

**IBM Cognos Report Studio:
Author Professional Reports
Fundamentals (v10.2.2)**
Student Guide Vol 1
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IBM Cognos Report Studio: Author Professional Reports Fundamentals (v10.2.2)

B5A58

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Course Overview

Course Overview

IBM Cognos Report Studio: Author Professional Reports Fundamentals (v10.2.2) is a three-day, instructor-led course. It is designed for professional report authors to learn report building techniques using relational data models, and methods of enhancing, customizing, and managing professional reports. Attendees will participate in hands-on demos and workshops that illustrate key concepts while learning how to use the product.

Intended Audience

This course is recommended for Professional Report Authors

Topics Covered

Topics covered in this course include:

- Explore Report Studio, different report types (list, crosstab, chart, map)
- Create and format reports using grouping, headers, footers, and other formatting options
- Focus reports by filtering data and using prompts
- Add value to your reports using calculations and additional report building techniques
- Enhance reports with advanced formatting and exceptional data highlighting
- Set up drill-through access and create drill-through reports

Course Prerequisites

Participants should have:

- Knowledge of your business requirements
- Experience using the Windows operating system
- Experience using a Web browser
- IBM Cognos BI for Consumers (10.2) WBT

Document Conventions

Conventions used in this guide follow Microsoft Windows application standards, where applicable. As well, the following conventions are observed:

Bold

Bold style is used in demo and workshop step-by-step solutions to indicate either:

- actionable items
(Point to **Sort**, and then click **Ascending**.)
- text to type or keys to press
(Type **Sales Report**, and then press **Enter**.)
- UI elements that are the focus of attention
(In the **Format** pane, click **Data**)

Italic

Used to reference book titles.

CAPITALIZATION

All file names, table names, column names, and folder names appear in this guide exactly as they appear in the application.

To keep capitalization consistent with this guide, type text exactly as shown.

Workshops

Workshop Format

Workshops are designed to allow you to work according to your own pace. Content contained in a workshop is not fully scripted out to provide an additional challenge. Refer back to demonstrations if you need assistance with a particular task. The workshops are structured as follows:

The Business Question Section

This section presents a business-type question followed by a series of tasks. These tasks provide additional information to help guide you through the workshop. Within each task, there may be numbered questions relating to the task. Complete the tasks by using the skills you learned in the module. If you need more assistance, you can refer to the Task and Results section for more detailed instruction.

The Task and Results Section

This section provides a task based set of instructions that presents the question as a series of numbered tasks to be accomplished. The information in the tasks expands on the business case, providing more details on how to accomplish a task. Screen captures are also provided at the end of some tasks and at the end of the workshop to show the expected results.

Additional Training Resources

Bookmark [Business Analytics Product Training](http://www-01.ibm.com/software/analytics/training-and-certification/) <http://www-01.ibm.com/software/analytics/training-and-certification/> for details on:

- Instructor-led training in a classroom or online
- Self-paced training that fits your needs and schedule
- Comprehensive curricula and training paths that help you identify the courses that are right for you
- IBM Business Analytics Certification program
- Other resources that will enhance your success with IBM Business Analytics Software

IBM Product Help

Help type	When to use	Location
Task-oriented	You are working in the product and you need specific task-oriented help.	<i>IBM Product - Help link</i>
Books for Printing (.pdf)	<p>You want to use search engines to find information. You can then print out selected pages, a section, or the whole book.</p> <p>Use Step-by-Step online books (.pdf) if you want to know how to complete a task but prefer to read about it in a book.</p> <p>The Step-by-Step online books contain the same information as the online help, but the method of presentation is different.</p>	Start/Programs/ <i>IBM Product/Documentation</i>
IBM on the Web	<p>You want to access any of the following:</p> <ul style="list-style-type: none"> • Training and Certification Web site • Online support • IBM Web site 	<ul style="list-style-type: none"> • http://www-01.ibm.com/software/analytics/training-and-certification/ • http://www-947.ibm.com/support/entry/portal/Overview/Software • http://www.ibm.com

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Introduction to the Reporting Application

IBM Cognos BI

Business Analytics software



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Objectives

- At the end of this module, you should be able to:
 - examine Report Studio and its interface
 - explore different report types
 - create a simple, sorted, and formatted report
 - explore how data items are added queries

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Prerequisites:

- B5208 Overview of IBM Cognos BI (v2.0)
- B5288 IBM Cognos Connection for Consumers (v10.2) WBT

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What is Report Studio?

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

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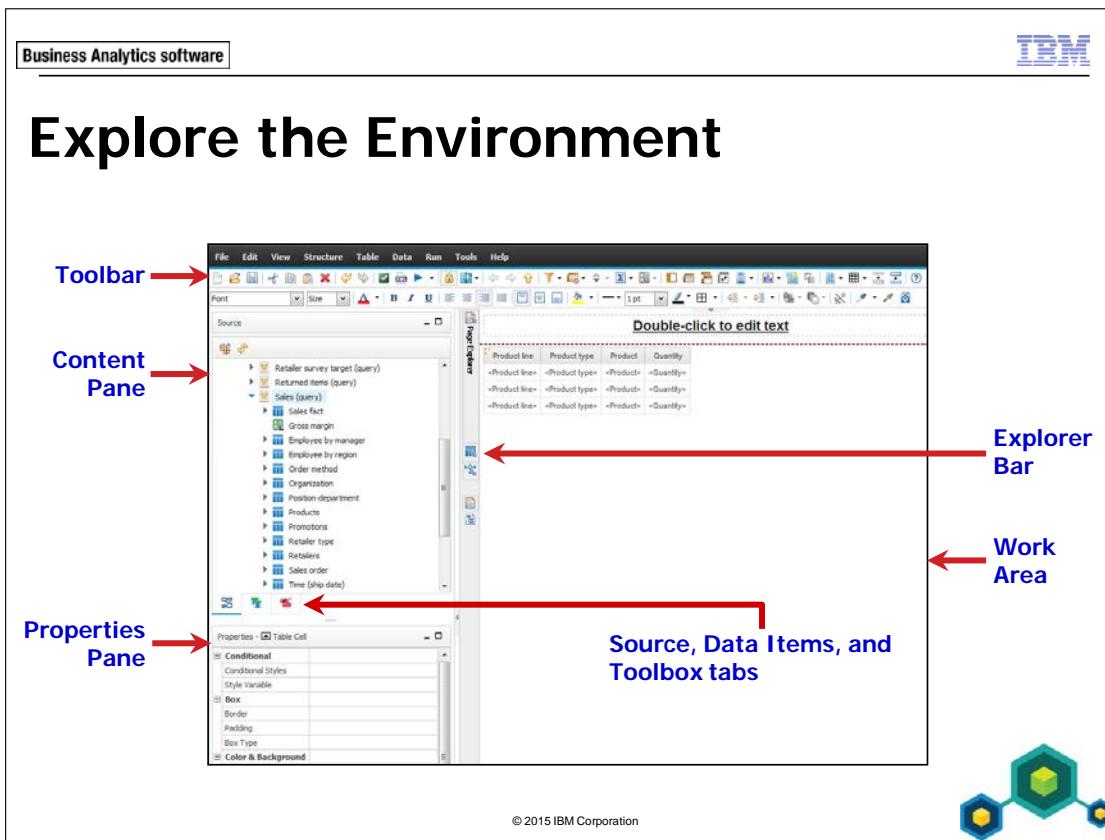


Report Studio can be opened using a variety of options depending on reporting need.

Create New: Open Report Studio with a choice from preset template options.

Open Existing: Open a copy of an existing report without affecting the original report.

New from Template: Navigate to and open a saved template. This option does not just show you saved templates but all reports. Users will be able to choose any saved report that is appropriate for their needs and Report Studio will then automatically create a template based on the chosen report.

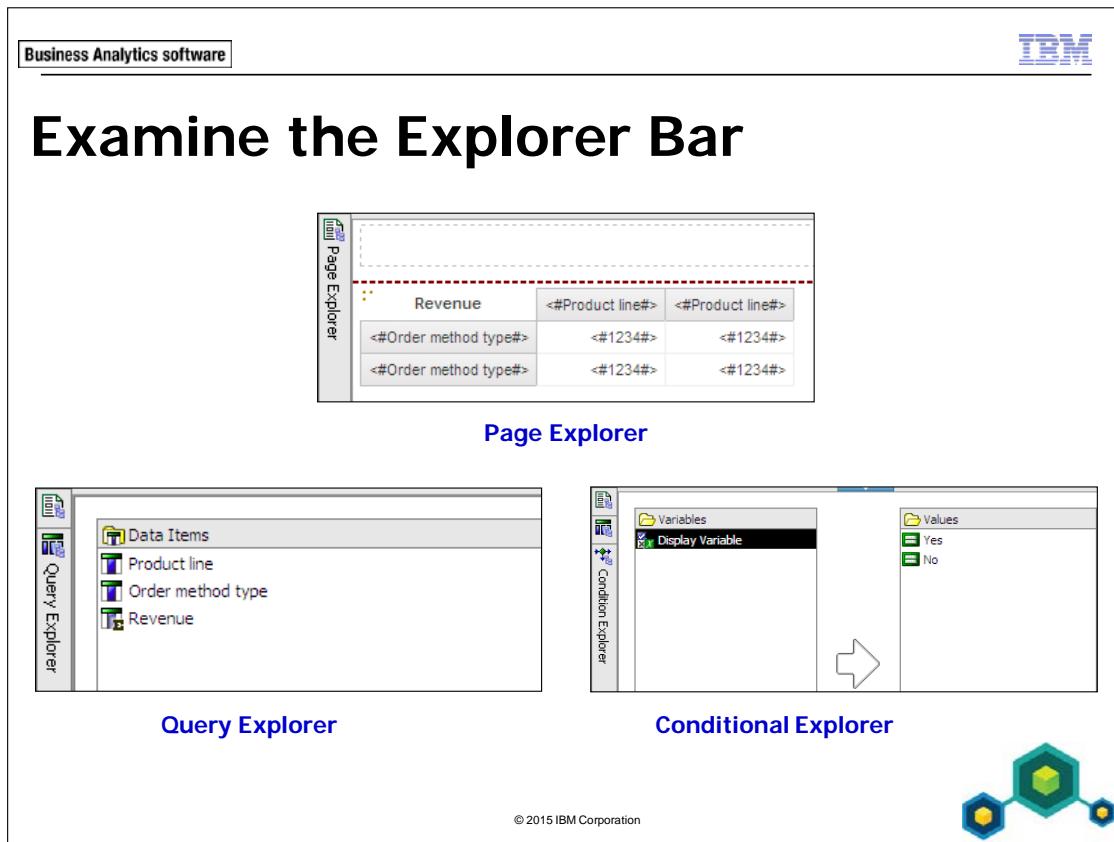


Build reports by adding objects and data items from the Content pane. The Source tab allows you to insert query items into your report directly from the package. You can only make changes to the structure of the package by using Framework Manager. The Data Items tab allows you to insert data items into your report that already exist in your query. The Toolbox tab allows you to insert report objects into your report.

Modify objects and query items using the Properties pane.

Resize panes by dragging the pane edges.

Use the Explorer bar to navigate between pages, queries and variables, and toggle between Page Design and Page Structure.



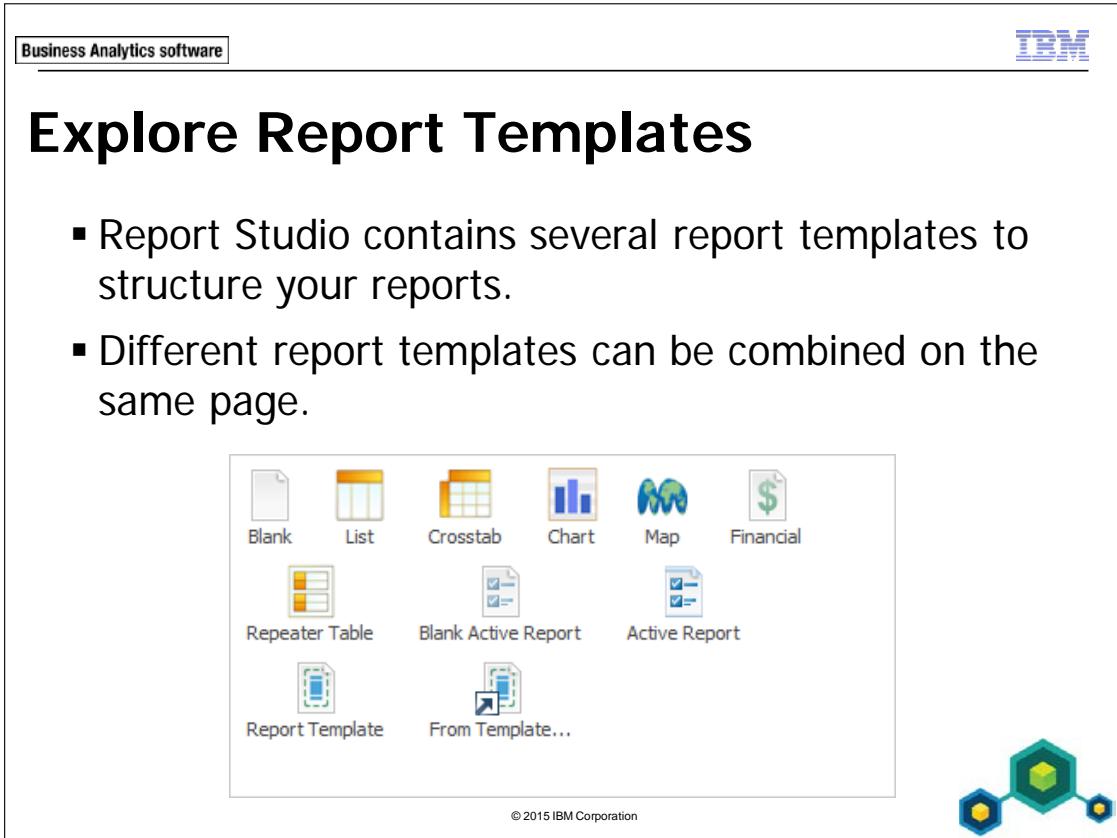
Page Explorer - used to create and modify report pages, prompt pages, and classes (local and global).

Query Explorer - used to create and modify queries and perform complex tasks such as defining union joins and writing SQL statements to be used in a report.

Conditional Explorer - used to create and modify variables to define conditions that will be used to format the report.

Page Design - view the set of pages that define the appearance and formatting of a report.

Page Structure - view the entire contents of a report page in a tree structure.



The screenshot shows a software window titled "Business Analytics software". In the top right corner is the "IBM" logo. The main content area features a large title "Explore Report Templates" in bold black font. Below it is a bulleted list of two items:

- Report Studio contains several report templates to structure your reports.
- Different report templates can be combined on the same page.

Below the list is a grid of report template icons:

Blank	List	Crosstab	Chart	Map	Financial
Repeater Table	Blank Active Report	Active Report			
Report Template	From Template...				

At the bottom of the grid is the text "© 2015 IBM Corporation". To the right of the grid is a decorative graphic of three interconnected hexagons in blue, green, and yellow.

If you create a new report using a report template, such as list or crosstab, the report will contain a header and footer with the specified report type in the body of the report.

Repeater tables are used to format data in a repeated fashion across a table format.

In Report Studio you can create Workspace Advanced and Report Studio templates to provide users with a layout to apply to their existing reports or to create new reports.

- **List** reports are useful for presenting tabular list information.
- **Crosstab** reports are useful for comparative analysis.
- **Chart** reports are useful for graphically showing comparisons, relationships, and trends.
- **Map** reports are useful for presenting data across geographical and other spatial contexts.

Business Analytics software

Generate the Report

- To view the results of the designed report, run the report and view it in IBM Cognos Viewer.

Work Area list report object layout

Country	Revenue
<Country>	<Revenue>

Results in IBM Cognos Viewer

Country	Revenue
Portugal	\$34,675,662.43

Run Report

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While working in Report Studio, you will only see metadata, such as column or row labels. You will not see actual data values in the report. It is faster to design without data reloading each time you make a change to the report. To see report results, you must run the report. The results appear in a separate window in IBM Cognos Viewer.

You can navigate through the report using the Page Up, Page Down, Top, and Bottom links at the bottom of the report.

You can return to Report Studio to alter your report by clicking the Close link in the upper right corner of the IBM Cognos Viewer.

You can distribute reports by email, through the Web, or you can save them on your desktop. You would first render the report in the format that is most suitable for your needs: HTML, PDF, Excel 2007, Excel 2007 Data, Excel 2002, Delimited Text (CSV), and XML formats.

The screenshot shows the Properties pane in IBM Cognos Report Studio. The top bar indicates 'Business Analytics software' and the IBM logo. The title 'Change the Properties of an Object' is displayed. The Properties pane is open for a 'List Column Body' object, specifically for a data item named 'Revenue'. The pane is divided into sections: Positioning, Data Item, and Miscellaneous. In the Data Item section, the 'Name' is set to 'Revenue'. In the Miscellaneous section, the 'Classes' field contains 'List column body measure cell'. Annotations include red arrows pointing to the 'Select Ancestor Button' (top left), 'Object Type Selected' (List Column Body at the top), 'Item Name' (Revenue), 'Property Setting' (Aggregate Function: Total), and a general 'Property' label pointing to the Miscellaneous section.

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.

Business Analytics software



Demo 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

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Demo 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. Open Report Studio and choose a report type.

1. Start your internet browser, and then, in the address box, type <http://localhost:88/ibmcognos>, and then press **Enter**.
2. On the **Log on** screen, in the **User ID** box, type **brettonf**, in the **Password** box, type **Education1**, and then click **OK**.
3. On the **IBM Cognos software** page, click **Author advanced reports**, and then on the **Select a package** page, navigate to **Samples\Models**, and then click **GO Data Warehouse (query)**.
4. Click **Create New**, click the **List**  template, and then click **OK**.

A list report object appears in the work area. A header appears at the top, and a footer containing date, time, and page number information appears at the bottom.

Task 2. Add items to the list.

1. In the **Content** pane, click the **Source** tab.
A data tree appears that contains all of the available items that can be added to the report.
2. On the **Content** pane, **Source** tab, expand the **Sales and Marketing (query)** folder , expand the **Sales (query)** namespace , and then expand the **Employee by region** query subject .

3. Double-click **Country** query item to add it to the list report object.
The list report object now has one column.
4. Double-click **City** to add it to the list report object.
City is automatically added to the end of the list.
5. Right-click **Last name** and then click **Properties**.
The Properties dialog box appears with details about the item.
6. Click **Close**.
7. Click **First name**, then **Ctrl-click Last name, Employee level and Position name**, right-click **Position name**, and then click **Insert**.
The items are added to the list in the order in which they are selected.
8. Expand the **Sales fact** query subject and then click and drag **Revenue** to add it to the end of the list.
If you place the query item outside of the list report object you will receive a message indicating that you have created a singleton.
You would like to see the Last name before the First name.
9. In the work area, click the <**Last name**> cell to select the list column body, and then drag it to the left of the <**First name**> list column body.
A flashing black bar appears when the item is over a drop zone.

Note: Make sure that the list column body is selected by clicking any one of the cells in the column, not the column header. To check to see what element of the report you have selected, check the title bar of the Properties pane.

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 **Explorer** bar, point to **Query Explorer** , and then 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 **Explorer** bar, point to **Page Explorer** , and click **Page1** to return to the work area.

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Task 4. Remove a column from the report.

You decide that you do not want to include Employee level in the list report object. You will remove it from the list.

1. In the list report object, click the <Employee level> list column body and then on the toolbar, click **Cut** .

The column is removed from the list report.

2. On the **Explorer** bar, point to **Query Explorer**, 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.

3. On the **Explorer** bar, point to **Page Explorer**, and then click **Page1** to return to the work area.

4. On the toolbar, click **Undo** , in the list report object, click <Employee level>, and then on the toolbar, click **Delete** .

5. On the **Explorer** bar, point to **Query Explorer**, 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 run the report.

1. On the **Explorer** bar, point to **Page Explorer**, and then click **Page1**.
2. In the list report object, click the **<Revenue>** list column body (not the column title).

The Revenue cells are highlighted to show that they are selected. The Properties pane shows the properties for this column.

3. On the toolbar, click **Sort** , and then click **Descending**.

An icon  appears beside the Revenue list column title indicating that the data is sorted in descending order. Our sales reps will now be ranked starting with our top performers.

4. With the **<Revenue>** column still selected, in the **Properties** pane, under the **Data** category, click **Data Format**, and then click the **ellipsis** .
5. In the **Format type** list, click **Currency**.
6. Under **Properties**, click **Currency**, click the **Down Arrow** in the column to the right of **Currency**, and then, the list, click **\$ (USD) - United States of America, dollar**.

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**.

8. On the toolbar, click **Run Report** .

A section of the results appear 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.

9. At the bottom of the screen, click **Page down** to navigate to each page of the report.
10. Close **IBM Cognos Viewer**.
11. Leave **Report Studio** open for the next demo.

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.

Business Analytics software

IBM

Dimensionally-modeled and Dimensional Data sources

- In Report Studio, reports using dimensionally-modeled relational data sources and dimensional data sources enable you to drill down to a detailed level

Drill down to a specific product

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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) 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 Report Studio can use relational data sources to create reports. The next demo provides an opportunity to create a report using a dimensional data source. The IBM Cognos Report Studio: Author Reports with Multidimensional Data course explores, in greater detail, how Report Studio can be used to analyze DMR or OLAP data sources.

Demo 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

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Demo 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. Explore a dimensionally-modeled relational data source in Report Studio.

1. From the toolbar, click **New** , without saving the previous report.
2. From the **Package** text box, click the **ellipsis**; navigate to **Samples\Models\GO Data Warehouse (analysis)**.
3. Click **OK**, click **List**, and then click **OK**.

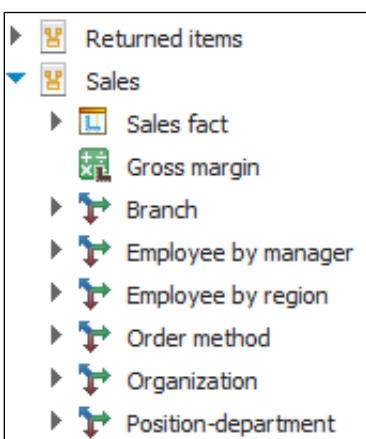
The Source tab displays the folders available in the package. Notice the folder icon .

4. Expand the **Sales and Marketing (analysis)** folder.

You see the namespaces in the Sales and Marketing (analysis) folder. Notice the namespace icon .

5. Expand the **Sales** namespace.

A section of the results appear as follows:



The available measures and dimensions display in the data tree.

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6. Notice the measures query subject icon  and the dimensions icons .

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

You see all the measures available in the Sales fact measures query.

8. Notice the measures icons .

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

You see a Members folder and five levels.

10. Notice the level icons .

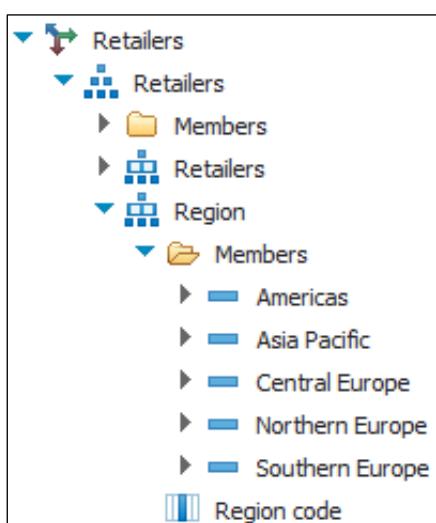
11. Expand the **Region** level.

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

12. Notice the query item icon .

13. Expand the **Members** folder to see the five sales regions.

The results appear as follows:



Task 2. Add items to the list report object.

You need 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**, and then 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).
2. In the **Retailers** dimension, **Retailers** hierarchy, **Region** level, **Members** folder, expand the **Americas** member, and then drag the **Canada** member to the list report object.
3. Expand the **Products** dimension, **Products** hierarchy, **Product line** level, **Members** folder, **Camping Equipment** member, **Tents** member, and then drag **Star Dome** member to the list report object
4. Expand **Sales fact** measures, if necessary, and 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 3. Allow drill-up and drill-down on the report.

1. From the **Data** menu, click **Drill Behavior**, select **Allow drill-up and drill-down** check box, and then click **OK**.

2. On the toolbar, click **Run Report**.

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

3. Click **2011** to drill-down.

The results appear as follows:

2011	Canada	Star Dome	Quantity
<u>Q1 2011</u>	<u>Canada</u>	<u>Star Dome</u>	621
<u>Q2 2011</u>	<u>Canada</u>	<u>Star Dome</u>	531
<u>Q3 2011</u>	<u>Canada</u>	<u>Star Dome</u>	586
<u>Q4 2011</u>	<u>Canada</u>	<u>Star Dome</u>	665

You can drill-down on any underlined data.

4. Close **IBM Cognos Viewer**.

5. Leave **Report Studio** open for the workshop.

Results:

You have explored a dimensionally-modeled relational data source in Report Studio. 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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Summary

- At the end of this module, you should be able to:
 - examine Report Studio and its interface
 - explore different report types
 - create a simple, sorted, and formatted report
 - explore how data items are added to queries

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Workshop 1

- Create a Revenue Report

Product line	Product type	Product	Revenue
Camping Equipment	Tents	Star Lite	168,191,550.48
Personal Accessories	Eyewear	Zone	157,369,344.95
Camping Equipment	Tents	Star Gazer 2	147,783,128.88
Golf Equipment	Woods	Hailstorm Titanium Woods Set	117,598,685.56
Personal Accessories	Watches	TX	112,878,735.7
Personal Accessories	Eyewear	Inferno	104,705,055.75
Camping Equipment	Packs	Canyon Mule Journey Backpack	99,216,132.92

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Workshop 1: Create a Revenue Report

Sales executives, from the Great Outdoors Samples Company, need you to create a report showing revenue for each product within each product type for each product line. The report must list the revenue from the greatest to the least.

- Create a list report using the GO Data Warehouse (query) package.
- Navigate to Sales and Marketing (query)/ Sales (query).
- Add the following query items to a new list report object in the order provided:
 - Products: Product line, Product type, and Product
 - Sales fact: Revenue
- Sort Revenue in descending order.

For more information about where to work and the workshop results, refer to the Tasks and Results section that follow. If you need more information to complete a task, refer to earlier demos for detailed steps.

Workshop 1: Tasks and Results

Task 1. Create a list report.

- **Toolbar:** Open a new **List** template using the **GO Data Warehouse (query)** package.
- **Source tab:** Navigate to **Sales and Marketing (query)/ Sales (query)/Products**.
 - Add **Product Line**, **Product type**, and **Product** to the **List** report object.
- **Source tab:** Navigate to **Sales and Marketing (query)/ Sales (query)/Sales fact**.
 - Add **Revenue** to the **List** report object.

The results appear as follows:

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

Task 2. Format and test the List report object.

- **List report object:** Click the <Revenue> list column body.
- **Toolbar:** Sort **Revenue** in descending order.
 - Click **Run Report** to test the new report.

A section of the results appear as follows:

Product line	Product type	Product	Revenue
Camping Equipment	Tents	Star Lite	168,191,550.48
Personal Accessories	Eyewear	Zone	157,369,344.95
Camping Equipment	Tents	Star Gazer 2	147,783,128.88
Golf Equipment	Woods	Hailstorm Titanium Woods Set	117,598,685.56
Personal Accessories	Watches	TX	112,878,735.7
Personal Accessories	Eyewear	Inferno	104,705,055.75
Camping Equipment	Packs	Canyon Mule Journey Backpack	99,216,132.92

- Close the **IBM Cognos Viewer**.
- Close **Report Studio**.
- Log off and close the Web explorer.

Results:

You have created a report showing revenue for each product within each product type for each product line, and the list is sorted on revenue in descending order.

The advertisement features a white background with a decorative pattern of blue and green hexagons containing yellow cubes in the top left corner. In the top right corner is the classic blue IBM logo. Below the logo, the text "Create List Reports" is displayed in a large, bold, black sans-serif font. Underneath that, "IBM Cognos BI" is written in a smaller, regular black font. At the bottom left, a small rectangular box contains the text "Business Analytics software". At the bottom right, there is a small graphic of three interconnected hexagons, each with a yellow cube, and the copyright notice "© 2015 IBM Corporation".

Create List Reports

IBM Cognos BI

Business Analytics software

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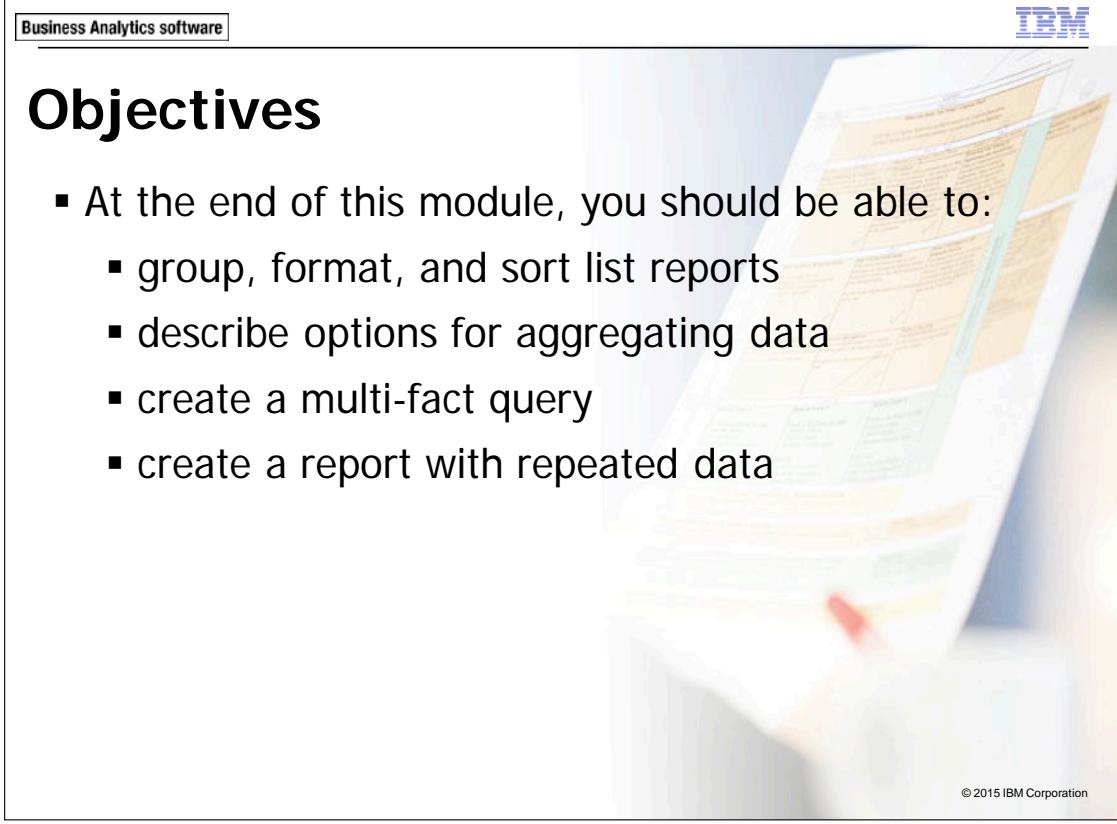
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Objectives

- At the end of this module, you should be able to:
 - group, format, and sort list reports
 - describe options for aggregating data
 - create a multi-fact query
 - create a report with repeated data



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

The list report should preferably follow a 1:n cardinality from left to right in order to properly display the grouping.

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.

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

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Format List Columns

- You can emphasize certain data to make your reports easier to read and understand.

Before

Order number	Retailer name	Year
100003	Universo Acampando	2004
100009	Sporting Goods Direct	2004

After

Order number	<i>Retailer name</i>	Year
100003	<i>Universo Acampando</i>	2004
100009	<i>Sporting Goods Direct</i>	2004

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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

In the slide example, if you wanted to sort the Product line column by Gross profit instead of by Product line, you would delete the Product line sort item from under the Product line Sort List folder, and would then drag the Gross profit query item to the Product line Sort List folder. Items in a report that are grouped 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 an object that can be sorted, on the toolbar, click Sort, and then click Advanced Sorting.
- Select the List object, and then in the Properties pane, double-click the Grouping & Sorting property.

The item used to sort specific grouped items in a report or to sort ungrouped items in a report does not need to be on the report page but does need to be in the query.

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Include List Headers and Footers

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

Country	City	Employee name	Revenue
<i>Sales Rep Performance by Country and City</i>			
As requested by Tom Johnson			
Austria	Wien	Jutta Shulz	26,274,108.98
		Sabine Grüner	32,895,343.27

List Page Header → *Sales Rep Performance by Country and City*

Overall Header → As requested by Tom Johnson

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List headers and footers can be placed:

- at the top or bottom of a list on each page
- at the top of the first page or bottom of the last page
- before or after a group of details

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

Demo and Workshop Start Point Information

This section describes in detail how to use the start point information included with the demos and workshops in this course. It is particularly important for students in a self-paced learning environment to review this information before proceeding with the course. If you walk through this section, you will be ready to begin Task 1 of Demo 1, as this section uses the Demo 1 start point as an example.

