352,910,329.97
Golf Equipment	70,766,389.29	153,553,850.98	78,819,344.94	168,006,427.07	115,965,213.04	230,110,270.55	86,642,694.9	174,740,819.29
Outdoor Protection	21,349,297.72	36,165,521.07	15,501,534.93	25,008,574.08	6,387,192.95	10,349,175.84	2,745,257.18	4,471,025.26
Personal Accessories	158,345,909.96	391,647,093.61	183,970,133.46	456,323,355.9	247,731,864.8	594,009,408.42	186,535,159.07	443,693,449.85
Mountaineering Equipment			42,323,567.2	107,099,659.94	64,233,527.4	161,039,823.26	56,718,814.19	141,520,649.7

Customize reports with conditional formatting

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*Demonstration 4: Conditionally format one crosstab measure based on another*

## Demonstration 4: Conditionally format one crosstab measure based on another

### Purpose:

Consumers would like to see conditional formatting for revenue values based on Gross profit values in a crosstab. To achieve this, you will take advantage of the IBM Cognos ability to conditionally format one crosstab value based on another.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the Crosstab

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a new **Crosstab** to the report page and accept the defaults.
3. From the **Source** tab, add the following query items to the Crosstab:
  - **Rows** area:
    - Products: **Product line**
  - **Columns** area:
    - Time: **Year**
    - Sales fact: **Gross Profit, Revenue** (nested under Year)

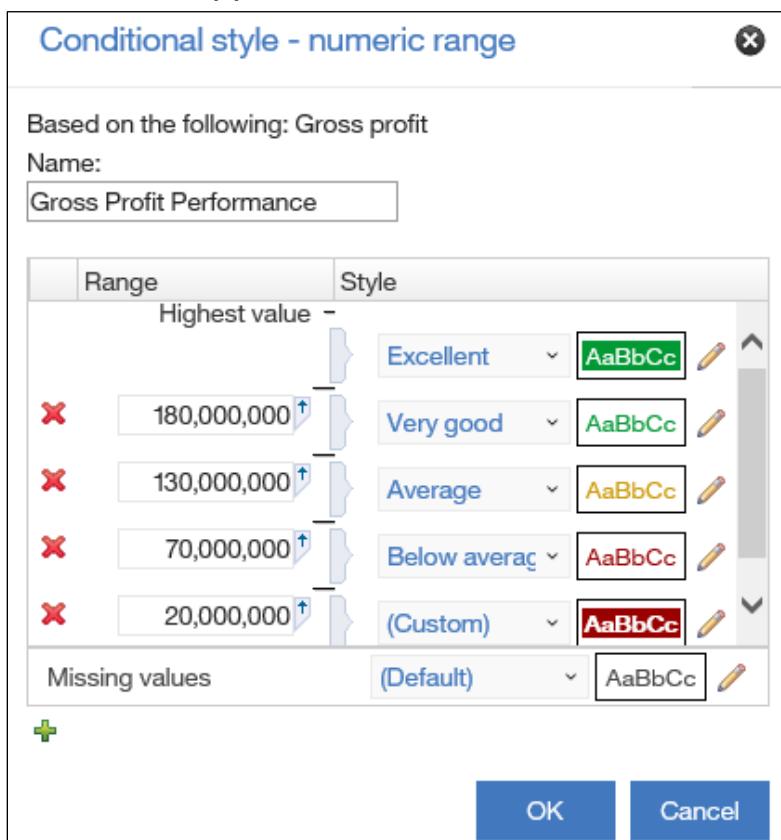
	<#Year#>		<#Year#>	
	<#Gross profit#>	<#Revenue#>	<#Gross profit#>	<#Revenue#>
<#Product line#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Product line#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

4. Run the report in **HTML**.
5. Examine the results.
6. Close the rendered report tab.

### Task 2. Conditionally format one Crosstab measure based on another

1. Click the **Revenue** fact cells (<#1234#>).
2. On the Application bar, click **Show properties**  to open the Properties pane.
3. In the Properties pane, under **CONDITIONAL**, double-click **Conditional styles**.

4. Click **New Conditional Style** , and then click **New Conditional Style** from the list.
5. In the **Base it on the following data item** list, click **Gross profit**, and then click **OK**.
6. In the **Name** box, type **Gross Profit Performance**.
7. Click **New Value** , type **180000000** (180,000,000), and then click **OK**.
8. Repeat step 7 to add values for **130000000** (130,000,000), **70000000** (70,000,000), and **20000000** (20,000,000).
9. In the **Style** column, in the top drop down list, select **Excellent**, and then for the remaining drop down lists select **Very good**, **Average**, **Below average**, and **Poor** respectively.
10. To the right of **Poor**, click **Edit Style** .
11. Click **Edit** to the right of **Font**, change **Weight** to **Bold**, and then click **OK**.
12. Click **OK** to close the Style dialog box.
13. The results appear as follows:



14. Click **OK** twice to close the open dialog boxes.

### Task 3. Run the report and use existing conditional styles

1. Run the report in **HTML**.

The results appear as follows:

	2010		2011		2012		2013	
	Gross profit	Revenue						
Camping Equipment	117,156,311.6	332,986,338.06	148,069,111.12	402,757,573.17	188,942,774.28	500,382,422.83	132,630,896.65	352,910,329.97
Golf Equipment	70,766,389.29	153,553,850.98	78,819,344.94	168,006,427.07	115,965,213.04	230,110,270.55	86,642,694.9	174,740,819.29
Outdoor Protection	21,349,297.72	36,165,521.07	15,501,534.93	25,008,574.08	6,387,192.95	10,349,175.84	2,745,257.18	4,471,025.26
Personal Accessories	158,345,909.96	391,647,093.61	183,970,133.46	456,323,355.9	247,731,864.8	594,009,408.42	186,535,159.07	443,693,449.85
Mountaineering Equipment			42,323,567.2	107,099,659.94	64,233,527.4	161,039,823.26	56,718,814.19	141,520,649.7

Revenue values are conditionally formatted based on Gross profit values.

2. Close the rendered report tab.
- You will now apply the same Gross Profit Performance style to the Gross profit measure.
3. Click the **Gross profit** fact cells.
  4. In the Properties pane, under CONDITIONAL, double-click **Conditional styles**.
  5. Click **New Conditional Style**.
  6. Click **Use Existing Conditional Style**, then click **Gross Profit Performance**.
  7. Click **OK** twice to close the open dialog boxes.
  8. Run the report in **HTML**.

The results appear as follows:

	2010		2011		2012		2013	
	Gross profit	Revenue						
Camping Equipment	117,156,311.6	332,986,338.06	148,069,111.12	402,757,573.17	188,942,774.28	500,382,422.83	132,630,896.65	352,910,329.97
Golf Equipment	70,766,389.29	153,553,850.98	78,819,344.94	168,006,427.07	115,965,213.04	230,110,270.55	86,642,694.9	174,740,819.29
Outdoor Protection	21,349,297.72	36,165,521.07	15,501,534.93	25,008,574.08	6,387,192.95	10,349,175.84	2,745,257.18	4,471,025.26
Personal Accessories	158,345,909.96	391,647,093.61	183,970,133.46	456,323,355.9	247,731,864.8	594,009,408.42	186,535,159.07	443,693,449.85
Mountaineering Equipment			42,323,567.2	107,099,659.94	64,233,527.4	161,039,823.26	56,718,814.19	141,520,649.7

Now the same conditional style is applied to both measures.

9. Close the rendered report tab.
10. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.
11. Leave the IBM Cognos Analytics portal open for the next exercise.

### Results:

By taking advantage of the IBM Cognos ability to conditionally format one crosstab value based on another, you were able to create a crosstab in which conditional formatting for revenue values were based on the Gross profit values. You then applied the same conditional formatting to the Gross profit values to create a uniform look for the crosstab.

## Unit summary

- Highlight exceptional data
- Create multilingual reports
- Show and hide data based on business conditions
- Conditionally render objects in reports
- Conditionally format data items based on other data items

## Exercise 1

Configure and use dynamic drill-through

### Returns by Product Type

  % Returned: Descending order

Product type	Base product	Quantity	Return quantity	% Returned	Lost revenue
Cooking Gear	TrailChef Cup	1,812,123	23,007	1.27%	\$19,611.32
<b>Summary</b>		<b>1,812,123</b>	<b>23,007</b>	<b>1.27%</b>	<b>\$19,611.32</b>

Drill-through definitions

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*Exercise 1: Configure and use dynamic drill-through*

## Exercise 1: Configure and use dynamic drill-through

Consumers using the GO Data Warehouse (analysis) package for analysis would like to review actual and planned revenue for order methods, using the Returns by Product Type\_DQ report, and be able to get details on lost revenue for specific products displayed in the report.

