IBM

Course Guide

IBM Cognos Analytics: Author Reports Fundamentals (v11.0)

Course code B6058 ERC 2.0

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IBM Training

April 2016

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Contents

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Course overview

Preface overview

IBM Cognos Analytics: Author Reports Fundamentals (v11.0) provides report authors an opportunity to learn report building techniques using relational data models. Techniques to enhance, customize, and manage professional reports will be explored. Demonstrations and exercises will illustrate and reinforce key concepts during this learning opportunity.

Intended audience

Report Authors

Topics covered

Topics covered in this course include:

- Explore IBM Cognos Analytics report authoring, different report object types (list, crosstab, chart, visualization, etc.)
- 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 Course prerequisites

Participants should have:

- Knowledge of business requirements
- Experience using the Windows operating system
- IBM Cognos Analytics for Consumers (v11.0) WBT or equivalent knowledge

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Verify services used in the course environment

The environment provided in this course requires the following services to be started before you begin performing demonstrations and exercises:

- Apache Directory Server
- DB2 -DB2COPY 1 - DB2
- DB2DAS - DB2DAS00
- IBM Cognos
- World Wide Web Publishing Service

To review the services, on the Taskbar of your environment, click the **Services** icon, and ensure that the above services are running. If you have closed your image and launched it again, it is a best practice to review the status of the services before continuing with your demonstrations and exercises.

If the Apache Directory Server or DB2 -DB2COPY 1 - DB2 service have stopped, you will need to stop the IBM Cognos service, start the stopped service(s), and then start the IBM Cognos service once the previously stopped service(s) has (have) started successfully. You can start and stop a specific service by double-clicking the service to open the Properties dialog box, and then clicking the Stop or Start buttons.

Note that it may take 15 minutes or more for the IBM Cognos service to start.

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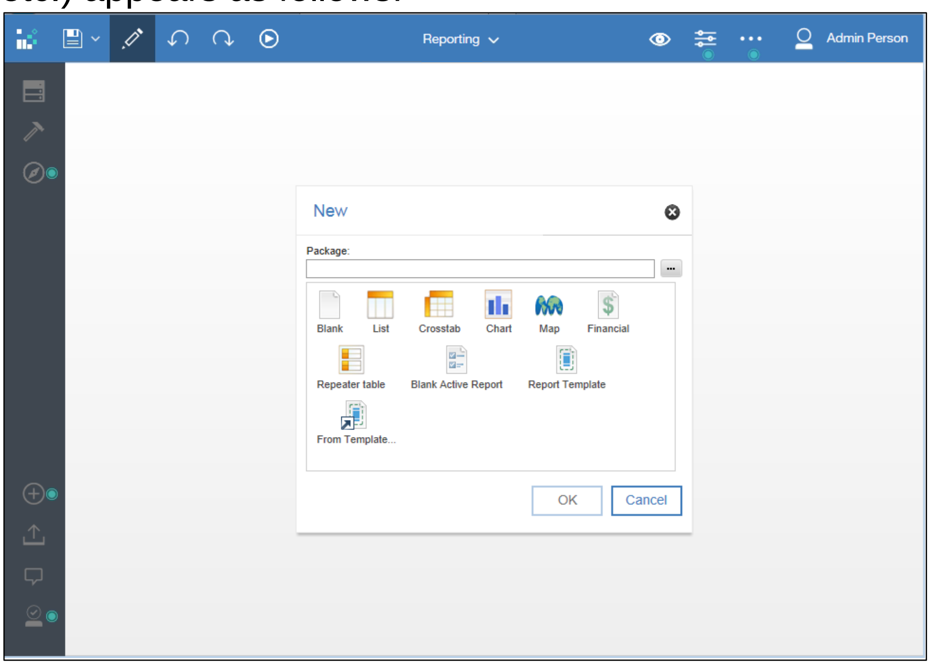
Optional configuration for the IBM Cognos Analytics 11.0 course environment

The environment provided has been configured and tested to work with the demonstrations and exercises in this course. For instructors teaching in an ILT or ILO environment, or for students in a Self-paced Virtual Classroom (SPVC) environment, there is an optional configuration that can be performed. This configuration provides access to a wide range of templates that can be used to create reports in the new IBM Cognos Analytics - Reporting environment. For the course environment, this change impacts the IBM Cognos Analytics - Reporting user interface and the initial steps used to create reports.

When creating a report in the current environment (as per the course set up tasks), the user interface and dialog box for choosing a report type (List, Crosstab, Chart, etc.) appears as follows:



The dialog box is a legacy component from the IBM Cognos BI 10.2.2 version of the product. It is available, by default, when performing the "Custom" installation of IBM Cognos Analytics 11.0. The "Custom" installation was chosen for the setup of the course environment. Note: steps in demonstrations and exercises are currently scripted to use this dialog box for creating reports.

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The optional configuration includes the deployment of the Templates.zip deployment archive. This can be performed using the following steps in the course environment:

1. In **Internet Explorer**, log on to **IBM Cognos Analytics** as **admin\Education1**.
2. On the side panel (left pane), click **Manage**, and then click **Administration console**.
3. Click the **Configuration** tab, and then click **Content Administration**.
4. On the toolbar, click **New Import**.
5. On the **Select a deployment archive** page, select the **Templates** archive, and then click **Next**.
6. On the **Specify name and description** page, click **Next**.
7. On the **Public folders, directory and library content** page, select the **Templates** check box, and then click **Next**.
8. On the **Specify the general options** page, click **Next**.
9. On the **Review the summary** page, click **Next**.
10. On the **Select an action** page, ensure **Save and run once** is selected, and then click **Finish**.
11. On the **Run with options** page, ensure **Now** is selected, click **Run**, and then click **OK**.
12. Close the **IBM Cognos Administration** tab.

Once this configuration has been performed, use the following steps to create a report.

1. Follow the steps from the demonstration or exercise to log on as a user with the ability to create reports.
2. From the side panel (left pane), click **New**.

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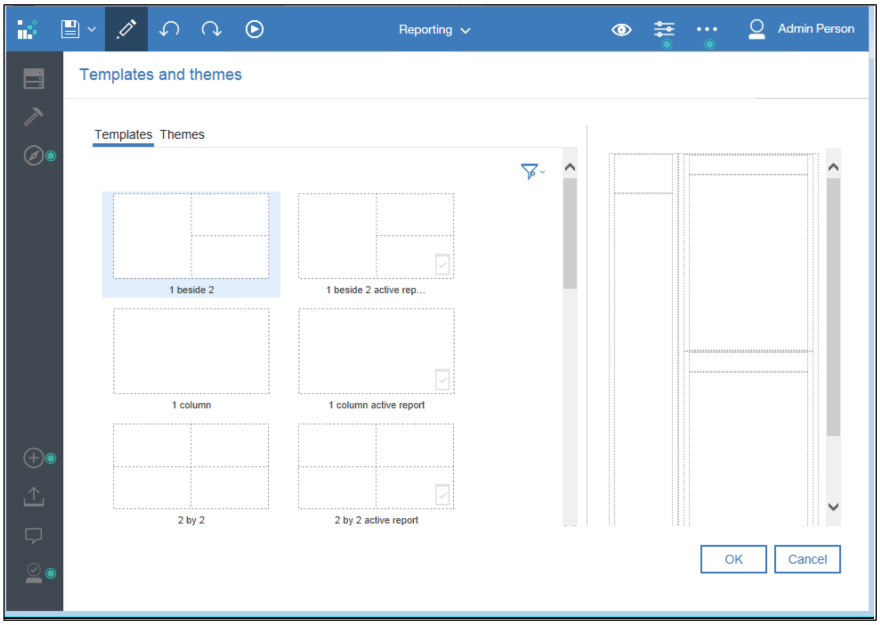
3. Click **Report**.
   The user interface now appears as follows:



   You are presented with a list of templates to choose from.
4. Select a template. Note: there are various layouts to choose from. In most instances, you will be successful with current steps using the "1 column" option (1st column, 2nd row). If issues are encountered, the "Blank" option is also available.
5. In the report layout on the right, click +, and then choose the report type (List, Crosstab, Chart), or object (Table, Text item, Block)
6. Continue creating the report as scripted in the demonstration or exercise. Note: some screen captures may appear different than what is presented in the demonstration or exercise.

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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 demonstration and exercise step-by-step solutions to indicate a user interface element that is actively selected or text that must be typed by the participant.
- *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.

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Exercises

Exercise format

Exercises are designed to allow you to work according to your own pace. Content contained in an exercise is not fully scripted out to provide an additional challenge. Refer back to demonstrations if you need assistance with a particular task. The exercises 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 exercise. Within each task, there may be numbered questions relating to the task. Complete the tasks by using the skills you learned in the unit. 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 exercise to show the expected results.

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Additional training resources

- Visit IBM Analytics Product Training and Certification on the IBM website 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 Analytics Certification program
  - Other resources that will enhance your success with IBM Analytics Software
- For the URL relevant to your training requirements outlined above, bookmark:
  - Information Management portfolio: http://www-01.ibm.com/software/data/education/
  - Predictive and BI/Performance Management/Risk portfolio: http://www-01.ibm.com/software/analytics/training-and-certification/

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IBM product help

Help type	When to use	Location
Task-oriented	You are working in the product and you need specific task-oriented help.	*IBM Product* - Help link
Books for Printing (.pdf)	You want to use search engines to find information. You can then print out selected pages, a section, or the whole book. 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. The Step-by-Step online books contain the same information as the online help, but the method of presentation is different.	Start/Programs/*IBM Product*/Documentation
IBM on the Web	You want to access any of the following:	
	• IBM - Training and Certification	• http://www-01.ibm.com/software/analytics/training-and-certification/
	• Online support	• http://www-947.ibm.com/support/entry/portal/Overview/Software
	• IBM Web site	• http://www.ibm.com

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IBM Training

Introduction to IBM Cognos Analytics - Reporting

IBM Cognos Analytics (v11.0)

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IBM Training

Unit objectives

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

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Unit objectives

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IBM Training

What is IBM Cognos Analytics - Reporting? (1 of 2)

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

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What is IBM Cognos Analytics - Reporting?

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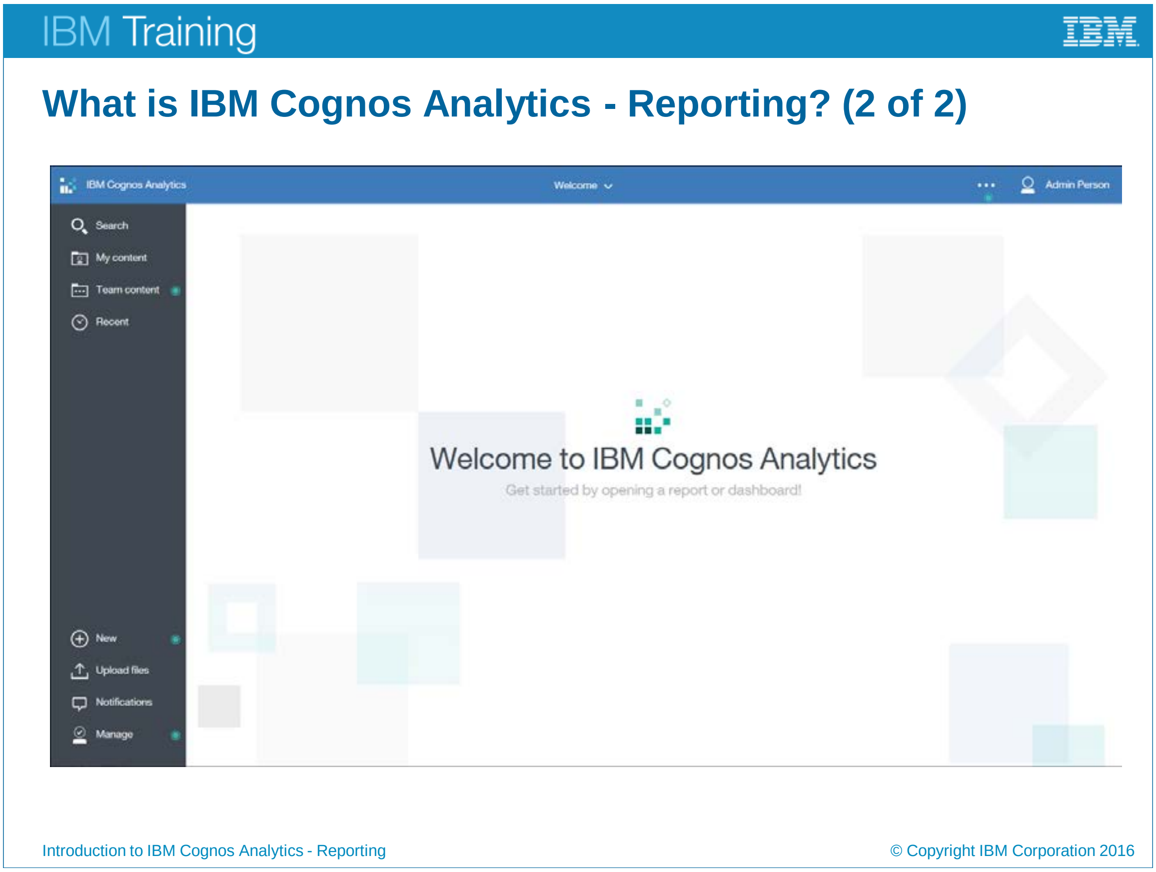

Reporting, in IBM Cognos Analytics, can be perform based on the following:

- **Create New**: Author a report with a choice from preset template options.
- **Open Existing**: Open a copy of an existing report, make changes and then save under a new name.
- **New from Template**: Navigate to and open a saved template. This option shows saved templates and all reports. You will be able to choose any saved report that is appropriate for your needs and Reporting will then automatically create a template based on the chosen report.

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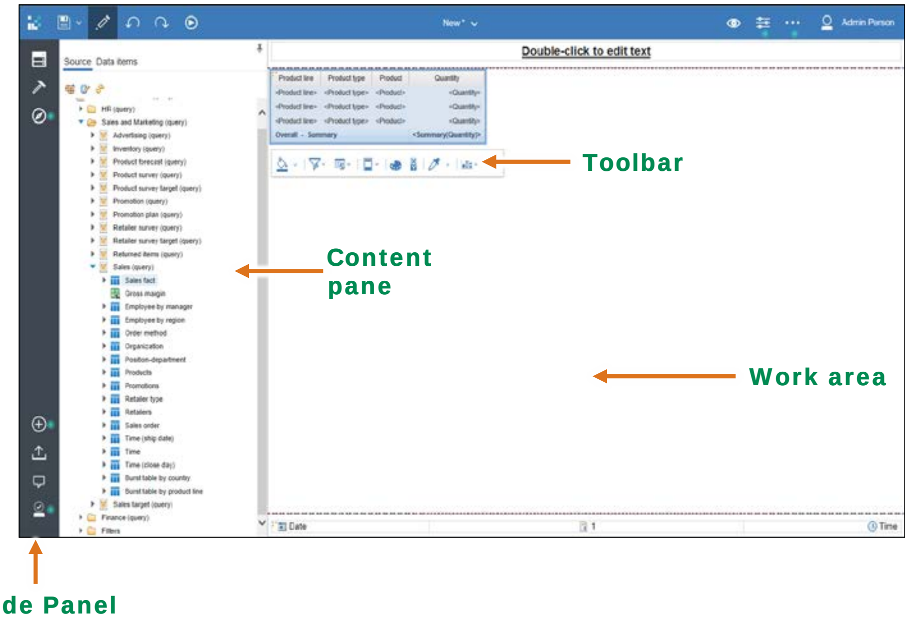
IBM Training

Explore the environment



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Explore the environment

Some notable actions and features:

- You can build reports by adding objects and data items from the Content pane.
- The Source tab provides query items that can be added to report data containers directly from a published package.
- You can 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.
- Use the Navigate tab to move through the Page structure of a report, including using the Page explorer, Query explorer, Condition explorer, and Active report controls and variables.

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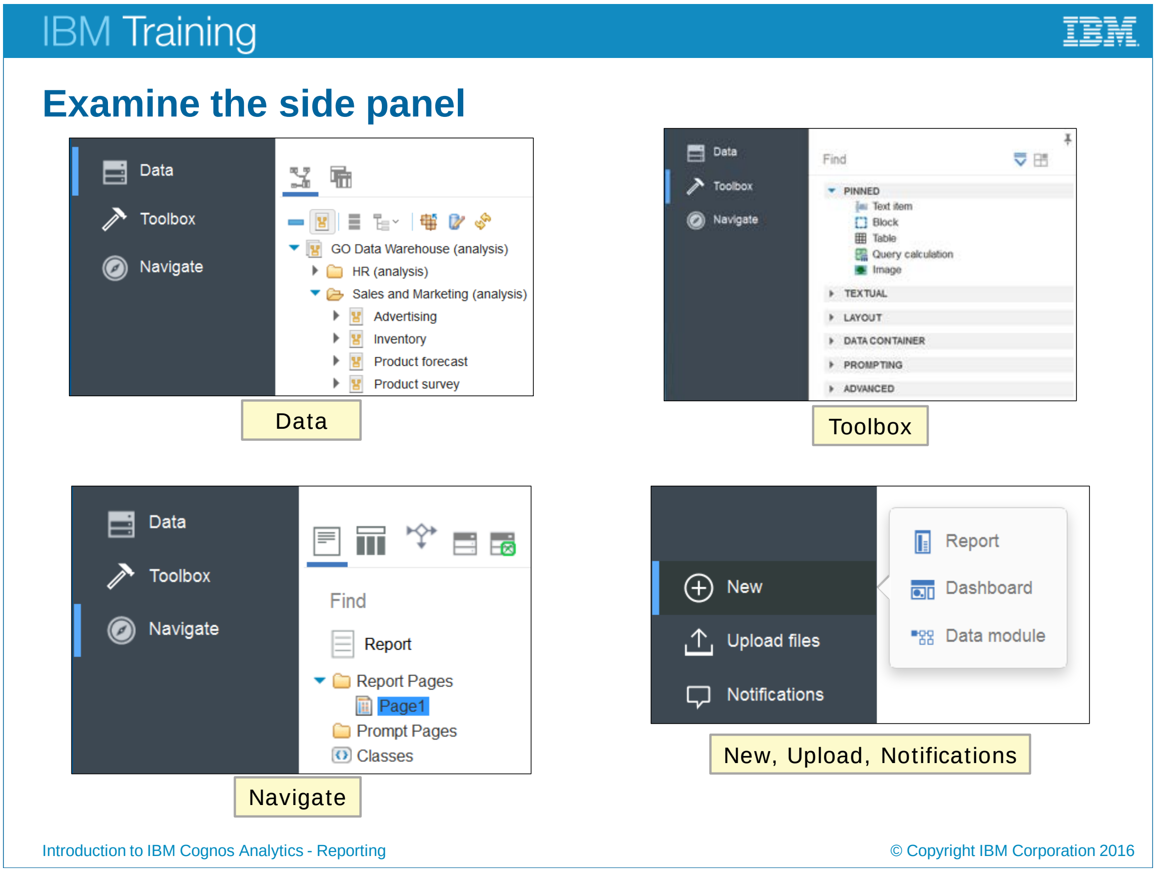

Examine the side panel

Data - use this to add query items to a report template.

Toolbox - use this to modify the report by adding unique options to the report template that aide in creating a professional look and feel to the report and additional options to a unique view of the data.

Navigate - use this to navigate through the different pages of the report including the Query and Conditional Explorer.

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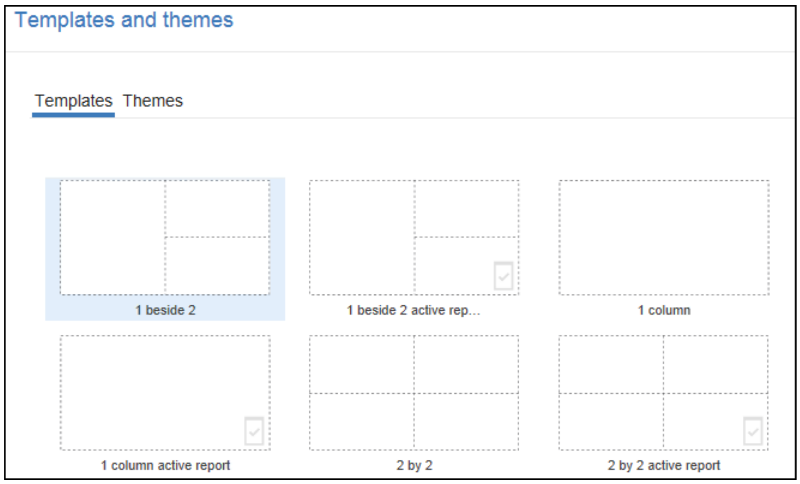
IBM Training

Explore authoring templates

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



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Explore authoring templates

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

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

- List reports which are useful for presenting tabular list information.
- Crosstab reports which are useful for comparative analysis.
- Chart reports which are useful for graphically showing comparisons, relationships, and trends.
- Text items are which useful for labeling report objects in a meaningful way.
- Blocks which are useful for extending the layout.
- Table which are useful for formatting data in a repeated fashion.

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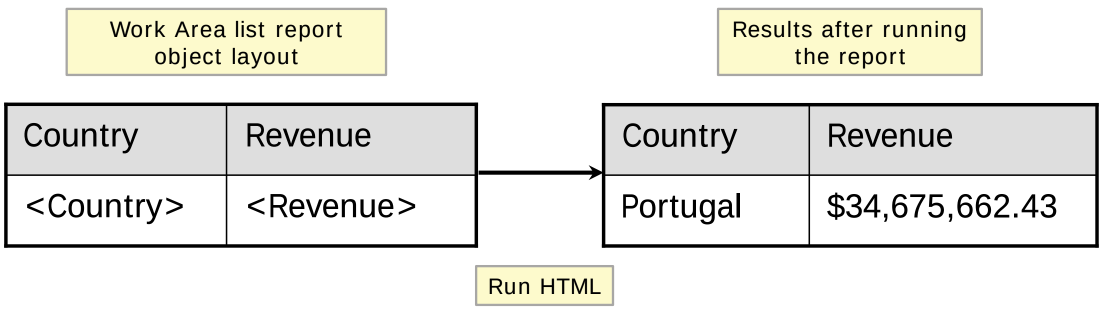
IBM Training

Generate the report

- You can view the results of the designed report by running the report in the web browser.



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Generate the report

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

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

You can return to Reporting to alter your report by clicking on the reporting tab containing your work area, or by closing the tab.

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, Excel Data, Run Delimited Text (CSV).

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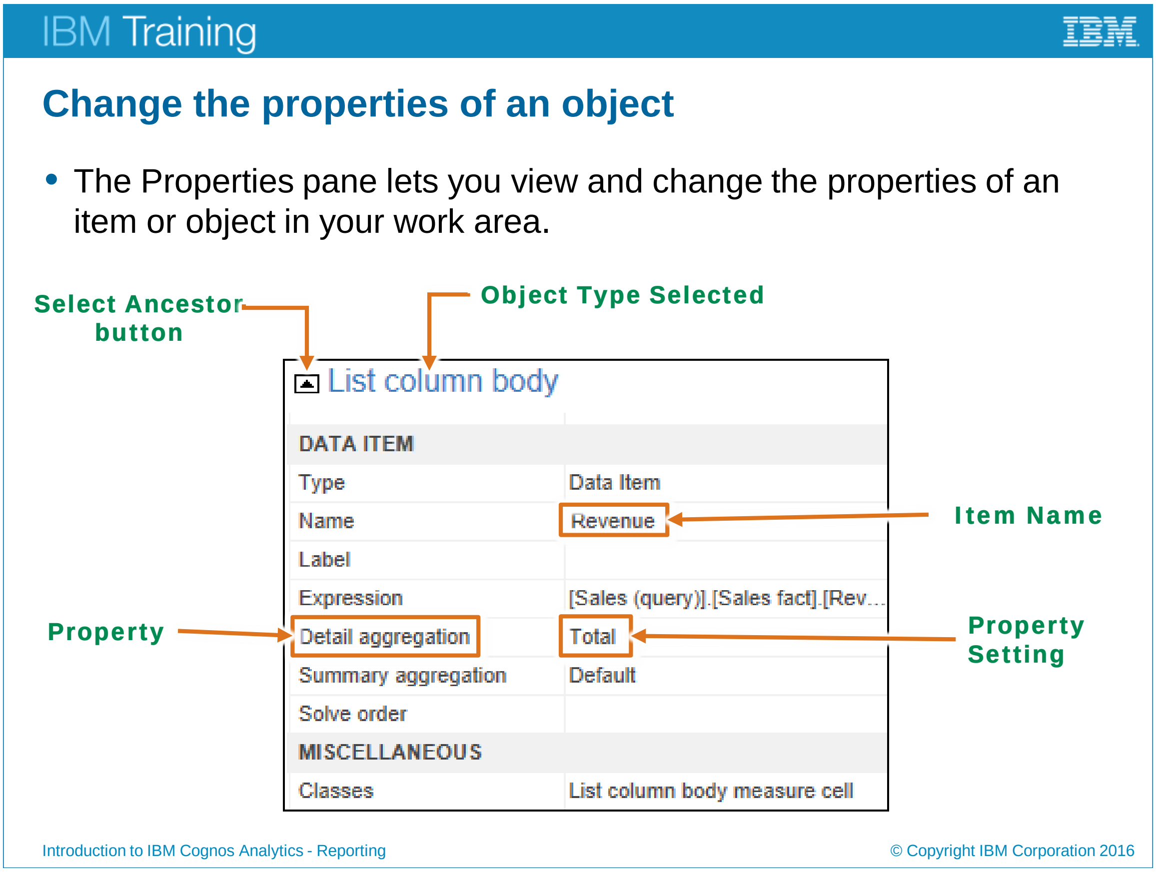

Change the properties of an object

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

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

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

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

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

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IBM Training

Demonstration 1

Create a simple report

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

Introduction to IBM Cognos Analytics - Reporting

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Demonstration 1: Create a simple report

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Demonstration 1: Create a simple report

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

The environment provided in this course requires the following services to be started before you begin performing demonstrations and exercises:

- Apache Directory Server
- DB2 -DB2COPY 1 - DB2
- DB2DAS - DB2DAS00
- IBM Cognos
- World Wide Web Publishing Service

To review the services, on the Taskbar of your environment, click the Services icon, and ensure that the above services are running. If you have closed your image and launched it again, it is a best practice to review the status of the services before continuing with your demonstrations and exercises.

If the Apache Directory Server or DB2 -DB2COPY 1 - DB2 service have stopped, you will need to stop the IBM Cognos service, start the stopped service(s), and then start the IBM Cognos service once the previously stopped service(s) has (have) started successfully. You can start and stop a specific service by double-clicking the service to open the Properties dialog box, and then clicking the Stop or Start buttons.

Note that it may take 15 minutes or more for the IBM Cognos service to start.

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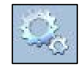
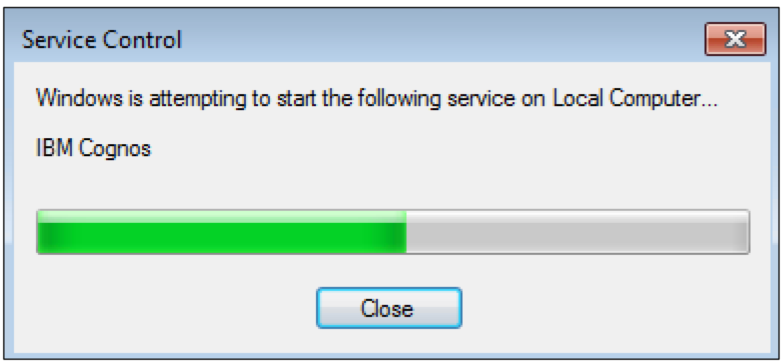
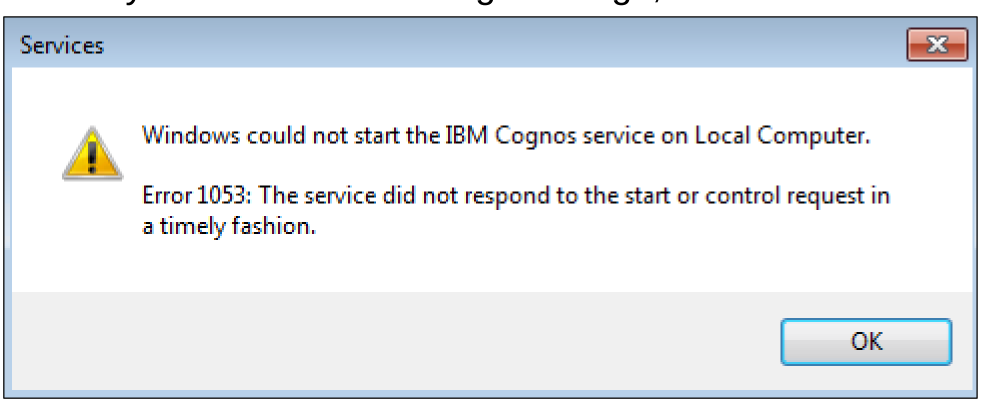
Task 1. Manually start the IBM Cognos service.

1. From the **Windows** desktop, locate the **Services**  button in the task bar, at the bottom of the screen.
2. Click **Services**, to view the list of Windows services.
3. In the list, scroll down until you locate the **IBM Cognos** service.
4. Click on the **IBM Cognos** service, to select it.
5. From the Services menu bar, click **Start Service** .

   After a moment, a progress bar appears - showing the Service is being started. This may take a few seconds, to several minutes, to complete.

   You may also see the following message, which is normal:

6. Click **OK**, then continue to monitor and check that the Service is started.

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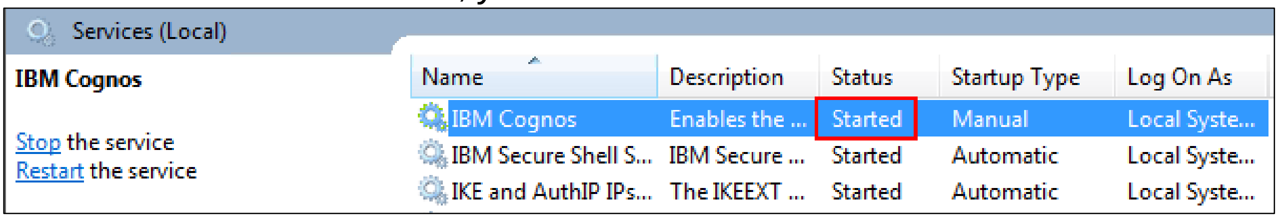
7. Periodically check to see if the **IBM Cognos** service has started, by clicking **Refresh** .

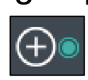
   Once the service has started, you will see a status of Started:

8. Once you have confirmed that the Service has started, close the **Services** window.
9. You may now proceed to Task 2.

Task 2. Open IBM Cognos Analytics - Reporting, and then choose a report template.

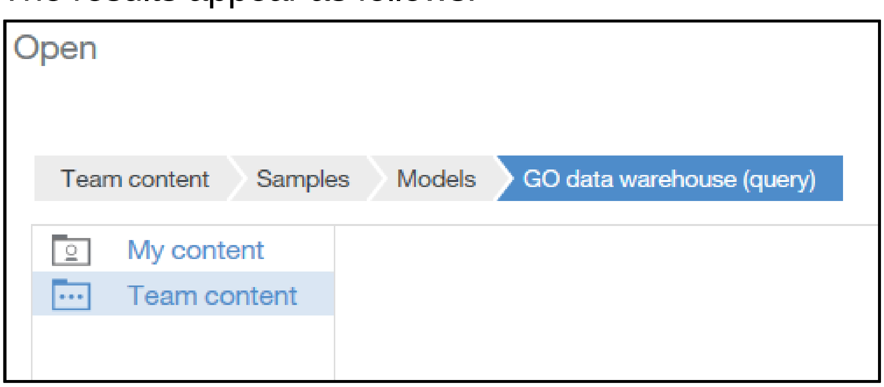
1. Open your internet browser, in the address box type **http://vclassbase:9300/bi**, and then press **Enter**.
2. On the IBM Cognos Analytics page, in the **User ID** box, type **brettonf**, in the **Password** box, type **Education1**, and then click **Sign in**.

   The Welcome to IBM Cognos Analytics page appears.
3. From the side panel on the left, click **New** , and then click **Report**.
4. From the **New** dialog, select the **Blank** template, and then click **OK**.

Task 3. Add a data source and a list.

1. From the side panel, click **Data** .
2. Under the **Source** tab, click **Add report data**.
3. Navigate to: **Samples\Models\GO data warehouse (query)**.

   The results appear as follows:

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4. Click **Open**.
5. On the **Application** bar, click **Page views**, and then click **Page preview**.
6. Click **Add** in the center of the screen. This will bring up a set of data container choices.
7. Click the **List** template, and then click **OK** to accept the default query name.

Task 4. Add data to the list.

1. On the side panel, **Source** tab, expand the **Sales and Marketing (query)** folder, expand the **Sales (query)** namespace, and then expand the **Employee by region** query subject.
2. Double-click the **Country** query item to add it to the list report object.
   The list report object now has one column.
3. Double-click **City** to add it to the list report object.
   City is automatically added to the end of the list.
4. Right-click **Last name**, and then click **Properties**.
   The Properties dialog box appears, with details about the item.
5. Click **Close**.
6. Click **First name**, and then Ctrl-click **Last name**, **Employee level** and **Position name**.
7. Right-click **Position name**, and then click **Insert**.
   The items are added to the list in the order in which they are selected.
   A section of the results appear as follows:

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

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

   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 instead want the new query item to be added to the end of the List.

   You would like to see Last name appearing before First name.

9. In the work area, click the data for **Last name** (not the header) 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 5. View the data items in the query.

1. On the side panel, click **Navigate**, then on the content pane, click **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. From the **Application** bar, click **Show properties**.
4. 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.

5. Click **OK**, and then in the **Data Items** pane, click **Last name**.
6. 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.

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7. Click **OK** to close the dialog box.
8. In the content pane, click **Page explorer**, and then click **Page1** to return to the work area.

Task 6. Remove a column from the report.

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

1. In the list report object, click the data cell for **Employee level** (not the header).
2. From the now visible container toolbar, click **More**, and then click **Cut**.

   The column is removed from the list report.
3. On the content toolbar, click **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.
4. On the content toolbar, click **Page explorer**, and then click **Page1** to return to the work area.
5. On the **Application** bar, click **Undo**.
6. With the **Employee level** data column still selected, on the container toolbar, click **More**, and then click **Delete**.
7. On the content toolbar, click **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 7. Format and sort the data, and then run the report.

1. On the content toolbar, click **Page explorer**, and then click **Page1**.
2. In the list report object, click the data cell for **Revenue**, in the 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.

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

   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**.

   The Data Format dialog box appears.

5. In the **Format type** list, select **Currency**.

6. Under **Properties**, click **Currency**, click the down arrow button in the column to the right of **Currency**, and then select **$ (USD) - United States of America, dollar** from the list.

   Revenue will now be displayed in American dollars. By default, it will use a comma as a Thousands separator, and two decimal places.

   Note: Changing the currency will not perform a currency conversion (for example, it will not convert one currency into the value of another). It will simply show the value with a different currency symbol, thousands separator, decimal place, and so on. If you want to see data displayed in a particular currency, the data must be stored in the data source in that currency.

7. Click **OK**.

8. Click **Page views**, and then click **Page design**.

   The results appear as follows:

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

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

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9. On the main toolbar, click **Run options**, and then click **Run HTML**.

   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.

10. At the bottom of the page, click **Page down** to navigate to each page of the report.
11. Close the rendered report web page (tab) to return to the work area.
12. Leave **IBM Cognos Analytics** open for the next demonstration.

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

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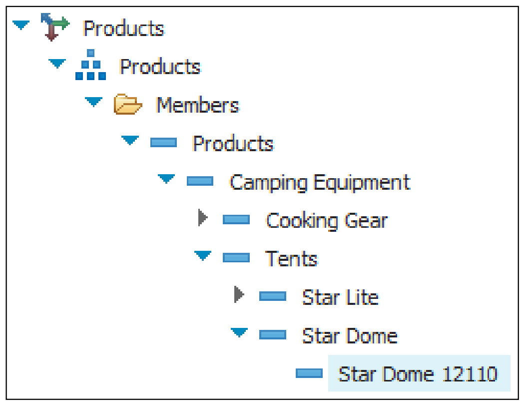
IBM Training

Dimensionally-modeled and dimensional data sources

- In IBM Cognos Analytics, 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 and dimensional data sources

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

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

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

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

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

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IBM Training

Demonstration 2

Create a report from a dimensionally-modeled relational data source

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

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Demonstration 2: Create a report from a dimensionally-modeled relational data source

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Demonstration 2: Create a report from a dimensionally-modeled relational data source

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

Task 1. Examine a dimensionally modelled relational data source.

1. From the side panel, click **New**, and then click **Report**.
2. Select **Blank**, and then click **OK**.
3. Using **Data > Source > Add report data,** navigate to **Team content > Samples > Models > GO data warehouse (analysis)**.
4. Click **Open**.

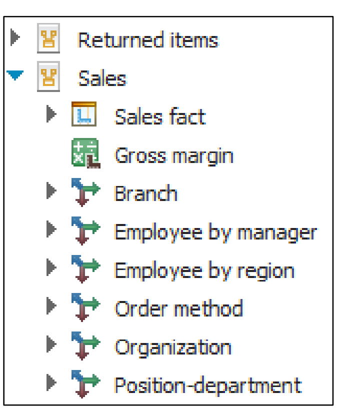
   The Source tab on the left, displays the folders available in the package.

   Notice the folder symbols.
5. Click **Add** in the center of the screen, click **List**, and then click **OK**.
6. Expand **Sales and Marketing (analysis)**.

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

   Notice the namespace symbols.
7. Expand the **Sales** namespace.

   A section of the results appear as follows:



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

   Notice the measures query subject and the dimensions.

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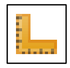
Task 2. Continue examining the data source.

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

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

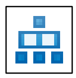
   Notice the measures .

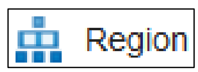
2. Expand the **Retailers** dimension 

, and then expand the **Retailers** hierarchy 

.

   You see a Members folder and five levels.

   Notice the level .

3. Expand the **Region** level 

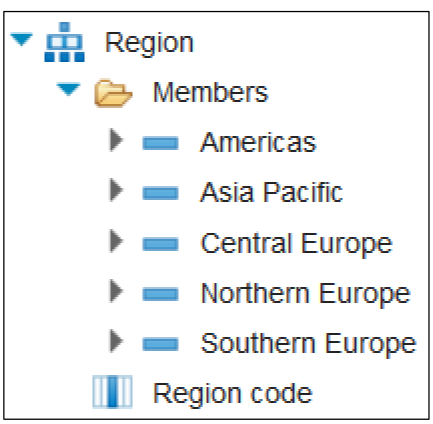
.

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

   Notice the query item .

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

   The results appear as follows:



Task 3. Add items to the list 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**.
2. Drag **2011** to the list report object, into 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).

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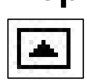
3. Under the **Retailers** dimension, **Retailers** hierarchy, **Region** level, **Members** folder, expand the **Americas** member, and then drag the **Canada** member to the list report object.
4. Expand the **Products** dimension, **Products** hierarchy, **Product line** level, **Members** folder,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

   The results appear as follows:

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

Task 4. Allow drill-up and drill-down on the report.

1. From the side panel, click **Navigate**.
2. Under **Find**, click **Report** , and then on the **Application** bar, click **Show properties**.
3. Under **DATA**, change the **Drill-up and drill-down** property to **Yes**.
4. Click the **Page explorer**, and then click **Page 1**.
5. Select the entire List data container by clicking the selection  handle in the upper left corner.
6. If necessary, open the **Properties** panel.
7. Click **Select Ancestor**  (next to the List panel header title) in the upper left of the Properties panel, and then click **Report**.
8. Under **RUNNING & VALIDATING**, change the property for **Run with full interactivity** to **No**.
9. On the **Application** bar, click **Run options**, and then click **Run HTML.**

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

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

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

    The results appear as follows:

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

    You can drill-down on any underlined data.

11. Close the rendered report page tab to return to the reporting work area.
12. Leave **IBM Cognos Analytics** open.

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

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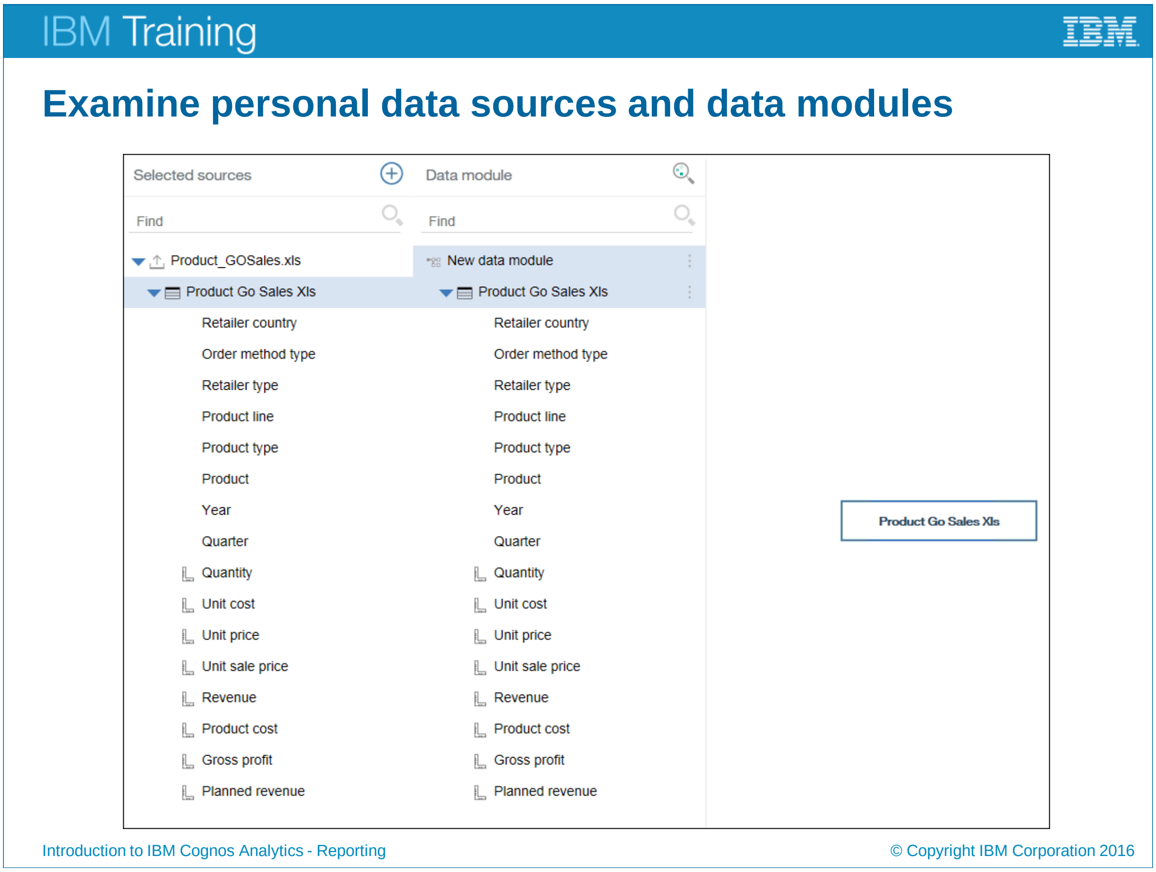

Examine personal data sources and data modules

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

The process begins by using the **Upload files** feature available from the Welcome screen. Next, the uploaded personal data source must be contained as a data module. This is done by selected **New** > **Data module**. Data can be dragged from the Selected sources pane to the Data module pane to define the data module. Once it has been defined, the data module can be renamed and saved, making it available as a data sources for report creation.

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IBM Training

Demonstration 3

Create a report from a personal data source

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

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Demonstration 3: Create a report from a personal data source

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Demonstration 3:
Create a report from a personal data source

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

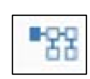
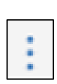
Server: **http://vclassbase:9300/bi**
User/Password: **brettonf/Education1**

Task 1. Upload a Microsoft Excel file.

1. In the **Application** bar, use the dropdown menu in the middle, and then click **Welcome**.
2. From the **Welcome to IBM Cognos Analytics** page, click  **Upload files** from the side bar.
3. In the **Choose File to Upload** dialog, browse to: **C:\Training\B6058\Instructor Files**.
4. Click the **SampleFile_GOSales.xlsx** file to select it, and then click **Open**.

   The system will take a few moments (up to 2 minutes) to load the file. When complete, a preview of the data is displayed - such as Retailer country, Order method type, Retailer type, etc.
5. Click **OK** at the top of the page, once the load is complete.

Task 2. Create the data module.

1. Using the actions from the Step 1 of the previous task, open the **Welcome** page.
2. From the **Welcome** page, click **New > Data module** .
3. From the **Sources** list, click **Uploaded files**.
4. Select the checkbox for **SampleFile_GOSales.xlsx** (with the **My content** designation).
5. Click the **Start** button in the bottom left of the page.
6. Under **Selected sources**, expand **SampleFile_GOSales.xlsx**.
7. Expand **Sample File Go Sales Xlsx**, and then drag it to the bee icon under **Data module**.
8. Click the **Actions**  to the right of **New data module**.
9. Click **Rename**, and then click the **X** to clear the textbox that appears.
10. In the textbox, type **Sales Data Module**.

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11. Click **Save**, and then click **My content**.
12. In the **Save as** textbox, type **Sales Data Module**, and then click **Save**.
13. From the dropdown menu in the Application bar at the top of the screen, click **Remove** to the right of **Sales Data Module**.

Task 3. Create a report from the data module.

1. Return to the **Welcome** page, and from there, click **New > Report**.
2. Click the ellipsis to the right of the **Package** textbox.
3. Click **My content**.
4. Click **Sales Data Module**, and then click **Open**.
5. Click **List**, and then click **OK**.
6. On the side bar, click **Data**.
7. Expand **Sales Data Module > Sample File Go Sales Xlsx**.
8. Drag **Retailer country** to the list.
9. Drag **Order method type** to the right of **Retailer country**.
10. Drag **Quantity** to the right of **Order method type**.
11. At the top, click **Run options**.
12. Click **Run HTML**.

    A section of the results appear as follows:

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

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

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IBM Training

Unit summary

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

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Unit summary

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IBM Training

Exercise 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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Exercise 1: Create a revenue report

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Exercise 1: Create a revenue report

The environment provided in this course requires the following services to be started before you begin performing demonstrations and exercises:

- Apache Directory Server
- DB2 -DB2COPY 1 - DB2
- DB2DAS - DB2DAS00
- IBM Cognos
- World Wide Web Publishing Services

To review the services, on the Taskbar of your environment, click the Services icon, and ensure that the above services are running. If you have closed your image and launched it again, it is a best practice to review the status of the services before continuing with your demonstrations and exercises.

If the Apache Directory Server or DB2 -DB2COPY 1 - DB2 service have stopped, you will need to stop the IBM Cognos service, start the stopped service(s), and then start the IBM Cognos service once the previously stopped service(s) has (have) started successfully. You can start and stop a specific service by double-clicking the service to open the Properties dialog box, and then clicking the Stop or Start buttons.

Note that it may take 15 minutes or more for the IBM Cognos service to start.

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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 exercise results, refer to the Tasks and Results section that follow. If you need more information to complete a task, refer to earlier demonstrations for detailed steps.

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Exercise 1: Tasks and Results

Task 1. Create a list report.

- **Toolbar**: Open a new **List** template using the **GO data warehouse (query)** package.
- **Data/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.
    - Run the report in **HTML** 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 all web browser tabs.

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.

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Unit 2 Create list reports

IBM Training

Create list reports

IBM Cognos Analytics (v11.0)

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IBM Training

Unit objectives

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

Create list reports

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Unit objectives

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IBM Training

Examine list reports

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

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

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Examine list reports

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IBM Training

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

Create list reports

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Group data

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

The list 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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IBM Training

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	***Retailer name***	Year
100003	*Universo Acampando*	2004
100009	*Sporting Goods Direct*	2004

Create list reports

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Format list columns

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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IBM Training

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
List Page Header →	*Sales Rep Performance by Country and City*			
Overall Header →	As requested by Tom Johnson			
	Austria	Wien	Jutta Shulz	29,274,108.98
			Sabine Grüner	32,895,343.27

Create list reports

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Include list headers and footers

List headers and footers can be placed:

- at the top or bottom of a list on each page
- 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.

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Demonstration and exercise start point information

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

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

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 the demonstration or exercise. 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 demonstration provided the start point information above, you would do the following nine steps before beginning the demonstration tasks (if you perform these steps, you will be ready to start Demonstration 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 web browser session.
2. In the **Address** box, type the portal address **http://vclassbase:9300/bi** and then press **Enter**.

   The IBM Cognos Analytics sign in window appears in a web browser tab, with a Sign in dialog box prompting for a User ID and Password. You will sign in 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 **Sign in**.

   The Welcome to IBM Cognos Analytics page displays, with options displayed in the side panel that are based on user permissions.

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4. Click **New**, and then click **Report**.

   The Reporting application is launched.

5. From the available templates, select **Blank**, and then click **OK**.

6. Click the circular plus symbol in the middle of the blank canvas, click the **List** template, and then click **OK**.

7. From the side panel, click **Data**, and then click **Add report data**.

8. Navigate to **Team content/Samples/Models/GO data warehouse (query**), and then click **Open**.

   The Data tab shows the package metadata. 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.

9. In the **Insertable Objects** pane of the **Source** tab, click the **Expand** button 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.

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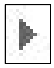
10. Click  to expand the **Sales (query)** namespace.

    The results appear as follows:

You have completed the start point preparation for the demonstration 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 may be different logins, packages, report types, and namespaces used for each demonstration and exercise in this course.

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

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IBM Training

Demonstration 1

Enhance a list report

Product type Sales and Revenue by Product

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

Create list reports

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Demonstration 1: Enhance a list report

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Demonstration 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.

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 the new list template:
   - **Products**: **Product line**, **Product type**, **Product**
   - **Retailer type**: **Retailer type**
   - **Sales fact**: **Quantity, Revenue**

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

2. From the **Application** bar, click **Run options**, and then click **Run HTML**.
   A new web browser tab opens with the rendered report.

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3. Click on the **Bottom** navigation button found on the lower left of the page to view the final rows of the report, noting there is no summary data.

   Due to the complexity of the final report, you will not include any summary row in your final report. This will make it easier for the consumer to review the data.
4. Close the rendered report tab and return to the report authoring work area tab.

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

1. In the list data container, Ctrl-click the **<Product line>**, **<Product type>** and **<Product>** list column bodies, and then from the **List** toolbar, click **Group / Ungroup** .

   Results appear as follows:

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

2. Click the **<Product type>** list column body.
3. Open the **Properties** pane, and then under **DATA**, click **Group span**.
4. From the list, click **Product**.
5. Close the **Properties** pane.
6. On the side panel, click **Toolbox** , and then drag a **Block** to the left of the list container.
7. Drag a **Text item** inside the Block object that you just placed.
8. In the Text dialog box, type **Product type Sales and Revenue by Product**, and then click **OK**.
9. Click the title text, and from the **Font** list, click **Arial Black**.

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10. Change the font size to **16pt**, and then click **Underline** U.

<u>Product type Sales and Revenue by Product</u>

Product line	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>
<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>

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

<u>Product type Sales and Revenue by Product</u>

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
	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

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

12. Close the rendered report tab.

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

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

1. Click the list data container to select it, and then from the container toolbar, click **Headers & footers** .
2. Click **List headers & footers**.
3. Select **List page header** and **Overall header**, and then click **OK**.
4. In the list data container, double-click **List page header**.
5. In the **Text** box, replace the default text with **Revenue by Retailer type**, and then click **OK**.
6. With the list page header still selected, on the toolbar click **More** , point to **Style**, and then click **Font**.
7. In the **Font** dialog box, change Family to **Arial Black**, change Size to **12 pt**., and then click **OK**.
8. In the list data container, double-click **Overall**.
9. In the **Text** box, replace the default text with **Attention: Sales Managers**, and then click **OK**.
10. In the list data container, click the **<Product line>** list column body.
11. 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".

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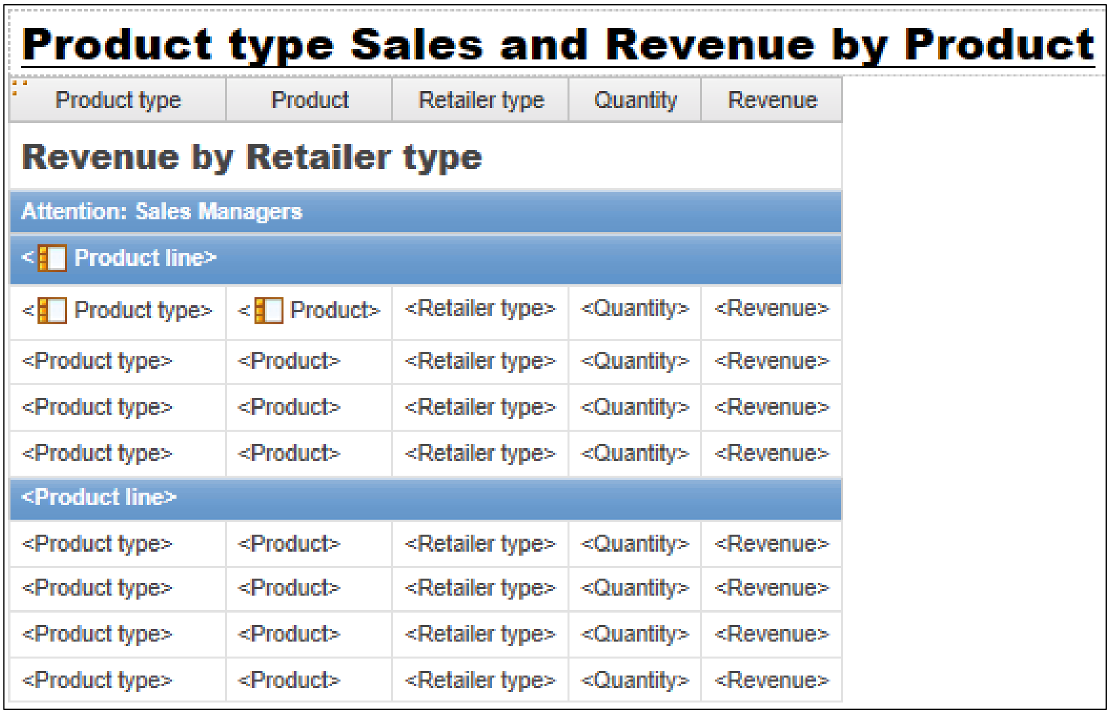
12. With the **<Product line>** list column body still selected, press the **Delete** key to remove the redundant column.

    Results appear as follows:

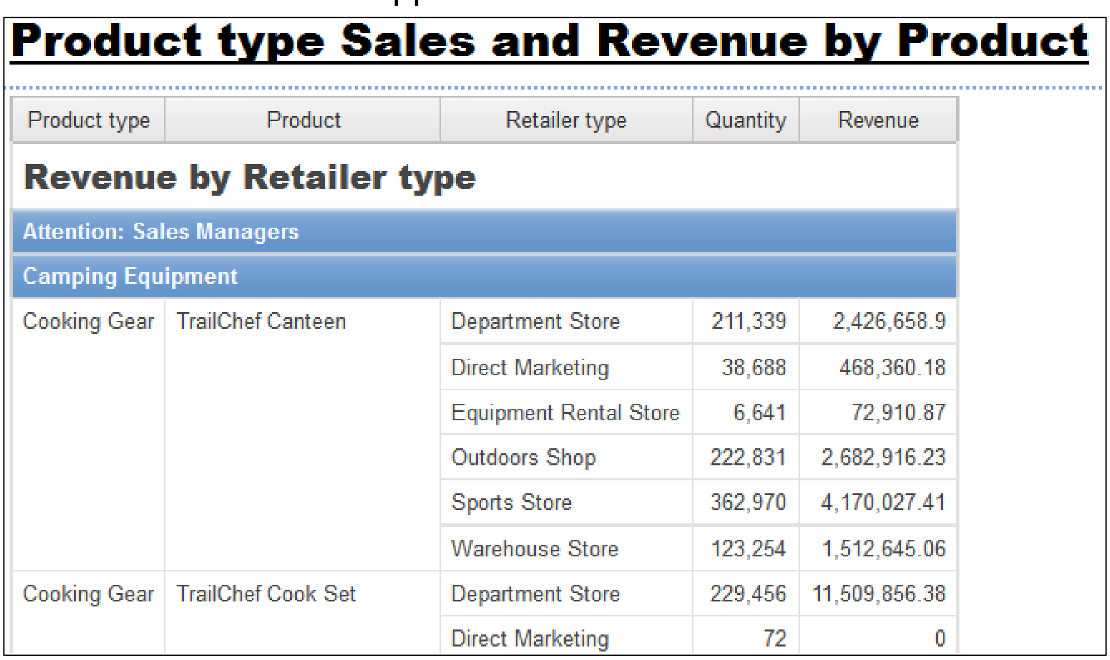


Product type Sales and Revenue by Product

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>				
<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>

13. Run the report in **HTML**.

    A section of the results appear as follows:



Product type Sales and Revenue by Product

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

14. Close the rendered report tab.

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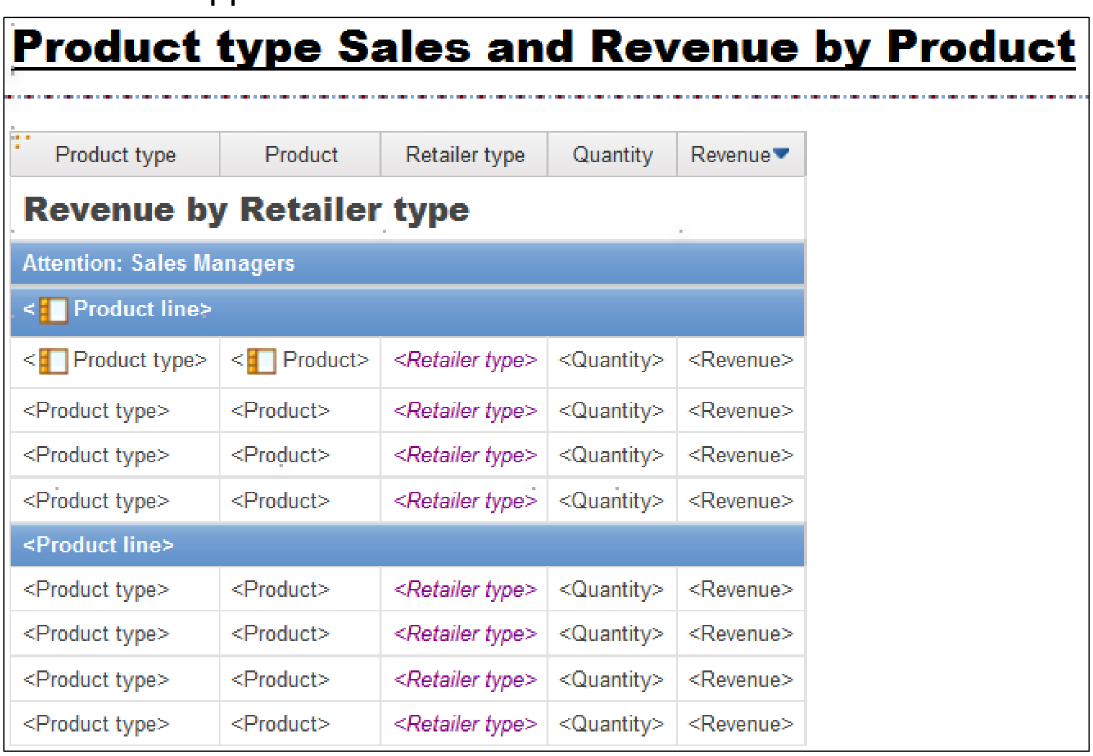
Task 4. Format and sort a column.

1. In the list data container, click **<Revenue>**.
2. On the List toolbar, click **Sort**, and then click **Descending**.
   When a column is sorted the Sort icon appears in the list column title cell Revenue.
3. With the **<Revenue>** list column body still selected, on the List toolbar, click **More**, point to **Style**, and then click **Data format**.
4. In the **Data format** dialog box, under **Format type**, select **Currency**.
5. Under **Properties**, click **Currency**.
6. From the list, select **$ (USD) United States of America, dollar**, and then click **OK**.

Task 5. Format the list column body.

1. Click the **<Retailer type>** list column body.
2. On the List toolbar, click **More**.
3. Point to **Style**, click **Font**, change Family to **Arial**, and then change **Style** to **Italic**.
4. Click **Foreground Color**, click **Purple**, click **OK**, and then click **OK** again.
   The font properties are applied to the body cells in the Retailer type column.
   The results appear as follows:



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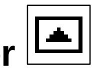
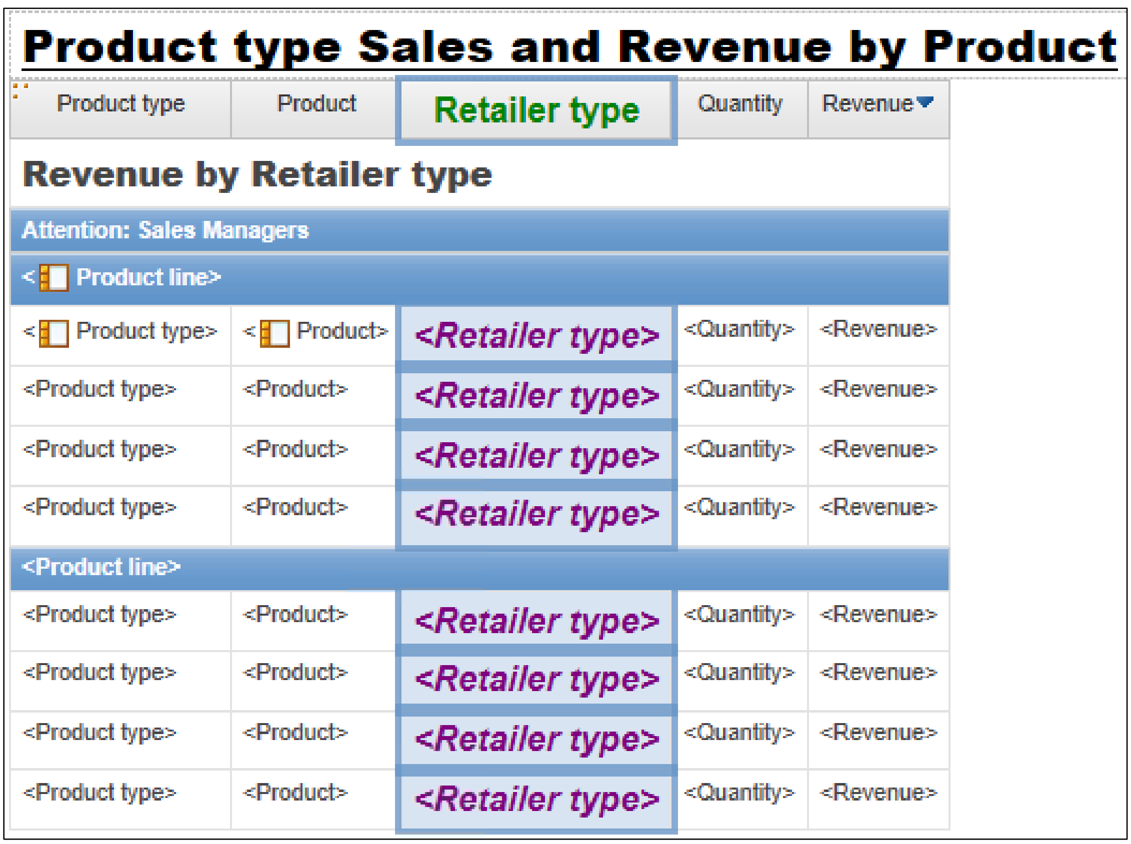
Task 6. Format an entire column.

1. With **<Retailer type>** list column body still selected, from the **Application** bar, click **Show properties**.
2. On the **Properties** pane title bar, click **Select Ancestor** , and then click **List column**.
3. In the **Properties** pane, under **FONT & TEXT**, double-click the **Font** property; change the properties to **Arial**, **12pt**, **Bold**, and then change the **Foreground Color** to **Green**.
4. Click **OK** to close the **Foreground Color** dialog box, and then click **OK** to close the **Font** dialog box.

   The results appear as follows:



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

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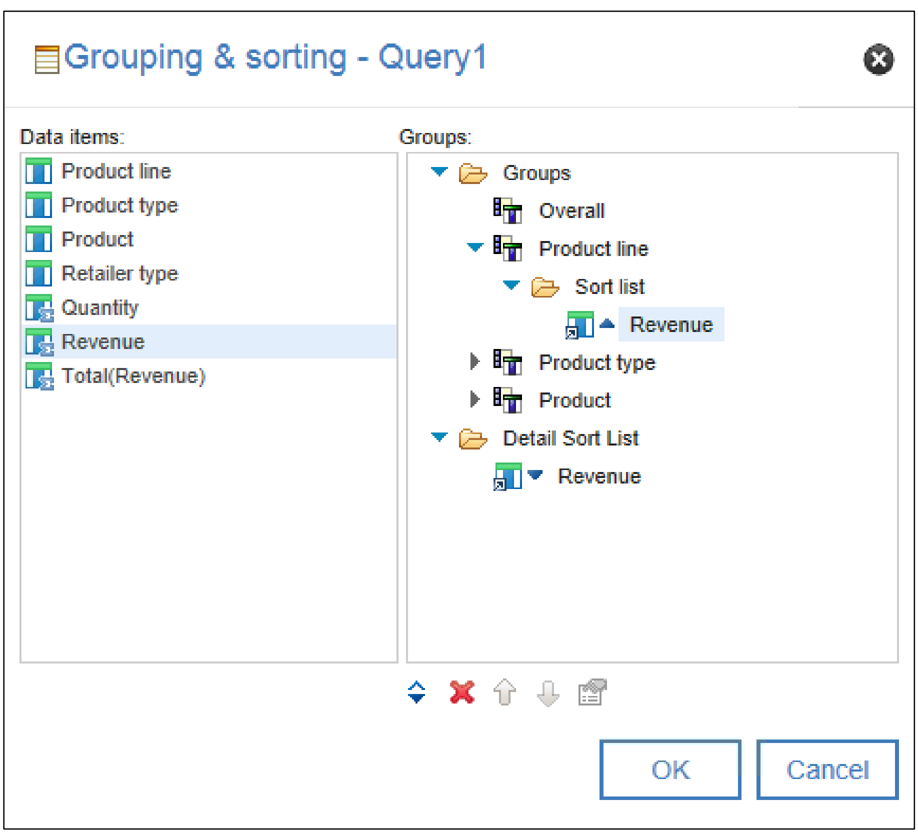
Task 7. Sort the Product line column by the Revenue generated.

1. Click the **<Revenue>** list column body, on the list 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.

   You may need to click Esc to clear the list toolbar so that you can see the list column headers.
3. On the **Application** bar, click **Show properties**, if it isn't already displayed.
4. 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.
5. In the **Groups** pane, expand **Product line**, and then from the **Data items** pane, drag **Revenue** onto 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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6. Click **OK**, and then, on the **Application** bar, run the report in **HTML**.

   A section of the results appear as follows:

   Product type Sales and Revenue by Product

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

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

7. Close the rendered report tab.
8. On the **Application** bar, close the **Properties** pane.
9. Return back to the **Welcome** screen.

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.

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IBM Training

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

Create list reports

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Understand fact/measure data

Show minimum, maximum, average, total, count, or calclated 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.

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IBM Training

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		22,839,550.23
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		33,536,672.69

Auto group and summarize set to 'No'

Employee name	Product line	Revenue
Alberto Pera	Camping Equipment	68,039.79
	Camping Equipment	8,191.18
	Camping Equipment	15,315.3
	Camping Equipment	25,833.6
	Camping Equipment	22,866.3
	Camping Equipment	90,874.08
	Camping Equipment	85,039.05
	Camping Equipment	35,438.94
	Camping Equipment	10,418.34
	Camping Equipment	10,142.1

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Understand aggregate data

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

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 Summary set to No.

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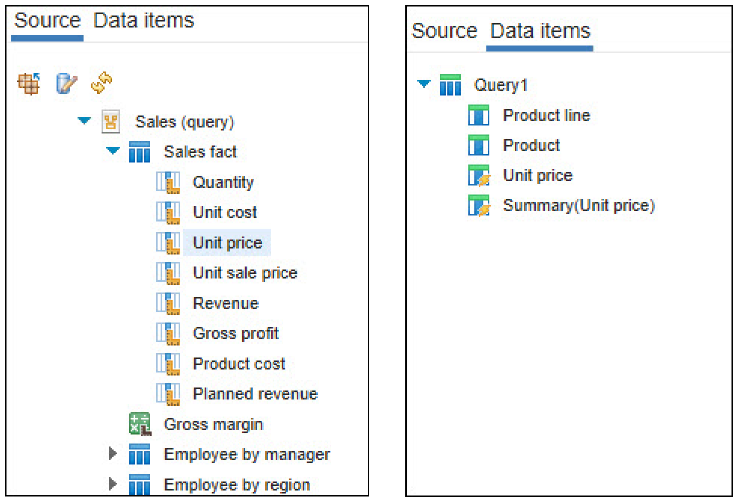
IBM Training

Understand difference in aggregation

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



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Understand difference in aggregation

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

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

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

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IBM Training

Demonstration 2

Explore data aggregation

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

Create list reports

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Demonstration 2: Explore data aggregation

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Demonstration 2: Explore data aggregation

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

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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. On the side panel, click **New > Report**.
2. Add the following query items to a new list template, using the **GO data warehouse (query)** package:
   - Products: **Product line**
   - Order method: **Order method type**
   - Sales fact: **Revenue**

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

3. On the side panel, click **Navigate**, click the **Query explorer** tab, and then under **Queries**, click **Query1**.