Before you begin the steps of a demo or workshop, you will see information to help you set your environment for the tasks that you will perform. The format appears as follows:

Portal:	http://localhost:88/ibmcognos
User/Password:	brettonf/Education1
Studio:	Report Studio
Package:	Public Folders\Samples\Models\GO Data Warehouse (query)
Report Type:	List
Folder:	Sales and Marketing (query)
Namespace:	Sales (query)

This information provides you with a unique starting point for that demo or workshop. It tells how you will access the IBM Cognos portal through a browser, the user ID and password, the Studio, the package to use, the report type to start with, and within the data source, 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.

If your demo provided the start point information above, you would do the following nine steps before beginning the demo tasks (if you perform these steps, you will be ready to start Demo 1 of this module, as it uses the same start point provided in this example):

1. From the **Start** menu, click **All Programs\Internet Explorer** to launch a browser session.
2. In the **Address** box, type the portal address **http://localhost:88/ibmcognos** and then press **Enter**.

The Log On to IBM Cognos Software window 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**, and then click **OK**.

The IBM Cognos software page displays, and the studios and applications that your user has permissions for are available. For example, IBM Cognos Content launches IBM Cognos Connection, and Author advanced reports launches Report Studio.

4. Click **Author advanced reports** to launch **Report Studio**.

When you launch Report Studio, you are prompted to select a package to author your reports with. In the start point information example, you are going to work with the Public Folders\Samples\Models\GO Data Warehouse (query) package.

5. In the **List of all packages** section of the dialog box, (which is open at Public Folders by default), to navigate to the required package location, click **Samples**, click **Models**, and then click **GO Data Warehouse (query)**.

The IBM Cognos Report Studio dialog box appears, prompting you to create a new report or open an existing report. Most demos and workshops will require a new report. If your demo or workshop requires you to use an existing report, you will be provided with a report name and location in the start point information. Because this start point example lists a Report type, this is your cue that a new report is required.

6. Click **Create new**.

The New dialog box displays the package you will work with, and the report objects that you will begin to author your report. You can select one object from the list, and then click OK, or you can double-click an object to select it and launch the new report. The start point information in this example requires a list report template.

7. Click **List**, and then click **OK**.

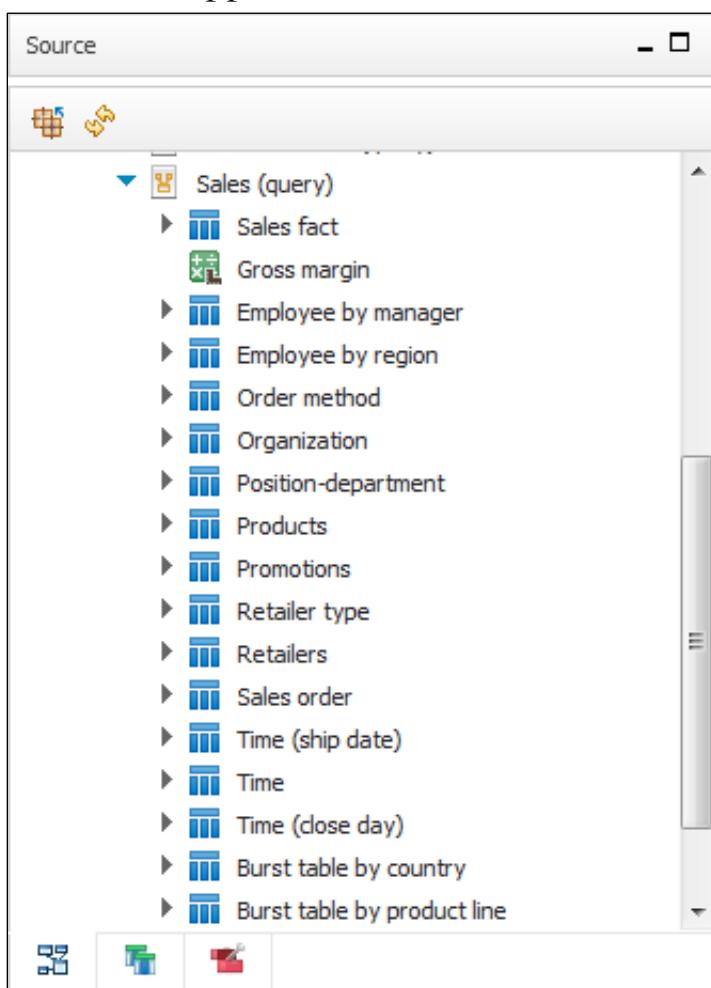
Report Studio opens, loads the package metadata, and provides you with a list report template. In the Insertable Objects pane at the left, the content pane of the Source tab displays the package, and the folder(s) of metadata that you will work with to build your reports. The start point information in this example will work with the Sales and Marketing (query) folder.

8. In the **Insertable Objects** pane on the **Source** tab, click the  icon to 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.

9. Click the  icon to expand the **Sales (query)** namespace.

The results appear as follows:



You have completed the start point preparation for the demo example provided, and you are now ready to begin the tasks. You will 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, report types, and namespaces used for each demo and workshop in this course.

If you have performed these steps for the example start point here, then you are ready to begin the tasks in Demo 1, as the start point for Demo 1 was used in this example.

Demo 1

- Enhance a List Report

Product type	Product	Retailer type	Quantity	Revenue
Revenue by Retailer Type				
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

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Demo 1: Enhance a List Report

Purpose:

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

Portal: <http://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public folders\Samples\Models\GO Data Warehouse (query)
 Report Type: List
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)

Task 1. Create the list and set options.

10. Add the following query items to a new list template without saving any previous reports:
 - 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>

Notice that there are no overall aggregate summaries in the list footer.

11. Click Undo , to remove the Quantity and Revenue measures.

12. From the **Tools** menu, click **Options**, and then select the **Resize IBM Cognos Viewer window** check box.

Note: This allows IBM Cognos Viewer to be expanded automatically. There is also a check box for Position pane on the right (requires restart). This gives you the option of positioning the Content and Properties panes on the right-hand side of the work window.
13. Click the **Report** tab, select the **Automatic group and summary behavior for lists** check box, and then click **OK**.
14. Ctrl-click **Quantity** and **Revenue**, and then drag them to the list.

Notice that there is now an overall aggregate summary in the list footer.
15. Click the <**Retailer type**> list column body, and then from the toolbar click  **Group / Ungroup**.

Notice that the Retailer type column has been moved to the beginning of the report and grouped.
16. From the toolbar, click **Run Report**.

The IBM Cognos Viewer window runs fully expanded.
17. Navigate to the bottom of the report to view the report summary.

A section of the results appear as follows:

	Personal Accessories	Watches	Mountain Man Digital	420	16,951.2
	Personal Accessories	Watches	Mountain Man Extreme	330	93,992.19
	Personal Accessories	Watches	Sam	4,095	125,307
	Personal Accessories	Watches	TX	1,793	302,316
	Personal Accessories	Watches	Venue	3,733	183,756
	Warehouse Store - Summary			5,111,760	264,608,475.03
	Overall - Summary			89,237,091	4,686,775,768.85
18. Close **IBM Cognos Viewer**.

Due to the complexity of the final report, you will turn off the aggregate summary feature.
19. Click **Undo**, and then click **Undo** again.
20. From the **Tools** menu, click **Options**.
21. Click the **Report** tab, clear the **Automatic group and summary behavior for lists** check box, and then click **OK**.

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

1. From **Sales fact**, Ctrl-click **Quantity**, and **Revenue**, and then drag them to the list.
2. In the list, Ctrl-click the **<Product line>**, **<Product type>** and **<Product>** list column bodies, and then, from the toolbar, click **Group / Ungroup**.
3. Click **<Product type>**.
4. In the **Properties** pane, under **Data**, click **Group Span**, and then, from the list, click **Product**.
5. In the work area, double-click on the text in the header block.
6. In the text box, type **Product type Sales and Revenue by Product**, and then click **OK**.
7. Click to the left of the report title text to change the focus to the header block.
8. On the toolbar, click **Left** , and then from the **Font** list, click **Arial Black**.
9. On the toolbar, click **Run Report**.

A section of the results appear as follows:

Product type Sales and Revenue by Product					
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
			Warehouse Store	123,254	1,512,645.06
		TrailChef Cook Set	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.

10. Close **IBM Cognos Viewer**.

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. On the toolbar, click **Headers & Footers**, and then click **List Headers & Footers**.
2. Select the **List page header** and **Overall header** check boxes, and then click **OK**.
3. In the list report object, 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, change the font to **Arial Black**, and then change the size to **12 pt**.
6. In the list report object, double-click **Overall**.
7. In the **Text** box, replace the default text with **Attention: Sales Managers**, and then click **OK**.
8. In the work area, click the **<Product line>** list column body.
9. On the toolbar click **Headers & Footers**, and then click **Create Header**.

Note: When a header is created from a column, the header stays within the list object. You cannot create a header out of a spanned column. Also note that the List Column titles can be moved to the start of the details of the report by selecting the entire report object and changing the Column Titles property to "At start of details".

10. With the **<Product line>** list column body still selected, click **Delete** to remove the redundant column.

11. On the toolbar, click **Run Report**.

A section of the results appear as follows:

Product type	Product	Retailer type	Quantity	Revenue
Revenue by Retailer Type				
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
		Outdoors Shop	222,831	2,682,916.23
		Sports Store	362,970	4,170,027.41
		Warehouse Store	123,254	1,512,645.06
Cooking Gear	TrailChef Cook Set	Department Store	229,456	11,509,856.38
		Direct Marketing	72	0
		Equipment Rental Store	15,597	824,622.11
		Outdoors Shop	266,064	13,678,387.26
		Sports Store	212,161	10,435,911.03
		Warehouse Store	90,430	4,735,498.12

12. Close **IBM Cognos Viewer**.

Task 4. Format and sort a column.

1. In the work area, click the <Revenue>.

Notice that List Column Body appears in the Properties pane.

2. On the toolbar, click **Sort**, and then click **Descending**.

When a column is sorted the Sort icon appears in the list column title cell,



3. With the <Revenue> list column body still selected, in the **Properties** pane, click **Data Format**, and then click the **ellipsis**.
4. In the **Format type** list, click **Currency**.
5. Under **Properties**, click **Currency**, and then in the list, click **\$ (USD) United States of America, dollar**.
6. Click **OK**.

Task 5. Format the list column body.

1. Click the <Retailer type> list column body.
2. On the toolbar, in the **Font** list, click **Arial**, and then click **Italic**.
3. Click **Foreground Color** , and then click **Purple**.

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

The results appear as follows:

Product type	Product	Retailer type	Quantity	Revenue
Revenue by Retailer Type				
Attention: Sales Managers				
<Product type>	<Product>	<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>
<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>
<Product type>	<Product>	<Retailer type>	<Quantity>	<Revenue>

Task 6. Format an entire column.

- With <Retailer type> list column body still selected, from the **Properties** pane title bar, click **Select Ancestor** , and 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**.
- Click **OK** to close the **Foreground Color** dialog box, and then click **OK** to close the **Font** dialog box.

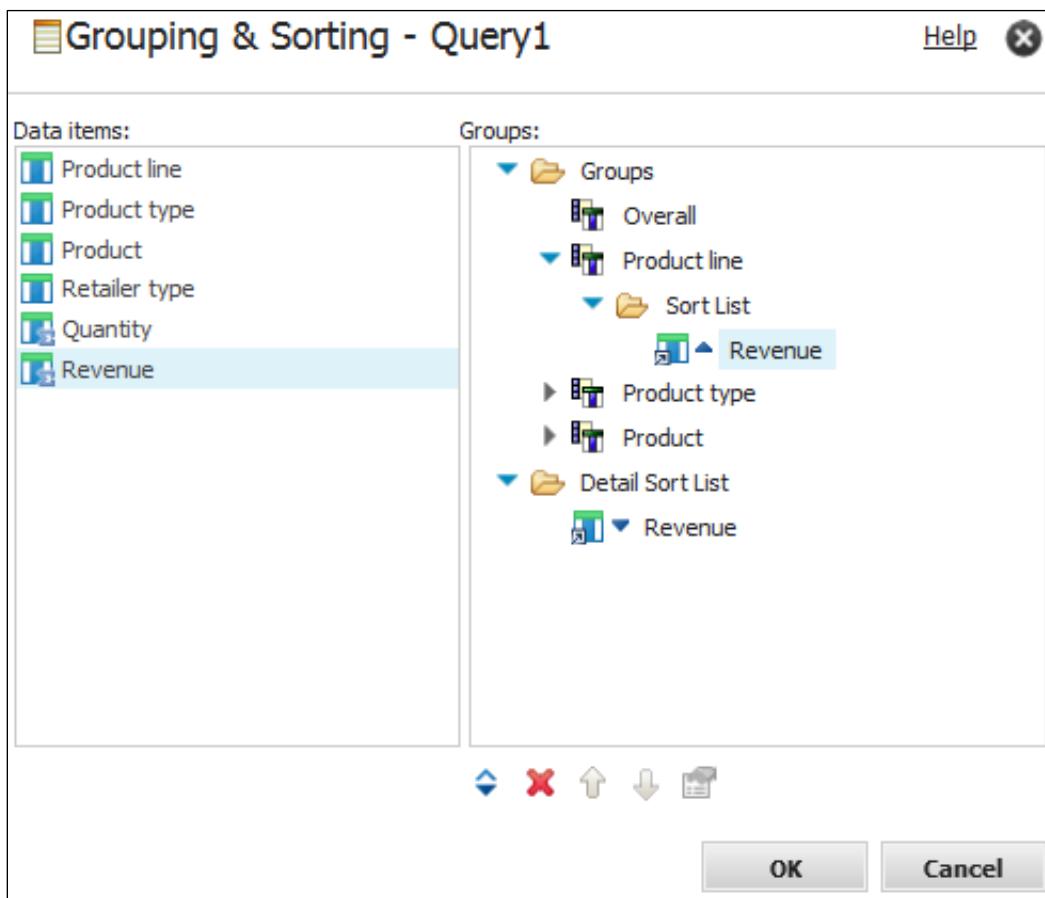
The results appear as follows:

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

The color property is applied only to the column title because the List Column Body formatting overrides the list column body 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, on the toolbar, click  **Summarize**, and then click **Total**.
 2. In the upper left corner of the **Product type** header cell click the **Container Selector**  to select the entire list.
 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** on to the **Product line Sort List** folder.
- The results appear 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.

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5. Click **OK**, and then on the toolbar click **Run Report**.

A section of the results appear as follows:

Product type	Product	Retailer type	Quantity	Revenue
Revenue by Retailer Type				
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

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

6. Close **IBM Cognos Viewer**.
 7. Leave **Report Studio** open for the next demo.

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.

Business Analytics software

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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
Agatha Reyes	24,097,530.3	

Detail rows

Summary row

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Show minimum, maximum, average, total, count, or calculated data.

The Rollup Aggregate Function specifies the type of aggregation to apply to summarize values. These values appear at the higher levels of list and crosstabs. The default setting is Automatic. 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 rollup aggregation set to Total.

The Aggregate function specifies the type of aggregation to apply to individual values which appear as detail rows in lists or crosstabs.

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

Business Analytics software

IBM

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
Total		22,839,650.25
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
Total		33,536,672.85

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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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.

The rollup aggregated function summarizes grouped data and is applied after data is retrieved.

The list on the left shows a list report with all of the default aggregation settings and no grouping applied; Aggregate Function is set to Total, by default, in the model package, Rollup Aggregation is set to Automatic since there is no grouping.

Aggregate Function: aggregates items at the lowest level of detail and is set by the data modeler for the package. This aggregation is applied only when the query's Auto Group and Summary is set to Yes.

Rollup Aggregation: is applied, by the report author, to grouped items and provides a higher level aggregation, as seen by the center list report.

The list on the right shows results with the query's Auto Group and Summery set to No.

Business Analytics software

IBM

Understand Difference in Aggregation

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

The screenshot shows two panels of the software interface. The left panel, titled 'Source', displays a hierarchical tree of data items under 'Sales (query)'. One item, 'Revenue', is highlighted with a blue selection bar. The right panel, titled 'Data Items', lists several items: 'Employee name', 'Product line', 'Revenue', and 'Total(Revenue)'. At the bottom of the interface is a decorative graphic of three hexagons in yellow, teal, and green.

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.

Business Analytics software



Demo 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
Camping Equipment - Average		227,005,237.718571
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
Golf Equipment - Average		103,773,052.555714

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Demo 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://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public folders\Samples\Models\GO Data Warehouse (query)
 Report Type: List
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)

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

1. From the toolbar, click **New** without saving the previous report.
2. Add the following query items to a new list template:
 - **Products: Product line**
 - **Order method: Order method type**
 - **Sales fact: Revenue**

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

3. Point to **Query Explorer**, and then click **Query1**.

Notice the three data items in the Data Items pane. Each data item corresponds to an item in a column in the list report.

4. In the **Data Items** pane, click **Revenue**.

In the Properties pane notice that the Aggregate Function 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 Order method type.

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

5. On the toolbar, click **Run Report**.

A section of the results appear 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.

6. Close **IBM Cognos Viewer**.

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 a particular 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. Point to **Query Explorer**, click **Queries**, and then click **Query1**.
2. In the **Properties** pane, click the **Auto Group & Summarize** property, and then in the list, click **No**.
3. On the toolbar, click **Run Report**.

A section of the results appear similar to the following:

Product line	Order method type	Revenue
Golf Equipment	Telephone	10,469.76
Golf Equipment	Telephone	41,958.76
Golf Equipment	Telephone	35,949.86
Golf Equipment	Telephone	5,921.28
Personal Accessories	Sales visit	11,570.01
Outdoor Protection	Sales visit	10,123.2

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 **IBM Cognos Viewer**.
5. In the **Properties** pane for **Query1**, click the **Auto Group & Summarize** property, and then in the list, click **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 **Explorer** bar, point to **Page Explorer**, and then click **Page1**.
2. In the list, 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.

3. In the list, click <**Revenue**> list column body.
4. On the toolbar, click **Summarize**, and then click **Average**.

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

5. On the **Explorer** bar, point to **Query Explorer**, click **Query1**, and then in the **Data Items** pane click **Average(Revenue)**.

In the Properties pane, notice that the Aggregation Method 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.

6. On the toolbar, click **Run Report**.

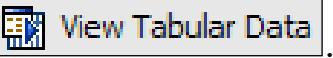
A section of the result appears as shown below:

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
Camping Equipment - Average		227,005,237.718571
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
Golf Equipment - Average		103,773,052.555714

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.

7. Close IBM Cognos Viewer.

8. From the Run menu, click View Tabular Data .

9. Click OK in 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.

10. Close IBM Cognos Viewer.

11. Leave Report Studio open for the next demo.

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.

Business Analytics software

IBM

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.

The diagram shows two query structures. The left query, 'Sales target (query)', contains items such as Sales target fact, Employee by manager, Employee by region, Organization, Position-department, Products, Product brand, Retailer type, Retailers, and Time. The right query, 'Sales (query)', contains items such as Sales fact, Gross margin, Employee by manager, Employee by region, Order method, Organization, Position-department, Products, Promotions, Retailer type, Retailers, Sales order, and Time (ship date). A red box highlights the 'Time' item in both lists. A blue arrow labeled 'Shared Dimension' points from the 'Time' item in the 'Sales target (query)' list to the 'Time' item in the 'Sales (query)' list. The background features a decorative hexagonal pattern.

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.

Demo 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

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Demo 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://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public folders/Samples/Models/GO Data Warehouse (query)
 Report Type: List
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)/Sales target (query)

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

1. Add the following query items to a new list and when prompted to save the existing report, click **No**:
 - Sales fact: Revenue
 - Sales target (query)/Sales target fact: Sales target
2. On the toolbar, click **Run Report**.

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.

3. Close IBM Cognos Viewer.

Task 2. Add context to the list.

You will include a query item to give context and meaning to the numbers 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 toolbar, click **Run Report**.

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).

3. Close **IBM Cognos Viewer**.

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.

1. 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.
2. 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.
3. Under **Sales (query)**, expand **Time**, and drag **Year** to the beginning of the list.

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4. On the toolbar, click **Run Report**.

The results appear 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
2011	2012	22,051,628.36	1,036,923,300
2012	2012	1,475,544,977.5	1,332,553,100
2012	2013	20,346,123.4	1,332,553,100
2013	2013	1,117,336,274.07	1,023,006,840

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.

5. Close **IBM Cognos Viewer**.

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.

1. In the list, click the <Year (close date)> list column body, and then click **Delete**.
2. On the toolbar, click **Run Report**.

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.

3. Close **IBM Cognos Viewer**.
4. Leave **Report Studio** open for the next demo.

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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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.

Demo 4

- Create a Mailing List Report

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

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Demo 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://localhost:88/ibmcognos>
User/Password: brettonf/Education1
Studio: Report Studio
Package: Public folders/Samples/Models/GO Data Warehouse (query)
Report Type: Repeater Table
Folder: Sales and Marketing (query)
Namespace: Sales (query)

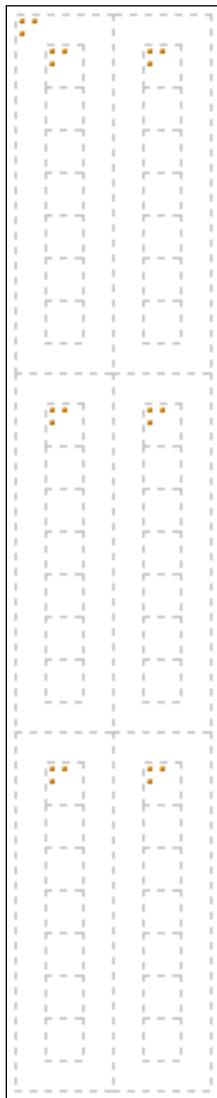
Task 1. Create a repeater table.

1. From the toolbar, select **New**, and when prompted to save the existing report, click **No**.
2. Double-click the Repeater Table template.
3. From the **Toolbox** tab, drag a **Table** into the drop zone at the top of the work area.

4. In the **Insert Table** dialog box, change the number of columns to **1**, the number of rows to **7**, and 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.

The results appear as follows:



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Task 2. Add items to the tables.

1. From the **Source** tab.
2. Expand **Employee by region**, and then drag **Country** into the first cell of the first 1x7 table.
3. Drag **Address 1**, **Address 2**, **City**, **Province or State**, **Postal zone**, and **Country** into the remaining table cells.

The results appear as follows:

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

When you add multiple instances of the same data item (as in this case 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.

1. Click the **<Country>** text item at the top of one of the tables, ensuring you select only the text item and not the entire cell.
All of the Country items at the top of each table are selected.
2. On the toolbar, click **Sort**, and then click **Ascending**.
A Sort Ascending icon appears beside the Country item in the first table.
3. With the **<Country>** text item still selected, from the toolbar expand the **Size** list, and then select **12 pt**.
4. From the toolbar, click **Bold**.
The Country headers appear in bold black text.

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

1. Click the **Container Selector** in the top left-hand corner of the **Repeater Table** to select the entire container.
2. In the **Properties** pane, under **General**, change **Across** to **3**, change **Down** to **4**, and then press **Enter**.
3. Under **Positioning**, double-click **Table Properties**, select **Fixed size**, and then click **OK**.
4. Click the **Container Selector** in the top left corner of the first table to select all of the tables.
5. In the **Properties** pane, under the **Box** section, double-click **Margin**.
6. In the **Right margin** and the **Top margin** text boxes, type **10**, and then click **OK**.

This adds the appropriate space for the printed labels.

7. On the toolbar, click the down arrow to the right of the **Run Report** icon.
8. Click **Run Report - PDF**.

PDF would be the appropriate run output for mailing labels.

A section of the results appear as follows:

Australia	Austria	Belgium
2315 Queen's Ave Level 2 Melbourne VIC 2088 Australia	Jedleser Straße 7 Wien A-1210 Austria	Interleuvenlaan 2 Heverlee B-3001 Belgium

9. Close **IBM Cognos Viewer**.
10. Leave **Report Studio** open for the workshop.

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.

Summary

- At the end of this module, you should be able to:
 - group, format, and sort list reports
 - describe options for aggregating data
 - create a multi-fact query
 - create a report with repeated data

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Business Analytics software



Workshop 1

- Create and Format a List Report

Gross Profit by Retailer Type and Region

Retailer type	Region	Gross profit
Department Store	Americas	111,543,822.41
	Asia Pacific	98,425,260.8
	Central Europe	77,587,318.45
	Northern Europe	39,559,098.97
	Southern Europe	36,177,713.46
Department Store - Total		363,293,214.09
Direct Marketing	Asia Pacific	10,763,419
	Central Europe	7,054,511
	Americas	6,419,647.17
	Northern Europe	3,932,561.37
	Southern Europe	2,270,788.95
Direct Marketing - Total		30,440,927.49

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Workshop 1: Create and Format a List Report

You have been asked to create a list report where users can review the gross profit generated by retailer types for each region.

To accomplish this:

- Create a list report using the GO Data Warehouse (query) package.
- Add the following items:
 - Retailer type: Retailer type
 - Retailers: Region
 - Sales fact: Gross profit
- Group Retailer type.
- Sort Gross profit as descending.
- Aggregate Gross profit by Total.

For more information about where to work and the workshop results, refer to the Tasks and Results section that follows. If you need more information to complete a task, refer to earlier demos for detailed steps.

Workshop 1: Tasks and Results

Task 1. Create, group, and sort a list.

- **Toolbar:** Open a new list report template without saving the previous report.
- **Source tab:** Navigate to **Sales and Marketing (query)/Sales (query)**.
 - From the **Retailer type** query subject, add the **Retailer type** query item, to the list report object.
 - From the **Retailers** query subject, add the **Region** query item, to the list report object.
 - From the **Sales fact** query subject, add the **Gross profit** query item, to the list report object.
- **Toolbar:** Group the <**Retailer type**> list column body.
 - Sort the <**Gross profit**>list column body in descending order.

The results appear as follows:

Retailer type	Region	Gross profit▼
< Retailer type>	<Region>	<Gross profit>
<Retailer type>	<Region>	<Gross profit>

Task 2. Format and summarize the list report.

- **Work area:** Add the following report title to the header block "**Gross Profit by Retailer Type and Region**".
- **Toolbar:** Left-justify the header block (not the text item).
 - Change the report title font to **Arial Black**.
 - Summarize the **<Gross profit>** list column body, by **Total**.
 - Run the report in **HTML**.

A section of the results appear as follows:

Gross Profit by Retailer Type and Region		
Retailer type	Region	Gross profit
Department Store	Americas	111,543,822.41
	Asia Pacific	98,425,260.8
	Central Europe	77,587,318.45
	Northern Europe	39,559,098.97
	Southern Europe	36,177,713.46
Department Store - Total		363,293,214.09

- Close **IBM Cognos Viewer**.
- Close **Report Studio** without saving changes.

Close **Internet Explorer**.

You have created a list report where users can review the gross profit generated by retailer types for each region.



Focus Reports Using Filters

IBM Cognos BI



Business Analytics software

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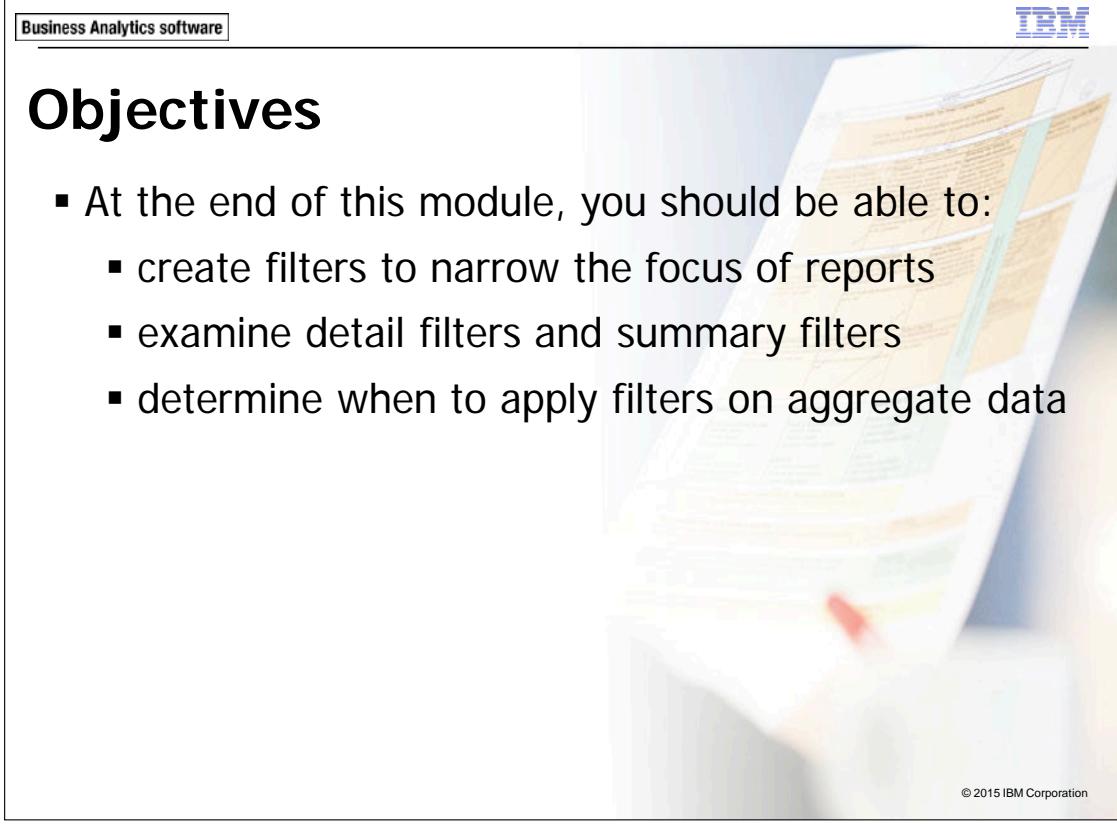
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Objectives

- At the end of this module, you should be able to:
 - create filters to narrow the focus of reports
 - examine detail filters and summary filters
 - determine when to apply filters on aggregate data



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The screenshot shows the 'Create Filter' interface in IBM Business Analytics software. It includes three examples:

- Custom based on data item:** A dialog box showing a dropdown menu set to 'Custom based on data item' with 'Year' selected. Other options like 'Product line' and 'Revenue' are also listed.
- Combined:** A dialog box titled 'Combined Filter' showing two filter conditions: '[Year] includes (2010, 2011) AND [Product line] includes ('Camping Equipment', 'Golf Equipment')'.
- Advanced:** A dialog box titled 'Detail Filter Expression - Query1' showing an expression definition: '[Sales (query)].[Time].[Date]between 2012-01-01 and 2012-12-31'. It lists available components: Day key, Date, Day of the week, and Day of the month.

Add a filter expression to focus a report and minimize processing time by excluding unwanted data. For example, you can filter data to show only customers who placed purchase orders that were valued at over one thousand dollars during the past year. When you run the report, you see only the filtered data. You have the following options to create the filter:

- **Custom based on data item:** create a simple filter condition based on selected values from only one data item in the query.
- **Combined:** combine filter conditions based on selected values from multiple data items in the query, into a single filter.
- **Advanced:** create a filter condition that uses advanced calculations (expression editor) based on items in the query or from the data source.

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

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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.

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Demo 1

- Apply Filters to a Report

City	First name	Last name	Position name	Revenue
Austria				
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
Wien - Total				28,348,967.66
Austria - Total				28,348,967.66

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Demo 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://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public Folders\Samples\Models\GO Data Warehouse (query)
 Report Type: List
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)

Task 1. Create the list.

1. Add the following query items to a new list template:
 - 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> |
2. Click <Country>, Ctrl-click <City>, and then on the toolbar, click **Group / Ungroup**.
 3. Click <Country>, on the toolbar click **Header & Footer**, and then click **Create Header**.
 4. With <Country> still selected, on the toolbar click **Delete** to delete the redundant <Country> list column body.

5. Click the <Revenue> list column body, on the toolbar click **Summarize**, and then click **Total**.
6. With the <Revenue> list column body still selected, click **Sort** from the toolbar, and then click **Descending**.
7. On the toolbar, click **Run Report**.

A section of the results appear as follows:

City	First name	Last name	Position name	Revenue
Australia				
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
Melbourne - Total				87,563,329.02
Australia - Total				87,563,329.02

8. Close **IBM Cognos Viewer**.

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

1. On the toolbar, click **Filters** , and then click **Edit Filters**.
The Filters - Query 1 dialog box appears. There are two tabs; one for creating filters at the detail level, and one for creating filters at the summary level.
2. With the **Detail Filters** tab selected, click **Add** , click **Advanced**, and then click **OK**.
3. In the **Available Components** pane, on the **Source** tab expand the **Sales and Marketing (query)** folder, expand **Sales (query)**, and then expand **Time**.