A list report has been created based on the GO Data Warehouse (analysis) package that retrieves the following items: Product type, Base product, Quantity, Return quantity, % Returned, and Lost revenue. The report is called Returns by Product Type\_DQ and is located in Team content\Samples\_LG\_DQ\Models\GO Data Warehouse (analysis)\Query Studio Report Samples. It is the starting point for your target report.

As Branka Hirsch, the report administrator, you will create a drill-through definition called Exercise 1\_Returns by Product Type Definition that allows consumers to drill through to the target report. Consumers should be able to drill through any report in the package only if the Product type level is available. To accomplish this, you will need to:

- set the scope in the drill-through definition at the Product type level
- ensure that all item names match between the source report and the target report
- create parameterized drill through that will dynamically filter the target report

You will save the target report as Unit 10 Exercise 1\_Returns report, to keep the original sample report unchanged.

For more information about where to work and the exercise results, refer to the Tasks and Results section that follows. If you need more information to complete a task, refer to earlier demonstrations for detailed steps.

## Exercise 1: Tasks and Results

### Task 1. Examine the target report

- **Browser:** Log on to IBM Cognos Analytics using: **hirschb/Education1**.
- **Search:** Do a search for **Returns by Product Type\_DQ** (Note: If the report does not come up in the Search, browse to the following path: **Team content\Samples\_LG\_DQ\Models\GO Data Warehouse (analysis)\Query Studio Report Samples**)
- **Open:** Click the report to see it open in IBM Cognos Query Studio.

A section of the results appears as follows:

Product type	Base product	Quantity	Return quantity	% Returned	Lost revenue
Insect Repellents	<a href="#">BugShield Lotion</a>	773,324	81,189	10.50%	\$189,170.37
Navigation	<a href="#">Trail Star</a>	65,146	5,461	8.38%	\$483,691.20
Insect Repellents	<a href="#">BugShield Lotion Lite</a>	384,513	14,171	3.69%	\$26,641.48
Sunscreen	<a href="#">Sun Shield</a>	991,486	32,382	3.27%	\$89,374.32
Lanterns	<a href="#">EverGlow Lamp</a>	965,019	29,434	3.05%	\$434,454.32
Insect Repellents	<a href="#">BugShield Extreme</a>	2,666,714	72,255	2.71%	\$174,857.10

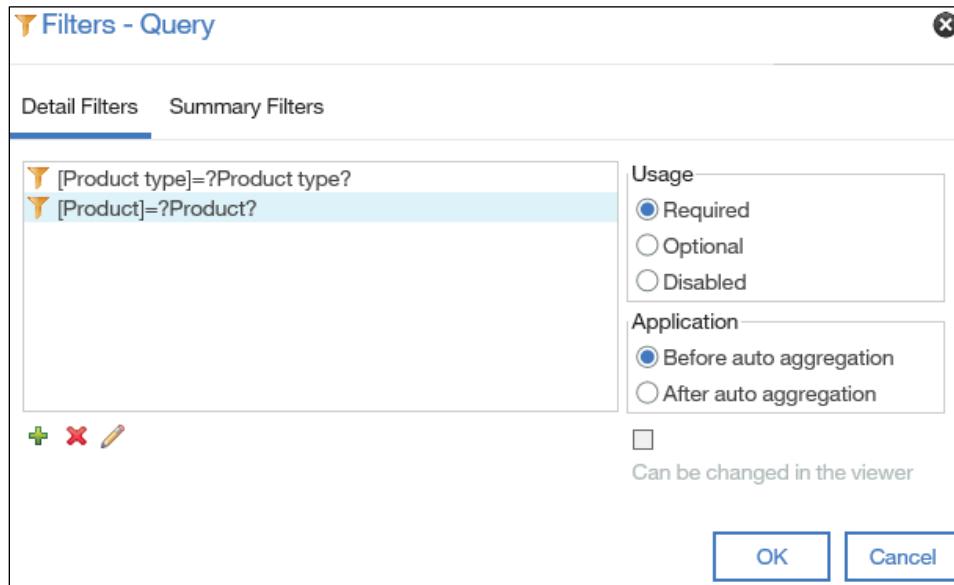
Notice the first two columns are Product type and Base product.

This report provides information about product returns and lost revenue.

- **Toolbar:** Save the report to **My content**, as: **Exercise 1\_Returns by Product Type Target**.
- From the Welcome screen, under **My content**, with the vertical ellipsis, use **Convert to report** on **Exercise 1\_Returns by Product Type Target**.
- Save the report as **Unit 10 Exercise 1\_Returns**, under **My content**.

### Task 2. Add parameters to the report

- **Toolbar:** Filters > Edit Filters
- Custom based on data item **Product type**.
- **Filter condition dialog:** Select **Prompt for values when report is run in viewer**.
- **Filters** dialog box:
  - Add: **[Product type]=?Product type?**
  - Add: **[Product]=?Product?**

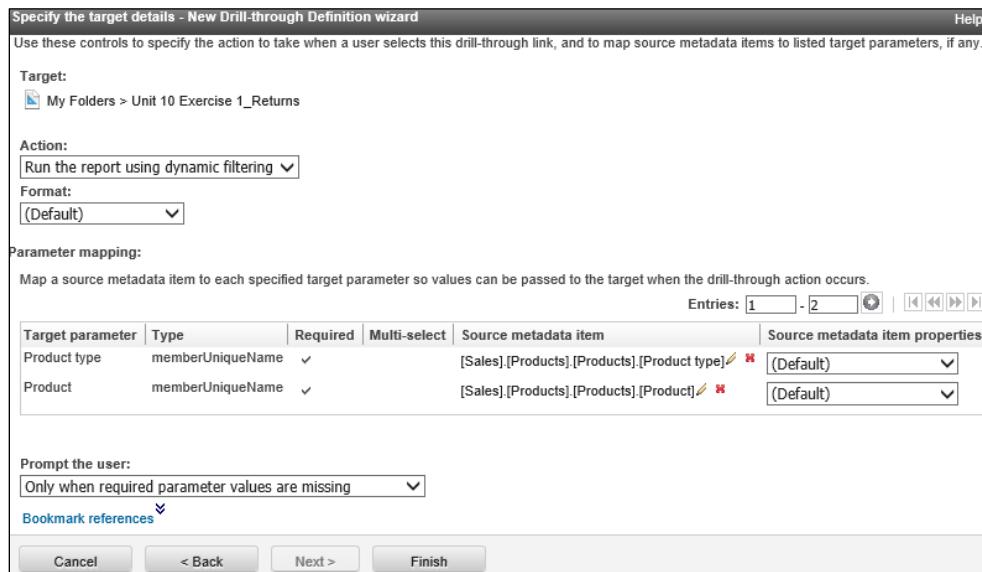


- **Application bar:** Save the report, and then close the browser tab.

### Task 3. Create the drill-through definition

- **Side bar:** click **New > Other > Drill Through Definitions**.
- **Team content:** Navigate to **Team content\Samples\_LG\_DQ\GO Data Warehouse (analysis)**.
- **Toolbar:** Click **New Drill-through Definition**.
- **Name box:** Name **Unit 10 Exercise 1\_Returns**, and then click **Next**.
- **Set scope and target:**
  - Set the scope to **Product from Products**.
  - Set the target to **Unit 10 Exercise 1\_Returns** (located in **My content**).
- **Specify the target details:**
  - From the **Action** list, select **Run the report using dynamic filtering**.
  - Under **Parameter mapping**, click **map to metadata** for the target parameter **Product type**, expand **Products**, and then click the **Product type**.
  - Under **Parameter mapping**, click **map to metadata** for the target parameter **Product**, expand **Products**, and then click the **Product**.

The results appear as follows:



- Click **Finish**.
- Browser: Close the **Drill-through Definitions** tab.