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

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4. In the **Data Items** pane, click **Revenue,** and then click **Show properties** from the **Application** bar.

   In the Properties pane notice that the Detail aggregation property 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 Summary aggregation, Detail property for Revenue is set to Automatic.

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

   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

6. You can examine the revenue generated by each product line using each order method.
7. Close the rendered report tab.

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

You would like to review the amount of revenue generated by each order made using 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. Verify that **Query1** is selected.
2. From the **Properties** pane, under **DATA**, click the **Auto group & summarize** property, and then change it to **No**.

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

   A section of the results appears as shown below:

Product line	Order method type	Revenue
Golf Equipment	Telephone	10,469.76
Golf Equipment	Telephone	41,958.76
Golf Equipment	Telephone	35,949.86
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 the rendered report tab.
5. From the **Properties** pane for **Query1**, click the **Auto group & summarize** property, and then change it back to **Yes**.

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

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

1. On the **Content** pane, click **Page explorer** , and then click **Page1**.
2. In the list, click the **<Revenue>** list column body, and then under **DATA** in the **Properties** pane, double-click **Data format**.
3. Change the **Format type** to **Currency**.
4. Change the **Currency** property to **USD - United States of America, dollar**, and then click **OK**.

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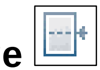
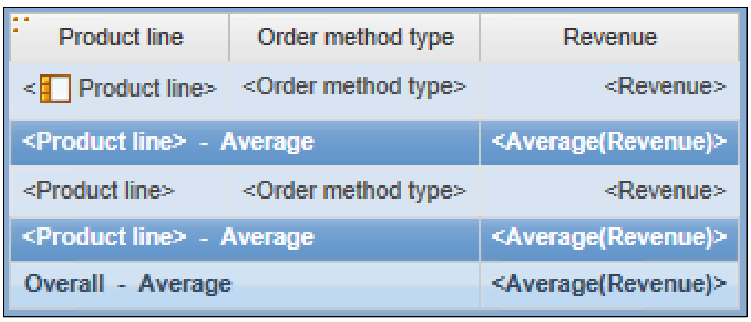
5. In the list, click the **<Product line>** list column body, and then on the container toolbar, click **Group / Ungroup**.

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

6. In the list, click the **<Revenue>** list column body.

7. On the container toolbar, click **Summarize**, and then click **Average** .

   A section of the results appears as shown below:



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

8. On the **Content** pane, click the **Query explorer** tab.

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

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

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

    A section of the results 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		**$227,005,237.72**
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		**$103,773,052.56**

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

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

11. Close the rendered report tab.

Task 4. View tabular data.

1. Click **Query1**.
2. Right-click the **Query Explorer** content pane, and then click **View Tabular Data**.
3. Click **OK** to the warning message.

   Notice that although you grouped the Product line data item in the report layout, in the tabular data retrieved for the query, product line data is still ungrouped. This option retrieves the data without any grouping or formatting.
4. Close the rendered report tab.
5. Return back to the **Welcome** page.

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.

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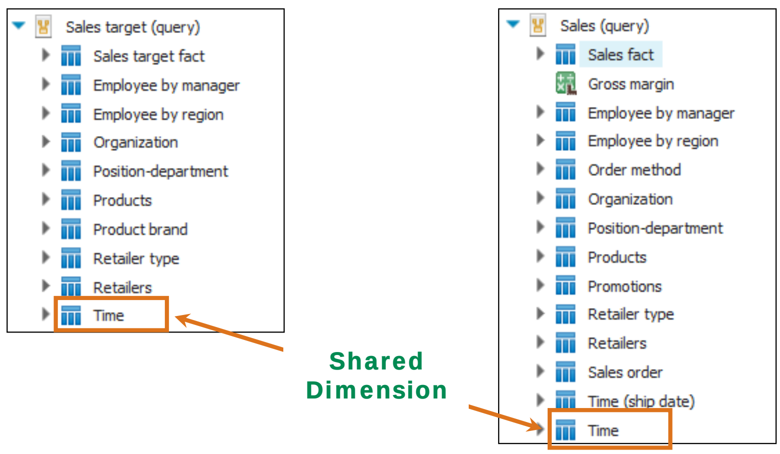
IBM Training

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.



Create list reports

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Use shared dimensions to create multi-fact queries

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

Shared dimensions are also known as conformed dimensions.

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

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IBM Training

Demonstration 3

Create a multi-fact query in a list report

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

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Demonstration 3: Create a multi-fact query in a list report

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Demonstration 3: Create a multi-fact query in a list report

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

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content/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 data container, using the **GO data warehouse (query)** package:
   - Sales (query)/Sales fact: **Revenue**
   - Sales target (query)/Sales target fact: **Sales target**
2. On the **Application** bar, run the report in **HTML**.

   The results appears 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 the rendered report tab.

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Task 2. Add context to the list.

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

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

   The results appear as follows:

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

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

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

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

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.

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3. Under **Sales (query)**, expand **Time**, and then drag **Year** to the beginning of the list.
4. On the **Application** bar, run the report in **HTML**.

   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 the rendered report tab.

Task 4. Delete a query item from the list report.

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

1. In the list, click on the **Year (close date)** list column body, on the list toolbar, click **More**, and then click **Delete**.
2. Run the report in **HTML**.

   The results appear as shown below:

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

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

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3. Close the rendered report tab.
4. Leave the reporting tab open for the next demonstration.

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

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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 2 Address line 3	Address line 1 Address line 2 Address line 3
Address line 1 Address line 2 Address line 3	Address line 1 Address line 2 Address line 3

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Add repeated information to reports

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

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

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IBM Training

Demonstration 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** 789 Yonge Street Toronto Ontario M2M 4K8 Canada	**Canada** 7800, 756 - 6th Avenue. S.W. Calgary Alberta T2P 3Z0 Canada

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Demonstration 4: Create a mailing list report

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Demonstration 4: Create a mailing list report

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

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content/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 side panel, select **New > Report**.
2. Double-click the **Repeater table** template.
3. Open the **GO data warehouse (query)** package.
4. From the **Toolbox** , expand **LAYOUT**.
5. Drag a **Table** data container to the **Repeater table** drop zone, at the top of the work area.

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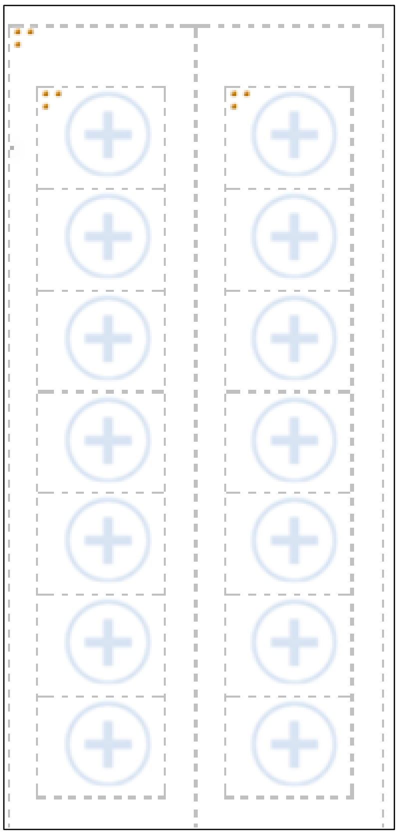
6. In the **Insert table** dialog box, change the number of columns to **1**, the number of rows to **7**, and then click **OK**.

   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.

   A section of the results appears as follows:



Task 2. Add items to the tables.

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

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

   A section of the results appear as follows:

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

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

1. Click the **<Country>** item at the top of one of the tables, ensuring you select only the item and not the entire cell.

   All of the Country items at the top of each table are selected.
2. On the List toolbar, click **Sort**, and then click **Ascending**.

   A Sort Ascending icon appears beside the Country item in the first table.
3. With the **<Country>** item still selected, from the toolbar expand the **Size** list, and then select **12 pt**.
4. From the toolbar, click **Bold**.

   The <Country> items appear in bold, black text.

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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 the **Across** property to a value of **3**, change **Down** to **4**, and then press **Enter**.
3. In the **Properties** pane, under **POSITIONING** (you may need to scroll down), 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 (you should only see the tables selected, not the entire list).
5. In the **Properties** pane, under the **BOX** section, double-click **Margin**.
6. In the **Right margin** and **Top margin** text boxes, type **10**, and then click **OK**.

   This adds the appropriate space for the printed labels.
7. On the **Application** toolbar, run the report in **PDF**.

   PDF would be the appropriate run output for mailing labels.

   A section of the results appear as follows:

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** 789 Yonge Street Toronto Ontario M2M 4K8 Canada	**Canada** 7800, 756 - 6th Avenue. S.W. Calgary Alberta T2P 3Z0 Canada

8. Close the rendered report tab.
9. Leave report authoring tab open for the exercise.

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.

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IBM Training

Unit summary

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

Create list reports

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Unit summary

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IBM Training

Exercise 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**

Create list reports

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Exercise 1: Create and format a list report

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Exercise 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 exercise results, refer to the Tasks and Results section that follows. If you need more information to complete a task, refer to earlier demonstrations for detailed steps.

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Exercise 1: Tasks and results

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

- Side panel: Open a new list report template using the **GO data warehouse (query)** package.
- **Data 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.
- **List 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>

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Task 2. Format and summarize the list report.

- **Change** the report title to "**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**

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

- Close the rendered report tab.
- Sign out of **IBM Cognos Analytics**, and then close the browser.

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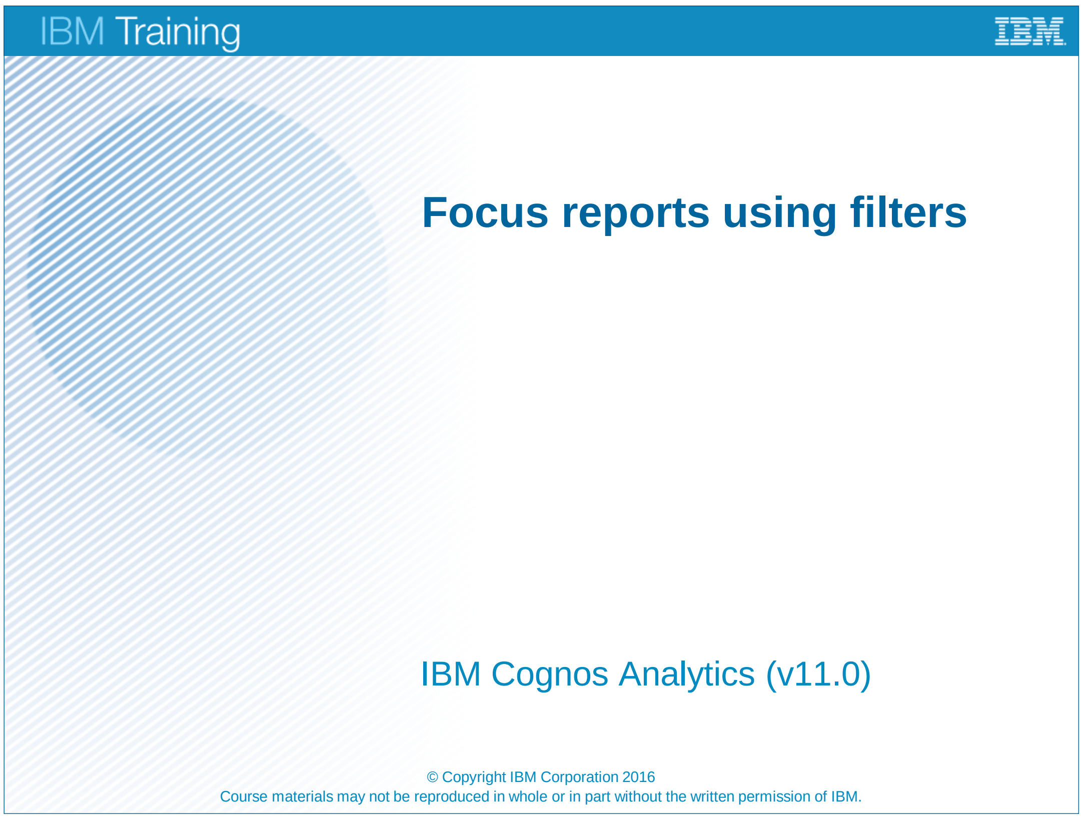
Unit 3 Focus reports using filters



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IBM Training

Unit objectives

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

Focus reports using filters

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Unit objectives

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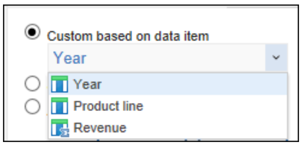
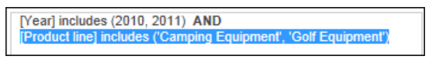
IBM Training

Create filters

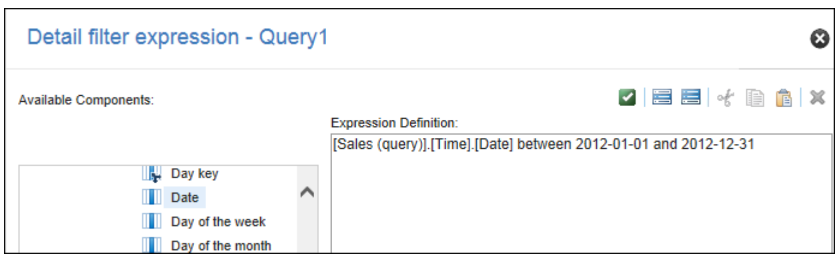
- To narrow the focus of your report, you can create a filter expression in three different ways:



Custom based on data item



Combined



Advanced

Focus reports using filters

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Create filters

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IBM Training

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

Focus reports using filters

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Filter your data with advanced detail filters

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

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

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

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IBM Training

Demonstration 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**
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**

Focus reports using filters

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Demonstration 1: Apply filters to a report

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Demonstration 1: Apply filters to a report

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

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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>
<Country>	<City>	<First name>	<Last name>	<Position name>	<Revenue>
<Country>	<City>	<First name>	<Last name>	<Position name>	<Revenue>

2. Ctrl-click **<Country>** and **<City>**, and then on the list toolbar, click **Group / Ungroup**.
3. Click **<Country>**, on the list toolbar click **Headers & footers**, and then click **Create header**.
4. With **<Country>** still selected, press the **Delete** key to delete the redundant **<Country>** list column body.

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5. Click the **<Revenue>** list column body, on the list toolbar click **Summarize**, and then click **Total**.
6. Click the **<Revenue>** list column body, on the list toolbar click **Sort**, and then click **Descending**.
7. Run the report in **HTML**.

   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 rendered report tab.

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

1. Select the list data container by clicking in the upper left corner of the list.
2. On the list 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.
3. With the **Detail Filters** tab selected, click **Add**, click **Advanced**, and then click **OK**.
4. Under **Available Components**, from the **Source** tab, expand **Sales and Marketing (query)**, expand **Sales (query)**, and then expand **Time**.

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5. Create and validate the following expression. (using the Hint outlined below, you can create the expression differently):

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

   Hint:

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

6. Click **OK** to close the **Detail filter expression** dialog box, and then click **OK** to close the **Filters - Query1** dialog box.
7. Run the report in **HTML**.
8. 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.

9. Close the rendered report tab.

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

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

1. Select the list data container, on the list 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**.

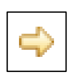
3. In the **Values** section, ensure that **Specific values** is selected from the list.

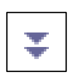
   Text pattern matching is also available and includes:

   - 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** pane.

6. Click **Page down** , click **Spain**, and then add it into the **Selected values** pane.

7. Click **OK** to close the **Filter condition** dialog box, and then click **OK** to close the **Filters** dialog box.

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8. Run the report in **HTML**.

   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.

9. Close the rendered report tab.
10. Leave the report authoring tab open for the next demonstration.

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

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IBM Training

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.

Focus reports using filters

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Determine when to apply a filter with aggregation

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

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IBM Training

Demonstration 2

Apply a detail filter on fact data in a report

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

Focus reports using filters

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

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Demonstration 2:
Apply a detail filter on fact data in 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://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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:
   - Products: Product line, Product type
   - Sales fact: Revenue

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

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**.

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4. Run the report in **HTML**.

   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 the rendered report tab.
6. On the **Side panel**, click **Navigate**, click the **Query explorer** tab, and then click **Query1**.
7. In the **Data Items** pane, click **Revenue**, and then click **Show properties** from the **Application** bar.

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

8. On the content pane, click **Queries**, 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.

9. In the **Properties** pane, click the **Auto group & summarize** property, and then select **No** from the list.

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

    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
	Sleeping Bags	22,737.78

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

11. Close the rendered report tab.

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

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

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

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8. Run the report in **HTML**.

   A section of the results appear 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.

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

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

10. Close the rendered report tab.
11. Click the **Query explorer** tab, and then click **Query 1**.

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

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

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

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

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

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

1. On the **Query explore** tab, click **Queries**, and then in the work area, click **Query 1**.
2. In the **Properties** pane, under **DATA**, change the **Auto group & summarize** property to **Yes**.

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

   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 the rendered report tab.

Task 4. Apply a detail filter after auto aggregation.

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

1. Click the **Page Explorer** tab, and then click **Page1**.
2. Select the list data container, on the list toolbar click **Filters**, and then click **Edit Filters**.
3. Click **Add**, select **Revenue** from the **Custom based on data item** list, and then click **OK**.

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4. Ensure that the **Operator** is **>**, and then in the **Value** text box, type **10000000** (10 million).
5. Click **OK**, and then ensure that under the **Application** section, **After auto aggregation** has been selected.
6. Click **OK** to close the **Filters** dialog box.

Task 5. Observe the effects of the filters.

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

   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.
2. Close the rendered report tab.

   You have decide to include product types in the report even if the aggregated revenue generated by all sales of the product type is less than ten million dollars. However, in case you may want to use this filter in the future, you will disable this filter instead of deleting it.
3. Select the list data container.
4. On the toolbar, click **Filters**, and then click **Edit Filters**.
5. Click **Revenue > 10000000**, and then in the **Usage** area, click **Disabled**.
6. Click **OK** to close the dialog box.

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

   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.

8. Close the rendered report tab.
9. On the **Content** pane, click **Query explorer**, and then click **Query1**.

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

10. 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.

11. Leave the report authoring tab open for the next demonstration.

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

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IBM Training

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

Focus reports using filters

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Filter your data with summary filters

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

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

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

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IBM Training

Demonstration 3

Apply a summary filter to a report

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	272,835,984.18
	Lanterns	126,925,660.64
	Packs	351,880,402.84
	Sleeping Bags	309,172,888.35
	Tents	528,221,728.02
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

Focus reports using filters

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Demonstration 3: Apply a summary filter to a report

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Demonstration 3: Apply a summary filter to a report

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

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 using the **GO data warehouse (query)** package:
   - 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 list toolbar, click **Group / Ungroup**.
3. Click **<Revenue>** list column body, on the list toolbar, click **Summarize**, and then click **Total**.
4. Select the list data container, on the list 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**.

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8. Next to the **Scope**, field click the **ellipsis**.
9. Select **Product line**, click **OK** to close the **Scope** dialog box, and then click **OK** to close the **Filters** dialog box.
10. Run the report in **HTML**.

    The results appear as follows:

Product line	Product type	Revenue
Camping Equipment	Cooking Gear	272,835,984.18
	Lanterns	126,925,660.64
	Packs	351,880,402.84
	Sleeping Bags	309,172,888.35
	Tents	528,221,728.02
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.

Task 2. Navigate to the query explorer.

1. Close the rendered report tab.
2. On the side bar, click **Navigate**.
3. On the **Content** pane, click **Query explorer**, and then click **Query 1**.

    The summary filter you added appears in the Summary Filters pane.
4. On the **Application** bar, click **Show Properties**.
5. In the **Summary Filters** pane, click **[Total(Revenue)] > 1000000000**.

    In the Properties pane, the Scope property for this filter is set to Product line.
6. Leave the report authoring tab open for Exercise 1.

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

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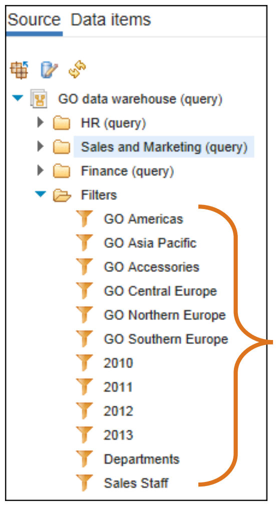
IBM Training

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.

Focus reports using filters

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Apply pre-defined source filters

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IBM Training

Unit summary

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

Focus reports using filters

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Unit summary

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IBM Training

Exercise 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

Focus reports using filters

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Exercise 1: Create a report focused on top performing product types and product lines

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Exercise 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 using the GO data warehouse (query) package/Sales and Marketing (query)/Sales (query).
  - Products: **Product line, Product type**
  - Sales fact: **Revenue**
- Group by **Product line**, Total on **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 $420 million.

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

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Exercise 1: Tasks and Results

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

- **Toolbar:** Open a new list template using the **GO data warehouse (query)** package.
- **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>
<Product line>	<Product type>	<Revenue>
<Product line>	<Product type>	<Revenue>

- **List Toolbar**: Group **<Product line>**.
- **List Toolbar**: Summarize/Total **<Revenue>**.

Product line	Product type	Revenue
<Product line>	<Product type>	<Revenue>
<Product line> - Total		<Total(Revenue)>
<Product line>	<Product type>	<Revenue>
<Product line> - Total		<Total(Revenue)>
Overall - Total		<Total(Revenue)>

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- Run the report in **HTML** and then observe the results for Product type and Revenue totals.

  A section of the results appear as follows:

Product line	Product type	Revenue
Camping Equipment	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
Mountaineering Equipment	Climbing Accessories	81,096,582.48
	Rope	114,426,644.73
	Safety	83,236,883.98
	Tools	130,900,021.71
Mountaineering Equipment - Total		409,660,132.9
Outdoor Protection	First Aid	12,429,699.12
	Insect Repellents	36,822,842.52
	Sunscreen	26,741,754.61
Outdoor Protection - Total		75,994,296.25
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		4,686,775,768.85

- Close the rendered report tab.

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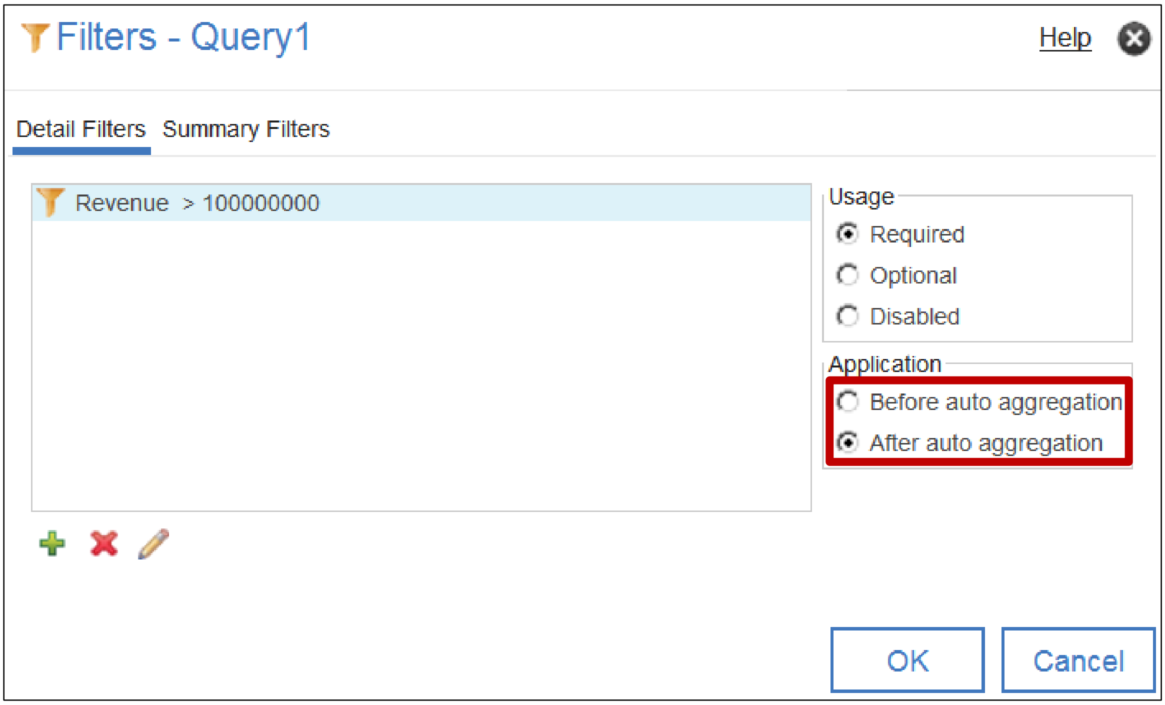
Task 2. Apply a detail filter on Revenue.

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

  The results appear as follows:



- Run the report in **HTML** and then compare to the previous run.

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Observe that most of the 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.

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	Irons	254,814,337.99
	Putters	106,184,271.37
	Woods	313,898,414.65
Golf Equipment - Total		**674,897,024.01**
Mountaineering Equipment	Rope	114,426,644.73
	Tools	130,900,021.71
Mountaineering Equipment - Total		**245,326,666.44**
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		**4,394,933,662.26**

- Close the rendered report tab.

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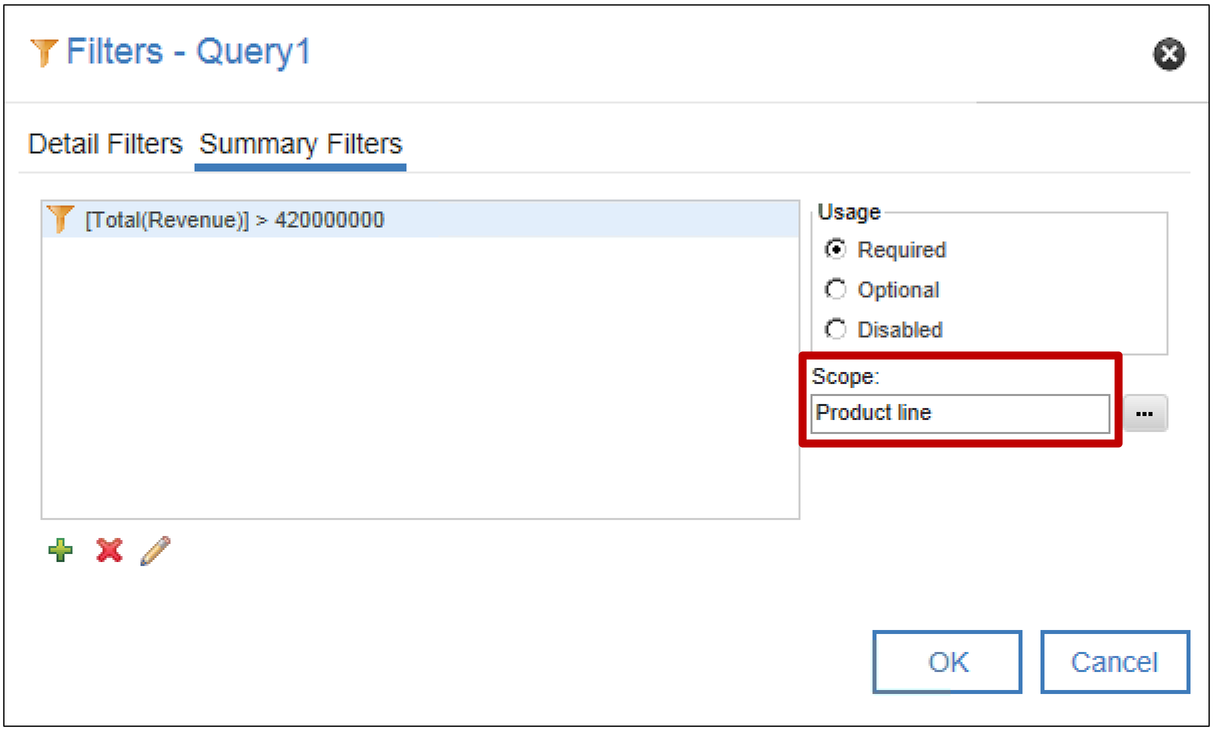
Task 3. Apply a summary filter on Total(Revenue).

- **List Toolbar**: Create a summary filter that shows generated revenue for each product line greater than $420,000,000.

  The results appear as follows:



- Run the report in **HTML**.

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Now with both the detailed and summary filters applied, you should see that only three product lines remain in the results queries. This includes only product lines that had an original summary over 420,000,000 and excluding any product types with revenue less than 100,000,000.

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**
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 rendered report tab.
- Close the browser.

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IBM Training

Create crosstab reports

IBM Cognos Analytics (v11.0)

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IBM Training

Unit objectives

- Format and sort crosstab reports
- Create complex crosstabs using drag and drop functionality
- Create crosstabs using unrelated data items

Create crosstab reports

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Unit objectives

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IBM Training

Create a crosstab report

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

Query Items

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

Measures

Create crosstab reports

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Create a crosstab report

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

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

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

Using crosstab drop zones, you can quickly create crosstabs using drag-and-drop functionality.

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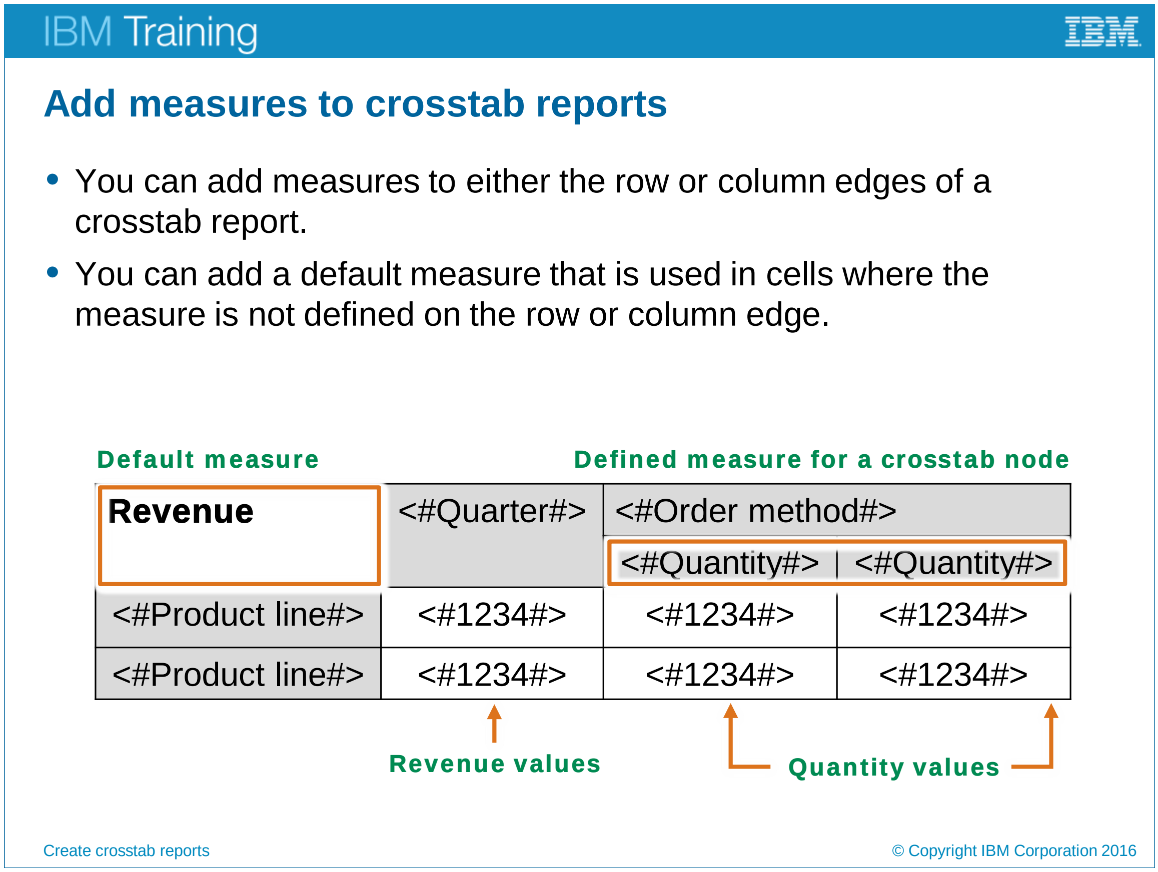

Add measures to crosstab reports

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

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

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

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IBM Training

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.

Create crosstab reports

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Data sources for crosstabs

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

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

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IBM Training

Demonstration 1

Create a simple crosstab report

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

Create crosstab reports

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Demonstration 1: Create a simple crosstab report

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Demonstration 1: Create a simple crosstab report

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

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal: **http://vclassbase:9300/bi**
User/Password: **brettonf/Education1**
Package: **Team content\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 using the **GO data warehouse (query)** package.
2. From the **Data/Source** tab, use the click and drag method to add the following query items to the new crosstab data container object:

   Rows:

   - Products: **Product line**

   Columns:

   - Order method**: Order method type**

   Measures:

   - Sales fact: **Revenue**

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

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

   The results appear as follows:

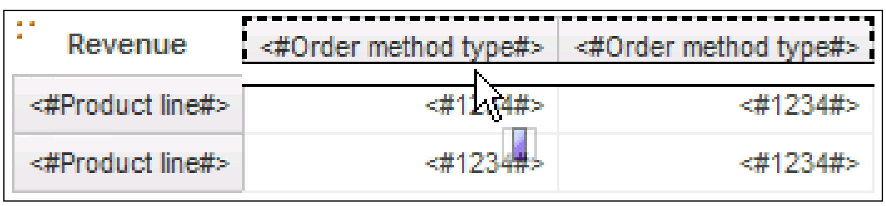
Revenue	E-mail	Fax	Mail	Sales visit	Special	Telephone	Web
Camping Equipment	75,899,094.63	23,054,398.48	21,348,644.09	168,611,961.87	12,388,989.44	153,894,892.13	1,133,838,683.39
Golf Equipment	47,933,933.16	15,241,303.27	12,693,287.48	39,240,918.73	4,964,762.97	78,730,112.65	527,607,049.63
Mountaineering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

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

4. Close the rendered report tab.

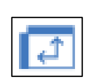
Task 2. Add Year to the crosstab report and sort on Year.

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



2. Click the **<#Year#>** column title.
3. From the list toolbar, click **Sort**, and then click **Ascending**.
4. Run the report in **HTML**.

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

5. Close the rendered report tab.
6. Select the entire crosstab.
7. On the toolbar, click **Swap Rows and Columns** .

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8. Run the report in **HTML**.

   A section of the results appear as follows:

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

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

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

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

10. Close the rendered report tab.
11. Leave the report authoring tab open for the next demonstration.

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

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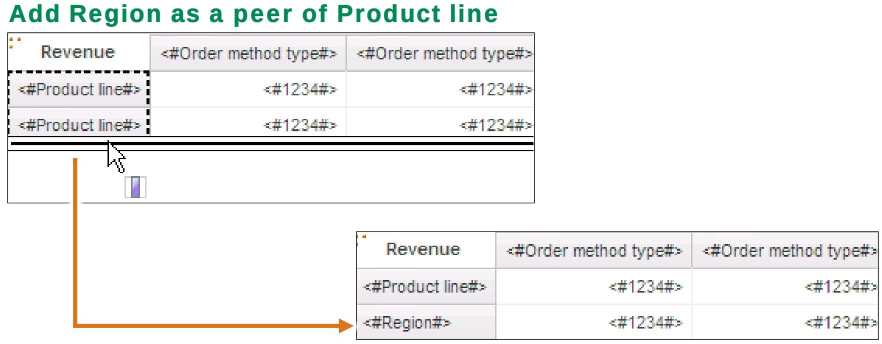
IBM Training

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



Create crosstab reports

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Create complex crosstab reports

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

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

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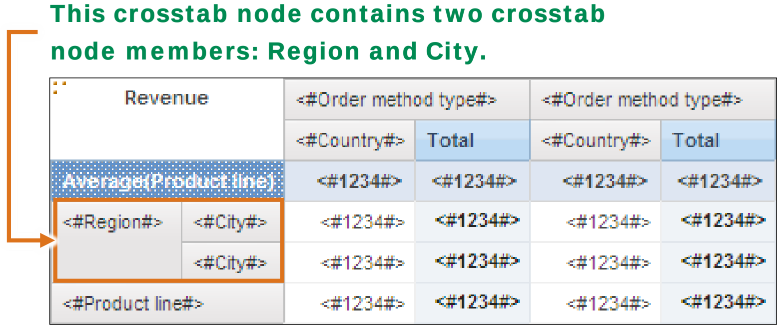
IBM Training

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.



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Create crosstab nodes and crosstab node members

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

Each crosstab node member refers to a data item.

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

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IBM Training

Demonstration 2

Create complex crosstab reports

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

Create crosstab reports

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Demonstration 2: Create complex crosstab reports

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Demonstration 2: Create complex crosstab reports

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

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\Samples\Models\GO data warehouse (query)**
Report Type:	**Crosstab**
Folder:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Create a crosstab report.

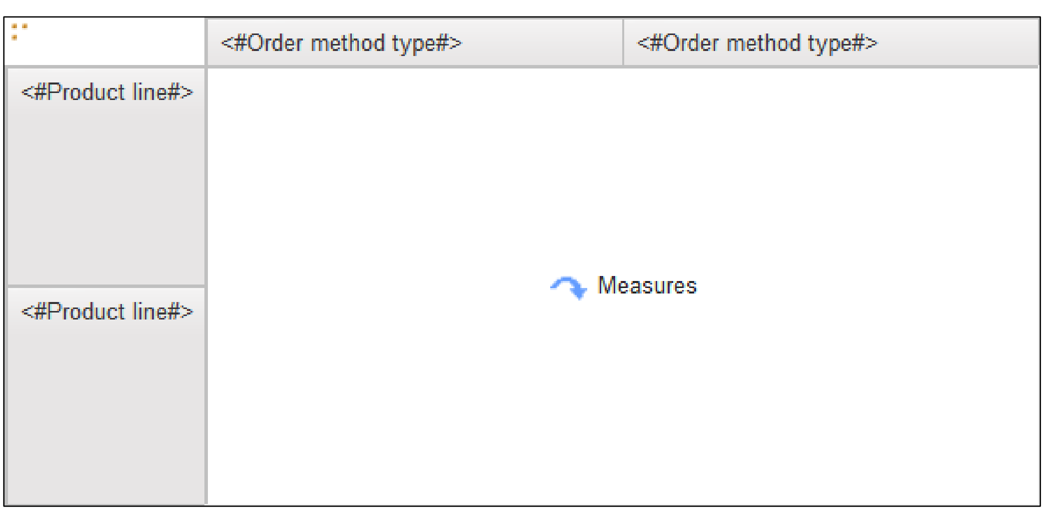
1. Open a new **Crosstab** template using the **GO data warehouse (query)** package.
2. From the **Data/Source** tab, add the following query items to the new crosstab report object:

   Rows:

   - Products: **Product line**

   Columns:

   - Order method: **Order method type**



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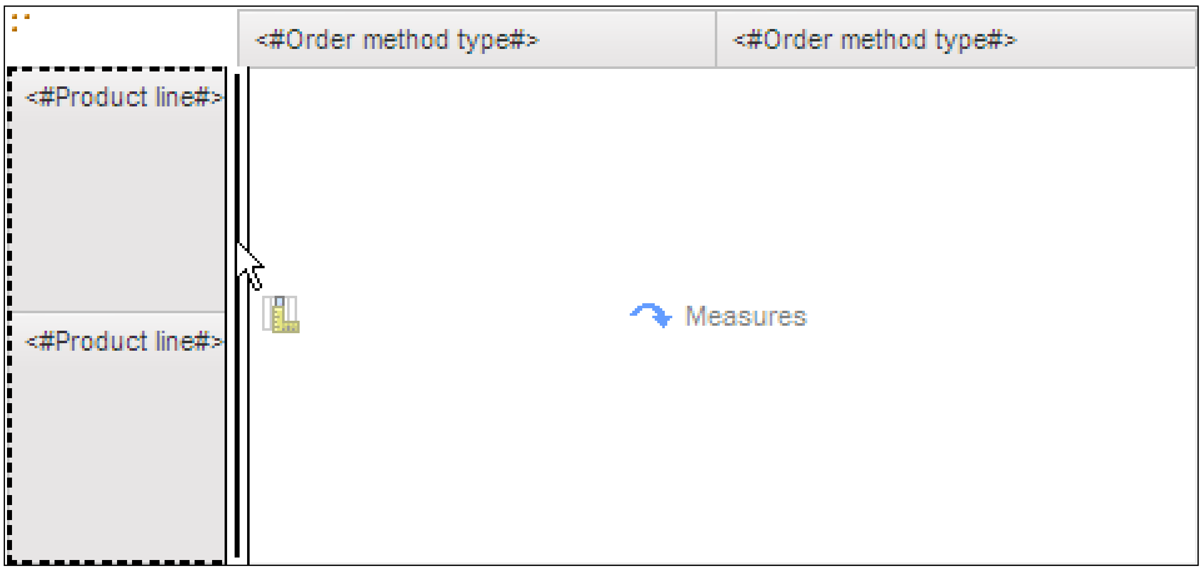
Task 2. Nest on a crosstab edge.

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.

1. 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.

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

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

A section of the results appear as follows:

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

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

4. Close the rendered report tab.

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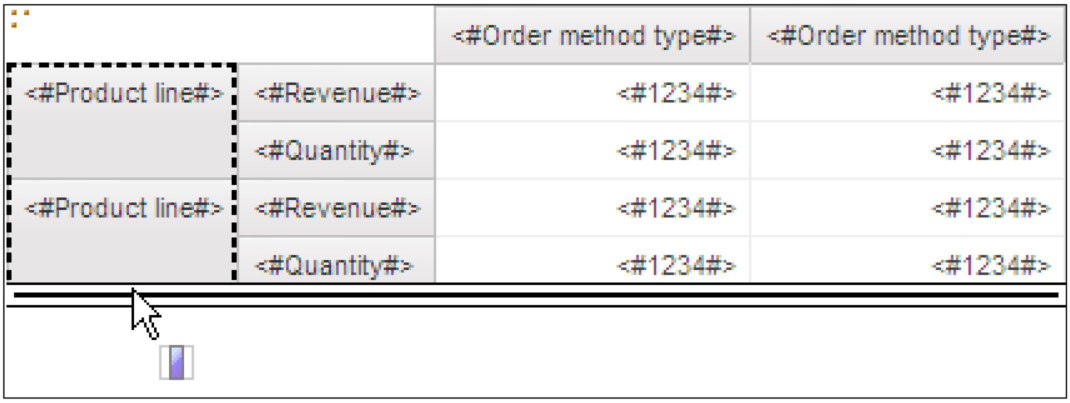
Task 3. Add items as peers on a crosstab edge.

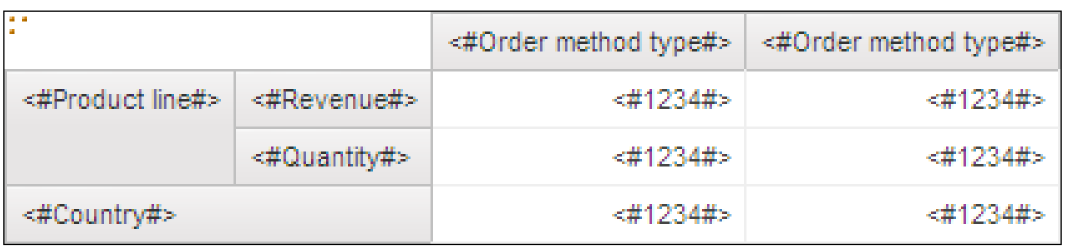
You are also interested in how revenue generated by different order methods varies from country to country.

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



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

The results appear as follows:



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

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

The results appear as follows:

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

Revenue is nested within the Country rows of the crosstab.

The results appear as follows:

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

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

A section of the results appear as follows:

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

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

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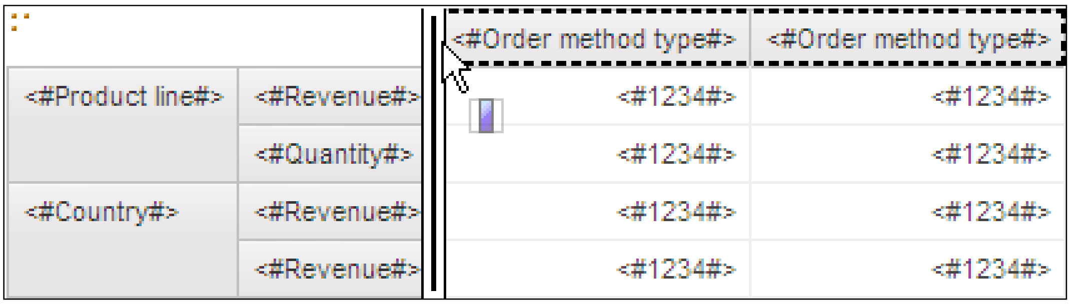
4. Close the rendered report tab.

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

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

   The results appear as follows:



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

   The results appear as follows:

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

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8. Run the report in **HTML**.

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

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

9. Close the rendered report tab.
10. Leave the report authoring tab open for the next demonstration.

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

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IBM Training

Format crosstab reports

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

Gross Profit	2011
Personal Accessories	**186,535,159.07**
Asia Pacific	***118,203,277.67***

Bold, Blue

Bold, Italic, and Green

No formatting applied

Formatting applied to Crosstab Fact Cells

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Format crosstab reports

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IBM Training

Add unrelated items to crosstabs edges

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

Node Nodes

Node

Nodes

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

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Add unrelated items to crosstabs edges

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

If you want items on the edges of your crosstab to be discontinuous (contain different nested items), you can turn on the 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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IBM Training

Demonstration 3

Sort and format a crosstab report

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

Create crosstab reports

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Demonstration 3: Sort and format a crosstab report

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Demonstration 3: Sort and format a crosstab report

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

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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, using the **GO data warehouse (query)** package.
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**

   Measures:

   - Sales fact: **Revenue**

   The results appear as follows:

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

3. Click **<#Year#>**.

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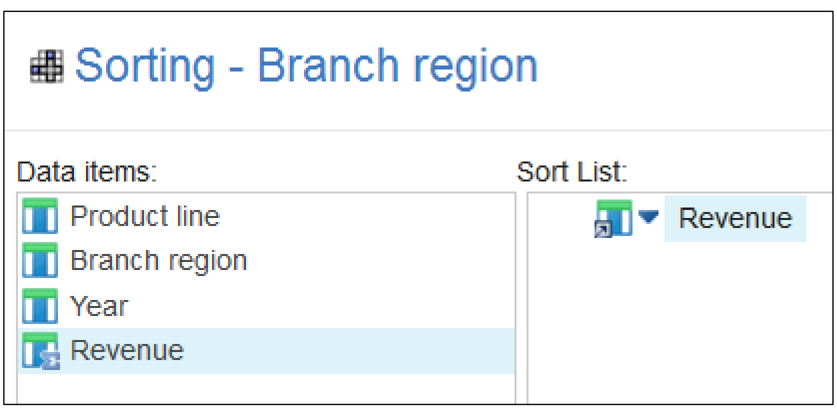
4. On the list toolbar, click **Sort**, and then click **Ascending**.
5. Click**<#Product line#>**.
6. On the toolbar, click **Sort**, and then click **Ascending**.

Task 2. Format the crosstab and perform advanced sorting.

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

   The results appear as follows:



10. Click **OK**.
11. Click **<#Year#>**.
12. On the list toolbar, click **Summarize**, and then click **Total**.

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Task 3. Add aggregate data to the crosstab.

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

   The results appear as follows:

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

2. Click **<#Product type#>**.
3. On the toolbar, click **Summarize**, and then click **Total**.
4. In the list report, under **<#Product type#>**, click **Total**.
5. In the **Properties** pane, under **TEXT SOURCE**, click the **Source type** property, and then from the list, select **Data item value**.
6. Run the report in **HTML**.
7. Click **Page down** to view the rest of the report.

   A section of the results appear as follows:

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

8. Close the rendered report tab.

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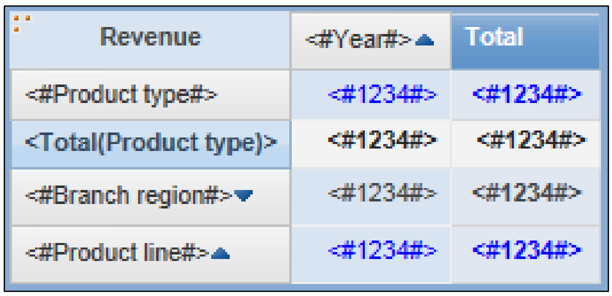
Task 4. Examine crosstab nodes and crosstab node members.

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

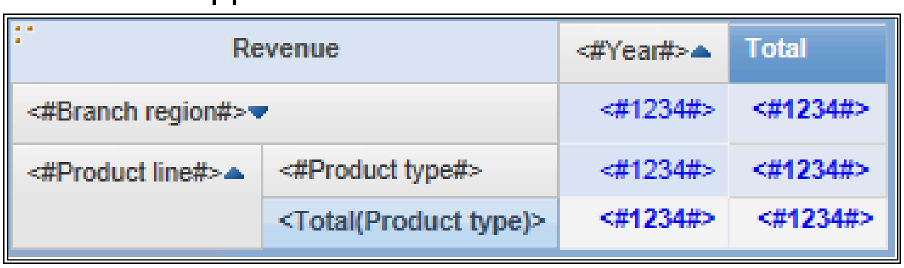
   The results appear as follows:



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

2. On the toolbar, click **Undo**.
3. Click the **<#Branch region#>** row and drag it above the **<#Product line#>** row.

   The results appear as follows:



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

4. Close the **Properties** pane.
5. Leave the report authoring tab open for the exercise.

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

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IBM Training

Unit summary

- Format and sort crosstab reports
- Create complex crosstabs using drag and drop functionality
- Create crosstabs using unrelated data items

Create crosstab reports

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Unit summary

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IBM Training

Exercise 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

Create crosstab reports

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Exercise 1: Present unrelated items in a crosstab using a discontinuous crosstab

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Exercise 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 exercise results, refer to the Tasks and Results section that follows. If you need more information to complete a task, refer to earlier demonstrations for detailed steps.

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Exercise 1: Tasks and Results

Task 1. Create a discontinuous crosstab.

- **Toolbar**: Open a new Crosstab template using the **GO data warehouse (query)** package.
- **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.

  Results appear as follows:

		<#Branch region#>▲		<#Branch region#>	
		<#Revenue#>	<#Quantity#>	<#Revenue#>	<#Quantity#>
<#Product line#>▲		<#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**.

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- Run the report in **HTML**.

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	13,816,863.89	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	1,163,992	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 the rendered report tab.
- Sign out of **IBM Cognos Analytics**.
- 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 create 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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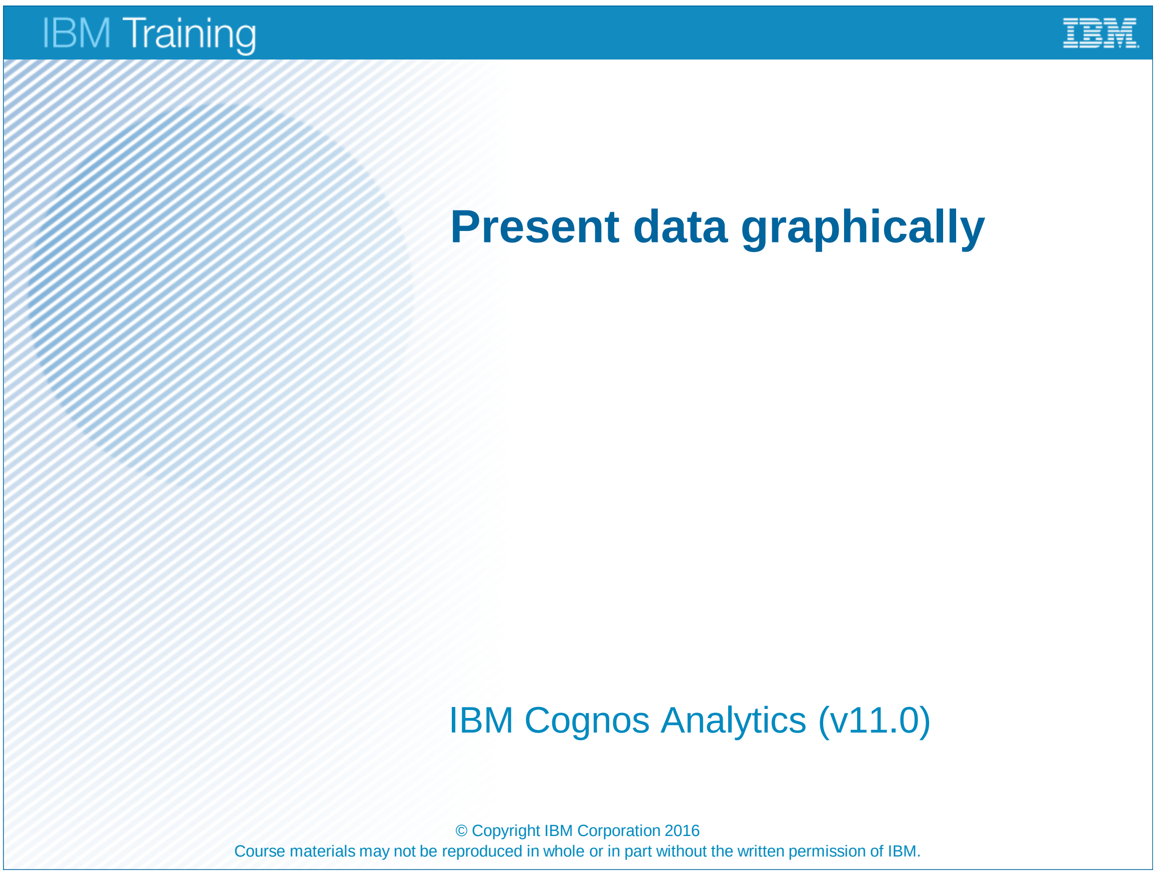

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IBM Training

Unit objectives

- Create charts containing peer and nested columns
- Present data using different chart type options
- Add context to charts
- Create and reuse custom chart palettes
- Introduce visualizations
- Present key data in a single dashboard report

Present data graphically

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Unit objectives

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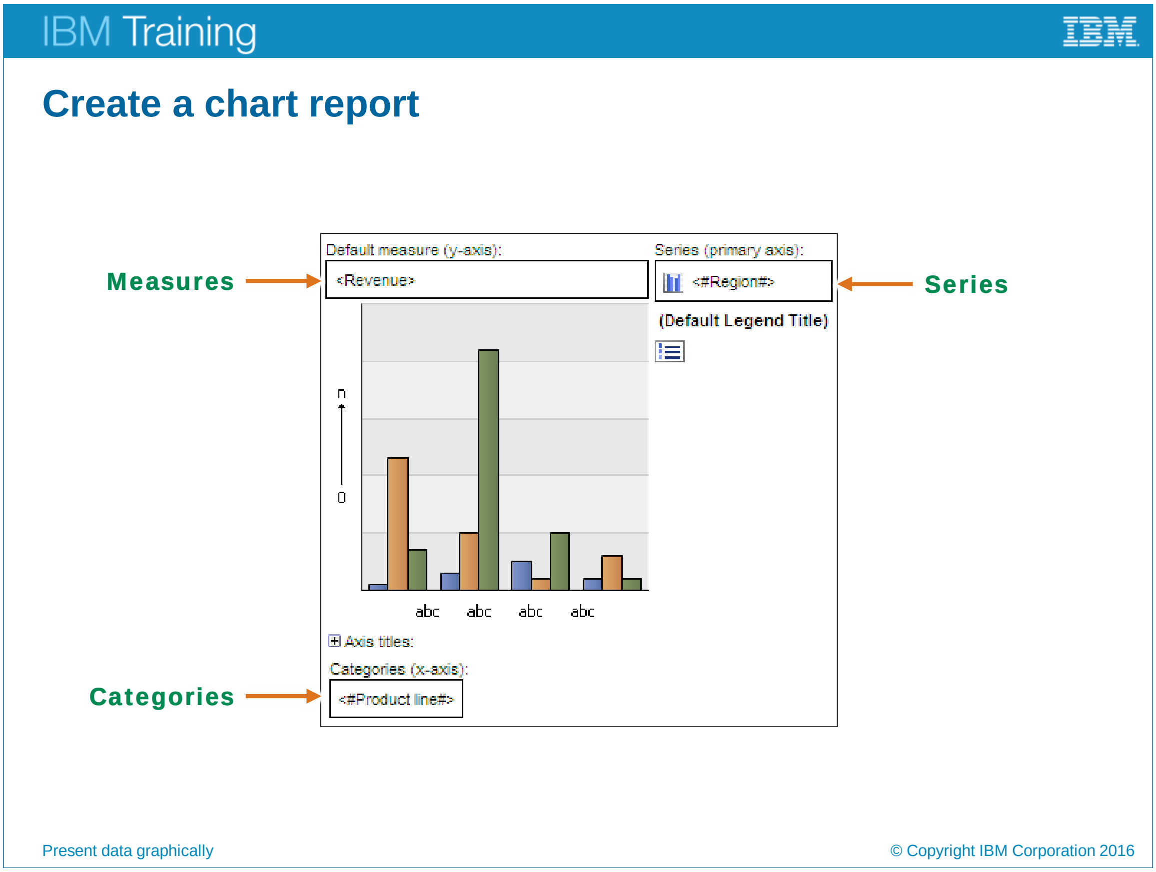

Create a chart report

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 Analytics v11 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.

Visualizations are also available in this released version of IBM Cognos Analytics.

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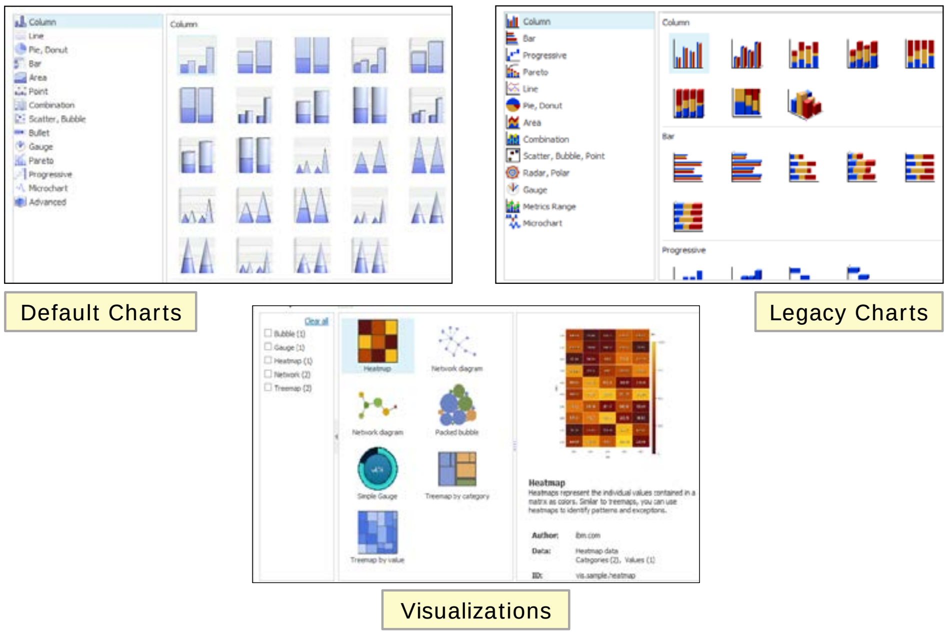
IBM Training

Different chart options

- Default charts, legacy charts, and visualizations



Present data graphically

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Different chart options

IBM Cognos Analytics 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.

Visualizations are also available, but must be added by the administrator to the visualization library.

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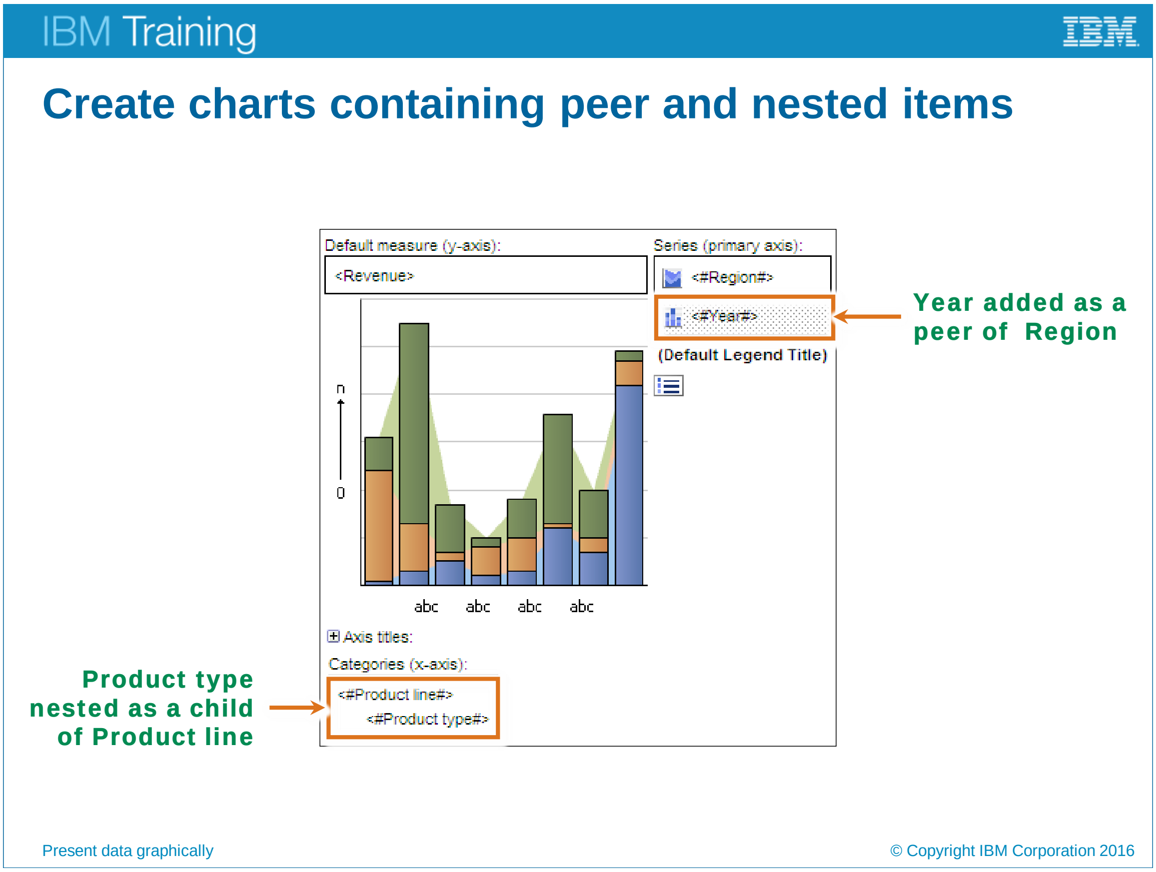

Create charts containing peer and nested items

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

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

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

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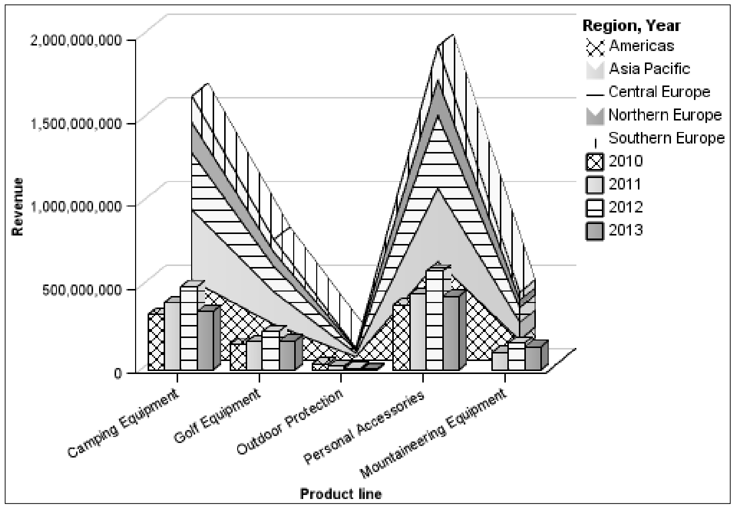
Create and reuse custom chart palettes



Present data graphically

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Create and reuse custom chart palettes

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.

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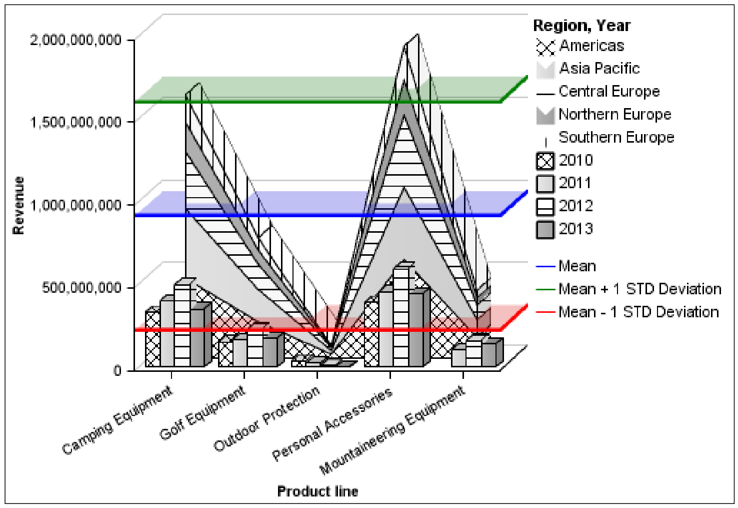
IBM Training

Add data-driven baselines and markers to charts



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Add data-driven baselines and markers to charts

To help consumers analyze data, you can add data-driven baselines to charts. Baselines help report consumers to quickly identify target or threshold values in charts.

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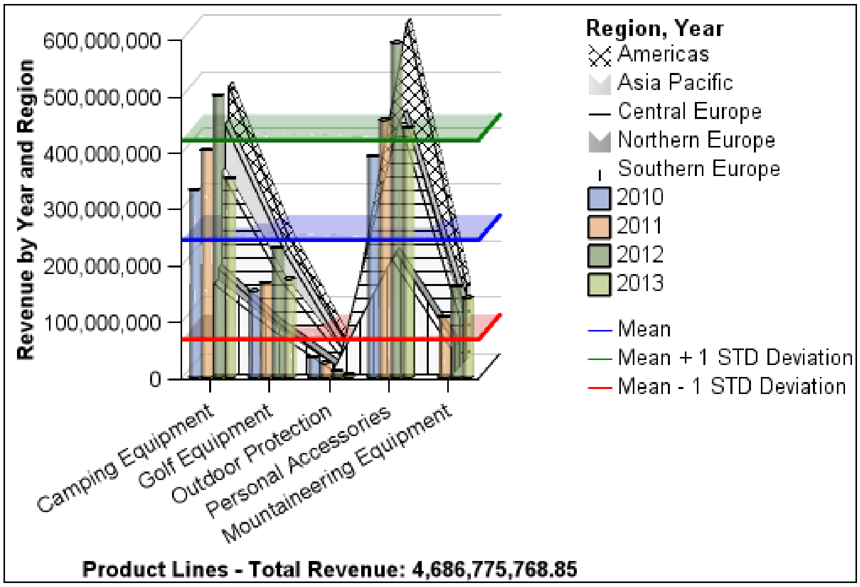
IBM Training

Demonstration 1

Create and format a chart report



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Demonstration 1: Create and format a chart report

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Demonstration 1:
Create and format a chart report

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

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Report Type:	**Blank**
Package:	**Team content\Samples\Models\GO data warehouse (query)**
Folder:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Create the combination chart.

1. Open a new **Blank** reporting template, using the **GO data warehouse (query) package**.
2. Click a blank part of the work area to bring it into focus.
3. On the **Application** bar, click **Show properties**, click **Select Ancestor**, and then click **Report**.
4. Under **More** , click **Options**.
5. Click the **Advanced** tab, ensure that **Use legacy chart authoring** is cleared, and then click **OK**.
6. On the **Application** bar, click **Page views** , and then click **Page preview**.
7. In the work area, click **Add** , and then click **Chart**.