4. Create and validate the following expression:
[Sales (query)].[Time].[Year]=2012.

Hint:

- Drag Year from the Time query subject, into the Expression Definition pane.

There are different ways of creating filters to achieve the same result:

- create the expression [Sales (query)].[Time].[Date]between 2012-01-01 and 2012-12-31
- create filters by adding operators and conditions to query items using SQL syntax

5. Click **OK** to close the **Detail Filter Expression** dialog box, and then click **OK** to close the **Filters - Query 1** dialog box.
6. On the toolbar, click **Run Report**.
7. At the bottom of the page, click **Bottom** to navigate to the end of the report.

A section of the results appear 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
Seattle - Total				52,905,576.36
United States - Total				164,986,189.21
Overall - Total				1,495,891,100.9

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.

8. Close **IBM Cognos Viewer**.

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

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

1. On the toolbar, click **Filters**, and then click **Edit Filters**.

The Filters - Query 1 dialog box 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 **Values** section, ensure that **Specific values** is selected from the list. Text pattern matching is also available and includes:

- Starts with
- Ends with
- Contains
- Matches SQL pattern

Advanced search options are also available.

4. From the **Values** list, click **Austria**, and then Ctrl+click **Italy**.
5. Click the **arrow** to add the items to the **Selected values** window.
6. Click **Page down** , click **Spain** and add it into the **Selected values** window, click **OK** to close the **Filter Condition** dialog box, and then click **OK** to close the **Filters** dialog box.

7. On the toolbar, click **Run Report**.

A section of the results appear as follows:

City	First name	Last name	Position name	Revenue
Austria				
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
Wien - Total				28,348,967.66
Austria - Total				28,348,967.66
Italy				
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
	Rolando	Giordano	Level 2 Sales Representative	4,235,729.57
Milano - Total				45,622,153.53
Italy - Total				45,622,153.53
Spain				
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
Bilbao - Total				41,467,572.14
Spain - Total				41,467,572.14
Overall - Total				115,438,693.33

You can see that in 2012, Italy generated the most revenue of Southern European countries, and Sabine Grüner from Austria earned the top sales rep award.

8. Close **IBM Cognos Viewer**.

9. Leave **Report Studio** open for the next demo.

Results:

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

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Determine When to Apply a Filter with Aggregation

Before Auto-aggregation

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

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	
Personal Accessories - Total		1,378,713.67	
Overall - Total		496,713,003.2	

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

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

Demo 2

- Apply a Detail Filter on Fact Data to 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

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Demo 2: Apply a Detail Filter on Fact Data to a Report

Purpose:

You need 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://localhost:88/ibmcognos
User/Password:	brettonf/Education1
Studio:	Report Studio
Package:	Public Folders\Samples\Models\GO Data Warehouse (query)
Report Type:	List
Folder:	Sales and Marketing (query)
Namespace:	Sales (query)

Task 1. Create the list.

1. Add the following query items to a new list template, without saving the previous report:
 - Products: Product line, Product type
 - Sales fact: Revenue
- | Product line | Product type | Revenue |
|----------------|----------------|-----------|
| <Product line> | <Product type> | <Revenue> |
2. Click the <Product line> list column body, and then on the toolbar, click **Group / Ungroup**.
 3. Click <Revenue> list column body, on the toolbar, click **Summarize**, and then click **Total**.

4. On the toolbar, click **Run Report**.

A section of 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
Camping Equipment - Total		1,589,036,664.03
Golf Equipment	Golf Accessories	51,514,343.88
	Irons	254,814,337.99
	Putters	106,184,271.37
	Woods	313,898,414.65
Golf Equipment - Total		726,411,367.89

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.

5. Close **IBM Cognos Viewer**.
6. On the **Explorer** bar, point to **Query Explorer**, and then click **Query 1**.
7. In the **Data Items** pane, click **Revenue**.

In the Properties pane, notice that the Aggregate Function property for Revenue is set to Total. This is because in the layout you added an aggregate row displaying total revenue for grouped items in the report.

8. On the toolbar, click **Up**, and then in the work area, click **Query 1**.
- 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 click **No** from the list.

Working in Query Explorer is further discussed in IBM Cognos Report Studio: Author Professional Reports Advanced (v10.2.2).

- On the toolbar, click **Run Report**.

Note: Do not click the Bottom navigation button as this report returns a large amount of data and it will take a considerable amount of time to render the last page. 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

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

- Close **IBM Cognos Viewer**.

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 **Explorer** bar, point to **Page Explorer**, and then click **Page1**.
2. On the toolbar, click **Filters**, click **Edit Filters**, and then ensure the **Detail Filters** tab is selected.
3. Click **Add**, click **Revenue** from the **Custom based on data item** list, and then **OK**.
4. Ensure that the **Operator** is **>**, and then in the **Value** text box, type **100000** (100 thousand).
5. Click **OK**, and then in the **Application** area, click **Before auto aggregation**.
6. Click **OK** to close the dialog box.
7. On the toolbar, click **Run Report**.

A section of the results appear as similar to 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.

8. In the report, click **Bottom**.
The total revenue generated by product type orders of over \$100,000 is \$496,713,003.20.
9. Close **IBM Cognos Viewer**.

10. On the **Explorer** bar, point to **Query Explorer**, and then click **Query 1**.
The filter that you created appears in the Detail Filters pane.
11. In the **Detail Filters** pane, click **Revenue >100000**.
In the Properties pane, the properties specified for the filter display as follows:
 - Definition property displays the expression you created for this filter
 - Usage property is set to Required
 - Application property 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. On the toolbar, click **Up**, and then in the work area, click **Query 1**.
2. In the **Properties** pane, click the **Auto Group & Summarize** property, and then in the list, click **Yes**.
3. On the toolbar click **Run Report**.

A section of the results appear 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
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

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 **IBM Cognos Viewer**.

Task 4. Apply a detail filter after auto aggregation and observe the effects.

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 **Explorer** bar, point to **Page Explorer**, and then click **Page1**.
2. On the toolbar, click **Filters**, and then click **Edit Filters**.
3. Click **Add**, click **Revenue** from the **Custom based on data item** list, and then click **OK**.
4. Ensure that the **Operator** is **>**, and then in the **Value** text box, type **10000000** (10 million).
5. Click **OK**, and then ensure that **After auto aggregation** has been selected.
6. Click **OK** to close the **Filters** dialog box.

7. On the toolbar, click **Run Report**.

The results appear as follows:

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

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

8. Close **IBM Cognos Viewer**.

You decide you do want 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.

9. On the toolbar, click **Filters**, click **Edit Filters**, click **Revenue > 10000000**, and then in the **Usage** area, click **Disabled**.
10. Click **OK** to close the dialog box.

11. On the toolbar, click **Run Report**.

A section of the results appear 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
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

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.

12. Close **IBM Cognos Viewer**.

13. On the **Explorer** bar point to **Query Explorer**, and then click **Query 1**.

Notice that the Revenue > 10000000 filter still appears in the query, though it is grayed out and unavailable to the query.

14. 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.

15. Leave **Report Studio** open for the next demo.

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.

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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
Camping Equipment - Total	1,589,036,664.03	←
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
Personal Accessories - Total	1,885,673,307.78	
Overall - Total	3,474,709,971.81	

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

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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.

Business Analytics software

IBM

Demo 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
Camping Equipment - Total	1,589,036,664.03	
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
Personal Accessories - Total	1,885,673,307.78	
Overall - Total	3,474,709,971.81	

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Demo 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://localhost:88/ibmcognos
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public Folders\Samples\Models\GO Data Warehouse (query)
 Report Type: List
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)

Task 1. Create the list and apply a summary filter.

1. Add the following query items to a new list template without saving the previous report:
 - Products: Product line, Product type
 - Sales fact: Revenue
- | Product line | Product type | Revenue |
|----------------|----------------|-----------|
| <Product line> | <Product type> | <Revenue> |
2. Click <Product line> list column body, and then on the toolbar, click **Group / Ungroup**.
 3. Click <Revenue> list column body, on the toolbar, click **Summarize**, and then click **Total**.
 4. On the toolbar, click **Filters**, and then click **Edit Filters**.
 5. Click the **Summary Filters** tab, click **Add**, click **Advanced** and then click **OK**.

6. Create and validate the following expression:

Total(Revenue)>1000000000

Hint:

- drag Total(Revenue) from the Data Items tab
- 1,000,000,000 (1 billion)

7. Click **OK**.

8. In **Scope**, click the **ellipsis**, select the **Product line** check box, click **OK** to close the **Scope** dialog box, and then click **OK** to close the **Filters** dialog box.

9. On the toolbar, click **Run Report**.

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
Camping Equipment - Total		1,589,036,664.03
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
Personal Accessories - Total		1,885,673,307.78
Overall - Total		3,474,709,971.81

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

10. Close **IBM Cognos Viewer**.

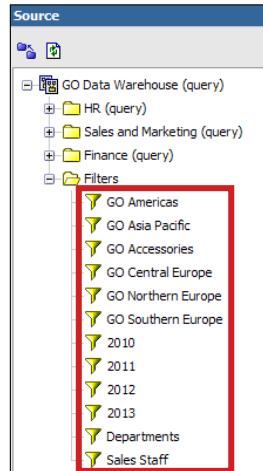
11. On the **Explorer** bar, point to **Query Explorer**, and then click **Query 1**.
The summary filter you added appears in the Summary Filters pane.
12. In the **Summary Filters** pane, click **[Total(Revenue)]>1000000000**.
In the Properties pane, the Scope property for this filter is set to Product line.
13. Leave **Report Studio** open for the workshop.

Results:

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

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 report package to assist in report authoring.

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Summary

- At the end of this module, you should be able to:
 - create filters to narrow the focus of reports
 - examine detail and summary filters
 - determine when to apply filters on aggregate data

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Workshop 1

- Create a Report Focused on Top Performing Product Types and Product Lines

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
Camping Equipment - Total		1,589,036,664.03
Golf Equipment	Irons	254,814,337.99
	Putters	106,184,271.37
	Woods	313,898,414.65
Golf Equipment - Total		674,897,024.01
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
Personal Accessories - Total		1,885,673,307.78
Overall - Total		4,149,606,995.82

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Workshop 1: Create a Report Focused on Top Performing Product Types and Product Lines

You have been asked to create a report that displays revenue by product line and product type. The report must show the product types that generated revenue greater than \$100 million and product lines that generated revenue greater than \$400 million.

To accomplish this:

- Add the following query items to a new list template:
 - Products: Product line, Product type
 - Sales fact: Revenue
- Add a detail filter (After auto-aggregation) for revenue greater than \$100 million.
- Add a summary filter on Product line that generated total revenue greater than \$400 million.

For more information about where to work and the workshop results, refer to the Tasks and Results section that follows. If you need more information to complete a task, refer to earlier demos for detailed steps.

Workshop 1: Tasks and Results

Task 1. Create a new list report and observe the results.

- **Toolbar:** Open a new list template without saving the previous report.
- **Source tab:** From the **Products** query subject add **Product line** and **Product type** to the list report object.
 - From the **Sales fact** query subject, add **Revenue** to the list report object.

The results appear as follows:

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

- **Toolbar:** Group **<Product line>**.
 - Summarize **<Revenue>** by **Total**.
 - Run the report and then observe the results for Product type Revenue totals.

A section of the results appear as follows:

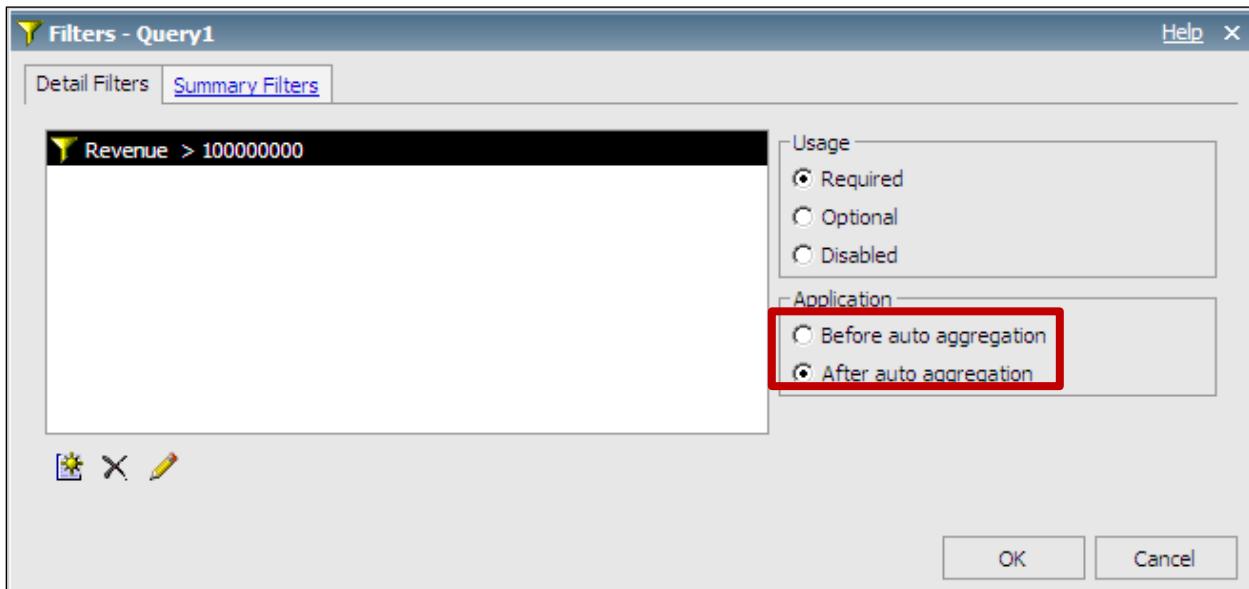
Product line	Product type	Revenue
Camping Equipment	Cooking Gear	272,835,984.18
	Lanterns	126,925,660.64
	Packs	351,880,402.84
	Sleeping Bags	309,172,888.35
	Tents	528,221,728.02
Camping Equipment - Total		1,589,036,664.03
Golf Equipment	Golf Accessories	51,514,343.88
	Irons	254,814,337.99
	Putters	106,184,271.37
	Woods	313,898,414.65
Golf Equipment - Total		726,411,367.89

- Close **IBM Cognos Viewer**.

Task 2. Apply a detail filter on Revenue.

- **Toolbar:** Create a detail filter that shows revenue greater than 100,000,000 after auto aggregation.

The results appear as follows:



- Run the report and compare to the previous run.

Observe that Product line total revenues have changed and that Product types that generated less than \$100 million are not included in these totals. Outdoor Protection is no longer included in the report because all the Product types that belong to it generated less than \$100 million.

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
Camping Equipment - Total		1,589,036,664.03
Golf Equipment	Irons	254,814,337.99
	Putters	106,184,271.37
	Woods	313,898,414.65
Golf Equipment - Total		674,897,024.01

- Close **IBM Cognos Viewer**.

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Task 3. Apply a summary filter on Total(Revenue).

- **Toolbar:** Create a summary filter that shows generated revenue for each product line greater than \$400,000,000.

The results appear as follows:

The screenshot shows the 'Filters - Query1' interface. At the top, there are two tabs: 'Detail Filters' and 'Summary Filters', with 'Summary Filters' being active. Below the tabs, a summary filter is defined: '[Total(Revenue)] > 400000000'. To the right of this filter, there are three radio buttons under the 'Usage' section: 'Required' (selected), 'Optional', and 'Disabled'. Further down, there is a 'Scope:' label followed by a text input field containing 'Product line' and a '...' button. A red box highlights the 'Scope:' input field and its associated controls.

- Run the report.

Observe that only Camping Equipment, Golf Equipment, and Personal Accessories appear in the report because their Total Revenue generated was greater than \$400 million. Although Mountaineering Equipment had a total Revenue of \$409 million as seen in Task 1, when you applied the detail filter, its total Revenue was reduced to \$245 million. Therefore, Mountaineering Equipment is filtered out of the report because the detail and summary filters were applied together.

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
	Camping Equipment - Total	
Camping Equipment - Total		1,589,036,664.03
Golf Equipment	Irons	254,814,337.99
	Putters	106,184,271.37
	Woods	313,898,414.65
Golf Equipment - Total		674,897,024.01
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
Personal Accessories - Total		1,885,673,307.78
Overall - Total		4,149,606,995.82

- Close **IBM Cognos Viewer**.
- Close **Report Studio** without saving the report.
- Log off **IBM Cognos Connection**.
- Close the Web browser.



Create Crosstab Reports

IBM Cognos BI

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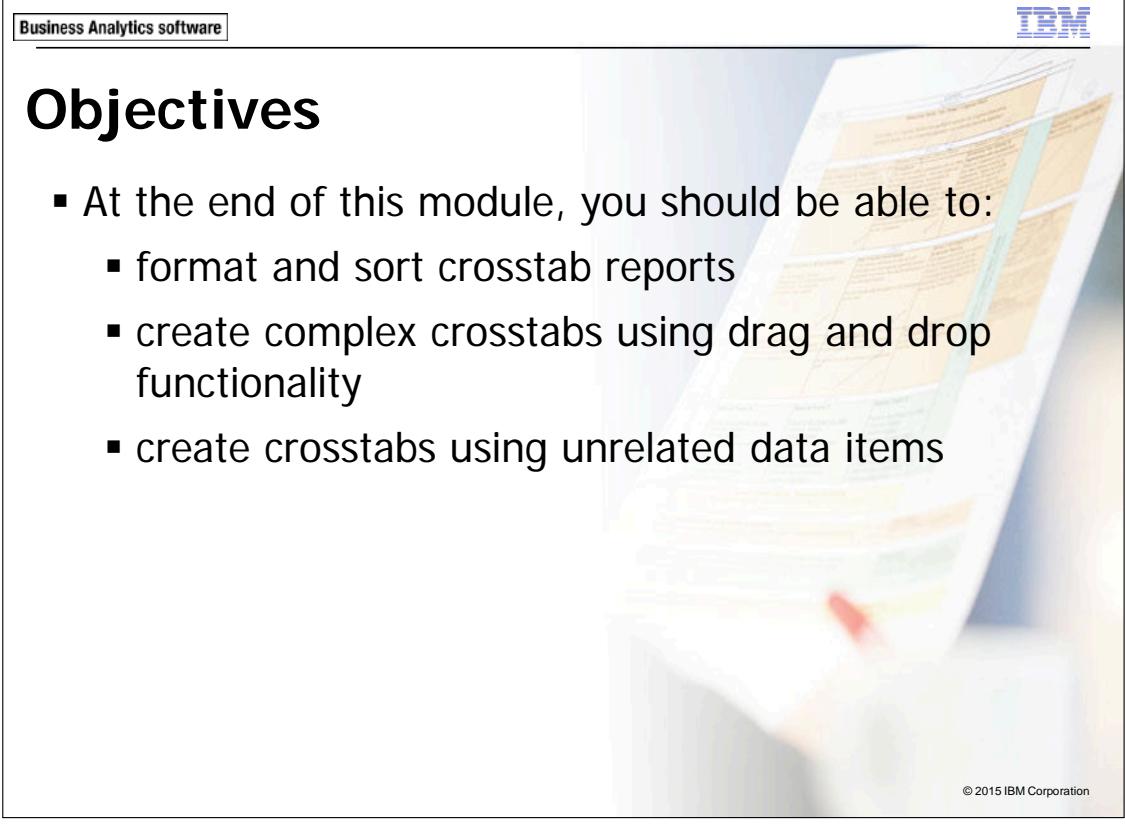
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Objectives

- At the end of this module, you should be able to:
 - format and sort crosstab reports
 - create complex crosstabs using drag and drop functionality
 - create crosstabs using unrelated data items



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Create a Crosstab Report

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

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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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.

Default measure		Defined measure for a crosstab node	
Revenue	<#Quarter#>	<#Order method#>	<#Quantity#> <#Quantity#>
<#Product line#>	<#1234#>	<#1234#>	<#1234#>
<#Product line#>	<#1234#>	<#1234#>	<#1234#>

↑ Revenue values
 ↑ Quantity values
 

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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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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

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Demo 1

▪ Create a Simple Crosstab Report

Revenue		Camping Equipment	Golf Equipment	Outdoor Protection	Personal Accessories	Mountaineering Equipment
	Telephone	80,467,596.88	44,244,120.93	8,141,169.76	45,940,692.79	
	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	125,829,519.92	49,583,401.41	13,735,716.85	284,622,826.47	
	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

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Demo 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://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public folders\Samples\Models\GO Data Warehouse (query)
 Report Type: Crosstab
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)

Task 1. Create a crosstab.

1. Open a new **Crosstab** template without saving any previous report.
2. From the **Source** tab, add the following query items to the new crosstab report 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#>

3. On the toolbar, click **Run Report**.

The results appear as follows:

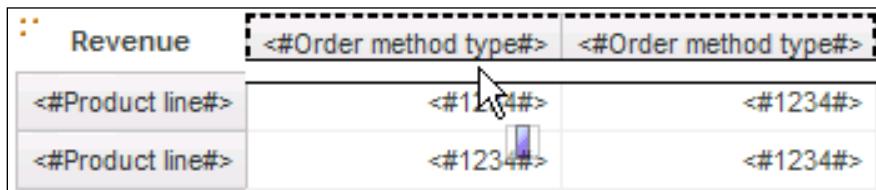
Revenue	E-mail	Fax	Mail	Sales visit	Special	Telephone	Web
Camping Equipment	75,899,094.63	23,054,398.48	21,348,644.09	168,611,961.87	12,388,989.44	153,894,892.13	1,133,838,683.39
Golf Equipment	47,933,933.16	15,241,303.27	12,693,287.48	39,240,918.73	4,964,762.97	78,730,112.65	527,607,049.63
Mountaineering 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.

4. Close **IBM Cognos Viewer**.

Task 2. Add Year to the crosstab report and sort on Year.

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



2. Click the **<#Year#>** column title.
3. From the toolbar, click **Sort**, and then click **Ascending**.
4. On the toolbar, click **Run Report**.

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.

5. Close **IBM Cognos Viewer**.



6. On the toolbar, click **Swap Rows and Columns**.
7. On the toolbar, click **Run Report**.
8. Click **Page down** to view the rest of the report.

The results appear as follows:

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

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)

9. Close **IBM Cognos Viewer**.
10. Leave **Report Studio** open for the next demo.

Results:

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

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Create Complex Crosstab Reports

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

Add Region as a peer of Product line

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

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

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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#>

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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.

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Demo 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
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
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
Australia	Revenue		19,270,852.15	38,968,802.62	29,323,674.25	600,979.72
Austria	Revenue	13,866,004.52	19,343,686.48	28,348,967.66	21,981,766.43	
Belgium	Revenue		21,554,248.84	27,345,821.17	19,822,994.69	
Brazil	Revenue	17,566,891.21	22,580,246.05	28,939,868.92	21,447,899.23	330,436.43

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Demo 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://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public folders\Samples\Models\GO Data Warehouse (query)
 Report Type: Crosstab
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)

Task 1. Create a crosstab report.

1. Open a new **Crosstab** template without saving the previous report.
2. From the **Source** tab, add the following query items to the new crosstab report object:

Rows:

- Products: **Product line**

Columns:

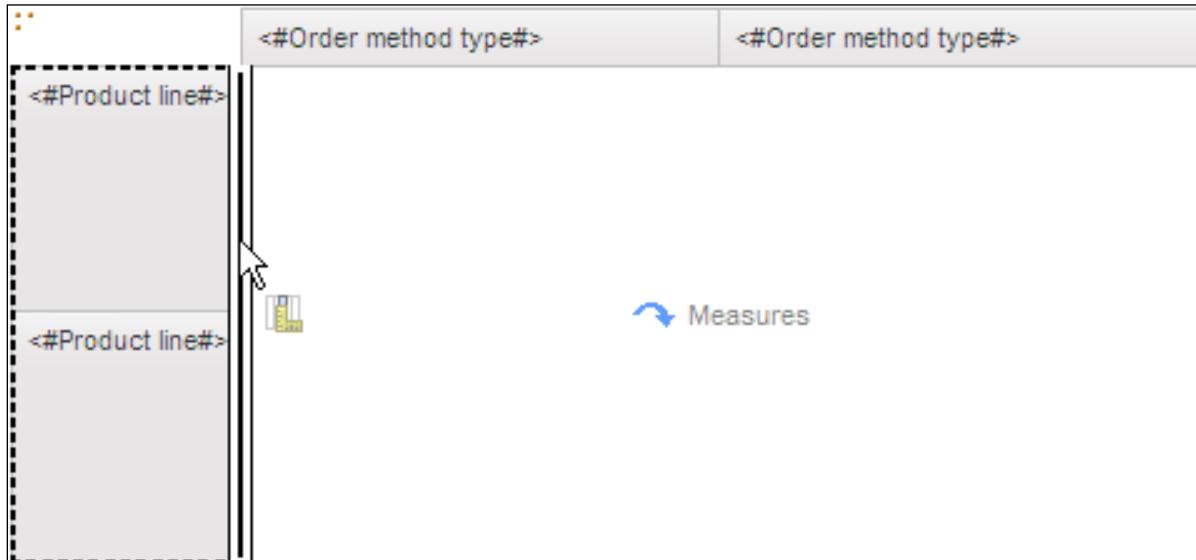
- Order method: **Order method type**

:	<#Order method type#>	<#Order method type#>
<#Product line#>		

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.

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

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

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#>

3. On the toolbar, click **Run Report**.

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

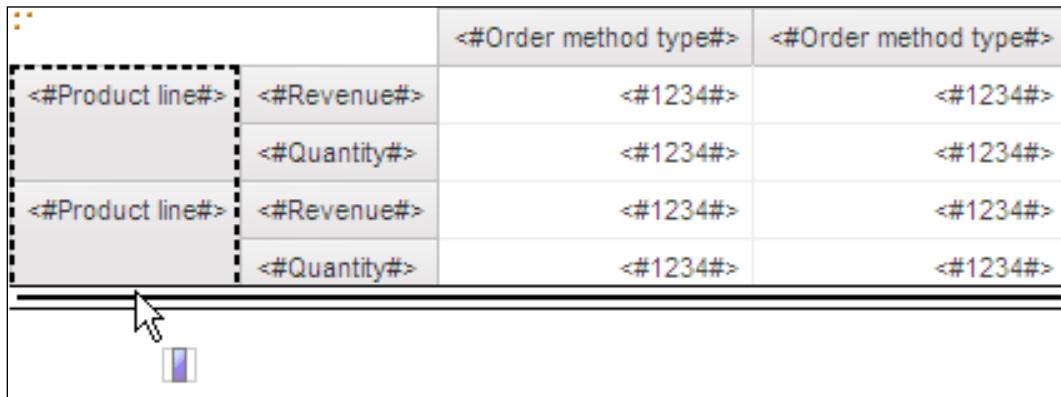
You can analyze the revenue generated and the quantity sold by each order method for each product line.

4. Close **IBM Cognos Viewer**.

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.

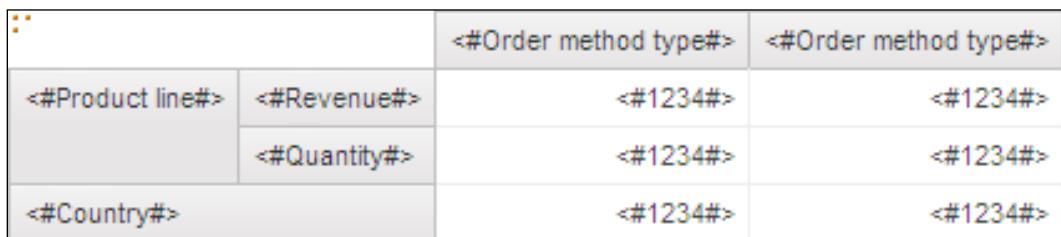
- From the **Source** tab, expand **Employee by region**, and then drag **Country** to the **Rows** area as a peer of **<#Product line#>**.



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

Both Product line and Country now appear on the row edge of the crosstab.

The results appear as follows:



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

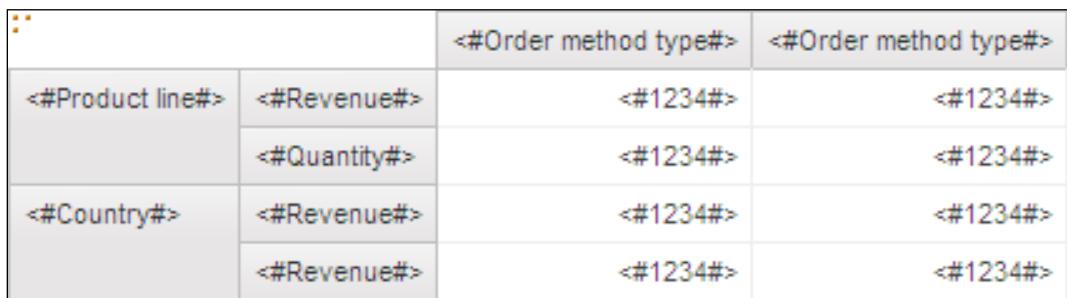
The results appear as follows:



A screenshot of the IBM Cognos Report Studio interface showing a crosstab. The crosstab has three columns and four rows. The first column contains '<#Product line#>', the second column contains '<#Revenue#>' and '<#Quantity#>', and the third column contains '<#Order method type#>'. The fourth row, which is highlighted with a dashed border, contains '<#Country#>'. A cursor arrow is pointing towards the bottom right corner of this row.

Revenue is nested within the Country rows of the crosstab.

The results appear as follows:



A screenshot of the IBM Cognos Report Studio interface showing the final crosstab structure. The crosstab has three columns and five rows. The first column contains '<#Product line#>', the second column contains '<#Revenue#>' and '<#Quantity#>', and the third column contains '<#Order method type#>'. The fifth row, which is the last one, contains '<#Country#>' and two '<#Revenue#>' items. The first '<#Revenue#>' item is aligned with the first '<#Country#>' cell, and the second '<#Revenue#>' item is aligned with the second '<#Country#>' cell.

- On the toolbar, click **Run Report**.

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 **IBM Cognos Viewer**.

You now want to examine data for years and order methods. 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.

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#>

Both Year and Order method appear on the column edge of the crosstab.

The results appear as follows:

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

6. Click the **<#Year#>** column header.
 7. On the toolbar, click **Sort**, and then click **Ascending**.

8. On the toolbar, click **Run Report**.

A section of the results appear 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
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
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
Australia	Revenue		19,270,852.15	38,968,802.62	29,323,674.25	600,979.72
Austria	Revenue	13,866,004.52	19,343,686.48	28,348,967.66	21,981,766.43	
Belgium	Revenue		21,554,248.84	27,345,821.17	19,822,994.69	
Brazil	Revenue	17,566,891.21	22,580,246.05	28,939,868.92	21,447,899.23	330,436.43

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 **IBM Cognos Viewer**.

10. Leave **Report Studio** open for the next demo.

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	2007
Personal Accessories	186,535,159.07
Asia Pacific	118,203,277.67

No formatting applied

Formatting applied to
Crosstab Fact Cells

← Bold, Blue
← Bold, Italic,
and Green

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Add Unrelated Items to Crosstabs Edges

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

Node Nodes

The diagram illustrates a discontinuous crosstab structure. At the top, there are two columns labeled "Node" with arrows pointing down to the first two columns of the table, and two columns labeled "Nodes" with arrows pointing down to the last two columns. The table has a header row with four columns: "Gross profit", "2013", "2012", and "Asia Pacific". The "Asia Pacific" column is further divided into "Web" and "Sales visit". The main body of the table contains several rows of data, each with a red border around its first two columns. The first row is "Camping Equipment". The second row is "Mountaineering Equipment". The third row is "Outdoor Protection". The fourth row is "Personal Accessories". The fifth row is "Golf Equipment". The sixth row is "Outdoors Shop", which is highlighted with a red border. The seventh row is "1 for 1 Sports shop". The eighth row is "Accapamento". The ninth row is "AcquaVerde". The tenth row is "Air frais".

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

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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 Create crosstab node option. This can be found under the Structure menu item.