## Task 4. Create a source report

- Side bar: Create a new report using **GO Data Warehouse (analysis)** package in **Team content\Samples\_LG\_DQ**.
- Add **List**:
  - Employee by region > Employee by region: **Branch region**
  - Time > Time: **Year**
  - Order method > Order method: **Order method type**
  - Products > Products: **Product type**
  - Products > Products: **Product**
  - Sales fact: **Revenue**
- Toolbar: Group **<Branch region>, <Year>, <Order method type>, and <Product type>**
- Toolbar: Click **<Branch region>**, click **Section / unsection**
- Toolbar: Click **<Year>**, click **Section / unsection**
- Toolbar: Click **<Revenue>**, click **Summarize > Total**
- Toolbar: Filters > Add
  - **[Order method type]=?pOrderMethod?**
  - **[Year]=?pYear?**

- **Application bar:** More > **Locked**
- **Branch region,** (and the Text item containing) : , press **Delete**
- **Year,** (and the Text item containing) : , press **Delete**
- **Application bar:** More > **Unlocked**

## Task 5. Run the source report and use the drill-through

- **Application bar:** Run HTML
  - Order method type: **Web**
  - Year: **2012**

A section of the results appears as follows:

Branch region: Americas			
Year: 2012			
Order method type	Product type	Product	Revenue
Web	Cooking Gear	TrailChef Canteen	776,726.46
		TrailChef Cook Set	2,998,864.52
		TrailChef Cup	387,699.26
		TrailChef Deluxe Cook Set	3,608,913.78
		TrailChef Double Flame	2,401,875.44
		TrailChef Kettle	1,958,669.15
		TrailChef Kitchen Kit	1,390,626.2
		TrailChef Single Flame	2,955,774.57
		TrailChef Utensils	1,187,577.56
		TrailChef Water Bag	1,597,509.14
Cooking Gear - Total			19,264,236.08

- Product > **TrailChef Cup.**
- **Toolbar:** Navigate > Related links > **Find more drill-through links**
- **Related links:** **Advanced**

The results appear as follows:

The screenshot shows the 'Related links' configuration for a report named 'Unit 10 Exercise 1\_Returns'. It includes sections for 'Advanced' settings, 'Link name' (set to 'Unit 10 Exercise 1\_Returns'), 'Target' (set to 'Directory > Great Outdoors > People > Branka Hirsch > My Folders > Unit 10 Exercise 1\_Returns'), 'Drill-through package search path' (set to '/content/folder[@name='Samples\_LG\_DQ']/folder[@name='Models']/package[@name='GO Data Warehouse (analysis)']'), and a 'Selection context' table.

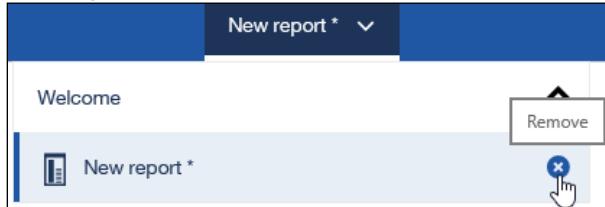
Item	Display value	Use value
Product	TrailChef Cup	[Sales].[Products].[Products].[Product]->[Product]
Order method type	TrailChef Cup	[Sales].[Order method].[Order method].[Order met
Product type	TrailChef Cup	[Sales].[Products].[Products].[Product type]->[Pro
Revenue	387,699.26	[Sales].[Sales fact].[Revenue]
Branch region	TrailChef Cup	[Sales].[Employee by region].[Employee by region]

- Click OK

The result appears as follows:

<b>Returns by Product Type</b>					
<span style="float: left;">▲▼ % Returned: Descending order</span>					
Product type	Base product	Quantity	Return quantity	% Returned	Lost revenue
Cooking Gear	TrailChef Cup	1,812,123	23,007	1.27%	\$19,611.32
<b>Summary</b>		<b>1,812,123</b>	<b>23,007</b>	<b>1.27%</b>	<b>\$19,611.32</b>

- Close the rendered report tab.
- In the Application bar, click the report dropdown menu, then click **Remove** to the right of New report to close it. Then click **OK** to confirm your action.



- Leave the IBM Cognos Analytics portal open for the next demonstration.

## **Unit 11 Enhance report layout**

IBM Training

**Enhance report layout**

IBM Cognos Analytics (v11.0)

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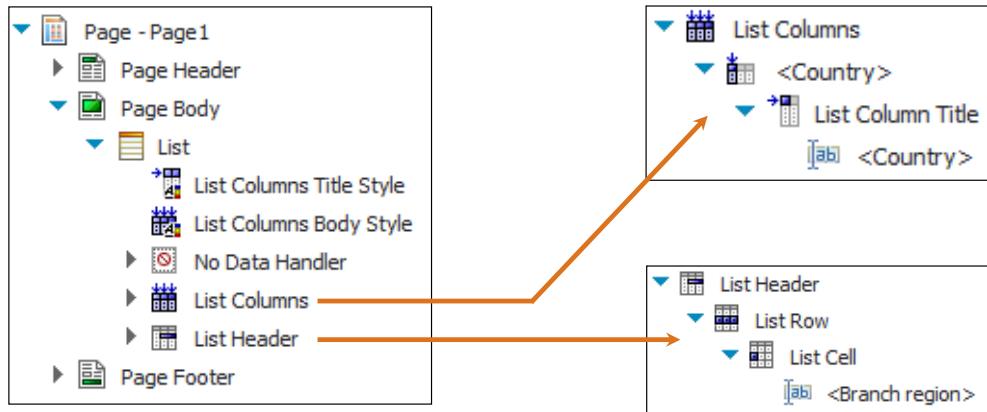


## Unit objectives

- Force page breaks in reports
- Modify existing report structures
- Apply horizontal formatting
- Specify print options for PDF reports
- Format data and report objects

## View the structure of the report

- To view your report in a different way and see how objects are organized, view the page structure.



### *View the structure of the report*

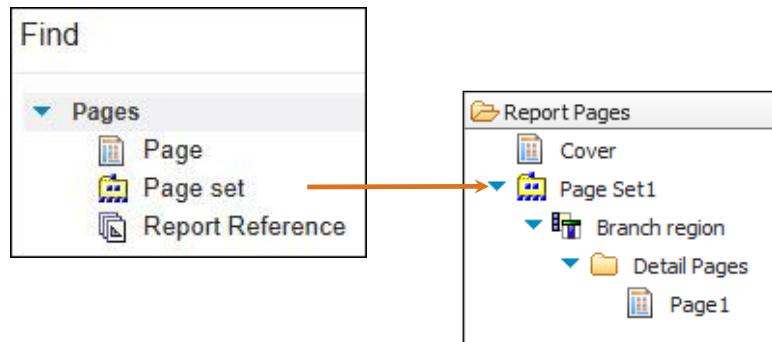
View the page structure to:

- view the entire contents of a report page in a tree structure
- move objects quickly from one area of a page to another
- modify object properties
- view the page structure, on the Application bar, click View, and then click Page Structure. A tree structure is useful for locating the objects in a page and troubleshooting problems with nested objects.
- view a complex layout, it may be difficult to select, cut, and paste objects in the layout view. Objects are easier to locate in the page structure view. This view can also be helpful if you want to modify an object but are not sure where the object is located within the report structure. Once you know where an object is placed, you can select it and modify its properties.

Objects can be changed in either view, depending on your preference. For example, you can group and sort list columns in the page structure view. Any changes made in the page structure view will also be visible in the page design view.

## Force page breaks in reports

- Page sets let you associate report pages with a query structure to force page breaks.



Enhance report layout

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### *Force page breaks in reports*

To force page breaks based on a data item, you must associate the page set with a query and then define a grouping structure for the page set.

You can add multiple detail pages to a page set.

You can also create nested page sets, and can define a master-detail relationship between them to see data in the nested page set that is related to the data in the parent page set. For example, you have a page set that shows pages of product line information. The page set contains a nested page set that shows pages of product type information.

You can use a page set to create a report that contains detail pages displaying data for each order method. Each order method type will begin on a new page.

In the slide example, Page Set1 has been grouped by Region. This page set will begin a new list for each region.

## Demonstration 1

Create a report structured on data items

<b>Country</b>	<b>Employee name</b>	<b>Revenue</b>
<b>Americas</b>		
Brazil	Alexandre Pereira	34,720,977.7
	Beatriz Couto	3,842,910.29
	Eduardo Guimarães	48,839,028.63
	Morela Castro	3,131,988.79
Canada	Brendon Pike	24,827,214.69
	Carole Claudel	15,728,893.35

## Demonstration 1: Create a report structured on data items

### Purpose:

You have been asked to create a report showing sales rep revenues generated in each region with each sales region on a separate page. You will need to design a title page for the report and make changes to the report using the structure view.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the List

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **List** to the work area.
3. From the **Source** tab, add the following query items to the new List:
  - Employee by region: **Branch region**, **Country**, **Employee name**
  - Sales fact: **Revenue**

Branch region	Country	Employee name	Revenue
<Branch region>	<Country>	<Employee name>	<Revenue>
<Branch region>	<Country>	<Employee name>	<Revenue>
<Branch region>	<Country>	<Employee name>	<Revenue>

4. Click **<Branch region>**, Ctrl-click **<Country>**, and then on the Toolbar, click **Group / Ungroup**.
5. Click **<Branch region>**, then on the Toolbar, click **More ... > Headers & footers > Create header**.
6. With the **<Branch region>** column still selected, press **Delete** to remove the redundant column.