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8. From the left pane, click **Combination**, then from the right pane, click **Stacked Bar and Stacked Area** , and then click **OK**.
9. Click **Page views** , and then click **Page design**.
10. From the **Source** tab, add the following query items to the new chart report object:

    Default measure (y-axis) drop zone:

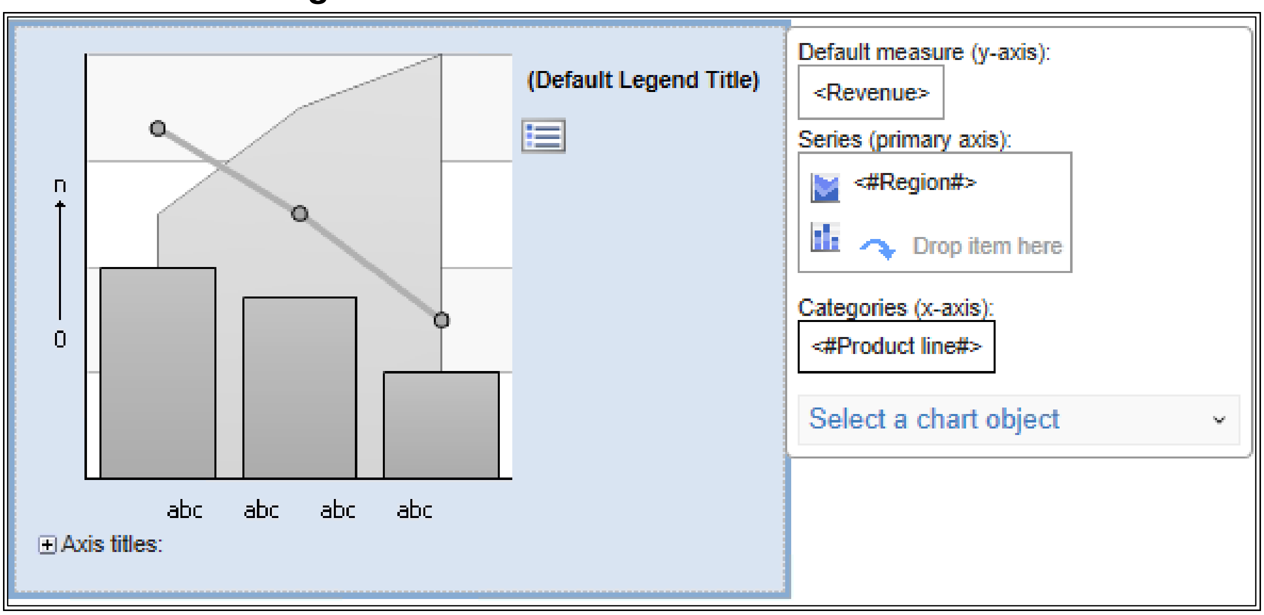
    - Sales fact: **Revenue**

    Categories (x-axis) drop zone:

    - Products: **Product line**

    Series (primary axis) drop zone (drop in the upper area of this drop zone):

    - Retailers: **Region**



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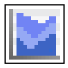
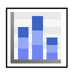
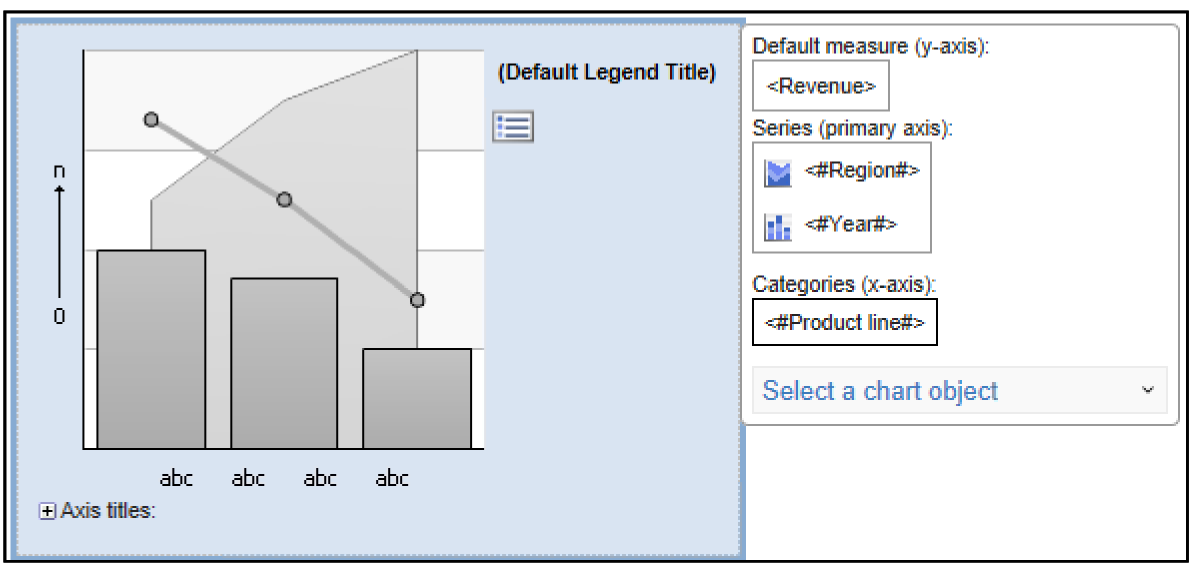
Task 2. Combine area and bar charts in a single presentation.

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 next to **<#Region#>**.
2. In the **Properties** pane, under **GENERAL**, click the **Series type** property and then select **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 empty **Series (primary axis)** drop zone beneath **<#Region#>**.
4. Click the **Chart**  icon for the **<#Year#>** series.
5. In the **Properties** pane, under **GENERAL**, click **Series type**, and then select **Clustered** from the list.

   The results appear as follows:



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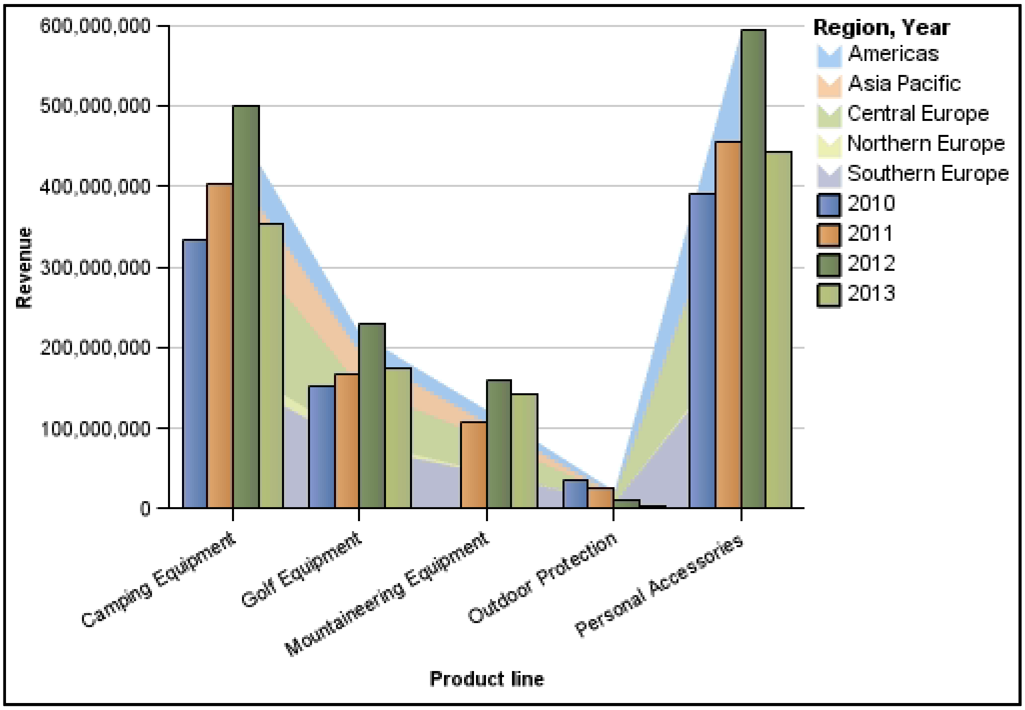
6. Run the report in **HTML**.

   The results appear similar to 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 the rendered report tab.

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

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

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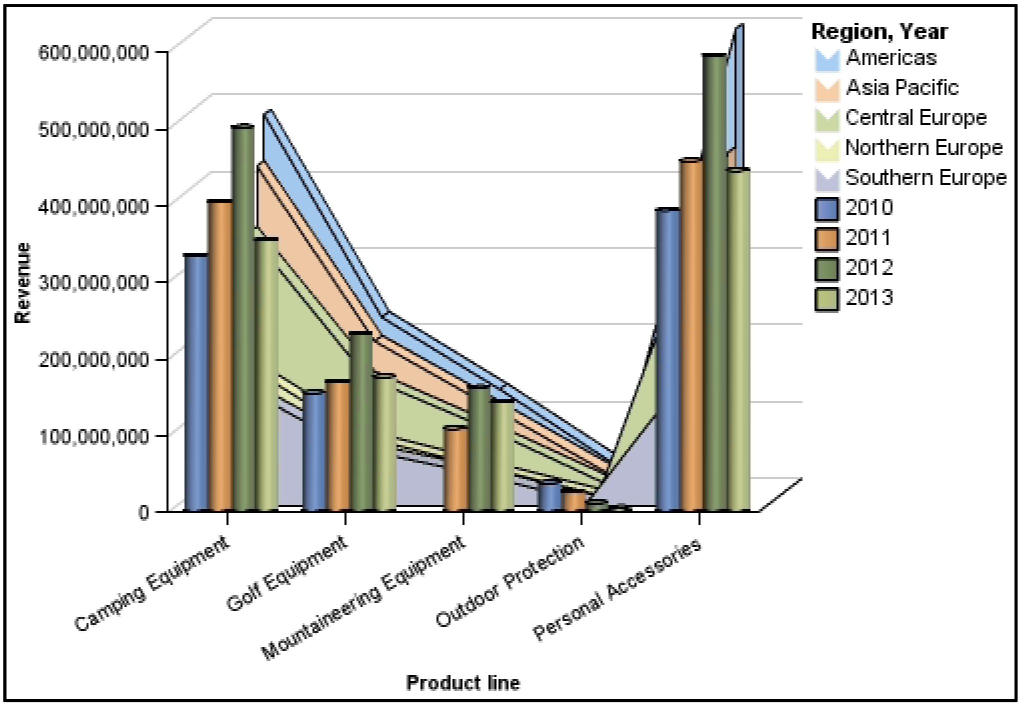
9. Run the report in **HTML**.

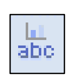
   The results appear as follows:



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

10. Close the rendered report tab.

Task 4. Format an axis title.

1. In the chart area, expand **Axis titles**.
2. Click **(Default category axis title)** .
3. From the **Properties** pane, under **GENERAL**, change **Default Title** to **No**.
4. Double-click **Double-click to edit text**, to open the **Text** dialog box.
5. In the **Text** dialog box, type **Product Lines - Total Revenue:**, press the space bar, and then click **OK**.
6. Repeat steps **2** to **5** to add the title **Revenue by Year and Region** to the **Primary Axis Title**.
7. Click **Toolbox** , and then expand **TEXTUAL**.

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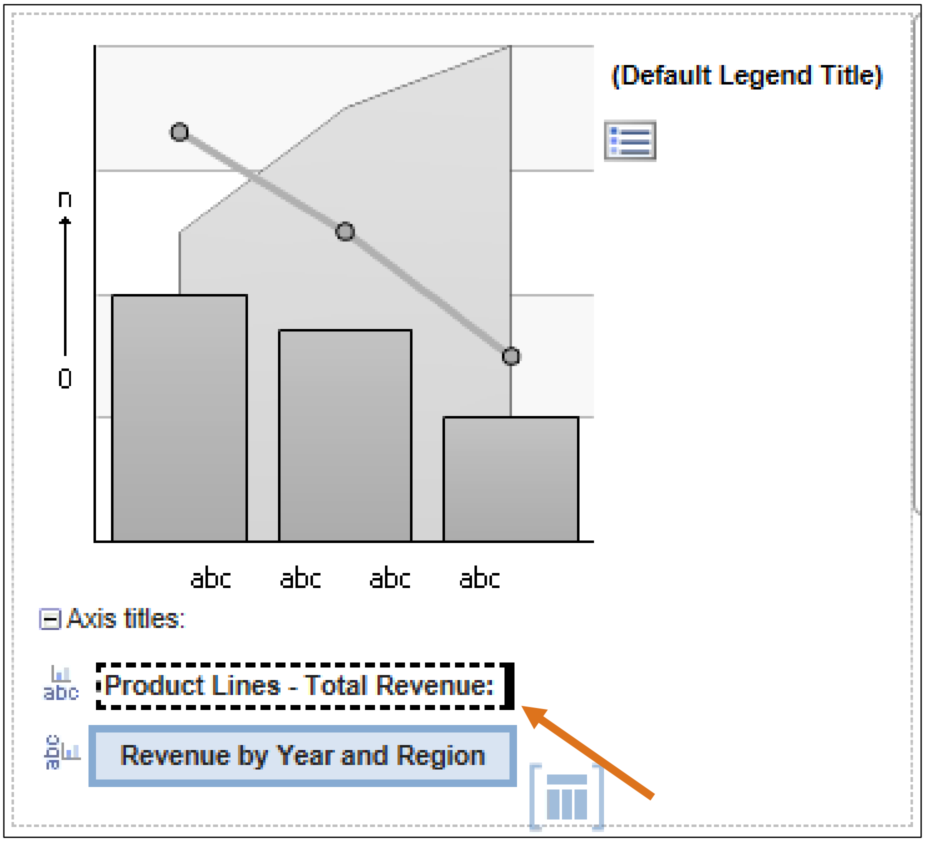
8. Drag a **Query calculation** to the end of the text in the horizontal axis title drop zone.



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

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

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

total([Revenue])

Hint: drag Revenue from the Data Items tab.

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

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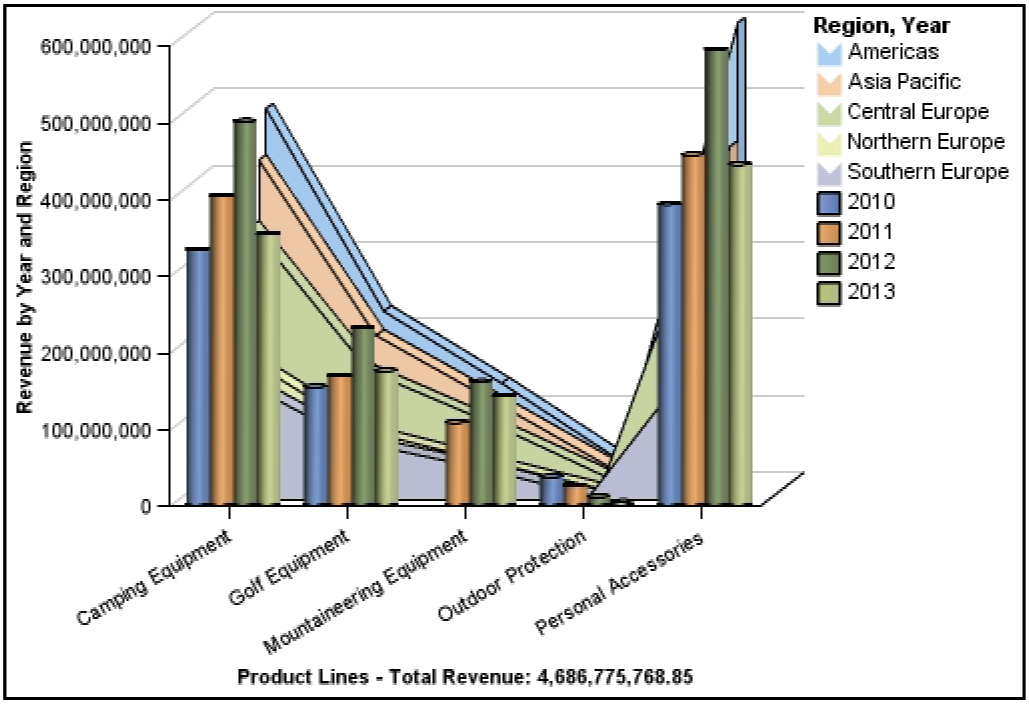
11. Run the report in **HTML**.

    The results appear as follows:



    The total product line revenue displays under the horizontal axis.

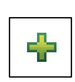
12. Close rendered report tab.

Task 5. Create a custom palette (optional).

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

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

1. Click the **<#Region#>** series chart icon, in the **Properties** pane, under **COLOR & BACKGROUND**, double-click the **Palette** property.
2. In the **Chart Palette Presets**  list, select **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. Under the left pane, click **New** .
4. In the **Fill type** list, select **Pattern**, change the **Default color** and **Foreground color** properties to the Basic color **Black**, and then change the **Background color** to **White**.

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

   You will now add four additional entries.
5. Click **New**.

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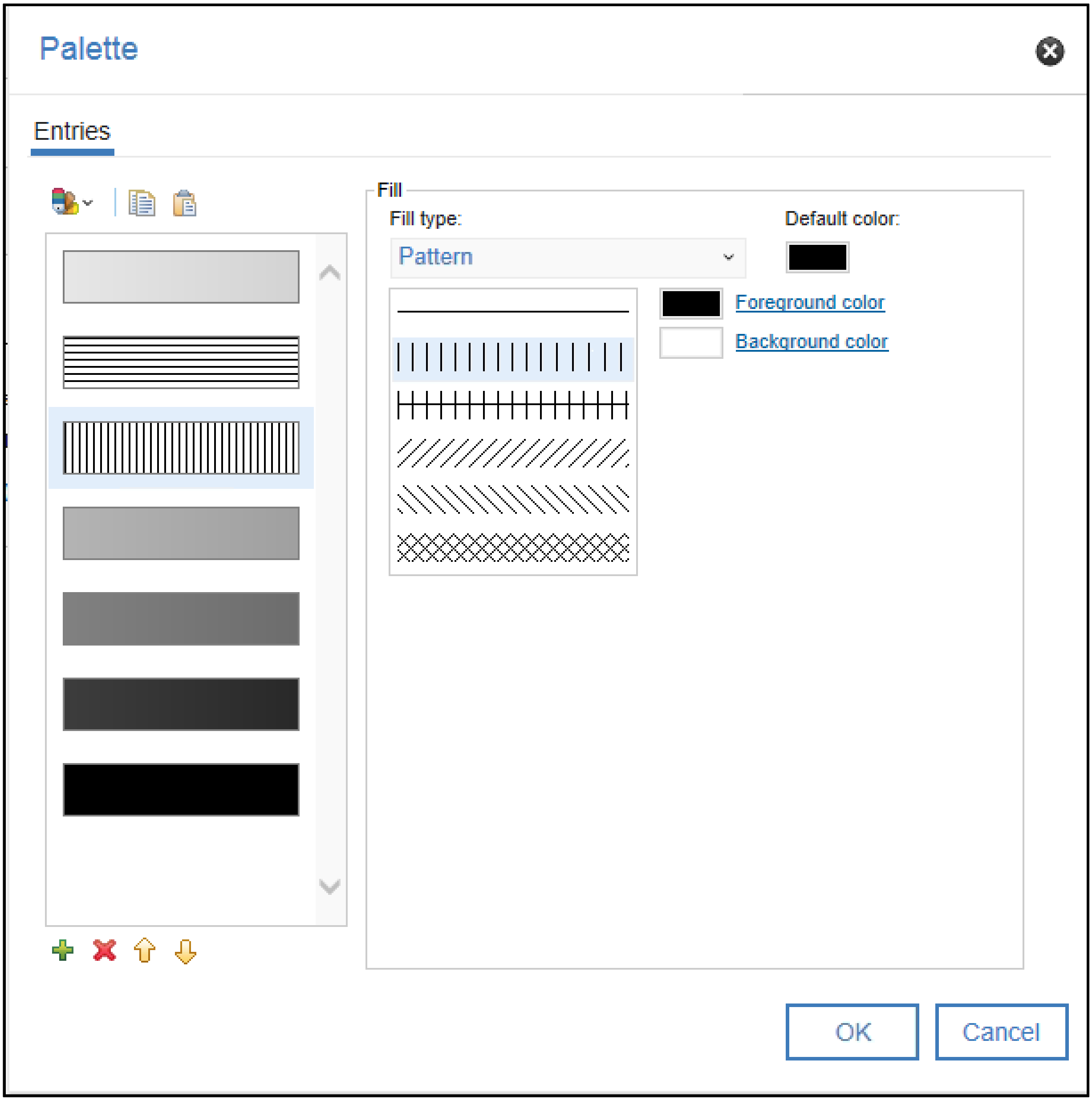
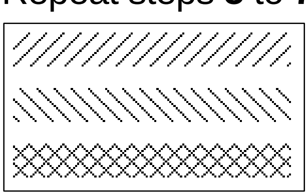
6. In the **Fill type** list, select **Pattern**, in the **Pattern** pane, click the second option (vertical lines), change the **Default color** and **Foreground color** to **Black**, and then change the **Background color** to **White**.

   The results appear as follows:



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



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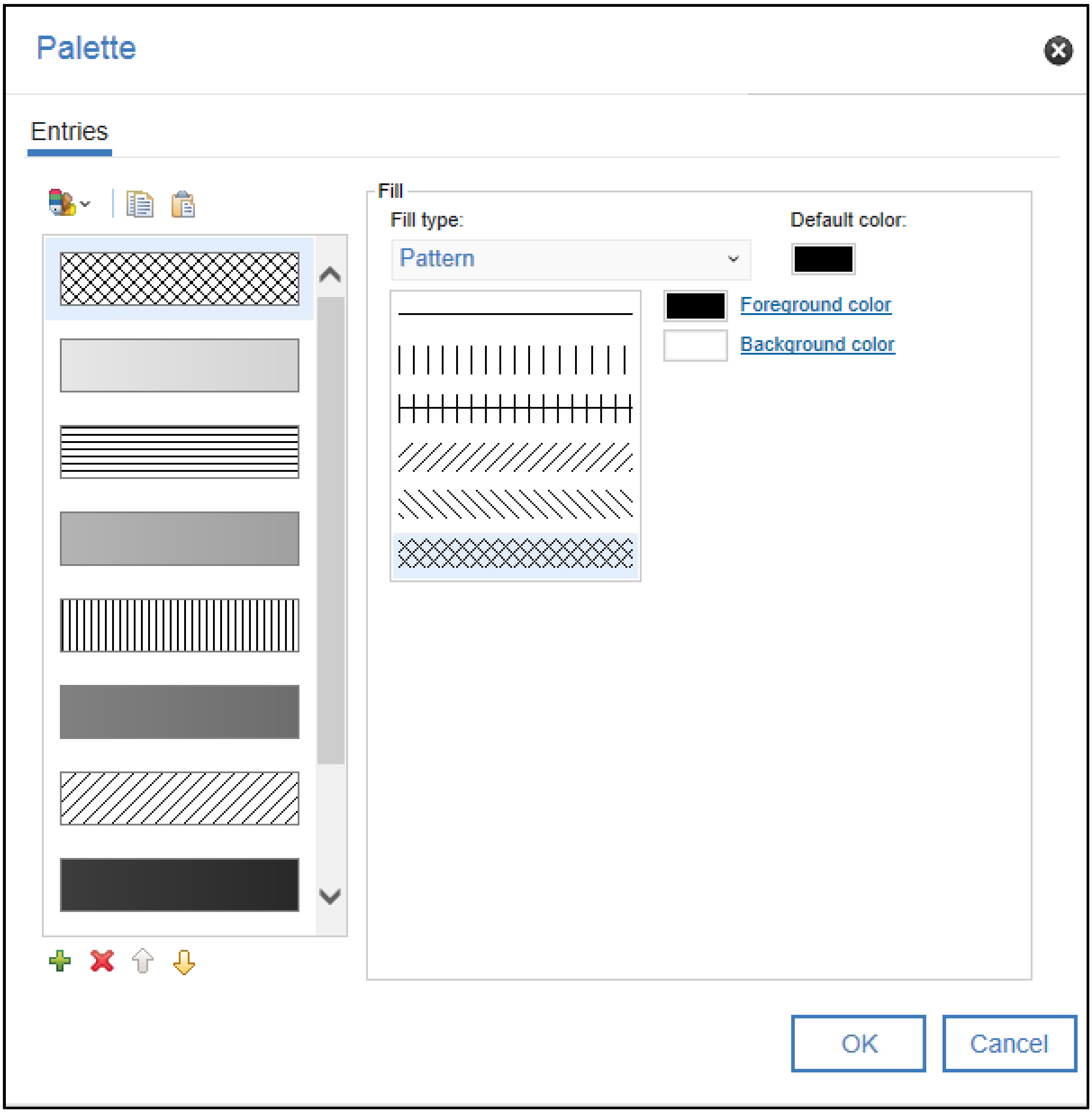
9. For the last pattern created, click **Move Up**  until the new pattern (hash marks), that you just added, appears at the top of the list of palette entries.

   The results appear as follows (note you will not see one of the patterns, due to scrolling…but it is there…):



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

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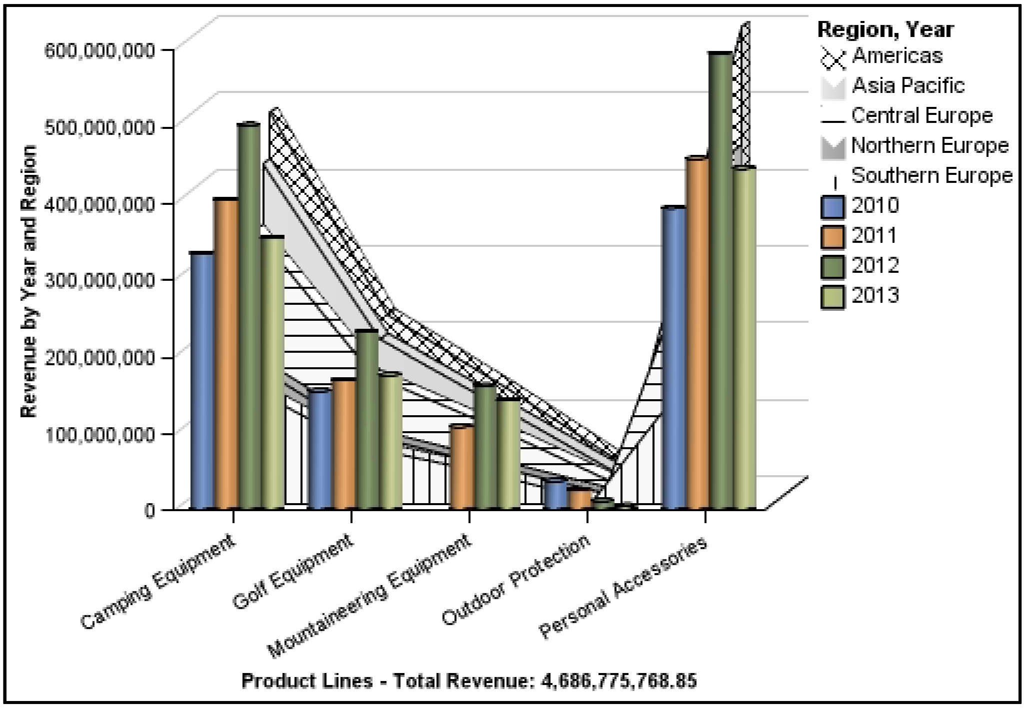
11. Run the report in **HTML**.

    The results appear as follows:



12. Close the rendered report tab.

Task 6. Use transparent colors.

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

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

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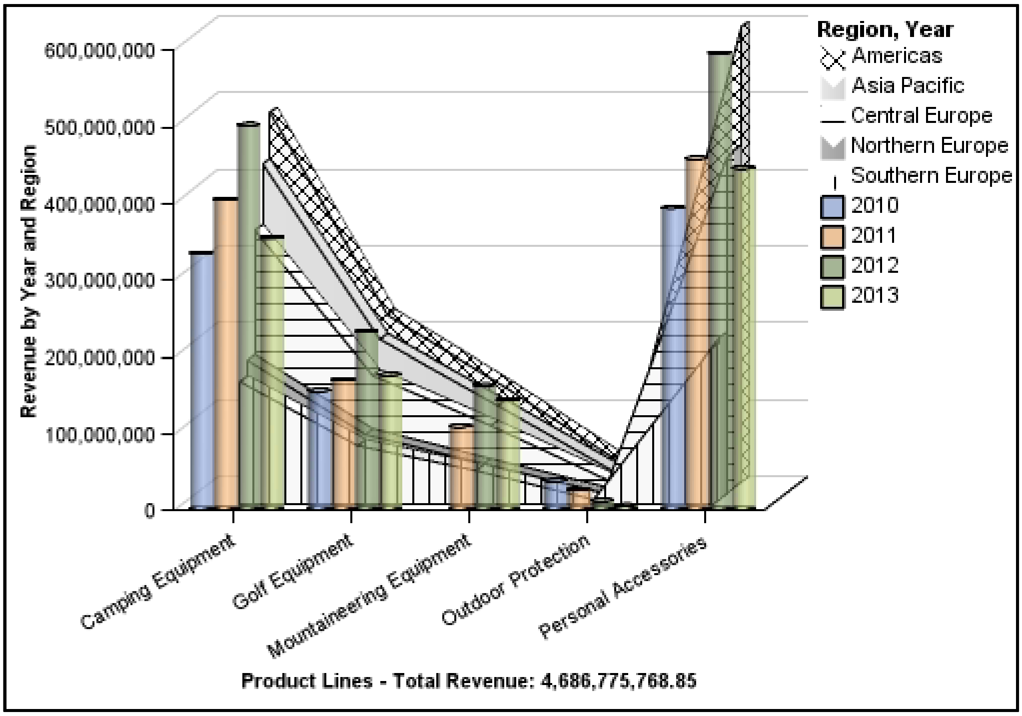
10. Run the report in **HTML**.

    The results appear as follows:



11. Close the rendered report tab.

Task 7. 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.

1. In the **Baselines** dialog box, click **New**, and then from the list, select **Mean**.
2. 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**
3. Click **OK**, and then **OK** again, 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.
4. In the **Baselines** dialog box, click **New**, and then from the list, select **Mean**.

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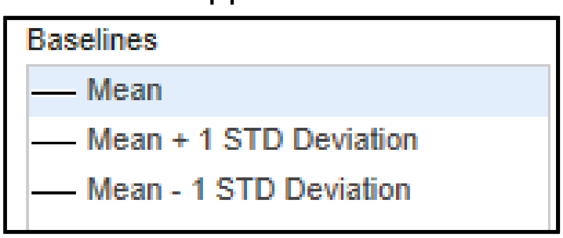
5. Ensure that the following properties are set as follows:
   - Based on: **Year, Year**
   - Number of standard deviations: **1**
   - Baseline Label: **Mean + 1 STD Deviation**
   - Line Styles**:** Weight: **2 px**, Color**: Green**
6. Click **OK** to close the **Line styles** dialog box.

   You will add a baseline to display a -1 standard deviation from the mean revenue based on Year.
7. In the **Baselines** dialog box, click **New**, and then from the list, select **Mean**.
8. 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**
9. Click **OK** to close the **Line styles** dialog box.

   The results appear as follows:



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

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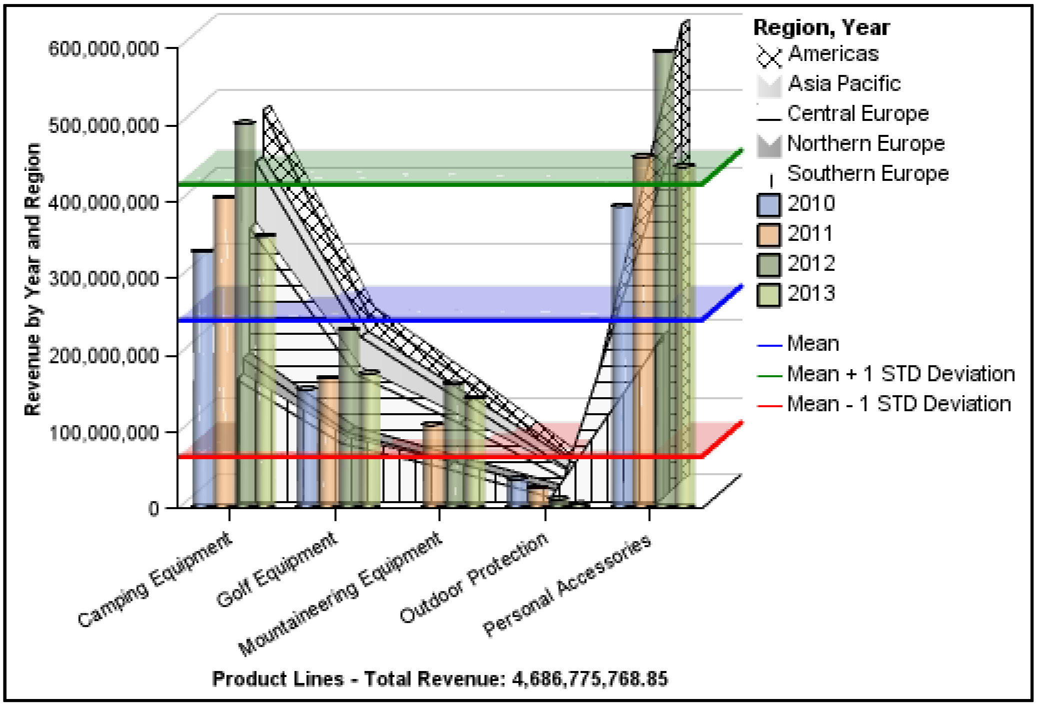
11. Run the report in **HTML**.

    The results appear as follows:



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

12. Close the rendered report tab.

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.

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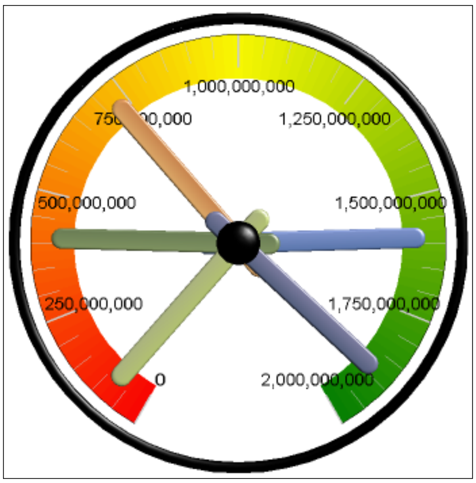
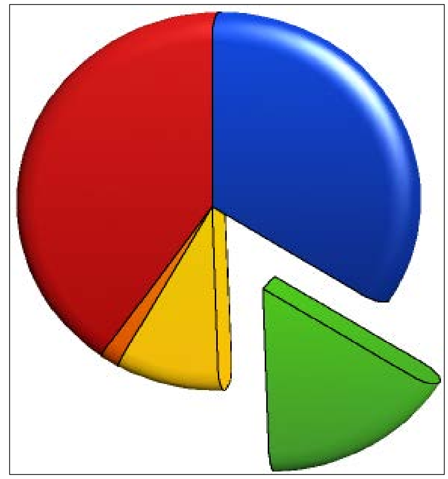
IBM Training

Compare values and highlight proportions using gauge charts and pie charts



Gauge Chart



Pie Chart

Present data graphically

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Compare values and highlight proportions using gauge charts and pie charts

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

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

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

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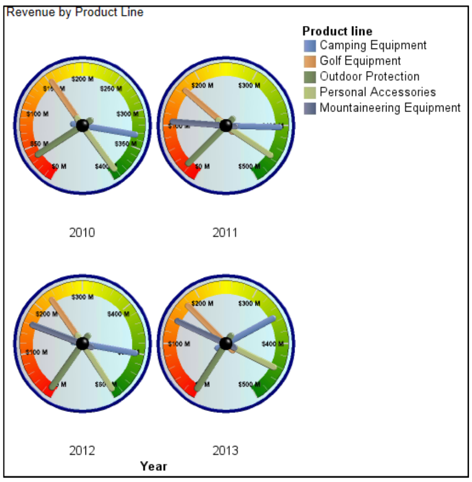
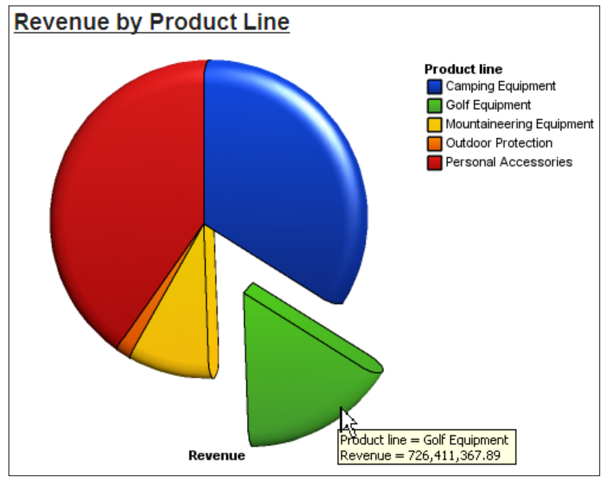
IBM Training

Demonstration 2

Create a gauge report and a pie chart report





Present data graphically

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

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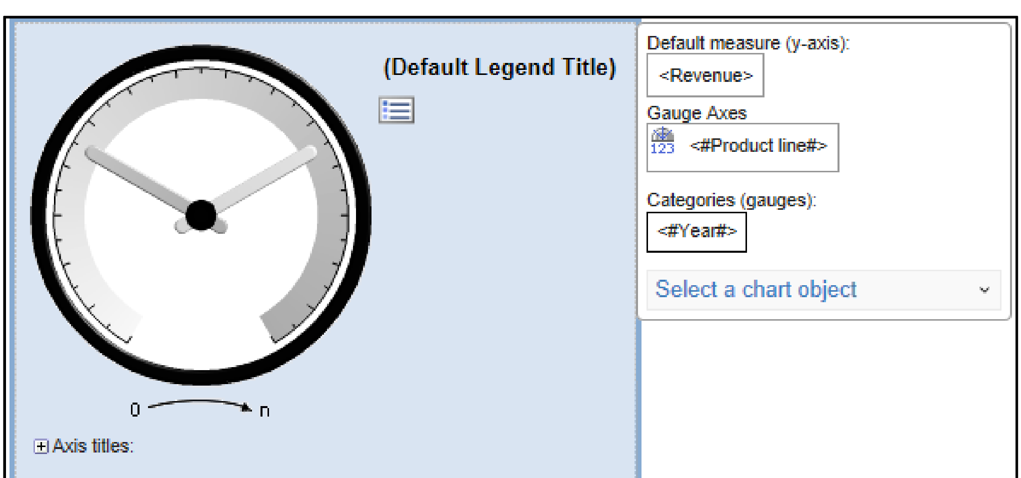
Demonstration 2: Create a gauge report and a pie chart report

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

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 using the **GO data warehouse (query)** package.
2. From the left pane click **Gauge**, and then click **OK** to accept the default.
3. Click the background of the chart to select it, and then from the **Source** tab, add the following query items to the new list report object:
   - **Default measure (y-axis)** drop zone:
     - Sales fact: **Revenue**
   - **Categories (gauges)** drop zone:
     - Time: **Year**
   - **Gauge Axes** drop zone:
     - Products: **Product line**



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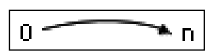
4. Double-click **Double-click to edit text**, at the top of the chart.
5. In the **Text** dialog box, type **Revenue by Product Line**, and then click **OK**.
6. On the **Application** bar, click **Show properties**.
7. Click the title block (not the text) to select it.
8. Under **POSITIONING**, double-click **Size & overflow**, in the **Width** box, type **500**, and then click **OK**.
9. Click the chart background (only the Guage chart should show selected), and then in the **Properties** pane, under **POSITIONING** (note: you may have to scroll down to find the property), double-click the **Size & overflow** property.
10. 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 Label** , and then under **FONT & TEXT** of the **Properties** pane, double-click **Font**.
2. Click **Foreground Color**, click **Black**, and then click **OK**.
3. Click **Bold**, and then click **OK**.
4. In the **Properties** pane, under the **DATA** section**,** click the **Data format** ellipsis.
5. Change the **Format type** to **Number**.
6. Change the **Scale** to **-6**.
7. In the **Pattern** box (scroll down), enter **$###,### M**.
8. Click **OK**.

Task 3. Modify the gauge properties.

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

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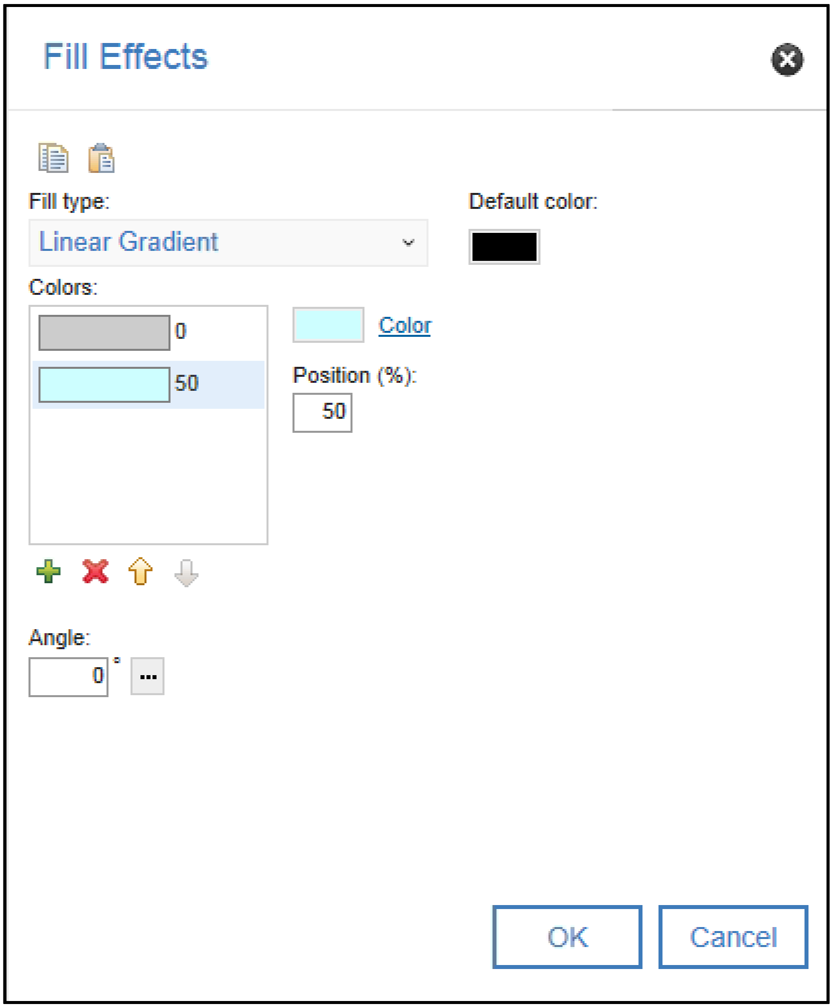
10. In the **Position (%)** box, change the value to **50**.

    The results appear as follows:



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

Task 4. Modify the arc colors.

1. Click the icon under **Gauge Axes**, for **<#Product line#>**.
2. In the **Properties** pane, under **COLOR & BACKGROUND**, double-click **Gauge axis colors**.

   To indicate product lines that are selling poorly, the low end of the arc will appear in red.
3. In the **Gauge axis Colors** dialog box, click the top color, and then click **Color**.
4. From the **Basic colors** tab, click **Red**, and then click **OK**.
5. In the **Gauge axis Colors** dialog box, click the middle color, and then click **Color**.
6. From the **Basic colors** tab, click **Yellow**, and then click **OK**.
7. Ensure the center color (yellow) in the list is selected, and then change the position percentage to **50%**.

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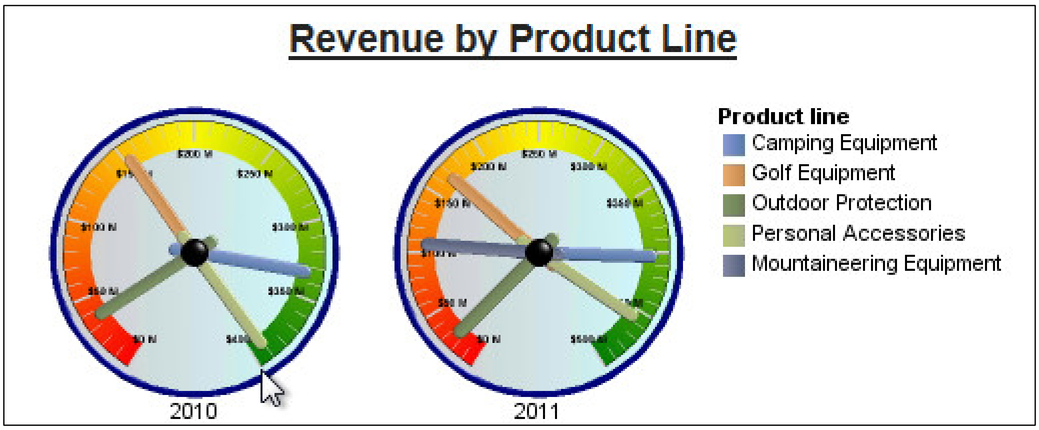
8. In the **Gauge axis Colors** dialog box, click the bottom color, and then click **Color**.
9. From the **Basic colors** tab, click **Green**, and then click **OK**.
10. Click **OK** to close the **Gauge axis Colors** dialog box.
11. Run the report in **HTML**.

    A section of the results are as follows:



12. Close the rendered report tab.

Task 5. Create a pie chart.

1. Open a new **Chart** template using the **GO data warehouse (query)** package.
2. On the left pane, click **Pie, Donut**, click

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

    Reminder: It only takes two values to define a chart.

Task 6. Set the properties of the chart.

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

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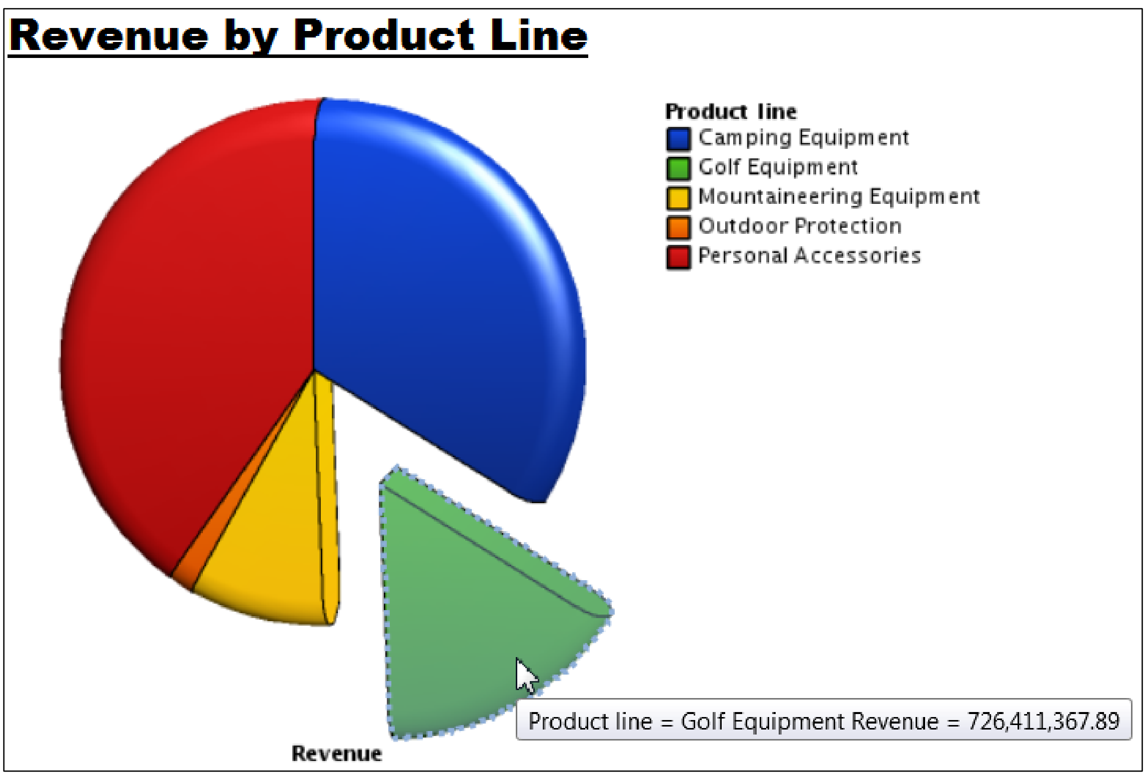
7. In the **Properties** pane, under **COLOR & BACKGROUND**, double-click **Palette**.
8. From **Chart palette presets**, click **Dynamic**, and then **OK**.

Task 7. Create chart title.

1. Double-click **Double-click to edit text**.
2. In the text dialog box, type **Revenue by Product Line**, and then click **OK**.
3. With the text title still selected, change the **Font** to **Arial Black**, **16pt**, and **Underlined**.
4. Select the header block, and then left justify it so it is no longer centered.
5. Run the report in **HTML**.
6. Move the cursor over the expanded green slice to view the tooltip.

   The results are as follows:



7. Close the rendered report tab.

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.

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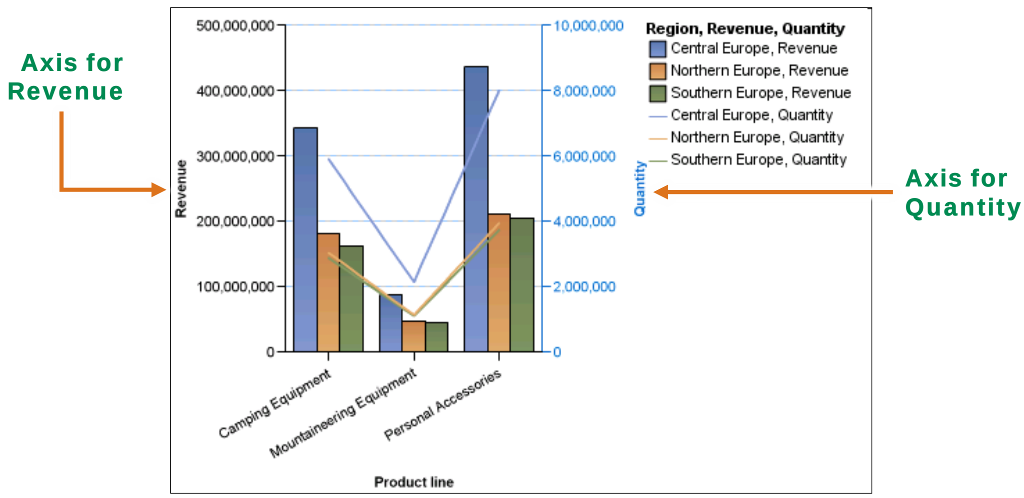
IBM Training

Display items on separate axes



Present data graphically

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Display items on separate axes

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

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

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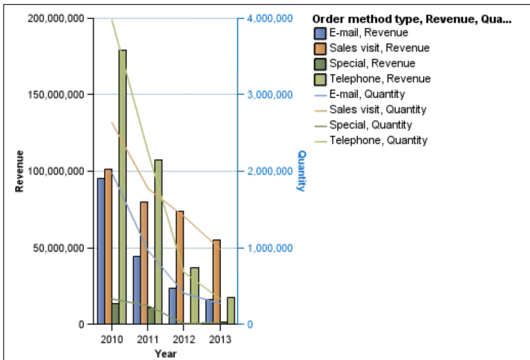
IBM Training

Demonstration 3

Show the same data graphically and numerically



	2010		2011		2012		2013	
	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity
E-mail	95,402,796.21	1,986,395	44,318,886.43	968,453	23,701,042.57	409,049	16,420,318.95	278,762
Sales visit	101,072,721.1	2,640,065	79,721,524.37	1,778,941	73,918,652.38	1,411,468	55,481,936.15	982,938
Special	13,905,918.75	340,021	10,769,180.34	252,429	1,006,100.01	13,622	1,670,121.15	30,730
Telephone	178,793,580.36	3,979,898	107,160,284.09	2,251,898	37,199,842.8	684,667	17,832,073.81	336,381

Present data graphically

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Demonstration 3: Show the same data graphically and numerically

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Demonstration 3: Show the same data graphically and numerically

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

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team Content\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 using the **GO data warehouse (query)** package.
2. Add the following query items:
   - Rows:
     - Order method: **Order method type**
   - Columns:
     - Time **Year**
     - Sales Fact: **Revenue**, **Quantity** (nested under Year)

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

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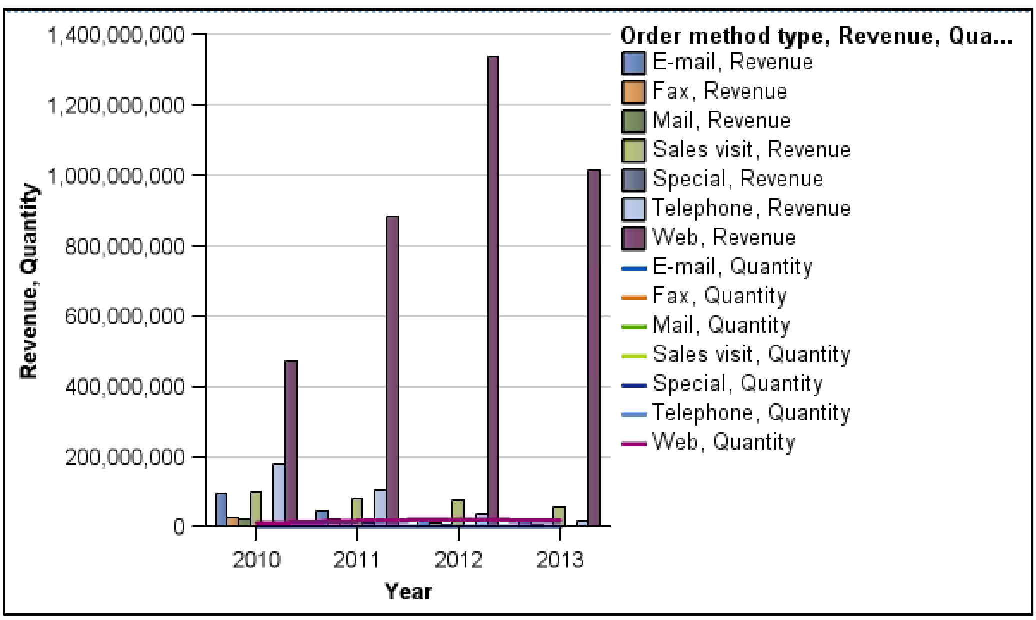
Task 2. Create a combination chart.

1. From the **Toolbox** tab, drag a **Chart** data container to the left of the crosstab.

   The Insert chart dialog opens.
2. Select **Fill with data from**.
3. 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.
4. Click the chart background to provide focus.
5. Run the report in **HTML**.



   You can see in the combination chart that the top revenue generating order method type is the Web. The crosstab provides the exact numbers and provides detail to what is seen graphically in the chart.
6. Close the rendered report tab.

   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, and then click **Show properties**.
2. In the **Properties** pane under **DATA**, click **Query2**, and then change it to **Query1** from the list.
3. From the **Properties** pane, under **GENERAL**, double-click **Combinations**.
4. Click the **Secondary Axis** checkbox to select it, and then click **Edit** .

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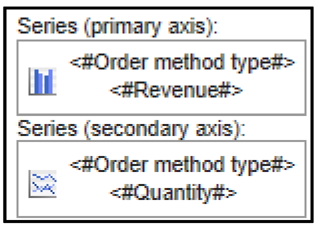
5. Click **Line**, click **OK** to close the **Combination Element** dialog box, and then **OK** to close the **Combinations** dialog box.
6. From the **Series (primary axis)**, drag **<#Order method type#>** from the **Line** chart type to the **Series (secondary axis),** and then drag **<#Quantity#>** under **<#Order method type#>**.
7. Click the now empty **Line** chart type icon, under **Series (primary axis),** and then press **Delete**.

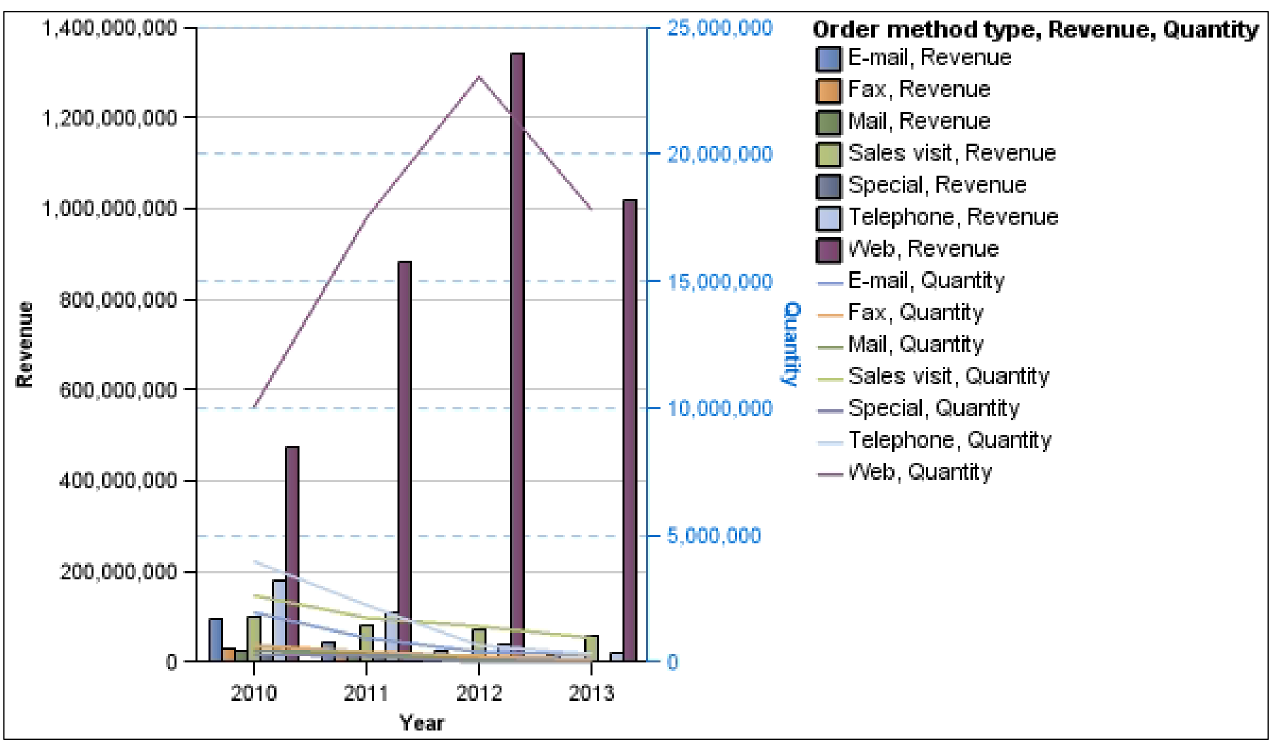
   The entire section may disappear. If it does, you may need to click the chart background again, to see the results of your Delete action just performed.

   The results appear as follows:



8. Run the report in **HTML**.

   A section of 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 E-mail, Sales visits, and Telephone. Web will not be included since it is the clear winner for Revenue and Quantity.

9. Close the rendered report tab.

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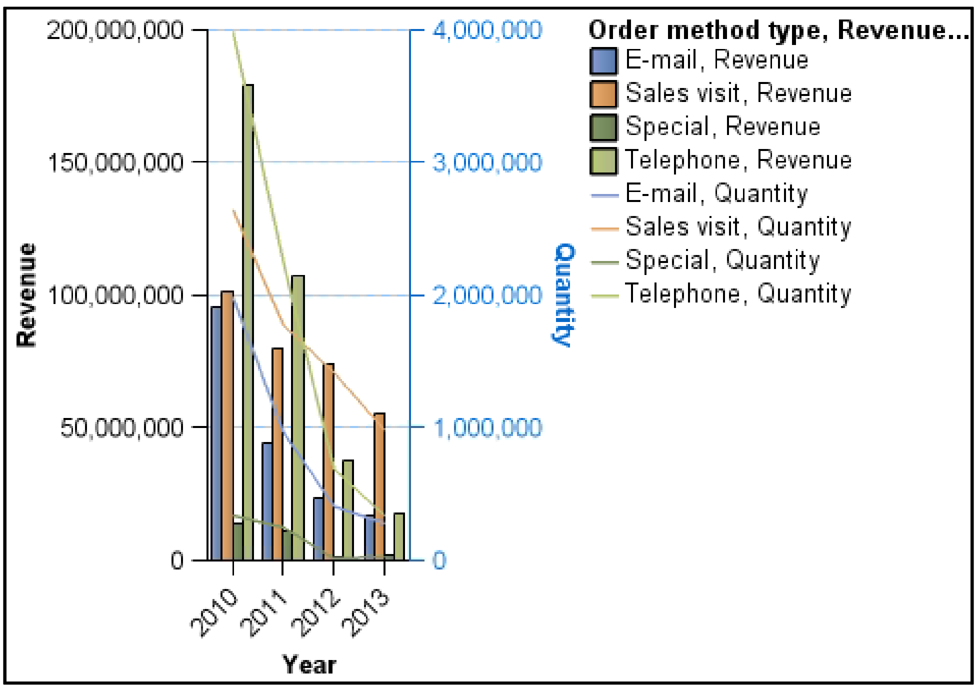
Task 4. Add filters to focus the data.

1. Click the combination chart to select it.
2. On the chart toolbar, click **Filters**, and then click **Edit Filters**.
3. Click **Add**, and then click **OK**.
4. From the **Values** box, move the following to the **Selected values** box: **E-mail**, **Sales visit**, **Special**, and **Telephone**, and then click **OK**.
5. In the **Filters** dialog box, under **Application**, ensure that **Before auto aggregation** is selected, and then click **OK** to close the **Filters** dialog box.
6. Run the report in **HTML**.

   The result appears as shown below:



7. Close the rendered report tab.

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

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

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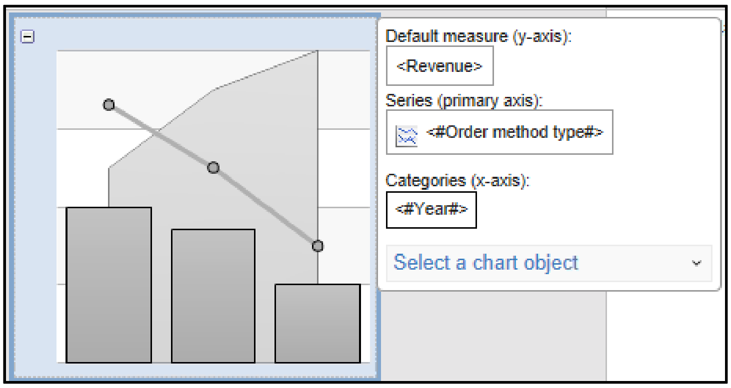
4. In the **Categories (x-axis)** section of the microchart, click **Quantity**, and then press **Delete**.

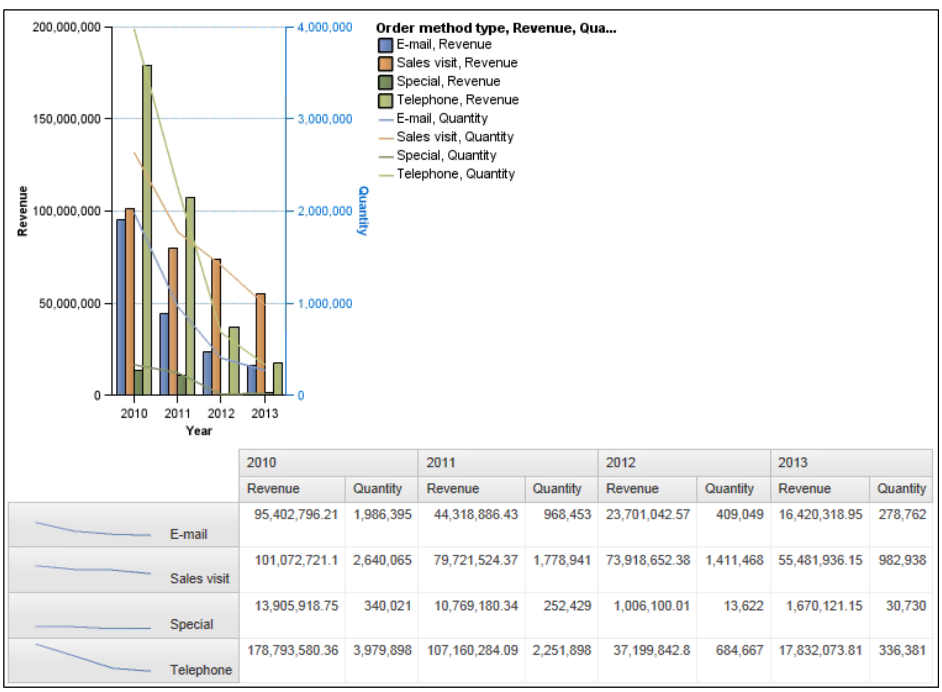
   The entire section may disappear. If it does, you may need to click the chart background again, to see the results of your Delete action just performed.

   The results appear as follows:



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

   The results appear as follows:



	2010		2011		2012		2013	
	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity
E-mail	95,402,796.21	1,986,395	44,318,886.43	968,453	23,701,042.57	409,049	16,420,318.95	278,762
Sales visit	101,072,721.1	2,640,065	79,721,524.37	1,778,941	73,918,652.38	1,411,468	55,481,936.15	982,938
Special	13,905,918.75	340,021	10,769,180.34	252,429	1,006,100.01	13,622	1,670,121.15	30,730
Telephone	178,793,580.36	3,979,898	107,160,284.09	2,251,898	37,199,842.8	684,667	17,832,073.81	336,381

6. Close the rendered report tab.

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.

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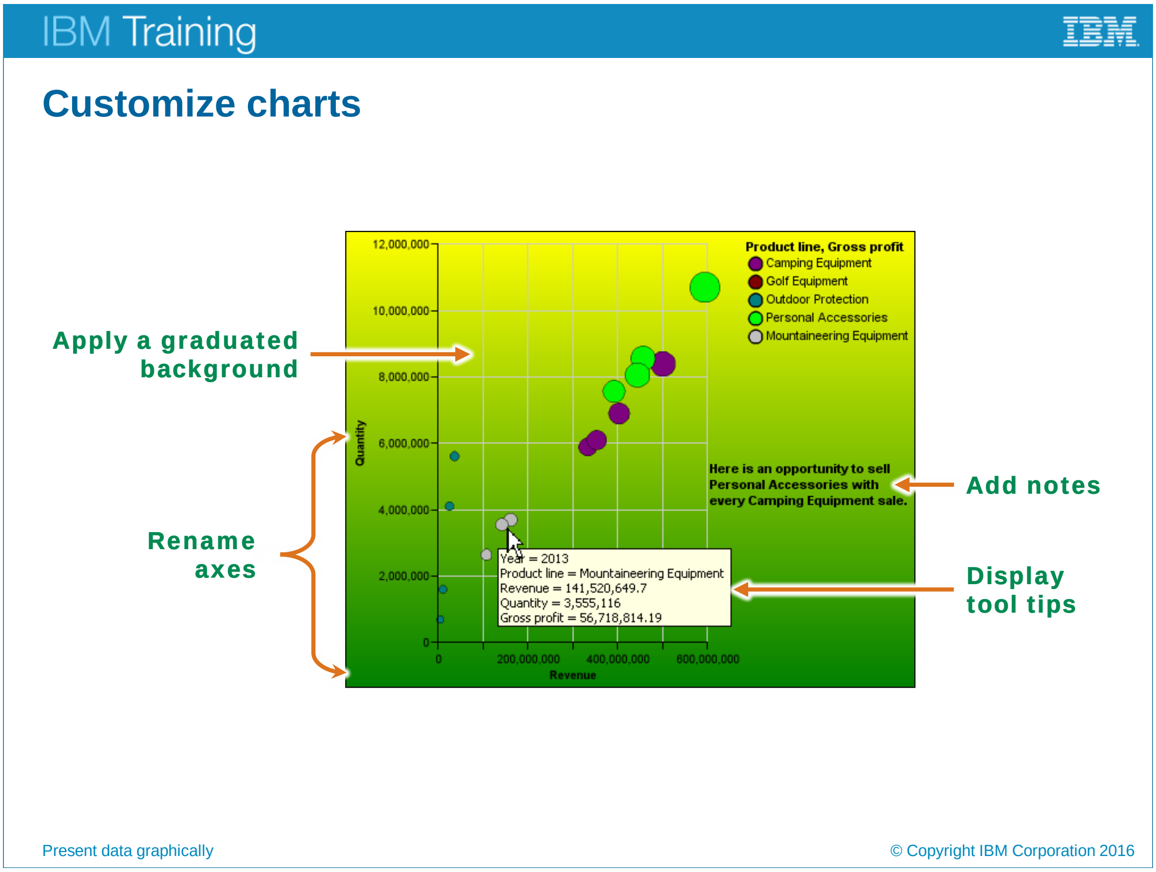

Customize charts

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

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

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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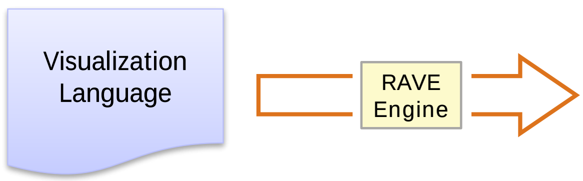
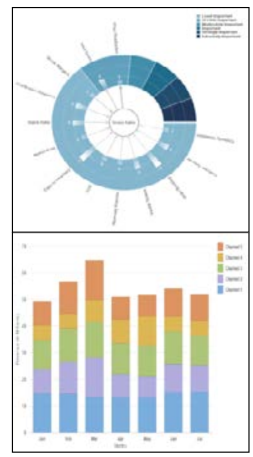
IBM Training

What is RAVE?