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

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Demo 3

- Sort and Format a Crosstab Report

Revenue		2004	2005	2006	2007	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	104,455,327.09	526,802,374.59
	Personal Accessories	391,647,093.61	456,323,355.9	594,009,408.42	443,693,449.85	1,885,673,307.78
Outdoors Shop		226,148,611.02	353,312,717.17	506,856,636.95	407,201,378.24	1,493,519,343.38
Sports Store		251,401,837.11	299,649,268.91	381,884,219.14	288,347,271.83	1,221,282,596.99
Department Store		218,500,823.58	233,827,385.24	261,984,087.03	166,634,238.57	880,946,534.42
Golf Shop		81,198,300.88	117,365,629.83	165,385,412.36	128,119,126.69	492,068,469.76
Warehouse Store		72,272,305.99	75,242,324.03	75,473,902.44	41,619,942.57	264,608,475.03
Eyewear Store		37,778,913.44	46,904,339.83	65,791,448.99	59,022,366.43	209,497,068.69
Direct Marketing		20,577,679.9	21,318,284.71	21,916,720.66	11,132,072.24	74,944,757.51
Equipment Rental Store		6,474,331.8	11,575,640.44	16,598,673.33	15,259,877.5	49,908,523.07

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Demo 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://localhost:88/ibmcognos
User/Password:	brettonf/Education1
Studio:	Report Studio
Package:	Public Folders\Samples\Models\GO Data Warehouse (query)
Report Type:	Crosstab
Folder:	Sales and Marketing (query)
Namespace:	Sales (query)

Task 1. Create and sort a crosstab.

1. Open a new **Crosstab** template without saving the previous report.
2. From the **Source** tab, add the following query items to the new crosstab report object:

Rows:

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

Columns:

- Time: **Year**

Measure:

- Sales fact: **Revenue**

The results appear as follows:

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

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3. On the column edge, click <#Year#>.
4. On the toolbar, click **Sort**, and then click **Ascending**.
5. On the row edge, click <#Product line#>.
6. On the toolbar, click **Sort**, and then click **Ascending**.

Task 2. Format the crosstab and perform advanced sorting.

1. On the row edge, right-click <#Product line#>, and then click **Select Member Fact Cells**.
2. On the toolbar, click **Foreground Color** , and then click **Blue**.
3. On the row edge, click <#Branch region#>, and then in the **Properties** pane, under **Data**, double-click the **Sorting** property.
4. In the **Sorting** box, from the **Data items** pane, drag **Revenue** to the **Sort List** pane, and then double-click the **Revenue** item that you just added to change the sort order from ascending to descending.
5. Click **OK**.
6. On the column edge, click <#Year#>.
7. On the toolbar, click **Summarize**, and then click **Total**.

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#>
<#Branch region#>	<#Product type#>	<#1234#>	<#1234#>
<#Branch region#>	<#Branch region#>	<#1234#>	<#1234#>

2. On the row edge, click <#Product type#>.
3. On the toolbar, click **Summarize**, and then click **Total**.

4. On the row edge, click **Total**, in the **Properties** pane, under **Text Source**, click the **Source Type** property, and then from the list, click **Data Item Value**, if not already selected.
5. In the **Properties** pane, click the **Data Item Value** cell, and then in the list, click **Product line**.
6. On the toolbar, click **Run Report**.
7. Click **Page down** to view the rest of the report.

A section of the results appear as follows (you may need to go to the next page):

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

8. Close **IBM Cognos Viewer**.

Task 4. Examine crosstab nodes and crosstab node members.

1. On the row edge, click the <#Product line#> row, and then drag it below the <#Branch region#> row.

The results appear as follows:

Revenue	<#Year#> Δ	Total
<#Product type#>	<#1234#>	<#1234#>
<Total(Product type)>	<#1234#>	<#1234#>
<#Branch region#> ∇	<#1234#>	<#1234#>
<#Product line#> Δ	<#1234#>	<#1234#>

This moves only the Product line node member. You wish to move the entire Crosstab node.

2. On the toolbar, click **Undo**.
3. On the row edge, ensure <#Product line#> is selected.
4. In the **Properties** pane, click **Select Ancestor**, and then click **Crosstab Node**.
5. In the crosstab, drag <#Product line#> below <#Branch region#>.

The results appear as follows:

Revenue	<#Year#> Δ	Total
<#Branch region#> ∇	<#1234#>	<#1234#>
<#Product line#> Δ	<#Product type#>	<#1234#> <#1234#>
	<Total(Product type)>	<#1234#> <#1234#>

6. Leave **Report Studio** open for the workshop.

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.

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Summary

- At the end of this module, you should be able to:
 - format and sort crosstab reports
 - create complex crosstabs using drag and drop functionality
 - create crosstabs using unrelated data items

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Workshop 1

- Present Unrelated Items in a Crosstab using a Discontinuous Crosstab

		Americas		Asia Pacific		Central Europe	
		Revenue	Quantity	Revenue	Quantity	Revenue	Quantity
Camping Equipment		481,445,781.04	8,101,682	421,639,391.62	7,366,131	343,645,848.36	5,904,428
Golf Equipment		217,262,995.22	1,544,411	193,677,873.68	1,338,406	153,632,833.39	1,071,235
Mountaineering Equipment		123,127,397.88	2,948,533	107,505,775.01	2,571,299	88,051,532.89	2,146,207
Outdoor Protection		23,002,647.68	3,619,457	19,716,018.32	3,114,960	17,488,870.77	2,800,923
Personal Accessories		132,249,058.98	2,730,299	116,715,219.51	2,397,747	1,540,675,699.15	27,771,811
2013	Q1	99,668,909.86	1,752,555	87,323,799.66	1,558,240	208,125,905.83	3,706,144
	Q2	98,828,777.21	1,699,239	86,438,349.68	1,504,142	218,251,618.31	3,830,700
	Q3	35,108,096.67	590,699	30,802,677.33	520,678	73,485,747.91	1,296,244
2012	Q1	72,919,470.22	1,269,166	61,699,029.76	1,101,646	151,653,156.66	2,677,762
	Q2	82,814,841.14	1,393,193	75,480,083.64	1,308,247	175,010,376.46	3,051,989
	Q3	79,628,210.68	1,319,021	71,904,554.16	1,197,936	168,066,493.55	2,948,132
	Q4	76,675,470.87	1,327,024	66,608,292.34	1,170,508	180,844,360.45	3,066,429

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Workshop 1: Present Unrelated Items in a Crosstab using a Discontinuous Crosstab

The sales managers have asked you to create a report showing revenue and quantity for each product line by year and quarter. The report should show revenue and quantity data for each sales region and they should be formatted in different colors to be more easily distinguished, blue for revenue and red for quantity. Since the report will have rows with unrelated data, you will be creating a discontinuous crosstab report.

To accomplish this:

- Open a new crosstab template using the GO Data Warehouse (query) package.
- Add the following query items to the new crosstab report object:
 - Rows:
 - Products: Product line,
 - Time: Year (below Product line as a peer),
 - Time: Quarter (nested to the right of Year as a child)
 - Columns: Employee by region: Branch region
 - Sales fact: Revenue and Quantity (nested under Branch region as children)
- Sort <#Branch region#> as ascending.
- Sort <#Product line#> as ascending.
- Sort <#Year#> as descending.
- Format <#Revenue#> Member Fact Cells with a Blue foreground color.
- Format <#Quantity#> Member Fact Cells with a Red foreground color.

For more information about where to work and the workshop results, refer to the Tasks and Results section that follows. If you need more information to complete a task, refer to earlier demos for detailed steps.

Workshop 1: Tasks and Results

Task 1. Create a discontinuous crosstab.

- **Toolbar:** Open a new Crosstab template without saving the previous report.
- **Source tab:** Add **Product line** to the rows of the crosstab report object.
 - Add **Branch region** to the columns of the crosstab report object.
 - Add **Year** to the rows as a peer of **<#Product line#>**.
 - Add **Quarter** to the rows as a child of **<#Year#>**.
 - Add **Revenue** as a nested column under **<#Branch region#>**.
 - Add **Quantity** to the columns as a peer of **<#Revenue#>**.
- **Toolbar:** Sort the **<#Branch region#>** column ascending.
 - Sort the **<#Product line#>** row ascending.
 - Sort the **<#Year#>** row descending.

The results appear as follows:

		<#Branch region#> Δ		<#Branch region#>	
		<#Revenue#>	<#Quantity#>	<#Revenue#>	<#Quantity#>
<#Product line#> Δ		<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Year#> ∇	<#Quarter#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
	<#Quarter#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

Task 2. Apply formatting to the crosstab fact cells.

- **Toolbar:** Set the **Foreground Color** for the <#Revenue#> Member Fact Cells to **Blue**.
 - Set the **Foreground Color** for the <#Quantity#> Member Fact Cells to **Red**.
 - Run the report.

The results appear as follows:

		Americas		Asia Pacific		Central Europe		Northern Europe		Southern Europe	
		Revenue	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity
Camping Equipment		481,445,781.04	8,101,682	421,639,391.62	7,366,131	343,645,848.36	5,904,428	180,851,396.88	3,046,563	161,454,246.13	2,882,345
Golf Equipment		217,262,995.22	1,544,411	193,677,873.68	1,338,406	153,632,833.39	1,071,235	84,424,300.9	592,168	77,413,364.7	567,481
Mountaineering Equipment		123,127,397.88	2,948,533	107,505,775.01	2,571,299	88,051,532.89	2,146,207	46,091,108.04	1,131,215	44,884,319.08	1,102,837
Outdoor Protection		23,002,647.68	3,619,457	19,716,018.32	3,114,960	17,488,870.77	2,800,923	8,346,431.17	1,310,804	7,440,328.31	1,168,301
Personal Accessories		132,249,058.98	2,730,299	116,715,219.51	2,397,747	1,540,675,699.15	27,771,811	49,825,913.97	1,050,963	46,207,416.17	956,885
2013	Q1	99,668,909.86	1,752,555	87,323,799.66	1,558,240	208,125,905.83	3,706,144	39,268,876.4	697,321	37,236,875.94	668,622
	Q2	98,828,777.21	1,699,239	86,438,349.68	1,504,142	218,251,618.31	3,830,700	38,859,548.97	661,448	36,891,629.65	649,065
	Q3	35,108,096.67	590,699	30,802,677.33	520,678	73,485,747.91	1,296,244	13,816,883.89	234,188	13,228,596.76	226,601
2012	Q1	72,919,470.22	1,269,166	61,699,029.76	1,101,646	151,653,156.66	2,677,762	29,214,791.98	516,210	28,637,818.45	530,003
	Q2	82,814,841.14	1,393,193	75,480,083.64	1,308,247	175,010,376.46	3,051,989	29,485,184.43	512,379	29,083,976.84	517,327
	Q3	79,628,210.68	1,319,021	71,904,554.16	1,197,936	168,066,493.55	2,948,132	29,476,715.04	498,493	29,042,039.11	504,407
	Q4	76,675,470.87	1,327,024	66,608,292.34	1,170,508	180,844,360.45	3,066,429	28,971,376.19	513,164	28,674,858.93	518,754
2011	Q1	61,679,289.83	1,369,148	56,312,126.53	1,268,246	134,130,313.2	2,677,977	21,984,786.32	489,797	19,121,944.65	453,259
	Q2	56,910,812.55	1,181,071	49,277,462.06	1,029,775	129,735,386.05	2,481,726	22,669,178.67	462,374	19,587,920.63	424,697
	Q3	57,195,724.98	1,159,624	49,206,966.1	998,645	132,664,137.27	2,539,454	22,481,473.56	447,998	19,531,365.04	411,132
	Q4	63,427,820.49	1,312,751	57,453,959.23	1,194,136	142,706,092.13	2,722,561	23,080,208.1	471,016	20,038,622.77	429,298
2010	Q1	47,381,351.43	1,117,915	41,548,840.6	970,249	101,800,331.59	2,066,747	17,178,637.94	394,586	13,795,543.75	327,561
	Q2	46,446,442.22	1,161,957	39,682,191.16	989,504	105,169,148.29	2,189,147	17,117,291.4	419,849	13,728,311.5	345,261
	Q3	50,130,435.79	1,183,992	43,885,141.25	1,010,004	109,583,098.88	2,203,282	17,861,264.35	401,471	14,290,375.98	331,566
	Q4	48,272,226.86	1,127,027	41,630,804.64	966,587	112,268,617.98	2,236,310	18,072,953.72	411,419	14,509,794.39	340,296

- Close **IBM Cognos Viewer**.
- Close **Report Studio**.
- Close the Web browser.

You have created a report that shows revenue and quantity for each product line by year and quarter. The report shows revenue and quantity data for each sales region. You have created a discontinuous crosstab report that shows rows of unrelated data. You have formatted the measure columns in different colors to be more easily distinguished.

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Present Data Graphically

IBM Cognos BI

Business Analytics software



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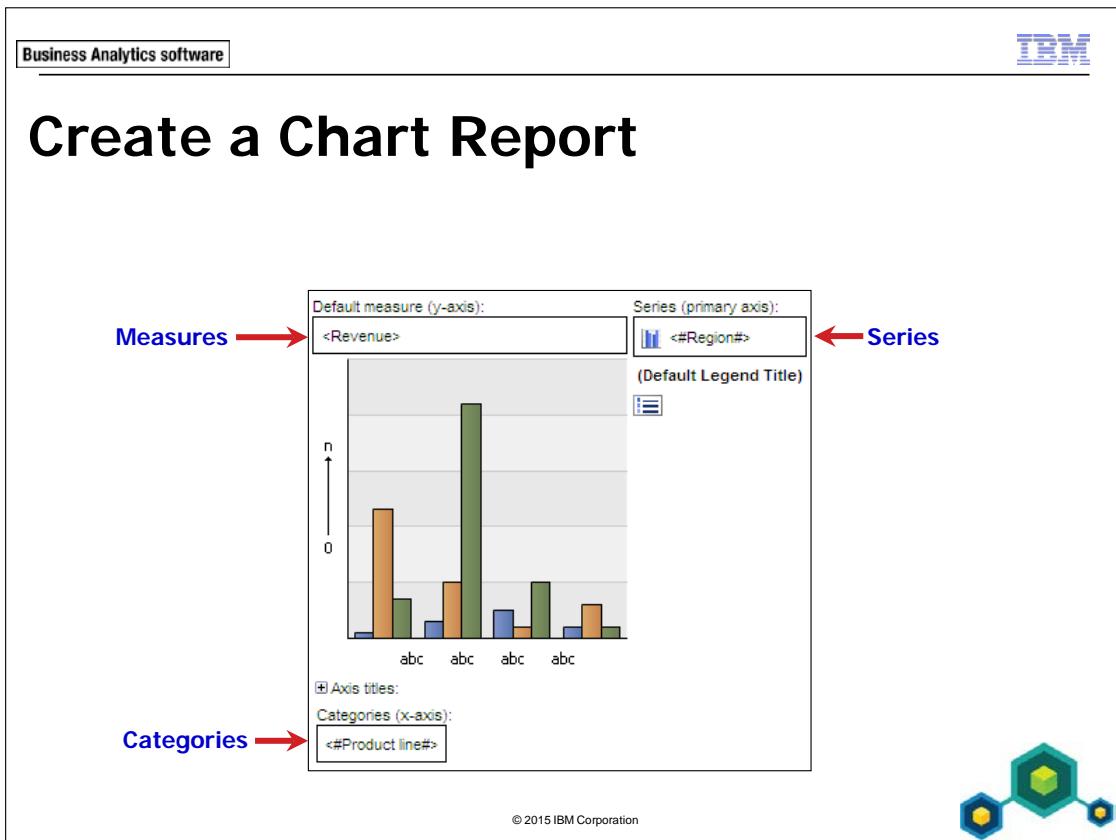
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Objectives

- At the end of this module, you should be able to:
 - create charts containing peer and nested columns
 - present data using different chart type options
 - add context to charts
 - create and reuse custom chart palettes
 - introduction to visualization
 - present key data in a single dashboard report

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The chart user interface lets you format and customize different objectives in charts. Data can be displayed graphically to effectively show comparisons, relationships, and trends using one or more of the available chart types.

The IBM Cognos BI v10.2.2 release includes two charting engines. Users can switch between the legacy chart engine and the default chart engine. The legacy chart engine is no longer the default. Default chart authoring allows you to create several types of standard charts. The chart authoring feature offers rich, visually-appealing charts with additional options to enhance them.

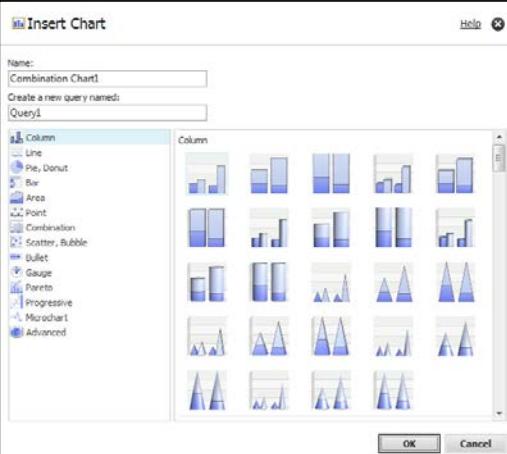
The features and benefits of each chart type are displayed at the bottom of the Insert Chart dialog box when you click a chart type. Many chart aspects can be customized including the title, the axes, 2D and 3D properties, and adding baselines.

Business Analytics software

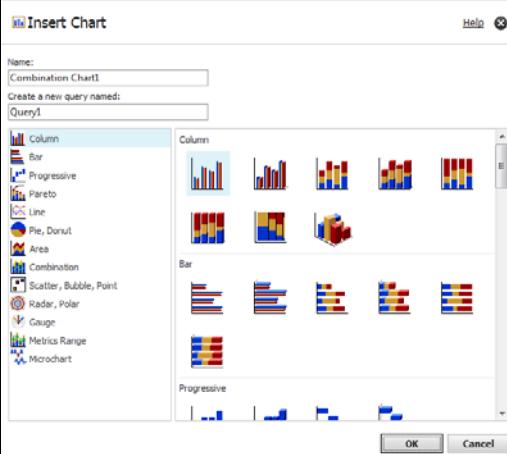
IBM

Different Chart Options

- Default and Legacy Charts



Default Charts



Legacy Charts

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IBM Cognos Report Studio includes a default chart technology. You can continue to use and work with the legacy charts or upgrade your legacy charts to the default charts. The new default chart technology provides a greater and more updated list of chart types and options for presenting your data in a meaningful way.

The screenshot shows a stacked bar chart in IBM Cognos Report Studio. The chart has a single series representing revenue across four categories (abc). The y-axis is labeled 'Default measure (y-axis): <Revenue>' and the x-axis is labeled 'Categories (x-axis): <#Product line#> <#Product type#>'. A legend titled '(Default Legend Title)' shows two items: '<#Region#>' (represented by a blue square) and '<#Year#>' (represented by an orange square). A red box highlights the '<#Year#>' item in the legend, with a blue arrow pointing to it from the text 'Year added as a peer of Region'. Another red box highlights the '<#Product type#>' item in the x-axis categories, with a blue arrow pointing to it from the text 'Product type nested as a child of Product line'.

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.

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Create and Reuse Custom Chart Palettes

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Patterns are especially useful when users print charts in black and white.

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.

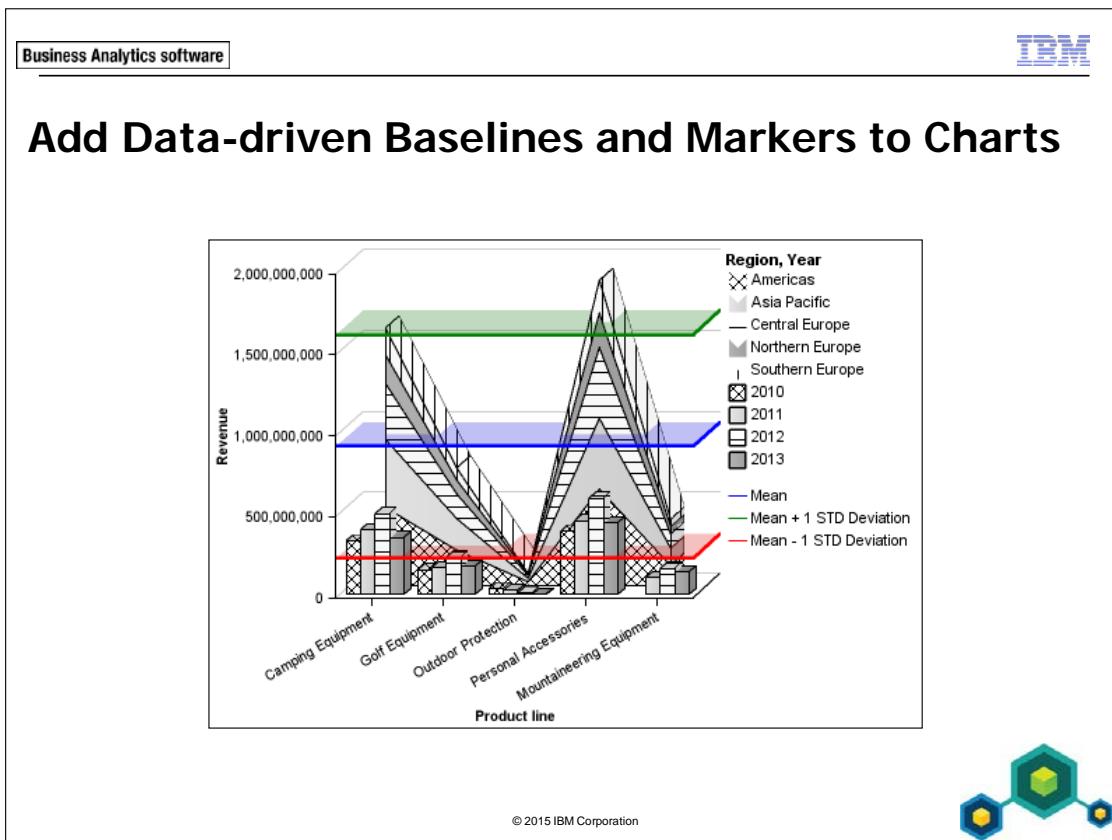
To reuse a custom palette, copy the palette to the clipboard and then paste the palette into a different chart report.

If you create a custom chart palette, to save time, you can copy the palette from one chart, and then paste it into different charts.

When using patterns in charts, the chart displays best when you include borders for chart elements such as the bars or pie slices.

There is a ready-made Patterns palette that report authors can select when defining chart palettes.

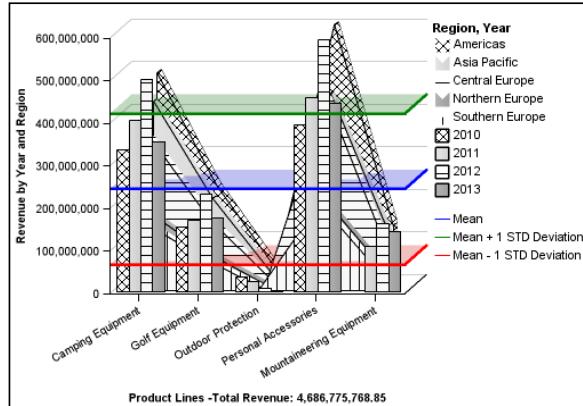
You can change the foreground and background colors for patterns in the palette. For example, you could change the foreground color of a pattern to white and the background of the pattern to black.



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.

Demo 1

Create and Format a Chart Report



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Demo 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://localhost:88/ibmcognos
User/Password:	brettonf/Education1
Studio:	Report Studio
Report Type:	Blank
Package:	Public Folders\Samples\Models\GO Data Warehouse (query)
Folder:	Sales and Marketing (query)
Namespace:	Sales (query)

Task 1. Create the combination chart.

1. On the **Tools** menu, click **Options**, click the **Advanced** tab, ensure the **Use legacy chart authoring** check box is cleared, and then click **OK**.
2. On the toolbar, click **New** without saving any previous reports, click **Chart**, and then click **OK**.
3. From the left pane, click **Combination**, click **Stacked Bar and Stacked Area**



from the right pane, and then click **OK**.

4. From the **Source** tab, add the following query items to the new chart report object:

Default measure (y-axis) drop zone:

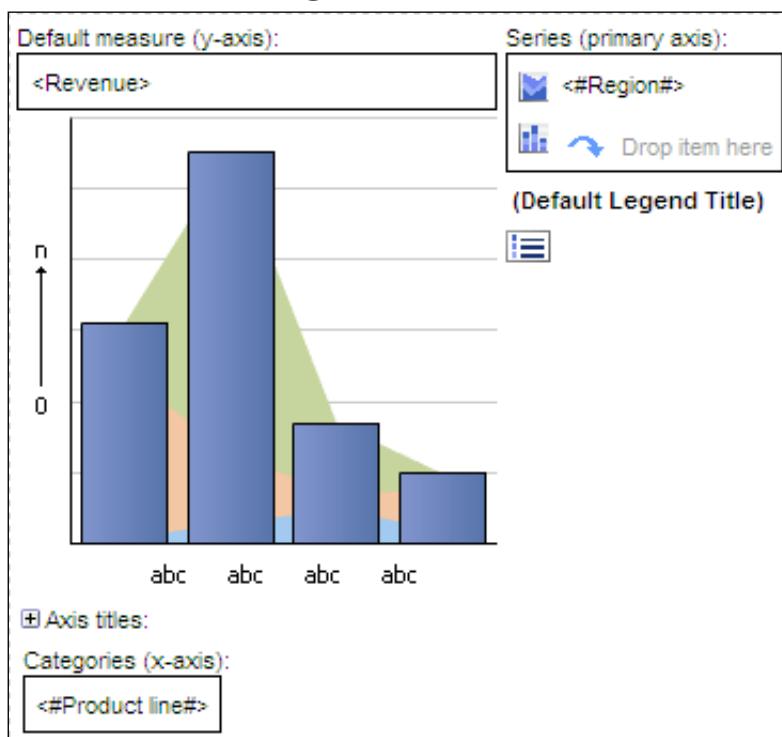
- Sales fact: **Revenue**

Categories (x-axis) drop zone:

- Products: **Product line**

Series (primary axis) drop zone:

- Retailers: **Region**

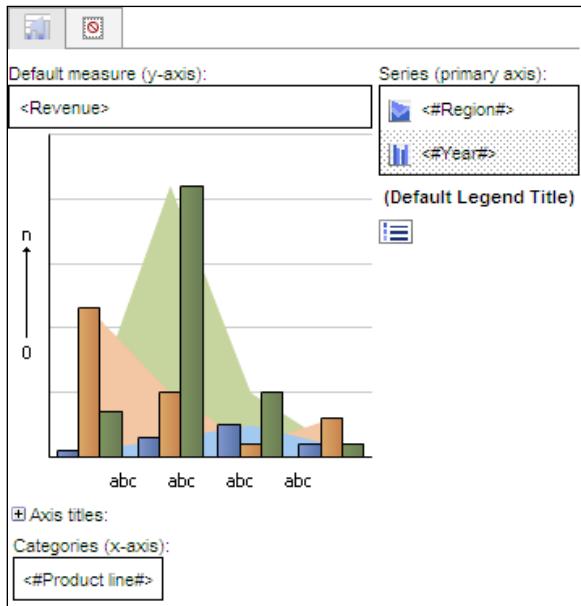


Task 2. Combine area and bar charts in a single presentation.

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

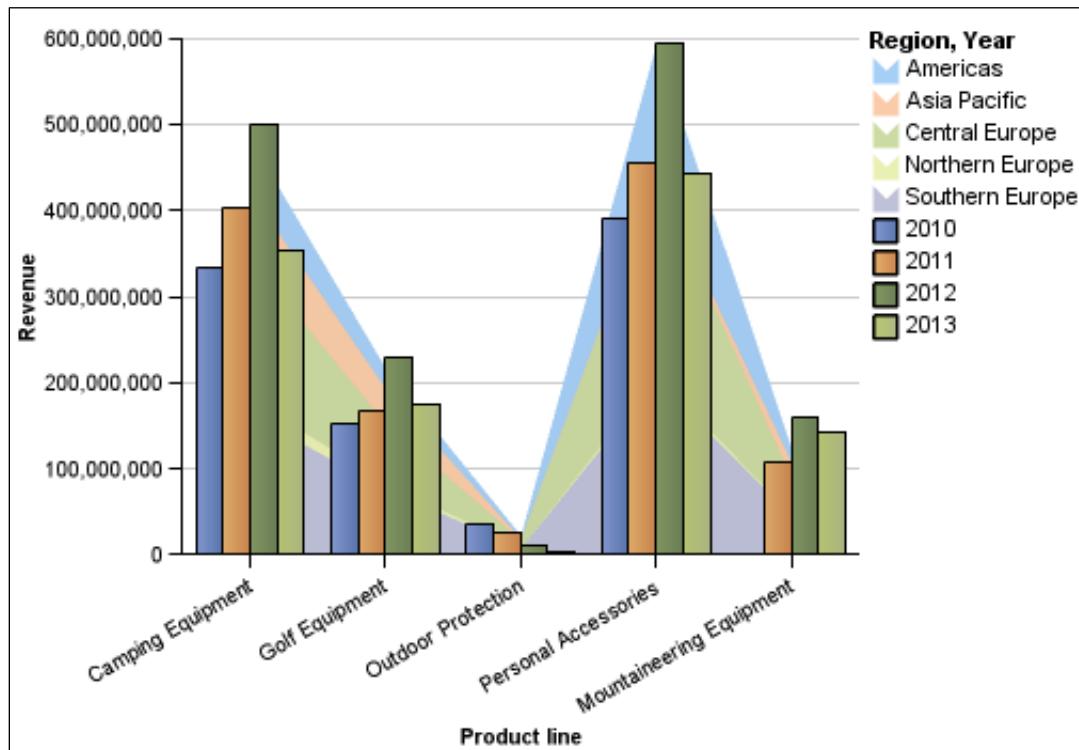
1. In the work area, in the **Series (primary axis)** area of the chart object, click the chart icon for <#Region#>.
 2. In the **Properties** pane, under **General**, click the **Series Type** property and then click **Clustered** from the list.
- You also want to add a clustered bar chart to display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

The results appear as follows:



6. On the toolbar, click **Run Report**.

The results appear as follows:



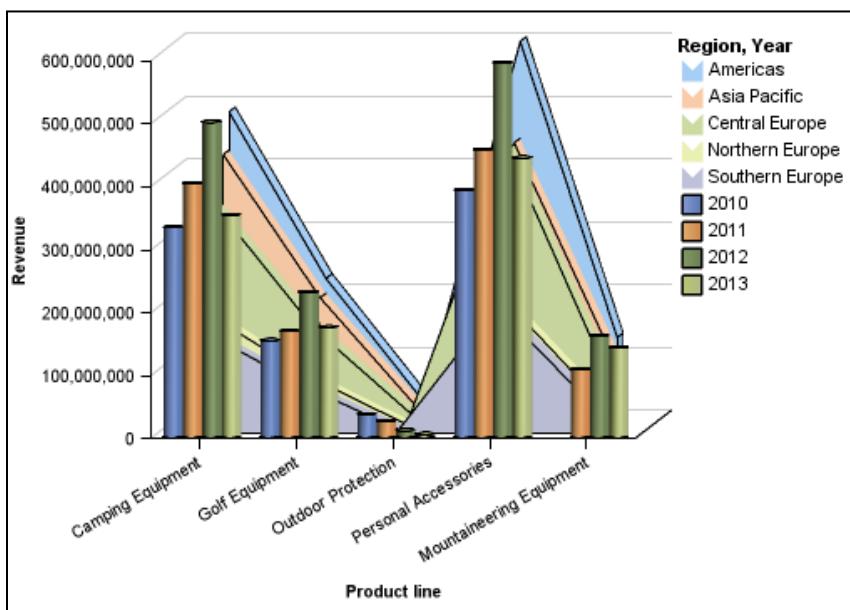
Both the region and the year data appear on the chart, however it is difficult to see the values of the different regions. The chart can be customized further in order to provide a better view of the data.

7. Close **IBM Cognos Viewer**.

8. In the **Series** area, click the <#Region#> text, on the toolbar, click **Sort**, and then click **Ascending**.
9. In the **Series** area, click the <#Region#> chart icon, in the **Properties** pane, under **Box**, click **Borders**, and then select **Show**.
10. In the **Series** area, click the <#Year#> text, on the toolbar, click **Sort**, and then click **Ascending**.
11. In the **Series** area, click the <#Year#> chart icon, in the **Properties** pane, under **General**, select **Bar Shape** and then click **Cylinder**.
12. Click the chart background, in the **Properties** pane, under **General**, beside **Depth**, from the list, click **75**.

13. On the toolbar, click **Run Report**.

The results appear as follows:



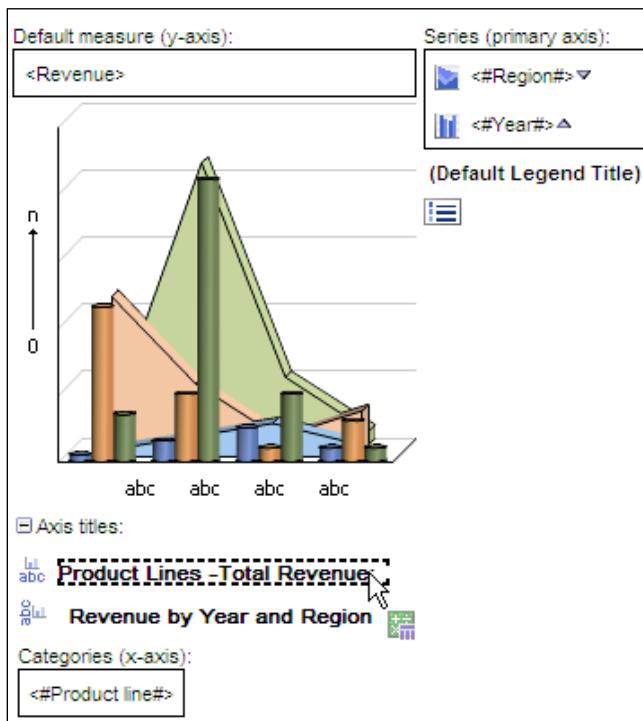
The year data appears as a bar chart and the region data appears as an area chart. This allows the yearly revenue generated by each product line to be compared with the revenue generated by each region.