7. On the Application bar, click **Run options** , then click **Run HTML**.  
A section of the results appears as follows:

Country	Employee name	Revenue
<b>Americas</b>		
Brazil	Alexandre Pereira	34,720,977.7
	Beatriz Couto	3,842,910.29
	Eduardo Guimarães	48,839,028.63
	Morela Castro	3,131,988.79
Canada	Brendon Pike	24,827,214.69

8. Click **Page down**.

Multiple sales regions are displayed on the same page. You want each sales region to display on a different page.

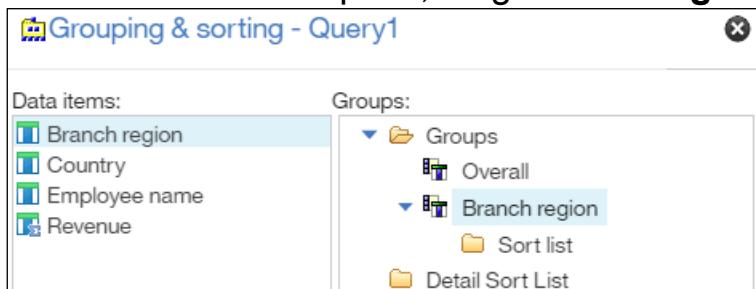
9. Close the rendered report tab.

## Task 2. Add page sets to the report

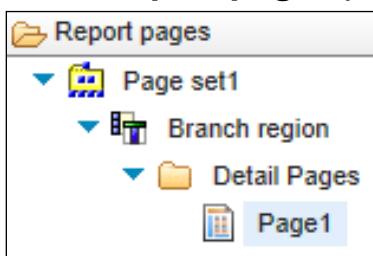
1. On side bar, click **Pages** , then click  **Report pages**.
2. From the **Toolbox**, double-click **Page set** to add it to the Report pages pane.
3. On the Application bar, click **Show properties**  to open the Properties pane.
4. In the Properties pane, under DATA, change the **Query** property to **Query1**. This will associate the query to the page set.

## Task 3. Define the grouping structure for the page set

1. In the Properties pane, under DATA, double-click **Grouping and sorting**.
2. From the Data items pane, drag **Branch region** to the **Groups** folder.



3. Click **OK**.
4. In the **Report pages** pane, drag **Page1** onto the **Detail Pages** folder.



5. Run the report in **HTML**, and then click **Page down** to examine multiple pages.  
The different sales regions are now on separate pages.
6. Close the rendered report tab.

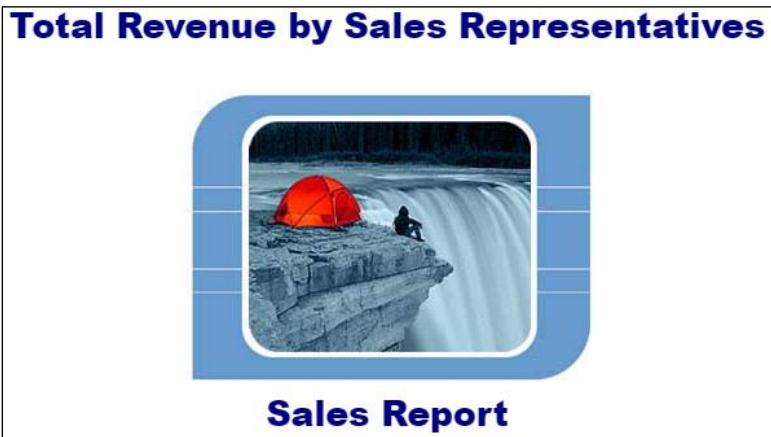
## Task 4. Add a cover page title to the report

1. From the **Toolbox**, drag a **Page to Report** pages above **Page set1**.
2. In the Properties pane, under MISCELLANEOUS, in the **Name** property, type **Cover**, and then press **Enter**.
3. In the **Report pages** pane, double-click **Cover**.
4. Click the work area, then from the Toolbar, click the arrow beside **Vertical alignment options**  , then click **Middle** .
5. In the work area, click **Add** , then click **Table** .
6. Choose **1 column** and **3 rows**, then click **OK**.
7. Ctrl-click each of the table cells, then from the Toolbar, click the arrow beside **Horizontal alignment**  , then click **Center** .
8. With the table cells still selected, on the Toolbar, click **Font** , then set **Family** to **Arial Black**, **Size** to **20pt**, and **Foreground Color** to **Navy**, then click **OK**.
9. Add a **Text item** to the top table cell, with the text: **Total Revenue by Sales Representatives**.
10. Add a **Text item** to the bottom table cell, with the text: **Sales Report**.



<b>Total Revenue by Sales Representatives</b>		
	<b>Sales Report</b>	

11. From the **Toolbox**, expand LAYOUT, then drag an **Image** to the middle table cell.
12. Double-click the **Image**, then from the drop-down list, select **samples/images**, then scroll down until you find **cover1.jpg**, and double-click it.  
Note: If no images are available on your server, you can paste a URL of an image directly and click OK.
13. On the Application bar, click **Run options** , then click **Run HTML**.  
The results appear as follows:



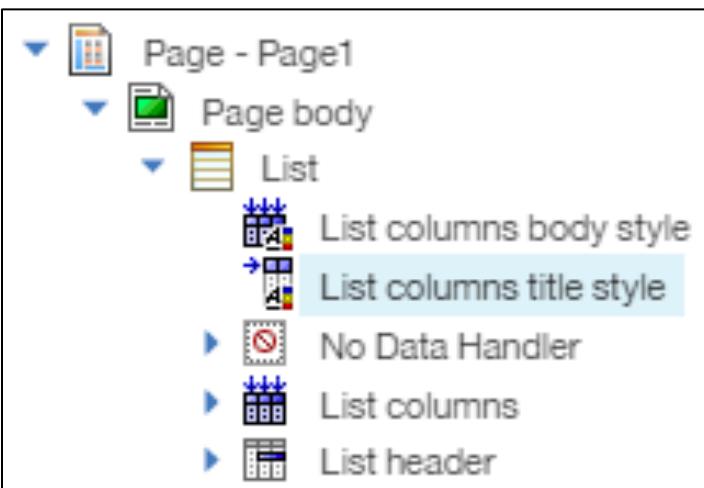
You now have added a cover page to your report.

14. **Page down** to see the details in the report.
15. Close the rendered report page.

## **Task 6. View the report structure and make changes to the report using the structure view**

1. On the side bar, click **Pages** , then click **Page 1**.
2. On the Application bar, click **Page views** , then click **Page structure**.  
All the objects of the report can be reviewed in a tree structure. Here you can quickly move and modify objects within the page of the report.
3. Expand **Page - Page1**.  
The page body of the report page is displayed. You want to view the structure of your List and quickly modify the format of all the list column titles in the report.
4. Expand **Page body**, and then expand **List**.
5. Click **List columns title style**.

The results appear as follows:



6. In the Properties pane, under **FONT & TEXT**, double-click the **Font** property.

7. Change **Family** to **Arial Black**, **Size** to **12pt**, and **Style** to **Italic**, then click **OK**.
8. On the Application bar, click **Page views** , and then click **Page design**.

The List column titles changed to reflect the modifications you made in the page structure view.

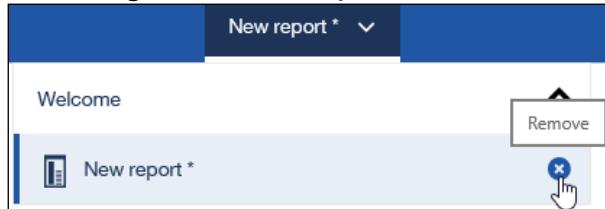
<b>Country</b>	<b>Employee name</b>	<b>Revenue</b>
<Branch region>		
<Country>	<Employee name>	<Revenue>
<Country>	<Employee name>	<Revenue>
<Branch region>		
<Country>	<Employee name>	<Revenue>
<Country>	<Employee name>	<Revenue>

9. On the Application bar, click **Run options** , then click **Run HTML**.
10. Click **Page down** to view other pages of the report that now reflect the formatting you implemented.

A section of the results appears as follows:

<b>Country</b>	<b>Employee name</b>	<b>Revenue</b>
<b>Americas</b>		
Brazil	Alexandre Pereira	34,720,977.7
	Beatriz Couto	3,842,910.29
	Eduardo Guimarães	48,839,028.63
	Morela Castro	3,131,988.79
Canada	Brendon Pike	24,827,214.69
	Carole Claudel	15,728,893.35

11. Close the rendered report tab.
12. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



13. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You created a report showing sales rep revenues generated in each region with each sales region on a separate page. You created and designed a title page for the report. You also made changes to the report using the structure view.