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





Present data graphically

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What is RAVE?

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

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.

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IBM Training

What is a visualization?

- A visualization is:
  - intuitive
  - immediate
  - language-independent

Present data graphically

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What is a visualization?

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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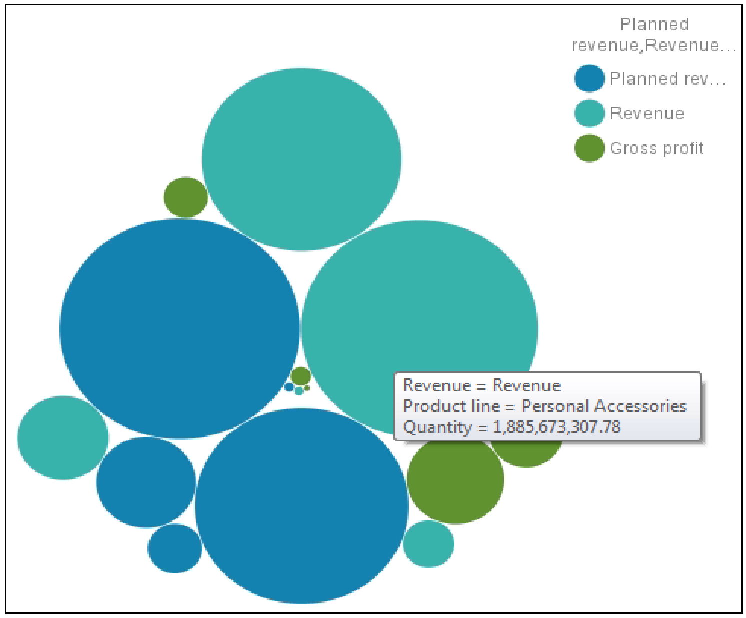
IBM Training

Demonstration 4

Display visualizations



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Demonstration 4: Display visualizations

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Demonstration 4: Display visualizations

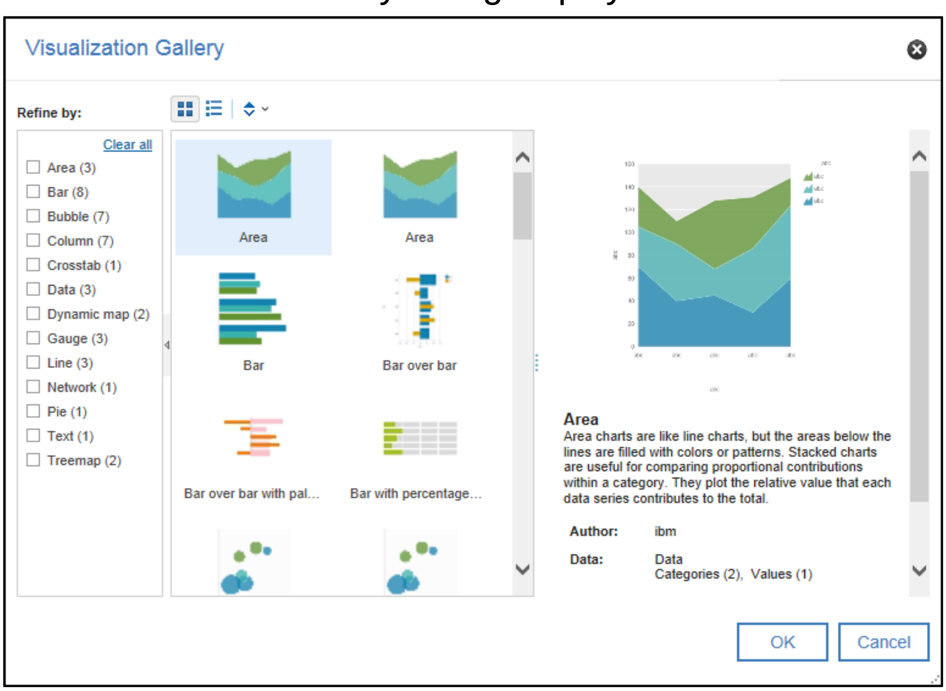
Purpose:
You have been asked to create a report that compares multiple key performance indicators for all product lines. Users need to be able to quickly identify product line performance. You will use a visualization that was made available in the portal Library to accomplish this task.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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, expand **DATA CONTAINER**, and then drag a **Visualization** object to the right pane.

   The Visualization Gallery dialog displays the visualizations that are available:



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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 **Bar** checkbox.

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

4. In the **Refine by** pane, select the **Column** checkbox.

   There are now box diagrams and column diagrams 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** checkbox, and then in the center pane, select **Packed Bubble**.

   Notice the description of the visualization in the right pane.

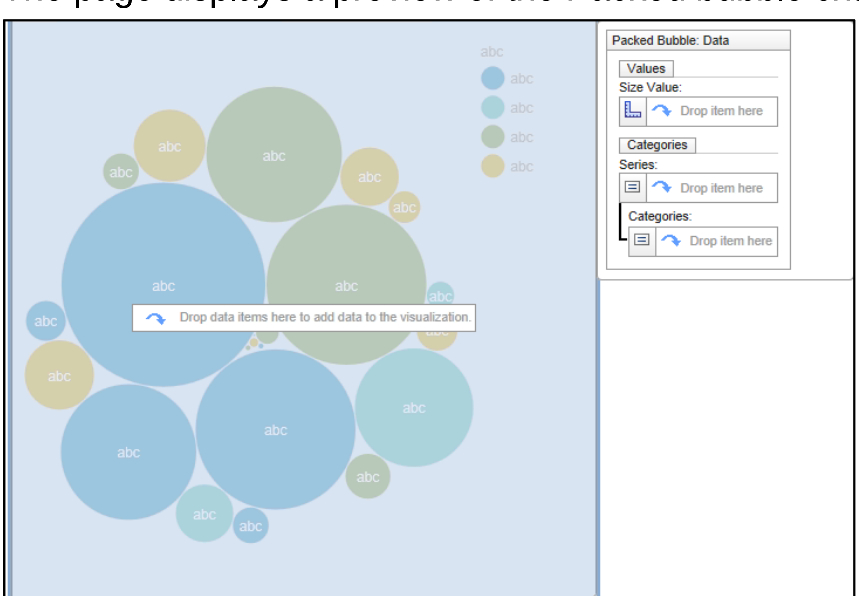
7. Click **OK** to open the visualization.

   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:



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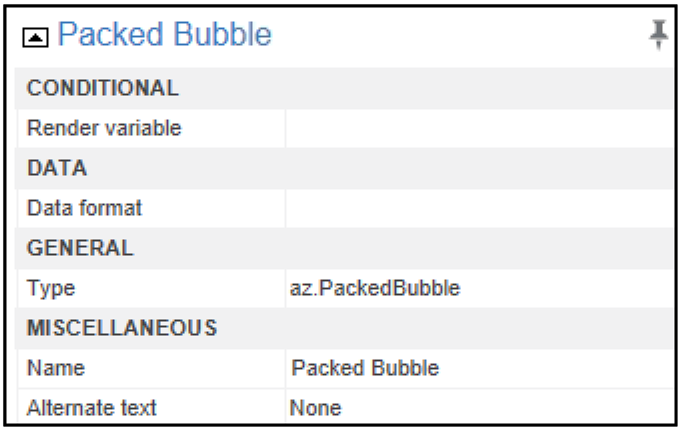
2. Open the **Properties** pane.
3. Click the visualization background, and then notice the available properties in the **Properties** pane.

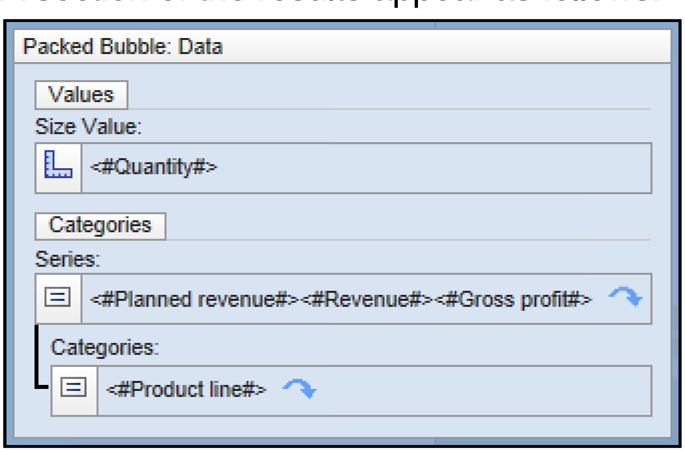
   Other properties can be made available by using the Visualization Customizer tool. The tool allows you to create properties that are needed in Reporting to further customize the report.

   A section of the Properties pane appears as follows:



4. If you haven't already done so, add the data source **Team content\Samples\Models\GO data warehouse (query)**.
5. From the **Source** tab, add the following query items to the visualization report object:
   - **Values: Size Value**
     - Sales fact: **Quantity**
   - **Categories: Series**
     - Sales fact: **Planned revenue**, **Revenue**, and **Gross profit**
   - **Categories: Bubbles (Categories)**
     - Products: **Product line**

   A section of the results appear as follows:



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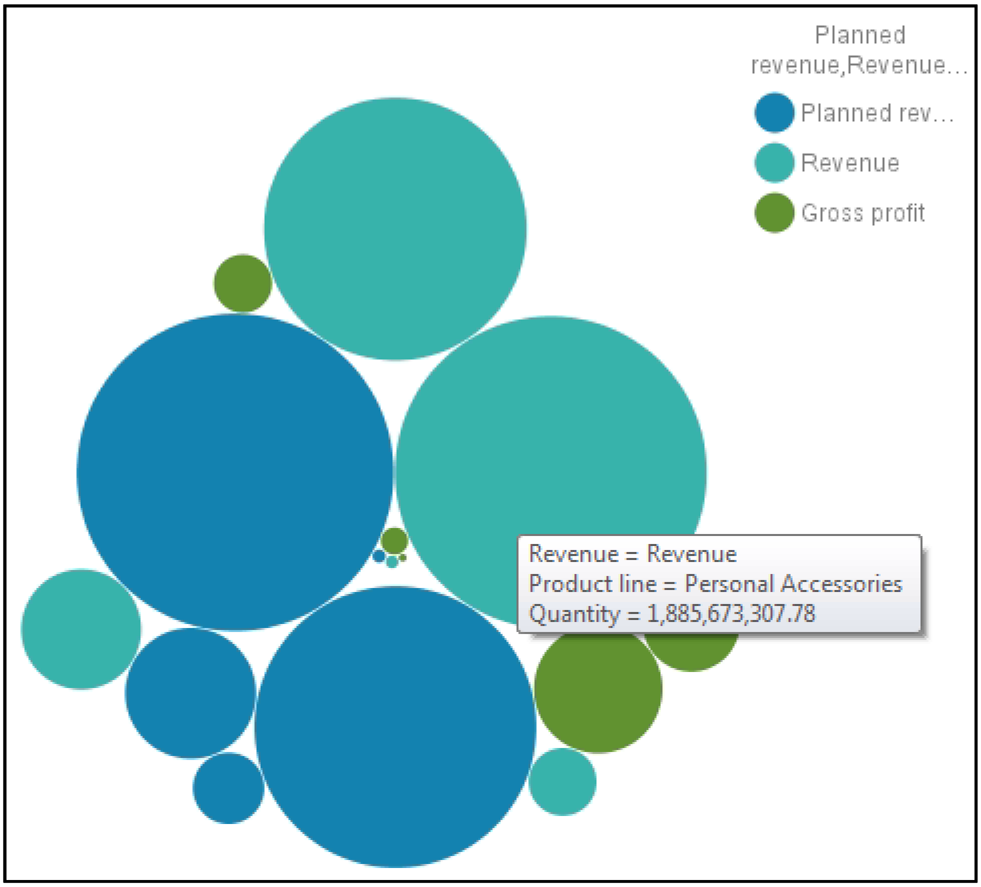
6. Click on the visualization background.
7. In the **Properties** pane, in the **COMMON** section, set **Show Values** to **No**.
8. Run the report as **HTML**.
9. Once the report is generated, hover the mouse cursor over one of the bubbles.
   The results will appear similar to the following:



   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.
10. Close the rendered report tab.

Results:
You used IBM Cognos Analytics - Reporting 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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IBM Training

Unit summary

- Create charts containing peer and nested columns
- Present data using different chart type options
- Add context to charts
- Create and reuse custom chart palettes
- Introduce visualizations
- Present key data in a single dashboard report

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Unit summary

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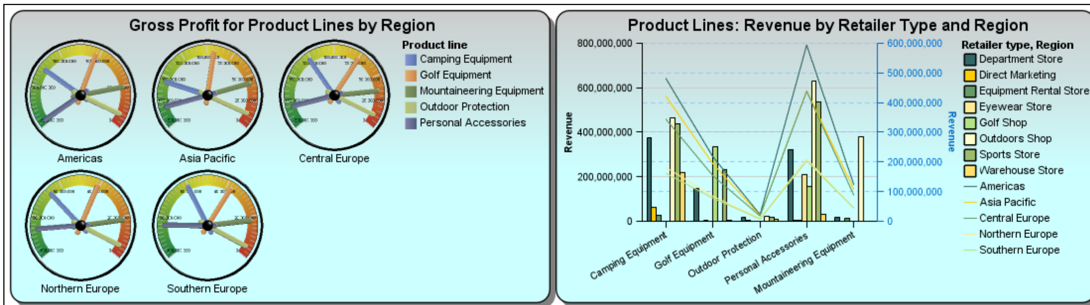
IBM Training

Exercise 1

Create a dashboard report



Gross margin	2013	2012	2011	2010	Americas	Asia Pacific	Central Europe	Northern Europe	Southern Europe
Camping Equipment	364,819%	616,781%	606,335%	513,157%	609,334%	438,315%	593,876%	230,166%	229,402%
Golf Equipment	178,897%	295,197%	272,722%	240,852%	285,873%	206,839%	279,248%	108,375%	107,333%
Outdoor Protection	189,181%	311,343%	309,134%	276,338%	315,929%	226,301%	306,139%	118,828%	118,799%
Personal Accessories	3,280,176%	4,925,059%	3,667,173%	2,578,597%	4,629,449%	3,046,862%	3,619,466%	1,608,235%	1,546,994%
Mountaineering Equipment	177,533%	303,609%	296,185%		221,809%	166,454%	222,484%	83,272%	83,309%

Present data graphically

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Exercise 1: Create a dashboard report

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Exercise 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 exercise 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.

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Exercise 1: Tasks and Results

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

- **Toolbar**: Open a new **2 by 1** report template using the **GO data warehouse (query)** package by going to **New > Report > From Template**. Then select **Team Content > Samples > Templates > 2 by 1 template**.
- **Work area**: Add a **Chart** data container to the top left table cell.
- **Insert Chart** dialog box: Change the **Name** field to **Gauge Query**.
  - From the left pane, click **Gauge**.
  - Click **OK** to accept the default gauge chart (Gauge Chart with Bevelled Border).
- **Work area**: Add a **Chart** data container to the top right table cell.
- **Insert Chart** dialog box: Change the **Name** field to **Combination Query**.
  - From the left pane, click **Combination**.
  - Click **OK** to accept the default combination chart (Clustered Bar and Clustered Line).
- **Work area**: Add a **Crosstab** data container to the bottom table cell.
- **Object and query name** dialog box: Change the query name to **Crosstab Query**.
  - Click **OK**.

Task 2. Add data to the reporting objects.

- **Data/Source** tab: Navigate to **Sales and Marketing (query)/Sales (query)**, and then add the following query items to the gauge chart:
  - **Default measure (y-axis)** drop zone:
    - Sales fact: **Gross profit**
  - **Categories (gauges)** drop zone:
    - Retailers: **Region**.
  - **Gauge Axes** drop zone:
    - Products: **Product line**

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- **Data/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**
- **Data/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** checkbox.
  - Click **Edit**.
- **Combination Element** dialog box: Under **Combination Type**, click **Line**, and then click **OK**.
- **Combinations** dialog box: Click **OK**.
- **Data/Source** tab: Under **Retailers** query subject, drag **Region** to the **Series (secondary axis)** drop zone of the combination chart.

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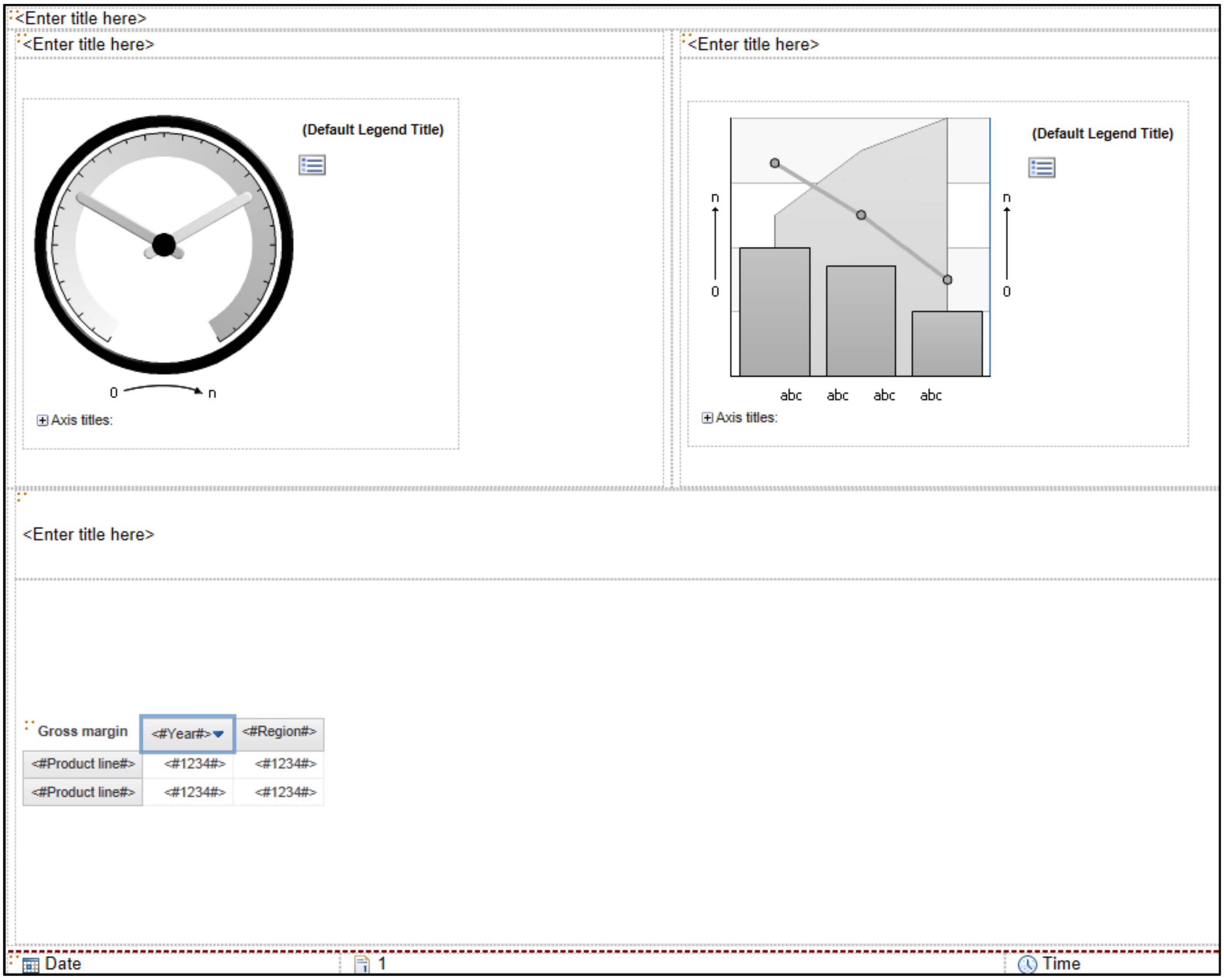
- In the crosstab, click **<#Year#>**, and then sort **Descending**.

  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**: Click the **Border** checkbox to select it.
  - Click **Black** from the **Color** list.
  - In the **Corner radius** box, type **10**.
  - Click the **Fill** checkbox to select it.
  - Click **Color**, and then click the **Color swatch** tab.
  - Click **#CCFFFF** (10^{th} row, last column), and then click **OK**.

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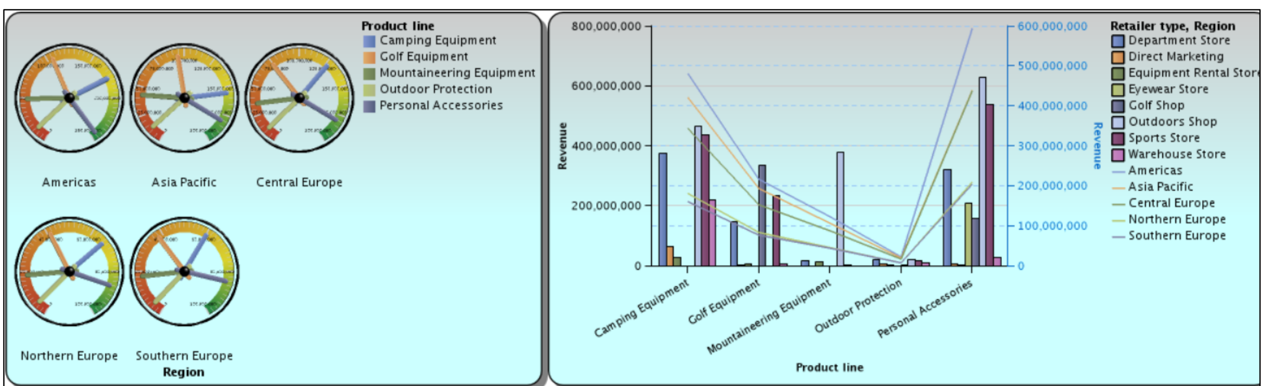
- In the **Position** box, type **45**.
- Click **New**.
- Click **Color**, and then click the **Color swatch** tab.
- Click **#CCCCCC** (10th row, 11th column), and then click **OK**.
- In the **Position** box, type **100**.
- In the **Angle** box, type **90**.
- Click the **Drop Shadow** checkbox to select it, and then click **OK**.

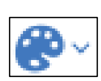
- **Toolbar**: Run the report in HTML.
- **Rendered report** tab: Verify the results, and then close the tab.

A section of the results appear as follows:



Gross margin	2013	2012	2011	2010	Americas	Asia Pacific	Central Europe	Northern Europe	Southern Europe
Camping Equipment	364,819%	616,781%	606,335%	513,157%	609,334%	438,315%	593,876%	230,166%	229,402%
Golf Equipment	178,897%	295,197%	272,722%	240,852%	285,873%	206,839%	279,248%	108,375%	107,333%
Outdoor Protection	189,181%	311,343%	309,134%	276,338%	315,929%	226,301%	306,139%	118,828%	118,799%
Personal Accessories	3,280,176%	4,925,059%	3,667,173%	2,578,597%	4,629,449%	3,046,862%	3,619,466%	1,608,235%	1,546,994%
Mountaineering Equipment	177,533%	303,609%	296,185%		221,809%	166,454%	222,484%	83,272%	83,309%

Task 4. Format the combination chart.

- **Work area**: In the combination chart, click **Series (primary axis)** bar.
- **Toolbar**: Click **Chart Palette Presets** .
- **Palette** dialog box: Click the **Contemporary style palette**.
- **Work area**: In the combination chart, click **Series (Secondary Axis)** line.
- **Toolbar**: Click **Chart Palette Presets**
- **Palette** dialog box: Click the **Contemporary style palette**.
- **Work area**: Click the combination chart background.

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- **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 **Gauge Axes** 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 **Counterclockwise**, 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**.

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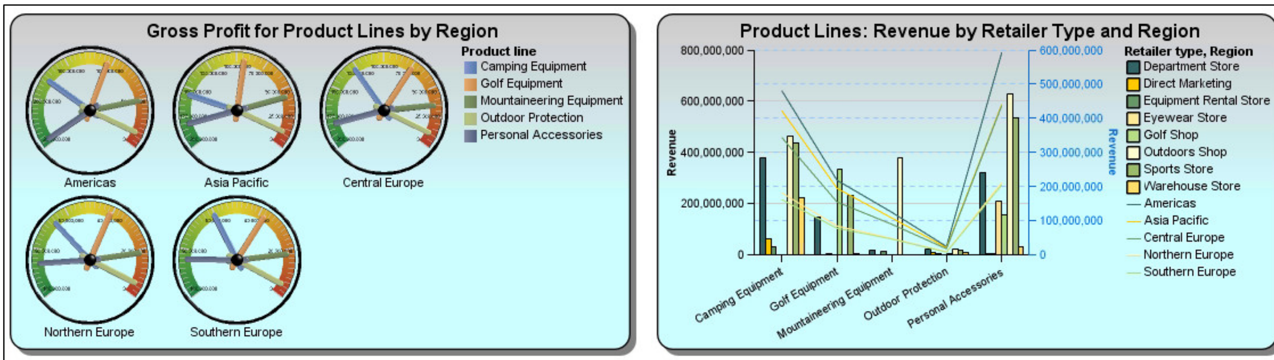
- **Work** area: In the gauge chart, double-click the chart title text.
- **Text** dialog box: Type **Gross Profit for Product Lines by Region**, and then click **OK**.
- **Toolbar**: Click **Arial**, **12 pt.**, **Bold**.

Task 6: Format the crosstab.

- **Crosstab table cell toolbar:** Click **Left** and then click **Top**.
- **Work** area**:** In the **Crosstab**, double-click the crosstab title text.
- **Title** dialog box: Type **Gross margin for Product lines by Year and Region**.
- **Toolbar**: Click **Arial**, **12 pt.**, **Bold**.
- Run the report in **HTML**.

  The results appear as follows:



Gross margin for Product lines by Year and Region

Gross margin	2013	2012	2011	2010	Americas	Asia Pacific	Central Europe	Northern Europe	Southern Europe
Camping Equipment	364,819%	616,781%	606,335%	513,157%	609,334%	438,315%	593,876%	230,166%	229,402%
Golf Equipment	178,897%	295,197%	272,722%	240,852%	285,873%	206,839%	279,248%	108,375%	107,333%
Outdoor Protection	189,181%	311,343%	309,134%	276,338%	315,929%	226,301%	306,139%	118,828%	118,799%
Personal Accessories	3,280,176%	4,925,059%	3,667,173%	2,578,597%	4,629,449%	3,046,862%	3,619,466%	1,608,235%	1,546,994%
Mountaineering Equipment	177,533%	303,609%	296,185%		221,809%	166,454%	222,484%	83,272%	83,309%

- Close the rendered report tab.
- Close sign off from **IBM Cognos Analytics**.
- Close the Web browser.

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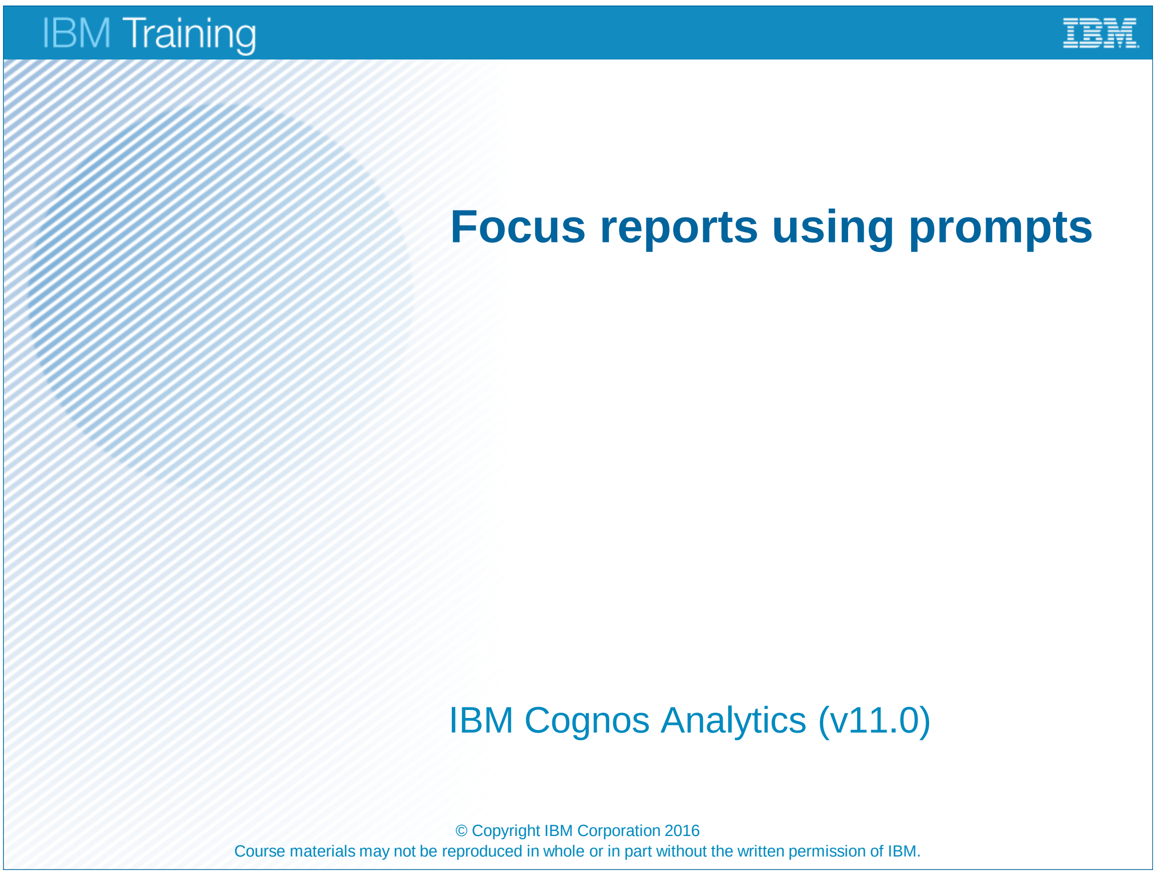
Unit 6 Focus reports using prompts



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IBM Training

Unit objectives

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

Focus reports using prompts

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Unit objectives

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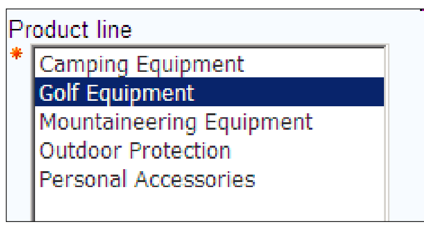
IBM Training

Examine parameters and prompts

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



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**

Focus reports using prompts

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Examine parameters and prompts

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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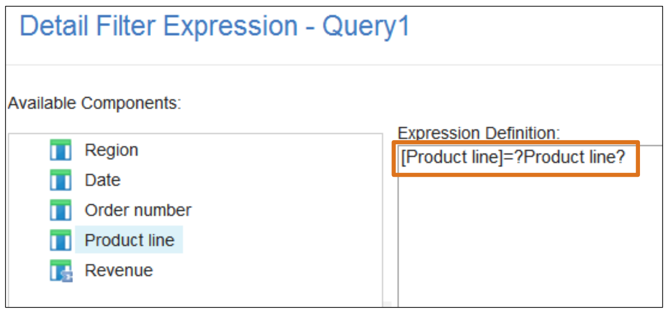
IBM Training

Create a parameter item on the report

- Use a parameterized filter to create a prompt.



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Create a parameter item on the report

Reporting can automatically generate prompted reports based on parameters you create. When you run the report, Reporting can generate a prompt 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.

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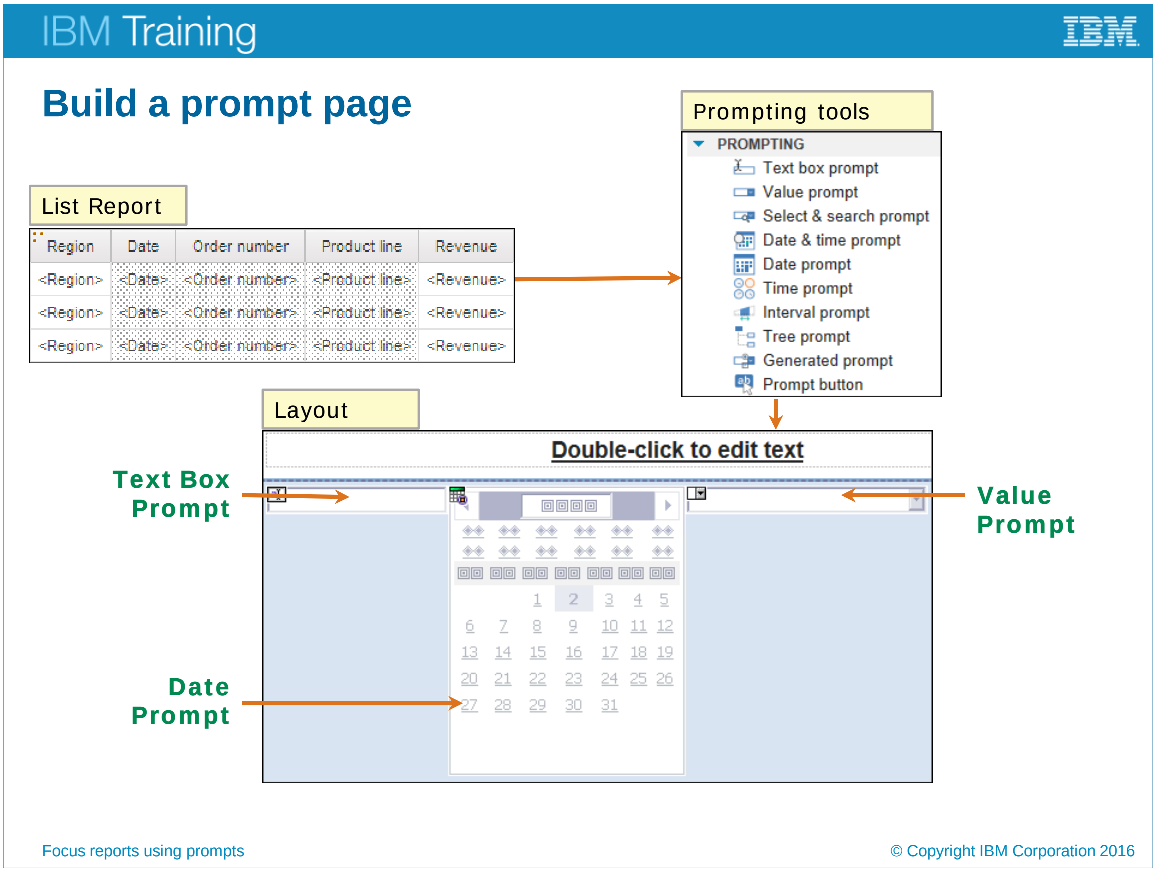

Build a prompt page

You can create a prompt page to control how prompts appear in the report. A prompt page can be built by dragging prompt tools from the tool box.

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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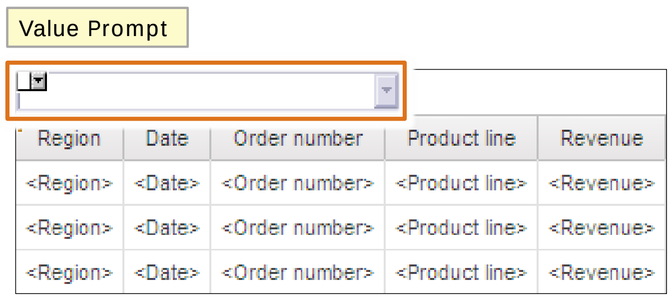
IBM Training

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.



Focus reports using prompts

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Add a prompt item to a report

A prompt item can be added directly to a report. When added, a prompt wizard dialog box appears and steps you through building the prompt. Prompt customization 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. Create a query for the prompt.
4. Add the query and the parameter to the prompt

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

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IBM Training

Demonstration 1

Create a prompt by adding a parameter

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

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Demonstration 1: Create a prompt by adding a parameter

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Demonstration 1: Create a prompt by adding a parameter

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

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 using the **GO data warehouse (query)** package.
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**

   The results appear as follows:

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

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

   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 the rendered report tab.

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

1. Click the list to regain focus.
2. On the list toolbar, clicks **Filters**, **Edit Filters**, and then click **Add**.
3. Click **Advanced**, and then click **OK**.
4. 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.
5. Click **OK** to close the **Detail filter expression** dialog box, and then click **OK** to close the **Filters** dialog box.
6. Run the report in **HTML**.

   You are prompted to select a date and time.
7. 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

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

   The report displays results from Jan 8, 2013 to Jul 20, 2013.
9. Close the rendered report tab.
10. Leave the report authoring tab open for the next demonstration.

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

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IBM Training

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

Focus reports using prompts

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Identify prompt type

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

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

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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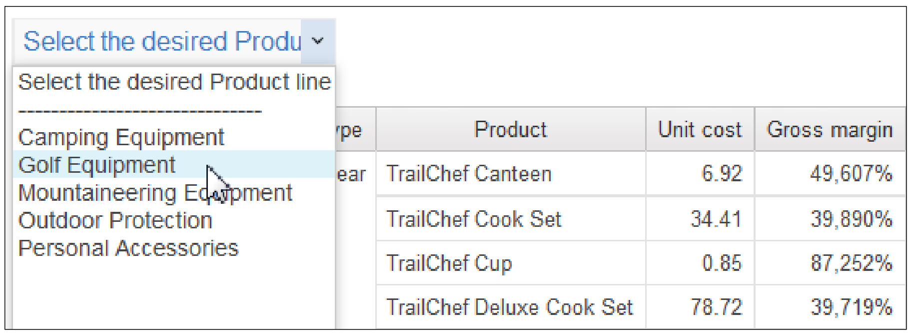
IBM Training

Demonstration 2

Add a value prompt to a report



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Demonstration 2: Add a value prompt to a report

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Demonstration 2:
Add a value prompt to a report

Purpose:
You will create a report to help reduce production costs. Because you have many products, you will add a prompt so that users can view products within a specified product line without closing and running the report.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 using the **GO data warehouse (query)** package.
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))
3. In the report, click **<Product line>**, Ctrl+click **<Product type>**, and then click **Group / Ungroup** on the List toolbar.

   The results appear as follows:

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

4. Delete the **Double-click to edit text** from the block at the top of the report.
5. From the **Toolbox** tab, drag a **Table** object into the **Block** object, clear the **Maximize width** checkbox, and then click **OK**.
6. Click in the **Block** object, and then from the toolbar, left justify the table.

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

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

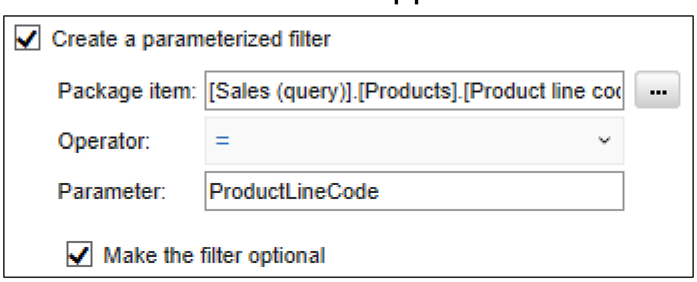
   You want the prompt to filter on product line code to make the query more efficient. However, the prompt will display product line names, not codes, to make selections easier.

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

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

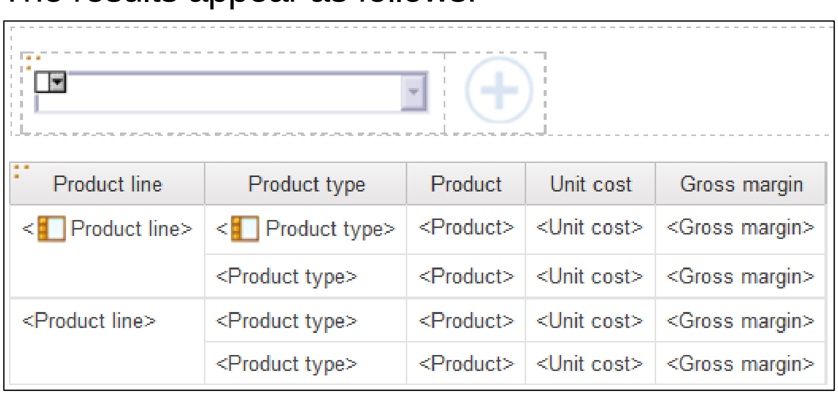
6. Select **Make the filter optional**.

   A section of the results appear as follows:



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

   The results appear as follows:



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

1. From the **Toolbox** tab, in the **PROMPTING** section, drag a **Prompt button** into the right table cell.
2. In the **Properties** pane, under **GENERAL**, click **Type**, and then from the list, select **Finish**.
3. From the side panel, click **Navigate,** and then click the **Query explorer**.
4. Click **Query2**, and then under **Data Items**, click **Product line code1**.
5. In the **Properties** pane, under **DATA ITEM**, double-click **Expression**.
6. Change the **Expression Definition** to **[Sales (query)].[Products].[Product line]**.
7. Validate the expression, and then click **OK**.
8. Run the report in **HTML**.

   The report opens in the browser, displaying data for all product lines. The report can run because the parameterized filter is defined as optional.
9. From the **Product line** prompt list, select **Golf Equipment**, and then click **Finish**.

   Only Golf Equipment product line information is displayed.
10. Close the rendered report tab.
11. Click **Page explorer**, and then click **Page1** to return to the report design.
12. Click the **Finish** prompt button, and then press **Delete**.
13. Click the **Value Prompt**, to select it.
14. In the **Properties** pane, under **GENERAL**, click **Auto-submit**, and then change the property to **Yes**.

Task 4. Customize the prompt.

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

1. With the value prompt selected, in the **Properties** pane, under **PROMPT TEXT**, click **Header Text**, and then click the **ellipsis**.
2. Select **Specified text**, and then click the **ellipsis** to the right of the text box.

   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.

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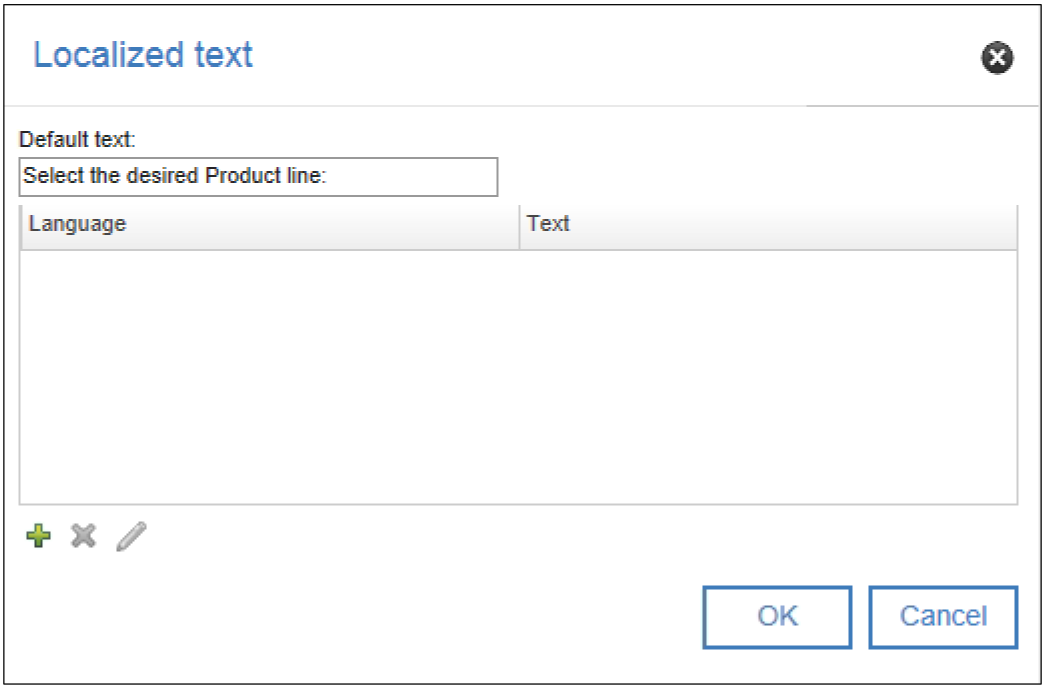
3. Type the following in the **Default text** box: **Select the desired Product line:**.

   The results appear as follows:

   You can add information here as well for localization.

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

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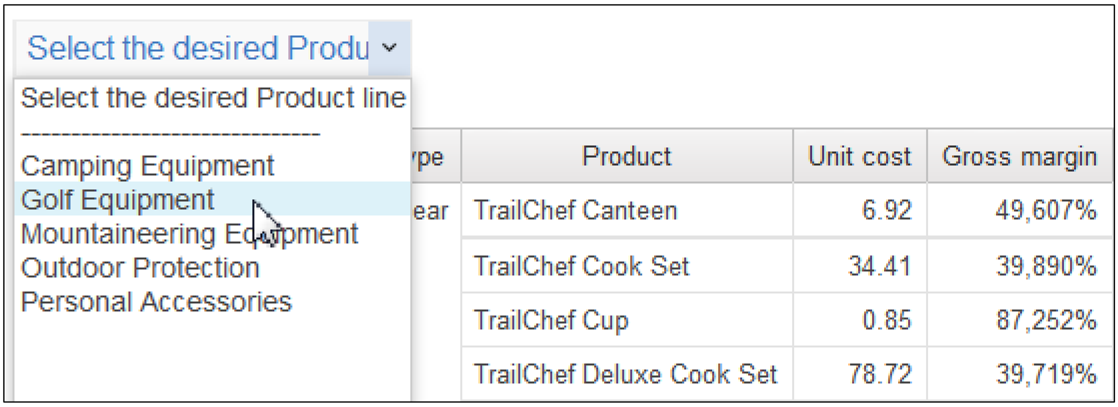
Task 5. Run the report.

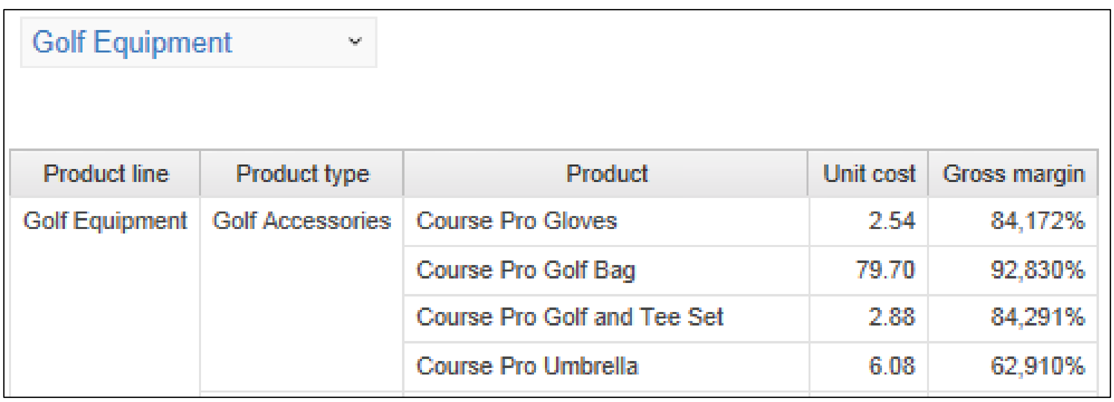
1. Run the report in **HTML**.

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



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

   A section of the results appear as follows:



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

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

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

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

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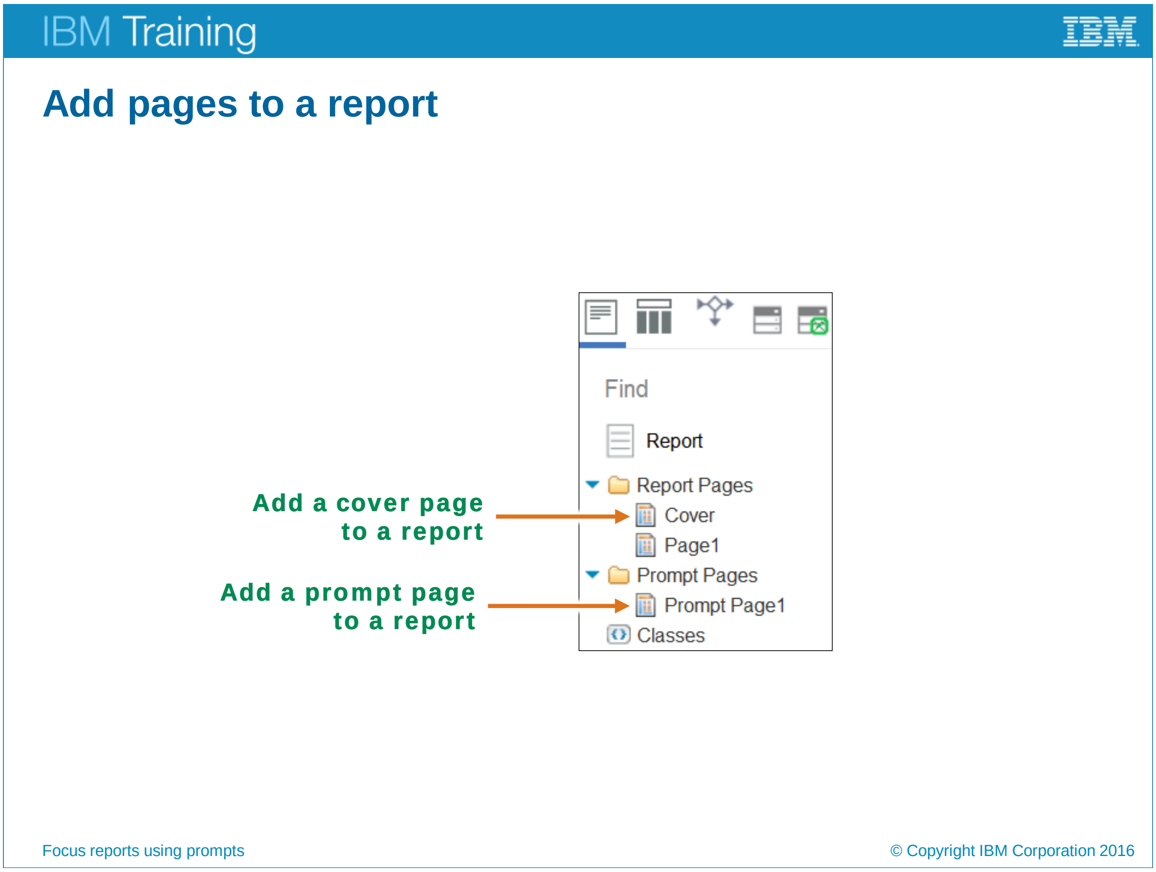

Add pages to a report

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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IBM Training

Demonstration 3

Add a Select & Search prompt to a report

Product line	Product type	Product	Unit cost	Gross margin
Camping Equipment	Lanterns	EverGlow Butane	40.63	49,092%
		EverGlow Kerosene	20.00	41,057%
		Firefly 2	16.38	48,909%
		Firefly 4	17.84	44,545%
		Firefly Extreme	29.10	51,590%
		Firefly Lite	6.75	62,846%
		Firefly Mapreader	7.50	62,146%
		Firefly Multi-light	17.78	37,673%
Mountaineering Equipment	Climbing Accessories	Firefly Charger	22.36	55,479%
		Firefly Climbing Lamp	21.57	38,336%
		Firefly Rechargeable Battery	3.15	54,869%

Focus reports using prompts

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Demonstration 3: Add a Select & Search prompt to a report

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Demonstration 3: Add a Select & Search prompt to a report

Purpose:
You want to change your current report to allow users to select multiple products to show in the report. To do this you must delete the current value prompt and replace it with the Select & Search prompt.

Note: Before starting this demonstration, be sure to complete Demonstration 2. The report ('**Unit 6-Prompt**') from Demonstration 2 is used for Demonstration 3.

Portal: **http://vclassbase:9300/bi**
User/Password: **brettonf/Education1**
Package: **Team \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 demonstration still open (**My Content\Unit 6-Prompt**), run the report in **HTML**.
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%
		TrailChef Water Bag	2.77	61,039%
	Lanterns	EverGlow Butane	40.63	49,092%
		EverGlow Double	28.75	55,443%

   The report includes information on only one product line. You will now modify the prompt to let users search and select one or more product names.

3. Close the rendered report tab.

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

1. In the work area, click the **Value** prompt, and then delete it.
2. Click the list data container, from the list toolbar, click **Filters**, and then click **Edit Filters**.

   Notice that the prompt filter remained even when the Value prompt was deleted.
3. Select the filter, delete it, and then click **OK**.
4. From the side panel, click **Navigate** to open it, and then click **Prompt pages**.
5. From the **Toolbox**, drag a **Page** object to the **Prompt pages** pane.
6. Double-click **Prompt page1**, expand **PROMPTING**, and then drag a **Select & search prompt** object onto the prompt page.
7. In the **Choose Parameter** page, change the parameter name to **Productnames**, and then click **Next**.
8. In the **Create Filter** page, ensure that **Create a parameterized filter** is selected, and then beside **Package item**, click the **ellipsis**.
9. Expand the **Sales and Marketing (query)** folder, **Sales (query)** namespace, **Products** folder, click **Product**, and then click **OK**.
10. Select **Make the filter optional**.
11. 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.
12. Left justify the **Double-click to edit text** in the header block.

Task 3. Run the report.

1. Run the report in **HTML**.
2. Click **Finish** to accept the default of all product lines.

   You can navigate to view product data on other pages. The report ran because you made the prompt optional. The name of the product you want to search for contains the keyword "Firefly".
3. Click **Run**  to run the report again.
4. In the **Keywords** text box, type **Firefly** (no other text should appear in the text box), and then expand the options drop down list at the bottom.

   The list of search options allows you to refine your search.
5. Select **Contains any of these keywords**, and then click **Search** .

   All product lines with "Firefly" in the name appear in the Results box.
6. Click **Select all,** and then click **Finish** to see the **Firefly** results.

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7. Click **Run Report**  to run the report again.
8. In the **Keywords** text box, type **Firefly Butane Kerosene**.
9. Select **Contains any of these keywords**, and then click **Search**.
10. Click **Select all**, and then click **Finish**.

    The results appear as follows:

Product line	Product type	Product	Unit cost	Gross margin
Camping Equipment	Lanterns	EverGlow Butane	40.63	49,092%
		EverGlow Kerosene	20.00	41,057%
		Firefly 2	16.38	48,909%
		Firefly 4	17.84	44,545%
		Firefly Extreme	29.10	51,590%
		Firefly Lite	6.75	62,846%
		Firefly Mapreader	7.50	62,146%
		Firefly Multi-light	17.78	37,673%
Mountaineering Equipment	Climbing Accessories	Firefly Charger	22.36	55,479%
		Firefly Climbing Lamp	21.57	38,336%
		Firefly Rechargeable Battery	3.15	54,869%

    The report runs and is filtered to display only the data associated with the products that you selected based on your search.

11. Close the rendered report tab.
12. Leave the report authoring tab open for the next demonstration.

Results:
You removed the existing value prompt and filter and updated the existing report with a Select & Search prompt. This allowed users to search for and select from, a list of product names based on keyword options.

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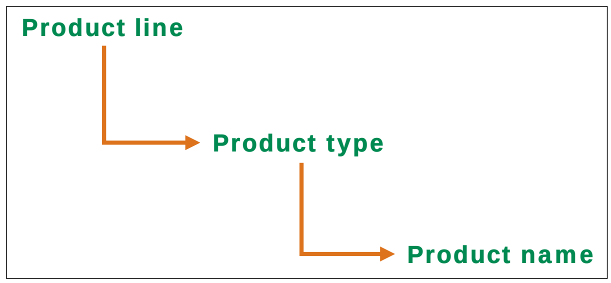
IBM Training

Create a cascading prompt

- Use values from a previous prompt to filter the values in the current prompt or picklist.



Focus reports using prompts

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Create a cascading prompt

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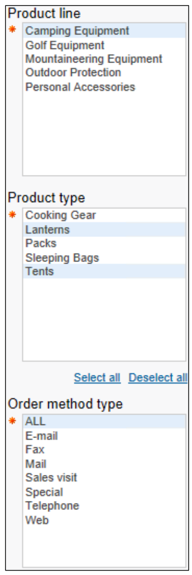
IBM Training

Demonstration 4

Create a cascading prompt



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

Focus reports using prompts

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Demonstration 4: Create a cascading prompt

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Demonstration 4: Create a cascading prompt

Purpose:
Executives need a report that lets them analyze product returns. They want a report that enables them to focus on specific product lines and product types within those product lines for all order methods. This report will be delivered to the shareholders during their monthly meeting, so the executives would like a cover page to add a more official look.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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, using the **GO data warehouse (query)** package.
2. From the **Data/Source** tab, 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>
<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.
3. In the **Text** field at the top of the report, change the title to:
   Product type by Product line for all Order methods.

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4. With the title text still selected, change the font to **Arial Black**, **14pt**.
5. Left justify the text field.
6. Ctrl-click **<Product line>** and **<Product type>**, and then on the list toolbar, click **Group / Ungroup**.
7. Click **<Return quantity>**, on the toolbar click **Summarize**, and then click **Total**.
8. In the work area, click **<Product line>**, and then Ctrl-click **<Product type>**, and **<Order method type>**.
9. On the **Navigate** tab, right-click **Report** , and then click **Build Prompt Page** .

Task 2. Set behavior patterns for prompts.

1. In the **Prompt page** work area, click the **Product type** value prompt.
2. From the **Application** bar, click **Show properties**.
3. In the **Properties** pane, under **GENERAL**, double-click **Cascade source**, from the list, select **Product line**, and then click **OK**.
4. 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 submits.
5. In the work area, click the **Product line** value prompt.
6. In the **Properties** pane, under **GENERAL**, in the **Multi-select** list, select **No**.
7. Under **GENERAL**, in the **Auto-submit** list, select **Yes**.

   The user can only select one product line, and the selection will be submitted automatically.
8. In the work area, click the **Order method type** value prompt.
9. 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.

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Task 3. Create a static value to select all order method type values.

1. With the **Order method type** value prompt still selected, under **DATA**, double-click **Static choices**, and then click **Add**.
2. Type **ALL** for both the **Use** and **Display** values, click **OK** to close the Edit dialog box, and then click **OK** to close the **Static choices** dialog box.

   The value entered for static choices is case sensitive and should be entered the exact same way in your filter expression.

   You will specify what values to return when ALL is selected in the Order method prompt.
3. From the **Page explorer** pane, click **Page1**.
4. Click anywhere in the list, from the list toolbar, click **Filters**, and then click **Edit Filters**.
5. Click the **Order method type** filter, and then click **Edit**.
6. Replace and validate the existing expression with the following:

   if (?Order method type?='ALL') then ([Order method type]=[Order method type]) else([Sales (query)].[Order method].[Order method type] = ?Order method type?).

   Hint: Drag Order method type from the Data Items tab.
7. Choose any options for the prompts, and then click **OK** to close the validation box.
8. Click **OK** to close the Detail filter expression dialog box, and then click **OK** to close the Filters dialog box.

Task 4. Create a cover page.

1. On the **Page explorer** tab, click **Report pages**.
2. From the **Toolbox** tab, drag a **Page** to the **Report pages** section - placing it above **Page1**.
3. In the **Properties** pane, under **MISCELLANEOUS**, in the **Name** box, modify it to a name of **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 left table cell, and then Ctrl-click the right table cell.
7. On the table toolbar, click **Center**.
8. Click anywhere on the page below the table, and then on the toolbar, click **Middle**.

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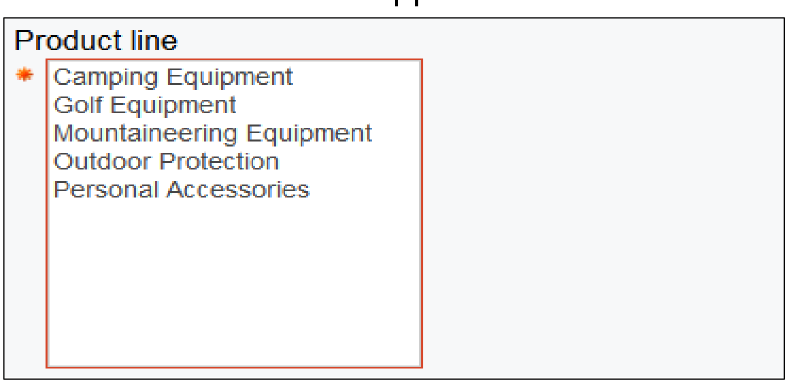
Task 5. Create title and image for cover page.

1. Drag a **Text item** into the left table cell.
2. In the **Text** dialog box, type **GO Data Warehouse - Revenue Generated**, and then click **OK**.
3. Click the text item, and then change the font to **Arial Black**, **16 pt**.
4. From **Toolbox**, expand **LAYOUT**, and then drag an **Image** object into the right table cell.
5. In the toolbar, click **More**, and then click **Edit Image URL**.
   (cancel any message that appear)
6. In the **Image URL** box, ensure the path is set to **http://vclassbase:88/images/** (modify the URL, if necessary), and then click the **Browse** button.
7. Locate and select **cover2.jpg**, and then click **OK** to close the **Image Browser** dialog box.
8. Click **OK** to close the **Image URL** dialog box.
9. In the **Properties** pane, under **POSITIONING**, double-click the **Size & overflow** property.
10. Set the **Width** to **150** pixels, the **Height** to **75** pixels, and then click **OK**.

Task 6. Run the report and view details for specific products.

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

   A section of the results appear as follows:



   The Prompt Page appears prompting for a Product line. The star icon indicates that this selection is mandatory.

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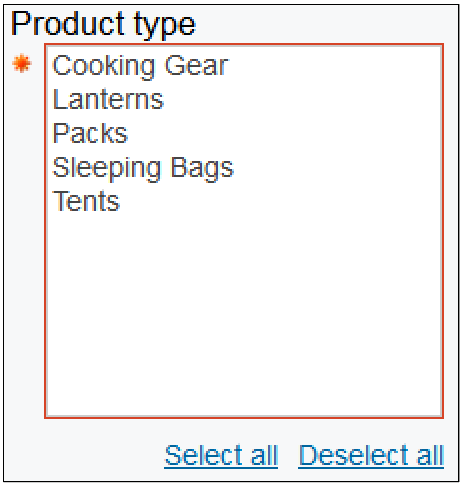
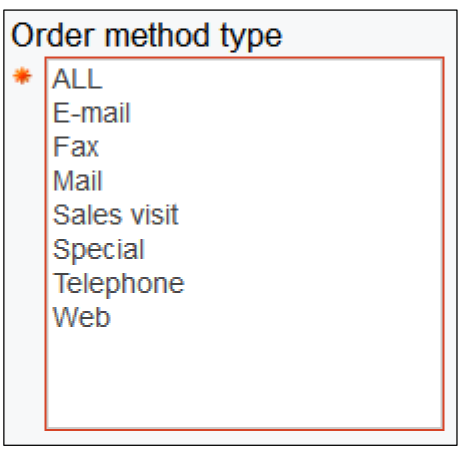
2. In the Product line prompt, click **Camping Equipment**.
   The results for the **Product type** prompt update and appear as follows:



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.

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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

6. Close the rendered report tab.
7. Leave the report authoring tab open for the following exercise.

Results:
You created a report that lets you analyze product returns. The report enabled users to focus on specific product lines and product types within those product lines. In particular, you focused on tent and lantern returns for all order methods. You gave the report a cover page for a more professional look.

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IBM Training

Unit summary

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

Focus reports using prompts

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Unit summary

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IBM Training

Exercise 1

Focus a report using value prompts

Focus reports using prompts

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Exercise 1: Focus a report using value prompts

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Exercise 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 exercise results, refer to the Tasks and Results section that follows. If you need more information to complete a task, refer to earlier demonstrations for detailed steps.

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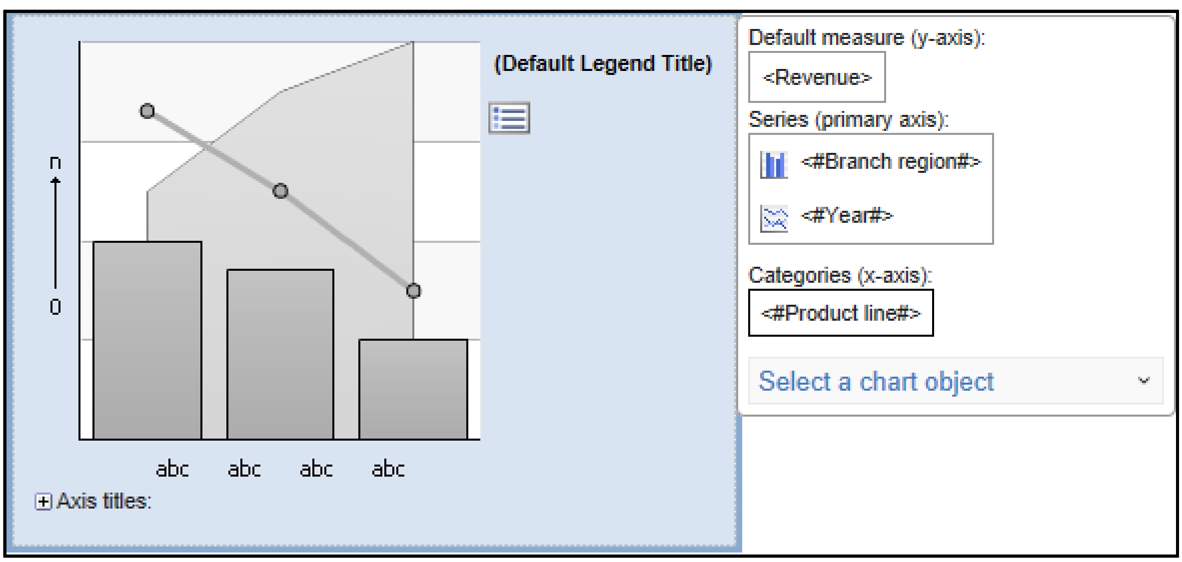
Exercise 1: Tasks and Results

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 using the **GO data warehouse (query)** package.
- **Data/Source tab**: Navigate to **Sales and Marketing (query)/Sales**
  - 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:



- **Navigate tab**: Navigate to Prompt pages.
- **Toolbox tab**: Create a new page.
- **Prompt Pages work area**: Open **Prompt page1**.
- **PROMPTING**: 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):**.

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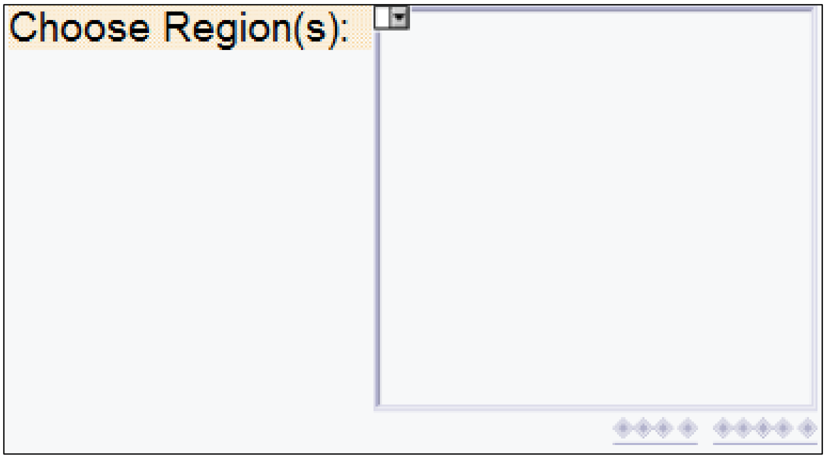
- **Toolbar**: Set text to **14pt**.

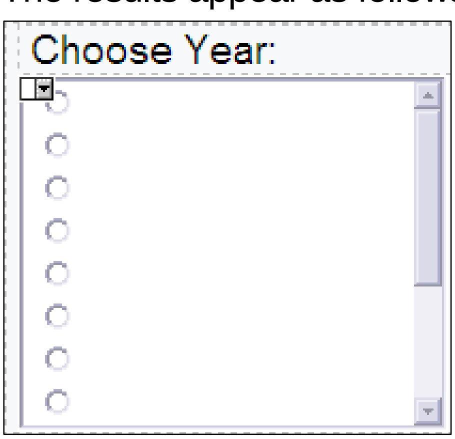
  The results appear as follows:



Task 2. Add a Year prompt.

- **Toolbox tab**: Drag a **Block** below 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:



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Task 3. Create a cover page (Optional).