14. Close **IBM Cognos Viewer**.

Task 3. 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. Click the chart background to remove focus from the axis title area.
5. Double-click **Double-click to edit text** to open the **Text** dialog box.
6. In the **Text** dialog box, type **Product Lines -Total Revenue**: press the space bar, and then click **OK**.
7. Repeat steps 2-6 to add the title **Revenue by Year and Region** to the **Primary Axis Title**.

8. From the **Toolbox** tab, 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.

9. In the **Name** box, type **Total Revenue for Product Lines**, and then create and validate the following expression:

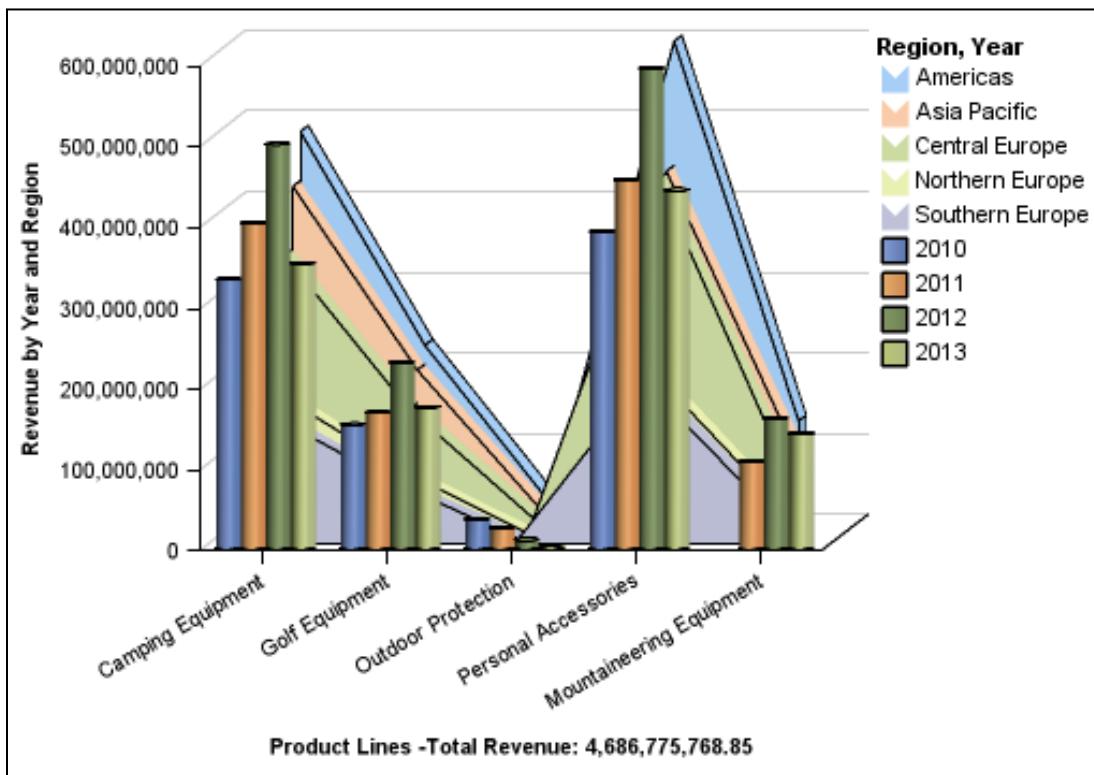
total([Revenue])

Hint: Drag Revenue from the Data Items tab.

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

11. On the toolbar, click **Run Report.**

The results appear as follows:



The total product line revenue displays under the horizontal axis.

12. Close **IBM Cognos Viewer.**

Task 4. Create a custom palette (optional).

Tasks 4-6 are optional; however they must all be done or not done at all.

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

1. Click the <**#Region#>** series chart icon, in the **Properties** pane, under **Color & Background**, double-click the **Palette** property.

2. In the **Chart Palette Presets**  list, click **Gray Scale**.

You want to add some patterns to the palette so that there are enough palette entries for all the items in your chart.

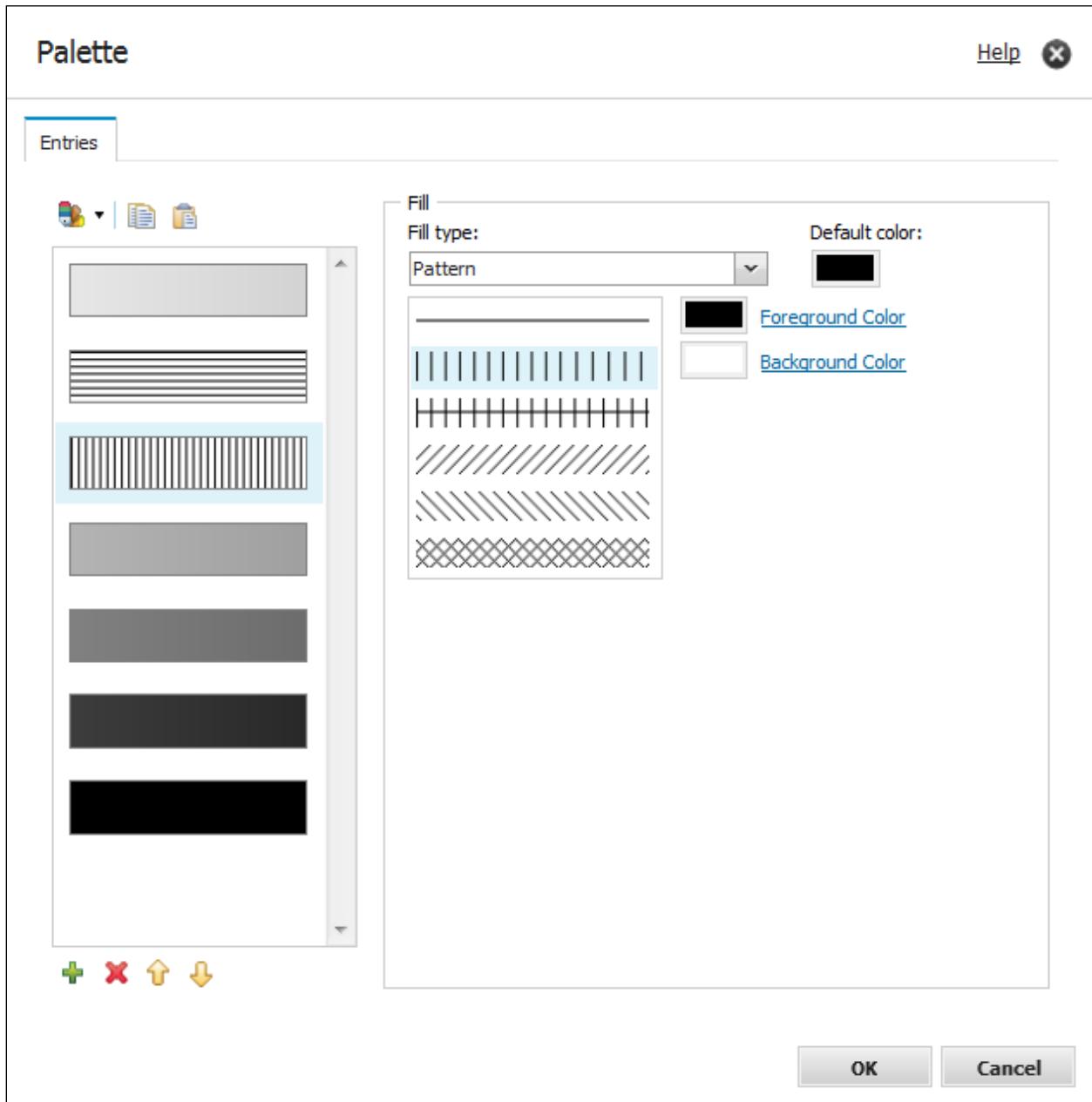
3. In the left pane, click **New** , in the **Fill type** list, click **Pattern**, change the **Default** and **Foreground Color** to the basic Color **Black**, and then change the **Background Color** to **White**.

A new pattern entry (horizontal line) is added to the palette.

You will now add four additional entries.

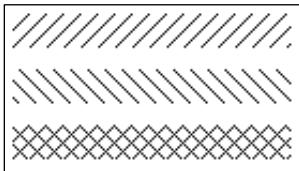
4. Click **New**, in the **Fill type** list, click **Pattern**, in the **Pattern** pane, click the second option (vertical lines), change the **Default** and **Foreground Color** to **Black**, and then change the **Background Color** to **White**.

The results appear as follows:

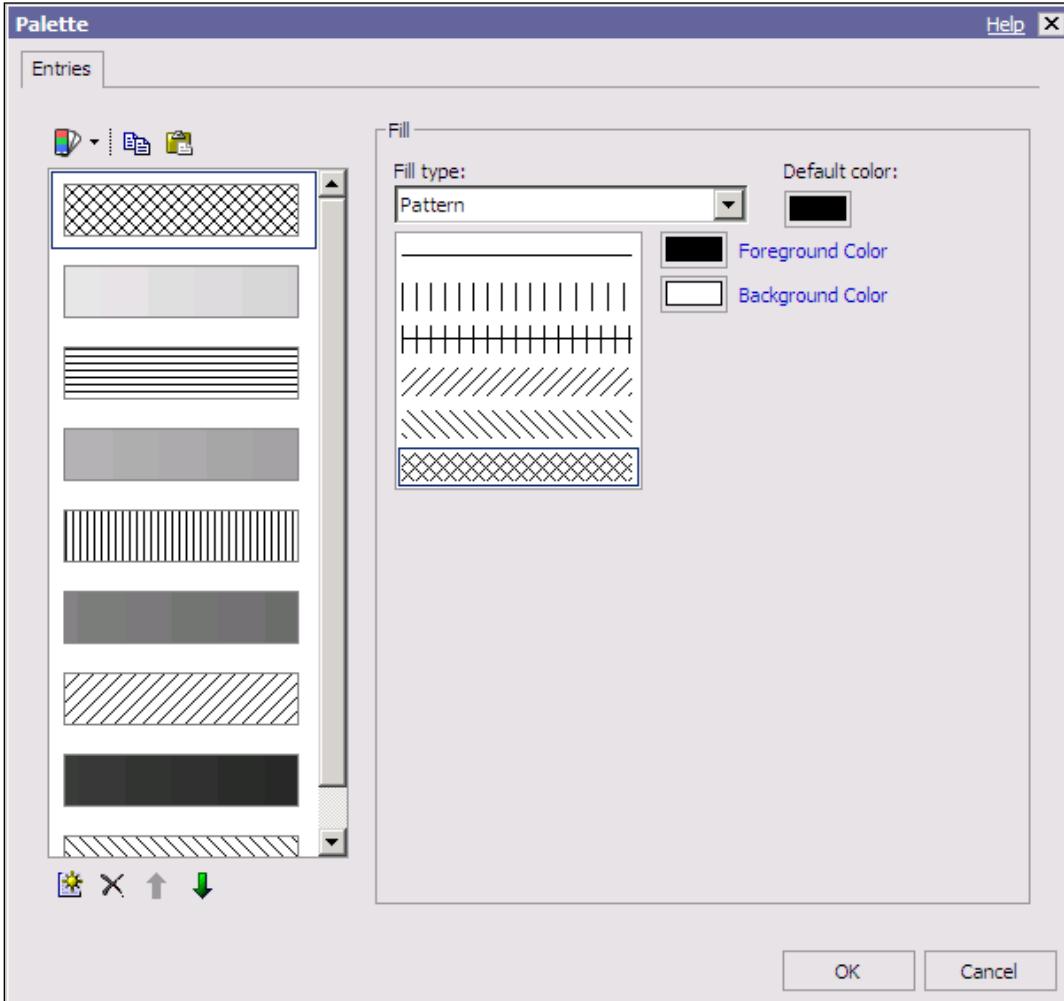


5. With the new vertical line pattern still selected in the left pane, click **Move Down** to move the new pattern below the second gray scale entry.

6. Repeat steps 4 and 5 to add these three additional patterns to the palette:



7. For the last pattern, 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:



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

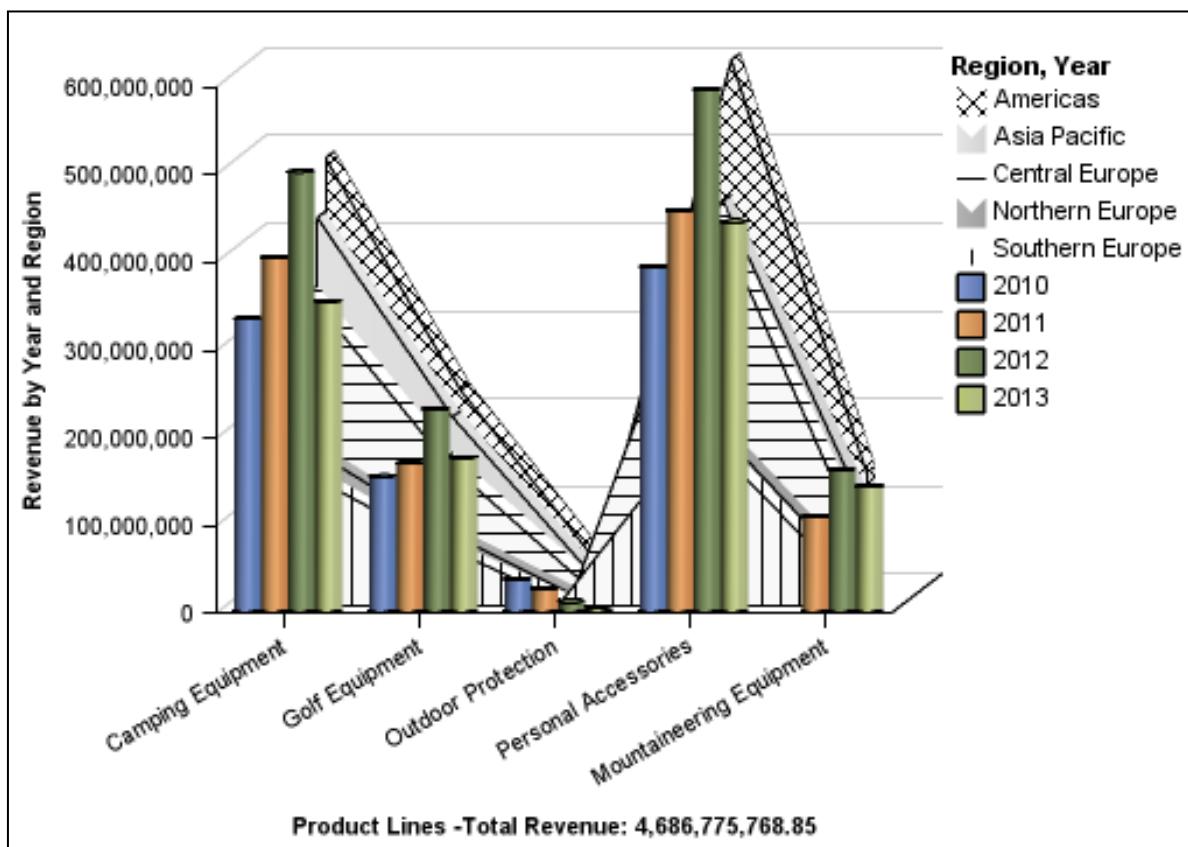
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9. On the toolbar, click **Run Report**.

The results appear as follows:



10. Close IBM Cognos Viewer.

Task 5. Reuse the custom palette (optional).

You want to reuse the custom palette that was just created for the Year series bar chart.

- With the <#Region#> series still selected, in the **Properties** pane, under **Color & Background**, double-click the **Palette** property.

- Click **Copy Palette** , and then click **OK**.

- Select the <#Year#> series icon, and then in the **Properties** pane, under **Color & Background**, double-click the **Palette** property.

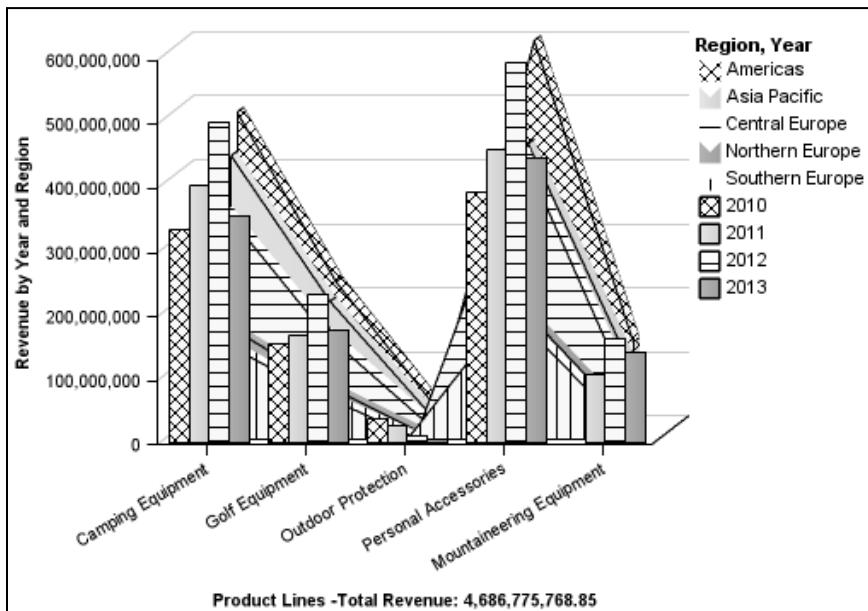
- In the **Palette** dialog box, click **Paste Palette** , and then click **OK**.

- With the <#Year#> series chart icon still selected, in the **Properties** pane, under **General**, change the **Bar Shape** property to **Rectangle**.

- On the toolbar, click **Run Report**.

The chart uses the new custom palette for both of the series charts.

The results appear as follows:



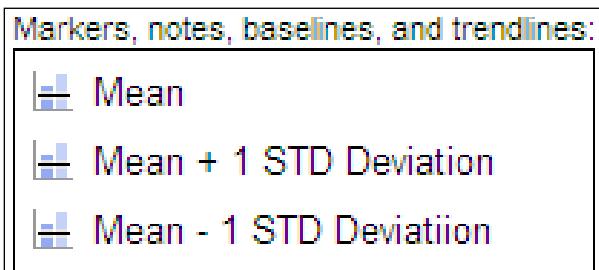
- Close **IBM Cognos Viewer**.

Task 6. Add baselines to the chart.

1. 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.
2. In the **Baselines** dialog box, click **New**, and then in the list, click **Mean**.
3. 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**
4. 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 in the list, click **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 in the list, click **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.

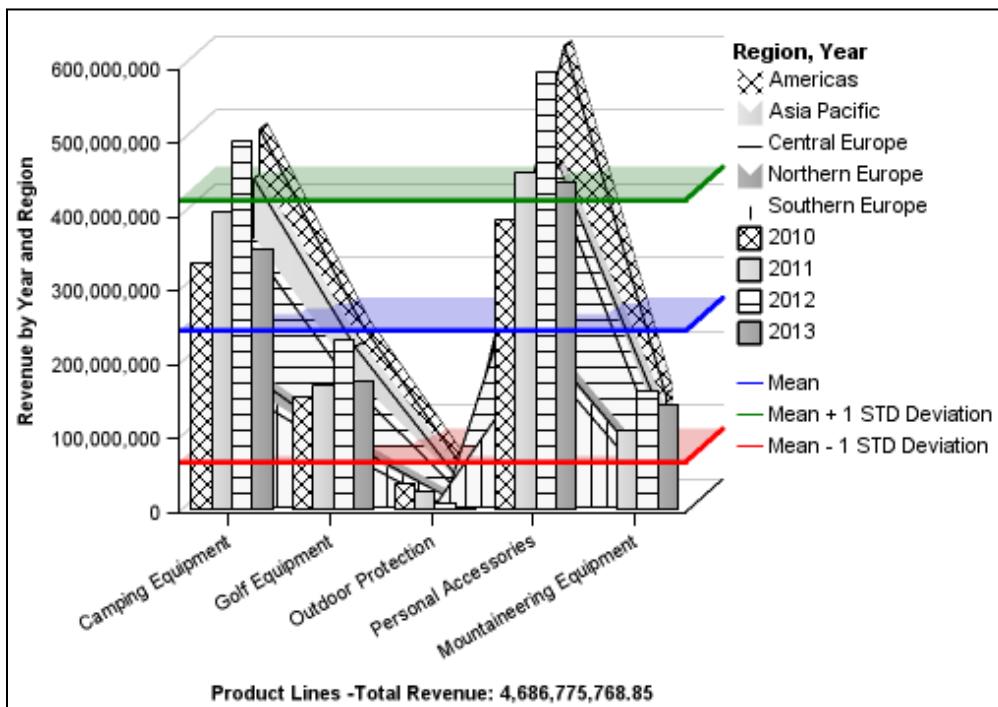
The results appear as follows:



11. Click **OK** to close the **Baselines** dialog box.

12. On the toolbar, click **Run Report**.

The results appear as follows:



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

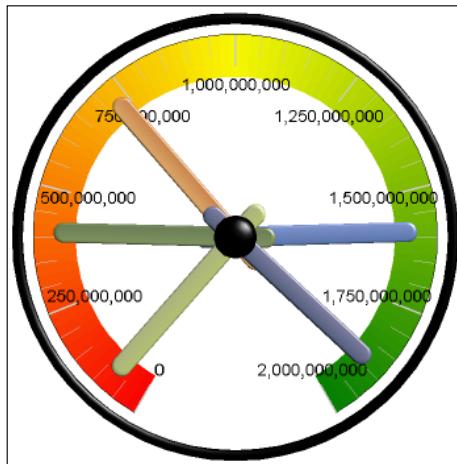
13. Close **IBM Cognos Viewer**.

14. Leave **Report Studio** open for the next demo.

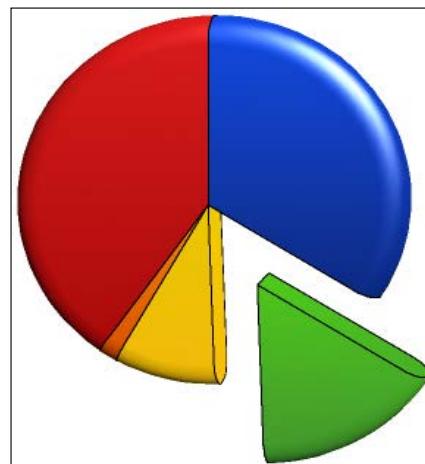
Results:

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



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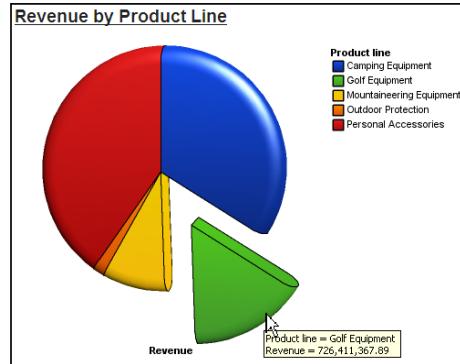
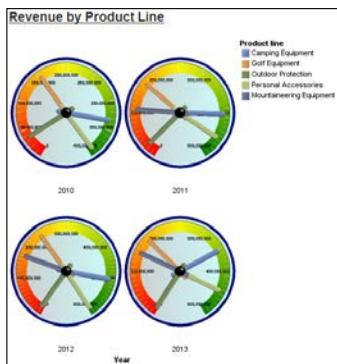
Gauge charts are useful for comparing values between a small number of variables.

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.

Demo 2

Create a Gauge Report and a Pie Chart Report



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Demo 2: Create a Gauge Report and a Pie Chart Report

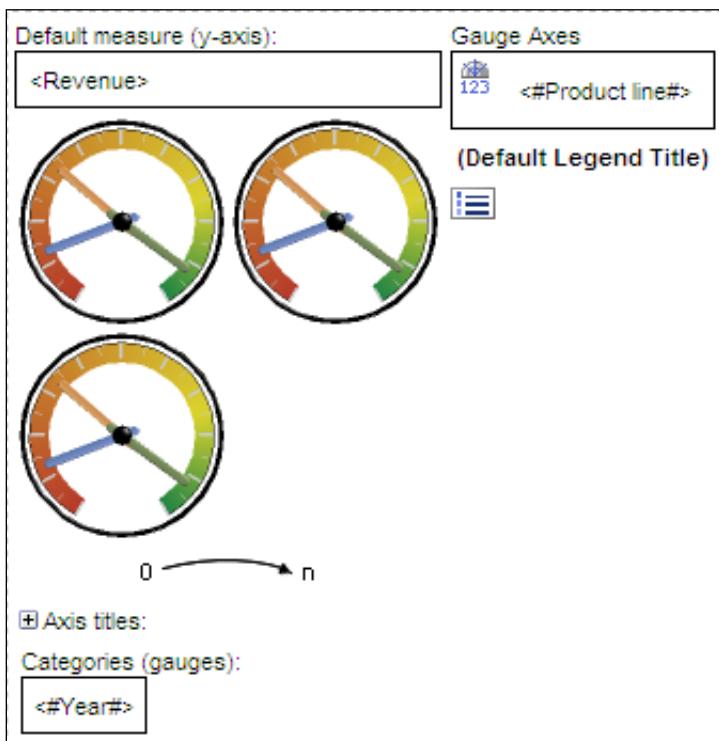
Purpose:

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://localhost:88/ibmcognos
User/Password:	brettonf/Education1
Studio:	Report Studio
Package:	Public Folders\Samples\Models\GO Data Warehouse (query)
Report Type:	Gauge Chart with Beveled Border
Folder:	Sales and Marketing (query)
Namespace:	Sales (query)

Task 1. Create a gauge chart.

1. Open a new Chart template without saving the previous report.
2. From the left pane click **Gauge**, and then click **OK** to accept the default selection.
3. From the Source tab, add the following query items to the new list report object:
 - **Default measure** drop zone:
 - Sales fact: **Revenue**
 - **Categories (gauges)** drop zone:
 - Time: **Year**
 - **Gauge Axes** drop zone:
 - Products: **Product line**



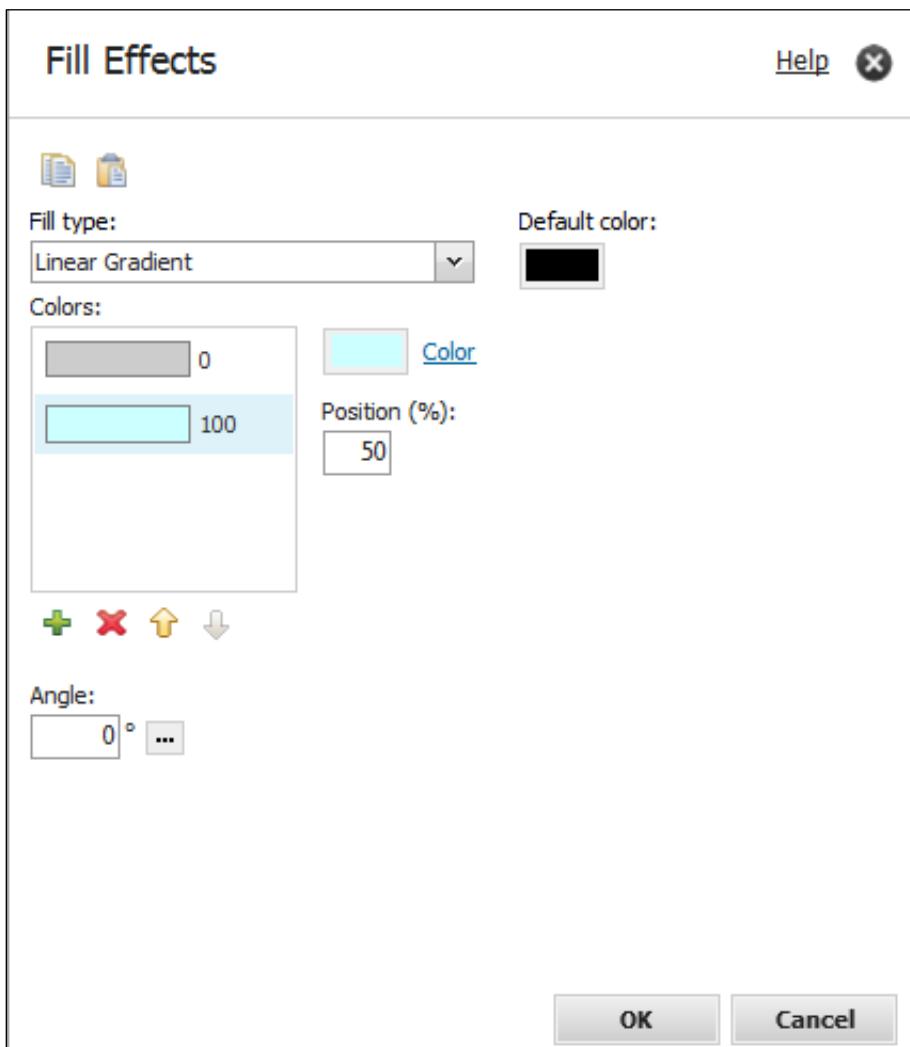
4. Double-click the report title text, type **Revenue by Product Line** and then click **OK**.
5. Click the block surrounding the report title, and then click **Left**.
6. In the **Properties** pane, under **Positioning**, double-click the **Size & Overflow** property, in the **Width** box, type **500**, and then click **OK**.
7. Click the chart background, and then in the **Properties** pane, under **Positioning**, double-click the **Size & Overflow** property.
8. In the **Width** and **Height** boxes, type **500**, and then click **OK**.

Task 2. Modify the axis labels and gauge properties.

1. Click the **Axis Labels**  on the toolbar change the **Foreground Color** to **Black**, and then click **Bold**.
2. Click the chart background.
3. In the **Properties** pane, under **General**, double click the **Gauge Border** property, change **Color** to **Navy**, and then click **OK** to close the **Color** dialog box.
4. Click **OK** to close the **Gauge Border** dialog box.
5. Under **Color and Background**, double click **Dial Face Fill**.
6. From **Fill type**, select **Linear Gradient**, under **Colors**, click the first color option, and then click **Color**.
7. Click the **Color Swatch** tab, click **#CCCCCC** (10th row, 11th column), and then click **OK**.
8. Under **Colors**, click the second color option, and then click **Color**.
9. Click the **Color Swatch** tab, click **#CCFFFF** (10th row, last column), and then click **OK**.

10. In the **Position** box type **50**.

The results appear as follows:

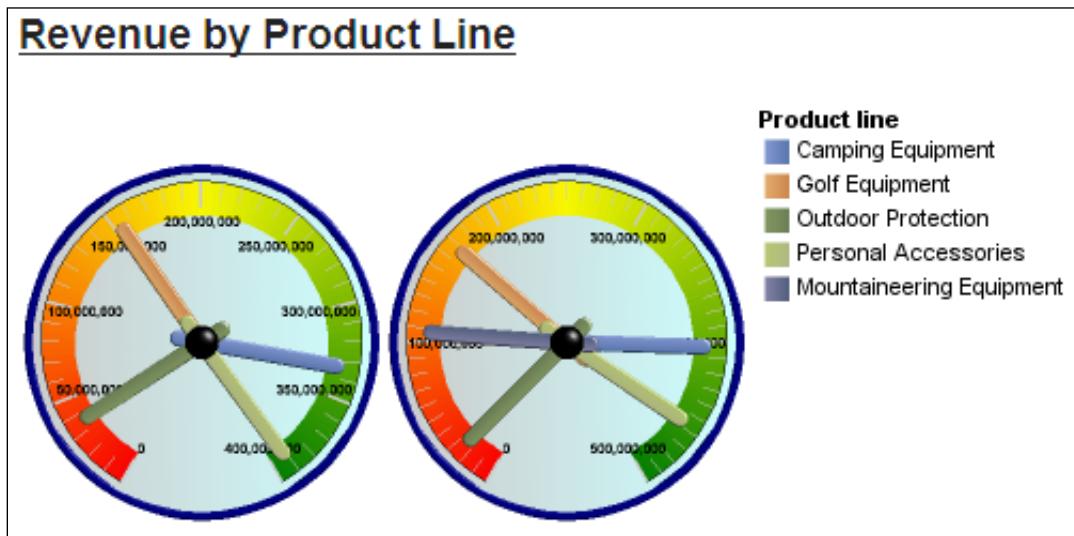


11. Click **OK** to close the **Fill Effects** dialog box.

Task 3. Modify the arc colors.