## Horizontal pagination

Camping Equipment	Cooking Gear	TrailChef Canteen	2007	Telephone	2,957	8.12	14.89	14.52	42,921.53	18,910.69
Camping Equipment	Cooking Gear	TrailChef Canteen	2007	Web	167,354	7.54	14.89	13.39	2,160,453.19	937,774.11

Jan 22, 2008

1...[A]

8:55:15 AM

TrailChef Canteen	2007	Telephone	24,010.84	44,029.73
TrailChef Canteen	2007	Web	1,222,679.08	2,491,901.06

Jan 22, 2008

1...[B]

8:55:15 AM

### Horizontal pagination

Horizontal Pagination enables you to span wide reports across multiple PDF pages with the appropriate page number.

You can only use horizontal pagination with list and crosstab reports.

## Add horizontal page numbers

- There are three options for adding horizontal page numbers:
  - Preset (using Number Style)
  - Custom Number Style
  - Report Layout Functions

Enhance report layout

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### *Add horizontal page numbers*

Add an existing page number from the preset list of styles.

By using the custom style option, you can create your own page number style.

Use a Layout Calculation from the toolbox tab to create an expression that determines a page number style.

## Demonstration 2

Format a report for horizontal viewing

Outdoor Protection	First Aid	Aloe Relief	2012	Sales visit	2,258	1.92	5.23	7,620.11
Outdoor Protection	First Aid	Aloe Relief	2012	Telephone	900	1.92	5.23	3,875.43
Outdoor Protection	First Aid	Aloe Relief	2012	Web	26,927	1.92	5.23	85,839.99
Outdoor Protection	First Aid	Aloe Relief	2013	E-mail	208	1.92	5.23	1,087.84
Outdoor Protection	First Aid	Aloe Relief	2013	Fax	7	1.92	5.23	36.61
1...(A)								

*Demonstration 2: Format a report for horizontal viewing*

## Demonstration 2: Format a report for horizontal viewing

### Purpose:

Management has asked you to create a list report that fits on one page. They have also asked to create a report with certain columns that repeat on each page. You will also need to apply different page numbering formats using horizontal page numbering and report layout functions.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the List

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **List** to the work area.
3. From the **Source** tab, add the following query items to the List:
  - Products: **Product line**, **Product type**, and **Product**
  - Time: **Year**
  - Order method: **Order method type**
  - Sales fact: **Quantity**, **Unit cost**, **Unit price**, **Revenue**, **Gross profit**, **Product cost**, **Planned revenue**
  - Sales (query): **Gross margin**

Product line	Product type	Product	Year	Order method type	Quantity	Unit cost
<Product line>	<Product type>	<Product>	<Year>	<Order method type>	<Quantity>	<Unit cost>
Unit price	Revenue	Gross profit	Product cost	Planned revenue	Gross margin	
<Unit price>	<Revenue>	<Gross profit>	<Product cost>	<Planned revenue>	<Gross margin>	

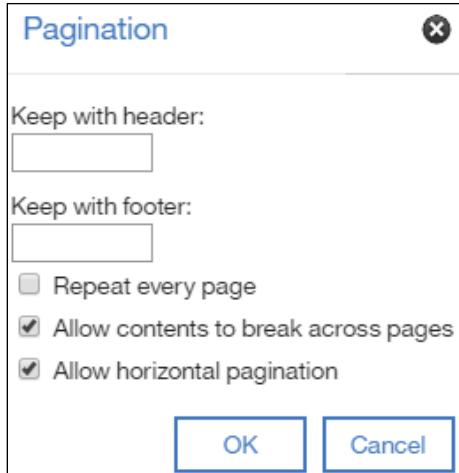
4. On the Application bar, click **Run options** , then click **Run PDF**. Notice that the list is too wide for one page, so it is split across two pages.
5. Close the rendered report tab.

### Task 2. Fit the List to the page width

1. Click the List's **Container Selector** .
2. On the Application bar, click **Show properties**  to open the Properties pane.
3. In the Properties pane, under GENERAL, double-click **Pagination**.

Notice that Allow horizontal pagination is selected. This ensures that the List allows horizontal pagination.

The results appear as follows:



4. Clear **Allow horizontal pagination**, and then click **OK**.
5. On the Application bar, click **Run options** , then click **Run PDF**.  
Notice that the entire List displays across the width of the page, but it is wider than an A4 page.
6. Close the rendered report tab.
7. On the Application bar, click **Undo**  to once again enable the **Allow horizontal pagination** property.

### Task 3. Repeat columns on multiple pages

When a report is split across pages, it is useful to repeat columns to carry context across. The author determines which List columns should repeat. In this report, you will repeat Product name, Year, and Order method type.

1. In the Application bar, click **Page views**, then click **Page structure**.
2. Expand **Page - Page1**, expand **Page body**, expand **List**, and then expand **List columns**.
3. Click **<Product>**, and then Ctrl-click **<Year>** and **<Order method type>**.
4. In the Properties pane, under GENERAL, double-click **Pagination**.
5. Check **Repeat every page**, then click **OK**.

Note: You can only select multiple List columns in the Page structure view.

6. On the Application bar, click **Run options** , then click **Run PDF**.
7. Scroll down to **Page 2**.

The Product, Year, and Order method type columns repeat on each page and provide the reader with sufficient content to understand the report. In a list, you can repeat any column.

8. Close the rendered report tab.
9. On the Application bar, click **Page views**, then click **Page design**.

## Task 4. Add page number to your report

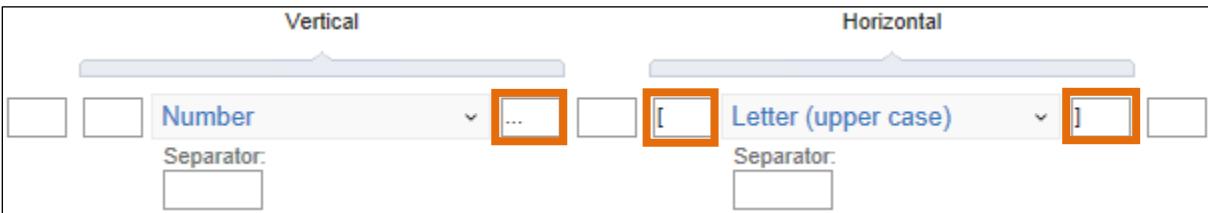
1. Click anywhere in the work area, then on the Toolbar, click **More > Headers & footers**, then click **Page header & footer**.
2. Check the **Footer**, then click **OK**.
3. Select the page footer, then on the Toolbar, click the arrow beside **Horizontal alignment**  , then click **Center**.
4. On side bar, click the **Toolbox** tab  , then under **TEXTUAL**, drag a **Page number** object  to the page footer.
5. On the Application bar, click **Run options**  , then click **Run PDF**. Notice that the page has page number in your report.
6. Close the rendered report tab.

## Task 5. Add horizontal page numbering

Currently, the page numbering in your report is 1, 2, 3, and so on. Reporting provides three methods to create the page numbering: preset, report layout functions, and custom number style.

1. To use a preset number style, double-click the **Page number** object  in the page footer.
2. In the Number Style dialog box, select **1A**, then click **OK**.
3. On the Application bar, click **Run options**  , then click **Run PDF**.
4. Scroll down, to view several page numbers in the footer.  
The pages are now numbered: 1A, 1B, 2A, 2B, and so on.
5. Close the rendered report tab.
6. To create a number using a custom number style, double-click the **Page number** object in the footer, and then click **Edit** .
7. In the Custom number style dialog, apply the following formatting:
  - add **3 periods** (...) in the box between **Vertical** and **Horizontal**.
  - under **Horizontal**, add a **left square bracket** ( [ ) in the box to the left of **Letter (upper case)**, and then add a **right square bracket** ( ] ) in the box to the right of **Letter (upper case)**.

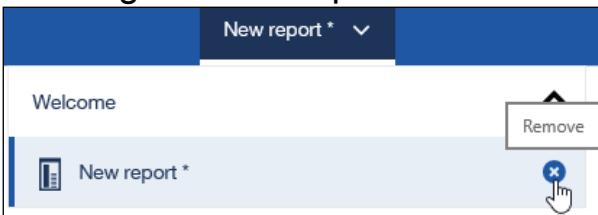
The results appear as follows:



8. Click **OK** to close all dialog boxes.
9. On the Application bar, click **Run options** , then click **Run PDF**.  
The custom page number style is applied.
10. Close the rendered report tab.