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

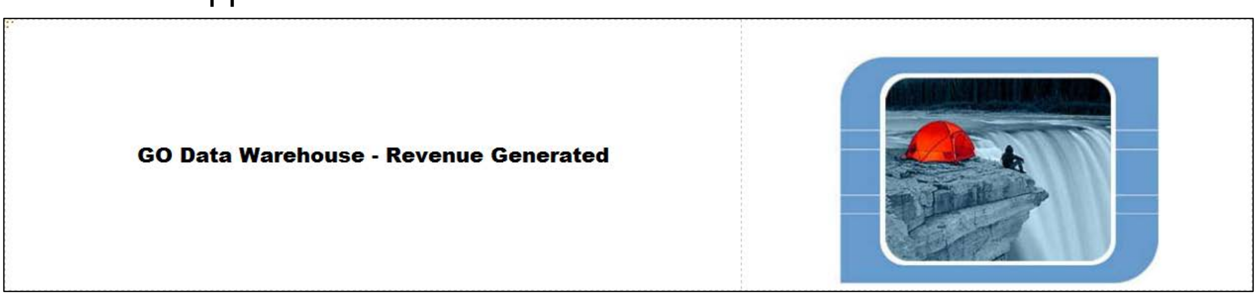
- **Navigate tab**: Navigate to **Report Pages**.
- **Toolbox tab**: Add a page to the **Report Pages** work area.
- **Properties page**: Name the new page **CoverPage**.
- **Report Pages work area**: Open **CoverPage**.
- **Toolbox tab**: Add a **2** column by **1** row **Table** to the work area.
- **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:



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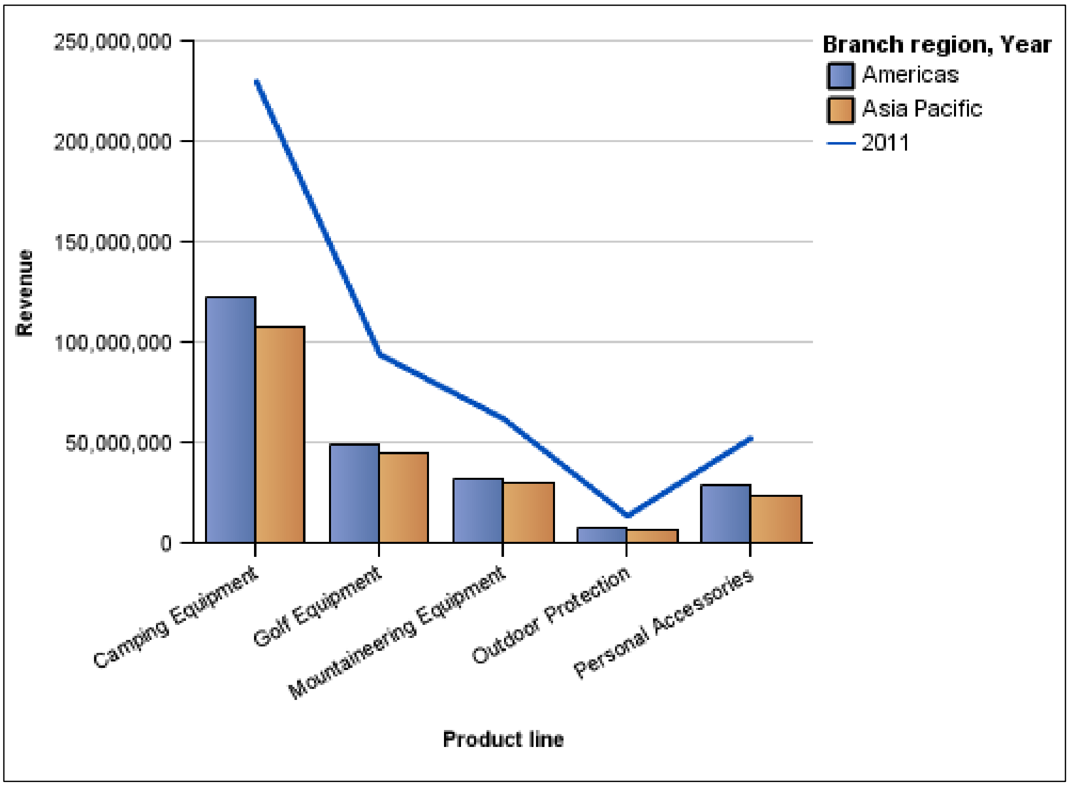
Task 5. Run the report.

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

  The results appear as follows:



  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.

- Close the rendered report tab.
- Sign out of **IBM Cognos Analytics**.
- Close the web browser.

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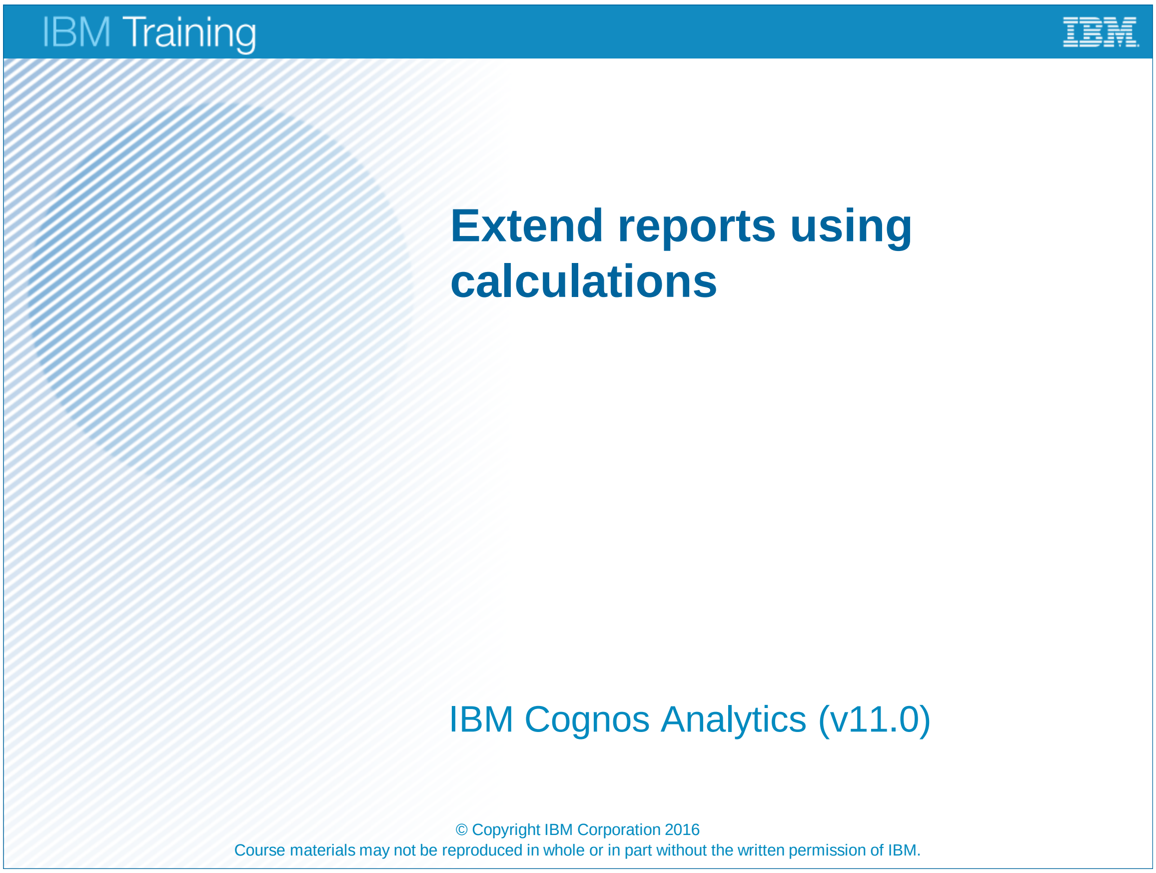

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IBM Training

Unit objectives

- Create calculations based on data in the data source
- Add run-time information to the reports
- Create expressions using functions

Extend reports using calculations

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Unit objectives

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IBM Training

Derive additional information from the data source

Query Calculations

Employee name	Revenue	Sales target	Variance	Percent of Goal
Australia				
Alice Walter	19,040,701.32	16,834,700	2,206,001.32	113%
Dave Smythe	16,652,383.41	15,084,300	1,568,083.41	110%

Expression Definition
[Revenue]-[Sales target]

Expression Definition
[Revenue]/[Sales target]

Extend reports using calculations

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Derive additional information from the data source

Create a layout calculation to add information to your report.

Create calculated columns based on existing items in the model using query calculations.

Calculations can be added to a list, crosstab, or chart report, as well as to the body, headers, and footers.

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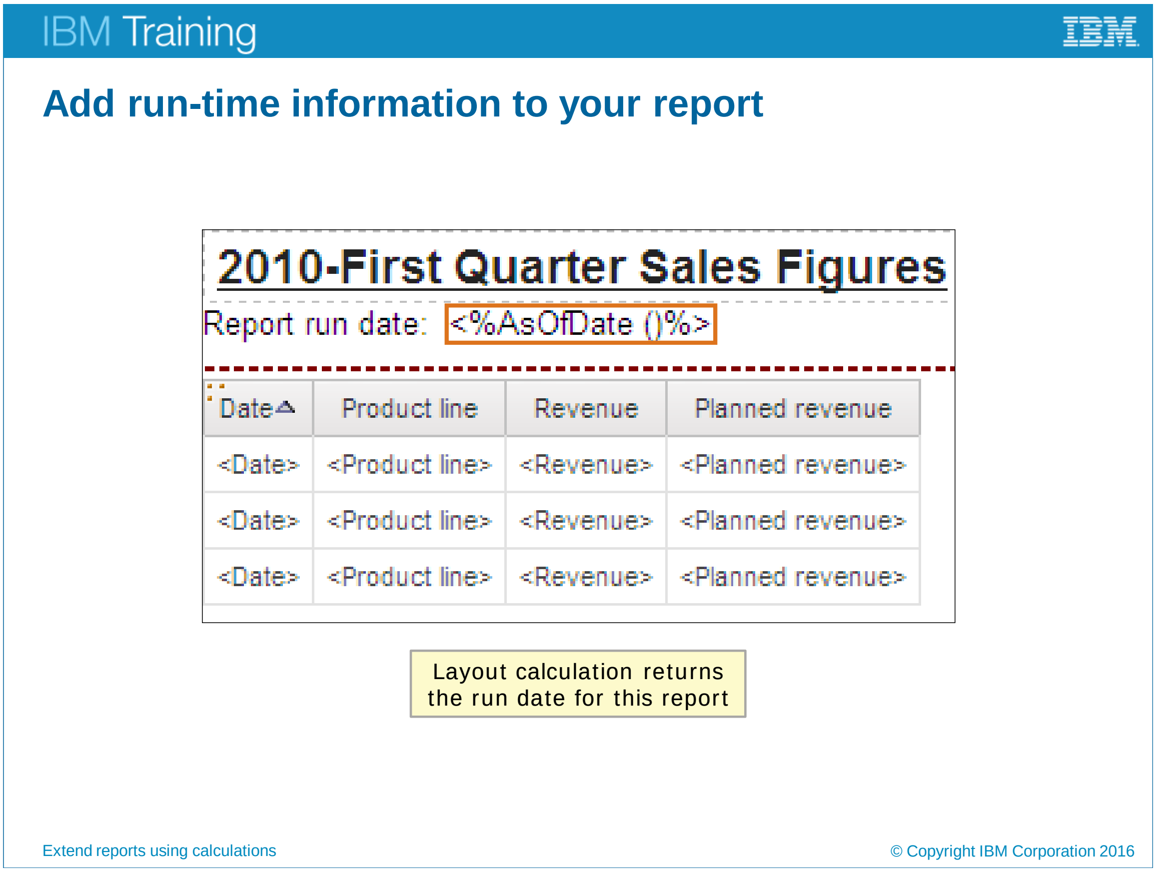

Add run-time information to your report

Layout calculations can include run-time information such as current date, current time, and user name.

Including calculated columns can help provide further insight into your data.

You can create a query or layout calculation by inserting a calculation in to your report and then creating the expression in the Expression Editor.

Create a calculated column to make a report more meaningful by deriving additional information from the data source. For example, you create an invoice report, and you want to see the total sale amount for each product ordered. Create a calculated column that multiplies the product price by the quantity ordered.

If an expression is used in multiple reports, or used by different report authors, ask your modeler to create the expression as a standalone object in the model and include it in the relevant package.

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To build the expression use the:

- Source tab to find all query items available from the package.
- Data Items tab to find the query items currently found in your report.
- Functions tab to find operators, summaries, constants, and constructs to create the expression you want to display your customized data.

Parameters tab to find query items used for prompts and parameters within the report.

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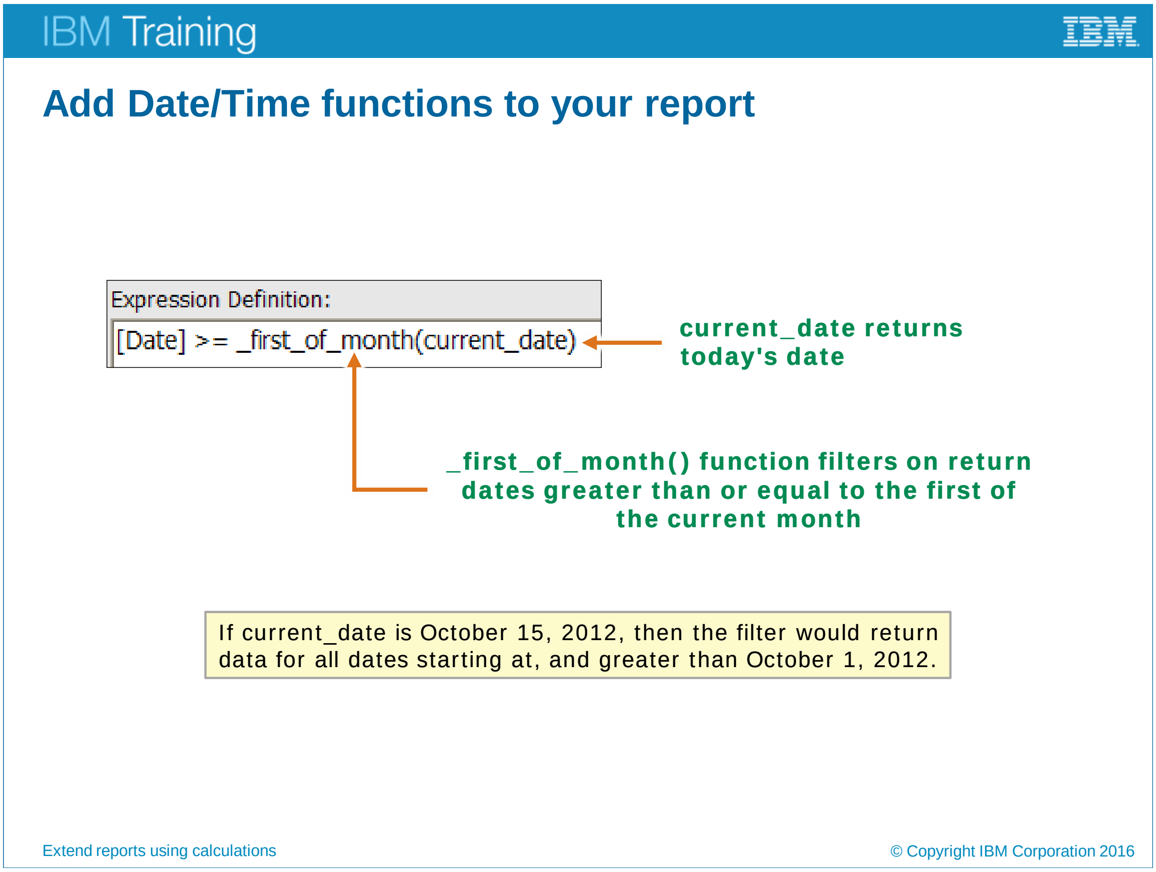

Add Date/Time functions to your report

Use date and time functions in calculations and filters to query on specific dates and times in your report.

Date/Time functions can be used to build dates, modify existing dates or to filter the report for specific dates.

A useful date/time function is the extract() function which returns an integer representing the value of datepart (year, month, day, hour, minute, second) in your datetime expression.

Date/Time functions can be found under the Business Date/Time Functions folder, Vendor Specific Functions folder or the Common Functions folder. If you are going to use vendor specific functions, ensure that they are specific to the database that is currently being queried.

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Not all data sources support functions the same way. The data modeler can set a quality of service indicator (icon appearing beside some functions) on functions to give a visual clue about the behavior of the functions. Report authors can use the quality of service indicators to determine which functions to use in a report. The quality of service indicators are:

- (**X**) not available -This function is not available for any data sources in the package.
- (**!!**) limited availability -The function is not available for some data sources in the package.
- (**!**) poor performance -The function is available for all data sources in the package but may have poor performance in some data sources.
- (**no symbol**) unconstrained -The function is available for all data sources.

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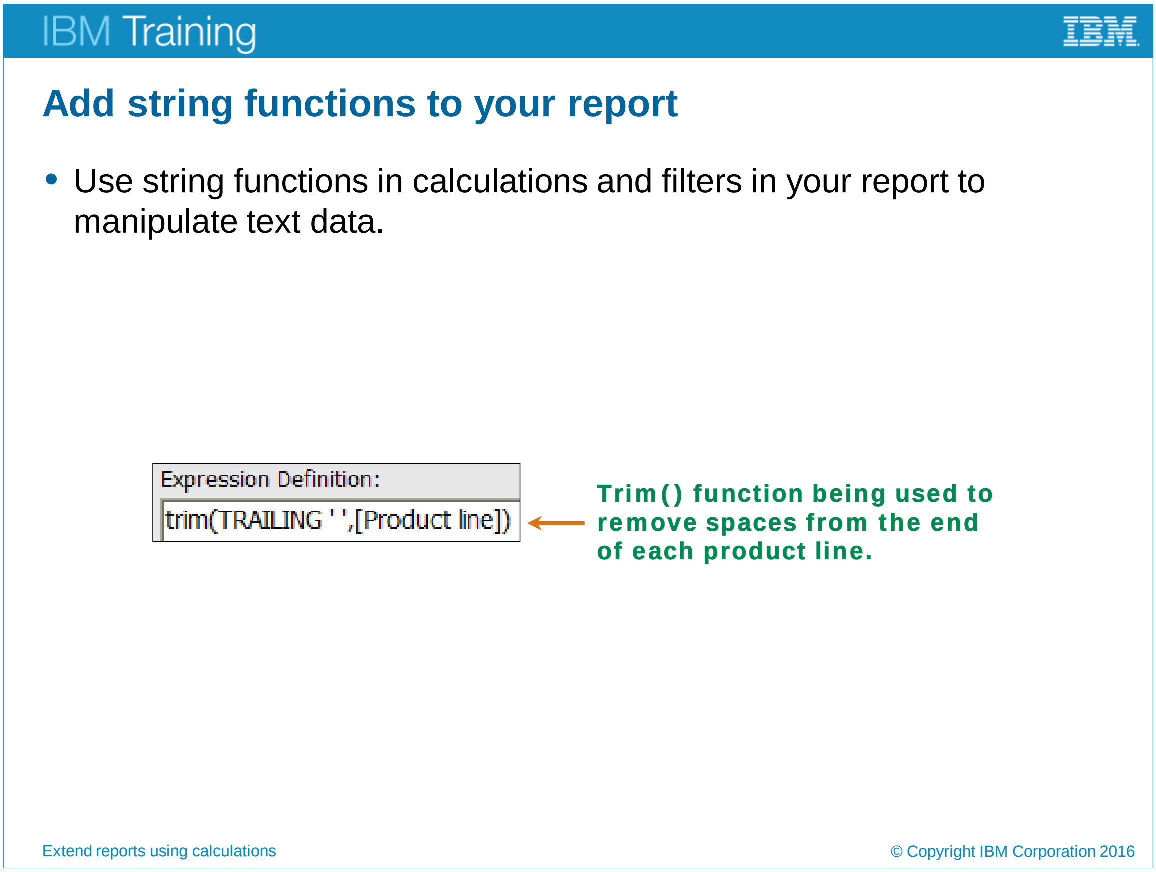

Add string functions to your report

Use string functions in calculations and filters in your report to manipulate text data..

Some examples of string functions include:

- **substring()** function to return part of a string
- **trim()** function removes specific characters from the beginning or end of a specific text data item
- **upper()** function changes the text returned to be in uppercase
- **lower()** function changes the text returned to be in lowercase

String functions can be found under the Common Functions folder, or Vendor Specific Functions folder. For the above slide, if a user entered ‘Golf Equipment ‘(with a space at the end) into the database, the report author would get unexpected results if they queried the database and was doing a comparison against ‘Golf Equipment’ (without a space at the end). This is a real world example where the trim() function should be used to remove trailing spaces before doing a comparison.

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IBM Training

Demonstration 1

Add calculations to a report

2010-First Quarter Sales Figures and Overall Calculated Percent of Goal
Report run date: Mar 4, 2016

Date	Product line	Revenue	Planned revenue	Percent of Goal
Jan 12, 2010	Camping Equipment	20,217,372.98	21,714,739.59	93%
Jan 12, 2010	Golf Equipment	9,141,599.89	9,815,894.17	93%
Jan 12, 2010	Outdoor Protection	2,263,380.47	2,393,032.12	95%
Jan 12, 2010	Personal Accessories	7,414,443.06	7,797,859.04	95%
Jan 13, 2010	Camping Equipment	5,000,710.6	5,350,515.31	93%
Jan 13, 2010	Golf Equipment	2,536,524.65	2,723,837.61	93%
Jan 13, 2010	Outdoor Protection	474,025.75	496,960.85	95%
Jan 13, 2010	Personal Accessories	3,477,197.59	3,586,395.95	97%

Extend reports using calculations

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Demonstration 1: Add calculations to a report

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Demonstration 1: Add calculations to a report

Purpose:
You have been asked to create a report that will return revenue and planned revenue for product lines for January 2010. In addition to looking at actual revenue versus planned revenue, users want to see a percentage for how much of the planned revenue was met. The report should also display the date that the report is run.

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content \Samples\Models\GO data warehouse (query)**
Report Type:	**List**
Folder:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Create the list and include a calculated column for percent of goal.

1. Open a new **List** template using the **GO data warehouse (query)** package.
2. From the **Source** tab, add the following query items to the new list report object:
   - Time: **Date**
   - Products: **Product line**
   - Sales fact: **Revenue**, **Planned revenue**

Date	Product line	Revenue	Planned revenue
<Date>	<Product line>	<Revenue>	<Planned revenue>
<Date>	<Product line>	<Revenue>	<Planned revenue>
<Date>	<Product line>	<Revenue>	<Planned revenue>

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3. From the **Toolbox** tab, expand **TEXTUAL**, and then drag a **Query calculation** to make it the last column.

   The Data item expression dialog box appears.

4. In the **Name** field, type **Percent of Goal**, and then create and validate the following expression:

   [Revenue]/[Planned revenue]

   Hint: Drag Revenue and Planned Revenue form the Data Items tab.

5. Click **OK**.

   This column will show the percentage of revenue achieved for each product line on each day.

Task 2. Add a detail filter to filter dates.

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

   [Date] between _first_of_month(2010-01-01) and _last_of_month (2010-03-31)

   Hint: Drag Date from the Data Items tab.

   Data items selected from the Source tab will be calculated and summarized after aggregation, whereas data items selected from the Data Items tab will be calculated and summarized after aggregation.

   This filter will return dates between January 1 2010 and March 31 2010 (First quarter of 2010). The _first_of_month() function returns the first day of the month in the date expression, while the _last_of_month() function returns the last day of the month in the date expression. You can use any date for the expression as long as it’s in the proper format and it contains data. Make sure that there is a space between each function.

4. Click **OK** to close the **expression** dialog box, and then click **OK** to close the **Filters** dialog box.

Task 3. Format the data in the list.

1. In the work area, click the **<Date>** list column body.
2. On the list toolbar, click **Sort**, and then click **Ascending**.
3. Click the **<Percent of Goal>** list column body.
4. In the **Properties** pane, under **DATA**, double-click **Data format**.
5. In the **Format type** list, select **Percent**, for **Percentage symbol** select **%**, and then click **OK**.

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6. With **Percent of Goal** still selected, on the list toolbar click **Summarize**, and then click **Calculated**.

Date	Product line	Revenue	Planned revenue	Percent of Goal
<Date>	<Product line>	<Revenue>	<Planned revenue>	<Percent of Goal>
<Date>	<Product line>	<Revenue>	<Planned revenue>	<Percent of Goal>
<Date>	<Product line>	<Revenue>	<Planned revenue>	<Percent of Goal>
Overall - Calculated				<Calculated(Percent of Goal)>

Calculated is applied if the data item expression:

- contains a summary function
- is an if then else or case expression that contains a reference to at least a modeled measure in its condition
- contains a reference to a model calculation or to a measure that has the Regular Aggregate property set to a value other than Unsupported
- contains a reference to at least one data item that has the Rollup Aggregate Function property set to a value other than None

Task 4. Add run-time information to the report.

You want to display the run date of the report under the title of the report.

1. Delete the **Double-click to edit text**.
2. From the **Toolbox** tab, drag a **Table**, with 1 column and 2 rows, into the block.
3. From the **Toolbox** tab, drag a **Text item** into the top cell.
4. In the **Text field**, type **2010-First Quarter Sales Figures and Overall Calculated Percent of Goal**, and then click **OK**.
5. From the list toolbar, set the font size to **14pt**.
6. From the **Toolbox** tab, drag a **Text item** into the bottom table cell, type **Report run date:**, press the spacebar, and then click **OK**.
7. From the **Toolbox** tab, drag a **Layout calculation** to the right of the text item.
8. Create and validate the following expression:

   AsOfDate()

   Hint: Drag AsOfDate from the functions Tab/Report Functions folder.
9. Click **OK**.

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

    A section of the results appear as follows:

2010-First Quarter Sales Figures and Overall Calculated Percent of Goal

Report run date: Mar 4, 2016

Date	Product line	Revenue	Planned revenue	Percent of Goal
Jan 12, 2010	Camping Equipment	20,217,372.98	21,714,739.59	93%
Jan 12, 2010	Golf Equipment	9,141,599.89	9,815,894.17	93%
Jan 12, 2010	Outdoor Protection	2,263,380.47	2,393,032.12	95%
Jan 12, 2010	Personal Accessories	7,414,443.06	7,797,859.04	95%
Jan 13, 2010	Camping Equipment	5,000,710.6	5,350,515.31	93%
Jan 13, 2010	Golf Equipment	2,536,524.65	2,723,837.61	93%
Jan 13, 2010	Outdoor Protection	474,025.75	496,960.85	95%
Jan 13, 2010	Personal Accessories	3,477,197.59	3,586,395.95	97%

11. Click **Bottom** to see that the report includes all of the months of the first quarter, and the overall calculated percent of goal.
12. Close the rendered report tab

Task 5. Overwrite query expression.

1. Double-click the **<Percent of Goal>** list column body to open the expression dialog box.
2. Overwrite the current expression using query items from the **Source** tab as follows: **[Sales (query)].[Sales fact].[Revenue]/[Sales (query)].[Sales fact].[Planned revenue]**
3. Validate, and then click **OK**.
4. Run the report in **HTML**.

   A section of the results appear as follows:

Date	Product line	Revenue	Planned revenue	Percent of Goal
Jan 12, 2010	Camping Equipment	20,217,372.98	21,714,739.59	66,858%
Jan 12, 2010	Golf Equipment	9,141,599.89	9,815,894.17	24,356%
Jan 12, 2010	Outdoor Protection	2,263,380.47	2,393,032.12	25,745%
Jan 12, 2010	Personal Accessories	7,414,443.06	7,797,859.04	80,525%
Jan 13, 2010	Camping Equipment	5,000,710.6	5,350,515.31	20,130%
Jan 13, 2010	Golf Equipment	2,536,524.65	2,723,837.61	7,577%
Jan 13, 2010	Outdoor Protection	474,025.75	496,960.85	6,954%

   The Percent of Goal calculation does not match because the timing of the aggregation is different.

5. Close the rendered report tab.

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6. Click **<Percent of Goal>** list column body.
7. In the **Properties** pane, under the **DATA ITEM** section, change the **Detail aggregation** function to **Calculated**.
8. Run the report in **HTML**.

   Now the expression returns the same results as the previous expression.

2010-First Quarter Sales Figures and Overall Calculated Percent of Goal

Report run date: Mar 4, 2016

Date	Product line	Revenue	Planned revenue	Percent of Goal
Jan 12, 2010	Camping Equipment	20,217,372.98	21,714,739.59	93%
Jan 12, 2010	Golf Equipment	9,141,599.89	9,815,894.17	93%
Jan 12, 2010	Outdoor Protection	2,263,380.47	2,393,032.12	95%
Jan 12, 2010	Personal Accessories	7,414,443.06	7,797,859.04	95%
Jan 13, 2010	Camping Equipment	5,000,710.6	5,350,515.31	93%
Jan 13, 2010	Golf Equipment	2,536,524.65	2,723,837.61	93%
Jan 13, 2010	Outdoor Protection	474,025.75	496,960.85	95%
Jan 13, 2010	Personal Accessories	3,477,197.59	3,586,395.95	97%

9. Close the rendered report tab.
10. Leave the report authoring tab open for the next demonstration.

Results:
You created a report to show revenue and planned revenue and the percentage of planned revenue that was achieved for product lines for the first quarter of 2010. You also included the date when the report was run.

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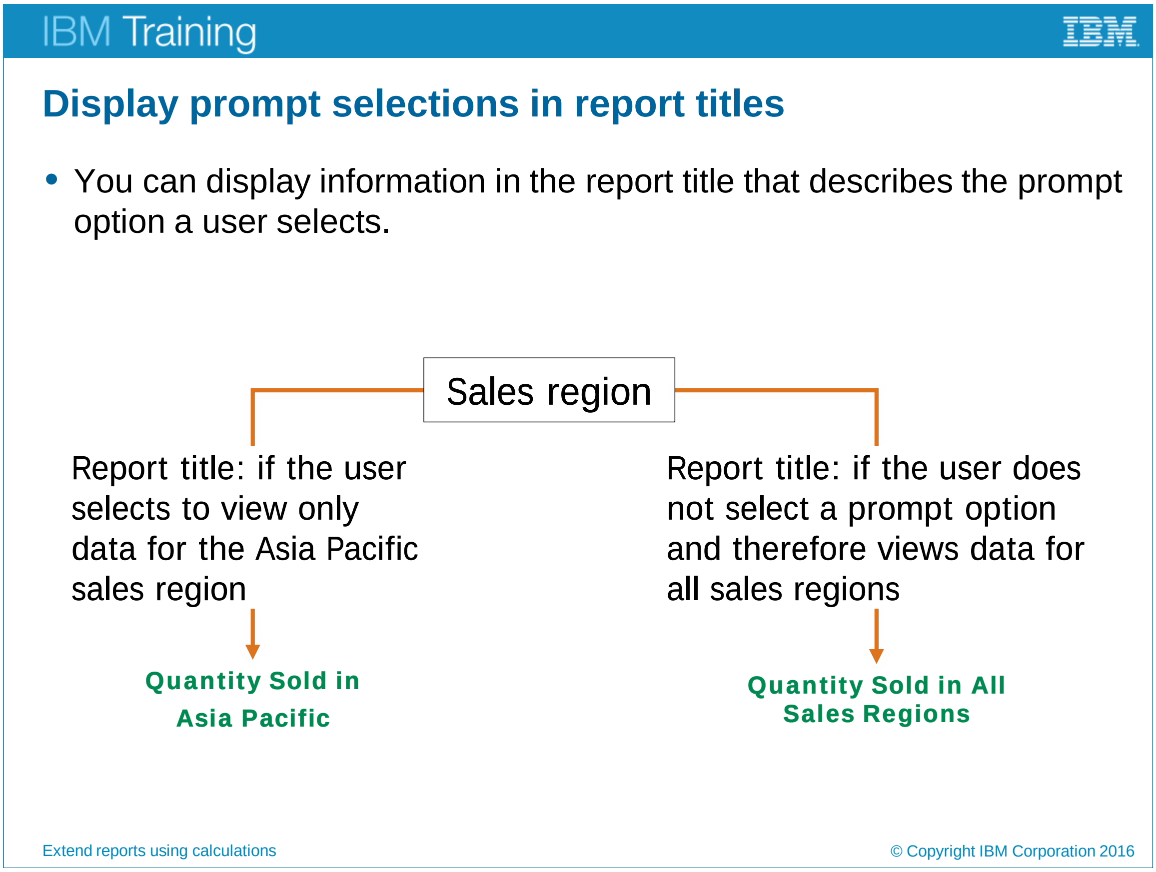

Display prompt selections in report titles

To display the selected prompt option in the report title, add a layout calculation to the report title that returns a different value depending on the prompt option a user selects.

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IBM Training

Demonstration 2

Display prompt selections in the report title

Quantity Sold in Asia Pacific

Quantity		2010	2011	2012	2013
PERSONAL ACCESSORIES	Binoculars	43,340	45,626	62,144	49,788
	Eyewear	22,252	50,760	79,760	69,607
	Knives	396,185	275,620	388,653	307,093
	Navigation	117,074	84,358	107,223	113,107
	Watches	33,936	46,015	60,211	44,995
	PERSONAL ACCESSORIES	**612,787**	**502,379**	**697,991**	**584,590**
MOUNTAINEERING EQUIPMENT	Climbing Accessories		410,155	526,482	573,585
	Rope		30,530	45,981	38,024
	Safety		85,114	104,518	87,855
	Tools		187,255	245,019	236,781
	MOUNTAINEERING EQUIPMENT		**713,054**	**922,000**	**936,245**

Extend reports using calculations

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Demonstration 2: Display prompt selections in the report title

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Demonstration 2:
Display prompt selections in the report title

Purpose:
You have been asked for a report that displays the quantity of products sold for each order year. You also need to display all product lines in uppercase. The report should contain an optional prompt that lets users view data by sales region. Add a report title that indicates which sales region users select in the prompt. It should also indicate if they do not select a region as well. You will use a layout calculation to display the report title.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\Samples\Models\GO data warehouse (query)**
Report Type:	**Crosstab**
Folder:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Create the crosstab and edit the expression to return product line values in uppercase.

1. Open a new **Crosstab** template using the **GO data warehouse (query)**.
2. From the **Source** tab, add the following query items to the new crosstab report object:
   - **Rows** area:
     - Products: **Product line**, **Product type** (nested to the right of Product line)
   - **Columns** area:
     - Time: **Year**
   - **Measures** area:
     - Sales fact: **Quantity**

Quantity		<#Year#>	<#Year#>
<#Product line#>	<#Product type#>	<#1234#>	<#1234#>
	<#Product type#>	<#1234#>	<#1234#>
<#Product line#>	<#Product type#>	<#1234#>	<#1234#>
	<#Product type#>	<#1234#>	<#1234#>

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3. Click the **<#Product type#>** crosstab node member, from the toolbar click **Summarize**, and then click **Total**.
4. On the crosstab, click **Total**.
5. In the **Properties** pane, under **TEXT SOURCE**, change **Source type** to **Data item value**.
6. In the **Properties** pane, under **TEXT SOURCE**, change **Data item value** to **Product line**.
7. In the crosstab, double-click <#**Product line#>**.
8. Update and validate the existing expression as follows:

   upper([Sales (query)].[Products].[Product line])
9. Click **OK**.

Task 2. Add an optional parameter.

You will now add an optional filter containing a parameter that lets users specify the sales region for which they want to view data.

1. With the entire crosstab selected, on the crosstab toolbar, click **Filters**, and then **Edit Filters**.
2. Ensure the **Detail Filters** tab is selected, click **Add**, click **Advanced**, and then click **OK**.
3. From the **Available Components** pane, expand **Sales and Marketing (query)**, **Sales (query)**, and then expand **Employee by region**.
4. Create and validate the following expression (validate using Americas):

   [Sales (query)].[Employee by region].[Branch region]=?Region?
5. Click **OK** to close the validation dialog box, and then **OK** to close the **Detail filter expression** dialog box.
6. In the **Filters** dialog box, with the filter you just added selected, click **Optional**, and then click **OK**.

   You will run this report to test the prompt.
7. Run the report in **HTML**.

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8. At the prompt, select **Asia Pacific**, and then click **OK**.

   A section of the results appear as follows:

Quantity		2010	2011	2012	2013
PERSONAL ACCESSORIES	Binoculars	43,340	45,626	62,144	49,788
	Eyewear	22,252	50,760	79,760	69,607
	Knives	396,185	275,620	388,653	307,093
	Navigation	117,074	84,358	107,223	113,107
	Watches	33,936	46,015	60,211	44,995
	PERSONAL ACCESSORIES	**612,787**	**502,379**	**697,991**	**584,590**
MOUNTAINEERING EQUIPMENT	Climbing Accessories		410,155	526,482	573,585
	Rope		30,530	45,981	38,024
	Safety		85,114	104,518	87,855
	Tools		187,255	245,019	236,781
	MOUNTAINEERING EQUIPMENT		**713,054**	**922,000**	**936,245**

   The report displays data only for the Asia Pacific region.

   Notice that the Total line caption now reflects the product line that it summarizes and that all Product line titles are uppercase.

9. Close the rendered report tab.

Task 3. Display the parameter value in the report title.

To give this report some context, you want the region selected to appear in the report title. If no region is selected, you want the report title to indicate that the data displayed represents quantity sold in all regions.

1. On the report page, double-click the report title text, type **Quantity Sold in**, press the spacebar, and then click **OK**.
2. Left justify the report title within the block.

   You will create a layout calculation to display the prompt option selected in the report title.
3. From the **Toolbox**, expand **TEXTUAL**, and then drag a **Layout calculation** object to the end of the report title.

   You will create an expression that specifies that if a parameter value is selected, the layout calculation should show the display value for the selected parameter value. Otherwise, the layout calculation should show All Regions.

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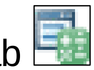
4. Create and validate the following expression:
if(ParamDisplayValue('Region')<> ' ') then (ParamDisplayValue('Region')) else 'All Regions'

Hint: ParamDisplayValue('Region') is found on the parameter tab .

The empty quotes represent no display value. This will be the case when the prompt is optional and the user does not select anything.

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

You will format the layout calculation text to look like the report title text.

6. Select the **Quantity Sold in** text, and make sure it is not underlined.

Task 4. Test the prompt.

1. Run the report in **HTML**.
2. On the prompt page, ensure that **Branch region** is selected, and then click **OK** to run the report.

A section of the results appear as follows:

Quantity Sold in All Regions

Quantity		2010	2011	2012	2013
PERSONAL ACCESSORIES	Binoculars	242,233	260,220	328,175	244,459
	Eyewear	4,066,410	5,180,407	6,354,258	4,710,321
	Knives	1,727,090	1,639,228	2,183,581	1,679,415
	Navigation	495,710	404,836	574,517	517,650
	Watches	1,040,896	1,082,666	1,265,484	910,149
	PERSONAL ACCESSORIES	**7,572,339**	**8,567,357**	**10,706,015**	**8,061,994**
MOUNTAINEERING EQUIPMENT	Climbing Accessories		1,571,481	2,101,101	2,177,669
	Rope		105,488	169,221	143,851
	Safety		311,141	437,813	386,240
	Tools		656,603	992,127	847,356
	MOUNTAINEERING EQUIPMENT		**2,644,713**	**3,700,262**	**3,555,116**

The report title explains that this report contains data about quantity sold in all regions.

3. Close the rendered report tab, and then run the report in **HTML**.

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4. On the prompt page, select **Asia Pacific**, and then click **OK**.

   A section of the results appear as follows:

   Quantity Sold in Asia Pacific

Quantity		2010	2011	2012	2013
PERSONAL ACCESSORIES	Binoculars	43,340	45,626	62,144	49,788
	Eyewear	22,252	50,760	79,760	69,607
	Knives	396,185	275,620	388,653	307,093
	Navigation	117,074	84,358	107,223	113,107
	Watches	33,936	46,015	60,211	44,995
	PERSONAL ACCESSORIES	**612,787**	**502,379**	**697,991**	**584,590**
MOUNTAINEERING EQUIPMENT	Climbing Accessories		410,155	526,482	573,585
	Rope		30,530	45,981	38,024
	Safety		85,114	104,518	87,855
	Tools		187,255	245,019	236,781
	MOUNTAINEERING EQUIPMENT		**713,054**	**922,000**	**936,245**

   The report title explains that this report contains data about quantity sold in Asia Pacific.

5. Close the rendered report tab.
6. Leave the report authoring tab open for the following exercise.

Results:
You created a report that displays the quantity sold for products by order year. You also displayed all product lines in uppercase. Users have the option to select a region for which to view data. To add context to the report, the user's prompt selection appears in the report title, by using a layout calculation.

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IBM Training

Unit summary

- Create calculations based on data in the data source
- Add run-time information to the reports
- Create expressions using functions

Extend reports using calculations

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Unit summary

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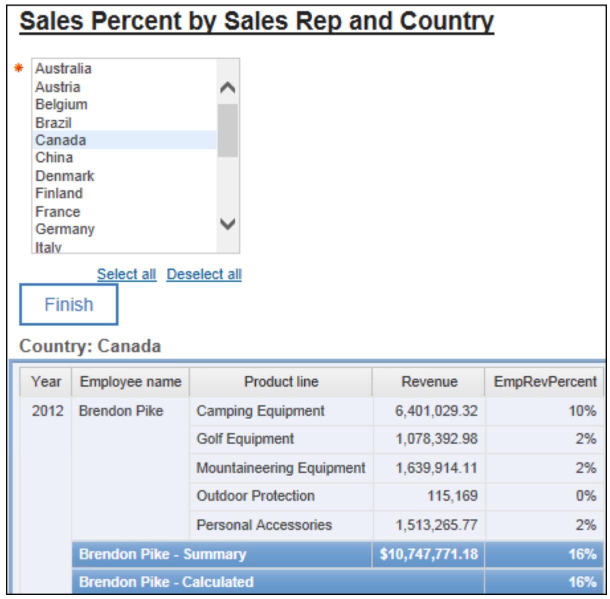
IBM Training

Exercise 1

Sales percent by sales rep and country



Year	Employee name	Product line	Revenue	EmpRevPercent
2012	Brendon Pike	Camping Equipment	6,401,029.32	10%
		Golf Equipment	1,078,392.98	2%
		Mountaineering Equipment	1,639,914.11	2%
		Outdoor Protection	115,169	0%
		Personal Accessories	1,513,265.77	2%
	Brendon Pike - Summary		$10,747,771.18	16%
	Brendon Pike - Calculated			16%

Extend reports using calculations

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Exercise 1: Sales percent by sales rep and country

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Exercise 1: Sales percent by sales rep and country

Sales management would like to improve overall product line sales. To do this they need to start with a report that shows which product lines each salesperson tends to sell the most of. Sales management would like to be able to filter by specified year and country or countries.

To accomplish this:

- Open a new list template using the GO data warehouse (query) package.
- Add the following query items to the list report object:
  - Employee by region: Country
  - Employee by region: Employee name
  - Time: Year
  - Products: Product Line
  - Sales fact: Revenue
- Add a calculated column called EmpRevPercent.
- Group Country, Year and Employee Name
- Create a header using Country
- Summarize the Revenue by Total and format the data as $(USD).
- Add an EmpRevPercent summary row and format as a percent.
- Format summary row to display the data item value.
- Create a Year parameter
- Add a prompt to allow users to focus on one or more countries.
- Add a report title
- Run the report and then focus on information for Canada and the United States, and for the year 2012.

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

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Exercise 1: Tasks and Results

Task 1. Create the list and add a calculated column.

- **Side panel**: Open a new **List** template using the **GO data warehouse (query)** package.
- **Toolbar:** Justify the report header text to the **Left**.
- **Source tab**: Add the following query items to the list data container:
  - Employee by Region: **Country**.
  - Time: **Year**.
  - Employee by Region: **Employee name**.
  - Products: **Product line**.
  - Sales fact: **Revenue**.
- **Toolbox tab**: Create and validate the **EmpRevPercent** query calculation, and add it to the end of the list:

  [Revenue]/Total([Revenue] for [Country]).

  Note: You can retrieve the Total function from the Function tab, Summaries folder. You can also drag Revenue and Country from the Data Items tab.

  The results appear as follows:

Country	Year	Employee name	Product line	Revenue	EmpRevPercent
<Country>	<Year>	<Employee name>	<Product line>	<Revenue>	<EmpRevPercent >
<Country>	<Year>	<Employee name>	<Product line>	<Revenue>	<EmpRevPercent >
<Country>	<Year>	<Employee name>	<Product line>	<Revenue>	<EmpRevPercent >

Task 2. Group and summarize the report.

- **Toolbar**: Group **<Country>**, **<Year>** and **<Employee name>**.
  - Create a header using the **<Country>** column, and delete the redundant list column body.
  - Summarize **<Revenue>** by **Total**.

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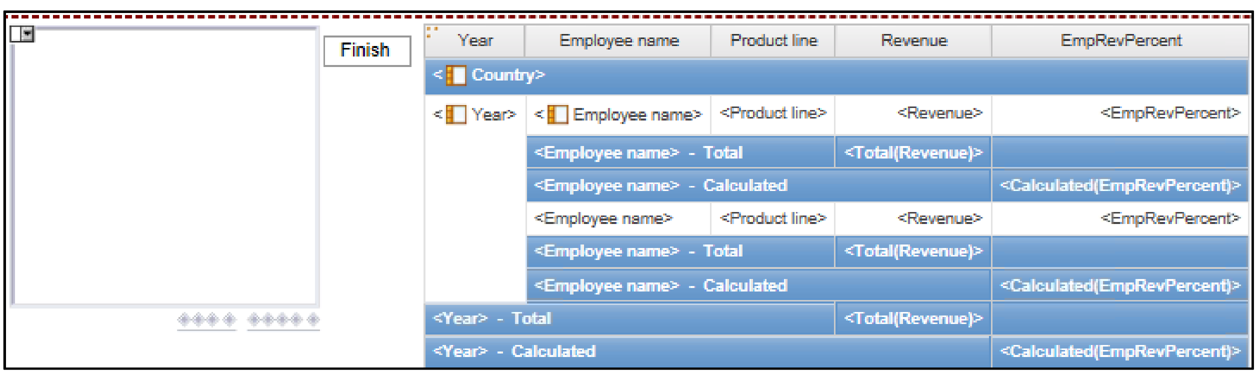
Task 3. Format the data.

- **Toolbar**: Format all of the **<Total(Revenue)>** summary cells for **$(USD) currency**.
  - Summarize the **<EmpRevPercent>** by **Calculated**.
  - Format all of the **<EmpRevPercent>** cells and **<Calculated(EmpRevPercent)>** summary cells for **Percent** (with **Percentage Symbol %**).

Task 4. Add a parameter and a prompt.

- **Toolbar**: Create and validate the following advanced filter expression: **[Year] =?Year?**. (Validate using 2012)
- **Toolbox tab**: To the left of the list data container, create a multi-select **Value prompt**, named **Countries**, based on the **Country** query item.
  - Add a **Prompt button** to the right of the value prompt.
- **Properties pane**: Change the Prompt button type to **Finish**.

  A section of the results appear as follows:



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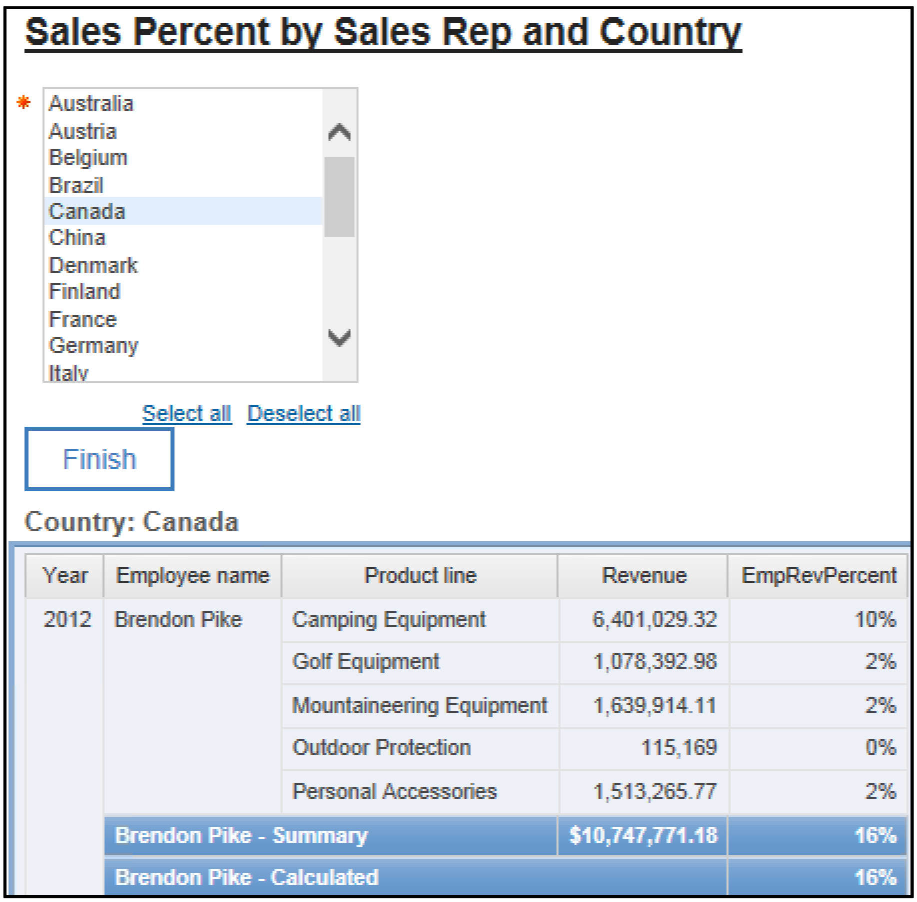
Task 5. Add a report title and run the report.

- **Text** pane: (type the following report title) **Sales Percent by Sales Rep and Country**.
- **Toolbar**: Run the report in **HTML**.
- **Year Parameter**: Type **2012**.
- **Value Prompt**: Select **Canada** and **United States**.

  The results appear as follows:



Sales Percent by Sales Rep and Country

Australia
Austria
Belgium
Brazil
Canada
China
Denmark
Finland
France
Germany
Italy

Select all Deselect all

Finish

Country: Canada

Year	Employee name	Product line	Revenue	EmpRevPercent
2012	Brendon Pike	Camping Equipment	6,401,029.32	10%
		Golf Equipment	1,078,392.98	2%
		Mountaineering Equipment	1,639,914.11	2%
		Outdoor Protection	115,169	0%
		Personal Accessories	1,513,265.77	2%
	Brendon Pike - Summary		$10,747,771.18	16%
	Brendon Pike - Calculated			16%

You have created a report that shows which product lines each sales person tends to sell the most of. The report is focused on a specified year and country or countries.

- Close the rendered report tab.
- Sign out of **IBM Cognos Analytics**.
- Close the web browser.

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Additional information: Some common functions

- **cast (expression , datatype_specification)** Converts "expression" to a specified data type. Some data types allow for a length and precision to be specified. Make sure that the target is of the appropriate type and size
- **char_length (string_expression)** Returns the number of logical characters in "string_expression". The number of logical characters can be distinct from the number of bytes in some East Asian locales.
- **current_date** Returns a date value representing the current date of the computer that the database software runs on.
- **current_time** Returns a time with time zone value, representing the current time of the computer that runs the database software if the database supports this function. Otherwise, it represents the current time of the computer that runs IBM® Cognos® Analytics software.
- **floor (** numeric_expression) Returns the largest integer that is less than or equal to "numeric_expression".
- **localtime** Returns a time value, representing the current time of the computer that runs the database software.
- **mod (** integer_expression1, integer_expression2) Returns the remainder (modulus) of "integer_expression1.
- **position (** string_expression1 , string_expression2) Returns the integer value representing the starting position.
- **substring (** string_expression , integer_expression1 [, integer_expression2]) Returns the substring of "string_expression" that starts at position
- **trim (** [[trailing|leading|both] [match_character_expression] ,] string_expression) Returns "string_expression" trimmed of leading and trailing blanks.
- **upper (** string_expression) Returns "string_expression" with all lowercase characters converted to uppercase.
- **percentage (** Returns the percent of the total value for selected data items.
- **total (**Returns the total value of selected data items.
- **between** Determines if a value falls in a given range.

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IBM Training

Use additional report building techniques

IBM Cognos Analytics (v11.0)

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IBM Training

Unit objectives

- Enhance report design with report objects
- Reuse objects within the same report
- Share layout components among separate reports
- Discuss report templates
- Choose options to handle reports with no available data

Use additional report building techniques

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Unit objectives

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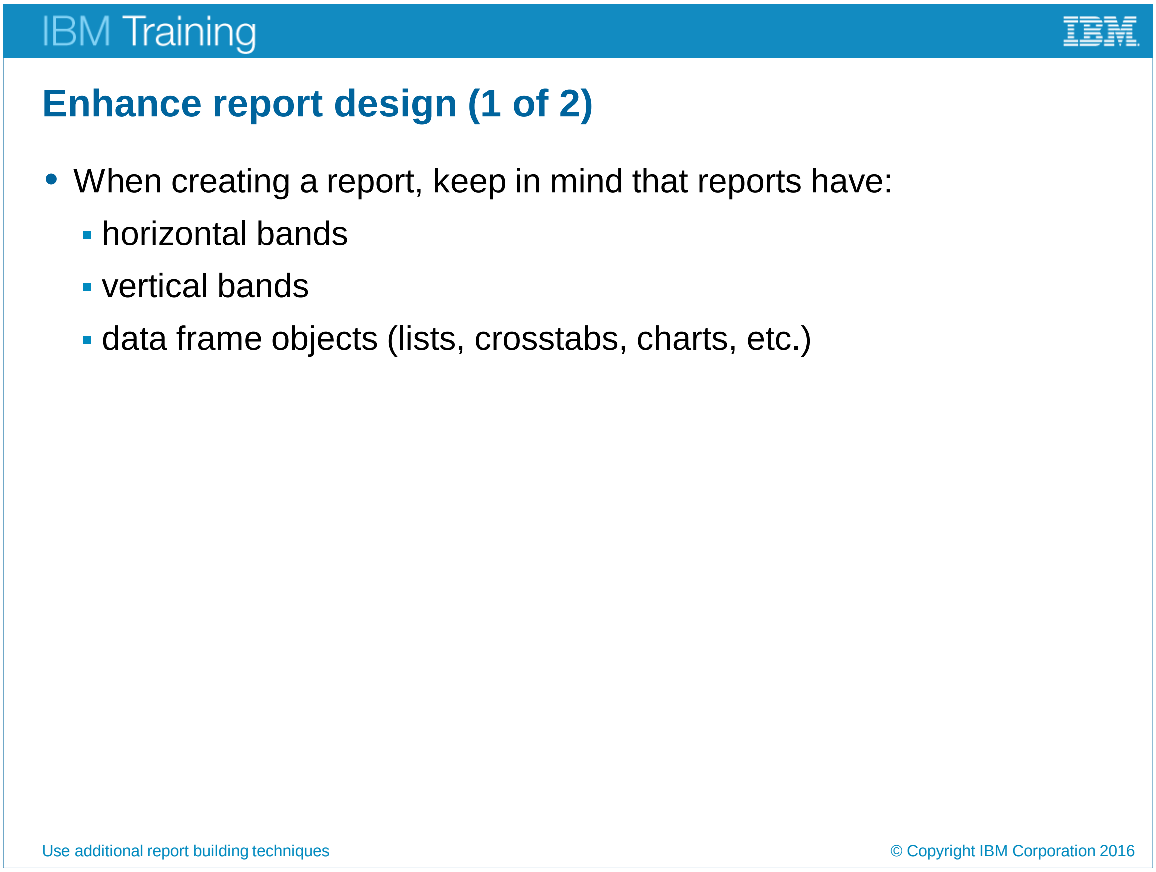

Enhance report design

When information runs in horizontal bands, use a block to hold the objects.

Reports may also have headers and footers. Determine what objects to use when building a report based on the kind of information you want to display, and how you want it to appear. If information applies to the entire report and you want it to appear on every page, place it in the header or footer.

When information runs vertically, such as text beside an image, use a table to organize the objects.

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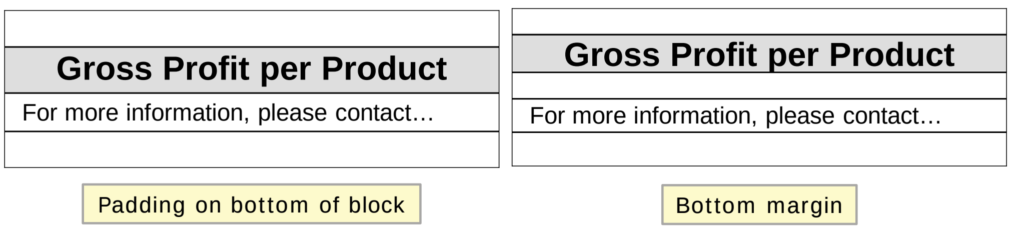
IBM Training

Enhance report design (2 of 2)

- To ensure professional results remember to:
  - use padding, margins, and blocks to create white space
  - set properties on the highest level item
  - avoid fixed size objects



Use additional report building techniques

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Properties applied to an object will also be applied to any child items; therefore, it is best to set styling properties at the highest level.

Avoid fixed size objects because they are rigid and may not work with your overall design.

An empty block does not add space between objects. The block must contain an object, or you must specify the padding of the block to use the block for spacing.

Property Inheritance is the passing of parent attributes to child items. Use the Select Ancestor button on the Properties pane title bar to help determine the level at which to apply settings.

Applying properties at the highest level saves time and effort. For example, if you set the font type for a list object then all items in the list or added to the list will inherit the same font.

If objects have borders, use margins to make the objects look spaced apart.

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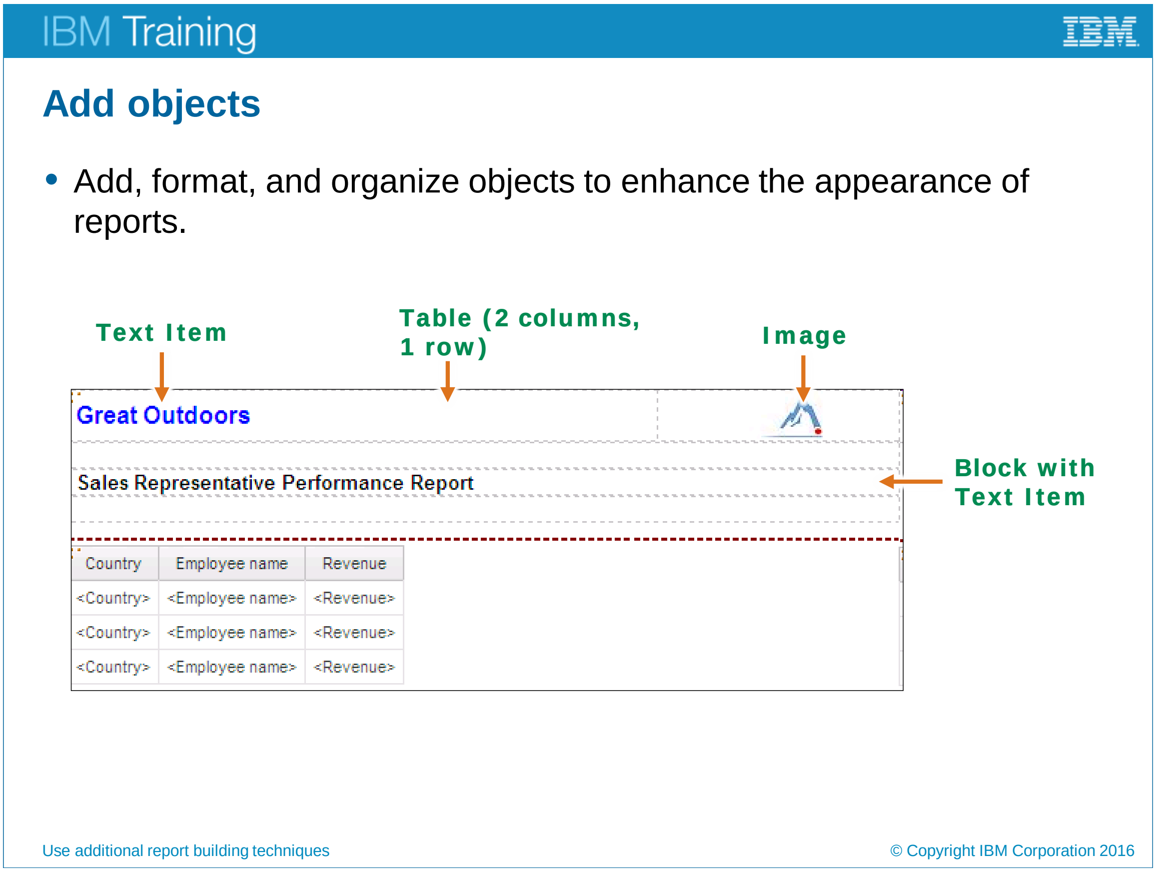

Add objects

You can format items and objects to change their size, shape, location, and behavior according to your needs.

You can use text items to communicate relevant information about the report to its users.

You can add a background image to a data frame object like a list or crosstab, a cell in a table, or to the entire page. It is important to be aware that a background image can obscure the data in the report to some degree.

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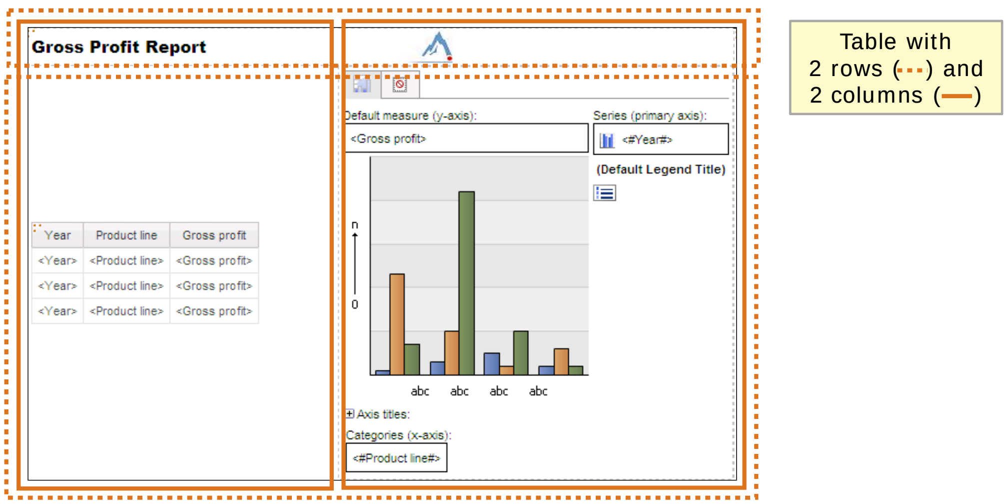
IBM Training

Organize objects using tables

- Add a table to a page to hold and organize objects such as titles, list, images, and charts.



Use additional report building techniques

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Organize objects using tables

You can use tables to assist with the spatial layout of report types and layout objects.

You need tables to control where objects are placed. Unlike some graphics software, you cannot place objects anywhere on the work area.

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IBM Training

Break a report into sections

Australia

Product line	Year	Revenue
Camping Equipment	2013	$13,007,383.98
Personal Accessories	2011	$2,131,381.68

Austria

Product line	Year	Revenue
Camping Equipment	2013	$5,009,903.66
Personal Accessories	2010	$7,431,795.17

Data Sectioned by Country

Use additional report building techniques

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Break a report into sections

Create sections in a report to show grouped information in separate report objects. This makes information easier to locate, and lets you view data for one group of items at a time.

Creating sections is similar to grouping on a query item. The difference is that section headers and footers appear outside the list, crosstab, or chart.

Create separate lists, crosstabs, or charts for specific query items by creating a section header.

When you run the report, separate sections appear for each value.

To remove section headers or footers, click the header or footer, and then from the Structure menu, click List Headers & Footers. Clear the appropriate checkboxes. The item will disappear from the report.

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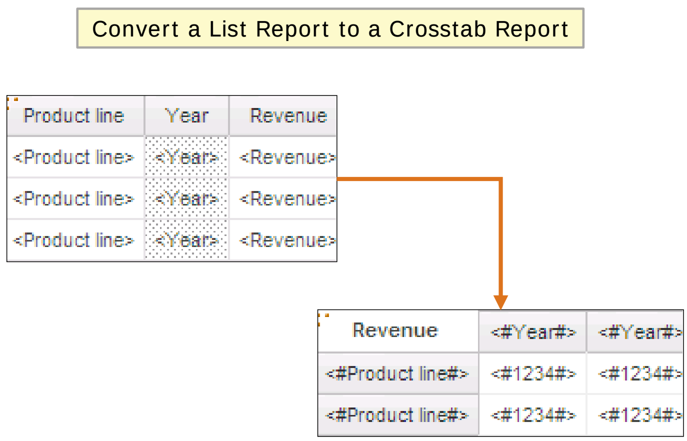
IBM Training

Convert a list to a crosstab

- Condense a report and view data from a different perspective by converting a list to a crosstab.



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Convert a list to a crosstab

The list columns you select become columns and nested columns in the crosstab, and the unselected columns become rows and nested rows.

If you have one measure, it becomes the cells of the crosstab. If you have more than one measure, then the measures will appear as columns.

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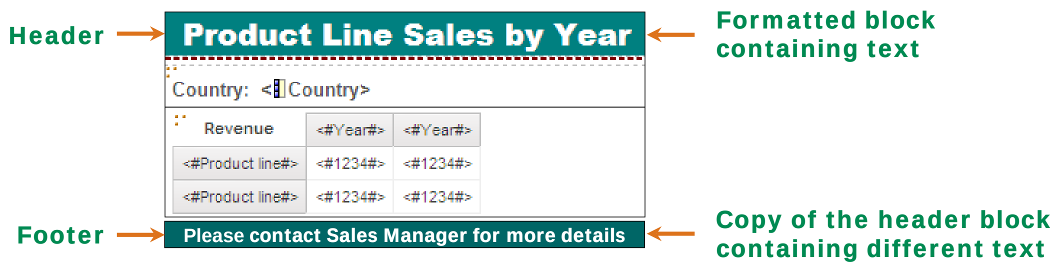
IBM Training

Reuse objects within the same report

- You can change the contents of a reused object by overriding the child components and replacing them with other objects.



Use additional report building techniques

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Reuse objects within the same report

If you reuse an object that contains other objects, you can replace the child objects with a different object to customize your report.

To change the contents of a reused object, you must override the child object using the Properties pane.

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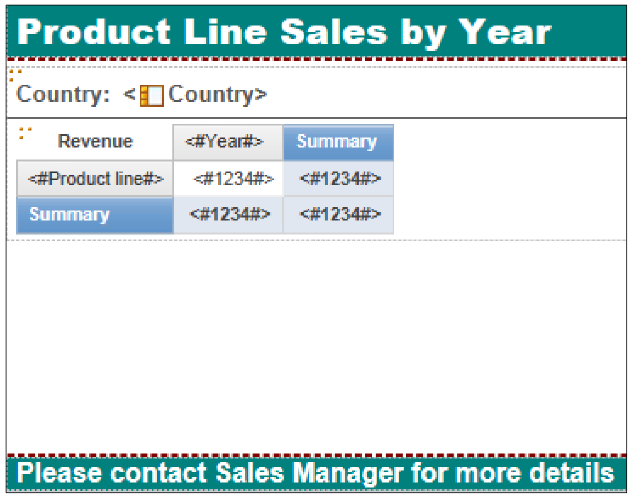
IBM Training

Demonstration 1

Reuse objects within the same report



Use additional report building techniques

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Demonstration 1: Reuse objects within the same report

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Demonstration 1: Reuse objects within the same report

Purpose:
You have been asked to add some descriptive information to a sectioned report. The report must include a title on each page describing the contents of the report, and information about whom to contact if users have any questions.

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\Samples\Models\GO data warehouse (query)**
Report Type:	**Blank**
Folder:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Add a list to a blank page.

1. Open a new **Blank** report template using the **GO data warehouse (query)** package.
2. On the work area, click **Add** , and then click **List**
3. Click **OK** to accept the **Object and query name** defaults.
4. From the **Data/Source** tab, add the following query items to the new list report object:
   - Employee by region: **Country**
   - Products: **Product line**
   - Time: **Year**
   - Sales fact: **Revenue**

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5. Click the **<Revenue>** list column body, click **Summarize**, and then click **Default summary**.

Country	Product line	Year	Revenue
<Country>	<Product line>	<Year>	<Revenue>
<Country>	<Product line>	<Year>	<Revenue>
<Country>	<Product line>	<Year>	<Revenue>
Overall - Summary			<Summary(Revenue)>

Task 2. Section data and convert to a crosstab.

1. Click the **<Country>** list column body, and then on the list toolbar, click **Section / unsection** .

   There is now a separate list displayed for each country.

2. Run the report in **HTML**.

   The report is sectioned at the Country level; however, it is difficult to interpret.