1. Click the **Gauge Axes** icon for <#Product line#>, in the **Properties** pane, under **Color & Background**, double-click the **Gauge Axis Colors** property. To indicate product lines that are selling poorly, the low end of the arc will appear in red.
2. In the **Gauge Axis Colors** dialog box, click the top color, and then click **Color**.
3. In the **Basic Colors** tab, click **Red**, and then click **OK**.
4. In the **Gauge Axis Colors** dialog box, click the middle color, and then click **Color**.
5. In the **Basic Colors** tab, click **Yellow**, and then click **OK**.
6. Ensure the center color (yellow) in the list is selected, and then change the position percentage to **50%**.
7. In the **Gauge Axis Colors** dialog box, click the bottom color, and then click **Color**.
8. In the **Basic Colors** tab, click **Green**, and then click **OK**.
9. Click **OK** to close the **Gauge Axis Colors** dialog box.
10. On the toolbar, click **Run Report**.

A section of the results are as follows:



11. Close **IBM Cognos Viewer**.

Task 4. Create a pie chart.

1. Click **New** without saving the previous report.
2. Double click **Chart**, and then click **Pie, Donut**.

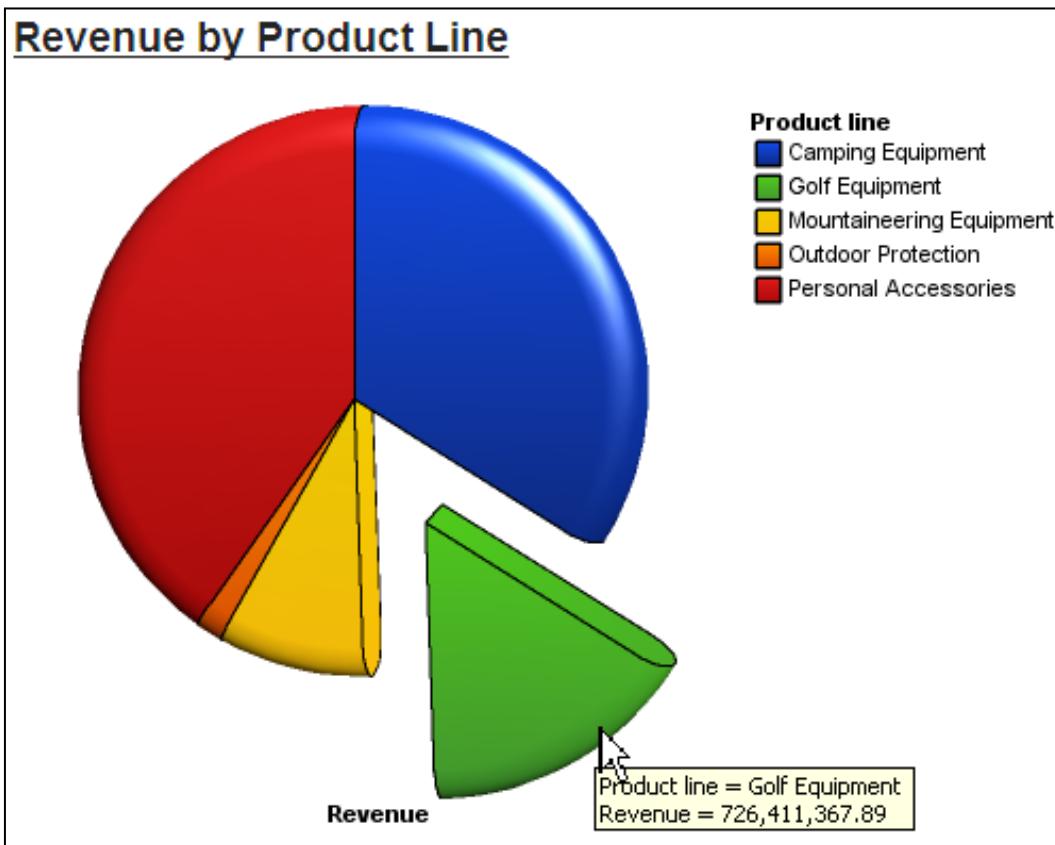


3. Click **Pie with 3-D Effects and Rounded Bevel**, and then click **OK**.
4. Add the following query items to the chart:
 - **Default measure:** drop zone:
• Sales fact: **Revenue**
 - **Series (pie slices):** drop zone:
• Products: **Product line**

Task 5. Set the properties of the chart.

1. Click the chart background.
2. In the **Properties** pane, under **General**, double-click the **Exploded Slices** property, click **Add**, and then change the **Slice number** to **2**.
3. Click **OK** to close the **Exploded Slice** dialog box.
4. Click **OK** to close the **Exploded Slices** dialog box.
5. In the **Properties** pane, under **Box**, change **Borders** to **Show**.
6. In the **Properties** pane, under **Color & Background** double-click **Palette**.
7. From the **Chart Palette Presets**, click **Dynamic** and then **OK**.
8. Double-click the report title text, type **Revenue by Product Line** and then click **OK**.
9. Click the header block, and then click **Left**.

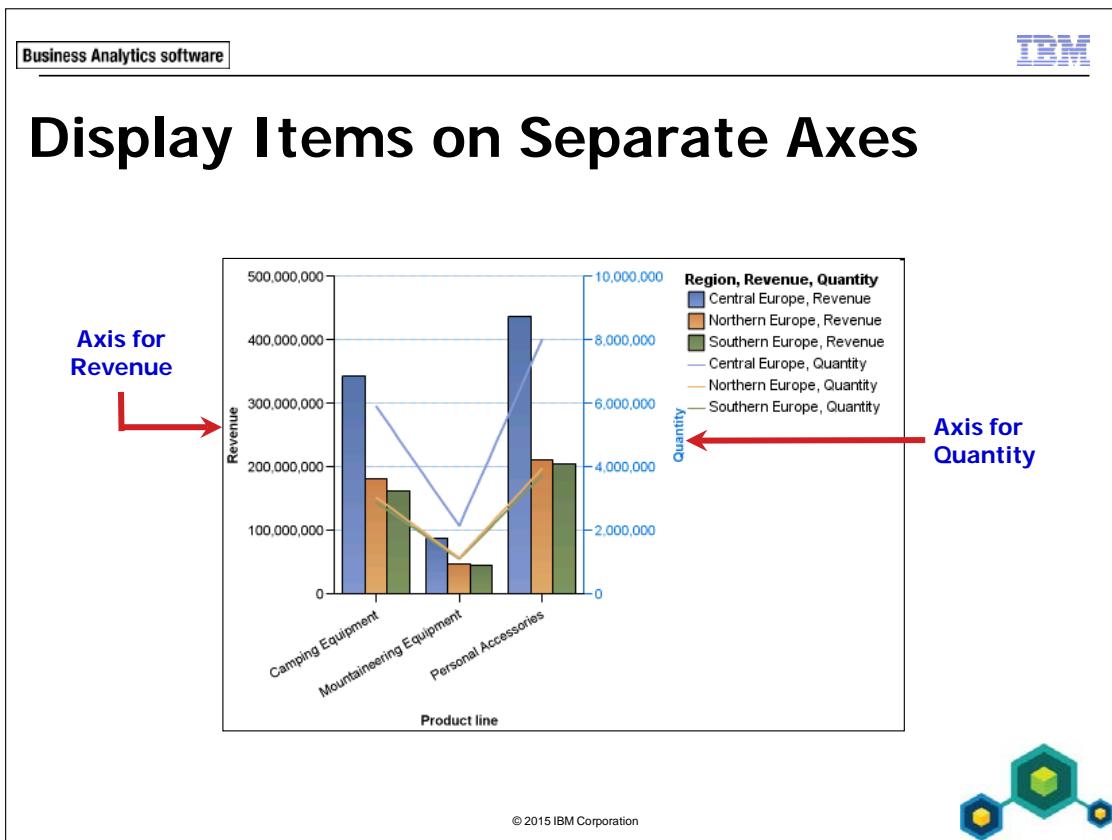
10. From the toolbar, click **Run Report**.
11. Move the cursor over the expanded green slice to view the tooltip.
The results are as follows:



12. Close **IBM Cognos Viewer**.
13. Leave **Report Studio** open for the next demo.

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.

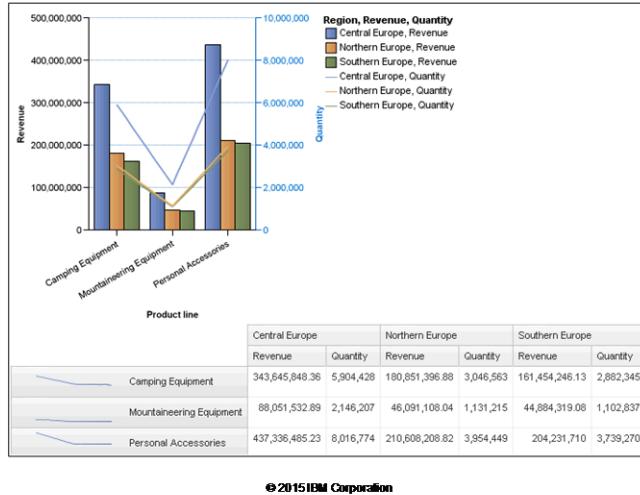


You can improve the clarity of charts by displaying values for different items on separate axes.

Using separate axes is useful when the value ranges for different items displayed in the chart are significantly different.

Demo 3

Show the Same Data Graphically and Numerically



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Demo 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://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public Folders\Samples\Models\GO Data Warehouse (query)
 Report Type: Crosstab
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)

Task 1. Add query items to a new crosstab.

1. Open a new **Crosstab** template without saving any previous report.
2. From the **Source tab**, add the following query items to the new crosstab report object:
 - **Rows:**
 - Retailers: **Region**
 - **Columns:**
 - Products: **Product line**
 - Sales Fact: **Revenue** and **Quantity** (nested under Product line)

	<#Product line#>		<#Product line#>	
	<#Revenue#>	<#Quantity#>	<#Revenue#>	<#Quantity#>
<#Region#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

Task 2. Create a combination chart.

1. On the toolbar click **Insert Chart** 
2. Click **More**, in the left pane click **Combination**, and then click **OK** to accept the default **Clustered Bar and Clustered Line** chart.

A new chart is added and populated based on the crosstab.

3. On the toolbar, click **Run Report**.

You can see in the combination chart that the top revenue generating region is Americas. The crosstab provides the exact numbers and provides detail to what is seen graphically in the chart.

4. Close **IBM Cognos Viewer**.

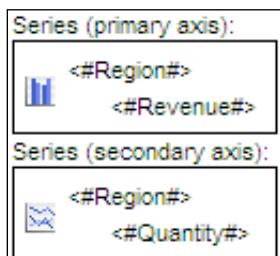
You want the chart to use the same query as the crosstab and to show the Revenue and the Quantity on separate y axes.

Task 3. Show two measures on different y axes.

1. Click the chart background, in the **Properties** pane under **Data**, click **Query2**, and then change it to **Query1** from the list.
2. From the **Properties** pane, under **General**, double-click **Combinations**.
3. Select the **Secondary Axis** check box, and then click **Edit**.
4. Click **Line**, click **OK** to close the **Combination Element** dialog box, and then **OK** to close the **Combinations** dialog box.
5. From the **Series (primary axis)**, drag **Region** from the **Line** chart type to the **Series (secondary axis)**, and then drag **Quantity** under **Region**.

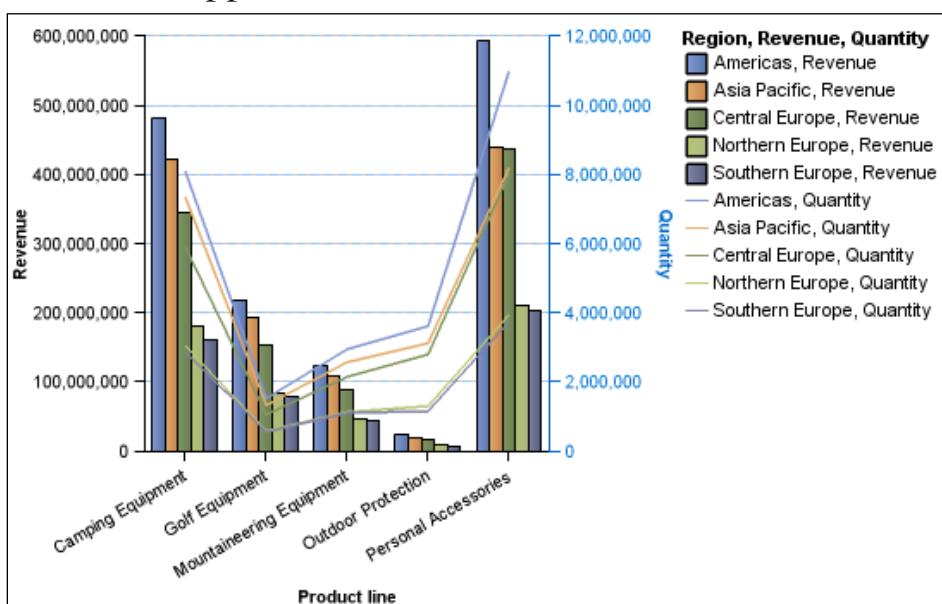
- Click the now empty **Line** chart type under **Series (primary axis)** and then click **Delete** on the tool bar.

The results appear as follows:



- On the toolbar, click **Run Report**.

The results appear 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 Camping Equipment, Mountaineering Equipment, and Personal Accessories in the three European regions.

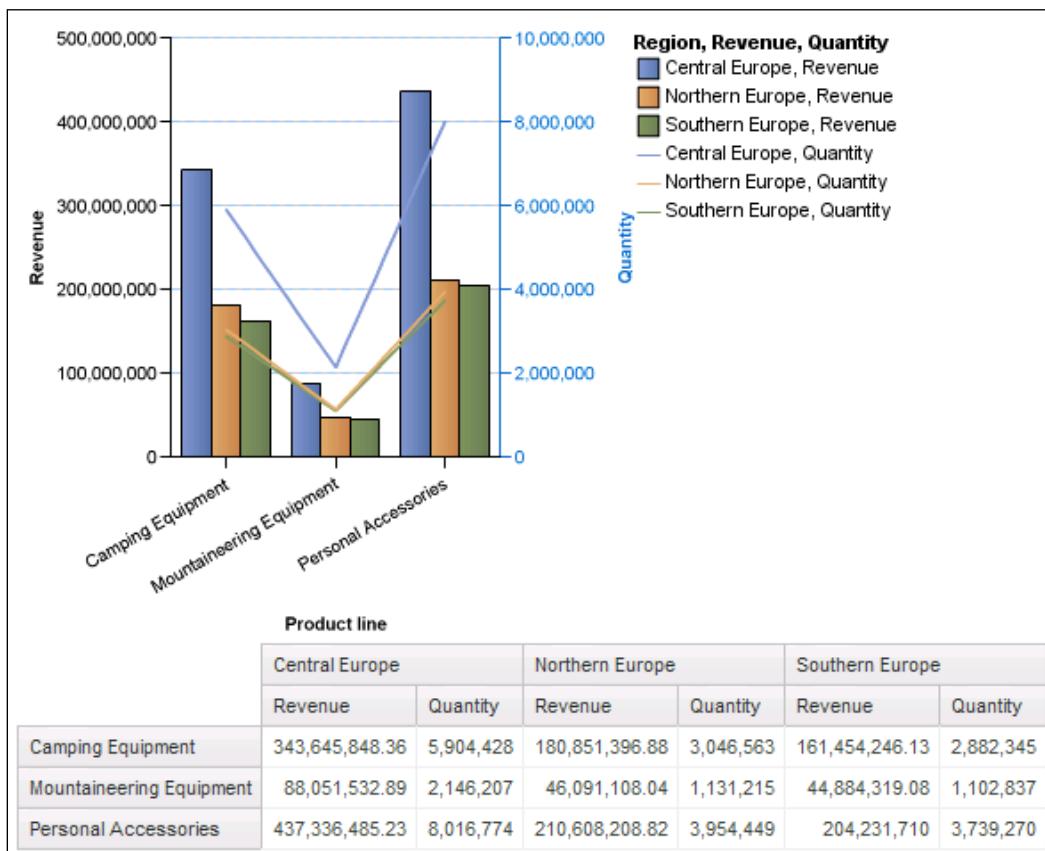
- Close **IBM Cognos Viewer**.

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**, Click **Combined**, and then click **OK**.
4. From the **Create Filter** list, ensure **Region** is selected, and then click **OK**.
5. Under the **Values** area, click **Northern Europe**, Ctrl+click **Central Europe**, and **Southern Europe**, and then click the green arrow to add them to the **Selected values** pane.
6. Click **OK**.
7. Click **Add**, click **Product line** from the **Create Filter** list, and then click **OK**.
8. Under the **Values** area, click **Camping Equipment**, Ctrl+click **Mountaineering Equipment**, and **Personal Accessories**, and then click the green arrow to add them to the **Selected values** pane.
9. Click **OK** to close the **Filter Condition** dialog box, click **OK** to close the **Combined Filter** dialog box, and then click **OK** to close the **Filters** dialog box.

10. On the toolbar click Run Report.

The result appears as shown below:

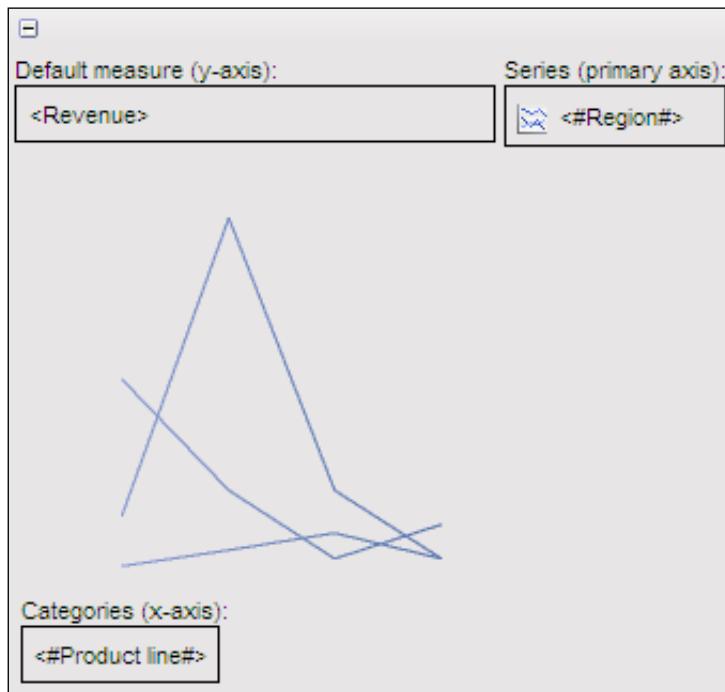


11. Close IBM Cognos Viewer.

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

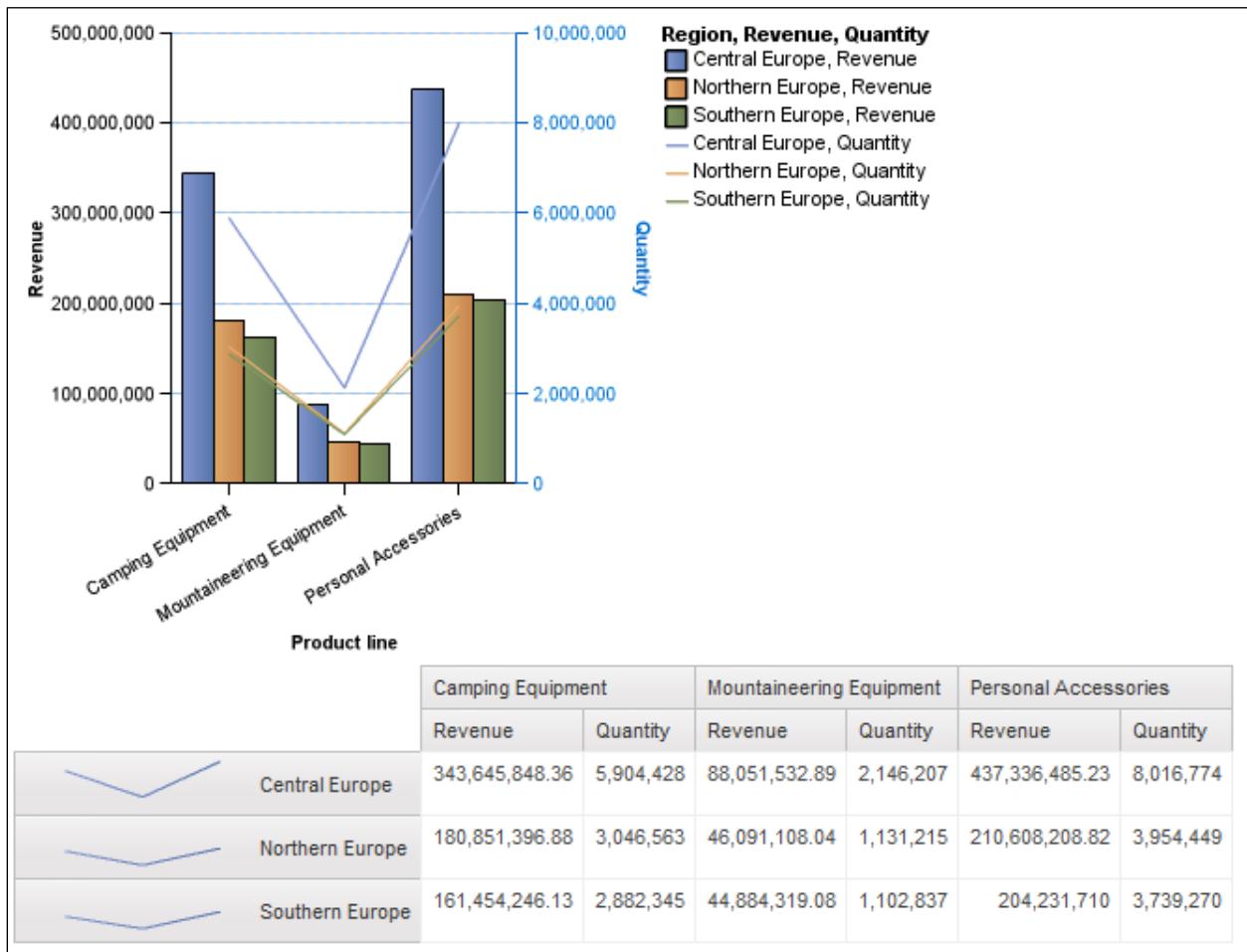
1. In the crosstab, right-click <#Region>, and then click **Insert Chart for Row Data**.
2. In the left pane, click **Microchart**, and then click **OK** to accept the default **Line** microchart.
3. In the **Categories (x-axis)** section of the chart, drag <#Revenue> to the **Default Measure (y-axis)**.
4. In the **Categories (x-axis)** section of the microchart, click **Quantity** and then click **Delete**.

The results appear as follows:



5. On the toolbar, click **Run Report**.

The results appear as follows:

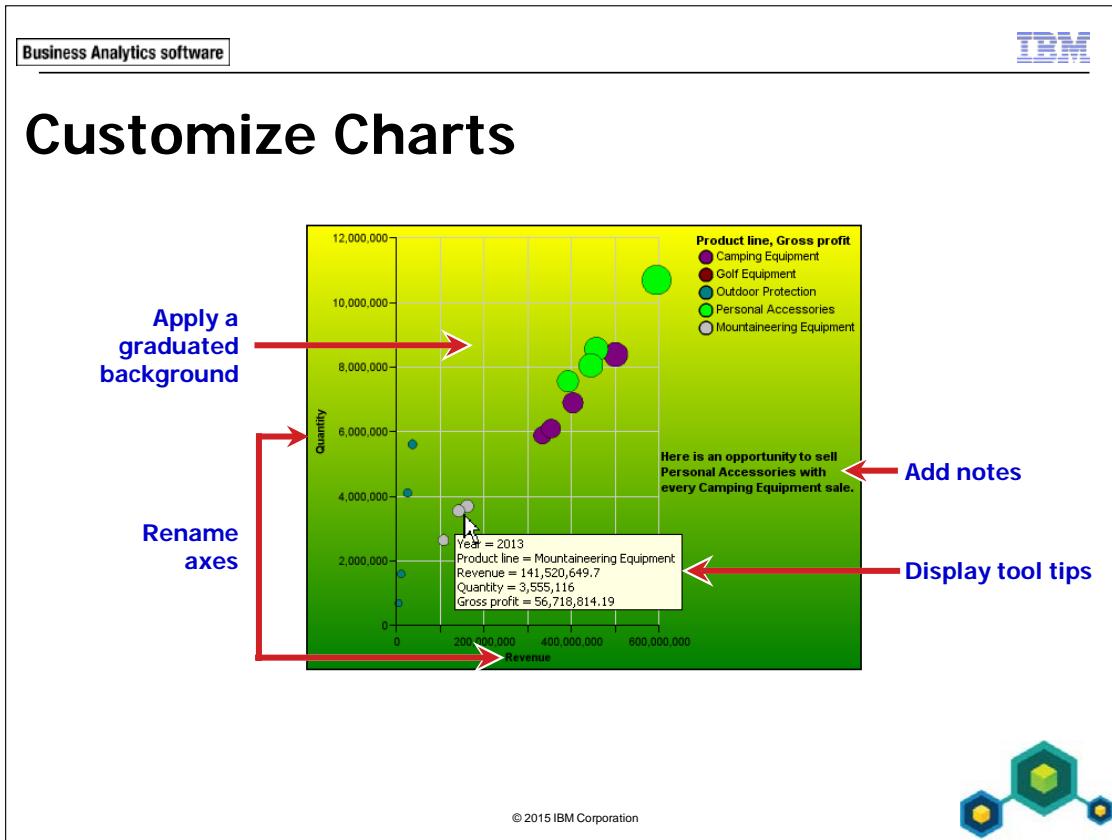


6. Close IBM Cognos Viewer.

7. Leave **Report Studio** open for the next demo.

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.



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.

Tool tips are available 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 so as to not block important information.

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What is RAVE

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

The diagram illustrates the process of generating visualizations. On the left, a light blue rounded rectangle labeled "Visualization Language" has a blue arrow pointing to a dark blue rounded rectangle labeled "RAVE Engine". Another blue arrow points from the "RAVE Engine" to a composite image on the right. This image contains two charts: a sunburst chart at the top and a stacked bar chart below it. At the bottom right of the image, there are three small hexagonal icons in yellow, green, and blue.

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The Rapidly Adaptive Visualization Engine (RAVE) is being used to enable advanced visualization technology in many different IBM projects and products today.

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 (barchart, linechart, 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 a new product binary. The declarative language for visualizations (charts, interactivity, events, etc.), is a cross-IBM standard.

Visualization

- Visualization is:
 - intuitive
 - immediate
 - language-independent

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Visualization exploits the human visual system to provide an intuitive, immediate and language-independent way to view and show your data. It is an essential tool for understanding information. Visualization can play a key role by making the individual analytic components understandable and by tying them together into a comprehensible “big picture.”

Visualizations provide an empowering technology that delivers context to raw data and maximize the perspective of the data.

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Demo 4

Display Visualizations

The visualization is a bubble chart titled "Planned revenue, Revenue, Gross profit". It displays data points for different product categories, represented by bubbles of varying sizes and colors. The legend indicates three data series: Planned revenue (blue), Revenue (orange), and Gross profit (green). The chart includes a tooltip for a specific data point.

Category	Planned revenue	Revenue	Gross profit
Camping Equipment	Large blue bubble	Large orange bubble	Small green bubble
Personal Accessories	Medium blue bubble	Large orange bubble	Small green bubble
Golf Equipment	Small blue bubble	Small orange bubble	Very small green bubble
Mo...	Very small blue bubble	Very small orange bubble	Very small green bubble

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Demo 4: Display Visualizations

Purpose:

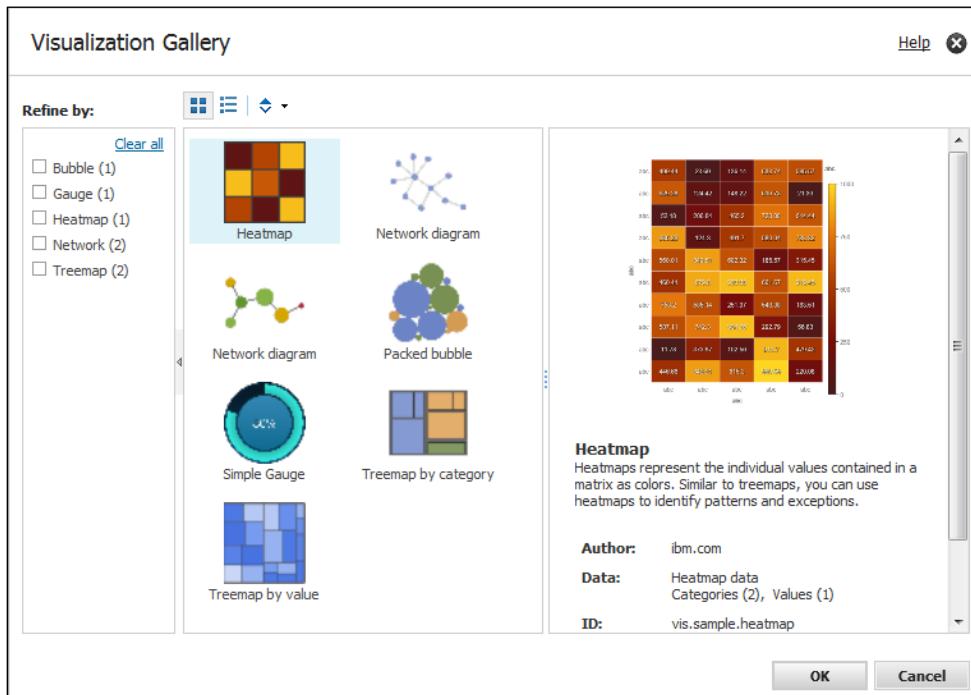
You have been asked to create a report that compares multiple key performance indicators for all product lines. Users need to be able to quickly identify product line performance. You will use a visualization that was made available in the portal Library to accomplish this task.

Portal: <http://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public Folders\Samples\Models\GO Data Warehouse (query)
 Report Type: Blank
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)

Task 1. Select a visualization.

1. Open a new **Blank** template without saving any previous reports.
2. From the **Toolbox** tab, drag a **Visualization** object to the right pane.

The Visualization Gallery displays the visualizations which are available in the portal Library:



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You could directly 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.

3. In the **Refine by** pane, select the **Network (2)** check box.

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

4. In the **Refine by** pane, select the **Treemap (2)** check box.

There are now network diagrams and treemaps available, and all other visualization types have been filtered from the view.

5. In the **Refine by** pane, click **Clear all**.

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

6. In the **Refine by** pane, select the **Bubble (1)** check box , and then in the center pane, ensure that the **Packed bubble** is selected by default.

Notice the description of the visualization in the right pane.

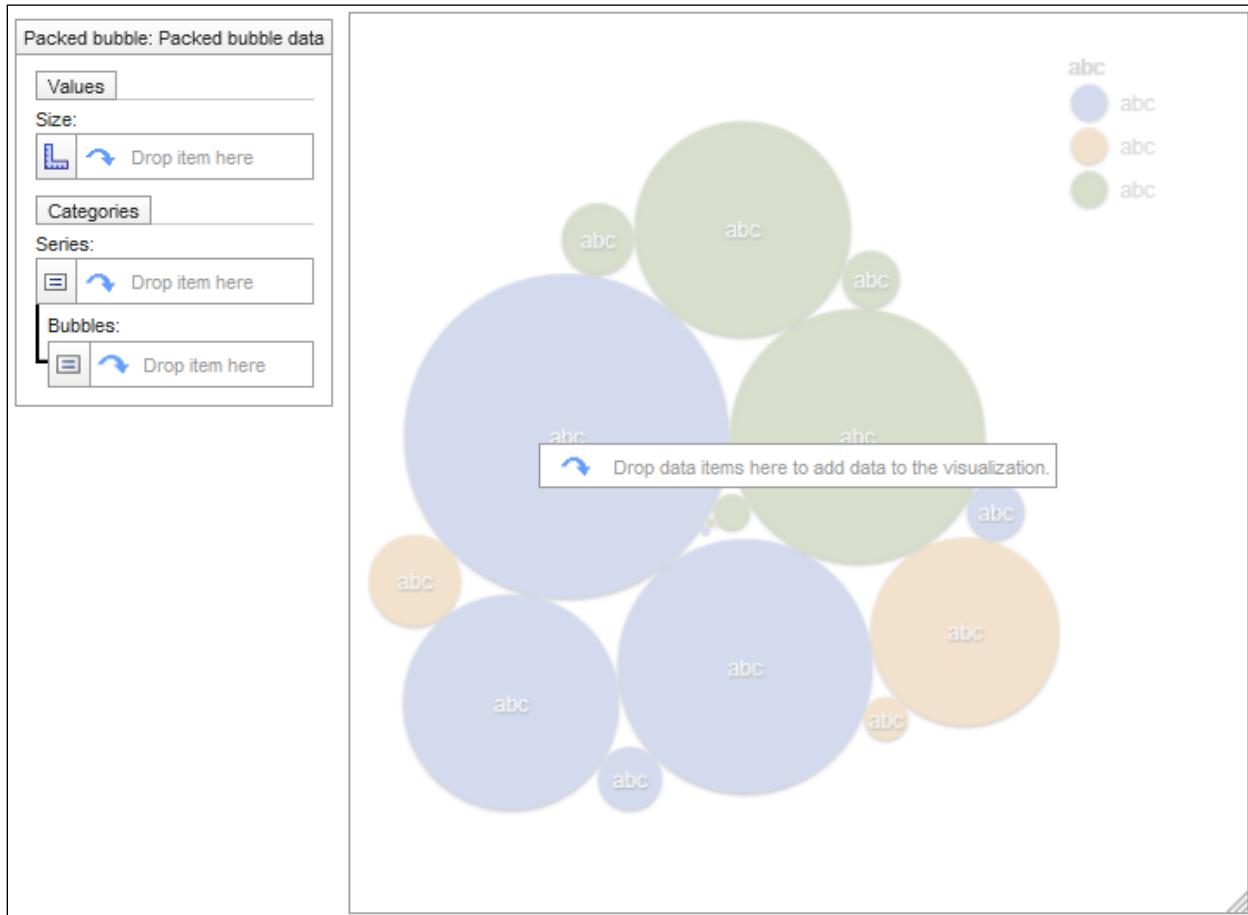
7. Click **OK** to open the visualization.