## Task 6. Create numbers using report layout functions (optional)

1. Delete the **Page number** object in the footer.
2. From the **Toolbox** tab, expand **TEXTUAL**, and then drag a **Layout calculation** to the footer.
3. Create and validate the following expression:  
`IF (HorizontalPageCount ()=1) THEN (number2string(PageNumber()))  
ELSE ( number2string(ceiling(PageNumber()/HorizontalPageCount()))  
+'...'+' mapNumberToLetter('A',HorizontalPageNumber ()-1)+')'`  
Hint: Drag the HorizontalPageCount, PageNumber, and mapNumberToLetter functions from the **Functions** tab/**Report Functions** folder; number2string is found in **Report Functions/Data Type Casting Functions**.
4. Click **OK**, and then run the report in **PDF**.  
The page numbers are now 1...(A), 1...(B), 2...(A), 2...(B), and so on.
5. Close the rendered report tab.
6. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



7. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You created a list report with columns too wide for one page and then modified it to fit on one page. You modified a report so that certain columns repeated on each page. You also applied different page numbering formats using horizontal page numbering and report layout functions.

**IBM Training**

## Modify structures

Position name	Contact Information
<Position name>	Work phone: <Work phone> ext. <Extension> Email: <Email> Date hired: <Date hired>

Add text items and additional query items to unlocked cells

Add a table to a row

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### Modify structures

By unlocking the cells, you can add multiple items to a single column to tailor a report to your needs.

Unlock cells to manipulate an object's contents. Once they are unlocked, you can change the text and add objects inside existing objects. This feature is useful for displaying related information in a single column, or for renaming a column. You can add additional rows to a list report to add extra information. You can add additional rows to a list report using the Structure menu.

Once a new row is added you can merge the cells by selecting one or more cells and then click the Merge cells button.

## Demonstration 3

### Create a condensed List report

Country	City	Employee name	Position name	Contact Information
<b>Australia</b>				
Australia	Melbourne	Thomas Faraday	Warehouse Worker	Work phone: +(61) 03 2982 4242 ext. 8223 Email: TFaraday@grtd123.com Date hired: Feb 16, 2011
	Melbourne	Andrea Samuel	Payroll Clerk	Work phone: +(61) 03 2982 4242 ext. 8224 Email: ASamuel@grtd123.com Date hired: Apr 25, 2011
	Melbourne	Cindy Sandles	Product Technician	Work phone: +(61) 03 2982 4242 ext. 8225 Email: CSandles@grtd123.com Date hired: Apr 11, 2011
	Melbourne	Jonathan Farrel	Level 1 Sales Representative	Work phone: +(61) 03 2982 4242 ext. 8226 Email: JFarrel@grtd123.com Date hired: Feb 2, 2013
	Melbourne	Ken Wilson	Customer Service Representative	Work phone: +(61) 03 2982 4242 ext. 8227 Email: KWilson@grtd123.com Date hired: Apr 19, 2011

*Demonstration 3: Create a condensed List report*

## Demonstration 3: Create a condensed List report

### Purpose:

The Human Resources department has requested a list of detailed sales rep information for each city. To reduce the number of columns in the report, you will combine information into one column.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

Namespace: Sales (query)

### Task 1. Create the List

1. Create a new **Blank** report using the **GO data warehouse (query)** package.
2. Add a **List** to the work area.
3. From the **Source** tab, add the following query items to the new List:
  - Employee by region: **Country, City, Employee name, Position name, Work phone, Extension, Email, Date hired.**

Country	City	Employee name	Position name	Work phone	Extension	Email	Date hired
<Country>	<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>
<Country>	<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>
<Country>	<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>

4. Click **<Country>**, and then on the Toolbar, click **Group / Ungroup**.
5. With **<Country>** selected, on the Toolbar, click **More > Headers & footers**, then click **Create header**.
6. Press **Delete** to remove the redundant **<Country>** column.
7. Click the **<Country>** header, then on the Toolbar, click **Horizontal alignment options > Center**.

The result appears as follows:

City	Employee name	Position name	Work phone	Extension	Email	Date hired
<b>&lt;Country&gt;</b>						
<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>
<b>&lt;Country&gt;</b>						
<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>

8. On the Application bar, click **Run options** , then click **Run HTML**.

The report data spreads out across the page. You want to condense it so that some of the data appears in a single column.

9. Close the rendered report tab.

## Task 2. Unlock the report and condense report data

1. On the Application bar, click **More** ..., then click **Locked**  to unlock the report. Once the report is unlocked, multiple data items can be merged into a single cell.
2. On the side bar, from the **Toolbox**, drag a **Table** to the right of <**Work phone**>, with **1** column and **3** rows, and then click **OK**.

A section of the result appears as follows:

Country	City	Employee name	Position name	Work phone	Extension	Email	Date hired
<b>&lt;Country&gt;</b>							
<Country>	<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>

3. Drag <**Work phone**> into the first row of the table, drag <**Email**> into the second row, and then <**Date hired**> into the third row.
4. Drag <**Extension**> into the top table cell, to the right of <**Work phone**> (inside the cell).

The results appear as follows:

Country	City	Employee name	Position name	Work phone	Extension	Email	Date hired
<b>&lt;Country&gt;</b>							
<Country>	<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>
<b>&lt;Country&gt;</b>							
<Country>	<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>

You can add text in front of the data items, to identify them.

5. From the **Toolbox**, drag a **Text item** to the left of <**Work phone**>, with the text **Work phone:**, press the spacebar, and then click **OK**.
6. Repeat steps **6** and **7** to add the following text items to the left of <**Email**> and <**Date hired**> respectively: **Email:** and **Date hired:**.
7. Drag a **Text item** between <**Work phone**> and <**Extension**>, press the spacebar, type **ext.**, press the spacebar, and then click **OK**.

A section of the results appears as follows:

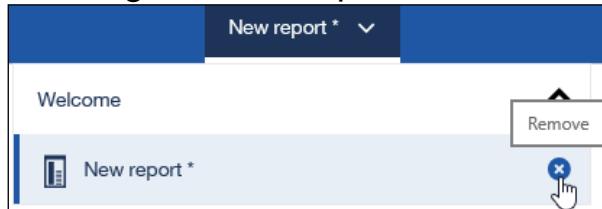
Work phone: <Work phone> ext. <Extension>  
 Email: <Email>  
 Date hired: <Date hired>

8. On the Application bar, click **More** , then click **Unlocked**  to lock the report.
9. Click the **Extension** column header, Ctrl-click the **Email** and **Date hired** column headers, then press **Delete**.
10. On the Application bar, click **Show properties**  to open the Properties pane.
11. Click the **Work phone** List column title, then in the Properties pane, under **DATA ITEM**, set the **Label** property to **Contact Information**, then press **Enter**.
12. On the Application bar, click **Run options** , then click **Run HTML**.  
 All key contact information is consolidated under a single column.

A section of the result appears as follows:

Country	City	Employee name	Position name	Contact Information
<b>Australia</b>				
Australia	Melbourne	Thomas Faraday	Warehouse Worker	Work phone: +(61) 03 2982 4242 ext. 8223 Email: TFaraday@grtd123.com Date hired: Feb 16, 2011
	Melbourne	Andrea Samuel	Payroll Clerk	Work phone: +(61) 03 2982 4242 ext. 8224 Email: ASamuel@grtd123.com Date hired: Apr 25, 2011
	Melbourne	Cindy Sandles	Product Technician	Work phone: +(61) 03 2982 4242 ext. 8225 Email: CSandles@grtd123.com Date hired: Apr 11, 2011
	Melbourne	Jonathan Farrel	Level 1 Sales Representative	Work phone: +(61) 03 2982 4242 ext. 8226 Email: JFarrel@grtd123.com Date hired: Feb 2, 2013
	Melbourne	Ken Wilson	Customer Service Representative	Work phone: +(61) 03 2982 4242 ext. 8227 Email: KWilson@grtd123.com Date hired: Apr 19, 2011

13. Close the rendered report tab.
14. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



15. Leave the IBM Cognos Analytics portal open for the next demonstration.

### Results:

You created a List of detailed sales rep information in each city. To reduce the number of columns in the report, you combined information in one column.