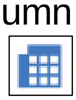
Country: Australia

Product line	Year	Revenue
Camping Equipment	2011	9,752,591.01
Golf Equipment	2011	4,094,643.54
Mountaineering Equipment	2011	2,691,279.15
Outdoor Protection	2011	600,956.77
Personal Accessories	2011	2,131,381.68
Camping Equipment	2012	19,175,957.2
Golf Equipment	2012	8,482,438.67
Mountaineering Equipment	2012	5,861,253.12
Outdoor Protection	2012	367,636.38
Personal Accessories	2012	5,081,517.25
Camping Equipment	2013	13,007,383.98
Golf Equipment	2013	6,502,474.22
Mountaineering Equipment	2013	5,380,587.79
Outdoor Protection	2013	171,750.41
Personal Accessories	2013	4,261,477.85

Country: Austria

Product line	Year	Revenue
Camping Equipment	2010	7,431,795.17
Golf Equipment	2010	3,411,617.12
Outdoor Protection	2010	824,026.84
Personal Accessories	2010	2,198,565.39
Camping Equipment	2011	9,163,419.93

3. Close the rendered report tab.

4. Click the **<Year>** list column body, and then on the list toolbar, click **Pivot List to Crosstab** .

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

   A section of the results appear as follows:

Country: Australia

Revenue	2011	2012	2013	Summary
Camping Equipment	9,752,591.01	19,175,957.2	13,007,383.98	41,935,932.19
Golf Equipment	4,094,643.54	8,482,438.67	6,502,474.22	19,079,556.43
Mountaineering Equipment	2,691,279.15	5,861,253.12	5,380,587.79	13,933,120.06
Outdoor Protection	600,956.77	367,636.38	171,750.41	1,140,343.56
Personal Accessories	2,131,381.68	5,081,517.25	4,261,477.85	11,474,376.78
Summary	19,270,852.15	38,968,802.62	29,323,674.25	87,563,329.02

Country: Austria

Revenue	2010	2011	2012	2013	Summary
Camping Equipment	7,431,795.17	9,163,419.93	13,471,100.17	9,731,648.11	39,797,963.38
Golf Equipment	3,411,617.12	4,465,999.47	6,234,620.98	5,009,903.66	19,122,141.23
Outdoor Protection	824,026.84	640,221.64	294,954.55	130,312.39	1,889,515.42
Personal Accessories	2,198,565.39	2,458,706.23	3,754,115.48	3,182,909.11	11,594,296.21
Mountaineering Equipment		2,615,339.21	4,594,176.48	3,926,993.16	11,136,508.85
Summary	13,866,004.52	19,343,686.48	28,348,967.66	21,981,766.43	83,540,425.09

   Because you selected Year before you converted the list into a crosstab, it now appears as columns. Product line appears on rows, and Revenue, because it can be aggregated, appears as measures on the report. You can now interpret the data more quickly.

6. Close the rendered report tab.

Task 3. Add a header and footer, and add objects to the header.

1. Click to the right of the crosstab data container.
2. From the list toolbar, click **Headers & footers**, click **Page header & footer**, select the **Header** and **Footer** checkboxes, and then click **OK**.
3. From the **Toolbox**, drag a **Block** object to the **Page header**.
4. From the Toolbox, drag a **Text Item** onto the **Block** object in the **Page header**.
5. In the **Text** field, type **Product Line Sales by Year**, and then click **OK**.

   You now want to format the objects you added to the header.

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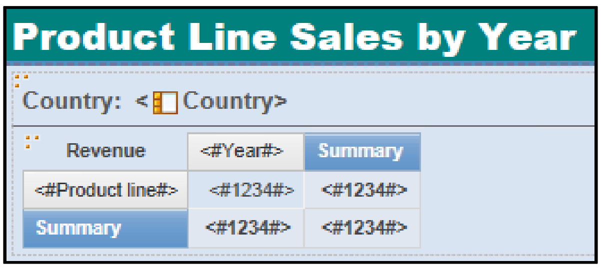
Task 4. Apply style to the header block and text.

1. Click the **Page header** block, on the toolbar, click the arrow next to **Background Color**, click the **Basic colors** tab, and then click **Teal**.
2. In the **Page header**, click the text item to select it, and then on the toolbar, change the font to **Arial Black**, **16 pt**, with a **Foreground Color** of **White**.

   The result appears as follows:

   The report contains a header with the title that you specified. It has been formatted according to the properties you have set.

   You now want to reuse the objects that you created and formatted to avoid repeating steps in building the footer.

Task 5. Specify unique object names.

1. Click the header block, in the **Properties** pane, under **MISCELLANEOUS**, in the **Name** property, type **Title Block**, and then press **Enter**.
2. Click the header text, in the **Properties** pane, under **MISCELLANEOUS**, in the **Name** property, type **Title Text**, and then press **Enter**.

   If you try to assign a name that is not unique, Reporting displays a warning message informing you that the name must be unique.

   If you select an element of the report, such as a column in a list, and want to deselect it, press **Esc** on your keyboard.

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Task 6. Reuse the header block and change the text in the footer.

1. From the **Toolbox,** expand the **ADVANCED** section, drag a **Layout component reference** object into the footer.

   To reuse an object in the footer, you need to specify the object to be referenced. You can choose from the two objects to which you have previously assigned names, as well as the list containing the crosstab. In this case, you will select the block object because it also contains the text item object.

2. Under **Available components to reference**, click **Title Block**, and then click **OK**.

   The footer now contains the same object and formatting as the header.

3. Click the text in the footer.

   In the Properties pane you can only select the layout component reference object and not the block or text item objects individually. This is because it is referencing the block object in the header. Remember, the block object in the header also contains the text item object.

   You want to change the text in the footer to contain contact information.

4. In the **Properties** pane, click **Overrides**, and then click the **ellipsis**.
5. In the **Overrides** dialog box, select the **Title Text** checkbox, and then click **OK**.

   The layout component reference object in the footer no longer contains text. Only the referenced block object remains.

6. Drag a **Text item** object into the component override area of the footer block, type **Please contact Sales Manager for more details**, and then click **OK**.
7. Click the text item object in the footer, and then change the font to **12 pt**, **Bold**, and **Foreground color** of **White**.

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8. Run the report in **HTML**, and then click **Bottom** to view the footer.

   A section of the results appear as follows:

Country: United States

Revenue	2010	2011	2012	2013	Summary
Camping Equipment	60,143,498.08	67,317,788.98	79,318,144.45	56,492,359.55	**263,271,791.06**
Golf Equipment	27,818,341.51	27,136,551.74	36,462,554.7	27,985,723.39	**119,403,171.34**
Outdoor Protection	6,540,425.46	3,942,571.55	1,668,409.49	719,154.19	**12,870,560.69**
Personal Accessories	16,332,709.27	15,719,103.65	21,964,680.23	18,508,851.48	**72,525,344.63**
Mountaineering Equipment		17,561,055.77	25,572,400.34	22,599,638.02	**65,733,094.13**
Summary	**110,834,974.32**	**131,677,071.69**	**164,986,189.21**	**126,305,726.63**	**533,803,961.85**

Please contact Sales Manager for more details

   This is a simplified example of reusing report objects. This technique might be best for reusing an object with numerous format properties applied.

   You can also reuse objects between different reports. This will be discussed later in this unit.

9. Close the rendered report tab.
10. Leave the report authoring tab open for the next demonstration.

Results:
You enhanced the Product Line Sales by Year report by adding a header and footer. To build the footer and to minimize your work, you reused objects from the header.

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IBM Training

Share layout components among separate reports

- In Report Studio you can reuse layout components in different reports.
- You can choose to update shared layout objects manually or automatically.
- Be sure to name each layout component you want to reuse in other reports.
- Create a report containing all the objects you want to reuse in different reports, and then use it as an object library.

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Share layout components among separate reports

Instead of creating new layout components (such as page headers) for each report, you can create an object in one report and then reuse it in different reports. Reusing layout components saves you time and lets you apply standard company formatting to multiple reports.

By default, reused objects are automatically updated each time the report is run. This means that when you open or run a report containing a reused object, if the object has been changed in the source report, this change will automatically be applied in your report.

If you want a reused object to be updated manually instead of automatically, in the report where the object is reused, select the object, and then in the Properties pane, change the Embed property from Reference to Copy.

When you reuse a layout object in a different report, you can override child objects within this object (such as a text item in a page header object) if the child objects have been named in the source report.

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Shared objects are stored in the layout component cache. The cache contains the definitions of the shared objects. When you open a report that contains layout component reference objects, the report(s) containing the shared layout objects is opened and the definitions are copied into the Reporting cache. Object names cannot contain white space and must begin with a letter. When you override child objects, you can replace the child object with any other object, not just an object of the same type. For example, if the child object is a text item, you can replace it with an image.

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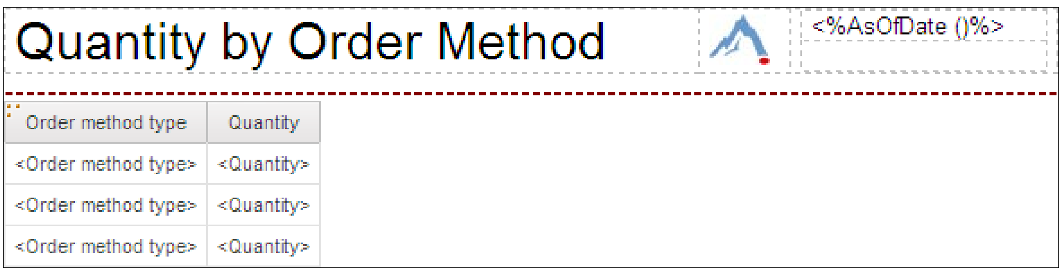
IBM Training

Demonstration 2

Reuse layout components in a different report



Use additional report building techniques

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Demonstration 2: Reuse layout components in a different report

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Demonstration 2: Reuse layout components in a different report

Purpose:
To save time when creating new reports, you will create one report containing a standard page header that can be used in many. Next, you will create one report that will reuse this page header.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\Samples\Models\GO data warehouse (query)**
Report Type:	**Blank**
Folder:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Create a report with a page header that can be reused in other reports.

1. Open a new **Blank** template using the **GO data warehouse (query)** package.
2. On the work area, click **Add**, and then click **Table**
3. Create a table with **3 columns** and **1 row**.

   Because you want to reuse this table as a page header in other reports, you will name the table object.
4. Click the **Container selector** in the upper left cell, to select the entire table.
5. In the **Properties** pane, under **MISCELLANEOUS**, in the **Name** property, type **StandardPageHeader**, and then press **Enter**.

   You want to add your company logo to the left side of the page header.
6. From the **Toolbox**, expand **LAYOUT**, and then drag an **Image** object to the left cell of the table.
7. Click the **Image** object that you just added, and then in the **Properties** pane, under **URL SOURCE**, double-click the **URL** property.
8. In the **Image URL** dialog box, click **Browse**, navigate to **http://vclassbase:88/images** , and then click **go_logo_small.jpg**.
9. Click **OK** to close the **Image Browser** dialog box, and then click **OK** to close the **Image URL** dialog box.

   You want to add a text item in the middle of the page header that can be used to add a report title.

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10. From the **Toolbox** tab, drag a **Text Item** to the center cell of the table, and then click **OK** to close the **Text** dialog box without adding any text.

    You will not specify the text to be used yet, because this will be different for each report. You will name this text object so that it can be overridden when the page header is reused in other reports.

11. Click the **Text Item** you just added, in the **Properties** pane, under **MISCELLANEOUS**, for the **Name** property type **ReportTitle**, and then press **Enter**.

Task 2. Add additional details to the page header, and save the report.

You want to add date and time information to the report header.

1. From the **Toolbox** tab, drag a **Table** object to the right cell of the table.
2. Set **Number of columns** to **1**, **Number of rows** to **2**, and then click **OK**.
3. From the **Toolbox**, from the **TEXTUAL** section, drag a **Layout calculation** object to the top cell of the table you added in the previous step.
4. In the **Report expression** dialog box, click the **Functions** tab, expand **Report Functions**, and then drag **AsOfDate** to the **Expression Definition** pane.
5. Validate the expression, and then click **OK** to close the **Report expression** dialog box.

   You want to add a time stamp, to appear in the bottom-right corner of the page header.

6. From the **Toolbox**, drag a second **Layout calculation** object to the bottom cell of the table you added previously.
7. Click the **Functions** tab, expand **Report Functions**, and then drag **AsOfTime** to the **Expression Definition** pane.
8. Validate the expression, and then click **OK** to close the **Report expression** dialog box.
9. From the **File** menu, click **Save**.
10. Navigate to **My content**, in the **Save as** box type **Layout Library**, and then click **Save**.

Task 3. Create a second report that reuses the standard page header.

1. Open a new **Blank** template, using the **GO data warehouse (query)** package.
2. Add a **List** report to the workspace, accepting the defaults.
3. From the **Toolbox**, drag a **Block** to the left of the list.

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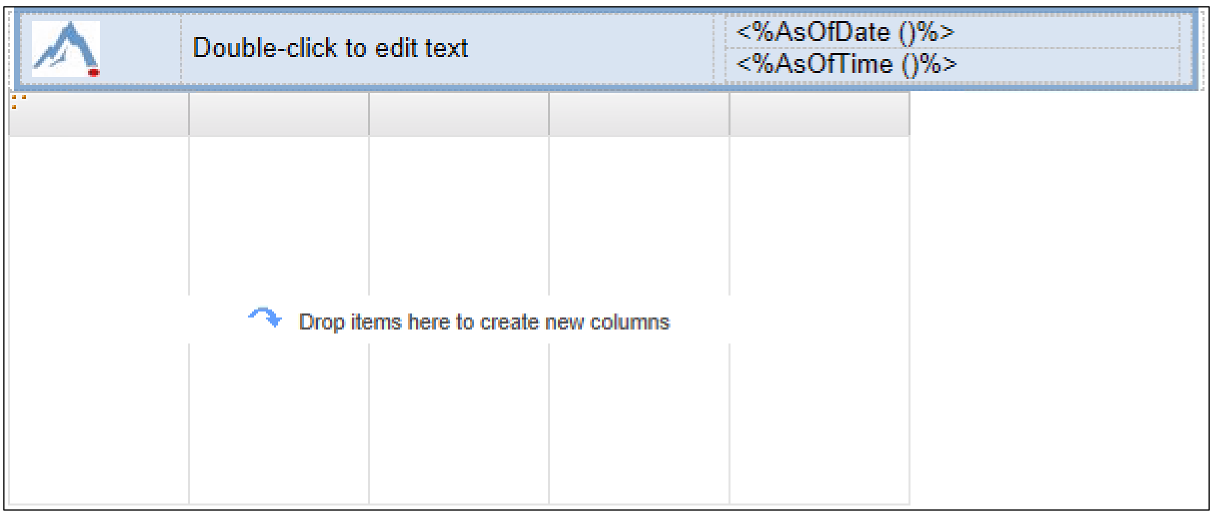
4. From **Toolbox/ADVANCED**, drag a **Layout component reference** object to the **Block**.
5. In the **Component reference** dialog, select **Another report**, click the **ellipsis**, and then navigate to **My Folders**.
6. Click **Layout Library**, and then click **Open**.
7. Under **Available components to reference**, click **StandardPageHeader**, and then click **OK**.

   The page header from the Layout Library report appears. You want to customize the report.



8. In the header, click the **Layout Component Reference** object (this is the image), and then in the **Properties** pane, under **GENERAL**, double-click the **Overrides** property.

   The Overrides dialog box appears. Because you gave the report title text object a distinct name, you can now override its contents in the shared page header.
9. Select the **ReportTitle** checkbox, and then click **OK**.
10. From the **Toolbox**, drag a **Text Item** to the **component override** area of the center cell of the header.
11. In the **Text** dialog box, type **Quantity by Order Method**, and then click **OK**.
12. Click the **Quantity by Order Method** title you just added, and then on the toolbar, change the font to **Arial**, and the size to **22 pt**.

Task 4. Add data to the list report and format the report.

1. Select the list, to put it in focus.
2. From **Data/Source**, expand the **Sales and Marketing (query)** folder, and then expand the **Sales (query)** namespace.

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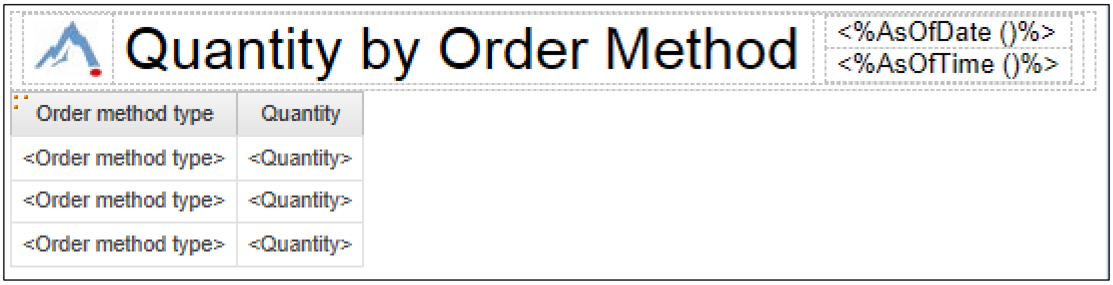
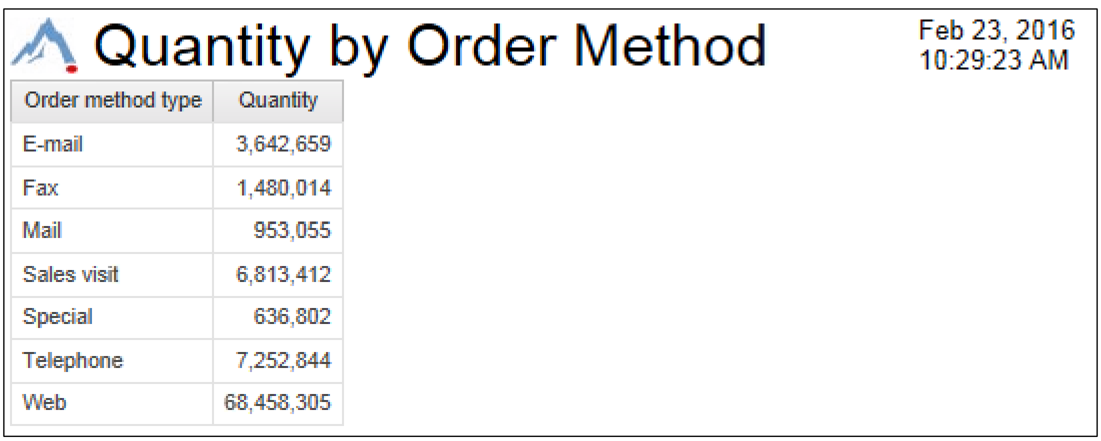
3. Add the following query items to the list:
   - Order method: Order method type
   - Sales fact: Quantity



Order method type	Quantity
<Order method type>	<Quantity>
<Order method type>	<Quantity>
<Order method type>	<Quantity>

4. Save the report to the **My content** folder, as **Quantity by Order Method**.
5. Run the report in **HTML**.

   The results appear as follows:



Order method type	Quantity
E-mail	3,642,659
Fax	1,480,014
Mail	953,055
Sales visit	6,813,412
Special	636,802
Telephone	7,252,844
Web	68,458,305

   The header you created in the Layout Library report displays the title that you added to this report.
6. Close the rendered report tab.

Task 5. Modify the shared page header and observe the results.

1. In the **Page header** of the list report, click the **Layout component reference** object.

   In the Properties pane, the Embed property is set to Reference. This means any changes made to the shared page header in the Layout Library source report will be automatically applied in this report. You will now modify the shared page header in the source report.

2. On the **Application** bar, click the down arrow next to the report title.
3. Click the **Layout Library** report to open it.
4. In the **Page header**, click **<%AsOfTime()%>**, and then press **Delete**.

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5. On the **Application** bar, click **Save**.
6. Click the down arrow next to the report title.
7. Click the **Quantity by Order Method** report to open it, and then run the report in **HTML**.

   The result appears as shown below:

   Quantity by Order Method Feb 23, 2016

Order method type	Quantity
E-mail	3,642,659
Fax	1,480,014
Mail	953,055
Sales visit	6,813,412
Special	636,802
Telephone	7,252,844
Web	68,458,305

   The change that you made to the page header in the source report has automatically been applied to this shared page header, as seen in the top right corner.
8. Close the rendered report tab.

Task 6. Manually update changes to the shared page header.

You decide you do not want changes to the page header in this report to be applied automatically when the header changes in the source (Layout Library) report.

1. In the **Quantity by Order Method** report, in the page header, click the **Layout component reference** object.
2. In the **Properties** pane, under **GENERAL**, change the **Embed** property to **Copy**.
3. Save the report.
4. Open the **Layout Library** report, from **My content**.
5. In the **Page header**, drag the **Image** object from the left cell, to the center cell, so that it appears to the right of the title.
6. In the table, in the center cell, click and drag the **Text** object into the left cell.
7. Save the report.

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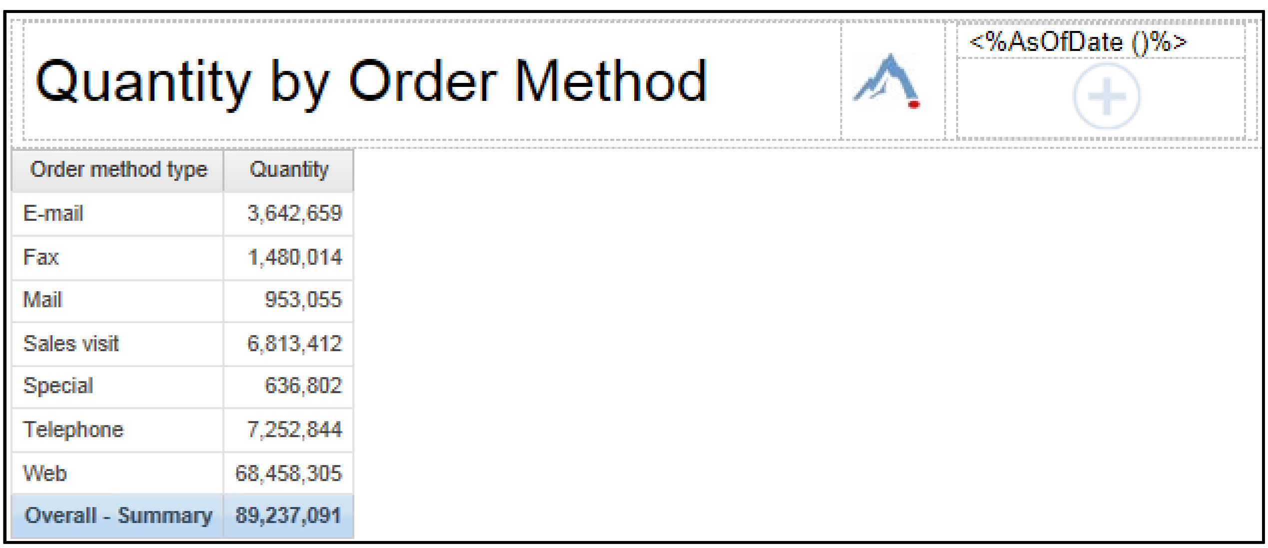
8. Open the **Quantity by Order Method** report from **My content**.

   Although you switched the order of the image and text objects in the source report, this change is not reflected in the page header in this report. To make the page header in the Quantity by Order Method report consistent with the standard page header you created in the Layout Library report, you will now manually update the shared page header.
9. In the report, in the **Page header**, click the **Layout component reference** object, from the toolbar click the ellipsis, and then click **Update Component Copy**.
10. Save the report.
11. Open the **Quantity by Order Method** report from **My content**.
12. From the **Application** bar, click the **Edit** button to enable editing, if not already enabled.
13. In the report, in the **Page header**, click the **Layout component reference** object, from the toolbar click the ellipsis, and then click **Update Component Copy**.

    A section of the results appears as shown below:



Quantity by Order Method

<%AsOfDate ()%>

Order method type	Quantity
E-mail	3,642,659
Fax	1,480,014
Mail	953,055
Sales visit	6,813,412
Special	636,802
Telephone	7,252,844
Web	68,458,305
Overall - Summary	89,237,091

    The page header is updated with the changes made in the Layout Library.
14. Save the report.
15. Leave report authoring tab open for the next demonstration.

Results:
You created and reused a standard page header and then compared automatically and manually updating the reused page header when it changed in the source report.

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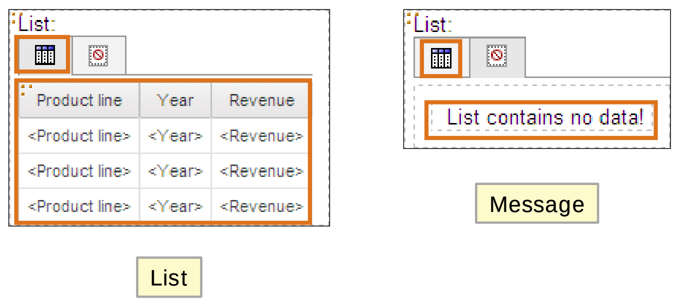
IBM Training

Handle reports with no data

- When a query returns no data, you can provide alternate content or remove the data frame from the report.



Use additional report building techniques

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Handle reports with no data

Each data frame has a property called No Data Contents. When this is set to Yes, a new frame appears that you can populate with a text message, or an alternate data frame, and so on.

Each data frame also has a Render Page when Empty property. When this property is set to No, the page does not render.

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IBM Training

Demonstration 3

Explore options for reports that contain no data

Page 3 - Show Custom Message When No Data is Returned

List:
List contains no data!

Crosstab:
Crosstab contains no data!

Use additional report building techniques

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Demonstration 3: Explore options for reports that contain do data

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Demonstration 3:
Explore options for reports that contain no data

Purpose:
You want to create a report with three pages showing different methods of handling no data being returned. The first page will show default data handling, the second page will not display when the list is empty, and the third page will generate a custom message to replace the empty container.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\Samples\Models\GO data warehouse (query)**
Report Type:	**List and Crosstab**
Folder:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Create a list and a crosstab.

1. Open a new **List** template, using **GO data warehouse (query)**.
2. From the **Data/Source** tab, add the following query items to the new list data container:
   - Products: Product line
   - Time: Year
   - Sales fact: Revenue

Product line	Year	Revenue
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>

3. From the **Toolbox**, add a new crosstab report to the right of the list.
4. From the **Query Name** list, click **Query1**, and then click **OK**.

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5. From **Data/Data Items**, add the following query items to the new crosstab:
   - **Rows** area:
     - Time: **Year**
   - Column area:
     - Products: **Product line**
   - Measure area:
     - Sales fact: **Revenue**

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

6. From the **Toolbox**, drag a **Table** to the page below the crosstab.
7. Clear the **Maximize width** checkbox, and then click **OK**.
8. Click inside the left table cell (but not the Add icon), and then in the **Properties** pane, under **BOX**, double-click **Padding**.
9. In the **Right padding** box, type **10**, and then click **OK**.

Task 2. Modify layout.

1. Click the list **Container Selector**, and then drag the list into the left table cell.
2. Click the crosstab **Container Selector**, and then drag the crosstab into the right table cell.

Product line	Year	Revenue
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>
<Product line>	<Year>	<Revenue>

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

3. From the **Toolbox** tab, drag a **Text Item** to the left of the list - but within the **left** table cell.
4. Type **List:**, and then click **OK**.
5. From the **Toolbox** tab, drag a **Text Item** to the left of the crosstab, within the right table cell.
6. Type **Crosstab:** then click **OK**.
7. Click to the right of the crosstab, and then on the toolbar, click **Top**.
8. Double-click the text in the header, type **Page 1 - Default Behavior**, and then click **OK**.

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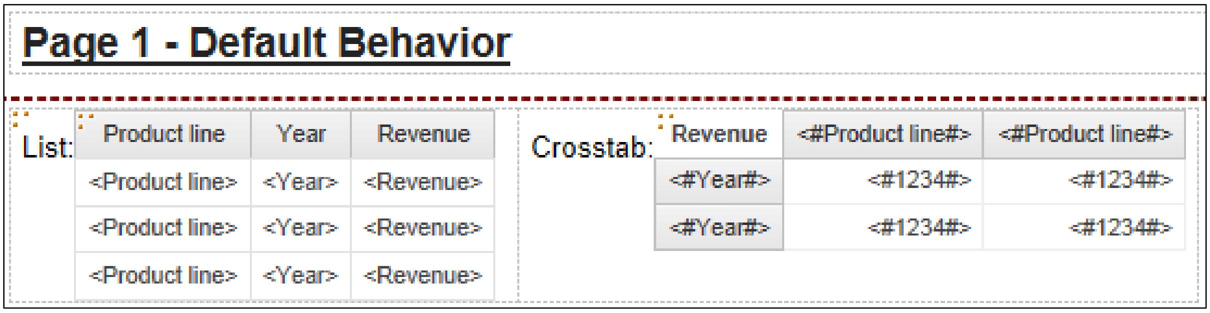
9. Left justify the text.

   The results appear as follows:



Task 3. Add filters to your list and crosstab.

Both reporting objects are linked to Query1, so only one set of filters will be needed;

1. Click anywhere in the list, click **Filters**, and then click **Edit Filters**.
2. Click **Add**, click **Advanced**, and then click **OK**.
3. Create and validate the following expression:

   [Year] =?pyear?

   Validate using 2011.
4. Click **OK** to close the **Detail filter expression** dialog box.
5. Create and validate another detail filter expression as follows:

   [Product line]=?ppline?

   Validate using Camping Equipment.
6. Click **OK** to close the **Detail filter expression** dialog box.
7. Click **OK** to close the **Filters** dialog box.

Task 4. Create additional pages.

1. On the **Navigate** tab, click **Page explorer**, and then click **Report pages**.
2. Right-click **Page1**, and then click **Copy**.
3. Right-click in the **Report pages** pane, and then click **Paste** to create **Page2**.
4. Right-click in the **Report pages** pane, and then click **Paste** to create **Page3**.

Task 5. Configure a page that does not display when the list is empty.

You do not want Page2 to render when the list is empty.

1. Double-click **Page2**, and then double-click the text in the **Page header** to edit the text.
2. Type **Page 2 - Do Not Render Page if No Data is Returned in the List**, and then click **OK**.

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3. Click the list **Container Selector** to select the entire list.
4. From the **Property** pane, under **GENERAL**, set the **Render page when empty** property to **No**.

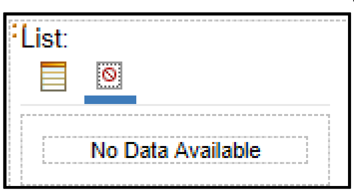
Task 6. Configure a page with a custom No Data Handler that replaces an empty container with a message.

You want to display a custom message when the list or crosstab is empty.

1. On the **Page explorer** tab, click **Page 3**.
2. Double-click the text in the **Page header**, and then update the text to: **Page 3 - Show Custom Message When No Data is Returned**.
3. Click **OK**.
4. Click the list **Container Selector** to select the entire list.
5. From the **Property** pane, under **CONDITIONAL**, double-click the **No data contents** property.
6. Select **Content specified in the No data tab**, and then click **OK**.

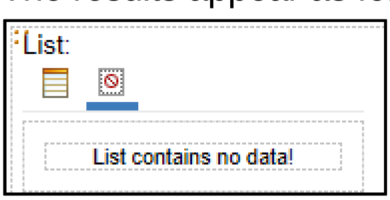
   The No Data Contents property specifies whether to show the No Data Contents tab for the selected query frame. When set to Yes, you can specify on this tab what to show when there is no data. When set to No, the tab is hidden and the query frame reverts to the default behavior.

   Your list should now appear as follows, with a new No Contents Data tab:



7. Double-click the object showing No Data Available, update the text to **List contains no data!**, and then click **OK**.

   The results appear as follows:



8. Click the crosstab **Container Selector** to select the entire crosstab.
9. From the **Property** pane, under **CONDITIONAL**, double-click the **No data contents** property.
10. Select **Content specified in the No data tab**, and then click **OK**.
11. Double-click the object showing No Data Available, update the text to **Crosstab contains no data!**, and then click **OK**.

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Task 7. Add a prompt page.

1. On the **Page explorer** tab, click **Prompt pages**.
2. From the **Toolbox**, drag **Page** to the **Prompt pages** pane, and then double-click **Prompt page1**.
3. Insert a **Table** of **2 rows** by **2 columns** into the work area.
4. Insert a **Text Item** in the top left cell, type **Select a Product Line:**, press the space bar, and then click **OK**.
5. Insert a **Text Item** in the bottom left cell, type **Select a Year:**, press the space bar, and then click **OK**.
6. Expand **PROMPTING**, and then insert a **Value prompt** in the top right cell.
7. Select **Use existing parameter**, select **ppline** from the list, click **Next**, and then click **Finish**.
8. Insert a **Value prompt** in the bottom left cell.
9. Select **Use existing parameter**, select **pyear** from the list, click **Next**, and then click **Finish**.
10. Click the top left cell
11. In the **Properties** window, under **POSITIONING**, double-click **Size & overflow**.
12. Type **150** for the **Width**, and then click **OK**.

Task 8. Run report displaying data, and with no data to display.

1. Run the report in **HTML**.
2. When prompted, next to **Select a Product Line:**, select **Camping Equipment**, next to **Select a Year**:, select **2010**, and then click **Finish**.

   The results for page 1 appear as follows:

   Page 1 - Default Behavior

   List:

Product line	Year	Revenue
Camping Equipment	2010	332,986,338.06

   Crosstab:

Revenue	Camping Equipment
2010	332,986,338.06

   Since all of the queries in this report are filtered by the same parameters, all lists and crosstabs on the three report pages should look the same when data is returned. The page numbers refer to the pages in Page Explorer and not in the HTML view

3. Click **Page Down** to see the Page 2 - Do Not Render Page if No Data is Returned in the List page.

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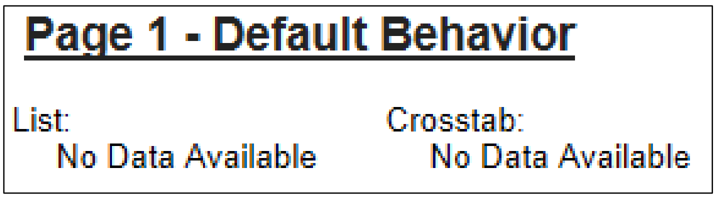
4. Click **Page Down** to see the Page 3 - Show Custom Message When No Data is Returned page.

   Notice that all three pages appear with a list and crosstab.

5. Click the **Run** button to run the report again.

6. When prompted, select **Mountaineering Equipment**, select **2010**, and then click **Finish**.

   The results for page 1 appear as follows:



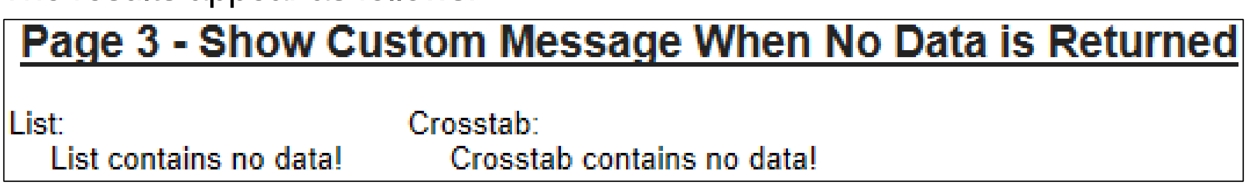
   Notice how the individual pages are affected in the report since there is no data for 2010 for the product line Mountaineering Equipment.

   The first page shows default behavior for the list and crosstab when there is no data returned. The list only shows the column titles, where the crosstab is not even rendered.

7. Click **Page Down**.

   Notice that the Page 2 - Do Not Render Page if No Data is Returned in the List page did not display at all. This list contains no data and the list property Render page when empty is set to No, so the page did not render. You are taken directly to the Page 3 - Show Custom Message When No Data is Returned page. Both the list and crosstab are showing the custom message you created when no data is returned.

   The results appear as follows:



8. Close the rendered report tab.

9. Leave the report authoring tab open for the following exercise.

Results:
You created a report with three pages showing different methods of handling no data being returned. The first page showed default data handling, the second page did not display when the list was empty, and the third page generated a custom message to replace the empty container.

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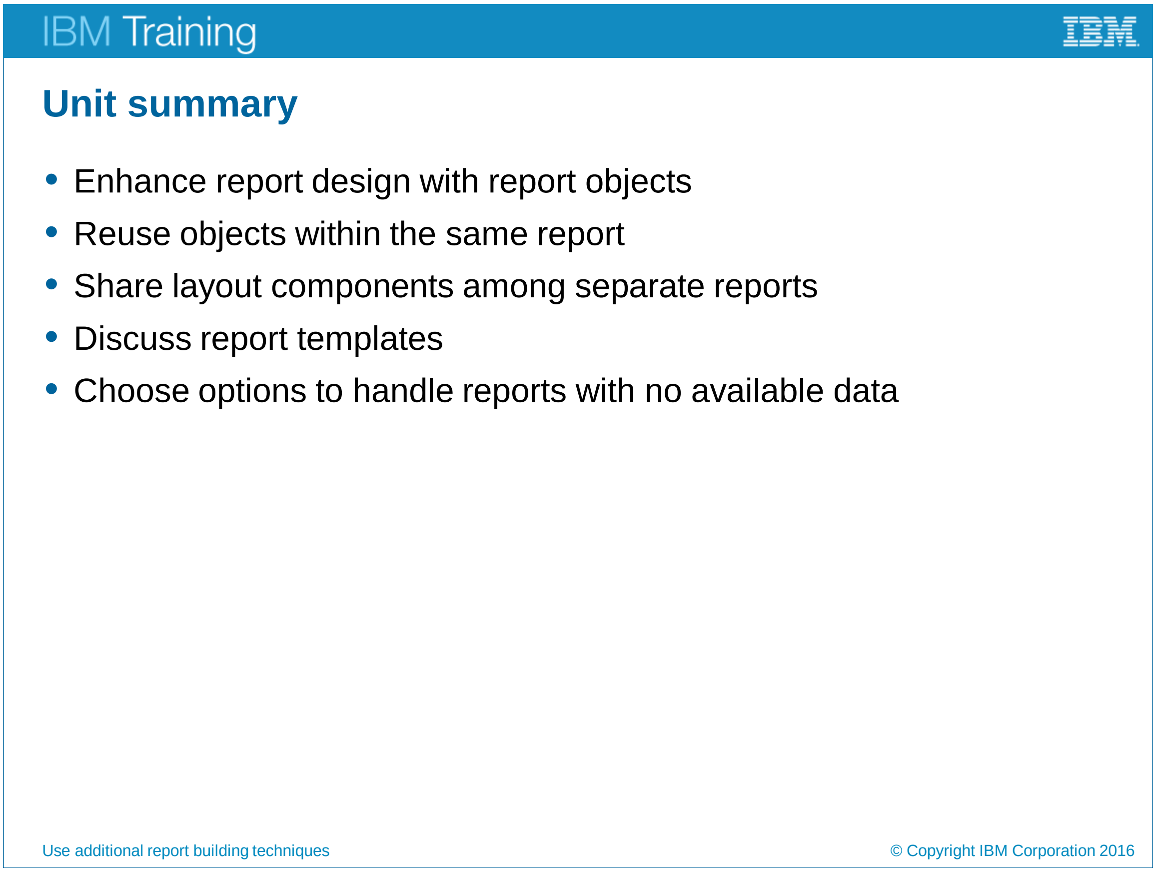

Unit summary

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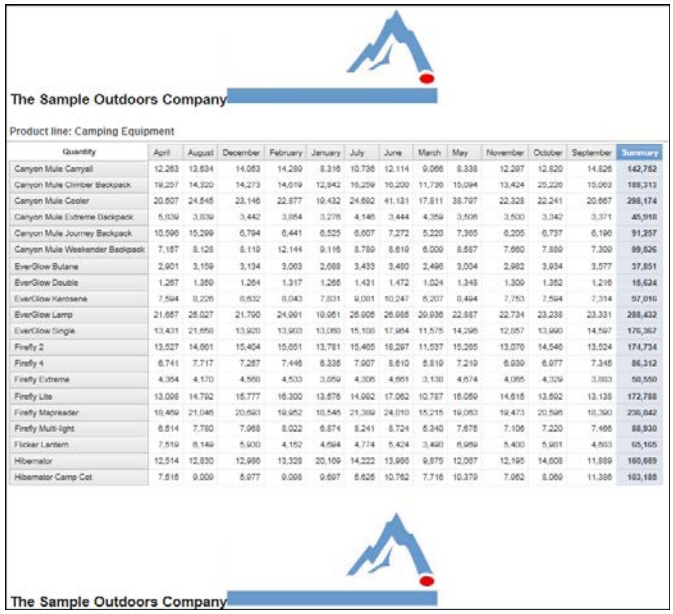
IBM Training

Exercise 1

Analyze product quantities sold by month



The Sample Outdoors Company

Product line: Camping Equipment

Quantity	April	August	December	February	January	July	June	March	May	November	October	September	Summary
Canyon Mule Carryall	12,263	13,634	14,063	14,289	8,316	10,736	12,114	9,066	8,338	12,297	12,820	14,826	**142,782**
Canyon Mule Climber Backpack	19,257	14,320	14,273	14,619	12,842	16,259	16,200	11,736	15,094	13,424	25,226	15,063	**188,313**
Canyon Mule Cooler	20,607	24,646	23,146	22,877	19,432	24,692	41,131	17,811	38,797	22,328	22,241	20,667	**298,174**
Canyon Mule Extreme Backpack	5,039	3,839	3,442	3,854	3,276	4,146	3,444	4,359	3,506	3,500	3,342	3,371	**45,918**
Canyon Mule Journey Backpack	10,596	15,299	6,794	6,441	6,525	6,607	7,272	5,220	7,365	6,205	6,737	6,196	**91,257**
Canyon Mule Weekender Backpack	7,187	8,128	8,119	12,144	9,116	8,789	8,619	6,009	8,687	7,660	7,889	7,309	**99,626**
EverGlow Butane	2,901	3,159	3,134	3,063	2,688	3,433	3,480	2,496	3,004	2,982	3,934	3,577	**37,851**
EverGlow Double	1,267	1,369	1,264	1,317	1,266	1,431	1,472	1,024	1,348	1,309	1,362	1,216	**15,624**
EverGlow Kerosene	7,594	8,226	8,632	8,043	7,631	9,081	10,247	6,207	8,494	7,753	7,594	7,314	**97,016**
EverGlow Lamp	21,667	26,027	21,790	24,991	19,961	26,906	26,966	29,936	22,887	22,734	23,238	23,331	**288,432**
EverGlow Single	13,431	21,658	13,920	13,903	13,060	15,106	17,964	11,575	14,296	12,857	13,990	14,597	**176,367**
Firefly 2	13,527	14,661	15,404	15,651	13,781	15,465	18,297	11,537	15,265	13,076	14,546	13,524	**174,734**
Firefly 4	6,741	7,717	7,267	7,446	6,336	7,907	8,610	5,819	7,219	6,939	6,977	7,346	**86,312**
Firefly Extreme	4,364	4,170	4,568	4,533	3,659	4,306	4,661	3,138	4,674	4,065	4,329	3,883	**50,550**
Firefly Lite	13,096	14,792	16,777	16,300	13,676	14,992	17,062	10,787	16,069	14,616	13,692	13,138	**172,788**
Firefly Mapreader	18,469	21,046	20,693	19,962	18,546	21,389	24,010	15,215	19,063	19,473	20,596	18,390	**236,842**
Firefly Multi-light	6,614	7,780	7,968	8,022	6,874	8,241	8,724	6,340	7,676	7,106	7,220	7,466	**88,930**
Flicker Lantern	7,519	6,149	5,930	4,152	4,694	4,774	5,424	3,490	6,969	5,400	5,961	4,603	**65,165**
Hibernator	12,514	12,830	12,986	13,328	20,169	14,222	13,986	9,875	12,067	12,195	14,608	11,889	**160,669**
Hibernator Camp Cot	7,616	9,009	6,977	9,096	9,697	6,626	10,762	7,716	10,379	7,962	8,069	11,386	**103,186**

The Sample Outdoors Company

Use additional report building techniques

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Exercise 1: Analyze product quantities sold by month

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Exercise 1:
Analyze product quantities sold by month

The Production Department has asked you to prepare a report that shows the quantity of products sold in each month of 2012 for all product lines, to help estimate production requirements for next year. The report must be broken into separate sections for each product line so that products from each line can be analyzed separately. The report name and logo must appear at the top and bottom of each page of the report.

To accomplish this:

- Open a new List template, based on the GO data warehouse(query) package, without saving the previous report.
- Add the following query items to the list report object. :
    - Products: Product line
    - Products: Product
    - Time: Month
    - Sales fact: Quantity
- Section data and convert to a crosstab.
- Filter data so that only 2012 data is displayed and sort month data in ascending order.
- Edit title and add an image to the header block with the Company name and logo (cover2.jpg).
- Add a layout component reference (CompanyBlock) to the footer block.

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

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Exercise 1: Tasks and results

Task 1. Create the list.

- **Toolbar**: Open a new **List** template, using the **GO data warehouse (Query)**.
- **Source** tab: Add the following, from **Sales (query)**:
  - Products: **Product line** to the new list report object.
  - Products: **Product** to the new list report object.
  - Time: **Month** to the new list report object.
  - Sales fact: **Quantity** to the new list report object.

  The results appear as follows:

Product line	Product	Month	Quantity
<Product line>	<Product>	<Month>	<Quantity>
<Product line>	<Product>	<Month>	<Quantity>
<Product line>	<Product>	<Month>	<Quantity>

  - **Toolbar**: Section on **<Product line>**.
  - Pivot the list to a crosstab using **<Month>**.

  The results appear as follows:

Product line: <Product line>

Quantity	<#Month#>	<#Month#>
<#Product#>	<#1234#>	<#1234#>
<#Product#>	<#1234#>	<#1234#>

Task 2. Filter and sort month data.

- **Toolbar**: Create and validate the following advanced filter expression for the crosstab:
  [Sales (query)].[Time].[Year]=2012
  - Sort the **<#Month#>** column header ascending.

Product line: <Product line>

Quantity	<#Month#>▲	<#Month#>
<#Product#>	<#1234#>	<#1234#>
<#Product#>	<#1234#>	<#1234#>

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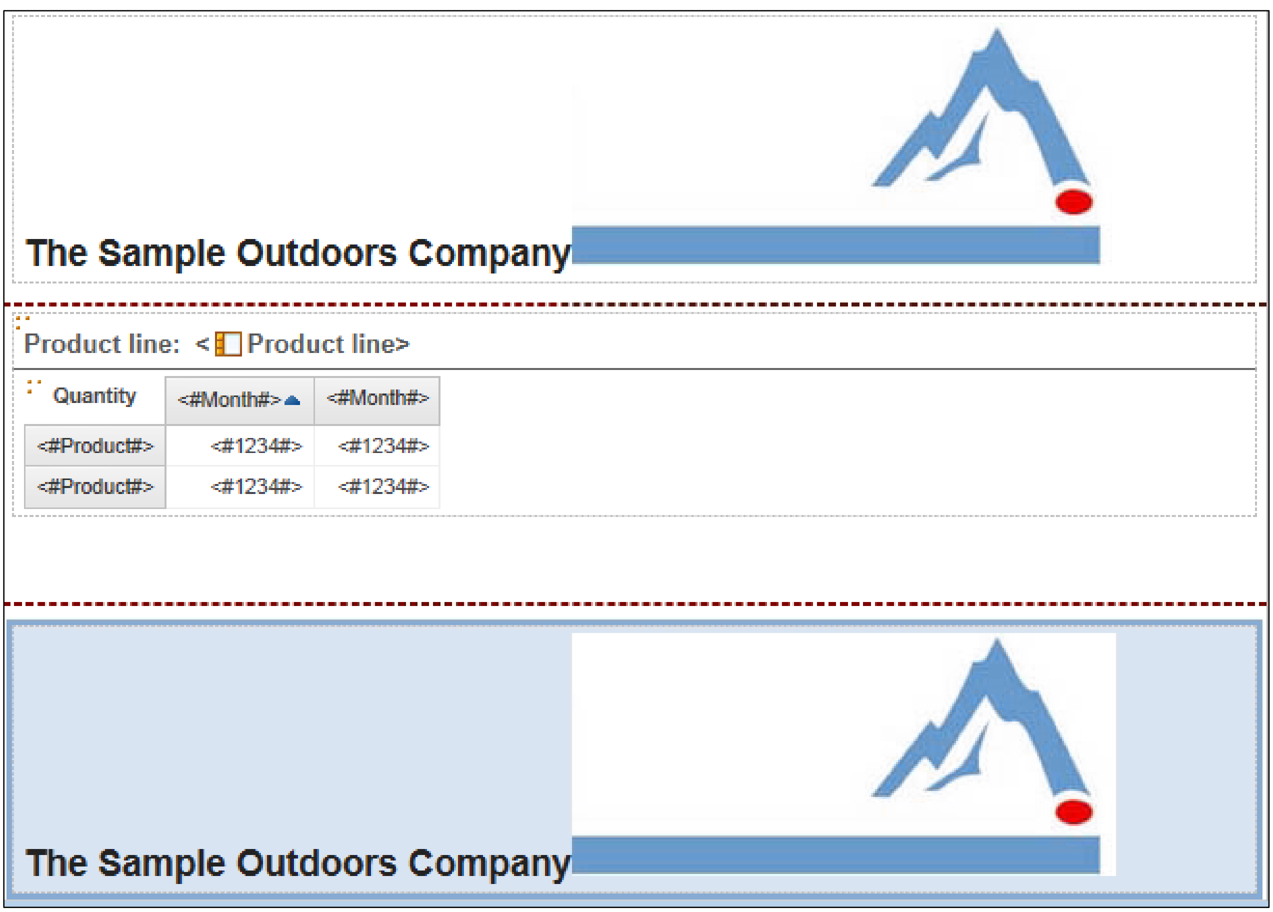
Task 3. Edit the title and add an image to the block.

- **Properties pane**: Name the header block **CompanyBlock**.
- **CompanyBlock**: Change the **Text** item to the following title: **The Sample Outdoors Company**.
  - Left align the text within the block.
  - Remove the underlining from the title.
- **Toolbox tab**: Add the **cover2.jpg** image to the right of the title.

Task 4. Add a reference to the block and its components.

- **Work area**: Delete the table in the footer block.
- **ADVANCED**: Add a **Layout component reference** for **CompanyBlock** into the page footer.



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- **Toolbar**: Run the report in **HTML**.
- **Rendered Report** tab: scroll down.

  The results appear as follows:

The Sample Outdoors Company

Product line: Camping Equipment

Quantity	April	August	December	February	January	July	June	March	May	November	October	September	Summary
Canyon Mule Carryall	12,263	13,634	14,053	14,289	8,316	10,736	12,114	9,066	8,338	12,297	12,820	14,826	142,752
Canyon Mule Climber Backpack	19,257	14,320	14,273	14,619	12,842	16,259	16,200	11,736	15,094	13,424	25,226	15,063	188,313
Canyon Mule Cooler	20,507	24,545	23,146	22,877	19,432	24,692	41,131	17,811	38,797	22,328	22,241	20,667	298,174
Canyon Mule Extreme Backpack	5,839	3,839	3,442	3,854	3,276	4,146	3,444	4,359	3,506	3,500	3,342	3,371	45,918
Canyon Mule Journey Backpack	10,596	15,299	6,794	6,441	6,525	6,607	7,272	5,220	7,365	6,205	6,737	6,196	91,257
Canyon Mule Weekender Backpack	7,157	8,128	8,119	12,144	9,116	8,789	8,619	6,009	8,587	7,660	7,889	7,309	99,526
EverGlow Butane	2,901	3,159	3,134	3,063	2,688	3,433	3,480	2,496	3,004	2,982	3,934	3,577	37,851
EverGlow Double	1,267	1,359	1,264	1,317	1,265	1,431	1,472	1,024	1,348	1,309	1,352	1,216	15,624
EverGlow Kerosene	7,594	8,226	8,632	8,043	7,831	9,081	10,247	6,207	8,494	7,753	7,594	7,314	97,016
EverGlow Lamp	21,657	25,027	21,790	24,991	19,951	25,905	26,985	29,936	22,887	22,734	23,238	23,331	288,432
EverGlow Single	13,431	21,658	13,920	13,903	13,068	15,108	17,964	11,575	14,296	12,857	13,990	14,597	176,367
Firefly 2	13,527	14,661	15,404	15,651	13,781	15,465	18,297	11,537	15,265	13,076	14,546	13,524	174,734
Firefly 4	6,741	7,717	7,257	7,446	6,335	7,907	8,610	5,819	7,219	6,939	6,977	7,345	86,312
Firefly Extreme	4,364	4,170	4,568	4,533	3,859	4,306	4,661	3,138	4,674	4,065	4,329	3,883	50,550
Firefly Lite	13,098	14,792	15,777	16,300	13,576	14,992	17,062	10,787	15,059	14,615	13,592	13,138	172,788
Firefly Mapreader	18,469	21,046	20,693	19,952	18,546	21,389	24,010	15,215	19,063	19,473	20,596	18,390	236,842
Firefly Multi-light	6,514	7,780	7,968	8,022	6,874	8,241	8,724	5,340	7,675	7,106	7,220	7,466	88,930
Flicker Lantern	7,519	6,149	5,930	4,152	4,694	4,774	5,424	3,490	6,969	5,400	5,981	4,683	65,165
Hibernator	12,514	12,830	12,986	13,328	20,169	14,222	13,986	9,875	12,067	12,195	14,608	11,889	160,669
Hibernator Camp Cot	7,515	9,009	5,977	9,098	9,697	5,625	10,762	7,716	10,379	7,952	8,069	11,386	103,185

The Sample Outdoors Company

- Close the rendered report tab.
- Sign out of the **IBM Cognos Analytics**.
- Close the Web browser.

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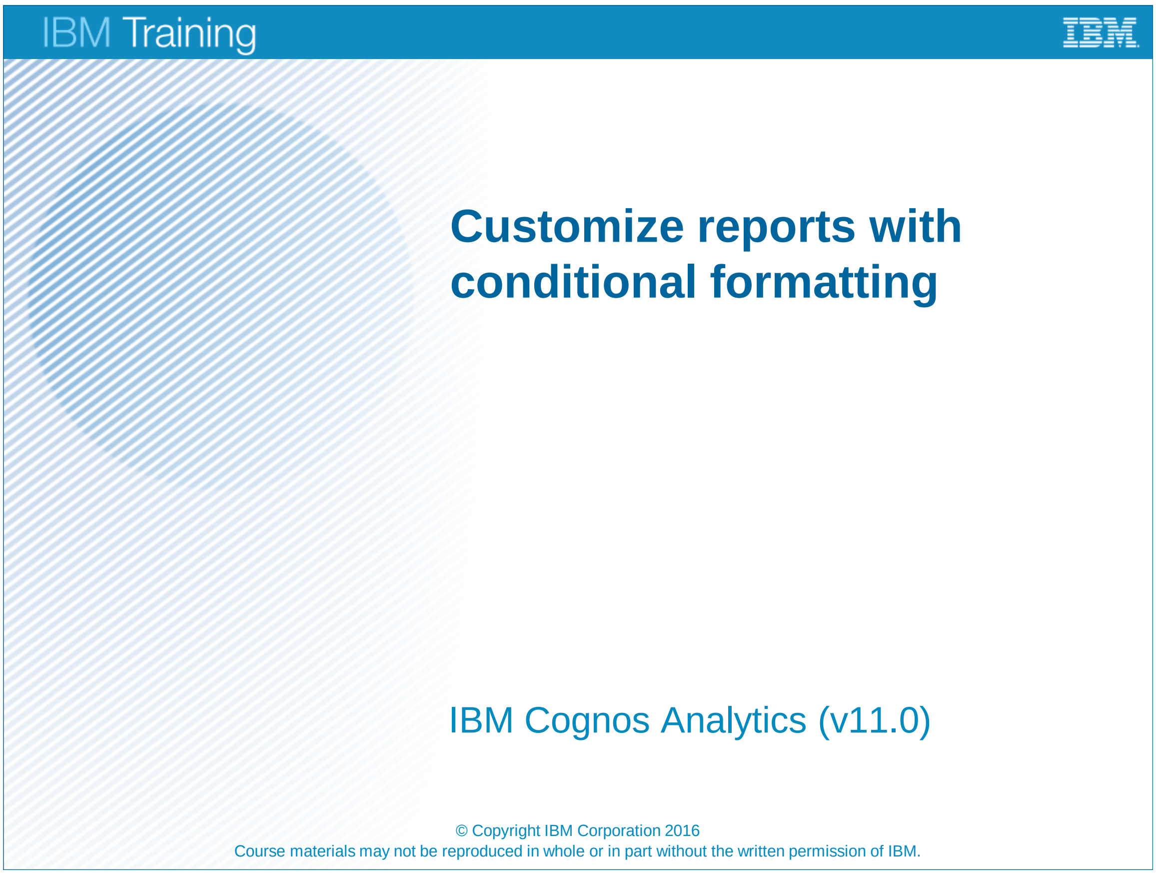

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IBM Training

Unit objectives

- Create multilingual reports
- Highlight exceptional data
- Show and hide data
- Conditionally render objects in reports
- Conditionally format one crosstab measure based on another

Customize reports with conditional formatting

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Unit objectives

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IBM Training

Change displays based on conditions

Display conditional text depending on language

Rapport sur les produits

Lignes de produits	Types de produit	Revenus
Accessoires personnels	Couteaux	153 420 439,59
	Jumelles	130 834 653,2
	Lunettes	867 125 198,48
	Matériel d'orientation	207 490 641,92
	Montres	526 802 374,59
Accessoires personnels - Total		**1 885 673 307,78**

Display conditional styles depending on data

Customize reports with conditional formatting

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Change displays based on conditions

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IBM Training

3 steps for conditional formatting

1. Create a variable.
   - Define the condition and create values.
2. Assign the variable to an object in the report.
   - Properties pane, under Conditional, assign variable to object.
3. Apply formatting to object based on condition value.
   - Select specific value condition and apply formatting to object.

Customize reports with conditional formatting

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3 steps for conditional formatting

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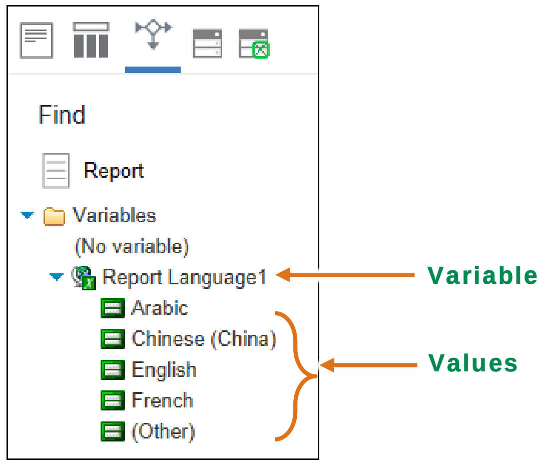
IBM Training

Step 1. Create a variable (1 of 2)

- Create variables and values to decide what element of the report will determine the change and the possible outcomes.



Customize reports with conditional formatting

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Step 1. Create a variable

This step can be performed in Condition explorer.

Boolean variables are used if there are only two possible outcomes, where the values will be Yes or No.

String variables are used if there is more than one outcome, based on string values you will specify.

Language variables are used when the values are different languages.

The variable determines what will change in the report. For example, the report will vary depending on revenue, product line or the language in which the report is run.

The values define the possible scenarios or outcomes for the variable. For example, revenue is either above $150,000 ('yes') or not ('no'), product line is 'Camping Equipment', 'Golf Equipment', or the language may be 'Chinese' or 'Dutch', and so on.

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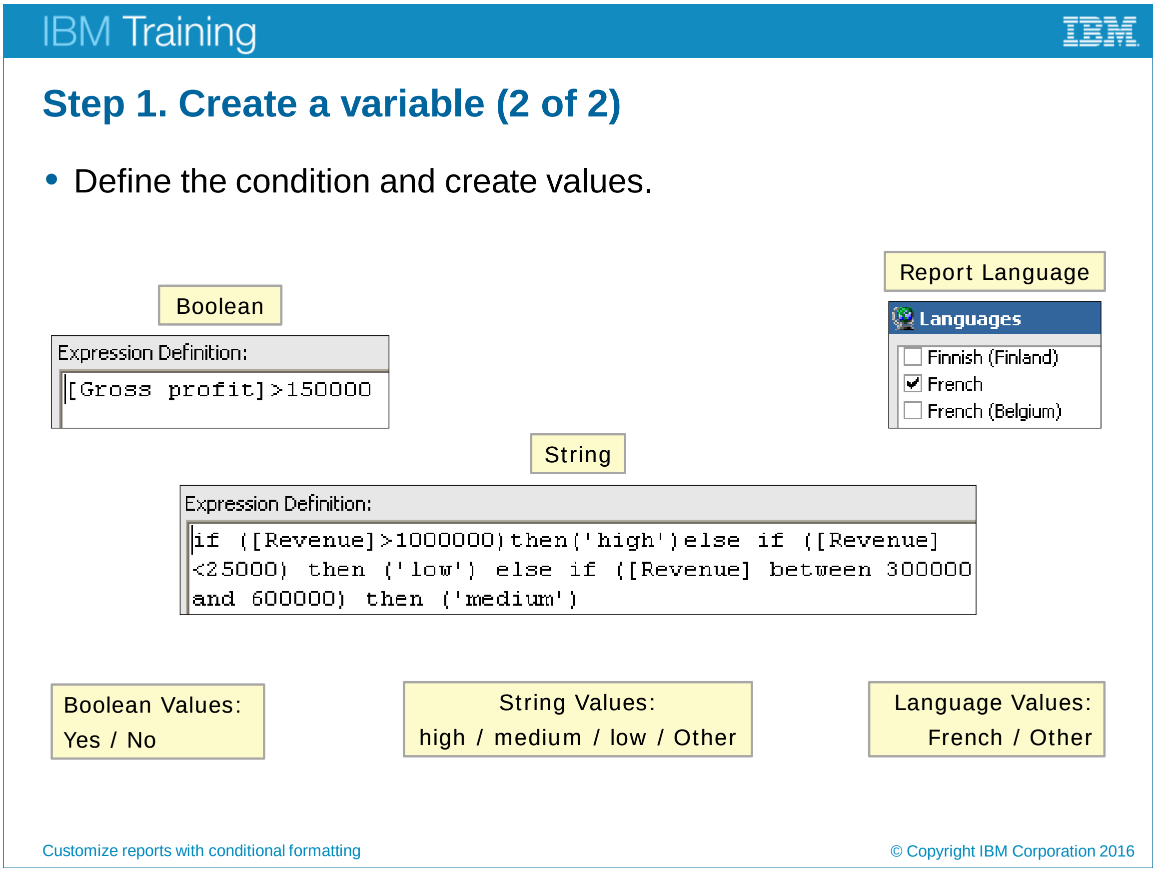

If you create a Boolean or string variable, you must define the condition.

If you create a language variable, you do not need to define the condition. You must choose the languages you want to support.

In the slide example for the string variable, revenue will be deemed 'high' if it is more than $1,000,000 or 'low' if it is less than $25,000.

The string variable's condition does not need to test all possible cases or the language variable hold all the possible languages because of the 'other' value. For example, in the slide string Expression Definition above, revenue between $25,000 and $300,000 is 'other'.

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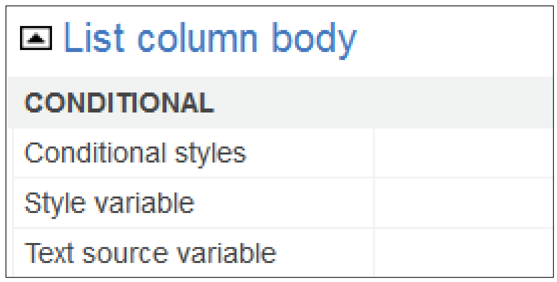
IBM Training

Step 2. Assign the variable to a report object (1 of 2)

- Select the condition style or variable that is appropriate to the object that you want to change based on the variable you want to assign to it.



Customize reports with conditional formatting

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Step 2. Assign the variable to a report object

Conditional Styles: Add conditional styles to highlight data in you report, based on set ranges.

Style Variable: Specifies a variable based on which the object can be conditionally styled.

Text Source Variable: Specifies a variable based on which the text can be chosen.

Render Variable: Specifies a variable based on which the object can be conditionally rendered.

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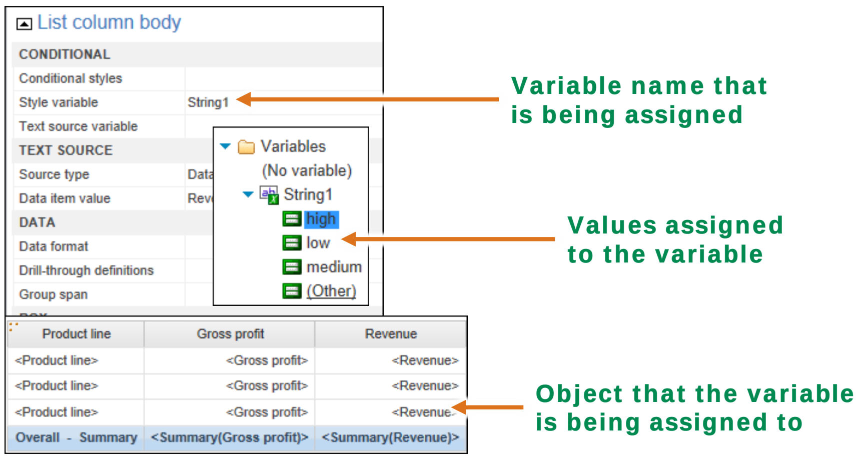
IBM Training

Step 2. Assign the variable to a report object (2 of 2)

- Once you have created a variable, assign the variable to the object that you wish to conditionally format.



Customize reports with conditional formatting

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Select your object in the report layout that you want to add conditional formatting to. This step is performed in Conditional explorer.

After you have created your variable, you must define how the report will appear for each value. To do this, select the text or part of the report that will vary, and then apply the variable to it using the Properties pane.

When you apply the variable, the values for which you can perform conditional report authoring appear. By default, Reporting selects all the values assuming you will format all of them. If you wish to create conditional formatting for only some values, you can deselect the others.

If you apply a language variable, an additional value called Other appears by default.

When you create a string or report language variable, and create or choose variables for it, an additional value called Other appears by default.

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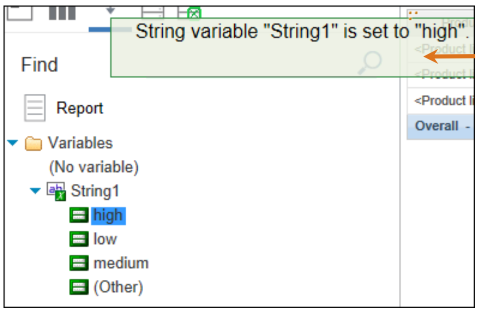
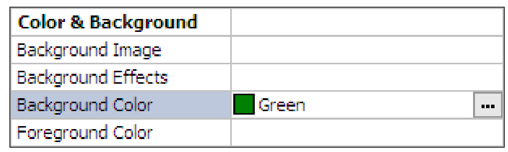
IBM Training

Step 3. Apply formatting to object based on condition value

- Select the condition value, and apply formatting to the object.



Explorer bar turns green when condition value is selected



Apply desired formatting to object based on condition value selected

Customize reports with conditional formatting

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Step 3. Apply formatting to object based on condition value

Once the report element has been designated as conditional, set the display for that value by modifying the report to appear the way you want it to look if that condition is satisfied.

This step is performed in Conditional explorer.

This step does not apply when working with a Render Variable.

When you select a value in the Condition explorer, the Explorer bar will turn green. This is to notify you that conditional formatting is turned on, and to remind you that all changes you make to the report only apply to the variable you selected.

After you have set the display for each value, turn the conditional formatting off by double-clicking the Explorer bar, or by selecting No Variable from the Condition explorer.

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IBM Training

Demonstration 1

Create a multilingual report (optional)

Rapport sur les produits

Lignes de produits	Types de produit	Revenus
Accessoires personnels	Couteaux	153 420 439,59
	Jumelles	130 834 653,2
	Lunettes	867 125 198,48
	Matériel d'orientation	207 490 641,92
	Montres	526 802 374,59
Accessoires personnels - Total		**1 885 673 307,78**

Customize reports with conditional formatting

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Demonstration 1: Create a multilingual report (optional)

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Demonstration 1:
Create a multilingual report (optional)

Purpose:
Your regional sales managers want to examine the revenue for all of your product types to promote the most profitable ones. Because this report will be distributed to offices in Germany, France, and the United States, you must run the report in different languages.

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 **Source**, add the following query items to the new list data container:
   - Products: **Product line**, **Product type**
   - Sales fact: **Revenue**

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

3. Click the **<Product line>** list column body, and then click **Group / Ungroup**.

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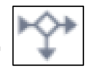
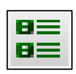
4. Click the **<Revenue>** list column body, click **Summarize**, and then click **Total**.
5. Run the report in **HTML** to examine the report.
6. Close the rendered report tab.

Task 2. Create a language variable and choose the languages.

You will apply conditional formatting to the header text so that a report title will appear in the language in which the report is run.

1. On the **Navigate** tab, click **Condition explorer** .

   The Condition explorer pane shows that there are currently no variables for this report.
2. Click **Variables**.
3. From the **Toolbox**, drag **Report Language Variable** to the **Variables** pane.
4. Scroll through the list to locate and select the checkboxes beside all of the **English**, **French**, and **German** languages, and then click **OK**.
5. In the **Values** pane, click **English**, Shift+click **English (Zimbabwe)**, and then click **Group Values** .
6. Repeat Step **5** to group all **French** languages together.