You could have also clicked directly on Packed bubble in the center pane, instead of filtering it first.

Task 2. Populate the packed bubble visualization and run the report.

1. Click **OK** to accept the default values for the **Object and Query Names** dialog box.

The page displays a preview of the Packed bubble chart visualization:



2. Click on the visualization background, and then notice the available properties in the **Properties** pane.

Other properties can be made available by using the Visualization Customizer tool. The tool allows you to create properties that are needed in Report Studio to further customize the report.

The results appear as follows:

Properties - Packed bubble	
Conditional	
Render Variable	
Data	
Data Format	
General	
Type	vis.sample.packedbubble
Miscellaneous	
Name	Packed bubble
Alternate Text	None
Custom	
Width	500
Height	500

3. From the **Source** tab, add the following query items to the visualization report object:
 - **Values: Size**
 - Sales fact: **Quantity**
 - **Categories: Series**
 - Sales fact: **Planned revenue**, **Revenue**, and **Gross profit**
 - **Categories: Bubbles**
 - Products: **Product line**

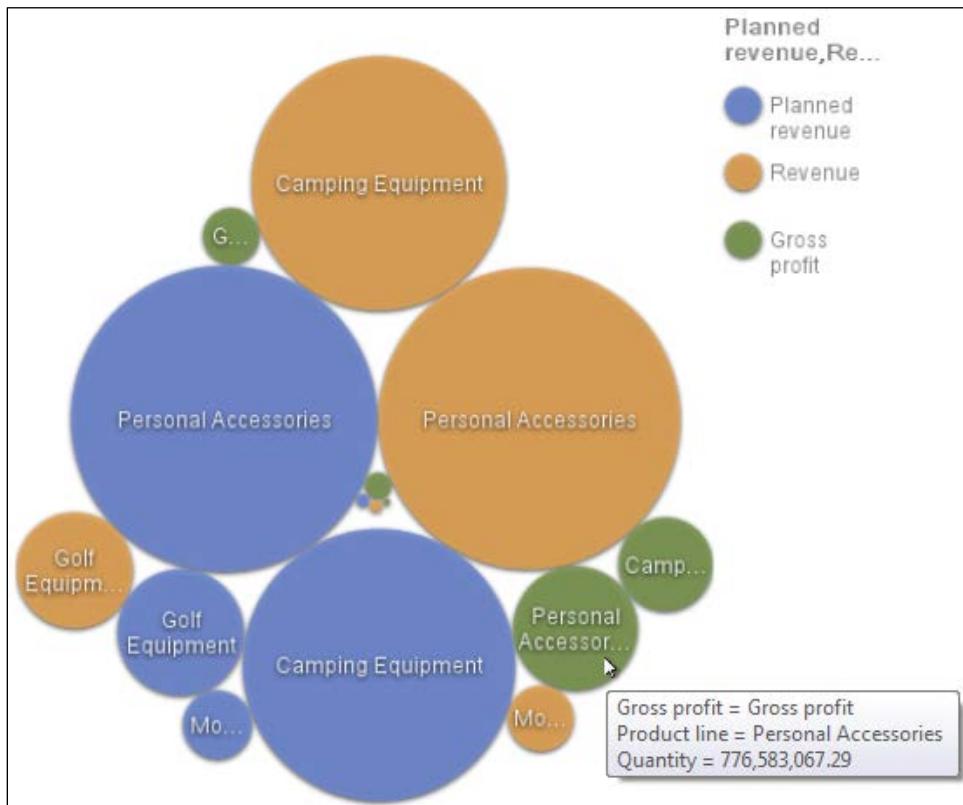
A section of the results appear as follows:

Packed bubble: Packed bubble data

Values
Size: L <#Quantity#>
Categories
Series: E <#Planned revenue#><#Revenue#><#Gross profit#> ↵
Bubbles:
E <#Product line#> ↵

- On the toolbar, click **Run Report**, and then hover the mouse cursor over one of the bubbles.

The results will appear similar to the following:



In this visualization, you can very quickly identify that Personal Accessories came close to its planned revenue goal and had the greatest gross profit. However, you would need an additional detail report to accurately identify the revenue achieved and to compare planned revenue with actual revenue.

- Close **IBM Cognos Viewer**.
- Leave **Report Studio** open for the workshop.

Results:

You used IBM Cognos Report Studio to create a packed bubble chart report, based on an imported visualization that was made available in the Library. You also successfully added data to the visualization, and ran the report to display the results .

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Summary

- At the end of this module, you should be able to:
 - create charts containing peer and nested columns
 - present data using new chart type options
 - add context to charts
 - create and reuse custom chart palettes
 - introduction to visualization
 - present key data in a single dashboard report

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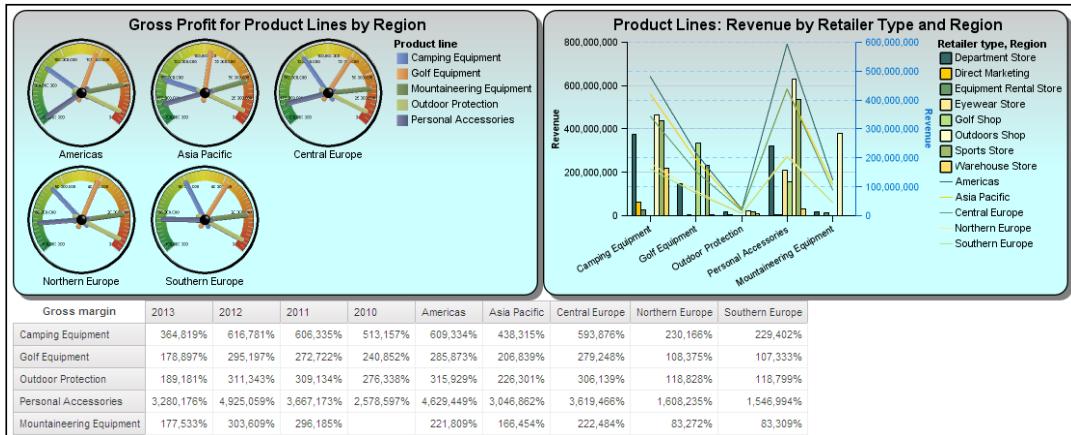
5-52

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Workshop 1

Create a Dashboard Report



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Workshop 1: Create a Dashboard Report

You are Frank Bretton, a report author, and have been asked to create an interactive report that lets users examine a variety of important sales data in one view. To do this, you will create a dashboard report that contains a gauge chart that compares the gross profit of each product line by region, a combination chart that shows revenue earned by each product line by retailer type and region on separate axis, and finally a crosstab report that shows the gross margin of each product line by year and region.

To accomplish this:

- Using the GO Data Warehouse (query) package, the Sales and Marketing (query) folder, and the Sales (query) namespace, add a gauge chart, a combination chart, and a crosstab to a blank report template.
- Create a gauge chart (Gauge Chart with Bevelled Border) with Gross profit, Product line, and Region, and then format the gauge chart to enhance its visual appeal.
- Create a combination chart (Clustered Bar and Clustered Line) with Revenue, Product line, and Retailer type with Region as a peer. Format and enhance the visual appeal of the chart.
- Create a crosstab with Gross margin, Product line, and Year with Region as a peer.

For more information about where to work and the workshop results, refer to the Tasks and Results section that follows. If you need more information to complete a task, refer to earlier demos for detailed steps.

Workshop 1: Tasks and Results

Task 1. Add charts and a crosstab to a blank report template.

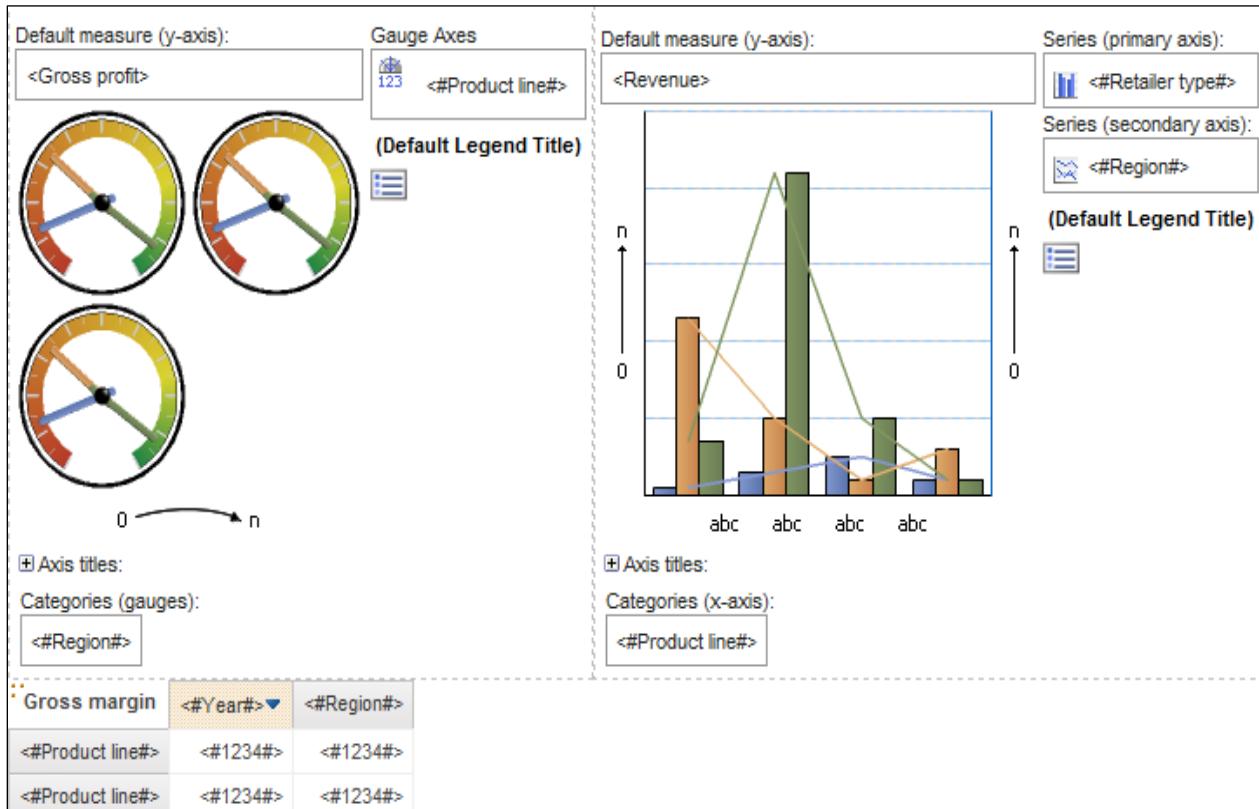
- **Toolbar:** Open a new **Blank** template without saving any previous reports.
- **Toolbox** tab: Drag a **Chart** object to the work area.
- **Insert Chart** dialog box: Change the query name to **Gauge Query**.
 - From the left pane, click **Gauge**.
 - Click **OK** to accept the default gauge chart (Gauge Chart with Bevelled Border).
- **Toolbox** tab: Drag a second **Chart** object to the work area, to the right of the gauge chart.
- **Insert Chart** dialog box: Change the query name to **Combination Query**.
 - From the left pane, click **Combination**.
 - Click **OK** to accept the default combination chart (Clustered Bar and Clustered Line).
- **Toolbox** tab: Drag a **Crosstab** to the work area below the two charts.
- **Object and Query Name** dialog box: Change the query name to **Crosstab Query**.
 - Click **OK**.

Task 2. Add data to the reporting objects.

- **Source** tab: Navigate to **Sales and Marketing (query)/Sales (query)**, and then add the following query items to the gage chart:
 - **Default measure** drop zone:
 - Sales fact: **Gross profit**
 - **Categories (gauges)** drop zone:
 - Retailers: **Region**.
 - **Gauge Axes** drop zone:
 - Products: **Product line**
- **Source** tab: Navigate to **Sales and Marketing (query)/Sales (query)**, and then add the following query items to the combination chart:
 - **Default measure (y-axis)** drop zone:
 - Sales fact: **Revenue**
 - **Category (x-axis)** drop zone:
 - Products: **Product line**
 - **Series (primary axis)** drop zone:
 - Retailers: **Retailer type**
- **Source** tab: Navigate to **Sales and Marketing (query)/Sales (query)**, and then add the following query items to the crosstab:
 - **Rows area:**
 - Products: **Product line**
 - **Columns area:**
 - Time: **Year**
 - Retailers: **Region** to the right (peer) of **Year**
 - **Measures area:**
 - **Gross margin**

- **Work area:** Click the combination chart background.
- **Properties pane:** Under **General**, double-click **Combinations**.
- **Combinations dialog box:** Under **Combinations**, click **Clustered Line**, and then click **Delete**.
 - Under **Numeric axes**, select the **Secondary Axis** check box.
 - Click **Edit**.
- **Combination Element dialog box:** Under **Combination Type**, click **Line**, and then click **OK**.
- **Combinations dialog box:** Click **OK**.
- From the **Source tab**, under **Retailers** query subject, drag **Region** to the **Series (secondary axis)** drop zone of the combination chart.
- In the crosstab, click **<#Year#>**, and then sort **Descending**.

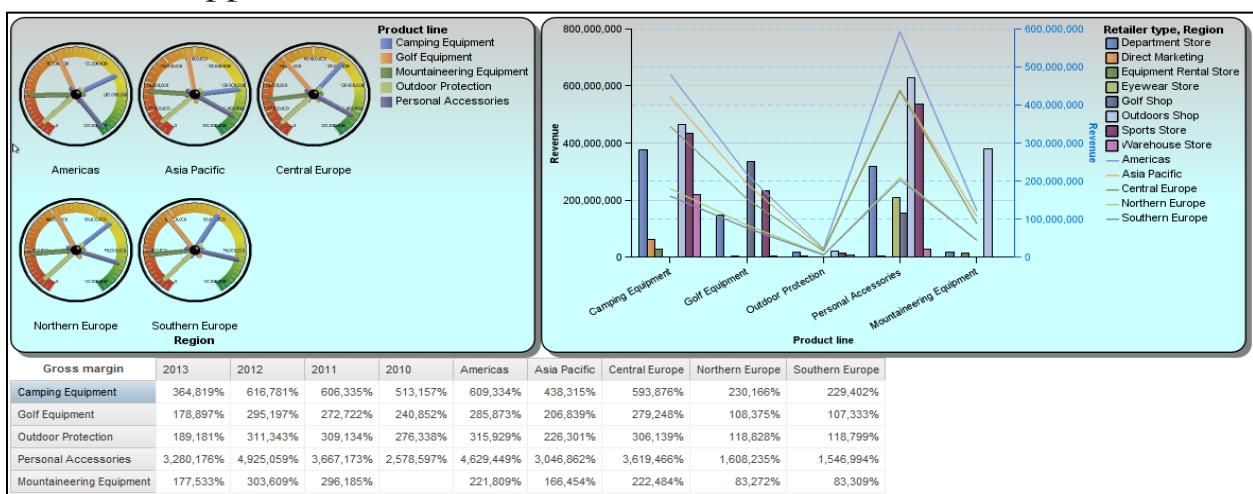
The results appear as follows:



Task 3. Enhance the visual appeal of the charts.

- **Work area:** Click the gauge chart background, and then Ctrl+click the combination chart background to select them.
- **Properties pane:** Under **Color & Background**, double-click **Background Effects**.
- **Background Effects:** Select the **Border** check box.
 - Click **Black** from the **Color** list.
 - In the **Corner radius** box, type **10**.
 - Select the **Fill** check box.
 - Click **Color**, and then click the **Color Swatch** tab.
 - Click on **#CCFFFF** (10th row, last column), and then click **OK**.
 - In the **Position** box, type **45**.
 - Click **New**.
 - Click **Color**, and then click the **Color Swatch** tab.
 - Click on **#CCCCCC** (10th row, 11th column), and then click **OK**.
 - In the **Position** box, type **100**.
 - In the **Angle** box, type **90**.
 - Select the **Drop Shadow** check box, and then click **OK**.
- **Toolbar:** Click **Run Report**, verify the results, and then close **IBM Cognos Viewer**.

The results appear as follows:



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Task 4. Format the combination chart.

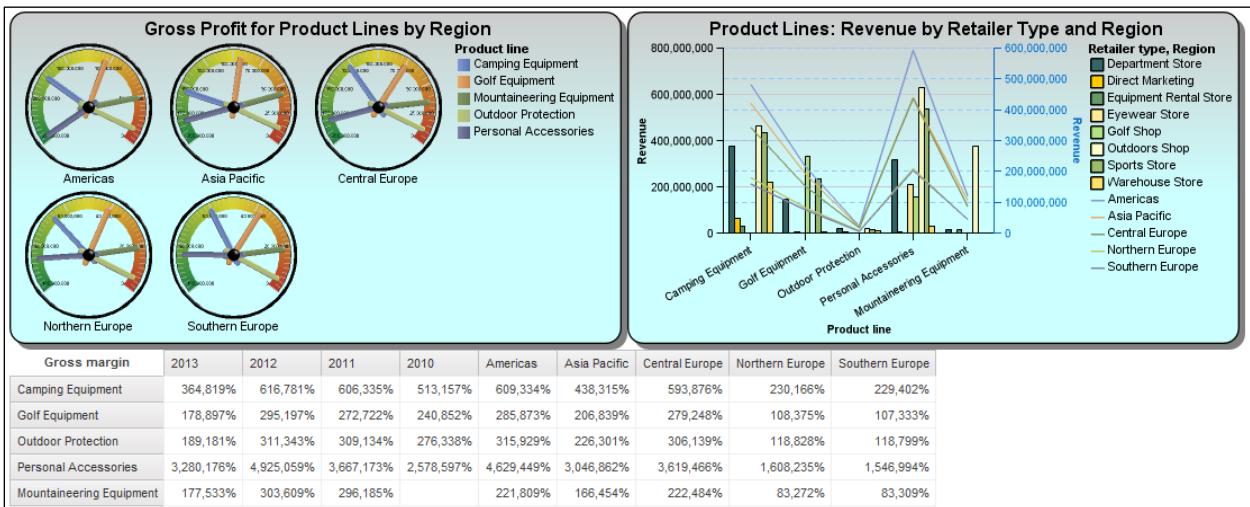
- **Work area:** In the combination chart, click the **Series (primary axis)** bar icon.
- **Properties pane:** Under **Color & Background**, double-click **Palette**.
- **Palette dialog box:** Click **Chart Palette Presets**.
 - Click the **Contemporary** style palette, and then click **OK**.
- **Work area:** In the combination chart, click the **Series (Secondary Axis)** line icon.
- **Properties pane:** Under **Color & Background**, double-click **Palette**.
- **Palette dialog box:** Click **Chart Palette Presets**.
 - Click the **Contemporary** style palette, and then click **OK**.
- **Work area:** Click the combination chart background.
- **Properties pane:** Under **Positioning**, double-click **Size & Overflow**.
- **Size & Overflow dialog box:** In the **Width** box type **550**, in the **Height** box, type **300**, and then click **OK**.
- **Properties pane:** Under **Chart Titles**, click **Title**, and then in the list, click **Show**.
- Combination chart: Expand **Axis titles**, and then click **Default Category Axis Title**.
- **Properties pane:** under **General**, click the **Default Title** property, and then in the list, click **No**.
- **Work area:** Double-click the combination chart title text.
- **Text dialog box:** Type **Product Lines: Revenue by Retailer Type and Region**, and then click **OK**.
- **Properties pane:** Click **Select Ancestor**, click **Chart Title**.
- **Toolbar:** Click **Arial, 12 pt., Bold**.

Task 5. Format the gauge chart.

- **Work area:** Click the background of the gauge chart.
- **Properties pane:** Under **Positioning**, double-click the **Size & Overflow** property, in the **Width** box type **550**, and in the **Height** box type **300** and then click **OK**.
- **Work area:** In the gauge chart, expand **Axis titles**, and then click **Default Matrix Columns Axis Title**.
- **Properties pane**, under **General**, click **Default Title**, and then in the list click **No**.
- **Work area:** In the gauge chart, click the **Gauge Axes** icon for **<#Product line#>**.
- **Properties pane:** Under **General**, double-click **Axis Angles**.
- **Axes Angles** dialog box: In the **Start angle** box, type **320**.
 - In the **End Angle** box, type **220**.
 - In the **Axis direction** list, click **Clockwise**, and then click **OK**.
- **Properties pane:** Under **Color & Background**, double-click **Gauge Axis Colors**.
- **Gauge Axis Colors:** Click the center color (yellow).
 - In the **Position** box, type **50**, and then click **OK**.
- **Work area:** Click the gauge chart background.
- **Properties pane:** Under **Chart Titles**, click the **Title** property, and then click **Show**.
- **Work area:** In the gauge chart, double-click the chart title text.
- **Text** dialog box: Type **Gross Profit for Product Lines by Region**, and then click **OK**.

- Properties pane: Click the **Select Ancestor** button, and then click **Chart Title**.
- Toolbar: Click **Arial, 12 pt, Bold**.
 - Click **Run Report**.

The results appear as follows:



- Close **IBM Cognos Viewer**.
- Close **Report Studio** without saving changes.
- Close the Web browser.

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Focus Reports Using Prompts

IBM Cognos BI

Business Analytics software



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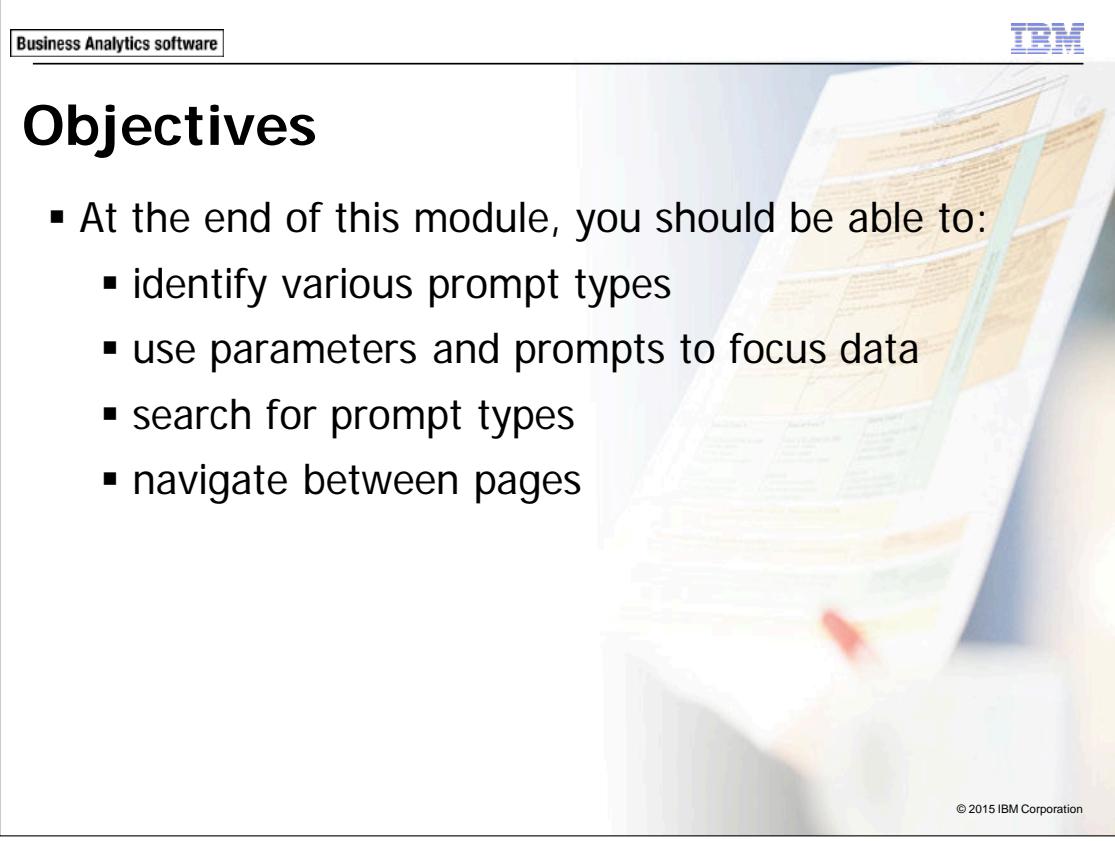
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Objectives

- At the end of this module, you should be able to:
 - identify various prompt types
 - use parameters and prompts to focus data
 - search for prompt types
 - navigate between pages

A blurred background image showing a person's hands working on a laptop. The screen of the laptop displays a complex business intelligence dashboard with multiple charts, graphs, and data tables, primarily in yellow and green colors.

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Examine Parameters and Prompts

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

The diagram illustrates the relationship between a parameter selection dialog and a generated report. On the left, a 'Product line' parameter dialog is shown with a list of options: Camping Equipment, Golf Equipment, Mountaineering Equipment, Outdoor Protection, and Personal Accessories. The 'Golf Equipment' option is selected and highlighted with a blue background. A red arrow points from this dialog to a table on the right. The table has columns: Product line, Product type, and Revenue. It contains the following data:

Product line	Product type	Revenue
Golf Equipment	Golf Accessories	51,514,343.88
	Irons	254,814,337.99
	Putters	106,184,271.37
	Woods	313,898,414.65
Golf Equipment - Total		726,411,367.89
Overall - Total		726,411,367.89

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There are three ways to prompt for report specifications:

- 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 a 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.

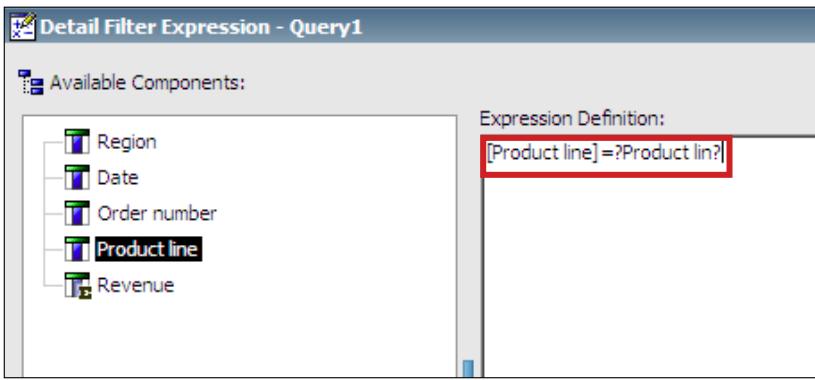
A prompt is nothing more than a dynamic (parameterized) filter.

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Create a Parameter Item on the Report

- Use a parameterized filter to create a prompt.

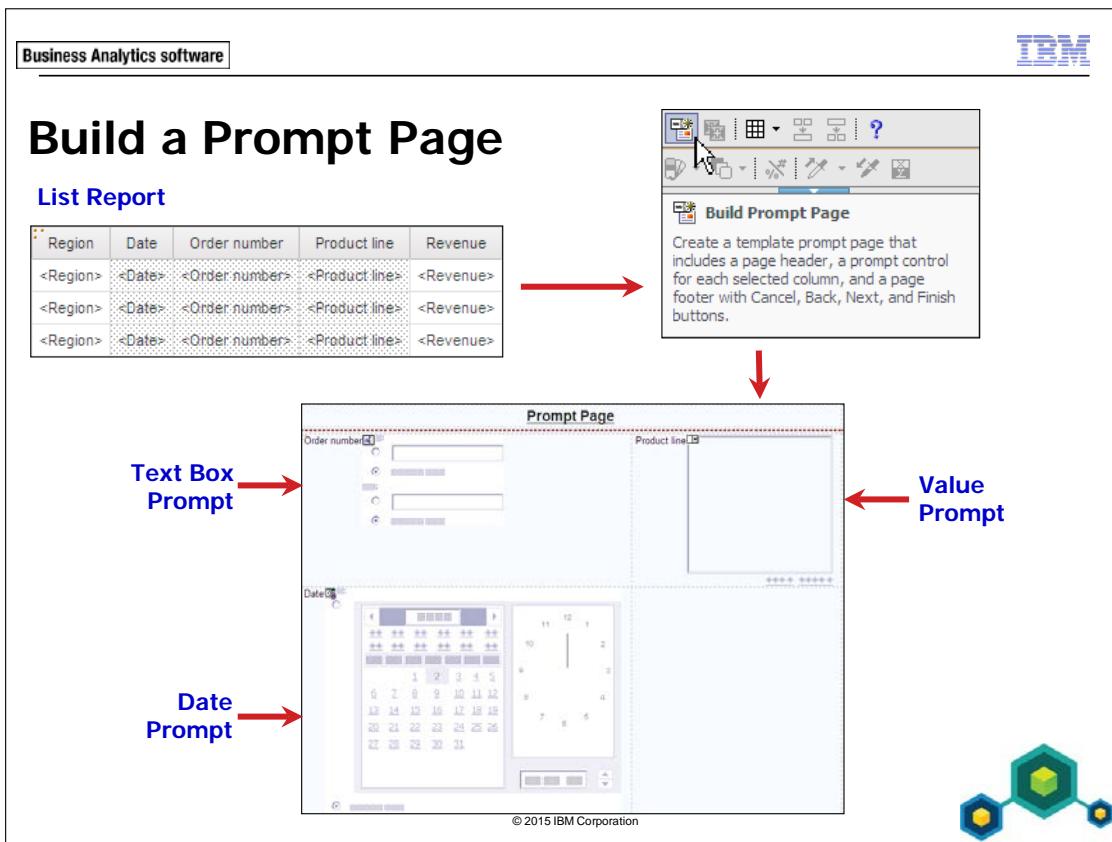


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Report Studio can automatically generate prompted reports based on parameters you create. When you run the report, Report Studio can generate a prompt page for each parameter not associated to an existing prompt page depending on whether the prompt 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.



You can create a prompt page to control how prompt appear in the report. A prompt page can be generated by highlighting rows or columns and clicking on the Build Prompt Page button from the toolbar.

Select one or more items in your report and then click the Build Prompt Page button. Prompts for each item appear in the work area.

You can also create a blank prompt page by adding a new page to the Prompt Pages section in Page Explorer. Once on the new prompt page, you can drag prompt items onto the work area.

A date item will automatically generate a Calendar 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>

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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 is 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. Creating 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 regenerate using the new criteria.

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Demo 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

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Demo 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://localhost:88/ibmcognos
User/Password:	brettonf/Education1
Studio:	Report Studio
Package:	Public Folders\Samples\Models\GO Data Warehouse (query)
Report Type:	List
Folder:	Sales and Marketing (query)
Namespace:	Sales (query)

Task 1. Create the list.

1. Open a new **List** template without saving any previous report.
2. From the **Source** tab, add the following query items to the new list report object:
 - Sales order: **Order number**
 - Time: **Date**
 - Products: **Product**
 - Sales fact: **Revenue**

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

3. Click the **<Date>** list column body, on the toolbar click **Sort**, and then click **Ascending**.
4. On the toolbar, click **Run Report**.

A section of the results appear 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.

5. Click **Bottom** to see the last page of the report.
The last date is Jul 20, 2013.
6. Close **IBM Cognos Viewer**.

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

1. On the toolbar, clicks **Filters**, **Edit Filters**, and then click **Add**.
2. Click **Advanced**, and then click on **OK**.
3. Create and validate the following expression :

[Date]>?Date?