## Change PDF page orientation to suit report objects

Order number	Retailer	Year	Revenue
100001	Kavanagh Sports	2010	18,036.24
100002	Ar fresco	2010	58,828.44
100003	Universo Acampando	2010	41,255.35
100004	Ao ar livre	2010	228,447.45
100005	Galáxia do esporte	2010	71,237.12
100006	Mundo saudável	2010	35,015.7
100007	Tamarack Outfitter Rentals	2010	94,859.1
100008	Husky Outfitters	2010	603,586.64
100009	Sporting Goods Direct	2010	149,654.11

Page 1 - Portrait

	Camping Equipment			Golf Equipment			Outdoor Protection			Personal Accessories			Mountaineering Equipment		
	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin
2010	332,986,338	5,895,053	513,157.39%	153,553,851	1,092,982	240,851.97%	36,165,521	5,614,356	276,337.72%	391,647,094	7,572,339	2,578,597.33%			
2011	402,757,573	6,903,764	606,334.60%	168,006,427	1,297,793	272,722.14%	25,008,574	4,111,058	309,134.34%	456,323,356	8,567,357	3,667,173.26%	107,099,660	2,644,713	296,185.08%
2012	500,382,423	8,399,156	616,781.40%	230,110,271	1,536,772	295,197.19%	10,349,176	1,599,585	311,343.26%	594,009,408	10,706,015	4,925,059.31%	161,039,823	3,700,262	303,609.45%
2013	352,910,330	6,103,176	364,819.16%	174,740,819	1,186,154	178,896.83%	4,471,025	689,446	189,180.72%	443,693,450	8,061,994	3,280,176.17%	141,520,650	3,555,116	177,533.07%

Page 2 - Landscape

## Change PDF page orientation to suit report objects

You can set the page orientation and size for each page in the report independently.

## Set PDF security options

- You can secure PDF reports when you run the report with options.
- You can set a password to secure the document.

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*Set PDF security options*

## Demonstration 4

Change a PDF page from portrait to landscape orientation

Order number	Retailer	Year	Revenue
100001	Kavanagh Sports	2010	18,036.24
100002	Ar fresco	2010	58,828.44
100003	Universo Acampando	2010	41,255.35
100004	Ao ar livre	2010	228,447.45
100005	Galáxia do esporte	2010	71,237.12
100006	Mundo saudável	2010	35,015.7
100007	Tamarack Outfitter Rentals	2010	94,859.1
100008	Husky Outfitters	2010	603,586.64
100009	Sporting Goods Direct	2010	149,654.11

	Camping Equipment			Golf Equipment			Outdoor Protection			Personal Accessories			Mountaineering Equipment		
	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin
2010	332,986,338	5,895,053	513,157.39%	153,553,851	1,092,982	240,851.97%	36,165,521	5,614,356	276,337.72%	391,647,094	7,572,339	2,578,597.33%			
2011	402,757,573	6,903,764	606,334.60%	168,006,427	1,297,793	272,722.14%	25,008,574	4,111,058	309,134.34%	456,323,356	8,567,357	3,667,173.26%	107,099,660	2,644,713	296,185.08%
2012	500,382,423	8,399,156	616,781.40%	230,110,271	1,536,772	295,197.19%	10,349,176	1,599,582	311,343.26%	594,009,408	10,706,015	4,925,059.31%	161,039,823	3,700,262	303,609.45%
2013	352,910,330	6,103,176	364,819.16%	174,740,819	1,186,154	178,896.83%	4,471,025	689,446	189,180.72%	443,693,450	8,061,994	3,280,176.17%	141,520,650	3,555,116	177,533.07%

Enhance report layout

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*Demonstration 4: Change a PDF page from portrait to landscape orientation*

## Demonstration 4:

### Change a PDF page from portrait to landscape orientation

#### Purpose:

You have been asked to build a PDF report that contains a list report and a crosstab report. You will use PDF Page Setup properties to display individual report pages as portrait or landscape. You will then create a secured version of the report.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

Package: Team content\Samples\Models\GO data warehouse (query)

Folder: Sales and Marketing (query)

#### Task 1. Create the List and page header

1. Create a new report using the **GO data warehouse (query)** package and the **1 column** template.
2. Add a **List** to the report page.
3. From the **Source** tab, add the following query items to the List:
  - Sales order: **Order number**
  - Retailers: **Retailer name**
  - Time: **Year**
  - Sales fact: **Revenue**

Order number	Retailer name	Year	Revenue
<Order number>	<Retailer name>	<Year>	<Revenue>
<Order number>	<Retailer name>	<Year>	<Revenue>
<Order number>	<Retailer name>	<Year>	<Revenue>

4. Click on the page body, then on the Toolbar, click **More ... > Headers & footers**, and then click **Create header**.
5. Select the page header, and then on the Toolbar, click the arrow beside **Horizontal alignment**  , then click **Center** .
6. Click the **Toolbox**  tab, then from under PINNED section, drag a **Text item**, to the page header.
7. In the text box, type **Revenue by Order Number**, and then click **OK**.  
You will now make a copy of this page so that you have a page header and footer on the second page.
8. On the side bar, click **Pages**  , then click  **Report pages**.
9. In the **Report pages** pane, right-click **Page1**, and then click **Copy**.

10. Right-click the white space below Page1, and then click **Paste**.
11. Double-click the new **Page2**.
12. Click the List's Container Selector , then press **Delete** (on the keyboard).

## Task 2. Create the Crosstab

1. On the work area, click **Add** , then click **Crosstab**.
2. Click **OK** to accept the defaults and close the dialog.
3. From the **Data/Source** tab, add the following query items to the Crosstab:
  - **Rows** area:
    - Time: **Year**
  - **Columns** area:
    - Products: **Product line**  
Nested under Product line
      - Sales fact: **Revenue**, **Quantity** and **Gross margin**

	<#Product line#>			<#Product line#>		
	<#Revenue#>	<#Quantity#>	<#Gross margin#>	<#Revenue#>	<#Quantity#>	<#Gross margin#>
	<#Year#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

4. Click the **<#Gross margin#>** fact cells.
5. On the Application bar, click **Show properties**  to open the Properties pane.
6. In the Properties pane, under DATA, double-click **Data format**.
7. From the **Format type** drop-down list, select **Percent**. in the Properties pane, click **Number of decimal places**, and then select **2** from the list.
8. Click **OK**.
9. Click the **<#Revenue #>** fact cells, and then in the Properties pane, under DATA, double-click **Data format**.
10. From the **Format type** drop-down list, select **Number**, then in the Properties pane, click **Number of decimal places**, and then select **0**.
11. Click **OK**.
12. On the side bar, click **Pages** , then click  **Report**.
13. In the Properties pane, under REPORT, double-click **PDF page setup**.  
The Orientation is set to Portrait by default. This is the setting for the entire report
14. On the Application bar, click **Run options** , then click **Run PDF**.
15. Scroll down to the last page.  
The crosstab gets split across two or three pages, because the page is not wide enough to display all data together, when portrait page orientation is used.

16. Close the rendered report tab.

### Task 3. Change the page orientation from portrait to landscape

1. On the side bar, click **Pages** , then click **Page2**.
2. Click anywhere below the Crosstab to select the entire page.
3. On the Properties pane header, click **Select Ancestor**  , then click the **Page** object.
4. In the Properties pane, under GENERAL, double-click the **PDF page setup** property.
5. Select **Override the page setup for this page**, click **Landscape**, and then click **OK**.
6. On the Application bar, click **Page views** , and then click **Page structure**.
7. Expand **Page - Page2**, then **Page body**, and then click **Crosstab** to select it.
8. From the Properties pane, under GENERAL, double-click **Pagination**.
9. Clear **Allow horizontal pagination**, and then click **OK**.
10. On the Application bar, click **Run options** , then click **Run PDF**.
11. Scroll down to the last page.  
The crosstab now fits on a single page. You can vary the orientation by page.
12. Close the rendered report tab.
13. Save the report to **My content**, naming it **Demonstration 4\_Enhance Report Layout**.

This report will be used in the next tasks, as well as in Demonstration 5.

### Task 4. Explore an unsecured PDF version of the report

In this task, you will open and copy some text from a PDF report and paste it into a Notepad document to prove that there is no security on the PDF document. In the next task, you will create a PDF output which will require a password to open.

1. On the side bar, click **Home** .
2. From the **Welcome** page, click **My content**.
3. For **Demonstration 4\_Enhanced Report Layout**, click the ellipsis icon to the right.
4. Click **Run as**, and then enable **Run in background** (checkmark appears).
5. In the list of file options, select **PDF**, and then clear **HTML**.
6. Click the **Advanced** header, and then click **>** next to **Delivery**.
7. Verify that **Save the report** is selected.

8. Click **Done**, and then click **Run**.
9. Wait about five minutes for the report to be generated.

## Task 5. Open the PDF report

1. From the **Welcome** screen, click **My content**, and then click the ellipsis icon to the right of the **Demonstration 4\_Enhanced Report Layout**.
2. Click **View versions**.  
You should see a timestamp from about five minutes ago.
3. Click the most recent timestamp. You should see the **PDF**  symbol.
4. Click the **PDF** to open it.
5. Once the **PDF** is visible, click and drag the cursor over the report to highlight some of the text, right-click the highlighted text, and then click **Copy** to copy the text to the clipboard.
6. From the Windows **Start** menu, click **Windows Accessories > Notepad**.
7. Paste the text into the Notepad document.  
This proves that you can copy the content from the PDF document into another document.
8. Close Notepad without saving the document, and then go back to **IBM Cognos Analytics**.