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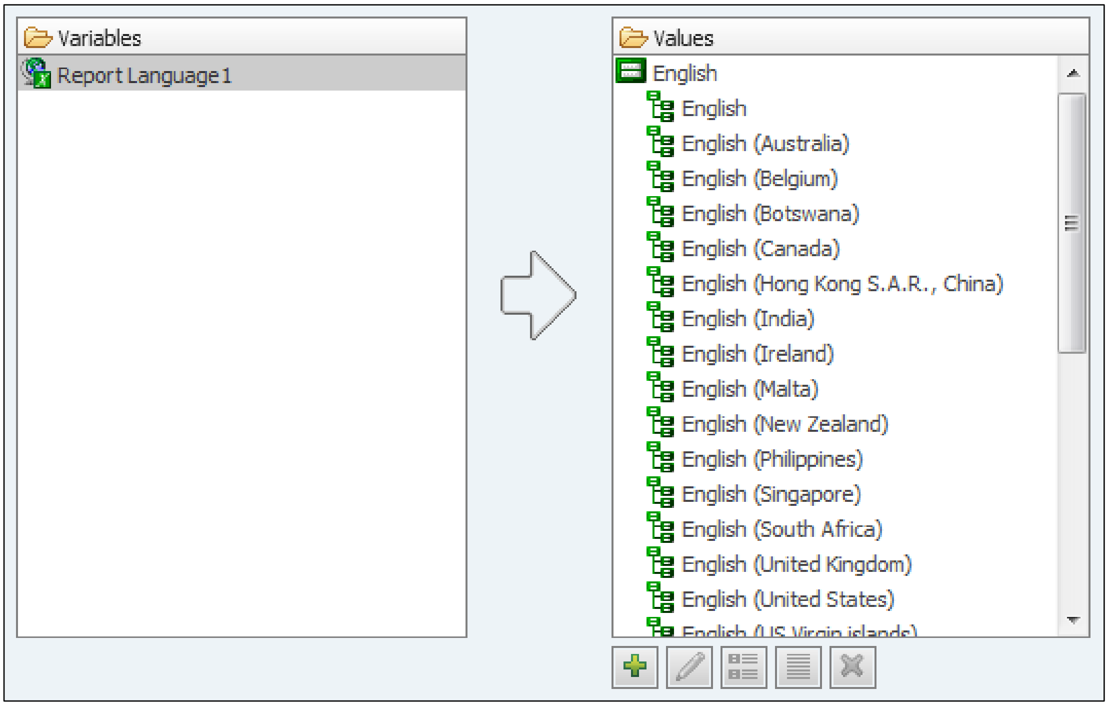
7. Repeat Step **5** to group all **German** languages together.

   The results appear as follows:



   There are seventeen English languages, six French, and six German. You want to select all of these languages so that you can group them together. That way you only have to format the report for three grouped values, rather than for each individual language.

   The report now has one variable with three grouped values, one for each language in which the report will be run. Because you created a language variable, the expression is created for you.

8. In the **Properties** pane, under **MISCELLANEOUS**, in the **Name** box, replace **Report Language1** with **Language**, and then press **Enter**.
9. On the **Navigate** tab, click **Page explorer**, and then click **Page1**.

Task 3. Define the title as conditional text.

1. Double-click the **Text** field at the top, in the Text dialog type **Product Report Title**, and then click **OK**.
2. Ensure that the report header text is left justified (use the containing block).
3. Click the **Text** field at the top to select it.
4. In the **Properties** pane, under **CONDITIONAL**, double-click **Text source variable**.

   The Text source variable dialog box appears.

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5. From the **Variable** list, select **Language**.

   The Values pane shows the three languages you chose, plus an option called Other. The three languages are selected by default so that you can use the Condition explorer to perform conditional authoring for any of these three languages.

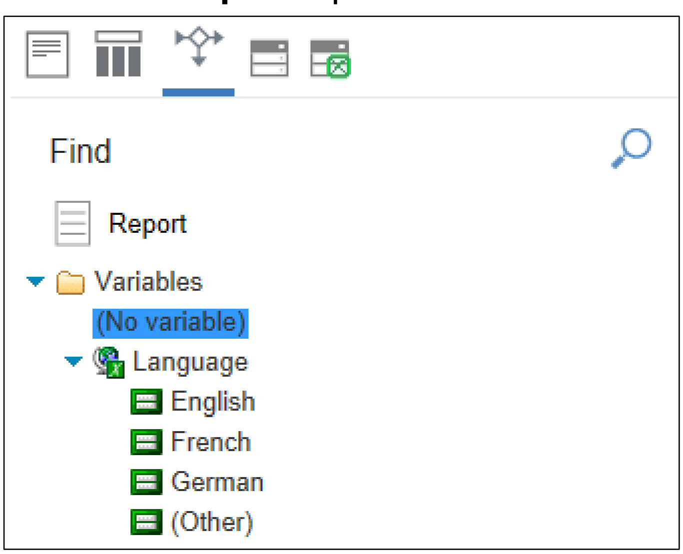
6. Click **OK**.

Task 4. Set the display for each value.

1. On the **Navigate** tab, click **Condition explorer**, and then click **English**.

   The Explorer bar turns green to remind you that any changes you make to the report will apply to the value you selected. The previous title also disappears because you must specify the text for this value.

2. Change the title text to **Product Report**.
3. Within the **Condition explorer** pane, click **French**.
4. Change the title text to **Rapport sur les produits**.
5. Within the **Condition explorer** pane, click **German**.
6. Change the title text to **Produktbericht**.
7. Turn off conditional formatting by clicking **(No variable)** in the **Condition explorer** pane.



   In order to run a report in different languages, the data source must be multilingual. Your browser must also be able to support multilingual characters, or else the characters will appear as boxes.

   Now you can run the report in various languages.

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Task 5. Run the report in various languages.

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

   Your report appears in English as this is our current default language. The report title appears as you created it for the English value. You will now run the report in French to see the results.
2. Close the rendered report tab.
3. Click **Run options**, and then click **Show run options**.

   You want to choose a language other than our current default.
4. Under **Language**, scroll down to and select **French (France)**, and then click **OK**.
5. Run the report in **HTML**.

   A section of the results appear as follows:

   Rapport sur les produits

Lignes de produits	Types de produit	Revenus
Accessoires personnels	Couteaux	153 420 439,59
	Jumelles	130 834 653,2
	Lunettes	867 125 198,48
	Matériel d'orientation	207 490 641,92
	Montres	526 802 374,59
Accessoires personnels - Total		**1 885 673 307,78**

   The report appears in French, including the title you created.

   IBM Cognos Analytics cannot translate the data returned by the query. This must be done as part of data modeling and must be included in the published package.
6. Close the rendered report tab.

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7. Repeat Steps **3** to **5** to run the report in **German (Austria)** and in **English (Zimbabwe)**.

   A section of the results appears as follows:

Produktbericht

Produktreihe	Produkttyp	Einnahmen
Accessoires	Ferngläser	130.834.653,2
	Messer	153.420.439,59
	Orientierung	207.490.641,92
	Sonnenbrillen	867.125.198,48
	Uhren	526.802.374,59
Accessoires - Total		1.885.673.307,78

Product 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

8. Close the rendered report tab.
9. Click **Run options**, and then click **Show run options**.
10. Under **Language**, scroll up, select **(Default)**, and then click **OK**.
11. Leave the report authoring tab open for the next demonstration.

Results:
Regional Sales managers can examine the revenue for all of your product types to promote the most profitable products. This report can be distributed to offices in German, French, and English speaking countries in the appropriate languages.

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IBM Training

Demonstration 2

Highlight exceptional data

Revenue		Americas			
		2010	2011	2012	2013
Personal Accessories	Binoculars	8,848,023.06	9,284,403.09	11,564,283.97	9,698,328.44
	Eyewear	51,804,488.86	64,364,796.83	89,687,954.94	68,629,625.09
	Knives	11,328,869.94	10,661,897.75	15,047,283.69	10,513,594.42
	Navigation	15,667,887.05	13,943,283.78	19,757,626.39	14,382,780.56
	Watches	40,906,913.37	44,372,804.39	51,213,306.66	32,018,631.1
Mountaineering Equipment	Climbing Accessories		6,928,733.67	8,238,351.85	8,576,743.95
	Rope		8,065,619.48	13,952,404.12	11,568,118.68
	Safety		6,881,659.98	10,137,737.5	9,410,543
	Tools		10,178,540.49	16,831,986.21	12,356,958.95
Camping Equipment	Cooking Gear	18,885,808.93	20,265,504.57	22,792,659.65	16,933,277.29
	Lanterns	9,550,941.78	9,516,880.22	12,274,847.87	8,136,831.6
	Packs	20,705,015.1	25,822,181.45	35,164,708.35	24,019,882.74
	Sleeping Bags	19,652,376.81	23,629,479.94	29,724,358.26	19,755,089.84
	Tents	35,466,023.41	43,218,510.95	49,900,030.23	36,031,372.05
Outdoor Protection	First Aid	2,122,816.09	841,085.19	536,893.86	256,402.95
	Insect Repellents	5,872,450.6	3,410,019.19	1,644,331.12	634,775.13
	Sunscreen	3,324,848.67	2,937,932.68	980,915.8	440,176.4

Customize reports with conditional formatting

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Demonstration 2: Highlight exceptional data

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Demonstration 2:
Highlight exceptional data

Purpose:
A manager wants to quickly identify revenue greater than $20,000,000 and less than $5,000,000 to identify high and low revenue-generating product types in all sales regions. You need to create a report that displays revenue data in different colors depending on revenue values.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\Samples\Models\GO data warehouse (query)**
Report Type:	**Crosstab**
Folder:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Create the crosstab.

1. Open a new **Crosstab** template using the **GO data warehouse (query)** package.
2. From the **Source** tab, add the following query items to the new crosstab data container:
   - **Rows** area:
     - Products: **Product line**, **Product type** (nested as a child)
   - **Columns** area:
     - Retailers: **Region**
     - Time: **Year** (nested under Region)
   - **Measure** area:
     - Sales fact: **Revenue**

Revenue		<#Region#>		<#Region#>	
		<#Year#>	<#Year#>	<#Year#>	<#Year#>
<#Product line#>	<#Product type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
	<#Product type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Product line#>	<#Product type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
	<#Product type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

You will create a variable to define revenue as 'high' or 'low' if the amount is above or below specified amounts.

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3. On the **Navigate** tab, click the **Condition explorer** tab.
4. In the **Condition explorer** pane, click **Variables**, and then from the **Toolbox** tab, drag a **String Variable** to the **Variables** pane.

   Because you are creating a string variable, you must specify the condition on which revenue will change, and then create values for the possible outcomes.
5. Create and validate the following expression:

   if ([Query1].[Revenue]>20000000) then ('high') else if ([Query1].[Revenue]<5000000) then ('low')

   Hint: You can double-click Revenue in the Available Components pane to add it to the expression as you write it.
6. Click **OK**.
7. Under the **Values** box, click **Add**.
8. In the **Add** dialog box, type **high**, and then click **OK**.
9. Repeat steps **7** and **8** to add a second value called **low**.

   The values created in steps **7** - **8** must be spelled exactly as they are spelled in the expression definition for the variable.
10. In the **Properties** pane, under **MISCELLANEOUS**, in the **Name** box, modify the text to **Revenue_high_low**, and then press **Enter**.
11. Navigate back to **Page1**.

    Now that you have created a variable and specified its values, you must format the revenue cells for each value.

Task 2. Define the measures as conditional and set the display for each value.

1. Click any of the **Revenue** (**<#1234#>**) cells in the crosstab, in the **Properties** pane, click **Select Ancestor**, and then click **Crosstab fact cells**.
2. Under **CONDITIONAL**, double-click **Style variable**.

   The Style variable dialog box appears.
3. From the **Variable** list, select **Revenue_high_low**, and then click **OK**.

   The measures cells are now conditionally formatted using the variable you just created. You must now set the display for each value.
4. Click the **Condition explorer** tab, and then click **high**.

   The Explorer bar turns green.
5. With the **Revenue** cells still selected, on the crosstab toolbar, click **Style** , and then click **Edit** next to the **Font** option.
6. Set **Foreground Color** to **Green**, set **Weight** to **Bold**, click **OK** to close the **Font** dialog box, and then click **OK** again to close the **Style** dialog box.

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7. Repeat steps **4** - **6** to change the **Foreground** color for the **low** value to **Red**.
8. Click **(No variable)** to turn the conditional formatting off.
9. Run the report in **HTML**.

   A section of the results appear as follows:

Revenue		Americas			
		2010	2011	2012	2013
Personal Accessories	Binoculars	8,848,023.06	9,284,403.09	11,564,283.97	9,698,328.44
	Eyewear	51,804,488.86	64,364,796.83	89,687,954.94	68,629,625.09
	Knives	11,328,869.94	10,661,897.75	15,047,283.69	10,513,594.42
	Navigation	15,667,887.05	13,943,283.78	19,757,626.39	14,382,780.56
	Watches	40,906,913.37	44,372,804.39	51,213,306.66	32,018,631.1
Mountaineering Equipment	Climbing Accessories		6,928,733.67	8,238,351.85	8,576,743.95
	Rope		8,065,619.48	13,952,404.12	11,568,118.68
	Safety		6,881,659.98	10,137,737.5	9,410,543
	Tools		10,178,540.49	16,831,986.21	12,356,958.95
Camping Equipment	Cooking Gear	18,885,808.93	20,265,504.57	22,792,659.65	16,933,277.29
	Lanterns	9,550,941.78	9,516,880.22	12,274,847.87	8,136,831.6
	Packs	20,705,015.1	25,822,181.45	35,164,708.35	24,019,882.74
	Sleeping Bags	19,652,376.81	23,629,479.94	29,724,358.26	19,755,089.84
	Tents	35,466,023.41	43,218,510.95	49,900,030.23	36,031,372.05
Outdoor Protection	First Aid	2,122,816.09	841,085.19	536,893.86	256,402.95
	Insect Repellents	5,872,450.6	3,410,019.19	1,644,331.12	634,775.13
	Sunscreen	3,324,848.67	2,937,932.68	980,915.8	440,176.4

   You can see that some Camping Equipment product types generated high revenue over a four-year period in Central Europe, whereas Outdoor Protection generated low revenue. Notice that when the revenue condition is not satisfied (when it is neither high nor low) revenue appears in black.

10. Close the rendered report tab.
11. Leave the report authoring tab open for the next demonstration.

Results:
You created a report that compares product line revenue for all sales regions to quickly identify by color the product type revenues greater than $20,000,000 and less than $5,000,000.

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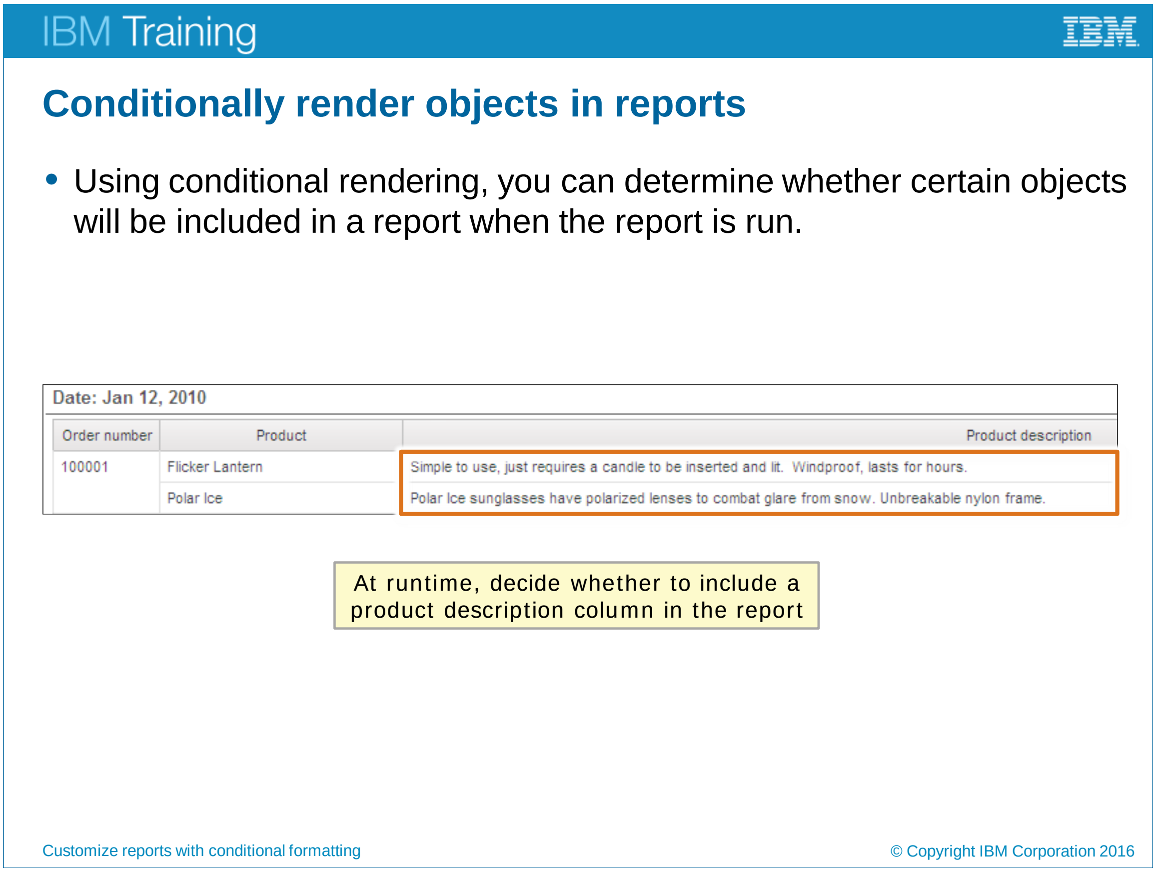

Conditionally render objects in reports

If objects are not rendered, they do not take up space in the report when it is run.

Conditional rendering is useful when your report contains sensitive data or data that may be relevant for some consumers but not for others.

When conditional rendering is applied to a column in a list report, the conditional rendering applies to all portions of the column including the title, the body cells, and header and footer cells.

In the slide example, the product description column is rendered because the report was run in HTML format. An expression was created on the product description column to only render if the report output is HTML.

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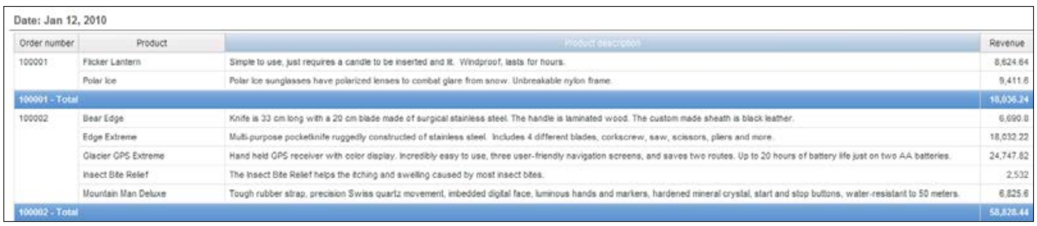
IBM Training

Demonstration 3

Create a report with a conditionally rendered column


Date: Jan 12, 2010

Order number	Product	Product description	Revenue
100001	Flicker Lantern	Simple to use, just requires a candle to be inserted and lit. Windproof, lasts for hours.	8,624.64
	Polar Ice	Polar Ice sunglasses have polarized lenses to combat glare from snow. Unbreakable nylon frame.	9,411.6
100001 - Total			18,036.24
100002	Bear Edge	Knife is 33 cm long with a 20 cm blade made of surgical stainless steel. The handle is laminated wood. The custom made sheath is black leather.	6,690.8
	Edge Extreme	Multi-purpose pocketknife ruggedly constructed of stainless steel. Includes 4 different blades, corkscrew, saw, scissors, pliers and more.	18,032.22
	Glacier GPS Extreme	Hand held GPS receiver with color display. Incredibly easy to use, three user-friendly navigation screens, and saves two routes. Up to 20 hours of battery life just on two AA batteries.	24,747.82
	Insect Bite Relief	The Insect Bite Relief helps the itching and swelling caused by most insect bites.	2,532
	Mountain Man Deluxe	Tough rubber strap, precision Swiss quartz movement, imbedded digital face, luminous hands and markers, hardened mineral crystal, start and stop buttons, water-resistant to 50 meters.	6,825.6
100002 - Total			58,828.44

Customize reports with conditional formatting

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Demonstration 3: Create a report with a conditionally rendered column

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Demonstration 3: Create a report with a conditionally rendered column

Purpose:
Some users want a report to include descriptions of each product, while others are familiar with the products and do not want these descriptions in the report. You will create a report that can be run with or without a column displaying product descriptions based on the format in which you run the report.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 the previous report.
2. From the **Source** tab, add the following query items to the new list data container:
   - Time**: Date**
   - Sales order: **Order number**
   - Products: **Product**, **Product Description**
   - Sales fact: **Revenue**

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

3. Click **<Date>**, and then on the toolbar, click **Section / unsection**.
4. Click **<Order number>**, and then on the toolbar, click **Group / Ungroup**.
5. Click **<Revenue>**, on the toolbar click **Summarize**, and then click **Total**.
6. On the toolbar, click **Filters**, and then click **Edit Filters**.
7. Click **Add**, click **Advanced**, and then click **OK**.
8. Create and validate the following expression:

   [Sales (query)].[Time].[Month key]=201001

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

   The report runs more efficiently with this filter.

10. Change the title text at the top of the report to **Order Details**, and then left justify the text field within the block.

Task 2. Add a Boolean variable.

1. Click **<Product description>**, in the **Properties** title bar, click **Select Ancestor**, and then click **List column** at the bottom of the list.
2. In the **Properties** pane, under **CONDITIONAL**, double-click the **Render variable** property.
3. From the **Variable** list, select **New boolean variable**.
4. In the **New variable** dialog box, type **ShowDescrip**, and then click **OK**.
5. Create and validate the following expression:

   ReportOutput ()='HTML'

   Hint: Find ReportOutput () from the Functions tab, Report Functions folder.
6. Click **OK** until all dialog boxes are closed.

Task 3. Run the report in HTML, and then in PDF.

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

   A section of the results appear as follows:

   Order Details

   Date: Jan 12, 2010

Order number	Product	Product description	Revenue
100001	Flicker Lantern	Simple to use, just requires a candle to be inserted and lit. Windproof, lasts for hours.	8,624.64
	Polar Ice	Polar Ice sunglasses have polarized lenses to combat glare from snow. Unbreakable nylon frame.	9,411.6

   The report contains a column displaying a description of each product.

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2. Click the down arrow to the right of the **Run report** button, and then run the report in **PDF**.

   A section of the results appear as follows:

   Order Details

   Date: Jan 12, 2010

Order number	Product	Revenue
100001	Flicker Lantern	8,624.64
	Polar Ice	9,411.6
100001 - Total		**18,036.24**
100002	Bear Edge	6,690.8
	Edge Extreme	18,032.22
	Glacier GPS Extreme	24,747.82
	Insect Bite Relief	2,532
	Mountain Man Deluxe	6,825.6
100002 - Total		**58,828.44**

   When the report is rendered in PDF format, Product description is not rendered.

3. Close the rendered report tab.
4. Leave report authoring tab open for the next demonstration.

Results:
You created a report you can run with or without a column displaying product descriptions based on the format in which you run the report.

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IBM Training

Conditionally format one crosstab measure based on another

	2010		2011	
	Gross profit	Revenue	Gross profit	Revenue
Camping Equipment	117,156,311.6	332,986,338.06	148,069,111.12	402,757,573.17
Golf Equipment	70,766,389.29	153,553,850.98	78,819,344.94	168,006,427.07
Outdoor Protection	21,349,297.72	36,165,521.07	15,501,534.93	25,008,574.08
Personal Accessories	158,345,909.96	391,647,093.61	183,970,133.46	456,323,355.9
Mountaineering Equipment			42,323,567.2	107,099,659.94

Revenue formatting
based on Gross profit values

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Conditionally format one crosstab measure based on another

You can conditionally format one crosstab measure based on another crosstab measure using the Conditional Styles dialog box.

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IBM Training

Demonstration 4

Conditionally format one crosstab measure based on another

	2010		2011		2012		2013	
	Gross profit	Revenue	Gross profit	Revenue	Gross profit	Revenue	Gross profit	Revenue
Camping Equipment	117,156,311.6	332,986,338.06	148,069,111.12	402,757,573.17	188,942,774.28	500,382,422.83	132,630,896.65	352,910,329.97
Golf Equipment	70,766,389.29	153,553,850.98	78,819,344.94	168,006,427.07	115,965,213.04	230,110,270.55	86,642,694.9	174,740,819.29
Outdoor Protection	21,349,297.72	36,165,521.07	15,501,534.93	25,008,574.08	6,387,192.95	10,349,175.84	2,745,257.18	4,471,025.26
Personal Accessories	158,345,909.96	391,647,093.61	183,970,133.46	456,323,355.9	247,731,864.8	594,009,408.42	186,535,159.07	443,693,449.85
Mountaineering Equipment			42,323,567.2	107,099,659.94	64,233,527.4	161,039,823.26	56,718,814.19	141,520,649.7

Customize reports with conditional formatting

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Demonstration 4: Conditionally format one crosstab measure based on another

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Demonstration 4: Conditionally format one crosstab measure based on another

Purpose:
Consumers would like to see conditional formatting for revenue values based on Gross profit values in a crosstab. To achieve this, you will take advantage of the IBM Cognos ability to conditionally format one crosstab value based on another.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\Samples\Models\GO data warehouse (query)**
Report Type:	**Crosstab**
Folder:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Create the crosstab report.

1. Open a new **Crosstab** template using the **GO data warehouse (query)** package.
2. From the **Source** tab, add the following query items to the new crosstab report object:
   - **Rows** area:
     - Products: **Product line**
   - **Columns** area:
     - Time: **Year**
     - Sales fact: **Gross Profit**, **Revenue** (Nested under Year)

	<#Year#>		<#Year#>	
	<#Gross profit#>	<#Revenue#>	<#Gross profit#>	<#Revenue#>
<#Product line#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Product line#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

3. Run the report in **HTML**.
4. Examine the results.
5. Close the rendered report tab.

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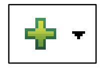
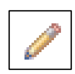
Task 2. Conditionally format one crosstab measure based on another.

1. Click the **Revenue** fact cells (**<#1234#>**), on the crosstab toolbar, click **More**, point to **Style**, and then click **Conditional styles**.
2. Click **New Conditional Style** , and then click **New Conditional Style** from the list.
3. In the **Base it on the following data item** list, click **Gross profit**, and then click **OK**.
4. In the **Name** box, type **Gross Profit Performance**.
5. Click **New Value** , type **180000000** (180,000,000), and then click **OK.**
6. Repeat step 5 to add values for **130000000** (130,000,000), **70000000** (70,000,000), and **20000000** (20,000,000).
7. In the **Style** column, in the top drop down list, select **Excellent**, and then for the remaining drop down lists select **Very good**, **Average**, **Below average**, and **Poor** respectively.
8. To the right of **Poor**, click **Edit Style** .
9. Click **Edit** to the right of **Font**, change **Weight** to **Bold**, and then click **OK.**

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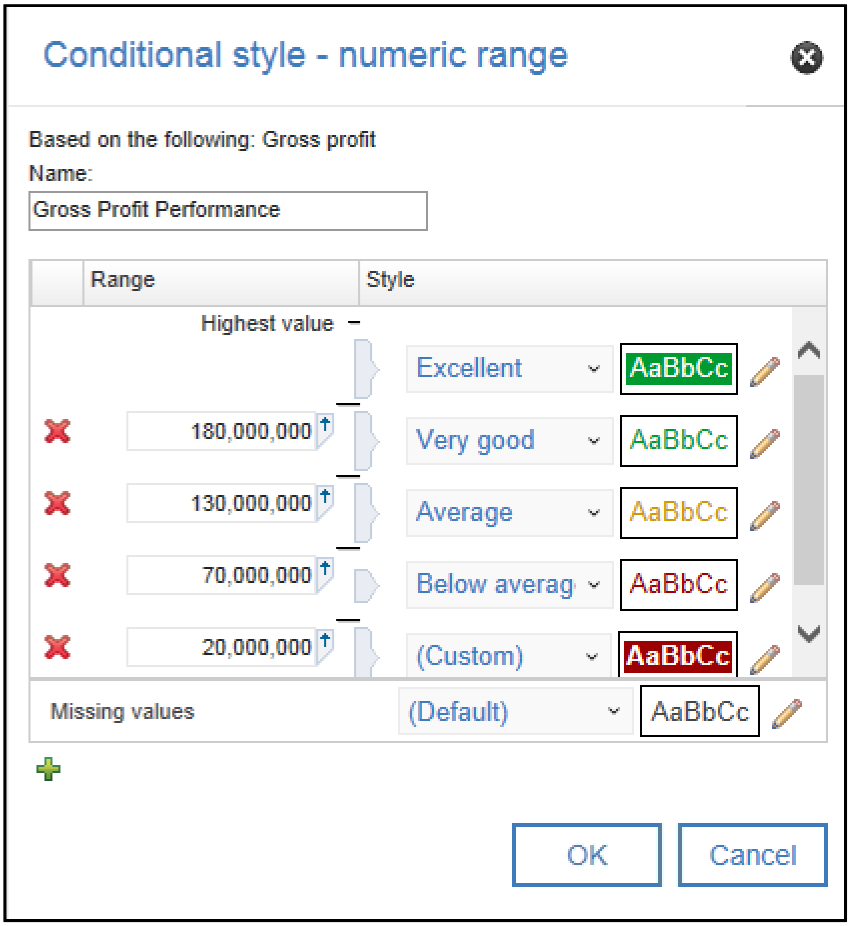
10. Click **OK** to close the **Style** dialog box.

    The results appear as follows:



11. Click **OK** to close the **Conditional style - numeric range** dialog box, and then click **OK** again to close the **Conditional styles** dialog box.

Task 3. Run the report and use existing conditional styles.

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

   The results appear as follows:

	2010		2011		2012		2013	
	Gross profit	Revenue	Gross profit	Revenue	Gross profit	Revenue	Gross profit	Revenue
Camping Equipment	117,156,311.6	332,986,338.06	148,069,111.12	402,757,573.17	188,942,774.28	500,382,422.83	132,630,896.65	352,910,329.97
Golf Equipment	70,766,389.29	153,553,850.98	78,819,344.94	168,006,427.07	115,965,213.04	230,110,270.55	86,642,694.9	174,740,819.29
Outdoor Protection	21,349,297.72	36,165,521.07	15,501,534.93	25,008,574.08	6,387,192.95	10,349,175.84	2,745,257.18	4,471,025.26
Personal Accessories	158,345,909.96	391,647,093.61	183,970,133.46	456,323,355.9	247,731,864.8	594,009,408.42	186,535,159.07	443,693,449.85
Mountaineering Equipment			42,323,567.2	107,099,659.94	64,233,527.4	161,039,823.26	56,718,814.19	141,520,649.7

   Revenue values are conditionally formatted based on Gross profit values.

2. Close the rendered report tab.

   You will now apply the same Gross Profit Performance style to the Gross profit measure.

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3. Click the **Gross profit** fact cells, from the toolbar click the ellipsis, then point to **Style**, and then click **Conditional styles**.
4. Click **New Conditional Style**, click **Use Existing Conditional Style**, and then click **Gross Profit Performance**.
5. Click **OK** to close the **Select existing conditional styles** dialog box, and then click **OK** to close the **Conditional styles** dialog box.
6. Run the report in **HTML**.

   The results appear as follows:

	2010		2011		2012		2013	
	Gross profit	Revenue	Gross profit	Revenue	Gross profit	Revenue	Gross profit	Revenue
Camping Equipment	117,156,311.6	332,986,338.06	148,069,111.12	402,757,573.17	188,942,774.28	500,382,422.83	132,630,896.65	352,910,329.97
Golf Equipment	70,766,389.29	153,553,850.98	78,819,344.94	168,006,427.07	115,965,213.04	230,110,270.55	86,642,694.9	174,740,819.29
Outdoor Protection	21,349,297.72	36,165,521.07	15,501,534.93	25,008,574.08	6,387,192.95	10,349,175.84	2,745,257.18	4,471,025.26
Personal Accessories	158,345,909.96	391,647,093.61	183,970,133.46	456,323,355.9	247,731,864.8	594,009,408.42	186,535,159.07	443,693,449.85
Mountaineering Equipment			42,323,567.2	107,099,659.94	64,233,527.4	161,039,823.26	56,718,814.19	141,520,649.7

   Now the same conditional style is applied to both measures.
7. Close the rendered report tab.
8. Leave the report authoring tab open for the following exercise.

Results:
By taking advantage of the IBM Cognos ability to conditionally format one crosstab value based on another, you were able to create a crosstab in which conditional formatting for revenue values were based on the Gross profit values. You then applied the same conditional formatting to the Gross profit values to create a uniform look for the crosstab.

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IBM Training

Unit summary

- Create multilingual reports
- Highlight exceptional data
- Show and hide data
- Conditionally render objects in reports
- Conditionally format one crosstab measure based on another

Customize reports with conditional formatting

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Unit summary

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IBM Training

Exercise 1

Distinguish yearly data

Quantity	Americas				Asia Pacific			
	2010	2011	2012	2013	2010	2011	2012	2013
Department Store	1,727,876	1,487,381	1,379,365	744,786	1,217,094	1,478,541	1,406,756	961,984
Direct Marketing	148,802	141,290	169,247	77,415	210,619	203,603	351,474	144,896
Equipment Rental Store	81,480	101,775	147,396	112,749	42,258	92,571	125,943	164,217
Eyewear Store	206,533	240,970	327,806	289,250	99,940	152,782	231,029	225,936
Golf Shop	271,114	313,422	404,204	285,323	272,825	509,698	614,846	457,216
Outdoors Shop	1,600,571	2,510,484	2,956,928	2,476,759	1,757,524	2,061,142	2,392,989	1,971,191
Sports Store	1,794,109	1,890,046	2,063,169	1,533,915	1,075,804	1,151,277	1,131,145	843,307
Warehouse Store	609,084	406,600	418,051	294,651	396,751	257,819	362,916	223,447

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Exercise 1: Distinguish yearly data

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Exercise 1: Distinguish yearly data

You have been asked to create a report that shows the volume of sales in each region by retailer type. To make the yearly data easier to distinguish, you will format the report so each year column will have a different background color.

To accomplish this you will:

- Open a new crosstab template, using the GO data warehouse (query) package, without saving the previous report.
- Add the following data items to a new crosstab using the GO data warehouse (query)\Sales (query):
  - Retailers: Region
  - Time: Year (Nested under Region)
  - Retailer type: Retailer type
  - Sales fact: Quantity
- Create a year string variable with values for each year.
- Assign the measures in the crosstab a conditional style using the year variable.
- Set the display for each year to display a yellow background for 2010, a green background for 2011, a blue background for 2012, and a red background for 2013.

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

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Exercise 1: Tasks and results

Task 1. Create the crosstab report and add an Order year variable.

- **Toolbar**: Open a new **Crosstab** template, using the **GO data warehouse (query)** package.
- **Source tab**: Add the following query items to the crosstab:
  - Retailer type: **Retailer type** to the rows area of the crosstab report object.
  - Retailers: **Region** to the columns area of the crosstab report object.
  - Time: **Year** as a nested column under **Region**.
  - Sales fact: **Quantity** to the measures area of the crosstab report object.

  The results appear as follows:

Quantity	<#Region#>		<#Region#>	
	<#Year#>	<#Year#>	<#Year#>	<#Year#>
<#Retailer type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Retailer type#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

- **Condition explorer**: Create and validate the following **String Variable** expression: **[Query1].[Year]**
  - Add the following values: **2010**, **2011**, **2012**, and **2013**.
  - Name the variable **Year**.
- **Toolbar**: Go back to **Page 1**.

Task 2. Define the measures as conditional and set the display for each value.

- **Properties** pane: Link the **Crosstab fact cells**, **Style variable**, to the **Year** variable.
- **Variable list**, click **Year**, and then click **OK**.
- **Condition Explorer**: Click the **2010** variable.

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- **Toolbar**: For the **Crosstab Fact Cells**, set the background color for each conditional value, using the **Color Swatch** colors, as follows:

Year	Color	Color Code	Position
2010	Light yellow	#FFFF99	Bottom row, 3rd from right
2011	Light green	#33FF99	4th row, 3rd from right
2012	Light blue	#66FFFF	6th row, last column
2013	Light red	#FF6666	2nd last row, 4th from right

- **Explorer bar:** Turn the conditional formatting off.
- **Toolbar**: Run the report in **HTML.**

  A section of the results appear as follows:

Quantity	Americas				Asia Pacific			
	2010	2011	2012	2013	2010	2011	2012	2013
Department Store	1,727,876	1,487,381	1,379,365	744,786	1,217,094	1,478,541	1,406,756	961,984
Direct Marketing	148,802	141,290	169,247	77,415	210,619	203,603	351,474	144,896
Equipment Rental Store	81,480	101,775	147,396	112,749	42,258	92,571	125,943	164,217
Eyewear Store	206,533	240,970	327,806	289,250	99,940	152,782	231,029	225,936
Golf Shop	271,114	313,422	404,204	285,323	272,825	509,698	614,846	457,216
Outdoors Shop	1,600,571	2,510,484	2,956,928	2,476,759	1,757,524	2,061,142	2,392,989	1,971,191
Sports Store	1,794,109	1,890,046	2,063,169	1,533,915	1,075,804	1,151,277	1,131,145	843,307
Warehouse Store	609,084	406,600	418,051	294,651	396,751	257,819	362,916	223,447

  You have created a report that shows the volume of sales in each region by retailer type. To make the yearly data easier to distinguish, you have formatted the report so each year column will have a different background color.

- Close the rendered report tab.
- Sign out of **IBM Cognos Analytics** without saving any reports.
- Close the Web browser.

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IBM Training

Drill-through definitions

IBM Cognos Analytics (v11.0)

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IBM Training

Unit objectives

- Discuss parameter-driven drill through
- Discuss dynamic drill through
- Set up package-based drill-through definitions
- Set scope
- Use the Drill Through Assistant

Drill-through definitions

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Unit objectives

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IBM Training

IBM

Let users navigate to related data in IBM Cognos Analytics

Crosstab Source Report

Revenue	2011	2012
E-mail	44,318,886.43	23,701,042.57

Click the data item to drill through

Target List Report

Order method	Product line	Year	Revenue
E-mail	Camping Equipment	2012	2,501,787.15
	Golf Equipment	2012	1,182,984.1

Drill-through definitions

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Let users navigate to related data in IBM Cognos Analytics

Drill-through access lets users navigate between reports to view related data to help them answer business questions.

In IBM Cognos Analytics, report authors can set up drill-through access to and from reports, queries, advanced queries, and analyses using dimensional and relational data sources.

It is also possible to set up drill-through access to IBM Cognos Analytics targets from third party sources and to third party targets from Cognos sources. Setting up drill-through access to and from third-party sources and targets can be accomplished using URL requests or by using the Software Development Kit.

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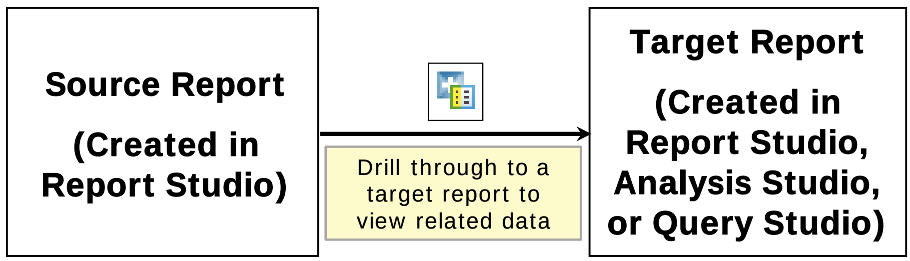
Set up drill-through access from a report



Drill-through definitions

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Set up drill-through access from a report

You can set up drill-through access from reports that are created from relational data sources or dimensional data sources.

You can let users navigate to target reports, queries, and analyses created from both relational and dimensional data sources.

You must create the target report before you can set up drill-through access.

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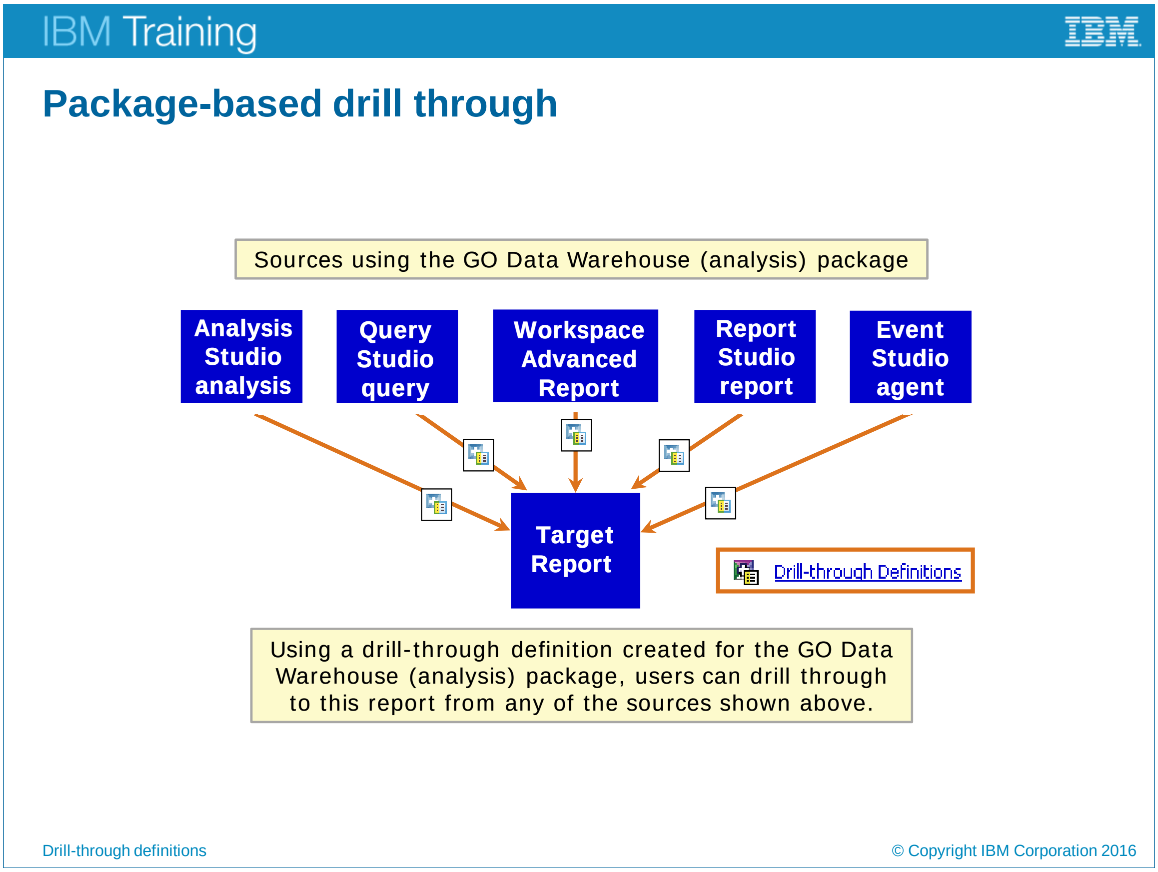

Package-based drill through

To let users navigate to a specific target report from reports, analyses, and queries created using a package, you can create a drill-through definition for the package.

The source reports do not need to be created when you create the drill-through definition. This lets you set up drill-through access to the target report, and then later, report authors can create as many source reports as required.

Each package drill-through definition can have only one target. You can create multiple drill-through definitions for a package.

In the slide example, a drill-through definition has been created for the GO Data Warehouse (analysis) package. Users can drill through to the target report from a variety of sources created using the same package.

A model in Framework Manager is a business presentation of the structure of the data from one or more data sources (such as IBM Cognos PowerCubes and relational databases). A model describes the metadata objects, structure, and grouping, as well as relationships and security.

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You can set permissions properties for target reports to determine which users will be able to open them when they attempt to drill through. You can also set permissions properties for drill-through definitions to determine which users have access to these drill-through definitions.

In IBM Cognos Analytics (v11.0), targets can be reports or packages.

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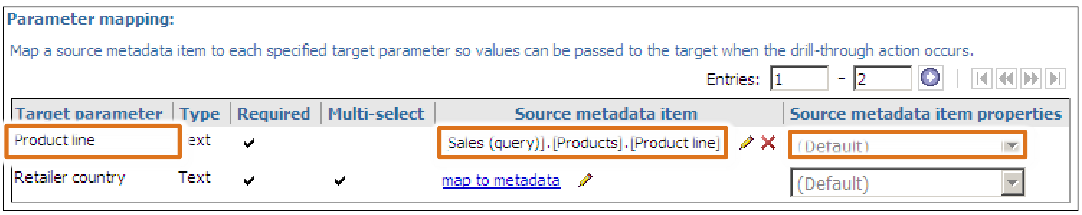
IBM Training

Specify the values passed to target parameters

Package-based drill-through definition



Drill-through definitions

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Specify the values passed to target parameters

When you set up drill-through access, you must map the values that the source report will pass to the target parameters.

If you do not specify which values to pass to target parameters, then when users drill through they will be prompted to select values for any required target parameters.

When dealing with dimensional sources, you can also select which property of the member you would like to pass to the target report (for example: Member Unique Name (MUN), Member Caption, or Business Key). It is important to know which values are conformed between the source report and the target report data sources.

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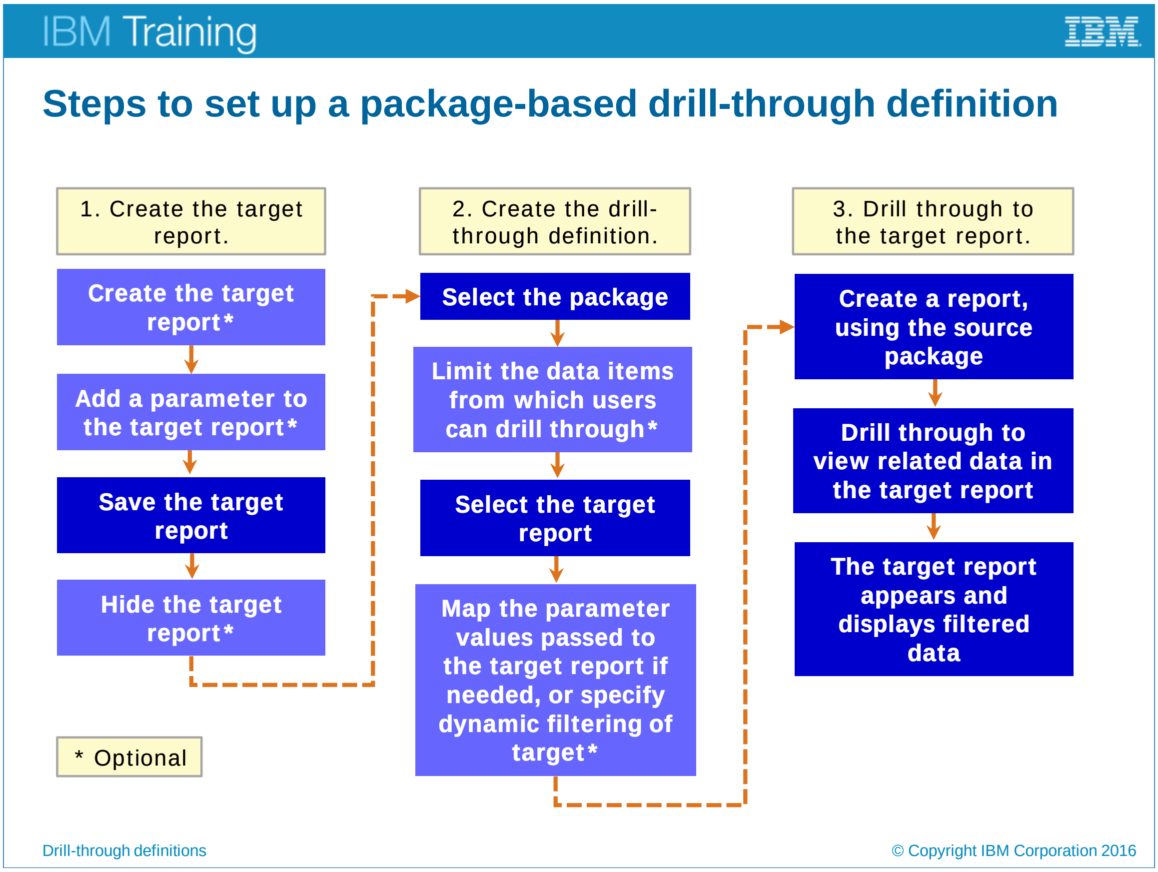

Steps to set up a package-based drill-through definition

Before you can set up drill-through access for a package, you must have a target report created.

Next, create a drill-through definition that lets users navigate to the target report from reports created using the package.

To let users drill through from a report using a package drill-through definition, you must enable this drill behavior in the source report.

You can create the target report in any studio.

When you set up drill through for a package, the following steps are optional:

- Create the target report (may be done by a different report author)
- Add a parameter to the target report.
- Limit the data items from which users can drill through.
- Map the parameter values passed to the target report.

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IBM Training

Limit the items that users can drill through from

- Package drill-through definitions control where users can start drill through in source reports.
- To do this, set a data item in the source package as the scope of the drill-through definition.

Product type values

Quantity	2004	2005	2006
Cooking Gear	2,905,120	3,501,329	4,060,635
Eyewear	4,066,410	5,180,407	6,354,258
First Aid	450,978	186,317	133,692
Golf Accessories	613,311	791,935	963,013
Insect Repellents	2,864,588	1,806,770	808,715

With scope set to Product type, users can drill through to the target report from any of the fact cells in this report.

Drill-through definitions

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Limit the items that users can drill through from

If a target report contains one parameter, it makes sense to limit the scope of the drill-through definition to the item that must be passed to this parameter. This ensures that users will not be prompted to select a parameter value when they drill through.

Once you have set the scope of a drill-through definition to a particular data item, users can drill through from a cell in source reports only if its context includes this item.

If you do not set the scope of a drill-through definition for a package, users can drill through from any cell in any report created using the package.

It is useful to set the scope of drill-through access to limit the number of possible target reports users see when they drill through. If you have created many drill-through definitions for a package and you do not set the scope, users may be presented with an overwhelming number of possible target reports when they drill through.

When you create a drill-through definition for a relational package, set the scope to a specific fact/measure or query item, such as the Revenue fact from the Sales fact query subject or the Product type query item from the Products query subject.

When you create drill-through definitions for OLAP or dimensionally modeled relational (DMR) packages, you can set the scope to a dimension, a level in the dimension, or a measure.

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Measure-based scope

- Set scope based on a measure in a drill-through definition.
- The source report must use the selected measure in order to drill through to target report.

Drill-through definitions

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Measure-based scope

When defining a drill-through definition, the user has a choice to set the scope on the target report.

If you base scope on a measure, then the target report that is specified in the drill-through definition will only appear on the Related Links list of a source report if the selected measure is in the source report.

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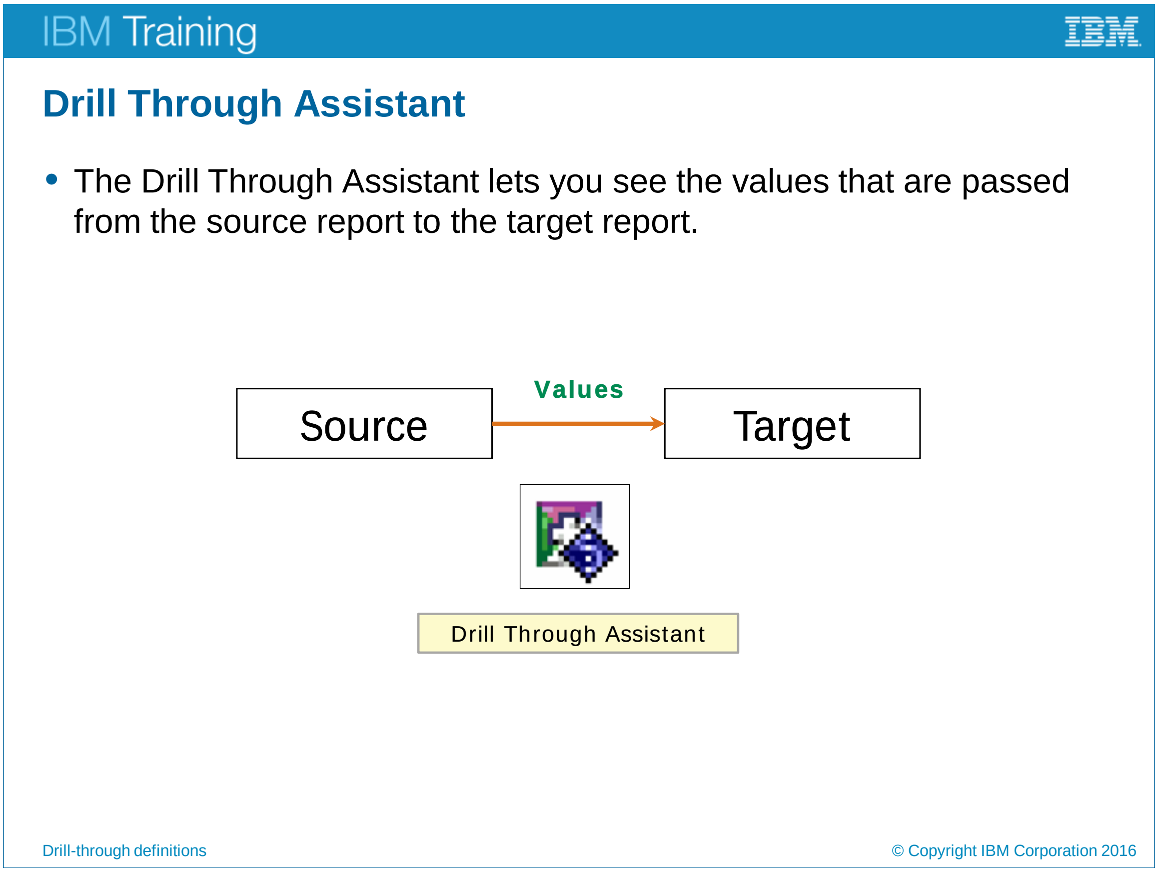

Drill Through Assistant

IBM Cognos includes a debugging functionality, called the Drill Through Assistant, which you can use to troubleshoot your drill-through definitions created in IBM Cognos Connection. It can also help you understand how the drill-through functionality works, especially across different types of data sources.

The Drill Through Assistant is especially useful for Report Authors and Report Administrators. By default, no user, group, or role can use the Drill Through Assistant until the capability is granted.

For more information about the Drill Through Assistant see the *Administration and Security* guide.

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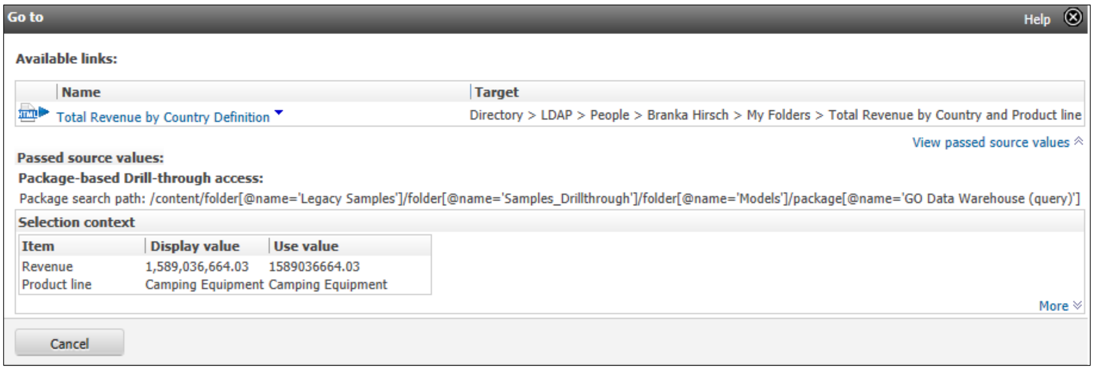
IBM Training

Demonstration 1

Set up drill-through access for a package



Drill-through definitions

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Demonstration 1: Set up drill-through access for a package

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Demonstration 1: Set up drill-through access for a package

Purpose:
You have been asked to create a drill-through definition to let users navigate to a detailed product line sales report that is created from reports using the GO Data Warehouse (query) package. To let users focus on specific areas of interest, the target report will only display data for the product line from which users drill through. Finally, you will enable the Drill Through Assistant and view the values that are passed.

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal: **http://vclassbase:9300/bi**
User/Password: **hirschb/Education1** (Branka Hirsch is a Report Administrator)

Task 1. Create the target report.

In this task you will open and run an existing report. Be sure you are logged in as Branka Hirsch (see above) before starting this particular demo.

1. From the **Welcome** screen, click **Team content** and then navigate to **Legacy Samples** > **Samples_Drillthrough** > **Models** > **Go Data Warehouse (query)** > **Report Studio Report Samples**.
2. Click the **Total Revenue by Country** entry.

   This is a report based on a relational model that provides information on region, country, retailer name, and revenue for product lines.

   A section of the results appear as follows:

		Revenue	Golf Equipment	Outdoor Protection	Personal Accessories	Camping Equipment	Mountaineering Equipment	Total(Product line)
Asia Pacific	Australia	4 Golf only	3,186,790.6	1,551.16	1,827,033.78			**5,015,375.54**
		Beach Beds Pty Ltd.	4,137,155.17	293,119.01	5,330,905.74	15,788,255.05		**25,549,434.97**
		Black Stump Camping Supplies		7,719	2,464,224.32	1,262,948.49	462,817.16	**4,197,708.97**
		Blue Mountains Golfing Company	8,257,037.18	69	1,797,644.23			**10,054,750.41**
		Can't Beat The Bush Supplies		44,577.27		1,049,058.84		**1,093,636.11**
		Gone Bush Supplies	318,232.24	38,649.38	210,786.47	1,107,959.92	479,606.83	**2,155,234.84**
		Harbour Pty Ltd.		69,407.26	471,913.2	1,352,640.02		**1,893,960.48**
		Jackos Enviro Shop		114,725.39	673,004.88	5,731,660.31		**6,519,390.58**
		Kanga Kampers		233,156.42	7,765,870.22	11,352,544.63	8,959,397.64	**28,310,968.91**
		OutBack Pty		122,841.24	3,032,847.57	2,598,252.2	4,031,298.43	**9,785,239.44**
		Southern Cross Pty.			7,589,488.86	13,681.08		**7,603,169.94**
		Top End Equipment	24,586.64	211,234.47	238,314.07	1,678,931.65		**2,153,066.83**
		Watson's Golf Supplies	3,155,754.6	3,293.96	1,808,983.56			**4,968,032.12**

3. Click **Edit in authoring** .

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Task 2. Add parameters to the report.

You will add parameters so that this report will only display data for the Country or Countries and the Product line from which the users drill through.

1. Click the container handle for the crosstab.
2. On the toolbar, click **Filters**, click **Edit Filters**, and then click **Add**.
3. Create, and then validate, the following expression:

   [Retailer country] in ?Retailer country?

   Hint: Drag Retailer country from the Data Items tab.

   Validate using Australia.
4. Click **OK** to close the **Detail filter expression** dialog box.
5. Click **Add**.
6. Create and validate the following expression:

   [Product line] = ?Product line?

   Hint: Drag Product line from the Data Items tab.

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

Task 3. Make prompt selections and save the report.

1. Run the report in **HTML**.
2. For **Product line**, select **Camping Equipment**, for **Retailer country**, select **Australia**, and then click **OK**.

   A section of the results appear as follows:

Revenue			Camping Equipment	Total(Product line)
Asia Pacific	Australia	Beach Beds Pty Ltd.	15,788,255.05	**15,788,255.05**
		Black Stump Camping Supplies	1,262,948.49	**1,262,948.49**
		Can't Beat The Bush Supplies	1,049,058.84	**1,049,058.84**
		Gone Bush Supplies	1,107,959.92	**1,107,959.92**
		Harbour Pty Ltd.	1,352,640.02	**1,352,640.02**
		Jackos Enviro Shop	5,731,660.31	**5,731,660.31**
		Kanga Kampers	11,352,544.63	**11,352,544.63**
		OutBack Pty	2,598,252.2	**2,598,252.2**
		Southern Cross Pty.	13,681.08	**13,681.08**
		Top End Equipment	1,678,931.65	**1,678,931.65**
	Total(Retailer country)		**41,935,932.19**	**41,935,932.19**

3. Close the rendered report tab.
4. Click the down arrow next to **Save** .

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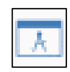
5. Click **Save as,** and then click **My content**.
6. In the **Save as** box, type **Total Revenue by Country and Product line**.
7. Click **Save.**
8. From the drop-down menu in the center of the **Application** bar, click **Welcome**.

Task 4. Create a drill-through definition for the GO Data Warehouse (query) package.

You will create a drill-through definition so that users can drill through to this report from reports that were created with the GO Data Warehouse (query) package.

1. At the left, click **New**, and then click **Other** .
2. In the **Companion applications** list, click **Drill-Through Definitions**.
3. Click **Legacy Samples** > **Samples_Drillthrough** > **Models**.
4. Click **GO Data Warehouse (query)**, and then from the top right corner of the interface, click **New Drill-through Definition**  from the toolbar.
5. In the **Name** box, type **Total Revenue by Country Definition**, and then click **Next**.

   It is important to create a logical name for each drill-through definition that describes the contents of the drill-through target report. This helps organize drill-through definitions.

   Your target report has a Product line parameter; therefore, you want to limit the scope of this drill-through definition so that users can drill through only from cells in source reports that have Product line as their context.
6. Click **Set the scope**.
7. Navigate to **Sales and Marketing (query)** > **Sales (query)** > **Products**.
8. Click **Product line**, and then click **OK**.
9. Click **Set the target**.
10. In the navigation path at the top, click **Cognos**, and then click **My Folders**.

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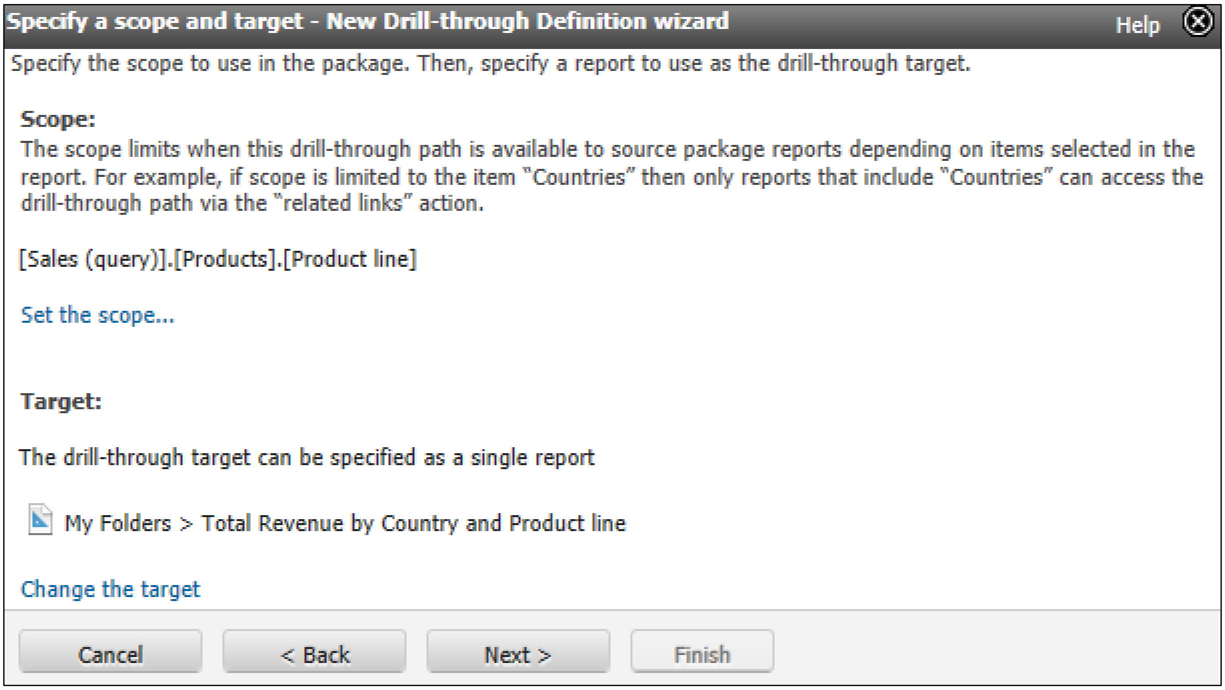
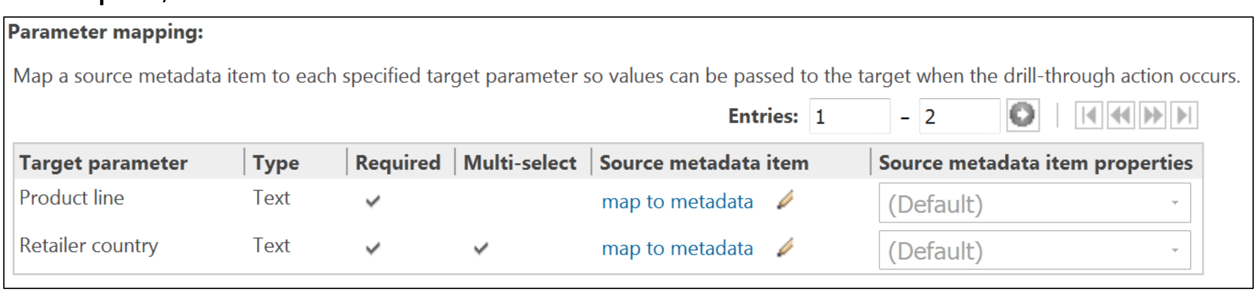
11. Click the **Total Revenue by Country and Product line** radio button, and then click **OK**.



12. Click **Next**.

    The Specify the target details page appears, and displays the Product line and Retailer country parameters from the Total Revenue by Country and Product line report, as follows:



13. For the **Product line** parameter, in the **Source metadata item** column, click **Set the value for Product line** .
14. Navigate to **Sales and Marketing (query)** > **Sales (query)** > **Products**.
15. Click **Product line**, and then click **OK**.
16. For the **Retailer country** parameter, in the **Source metadata item** column, click **Set the value for Retailer country** .
17. Navigate to **Sales and Marketing (query)** > **Sales (query)** > **Retailers**.

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18. Click **Retailer country**, and then click **OK**.

Map a source metadata item to each specified target parameter so values can be passed to the target when the drill-through action occurs.

Entries: 1 - 2

Target parameter	Type	Required	Multi-select	Source metadata item	Source metadata item properties
Product line	Text	✓		[Sales (query)].[Products].[Product line]	(Default)
Retailer country	Text	✓	✓	[Sales (query)].[Retailers].[Retailer country]	(Default)

19. Click **Finish**.
20. Close the **Drill-through Definitions** tab, and return to the **Welcome** screen.

Task 5. Test the drill-through definition.

You will test this drill-through definition by drilling through from a report created which uses the GO Data Warehouse (query) package.

1. Create a **New** report. The report should use the **Legacy Samples** > **Samples_Drillthrough** > **Models** > **GO Data Warehouse (query)** package.

   The report should also create a **List**.
2. From the **Side** pane, click **Data**.
3. Expand **Sales and Marketing (query)** > **Sales (query)** > **Retailers**.
4. Ensure that the **List** is selected.
5. Double-click **Retailer country** to add it to the list.
6. Expand **Sales fact**, and then double-click **Revenue** to add it to the list.
7. Click **Show properties**.
8. Click **Show Ancestor**, and then click **Report**.
9. In the **RUNNING & VALIDATING** section, change the value for **Run with full interactivity** to **No**.
10. Run the report in **HTML**.

    You will attempt to drill through to view more data about revenue in Australia.

Task 6. Use the related links feature.

1. In the report, in the **Australia** row, right-click the revenue cell **109,299,969.14**, point to **Go To**, and then click **Related Links**.

   Note: if you click in the cell, but not on the actual value in the cell, the menu many not appear. Be sure to click the value (character) that appears in the cell.

   The drill-through definition that you created does not appear in the list of available links. This is because you limited the scope of this drill-through definition to the Product line data item. The Australia row does not have a specific product line as its context.
2. Close the **Go to** tab.
3. Close the **Reporting** tab.

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4. Click the **Navigate** button at the left.
5. Click **Page1** to return to the design screen.
6. Click **<Retailer country>**, and then press the **Delete** key.

   You will add product line data to this report, and then drill through to view more data about revenue generated by the camping equipment product line.
7. Click the **Data** tab at the left.
8. Expand **Products**, and then drag **Product line** to the left of the **Revenue** column.
9. Run the report in **HTML**.

Task 7. Testing drill through definitions.

1. In the report, in the **Camping Equipment** row, right-click the revenue cell **1,589,036,664.03**, point to **Go To**, and then click **Related Links**.
2. Under Available links, click **Total Revenue by Country Definition**.
3. In the **Retailer country** prompt, click **Australia** and then click **OK**.

   IBM Cognos drills through to the Total Revenue by Country target report.

   The report contains data for only Australia, and for only the Camping Equipment product line.