Hint:

- drag Date from the Data Items tab
- validate for 2013-Jan-1

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

4. Click **OK** to close the **Detail Filter Expression** dialog box, and then click **OK** to close the **Filters** dialog box.
5. On the toolbar, click **Run Report**.
You are prompted to select a date and time.
6. Select **2013-Jan-1**, accept the default time, and then click **OK**.
A section of the results appear 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

7. Click **Bottom** to see the last page of the report.
The report displays results from Jan 8, 2013 to Jul 20, 2013.
8. Close **IBM Cognos Viewer**.
9. Leave **Report Studio** open for the next demo.

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

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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, Report Studio will choose an appropriate prompt type for you.

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

If there are a large number of choices available (such as sales rep name), 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 appears in the report.

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.

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Demo 2

Add a Value Prompt to a Report

Select the Desired Product line Results:

Golf Equipment

		Unit cost	Gross margin
Camping Equipment	Set	6.92	49,607%
Golf Equipment	Set	34.41	39,890%
Mountaineering Equipment		0.85	87,252%
Outdoor Protection			
Personal Accessories			
	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%
	TrailChef Water Bag	2.77	61,039%

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Demo 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 products within a specified product line without closing and running the report.

Portal: <http://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public Folders\Samples\Models\GO Data Warehouse (query)
 Report Type: List
 Folder: Sales and Marketing (query)
 Namespace: Sales (query)

Task 1. Create the list and add a product line prompt to the report page.

1. Open a new **List** template without saving the previous report.
2. From the **Source** tab, add the following query items to the new list report object:
 - Products: **Product line**, **Product type**, **Product**
 - Sales fact: **Unit cost**
 - **Gross margin** (calculated fact under Sales (query))

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

3. Click **Product line**, Ctrl+click **Product type**, and then click **Group / Ungroup** on the toolbar.

- From the **Toolbox** tab, drag a **Value Prompt** onto the work area to the left of the list.

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.

- In the **Prompt Wizard - Value Prompt** dialog box, change the parameter name to **ProductLineCode**, and then click **Next**.
- On the **Create Filter** page, ensure that **Create a parameterized filter** is selected, and then beside **Package item**, click the **ellipsis**.
- Expand the **Sales and Marketing (query)** folder, **Sales (query)** namespace, **Products** folder, and then **Codes** folder.
- 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.
- Select **Make the filter optional**, and then click **Next**.
- Next to **Values to display**, click the **ellipsis**.
- Expand the **Sales and Marketing (query)** folder, expand the **Sales (query)** namespace, and then expand **Products**.
- 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 type>	<Product>	<Unit cost>	<Gross margin>
<Product line>	<Product type>	<Product>	<Unit cost>	<Gross margin>
	<Product type>	<Product>	<Unit cost>	<Gross margin>

Task 2. Add a prompt button and set the properties for the value prompt

1. From the **Toolbox** tab, drag a **Prompt Button** onto the work area to the right of the value prompt.
2. Click the **Prompt Button**, in the **Properties** pane, under **General**, click **Type**, and then click **Finish**.
3. On the toolbar, click **Run Report**.

The report opens in the browser, displaying data for all product lines. The report ran because the parameterized filter was defined as optional.

4. From the **Product line** prompt list, click **Golf Equipment**, and then click **Finish**.
- Only Golf Equipment product line information is displayed.
5. Close **IBM Cognos Viewer**.
6. Click the **Finish** prompt button, and then press **Delete**.
7. Click the **Value Prompt**, in the **Properties** pane, under **General**, click **Auto-Submit**, and then change the property to **Yes**.

Task 3. Customize the prompt.

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

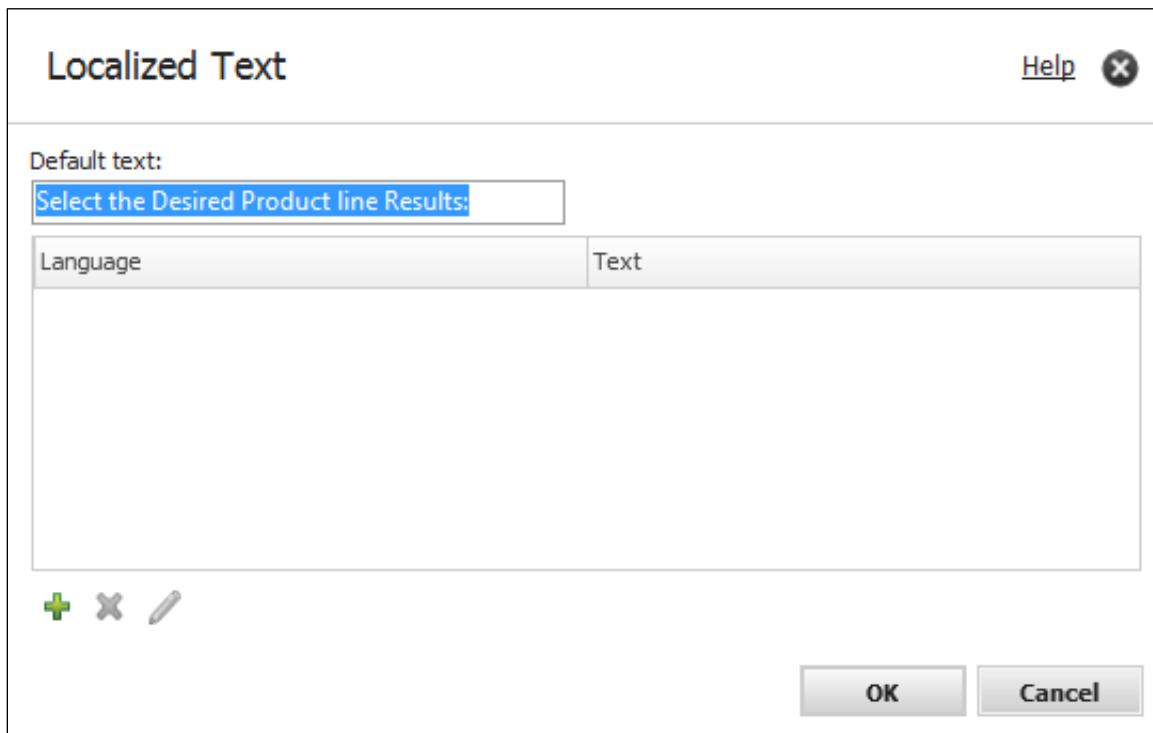
1. With the value prompt selected, in the **Properties** pane, in the **Prompt Text** property, click **Header Text**, and then click the ellipsis.
2. Select the **Specified text** radio button, and then click the ellipsis to the right of the text box.

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 prompts Required property.

3. Type the following in the **Default text** box:

Select the Desired Product line Results:

The results appear as follows:



You can add information here as well for localization.

4. Click **OK** to close the **Localized Text** dialog box, and then **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.

5. Click the list **Container selector** to select the entire list.
6. From the **Properties** pane, under **Box**, double-click the **Margin** property.
7. Type **20** in the top margin cell and click **OK**.

Task 4. Run the report.

1. On the toolbar, click **Run Report**.

The report opens in the browser displaying data for all product lines. The report ran because the parameterized filter was defined as optional.

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

A section of the results appear as follows:

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

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 **IBM Cognos Viewer**.
4. From the **File** menu, click **Save As**, navigate to **My Folders** and then save the report as **Mod 6-Filters**.
5. Leave the **Report Studio** report open as it will be used for the next demo.

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 'Page Explorer' window. It has two main sections: 'Report Pages' and 'Prompt Pages'. Under 'Report Pages', there are icons for 'Cover' and 'Page1'. Under 'Prompt Pages', there are icons for 'Prompt Page1' and 'Classes'. Two red arrows point from blue text labels to the respective icons: one arrow points to 'Cover' with the label 'Add a cover page to a report', and another arrow points to 'Prompt Page1' with the label 'Add a prompt page to a report'.

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Enhance your report by adding multiple report and prompt pages.

By accessing Page Explorer from the Explorer bar, 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.

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Demo 3

Add a Select & Search Prompt to a Report

Choose a Product Name:

Keywords:
Type one or more keywords separated by spaces.

[Options](#) ▾

- Starts with any of these keywords
- Starts with the first keyword and contains all of the remaining keywords
- Contains any of these keywords
- Contains all of these keywords

Case insensitive

Results:

EverGlow Butane	<input type="button" value="Insert"/>
EverGlow Double	<input type="button" value="Remove"/>
EverGlow Kerosene	
EverGlow Lamp	
EverGlow Single	

[Select all](#) [Deselect all](#)

Choice:

EverGlow Butane
EverGlow Kerosene

[Select all](#) [Deselect all](#)

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Demo 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: Demo 2 needs to be completed before starting demo 3. The report saved in demo 2, **Mod 6-Filters**, is used as a starting point for this demo.

Portal: <http://localhost:88/ibmcognos>

User/Password: brettonf/Education1

Studio: Report Studio

Package: Public Folders\Samples\Models\GO Data Warehouse (query)

Report Type: List

Folder: Sales and Marketing (query)

Namespace: Sales (query)

Task 1. Run the report.

1. With the report from the previous demo still open (**My Folders\Mod 6-Filters**), click **Run Report** from the toolbar.

2. In the **Product line** list, select **Camping Equipment**.

A section of the results appear 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 change the prompt to let users search and select one or more product names.

3. Close **IBM Cognos Viewer**.

Task 2. Add a Select & Search prompt on a prompt page.

1. In the report layout, click the **Value** prompt and delete it.
2. Click **Filters**, click **Edit Filters**.

Notice that the prompt filter remained even when the Value prompt was deleted.

3. Select the filter and delete it, and then click **OK**.

4. On the Explorer bar, point to **Page Explorer** , and then click **Prompt Pages**.
5. From the **Toolbox** tab, drag a **Page** object to the **Prompt Pages** pane.
6. Double-click **Prompt Page1**, and then from the **Toolbox** tab, drag a **Select & Search Prompt** object onto the prompt page.
7. In the **Choose Parameter** dialog box, 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**.
10. Select **Make the filter optional** checkbox, in the **Operator** list, select **in**, click **Next**, and then click **Finish**.

The report appears with the Select & Search prompt on the prompt page.

You use the 'in' operator to allow for multiple selections. If you used the '=' operator, the prompt would allow for only a single selection.

11. From the **Toolbox** tab, drag a **Block** to the left of the prompt.
12. From the **Toolbox** tab, drag a **Text Item** onto the block, type **Choose a Product Name:**, click **OK**, and then set the text to **14 pt, Bold**.

Task 3. Run the report.

1. On the toolbar, click **Run Report**, and then click **Finish**

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".

2. Click the **Run Report** button in the upper right corner to rerun the report

3. In the **Keywords** text box, type **Firefly**, and then click **Options**.

A list of search options appears that you can use to refine your search.

4. Click on the radio button **Contains any of these keywords** to select it, and then click **Search**.

All product lines with "Firefly" in the name appear in the Results box at the bottom of the report.

5. In the **Results** box, click **Select all** and then click **Insert**.

Notice that you can select more than one value. This indicates that the prompt allows multiple selections. This is the default behavior for a Select & Search prompt.

6. Repeat steps 2 to 4 for the keyword **EverGlow**, insert **EverGlow Butane**, and then **EverGlow Kerosene**.

7. 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.

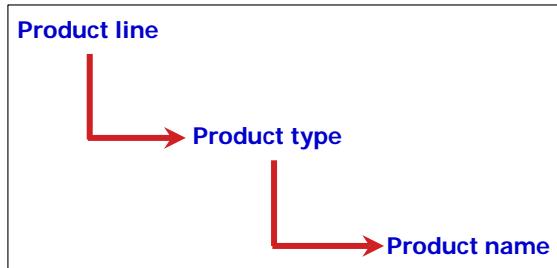
8. Close **IBM Cognos Viewer**.
9. Leave **Report Studio** open for the next demo.

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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In the slide example, the selection that the user makes for Product line determines what is populated in the Product type prompt. The selection made for Product type determines what is populated in the Product name 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.

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Demo 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

Order method type
All
E-mail
Fax
Mail
Sales visit
Special
Telephone
Web

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
Lanterns - Total		65,590	
Tents		E-mail	648
		Fax	216
		Mail	240
		Sales visit	5,977
		Telephone	4,631
Tents - Total		39,506	
Camping Equipment - Total		105,096	
Overall - Total		105,096	

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Demo 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://localhost:88/ibmcognos>
 User/Password: brettonf/Education1
 Studio: Report Studio
 Package: Public Folders\Samples\Models\GO Data Warehouse (query)
 Report Type: List
 Folder: Sales and Marketing (query)
 Namespace: Sales (query); Returned items (query)

Task 1. Create a list report with title, and then create a prompt page with a cascading prompt.

1. Open a new **List** template without saving the previous report.
2. Add the following query items to the list report object:
 - Sales (query)\Products: **Product line** and **Product type**
 - Sales (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>

Returned quantity works in this query because the Returned Items (query) query subject has the same query items as the Sales (query) query subject. Returned quantity is a conformed value. This subject is further explored in the IBM Cognos Report Studio: Author Professional Reports Advanced (v10.2.2) course.

3. Ctrl-click <Product line> and <Product type>, and then on the toolbar, click **Group / Ungroup**.
4. Click <Return quantity>, on the toolbar click **Summarize**, and then click **Total**.
5. Double-click the text in the header block.
6. In the text box, type in the following title: **Product type by Product line for all Order Methods**.
7. Click **OK**.
8. Click the header block to the left of the text.
9. On the toolbar, click **Left**.
10. In the work area, click <Product line>, and then Ctrl-click <Product type>, and <Order method type>.
11. On the toolbar, click **Build Prompt Page** .

Task 2. Set behavior patterns for prompts.

1. In the work area, click the **Product type** value prompt.
2. In the **Properties** pane, under **General**, double-click **Cascade Source**, from the list, click **Product line**, and then click **OK**.
3. In the **Properties** pane, under **General**, ensure that **Multi-Select** is set to **Yes**, and that **Auto-Submit** is set to **No**.

The Product types available to choose from will depend on the Product line selected when the prompt is run.

4. In the work area, click the **Product line** value prompt.
5. In the **Properties** pane, under **General**, in the **Multi-Select** list, click **No**.
6. Under **General**, in the **Auto-Submit** list, click **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**.

The user can select multiple product types, but the selection will not submit automatically. Once all of the selections for the prompts are complete, the user must submit the request by clicking **Finish**.

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 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 now need to specify what values to return when ALL is selected in the Order method prompt.

3. Point to **Page Explorer**, and then under **Report Pages**, click **Page1**.
4. Click anywhere in the list, click **Filters**, and then click **Edit Filters**.
5. Click the **Order method** 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 Data Items tab. It is important that the Parameter name matches the Query Item name for the cascade to work.
7. Choose any options for the prompts and then click **OK** to close the validation box.
 8. Click **OK** to close the **Expression** dialog box, and then click **OK** to close the **Filters** dialog box.

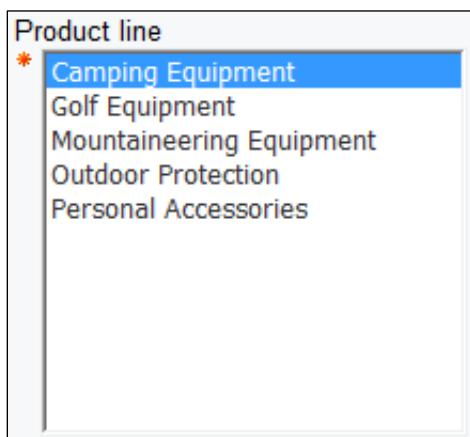
Task 4. Create a cover page.

1. On the **Explorer** bar, point to **Page Explorer**, and then click **Report Pages**.
2. From the **Toolbox** tab, drag a **Page** to the **Report Pages** section above **Page1**.
3. In the Properties pane, under **Miscellaneous**, in the **Name** box, type **CoverPage**, and then press **Enter**.
4. Double-click **CoverPage** to open it.
5. From the **Toolbox** tab, drag a **Table** onto the work area with **2** columns and **1** row, and then click **OK**.
6. Click the **Container selector** in the upper left cell to select the entire table.
7. On the toolbar, click **Center**.
8. Click anywhere on the page below the table, and then, on the toolbar, click **Middle**.
9. Drag a **Text Item** into the left table cell.
10. In the **Text** dialog box, type **GO Data Warehouse - Revenue Generated** and then click **OK**.
11. Click the text item, and then change the font to **Arial Black, 16 pt**.
12. From **Toolbox** tab, drag an **Image** into the right table cell.
13. Click the **image** to select it, in the **Properties** pane, double-click the **URL** property, and then click **Browse**.
14. Click **cover2.jpg**, and then click **OK** to close the **Image** dialog box, and then click **OK** to close the **Image** browse dialog box.
15. In the **Properties** pane, under **Positioning**, double-click the **Size & Overflow** property.
16. Set the **Width** to **150** pixels, the **Height** to **75** pixels, and then click **OK**.

Task 5. Run the report and view details for specific products.

1. On the toolbar, click **Run Report**.

A section of the results appear as follows:



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**.

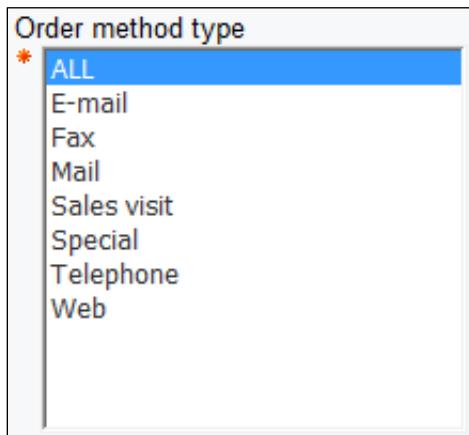
The results for the Product type prompt appear as follows:



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3. Under **Product type**, click **Lanterns** and then Ctrl-click **Tents**.

The results for the Order method type prompt appear as follows:



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:

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	
Lanterns - Total		65,590		
	Tents	E-mail	648	
		Fax	216	
		Mail	240	
		Sales visit	5,977	
		Telephone	4,631	
		Web	27,794	
		Tents - Total	39,506	
Camping Equipment - Total		105,096		
Overall - Total		105,096		

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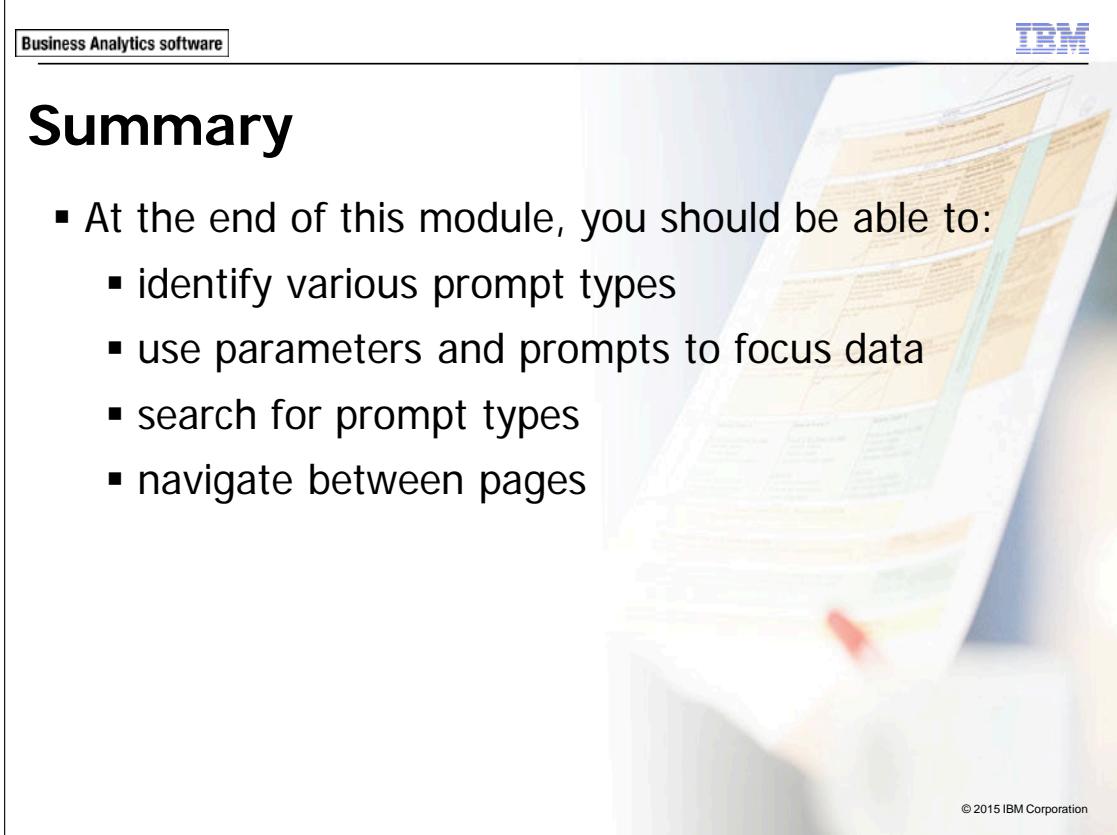
6. Close IBM Cognos Viewer.
7. Leave Report Studio open for the workshop.

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.

Summary

- At the end of this module, you should be able to:
 - identify various prompt types
 - use parameters and prompts to focus data
 - search for prompt types
 - navigate between pages



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Workshop 1

Focus a Report Using Value Prompts

Choose Region(s):*

- Americas
- Asia Pacific
- Central Europe
- Northern Europe
- Southern Europe

Choose Year:

* 2010
 2011
 2012
 2013

[Select all](#) [Deselect all](#)

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Workshop 1: Focus a Report Using Value Prompts

Company executives have asked you to create a report that shows revenue data by product line where they can choose the region(s) and the year that they want the report to include. They would like the prompts to show up on a separate prompt page.

To accomplish this:

- Open a Combination chart (Clustered Bar and Clustered Line) template with the GO Data Warehouse (query) package.
- Add the following query items:
 - Default measure (y-axis):
 - Sales fact: Revenue
 - Categories (x-axis):
 - Products: Product line
 - Series (primary axis) - Bar Chart Type:
 - Retailers: Region
 - Series (primary axis) - Line Chart Type:
 - Time: Year
- Create a prompt page with two value prompts:
 - Branch region
 - Year
- Create a cover page.
- Add a table with 2 columns and one row
- Add a title and company logo to the cover page.

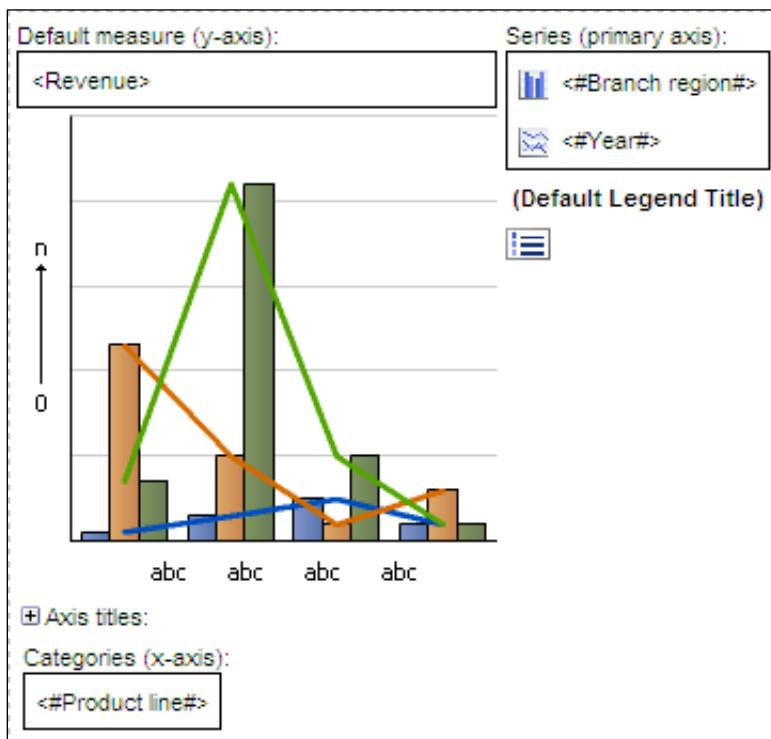
For more information about where to work and the workshop results, refer to the Tasks and Results section that follows. If you need more information to complete a task, refer to earlier demos for detailed steps.

Workshop 1: Tasks and Results

Task 1. Create a chart, then create a prompt page and add the Region prompt.

- **Toolbar:** Open a new **Combination chart** (Clustered Bar and Clustered Line) template without saving the previous report.
- **Source tab:** Add Sales fact: **Revenue** to the **Default measure (y-axis)**.
 - Add Products: **Product line** to the **Categories (x-axis)**.
 - Add Employee by region: **Branch Region** to the **Series (primary axis)** - Bar Chart Type.
 - Add Time: **Year** to the **Series (primary axis)** - Line Chart Type.

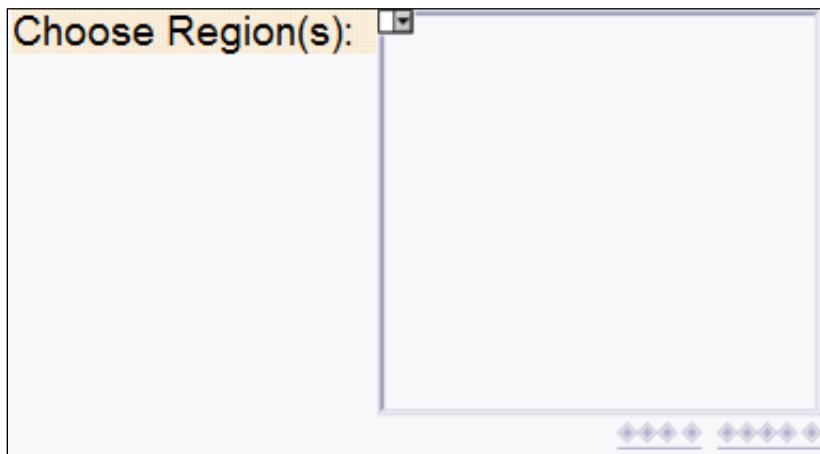
The results appear as follows:



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- **Explorer bar:** Navigate to Prompt Pages.
- **Toolbox tab:** Create a new page.
- **Prompt Pages work area:** Open Prompt Page1.
- **Toolbox tab:** Add a **Value Prompt** object to the prompt page.
- **Prompt Wizard - Value Prompt** dialog box: Create the multi-select parameter based on **Branch region** named **RegionPrompt**.
- **Toolbox tab:** Add a **Text Item** to the left of the value prompt.
- **Text box:** Type **Choose Region(s):**
- **Toolbar:** Set text to **14pt**.

The results appear as follows:

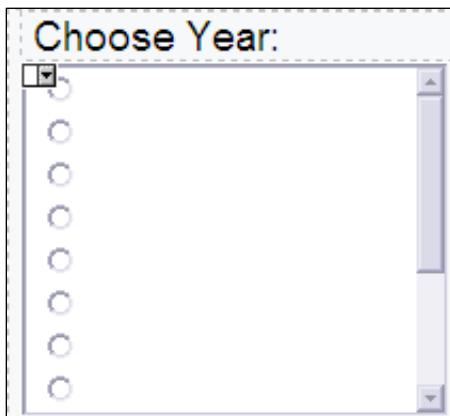


Task 2. Add a Year prompt.

- **Toolbox tab:** Drag a **Block** to the right of the RegionPrompt prompt.
 - Add a **Value Prompt** object into the block.
- **Prompt Wizard - Value Prompt** dialog box: Create the single-select parameter based on **Year** named **YearPrompt**.
 - Click **Next**, click **Next** again, and then click **Finish**.

- **Toolbox tab:** Add a **Block** to the left of the **YearPrompt** prompt.
- Add a **Text Item** into the block, type **Choose Year:** and then click **OK**.
- **Toolbar:** Set text to **14 pt**.
- **Properties pane:** Under **General**, set the **Select UI** property for the **YearPrompt** to **Radio button group**.

The results appear as follows:



Task 3. Create a cover page (Optional).

As an additional challenge, create a cover page to give your report a finished look.

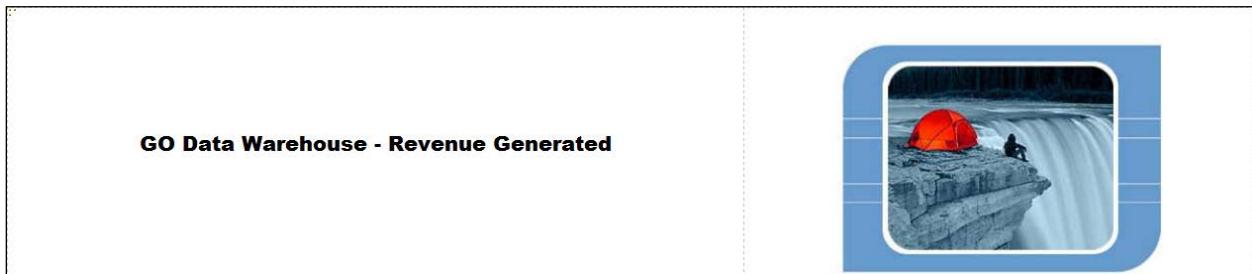
- **Explorer bar:** Navigate to **Report Pages**.
- **Toolbox tab:** Add a page to the **Report Pages** work area.
- **Properties page:** Name the new page **CoverPage**.
- **Report Pages work area:** Open **CoverPage**.
- **Toolbox tab:** Add a **2 column by 1 row Table** to the work area.
- **Toolbar:** Center the table.
 - Set the page to **Middle**.

Task 4. Add a text item and image to the cover page (Optional).

This task will add a title and image to the cover page created in Task 3.

- **Toolbox tab:** Add a **Text Item** into the left table cell.
- **Text box:** Type **GO Data Warehouse - Revenue Generated**.
- **Toolbar:** Set text to **Arial Black** and **16 pt**.
- **Toolbox tab:** Add an **Image** into the right table cell.
- **Image:** Use the **cover1.jpg** image.

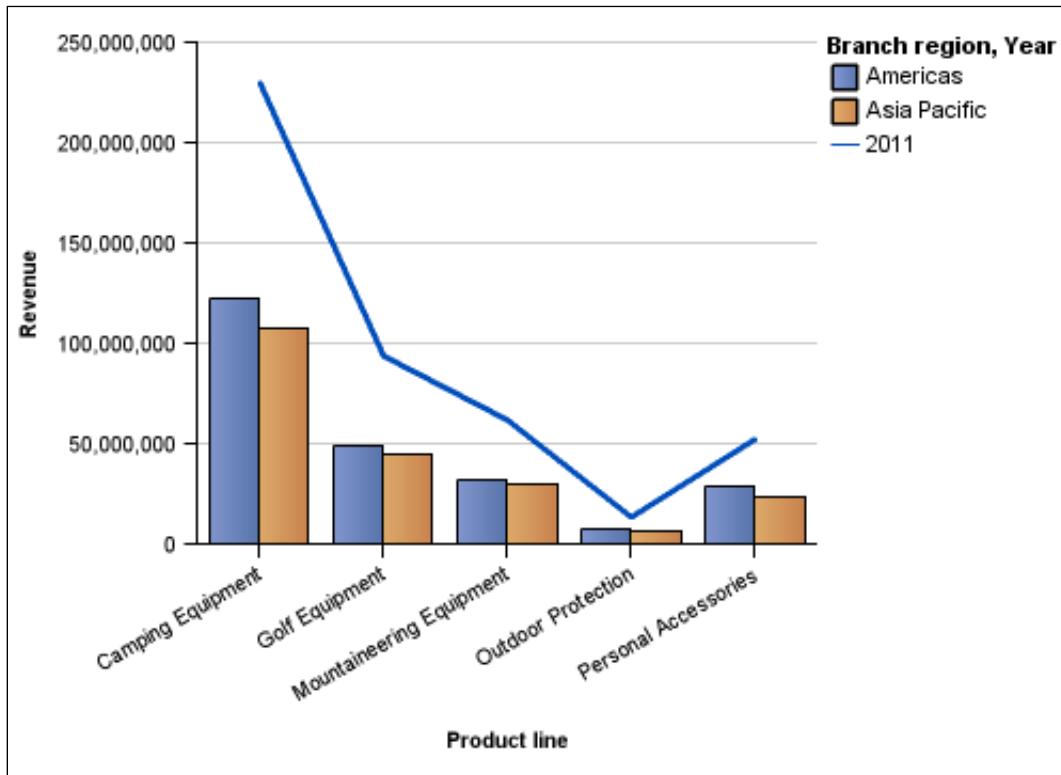
The results appear as follows:



Task 5. Run the report.

- **Toolbar:** Run the report.
- **RegionPrompt:** Select **Americas** and **Asia Pacific**.
- **YearPrompt:** Select **2011**.
- **Cover Page:** Go to the next page.

The results appear as follows:



- Close **IBM Cognos Viewer**
- Close **Report Studio**.

You have created a report that shows revenue data by product line where users can choose the region(s) and the year that they want the report to include. You have put the prompts on a separate prompt page and created a cover page.

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