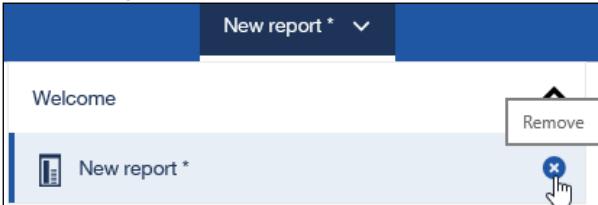
## Task 6. Secure a PDF report

1. From the **Welcome** screen of **IBM Cognos Analytics**, click **My Content**.
2. Click the ellipsis icon at the right of **Demonstration 4\_Enhance Report Layout**.
3. Click **Run as**, and then click the switch for **Run in background** to enable it.
4. Select the **PDF** checkbox, and then clear the **HTML** checkbox.
5. Click **Advanced** and then click the **>** to the right of **PDF**.
6. Select the checkbox for **Requires a password to open the report**.
7. In the **Password** and **Confirm Password** textboxes, type **Education1**.
8. Click the **< Back** tab at the top, and then click **Run**.
9. Wait about five minutes for the report to be generated.

## Task 7. Open a secured PDF report

1. From the **Welcome** screen, click **My content**.
2. Click the ellipsis icon at the right of **Demonstration 4\_Enhance Report Layout**.
3. Click **View versions**.
4. Open the most recent time stamp and then open the **PDF**.

5. When the PDF appears, you are prompted to type a password because you secured this version of the report.
6. Type the password **Education1**, and then click **OK**.
7. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



8. Leave the IBM Cognos Analytics portal open for the next demonstration.

**Results:**

You created a PDF report that contains a list report and a crosstab report. You used PDF Page Setup properties to display individual report pages as portrait or landscape. You then created a secured version of the report that required a password to access.

## Format objects across a report

- Format reports quickly and consistently using Cascading Style Sheet (CSS) classes.

Enhance report layout

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### *Format objects across a report*

CSS classes are used in reports and templates.

To determine what class an object uses, select the object and view the Classes property. An object also inherits the classes set for its parent objects.

## Demonstration 5

Format objects across a report (optional)

### Revenue by Order Number

Order number	Retailer name	Year	Revenue
100001	Kavanagh Sports	2010	18,036.24
100002	Ar fresco	2010	58,828.44
100003	Universo Acampando	2010	41,255.35
100004	Ao ar livre	2010	228,447.45
100005	Galáxia do esporte	2010	71,237.12
100006	Mundo saudável	2010	35,015.7
100007	Tamarack Outfitter Rentals	2010	94,859.1
100008	Husky Outfitters	2010	603,586.64
100009	Sporting Goods Direct	2010	149,654.11
100010	Game On! Sports	2010	296,228.09

Jan 8, 2018

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### *Demonstration 5: Format objects across a report (optional)*

This is an optional demonstration; however, to complete it, you must first complete Demonstration 4.

## Demonstration 5: Format objects across a report (optional)

### Purpose:

In Reporting, you will override a global style to modify the way report title objects appear in the report. You will also add a local style and will use it to format the report footer text. You will then create a report and observe how these style changes affect it.

You will need to complete Demonstration 4 before starting this demonstration.

Portal: <http://vclassbase/ibmcognos>

User/Password: brettonf/Education1

### Task 1. Explore Global Class Extensions

1. Click **My content**, then to the right of **Demonstration 4\_Enhance Report Layout**, click the ellipsis, then click **Edit report**.
2. On the Application bar, click **Page views**, , then click **Page design**.
3. Click the report title text in the page header.
4. On the Application bar, click **Show properties**  to open the Properties pane.
5. In the Properties pane, under MISCELLANEOUS, double-click the **Classes** property.
6. Under the Selected classes list, ensure that the class **Report title text** is there.
7. In the Properties pane, click **Select Ancestor** , then click **Block**.
8. In the Properties pane, under MISCELLANEOUS, verify that the **Classes** property is set to **Report title area**.
9. On the side bar, click **Pages** , then click **Classes**.
10. In the **Global Class Extensions** list, select **Report title text**.

Report title text class corresponds to the class name you set on Page1.

In the Preview pane, Sample Text is underlined. You can explore the Report title area class to preview its style.

### Task 2. Override a class style definition, and then add a new class

You will now change the report title text style. The changes you make will apply only to instances of the style in this report.

1. With the **Report title text** style selected, in the Properties pane, under **FONT & TEXT**, double-click the **Font** property.
2. Click **Foreground Color**, then double-click **Blue**.
3. Click **OK** to close the Font dialog.

4. On the Pages tab, under the Report pages folder, click **Page1**.  
The change you made to the report title text style has been applied. You will now format the text in the footer of the report.
5. On the Pages tab, click **Classes**.
6. From the **Toolbox**, drag a **Class** object to the **Local Classes** pane.
7. In the Properties pane, under GENERAL, modify the **Label** property to be **ReportFooterText**, and then press **Enter**.
8. In the Properties pane, under FONT & TEXT, double-click **Font**.
9. Set **Family** to **Tahoma**, **Size** to **10pt**, **Weight** to **Bold**, **Effects** to **Underline**, and **Foreground Color** to **Purple**, and then click **OK**.
10. Click **OK** to close the Font dialog box.  
Notice that the preview window shows the changes that have been made.
11. In the Properties pane, under FONT & TEXT, click the **Horizontal alignment** property, and then from the list, select **Left**.

The screenshot shows a 'Text item' placeholder on the left with the text 'Sample Text.' inside. To the right is the Properties pane with the following settings:

Background effects	
Background color	
Foreground color	Purple
<b>FONT &amp; TEXT</b>	
Font	<b>Bold 10pt Tahoma Underline</b>
Horizontal alignment	<b>Left</b>

### Task 3. Apply the new class to the report, add details, and run the report

1. On the side bar, click **Pages** , then click **Page1**.
2. Click the page footer.
3. In the Properties pane, under MISCELLANEOUS, double-click the **Classes** property.
4. From the **Local classes** list, click **cls1:ReportFooterText**, click **Add to select classes** (right arrow), and then click **OK**.  
The style from the Report footer text class you created has been applied.
5. On the Application bar, click **Run options** , then click **Run HTML**.  
The result appears as follows:

<b>Revenue by Order Number</b>				
Order number	Retailer name	Year	Revenue	
100001	Kavanagh Sports	2010	18,036.24	
100002	Ar fresco	2010	58,828.44	
100003	Universo Acampando	2010	41,255.35	
100004	Ao ar livre	2010	228,447.45	
100005	Galáxia do esporte	2010	71,237.12	
100006	Mundo saudável	2010	35,015.7	
100007	Tamarack Outfitter Rentals	2010	94,859.1	
100008	Husky Outfitters	2010	603,586.64	
100009	Sporting Goods Direct	2010	149,654.11	
100010	Game On! Sports	2010	296,228.09	
100011	Expert Fitness	2010	151,948.12	
100012	VIP Department Stores	2010	507,337.27	
100013	Over the Top Cycles	2010	91,781.28	
100014	The Marketplace	2010	66,839.03	
100015	Wilderness Wonderment Ltd	2010	34,690.68	
100016	Sunglass Corner	2010	11,140.54	
100017	Eye Dimensions	2010	10,584.7	
100018	Todo para el Golf, S.A. de C.V.	2010	123,819.08	
100019	New Vision	2010	130,042.08	
100020	Esportes Grumari	2010	51,072.44	

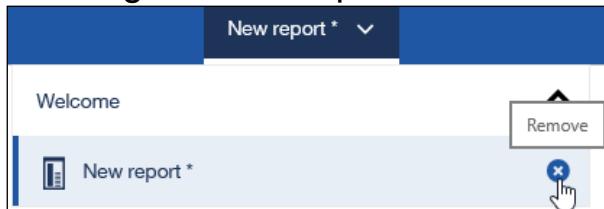
Sep 4, 2018

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The formatting that you applied using the named styles appears in the report.

6. Close the rendered report tab.
7. In the Application bar, click the report dropdown menu, then click **Remove**  to the right of New report to close it. Then click **OK** to confirm your action.



8. Leave the IBM Cognos Analytics portal open for the next exercise.

### Results:

**In Reporting, you overrode a global class style and added a new local class style to the report.**

## Unit summary

- Force page breaks in reports
- Modify existing report structures
- Apply horizontal formatting
- Specify print options for PDF reports
- Format data and report objects

Enhance report layout

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*Unit summary*