   A section of the results appear as follows:

Revenue			Camping Equipment	Total(Product line)
Asia Pacific	Australia	Beach Beds Pty Ltd.	15,788,255.05	**15,788,255.05**
		Black Stump Camping Supplies	1,262,948.49	**1,262,948.49**
		Can't Beat The Bush Supplies	1,049,058.84	**1,049,058.84**
		Gone Bush Supplies	1,107,959.92	**1,107,959.92**
		Harbour Pty Ltd.	1,352,640.02	**1,352,640.02**
		Jackos Enviro Shop	5,731,660.31	**5,731,660.31**
		Kanga Kampers	11,352,544.63	**11,352,544.63**
		OutBack Pty	2,598,252.2	**2,598,252.2**
		Southern Cross Pty.	13,681.08	**13,681.08**
		Top End Equipment	1,678,931.65	**1,678,931.65**
	Total(Retailer country)		**41,935,932.19**	**41,935,932.19**

   The drill-through definition works as expected.
4. Close the **Total Revenue by Country** tab.
5. In the report, in the **Camping Equipment** row, right-click the revenue cell **1,589,036,664.03**, point to **Go To**, and then click **Related Links**.

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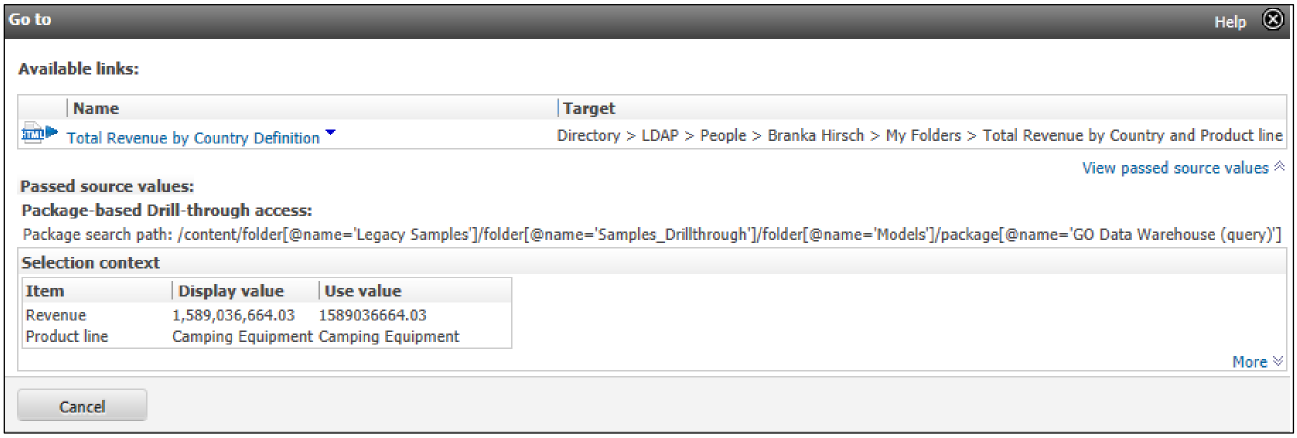
6. Click **View passed source values**.

   The results appear as follows:



   You can see the items and values that are passed. If you want, you can click Total Revenue by Country Definition, to view the target report.

   For further troubleshooting, you can click the More link. The information found there is typically sent to customer support for investigation.

7. Click **Cancel**, and then close the **Reporting** rendered tab.
8. On the **Application** bar, click **Save**, and then navigate to **My content**.
9. In the **Save as** box, type **Revenue by Product line - Source**, and then click **Save**.

   This report will be used in the next demonstration.

10. Using the dropdown menu at the top, return to the **Welcome** screen.

Results:
You created a drill-through definition for the GO Data Warehouse (query) package to let users drill through to a target report containing detailed information about sales of each product line. To let users focus on specific areas of interest, you set up drill-through access so that when users drill through, they will see details for only the product line they are interested in. Finally, you enabled the Drill Through Assistant and viewed the values that were passed.

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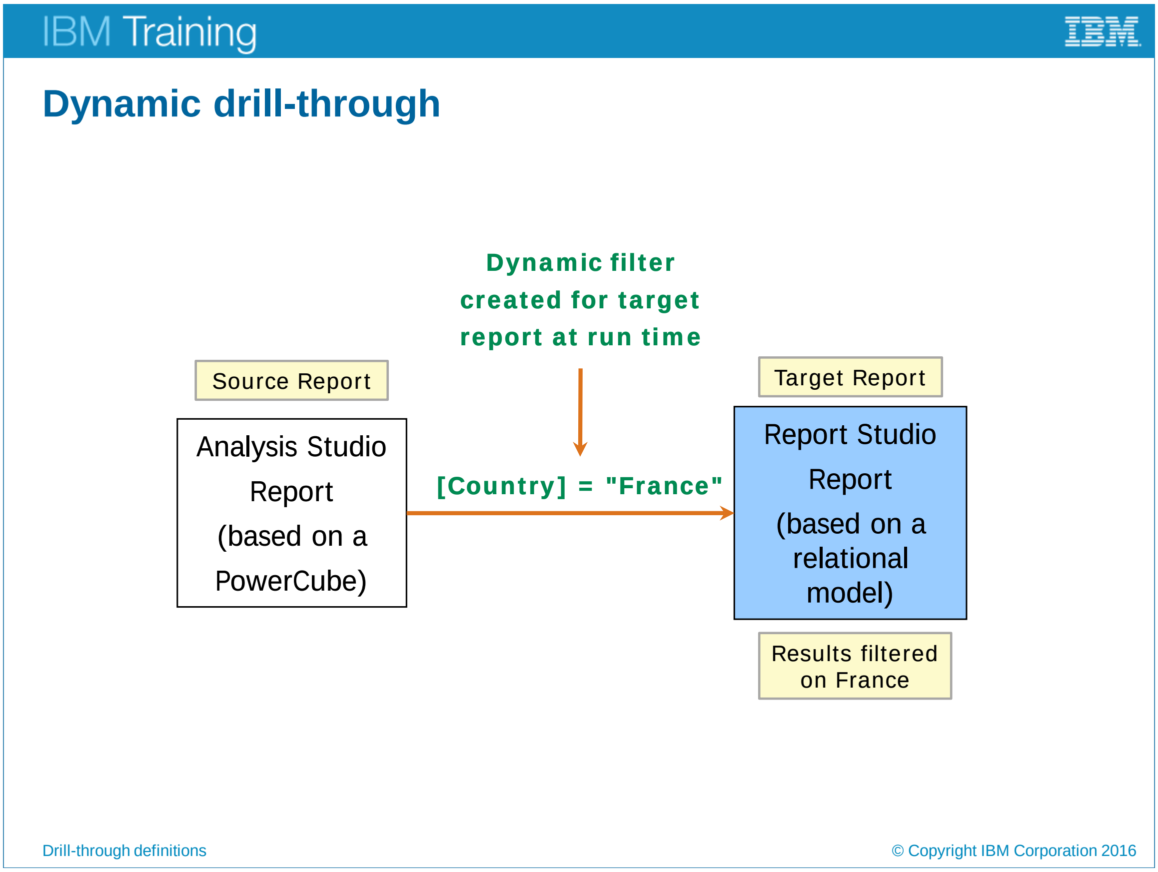

Dynamic drill-through

Dynamic filtering eliminates the need for pre-authored drill-through prompts and parameters previously required for drill-through reports.

Dynamic drill through simplifies the process of creating reports for drill through and allows administrators to create reliable drill-through definitions between any reports provided they have common items with conformed values.

You can use dynamic drill through alone, or combine with parameterized drill through when reports expect parameters. Non-parameterized items would be filtered dynamically, whereas the parameterized items would be predefined.

In the example, the source Analysis Studio report, based on a PowerCube, is configured to drill through to a report, based on a relational model. Both the source and the target contain an item called Country. The value from the PowerCube is converted into a string value (based on caption) which matches the string value found in the relational target, in this case, France.

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Drill-through functionality also applies to PowerPlay Studio.

Note: In this release, if the drill-through target is a PowerCube, it will always open in PowerPlay Studio (not Analysis Studio). If PPS is not installed, you cannot select a PowerCube as a target for dynamic drill-through. In short PowerCubes, not just reports, can be targets when PPS is installed.

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IBM Training

Dynamic drill-through - matching criteria

- Dynamic drill through matches source model item names to either:
  - target model item name
  - target report data item name
- No match, source item is ignored.

Drill-through definitions

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Dynamic drill-through - matching criteria

First, IBM Cognos tries to match model item names. This is the most reliable match since column names may be renamed during the design process of potential target reports.

For example, if both the source and target reports had items called Product line, renaming Product line in the target report to something else would still work since the model names match.

When the model names do not match, then the target report data item name must match that of the source report.

If no match is found for the model or data item name, then the item is ignored for the drill-through.

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IBM Training

Demonstration 2

Configure dynamic drill-through and set measure scope

Total Revenue by Country
For Product Line

Revenue			Golf Equipment	Outdoor Protection	Personal Accessories	Camping Equipment	Mountaineering Equipment	Total(Product line)
Asia Pacific	Australia	4 Golf only	3,186,790.6	1,551.16	1,827,033.78			**5,015,375.54**
		Beach Beds Pty Ltd.	4,137,155.17	293,119.01	5,330,905.74	15,788,255.05		**25,549,434.97**
		Black Stump Camping Supplies		7,719	2,464,224.32	1,262,948.49	462,817.16	**4,197,708.97**
		Blue Mountains Golfing Company	8,257,037.18	69	1,797,644.23			**10,054,750.41**
		Can't Beat The Bush Supplies		44,577.27		1,049,058.84		**1,093,636.11**
		Gone Bush Supplies	318,232.24	38,649.38	210,786.47	1,107,959.92	479,606.83	**2,155,234.84**
		Harbour Pty Ltd.		69,407.26	471,913.2	1,352,640.02		**1,893,960.48**
		Jackos Enviro Shop		114,725.39	673,004.88	5,731,660.31		**6,519,390.58**
		Kanga Kampers		233,156.42	7,765,870.22	11,352,544.63	8,959,397.64	**28,310,968.91**
		OutBack Pty		122,841.24	3,032,847.57	2,598,252.2	4,031,298.43	**9,785,239.44**
		Southern Cross Pty.			7,589,488.86	13,681.08		**7,603,169.94**
		Top End Equipment	24,586.64	211,234.47	238,314.07	1,678,931.65		**2,153,066.83**
		Watson's Golf Supplies	3,155,754.6	3,293.96	1,808,983.56			**4,968,032.12**
	China	COMLINRK 国际实业有限公司		70,015.85	5,668,139.98	5,152,698.57	359,268.54	**11,250,122.94**
		ORDER 集团		176,349.03	4,900,904.78	627,723.56	1,074,171.74	**6,779,149.11**
		W&S 格洛里亚运动中心		182,183.86	310,065.61	3,056,556.42		**3,548,805.89**
		上海健华露营用品店		303,137.08	3,888,404.59	5,589,902.82	574,016.06	**10,355,460.55**
		上海国际户外用品专卖店		626,236.92	7,677,546.74	6,715,767.86	3,763,966.48	**18,783,518**
		上海瑞宇健身休闲用品有限公司		316,501.05	3,202,563.91	3,973,931.38		**7,492,996.34**
		上海第一体育用品商场		164,453.52	3,166,931.19	5,274,434.77		**8,605,819.48**

Drill-through definitions

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Demonstration 2: Configure dynamic drill-through and set measure scope

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Demonstration 2: Configure dynamic drill-through and set measure scope

Purpose:
You have been asked to configure a package to enable dynamic drill-through from source reports based on a package to a target report that provides revenue details.

In addition, you will also set the scope of the target report to be available only if the source report contains the Revenue measure.

Note: Demonstration 1 needs to be completed before starting this demonstration.

Portal: **http://vclassbase:9300/bi**
User/Password: **hirschb/Education1**

Task 1. Examine the target report.

You will open an existing report, remove its filters, and then save the report with a different name. Be sure to log in as Branka Hirsch.

1. From the left margin of the **Welcome** screen, click **My content** .
2. Click the action menu for **Total Revenue by Country and Product line** (you many need to hover over Total Revenue by Country and Product line).
3. Click **Edit report**.

   This is the crosstab report created in the previous demonstration.
4. Click the container handle for the crosstab.
5. On the toolbar, click **Filters**, and then click **Remove all Filters**.
6. Run the report in **HTML**.

   A section of the report appears as follows:

		Revenue	Golf Equipment	Outdoor Protection	Personal Accessories	Camping Equipment	Mountaineering Equipment	Total(Product line)
Asia Pacific	Australia	4 Golf only	3,186,790.6	1,551.16	1,827,033.78			5,015,375.54
		Beach Beds Pty Ltd.	4,137,155.17	293,119.01	5,330,905.74	15,788,255.05		25,549,434.97
		Black Stump Camping Supplies		7,719	2,464,224.32	1,262,948.49	462,817.16	4,197,708.97
		Blue Mountains Golfing Company	8,257,037.18	69	1,797,644.23			10,054,750.41

   Notice that all data is returned for each of the data items on the report (region country, retailer name, and product line).
7. Click **Page down** to advance through the report.
8. Close the rendered report tab.
9. Click the down arrow next to the **Save** button, and then click **Save as**.
10. Click **My content**.

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11. In the **Save as** box, type **Demonstration2_Total Revenue by Country**, and then click **Save**.
12. Return to the **Welcome** screen.

Task 2. Create a drill-through definition.

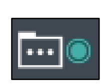
You will create a drill-through definition with dynamic filtering, and use it to drill through to the target report, and then you will identify a filter error.

1. From the **Welcome** screen**,** click **New** > **Other**.
2. From the **Companion applications** list, click **Drill-Through Definitions**.
3. Navigate to **Legacy Samples** > **Samples_Drillthrough** > **Cubes**.
4. Click **Sales and Marketing (cube)**.
5. In the upper right, click **New Drill-through Definition**.
6. In the **Name** box, type **Revenue Details Drill-through Definition**, and then click **Next**.

   For now, you will not set any scope on this drill-through definition. Users will be allowed to drill through on any level in any dimension. Later, you will restrict the scope based on a measure.
7. Click **Set the target**, and then navigate to **Cognos > My Folders**.
8. Click the **Demonstration2_Total Revenue by Country** report radio button, and then click **OK**.
9. Click **Next**, and then from the **Action** list, click **Run the report using dynamic filtering**.

   Notice that there are no parameters under Parameter mapping because the target report has no parameters. If the target report did have parameters, you would need to map those parameters, but could still leverage dynamic filtering on other common, non-parameterized items. In other words, you can combine the two methods if required.
10. Click **Finish**, and then close the **Drill-through Definitions** tab.

Task 3. View passed source values and drill-through definition.

1. From the **Welcome** screen, click **Team content** .
2. Navigate to **Legacy Samples** > **Samples_Drillthrough** > **Cubes** > **Sales and Marketing (cube)** > **Report Studio Report Samples**.
3. Click **Top Retailers by Country**.
4. When prompted to make a selection of retailers, click **Select all**, and then click **Finish**.

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5. Right-click the intersection of **Netherlands/Extra Sport** (rows) and **Prior YTD/Camping Equipment** (columns)
6. Point to **Go To**, and then click **Related Links**.
7. Click **View passed source values**.

   A section of the results appear as follows:

   Selection context

Item	Display value	Use value
Revenue	4071999.3	[sales_and_marketing].[Measures].[Revenue]
top 10	Extra Sport	[sales_and_marketing].[Retailers].[Retailers].[Retailer name]->:[PC].[@MEMBER].[6846]
Retailer country	Netherlands	[sales_and_marketing].[Retailers].[Retailers].[Retailer country]->:[PC].[@MEMBER].[90010]
Product Set	Camping Equipment	[sales_and_marketing].[Products].[Products].[Product line]->:[PC].[@MEMBER].[991]
Time Set	Prior YTD	[sales_and_marketing].[Time].[Prior YTD]->:[PC].[@MEMBER].[Prior YTD]

   More

   You can see the data items used, their display values, and the values that are used to filter the target report. The Use value may be converted at run time depending on the source and target report data sources.

   For example, if the source report is based on a PowerCube and the target report is based on a relational model, then the member unique name (MUN) value from the source report may be converted to a string representation of the member caption in order to conform to the relational data value.

   Be aware that one of the use values being passed is Retailer name.
8. Under **Available links**, click the **Revenue Details Drill-through Definition** link.

   A section of the report appears as follows:

Revenue			Camping Equipment	Total(Product line)
Northern Europe	Netherlands	Beter Buitenleven	12,289,976.23	**12,289,976.23**
		Cornelius' buitensport	1,251,721.79	**1,251,721.79**
		Eurobal	1,185,078.65	**1,185,078.65**
		Extra Sport	15,734,395.66	**15,734,395.66**

   The source and target reports have country, retailer name and product line in common, yet the report is only filtered on country and product line.

   The item names must match. In this case the source item name does not match the target item name. The use value for the item from the source report is Retailer name, as seen with the View passed source values feature. The value for the item from the target report is Retailer name (multiscript).
9. Close the **Demonstration2_Total Revenue by Country** tab.

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Task 4. Fix target report and retest.

1. Use the dropdown menu at the top to navigate back to design mode for **Demonstration2_Total Revenue by Country**.

   You will need to verify the item name in the target report, and retest the drill-through.

2. From the **Demonstration2_Total Revenue by Country** report, in the crosstab, click **<#Retailer name (multiscript)#>** to select it.

   Notice that the name does not match the item name in the cube. In the relational source it is called Retailer name (multiscript); in the cube source it is called Retailer name.

3. In the **Properties** pane, under **DATA ITEM**, change the **Name** property to **Retailer name**, and then save the report.
4. In design mode of the **Top Retailers by Country** source report, run the report in **HTML**.
5. When prompted to make a selection of retailers, click **Select all**, and then click **Finish**.
6. Right-click the intersection of **Netherlands/Extra Sport** (rows) and **Prior YTD/Camping Equipment** (columns), point to **Go To**, and then click **Related Links**.
7. Under **Available links**, click the **Revenue Details Drill-through Definition** link.

   A section of the report appears as follows:

Revenue			Camping Equipment	Total(Product line)
Northern Europe	Netherlands	Extra Sport	15,734,395.66	15,734,395.66
	Total(Retailer country)		15,734,395.66	15,734,395.66

   The report is now filtered on country, retailer name, and product line.

8. Close the rendered report tab.

Task 5. Set measure scope.

You will now only permit drill through for this definition when the source report includes the Planned revenue measure.

1. From the **Welcome** screen, click **New** > **Other**.
2. Click **Drill-through Definitions**.
3. Navigate to **Legacy Samples** > **Samples_Drillthrough** > **Cubes** > **Sales and Marketing (cube)**.
4. In the **Actions** column, beside **Revenue Details Drill-through Definition**, click **Set properties** .
5. Click the **Target** tab, and then click **Set the scope**.

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6. Expand **Measures**, and then click **Planned revenue**.
7. Click **OK** to close the **Set the scope** dialog box, and then click **OK** to close the **Set properties** dialog box.
8. Close the **Drill-through Definitions** tab.
9. In the **Reporting** tab, right-click the intersection of **Netherlands**/**Extra Sport** (rows) and **Prior YTD**/**Camping Equipment** (columns), point to **Go To**, and then click **Related Links**.

   The Revenue Details link does not appear any longer because Planned revenue is not in the analysis.
10. Close the web browser.

Results:
By configuring a dynamic drill-through definition and ensuring that the common item names in the source and target reports matched, you were able to achieve a dynamic drill-through.

You also ensured that the target report would only be available if the source report contained the Revenue measure.

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IBM Training

Unit summary

- Discuss parameter-driven drill through
- Discuss dynamic drill through
- Set up package-based drill-through definitions
- Set scope
- Use the Drill Through Assistant

Drill-through definitions

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Unit summary

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IBM Training

Exercise 1

Configure dynamic drill-through

Returns by Product Type

% Returned: Descending order

Product type	Base product	Quantity	Return quantity	% Returned	Lost revenue
Binoculars	Seeker 50	159,701	2,282	1.43%	$211,267.56
Summary		**159,701**	**2,282**	**1.43%**	**$211,267.56**

Drill-through definitions

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Exercise 1: Configure dynamic drill-through

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Exercise 1: Configure dynamic drill-through

Consumers using the Sales and Marketing (cube) package for analysis would like to review actual and planned revenue for order methods, using the Actual vs. Planned Revenue report, and be able to get details on lost revenue for specific products displayed in the report. The GO Data Warehouse (analysis) package has lost revenue information and can be used to provide the details consumers require.

A list report has been created based on the GO Data Warehouse (analysis) package that retrieves the following items: Product type, Product, Quantity, Return quantity, % Returned, and Lost revenue. The report is called Returns by Product Type and is located in the Team Content\Samples\Models\GO Data Warehouse (analysis)\Query Studio Report Samples folder. This will provide a starting point for your target report.

As Branka Hirsch, the administrator, you will create a drill-through definition called Exercise 1_Returns by Product Type Definition that allows consumers to drill through from the Sales and Marketing (cube) package to the target report. Consumers should be able to drill through any report in the package only if the Product type level is available. To accomplish this, you will need to:

- set the scope in the drill-through definition at the Product type level
- ensure that all item names match between the source report and the target report
- create parameterized drill through that will dynamically filter the target report

You will save the target report as Exercise 1_Returns by Product Type Target report, to keep the original sample report unchanged.

You will save the source report as Exercise 1_Drill-through Source_Actual vs. Planned Revenue, to keep the original sample report unchanged.

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

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Exercise 1: Tasks and Results

Task 1. Examine the target report.

- **Browser**: Log on to **IBM Cognos Analytics** using the following credentials: **hirschb/Education1**.
- **Search**: Do a search for **Returns by Product Type_DQ**
  (Note - if the report does not come up in the Search, browse to the following path: **Team content\Legacy Samples\Sample_DQ\Models\GO Data Warehouse (analysis)\Query Studio Report Samples**)
- **Open:** Click the report to see it open in IBM Cognos Query Studio.

  A section of the results appear as follows:

Product type	Base product	Quantity	Return quantity	% Returned	Lost revenue
Insect Repellents	BugShield Lotion	773,324	81,189	10.50%	$189,170.37
Navigation	Trail Star	65,146	5,461	8.38%	$483,691.20
Insect Repellents	BugShield Lotion Lite	384,513	14,171	3.69%	$26,641.48
Sunscreen	Sun Shield	991,486	32,382	3.27%	$89,374.32
Lanterns	EverGlow Lamp	965,019	29,434	3.05%	$434,454.32
Insect Repellents	BugShield Extreme	2,666,714	72,255	2.71%	$174,857.10

  Notice the first two columns are Product type and Base product.

  This report provides information about product returns and lost revenue.

- **Toolbar**: Save the report to **My Folders**, as:
  Exercise 1_Returns by Product Type Target.
- From the Welcome screen, under **My content**, with the vertical ellipsis, use **Convert to report** on **Exercise 1_Returns by Product Type Target**.
- Save the report as **Unit 10 Exercise 1_Returns**, under **My content**.

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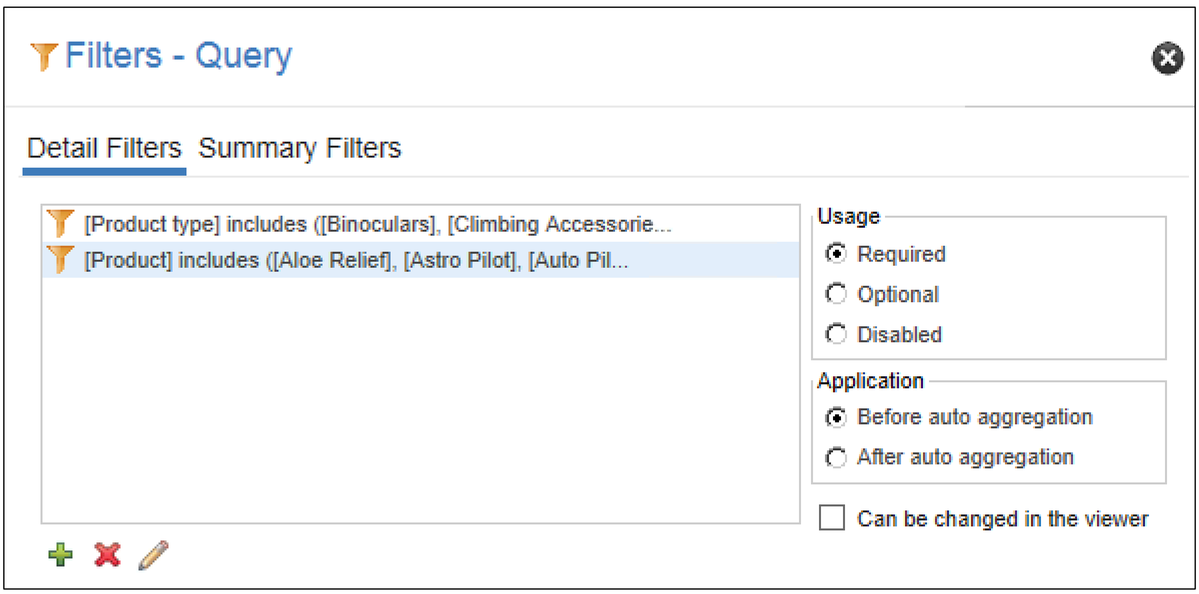
Task 2. Add parameters to Unit 10 Exercise 1_Returns report.

- **Toolbar**: Create a custom filter based on **Product type**.
- **Filter condition** dialog: Select **Prompt for values when report is run in viewer**.
  - Add all values to the **Selected values** pane.
- **Filters** dialog box: Add a combined filter based on **Product**.
- **Filter condition** dialog: Select **Prompt for values when report is run in viewer**.
  - Add all values to the **Selected values** pane.



- **Toolbar**: Save the report, and then close the browser tab.

Task 3. Create the drill-through definition.

- **Welcome**: click **New > Other > Drill Through Definitions**.
- **Team content**: Navigate to **Team content\Legacy Samples\ Samples_Drillthrough\Cubes\Sales and Marketing (cube)**.
- **Toolbar**: Click **New Drill-through Definition**.
- **Name box**: Name **Unit 10 Exercise 1_Returns**, and then click **Next**.
- **Set scope** and **target**:
  - Set the scope to **Product** from **Products**.
  - Set the target to **Unit 10 Exercise 1_Returns** (located in **My Folders**).
- **Specify the target details**: From the **Action** list, select **Run the report using dynamic filtering**.

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- Under **Parameter mapping**, click **map to metadata** for the target parameter **Product type**, expand **Products**, and then click the **Product type**.
- Under **Parameter mapping**, click **map to metadata** for the target parameter **Product**, expand **Products**, and then click the **Product**.

The results appear as follows:

- Click **Finish**.

- **Toolbar**: Return to the **Welcome** screen.

Task 4. View the passed source values.

- **Welcome**: navigate to:
  Team content\Legacy Samples\Samples_Drillthrough\Cubes\Sales and Marketing (cube)\Report Studio Report Samples.
  - Run **Actual vs. Planned Revenue** report.
- **Prompt page**:
  - From the **pMethod** list: select **Web**.
  - From the **Year** list: select **2012**.

A section of the results appear as follows:

Americas

2012

Order method type	Product type	Product	Revenue	Planned revenue	Difference
Web	Binoculars	Seeker 35	2,364,509.14	2,488,845.02	124,335.88
		Seeker 50	1,484,847.00	1,563,052.05	78,205.05
		Seeker Extreme	1,516,179.00	1,759,842.78	243,663.78
		Seeker Mini	1,024,541.66	1,129,220.88	104,679.22
		Opera Vision	963,270.00	1,054,240.00	90,970.00
		Ranger Vision	3,107,622.50	3,107,622.50	0.00
	Binoculars		**10,460,969.30**	**11,102,823.23**	

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- **Product column**: **Go To** - **Related Links**, for **Seeker 50**.
- **Go to** window: Click **View passed source values** (right side of window).

  The results appear as follows:

Selection context		
Item	**Display value**	**Use value**
Product	Seeker 50	[sales_and_marketing].[Products].[
Order method type	Web	[sales_and_marketing].[Order meth
Product type	Binoculars	[sales_and_marketing].[Products].[
Revenue	1,484,847.00	[sales_and_marketing].[Measures].
Planned revenue	1,563,052.05	[sales_and_marketing].[Measures].
Difference	78,205.05	78205.05
Year	2012	[sales_and_marketing].[Time].[Tim

Task 5. Fix and test source report.

- **Welcome**: Open the **Actual vs. Planned Revenue** report (under **Team content\Legacy Samples\Samples_Drillthrough\Cubes\Sales and Marketing (cube)\Report Studio Report Samples**)
- **File menu**: click **Edit in authoring**.
- **File menu**: In **My content**, save the report as **Unit 10 Exercise 1_Drill**
- **Work area**: Change **Name** property of **Product** column header to **Base product**.
- **Toolbar**: Run the report.
- **Prompt page**:
  - From the **pMethod** list: select **Web**.
  - From the **Year** list: select **2012**.
- **Product column**: **Go To** - **Related Links**, for **Seeker 50**.
- **Go to** window: Click **View passed source values**.

  The results appear as follows:

Selection context		
Item	**Display value**	**Use value**
Base product	Seeker 50	[sales_and_marketing].[Products].[Prod
Order method type	Web	[sales_and_marketing].[Order method]
Product type	Binoculars	[sales_and_marketing].[Products].[Prod
Revenue	1,484,847.00	[sales_and_marketing].[Measures].[Re
Planned revenue	1,563,052.05	[sales_and_marketing].[Measures].[Pla
Difference	78,205.05	78205.05
Year	2012	[sales_and_marketing].[Time].[Time].[

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- **Available links**: click **Unit 10 Exercise 1_Returns**.

  The results appear as follows:

  Returns by Product Type

  % Returned: Descending order

Product type	Base product	Quantity	Return quantity	% Returned	Lost revenue
Binoculars	Seeker 50	159,701	2,282	1.43%	$211,267.56
Summary		**159,701**	**2,282**	**1.43%**	**$211,267.56**

  Because the item names now match at the Product level, the report filters as expected, and the lost revenue details are displayed for the product you selected.

  - Close the rendered report tab.
  - Sign out of **IBM Cognos Analytics**.
  - Close the Web browser.

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Unit 11 Enhance report layout

IBM Training

Enhance report layout

IBM Cognos Analytics (v11.0)

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IBM Training

Unit objectives

- Force page breaks in reports
- Modify existing report structures
- Apply horizontal formatting
- Specify print options for PDF reports
- Format data and report objects

Enhance report layout

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Unit objectives

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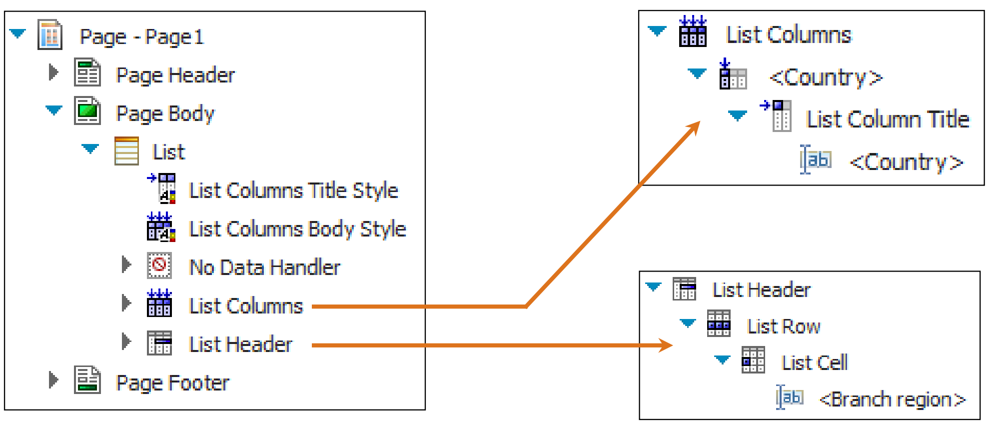
IBM Training

View the structure of the report

- To view your report in a different way and see how objects are organized, view the page structure.



Enhance report layout

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View the structure of the report

View the page structure to:

- view the entire contents of a report page in a tree structure
- move objects quickly from one area of a page to another
- modify object properties
- view the page structure, on the toolbar, click View, and then click Page Structure. A tree structure is useful for locating the objects in a page and troubleshooting problems with nested objects.
- view a complex layout, it may be difficult to select, cut, and paste objects in the layout view. Objects are easier to locate in the page structure view. This view can also be helpful if you want to modify an object but are not sure where the object is located within the report structure. Once you know where an object it placed, you can select it and modify its properties.

Objects can be changed in either view, depending on your preference. For example, you can group and sort list columns in the page structure view. Any changes made in the page structure view will also be visible in the page design view.

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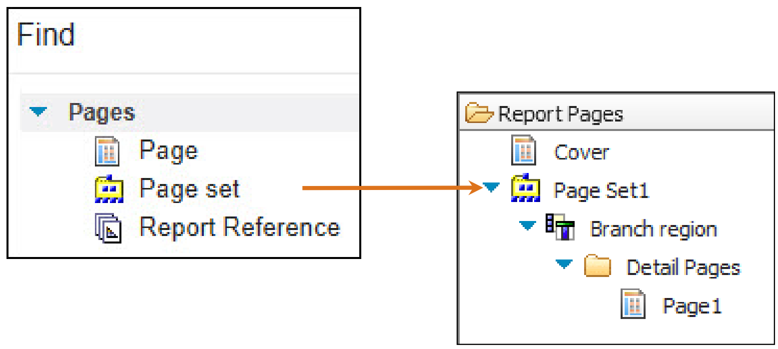
IBM Training

Force page breaks in reports

- Page sets let you associate report pages with a query structure to force page breaks.



Enhance report layout

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Force page breaks in reports

To force page breaks based on a data item, you must associate the page set with a query and then define a grouping structure for the page set.

You can add multiple detail pages to a page set.

You can also create nested page sets, and can define a master-detail relationship between them to see data in the nested page set that is related to the data in the parent page set. For example, you have a page set that shows pages of product line information. The page set contains a nested page set that shows pages of product type information.

You can use a page set to create a report that contains detail pages displaying data for each order method. Each order method type will begin on a new page.

In the slide example, Page Set1 has been grouped by Region. This page set will begin a new list for each region.

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IBM Training

Demonstration 1

Create a report structured on data items

Country	Employee name	Revenue
Americas		
Brazil	Alexandre Pereira	34,720,977.7
	Beatriz Couto	3,842,910.29
	Eduardo Guimarães	48,839,028.63
	Morela Castro	3,131,988.79
Canada	Brendon Pike	24,827,214.69
	Carole Claudel	15,728,893.35

Enhance report layout

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Demonstration 1: Create a report structured on data items

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Demonstration 1: Create a report structured on data items

Purpose:
You have been asked to create a report showing sales rep revenues generated in each region with each sales region on a separate page. You will need to design a title page for the report and make changes to the report using the structure view.

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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, using the **GO data warehouse (query)** package.
2. From the **Source** tab, add the following query items to the new list data container:
   - Employee by region: **Branch region**, **Country**, **Employee name**
   - Sales fact: **Revenue**

Branch region	Country	Employee name	Revenue
<Branch region>	<Country>	<Employee name>	<Revenue>
<Branch region>	<Country>	<Employee name>	<Revenue>
<Branch region>	<Country>	<Employee name>	<Revenue>

3. Click **<Branch region>**, Ctrl-click **<Country>**, and then on the toolbar, click **Group / Ungroup**.
4. Click **<Branch region>**, on the toolbar, click **Headers & footers**, and then click **Create header**.

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5. With **<Branch region>**column still selected, on the toolbar, click **Delete** to remove the redundant column.
6. Run the report in **HTML**.

   A section of the results appear as follows:

Country	Employee name	Revenue
Americas		
Brazil	Alexandre Pereira	34,720,977.7
	Beatriz Couto	3,842,910.29
	Eduardo Guimarães	48,839,028.63
	Morela Castro	3,131,988.79
Canada	Brendon Pike	24,827,214.69

7. Click **Page down**.

   Multiple sales regions are displayed on the same page. You want each sales region to display on a different page.
8. Close the rendered report tab.

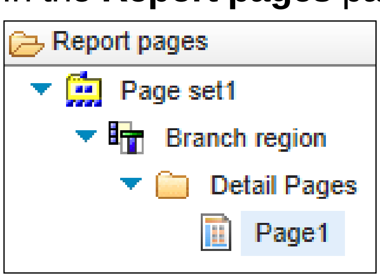
Task 2. Add page sets to the report.

1. On the **Navigate** tab, click **Report pages**.
2. From the **Toolbox**, double-click **Page set** to add it to the **Report pages** pane.
3. In the **Properties** pane, under **DATA**, in the **Query** list, select **Query1**.

   This will associate the query to the page set.

Task 3. Define the grouping structure for the page set.

1. In the **Properties** pane, under **DATA**, double-click **Grouping and sorting**.
2. From the **Data items** pane, drag **Branch region** to the **Groups** folder, and then click **OK**.
3. In the **Report pages** pane, drag **Page1** onto the **Detail Pages** folder.



4. Run the report in **HTML** and then click **Page down** to examine multiple pages.

   The different sales regions are now on separate pages.
5. Close the rendered report tab.

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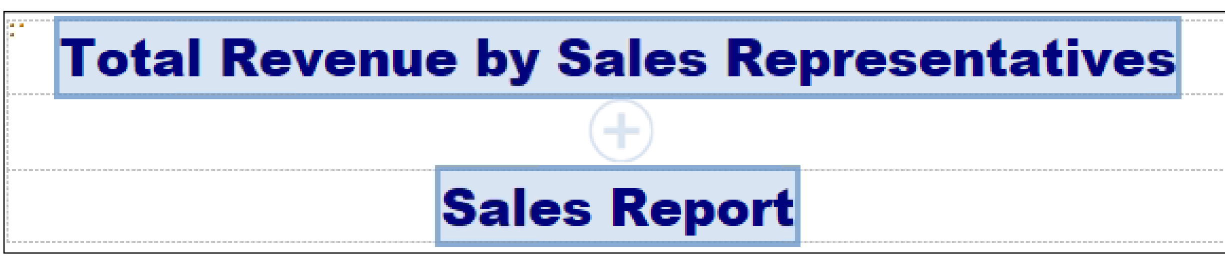
Task 4. Add a cover page title to the report.

1. From the **Toolbox**, drag a **Page** to **Report pages** above **Page set1**.
2. In the **Properties** pane, under **MISCELLANEOUS**, in the **Name** property, type **Cover**, and then press **Enter**.
3. In the **Report pages** pane, double-click **Cover**.
4. From the **Toolbox** tab, drag a **Table** onto the work area, with a size of **1 column** and **3 rows**.
5. Ctrl-click each of the table cells, and then from the toolbar, click **Center**.
6. Drag a **Text Item** into the top table cell, naming it **Total Revenue by Sales Representatives,** and then click **OK**.
7. Drag a **Text Item** into the bottom table cell, naming it **Sales Report**, and then click **OK**.
8. Click only (not the cell) **Total Revenue by Sales Representative**, and then Ctrl+click **Sales Report**.
9. On the toolbar, change the font to **Arial Black**, the font size to **20pt**, and the foreground color to **Navy.**



Task 5. Add an image to the cover page.

1. From the **Toolbox** tab, expand **LAYOUT**.
2. Drag an **Image** object to the middle table cell, click the **Image**, and then in the **Properties** pane, under **URL SOURCE**, double-click the **URL** property.
3. In the **Image URL** dialog box, click **Browse**, select **cover1.jpg**, and then click **OK** to close the **Image Brower** dialog box.
4. Click **OK** to close the **Image URL** dialog box.
5. Click the work area and then, from the toolbar, click **Middle** .

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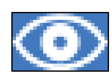
6. Run the report in **HTML**.

   The results appear as follows:

   You now have a cover page to your report.

7. **Page down** to see the details in the report.
8. Close the rendered report page.

Task 6. View the report structure and make changes to the report using the structure view.

1. On the **Navigate** tab, click **Page 1**.
2. From the **Application** bar, click **Page views** , and then click **Page structure**.

   All the objects of the report can be reviewed in a tree structure. Here you can quickly move and modify objects within the page of the report.

3. Expand **Page - Page1**.

   The page header, page body, and page footer of the report page are displayed. You want to view the structure of your list and quickly modify the format of all the list column titles in the report.

4. Expand **Page body**, and then expand **List**.

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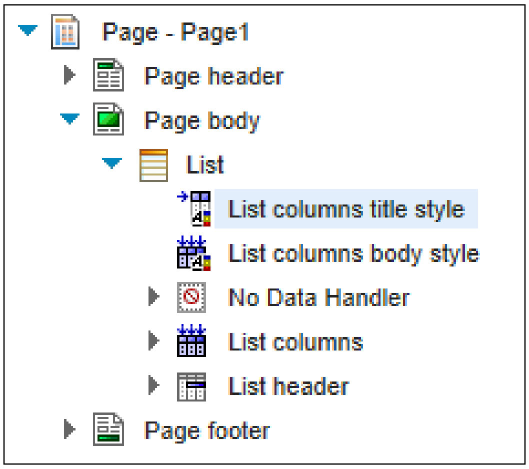
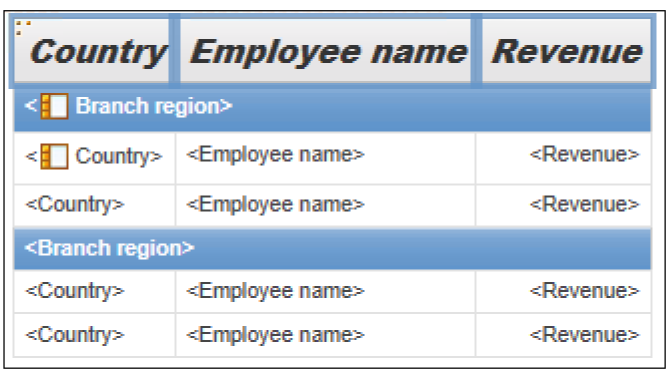
5. Click **List columns title style**.

   The results appear as follows:



6. In the **Properties** pane, under **FONT & TEXT**, double-click the **Font** property.
7. Change the font to **Arial Black**, **12pt**, **Italic**, and then click **OK**.
8. Click **Page views**, and then click **Page design**.

   The list column titles are changed to reflect the modifications you made to the page structure.



9. Run the report in **HTML**.

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10. Click **Page down** to view the other pages of the report that now reflect the formatting you implemented.

    A section of the results appear as follows:

Country	Employee name	Revenue
Americas		
Brazil	Alexandre Pereira	34,720,977.7
	Beatriz Couto	3,842,910.29
	Eduardo Guimarães	48,839,028.63
	Morela Castro	3,131,988.79
Canada	Brendon Pike	24,827,214.69
	Carole Claudel	15,728,893.35

11. Close the rendered report tab.
12. Leave the report authoring tab open for the next demonstration.

Results:
You created a report showing sales rep revenues generated in each region with each sales region on a separate page. You created and designed a title page for the report. You also made changes to the report using the structure view.

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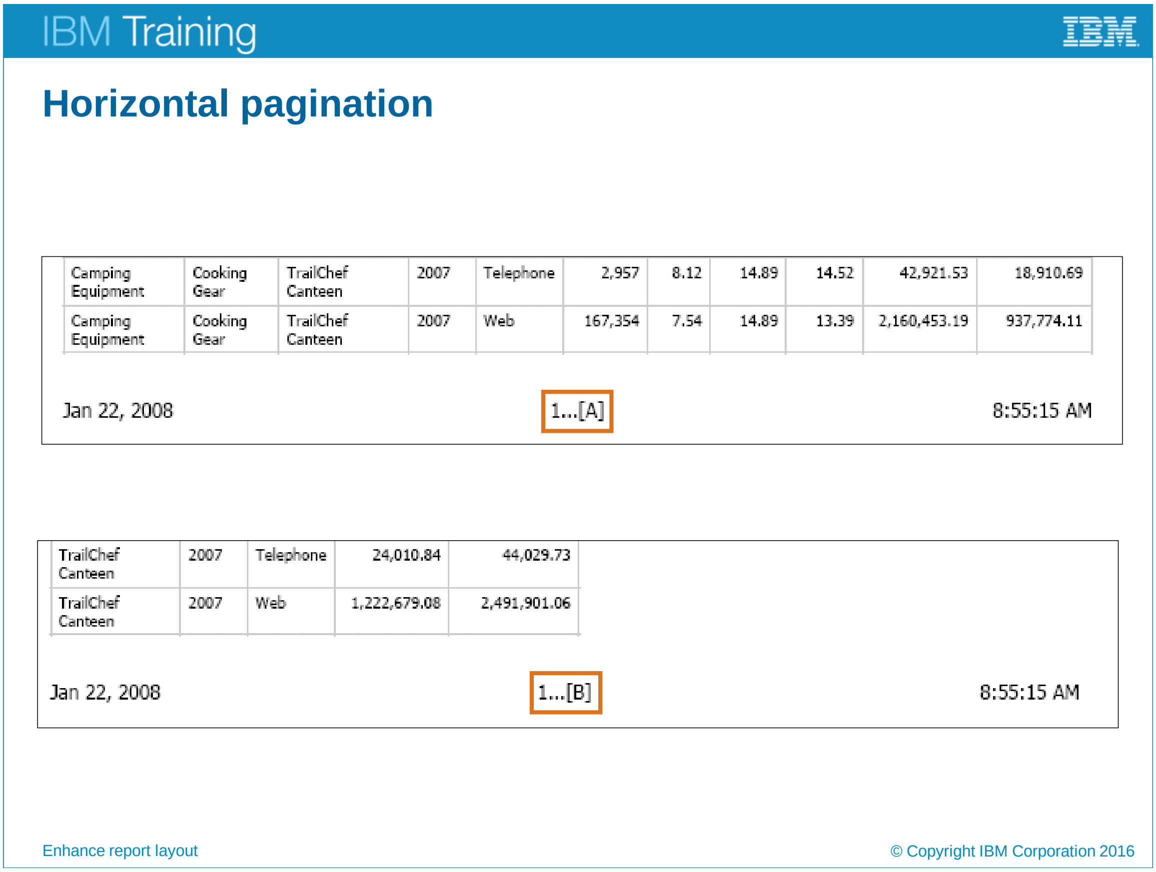

Camping Equipment	Cooking Gear	TrailChef Canteen	2007	Telephone	2,957	8.12	14.89	14.52	42,921.53	18,910.69
Camping Equipment	Cooking Gear	TrailChef Canteen	2007	Web	167,354	7.54	14.89	13.39	2,160,453.19	937,774.11

TrailChef Canteen	2007	Telephone	24,010.84	44,029.73
TrailChef Canteen	2007	Web	1,222,679.08	2,491,901.06

Horizontal pagination

Horizontal Pagination enables you to span wide reports across multiple PDF pages with the appropriate page number.

You can only use horizontal pagination with list and crosstab reports.

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IBM Training

Add horizontal page numbers

- There are three options for adding horizontal page numbers:
  - Preset (using Number Style)
  - Custom Number Style
  - Report Layout Functions

Enhance report layout

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Add horizontal page numbers

Add an existing page number from the preset list of styles.

By using the custom style option, you can create your own page number style.

Use a Layout Calculation from the toolbox tab to create an expression that determines a page number style.

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IBM Training

Demonstration 2

Format a report for horizontal viewing

Outdoor Protection	First Aid	Aloe Relief	2012	Telephone	900	1.92	5.23	3,875.43	2,147.43
Outdoor Protection	First Aid	Aloe Relief	2012	Web	26,927	1.92	5.23	85,839.99	34,140.15
Outdoor Protection	First Aid	Aloe Relief	2013	E-mail	208	1.92	5.23	1,087.84	688.48
Outdoor Protection	First Aid	Aloe Relief	2013	Fax	7	1.92	5.23	36.61	23.17
Outdoor Protection	First Aid	Aloe Relief	2013	Sales visit	311	1.92	5.23	1,626.53	1,029.41
Outdoor Protection	First Aid	Aloe Relief	2013	Telephone	157	1.92	5.23	821.11	519.67
Outdoor Protection	First Aid	Aloe Relief	2013	Web	9,228	1.92	5.23	48,262.44	30,544.68

Mar 5, 2012 1...(A) 10:51:03 AM

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Demonstration 2: Format a report for horizontal viewing

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Demonstration 2: Format a report for horizontal viewing

Purpose:
Management has asked you to create a list report that fits on one page. They have also asked to create a report with certain columns that repeat on each page. You will also need to apply different page numbering formats using horizontal page numbering and report layout functions.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 using the **GO data warehouse (query)** package.
2. From the **Source** tab, add the following query items to the new list report object:
   - Products: **Product line**, **Product type**, and **Product**
   - Time: **Year**
   - Order method: **Order method type**
   - Sales fact: **Quantity**, **Unit cost**, **Unit price**, **Revenue**, **Gross profit**, **Product cost**, **Planned revenue**
   - Sales (query): **Gross margin**

Product line	Product type	Product	Year	Order method type	Quantity	Unit cost
<Product line>	<Product type>	<Product>	<Year>	<Order method type>	<Quantity>	<Unit cost>

Unit price	Revenue	Gross profit	Product cost	Planned revenue	Gross margin
<Unit price>	<Revenue>	<Gross profit>	<Product cost>	<Planned revenue>	<Gross margin>

3. Run the report in **PDF**.
   Notice that the list is too wide for one page, so it is split across two pages.
4. Close the rendered report tab.

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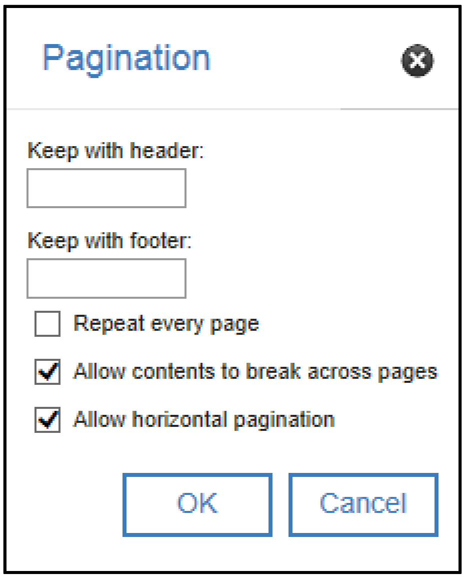
Task 2. Fit the list to the page width.

1. Click the list **Container Selector**.
2. In the **Properties** pane, under **GENERAL**, click **Pagination**, and then click the **ellipsis**.

   Notice that Allow horizontal pagination is selected. This ensures that new reports allow horizontal pagination.

   The results appear as follows:

3. Clear **Allow horizontal pagination**, and then click **OK**.
4. Run the report in **PDF**.

   Notice that the entire list displays across the width of the page, but there is more horizontal scrolling.

5. Close the rendered report tab.
6. On the **Application** bar, click **Undo** to once again enable the **Allow horizontal pagination** property.

Task 3. Repeat columns on multiple pages.

When a report is split across pages, it is useful to repeat columns to carry context across. The author determines which list columns repeat. In this report, you will repeat Product name, Year, and Order method type.

1. Click **Page views**, and then click **Page structure**.
2. Expand **Page - Page1**, expand **Page body,** expand **List,** and then expand **List columns**.
3. Click **<Product>**, and then Ctrl-click **<Year>** and **<Order method type>**.
4. In the **Properties** pane, under **GENERAL**, click **Pagination**, and then click the **ellipsis**.

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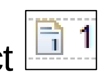
5. Select **Repeat every page**, and then click **OK**.

   This can only be set in the Page Structure view.
6. Run the report in **PDF**.
7. Scroll down to **Page 2**.

   The Product, Year, and Order method type columns repeat on each page and provide the reader with sufficient content to understand the report. In a list, you can repeat any column.
8. Close the rendered report tab.
9. Click **Page views**, and then click **Page design**.

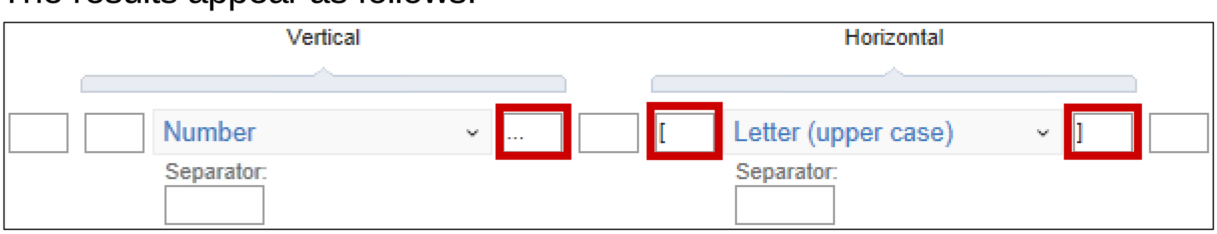
Task 4. Add horizontal page numbering.

Currently, the page numbering in your report is 1, 2, 3, and so on. Reporting provides three methods to create the page numbering: preset, report layout functions, and custom number style.

1. To use a preset number, locate the **Page number** object  in the page footer.
2. Double-click the **Page number** object, select **1A**, click **OK**, and then run the report in **PDF**.
3. Scroll down, to view several of the page numbers in the footer.

   The pages are now numbered: 1A, 1B, 2A, 2B, and so on.
4. Close the rendered report tab.
5. To create a number using **Custom number style**, double-click the **Page number** object in the footer, and then click **Edit** .
6. In the **Custom number style** dialog, incorporate the following formatting:
   - under **Vertical**, add **3 periods** (…) in the box to the right of **Number**.
   - under **Horizontal**, add a **left square bracket** ([ ) in the box to the left of **Letter (upper case)**, and then add a **right square bracket** ( ]) in the box to the right of **Letter (upper case)**.

   The results appear as follows:



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7. Click **OK** to close all dialog boxes.
8. Run the report in **PDF**.

   The custom page number style is applied.
9. Close the rendered report tab.

Task 5. Create numbers using report layout functions (optional).

1. To create a number using report layout functions, delete the **Page number** object in the footer.
2. From the **Toolbox** tab, expand **TEXTUAL**, and then drag a **Layout calculation** to the middle cell of the footer.
3. Create and validate the following expression:

   if (HorizontalPageCount() = 1) then (number2string(PageNumber())) else (number2string(PageNumber()) + '...(' +mapNumberToLetter('A', HorizontalPageNumber()-1)+ ')')

   Hint: HorizontalPageCount(), PageNumber(), and mapNumberToLetter are found under the Functions tab/Report Functions folder; number2string is found in the Data Type Casting Functions, under the Report Functions folder.
4. Click **OK**, and then run the report in **PDF**.

   The page numbers are now 1…(A), 1…(B), 2…(A), 2…(B), and so on.
5. Close the rendered report tab.
6. Leave the report authoring tab open for the next demonstration.

Results:
You created a list report with columns too wide for one page and then modified it to fit on one page. You modified a report so that certain columns repeated on each page. You also applied different page numbering formats using horizontal page numbering and report layout functions.

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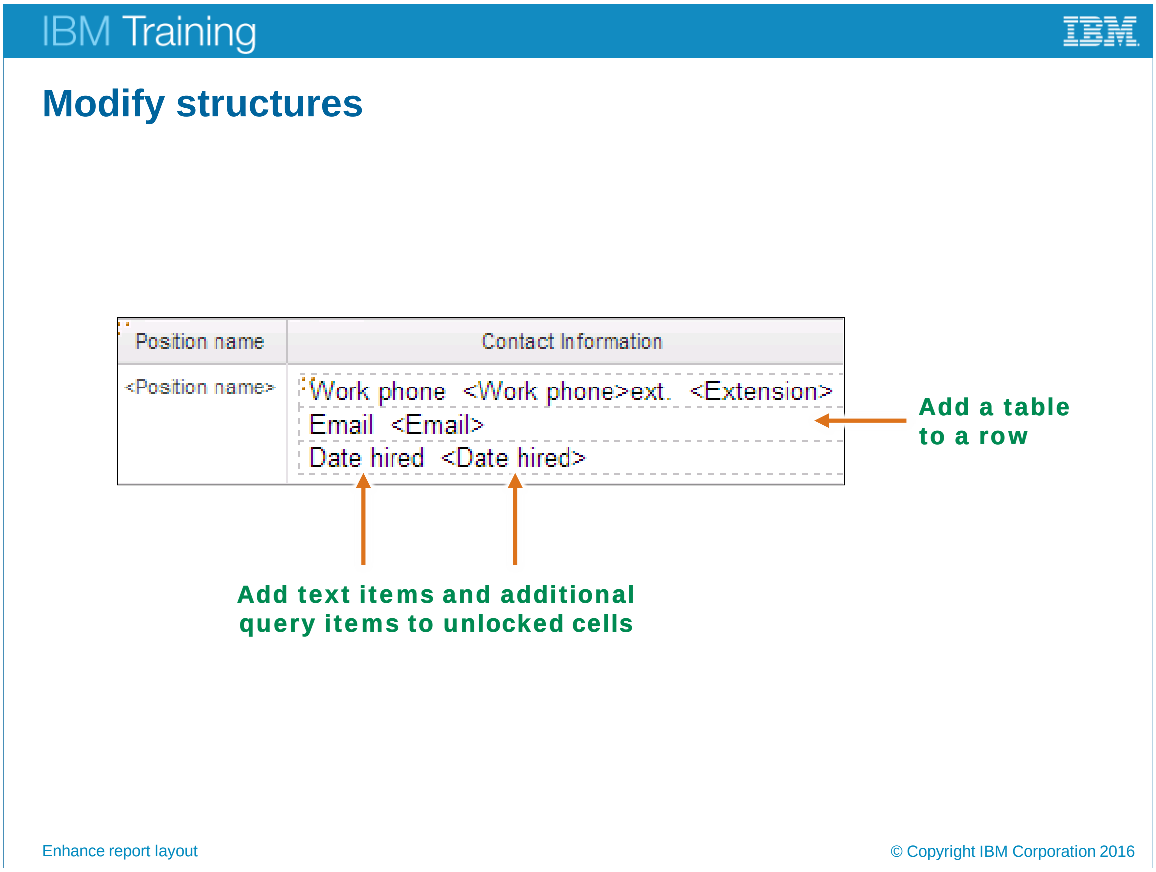

Modify structures

By unlocking the cells, you can add multiple items to a single column to tailor a report to your needs.

Unlock cells to manipulate an object’s contents. Once they are unlocked, you can change the text and add objects inside existing objects. This feature is useful for displaying related information in a single column, or for renaming a column. You can add additional rows to a list report to add extra information. You can add additional rows to a list report using the Structure menu.

Once a new row is added you can merge the cells by selecting one or more cells and then click the Merge cells button.

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IBM Training

Demonstration 3

Create a condensed list report

City	Employee name	Position name	Contact Information
Australia			
Melbourne	Thomas Faraday	Warehouse Worker	Work phone: +(61) 03 2982 4242 ext. 8223 Email: TFaraday@grtd123.com Date hired: Feb 16, 2011
Melbourne	Andrea Samuel	Payroll Clerk	Work phone: +(61) 03 2982 4242 ext. 8224 Email: ASamuel@grtd123.com Date hired: Apr 25, 2011
Melbourne	Cindy Sandles	Product Technician	Work phone: +(61) 03 2982 4242 ext. 8225 Email: CSandles@grtd123.com Date hired: Apr 11, 2011
Melbourne	Jonathan Farrel	Level 1 Sales Representative	Work phone: +(61) 03 2982 4242 ext. 8226 Email: JFarrel@grtd123.com Date hired: Feb 2, 2013
Melbourne	Ken Wilson	Customer Service Representative	Work phone: +(61) 03 2982 4242 ext. 8227 Email: KWilson@grtd123.com Date hired: Apr 19, 2011

Enhance report layout

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Demonstration 3: Create a condensed list report

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Demonstration 3: Create a condensed list report

Purpose:
The Human Resources department has requested a list of detailed sales rep information for each city. To reduce the number of columns in the report, you will combine information into one column.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\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 using **GO data warehouse (query)** package.
2. From the **Source** tab, add the following query items to the new list report object:
   - Employee by region: **Country**, **City**, **Employee name**, **Position name**, **Work phone**, **Extension**, **Email**, **Date hired**.

Country	City	Employee name	Position name	Work phone	Extension	Email	Date hired
<Country>	<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>
<Country>	<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>
<Country>	<City>	<Employee name>	<Position name>	<Work phone>	<Extension>	<Email>	<Date hired>

3. Click **<Country>**, and then on the toolbar, click **Group / Ungroup**.
4. With **<Country>** selected, on the toolbar click **Headers and footers**, and then click **Create header**
5. On the toolbar, click **Delete** to remove the redundant **<Country>**.

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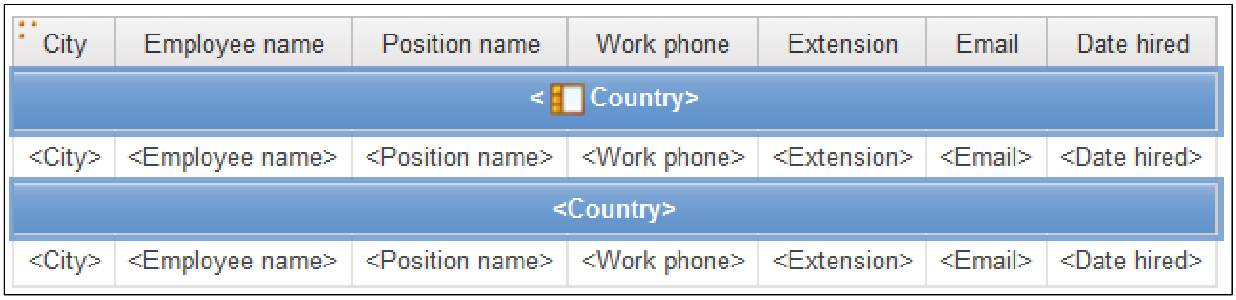
6. Click the **<Country>** header, and then click **Center**.

   The results appear as follows:



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

   The report data spreads out across the page. You want to condense it so that some of the data appears in a single column.

8. Close the rendered report tab.

Task 2. Unlock cells and condense report data.

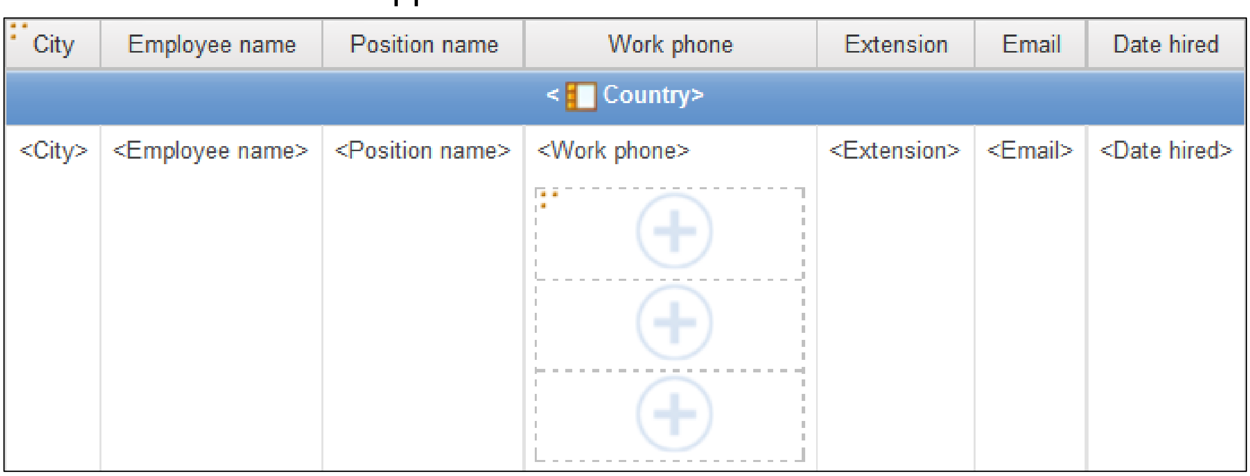
1. On the **Application** bar, click **More**, and then click **Locked** to unlock the cells of the report.

   Once cells are unlocked, query items can be added directly from the Content tabs.

2. From the **Toolbox**, drag a **Table** to the **Work phone** column, to the right of **<Work phone>**.

3. Set the table with **1** column and **3** rows, and then click **OK**.

   A section of the results appear as follows:



4. From the list data container, drag **<Work phone>** into the first row of the table, drag **<Email>** into the second row, and then **<Date hired>** into the third row.

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5. Drag **<Extension>** into the top table cell, to the right of **<Work phone>**.

   The results appear as follows:

City	Employee name	Position name	Work phone	Extension	Email	Date hired
			<Country>			
<City>	<Employee name>	<Position name>	<Work phone><Extension> <Email> <Date hired>			
			<Country>			
<City>	<Employee name>	<Position name>	<Work phone><Extension> <Email> <Date hired>			

   You can add text in front of the data items, to identify them.

6. From the **Toolbox**, drag a **Text item** to the left **<Work phone>**.
7. In the **Text** box type **Work phone:**, press the spacebar, and then click **OK**.
8. Repeat steps **6** and **7** to add the following text items to the left of **<Email>** and **<Date hired>** respectively: **Email:** and **Date hired:**.
9. Drag a **Text item** between **<Work phone>** and **<Extension>**, press the spacebar, type **ext.**, press the spacebar, and then click **OK**.

   A section of the results appear as follows:

Work phone: <Work phone> ext. <Extension>
Email: <Email>
Date hired: <Date hired>

10. Click the list Container Selector, from the Application toolbar click **More**, and then click **Unlocked** to lock the cells of the report,
11. Click the **Extension** column header, Ctrl-click the **Email** and **Date hired** column headers, and then on the toolbar, click **Delete**.
12. In the list column, click the **Work phone** list column title, in the **Properties** pane, under **DATA ITEM**, in the **Label** box, type **Contact Information**, and then press **Enter**.
13. Run the report as **HTML**.

    All key contact information is consolidated under a single column.

14. Close the rendered report tab.
15. Leave the report authoring tab open for the next demonstration.

Results:
You created a list of detailed sales rep information in each city. To reduce the number of columns in the report, you combined information in one column.

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IBM Training

Change PDF page orientation to suit report objects

Order number	Retailer	Year	Revenue
100001	Kavanagh Sports	2010	18,036.24
100002	Ar fresco	2010	58,828.44
100003	Universo Acampando	2010	41,255.35
100004	Ao ar livre	2010	228,447.45
100005	Galáxia do esporte	2010	71,237.12
100006	Mundo saudável	2010	35,015.7
100007	Tamarack Outfitter Rentals	2010	94,859.1
100008	Husky Outfitters	2010	603,586.64
100009	Sporting Goods Direct	2010	149,654.11

Page 1 - Portrait

	Camping Equipment			Golf Equipment			Outdoor Protection			Personal Accessories			Mountaineering Equipment		
	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin
2010	332,986,338	5,895,053	513,157.39%	153,553,851	1,092,982	240,851.97%	36,165,521	5,614,356	276,337.72%	391,647,094	7,572,339	2,578,597.33%			
2011	402,757,573	6,903,764	606,334.60%	168,006,427	1,297,793	272,722.14%	25,008,574	4,111,058	309,134.34%	456,323,356	8,567,357	3,667,173.26%	107,099,660	2,644,713	296,185.08%
2012	500,382,423	8,399,156	616,781.40%	230,110,271	1,536,772	295,197.19%	10,349,176	1,599,585	311,343.26%	594,009,408	10,706,015	4,925,059.31%	161,039,823	3,700,262	303,609.45%
2013	352,910,330	6,103,176	364,819.16%	174,740,819	1,186,154	178,896.83%	4,471,025	689,446	189,180.72%	443,693,450	8,061,994	3,280,176.17%	141,520,650	3,555,116	177,533.07%

Page 2 - Landscape

Enhance report layout

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Change PDF page orientation to suit report objects

You can set the page orientation and size for each page in the report independently.

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IBM Training

Set PDF security options

- You can secure PDF reports when you run the report with options.
- You can set a password to secure the document.

Enhance report layout

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Set PDF security options

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IBM Training

Demonstration 4

Change a PDF page from portrait to landscape orientation

Order number	Retailer	Year	Revenue
100001	Kavanagh Sports	2010	18,036.24
100002	Ar fresco	2010	58,828.44
100003	Universo Acampando	2010	41,255.35
100004	Ao ar livre	2010	228,447.45
100005	Galáxia do esporte	2010	71,237.12
100006	Mundo saudável	2010	35,015.7
100007	Tamarack Outfitter Rentals	2010	94,859.1
100008	Husky Outfitters	2010	603,586.64
100009	Sporting Goods Direct	2010	149,654.11

	Camping Equipment			Golf Equipment			Outdoor Protection			Personal Accessories			Mountaineering Equipment		
	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin	Revenue	Quantity	Gross margin
2010	332,986,338	5,895,053	513,157.39%	153,553,851	1,092,982	240,851.97%	36,165,521	5,614,356	276,337.72%	391,647,094	7,572,339	2,578,597.33%			
2011	402,757,573	6,903,764	606,334.60%	168,006,427	1,297,793	272,722.14%	25,008,574	4,111,058	309,134.34%	456,323,356	8,567,357	3,667,173.26%	107,099,660	2,644,713	296,185.08%
2012	500,382,423	8,399,156	616,781.40%	230,110,271	1,536,772	295,197.19%	10,349,176	1,599,585	311,343.26%	594,009,408	10,706,015	4,925,059.31%	161,039,823	3,700,262	303,609.45%
2013	352,910,330	6,103,176	364,819.16%	174,740,819	1,186,154	178,896.83%	4,471,025	689,446	189,180.72%	443,693,450	8,061,994	3,280,176.17%	141,520,650	3,555,116	177,533.07%

Enhance report layout

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Demonstration 4: Change a PDF page from portrait to landscape orientation

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Demonstration 4:
Change a PDF page from portrait to landscape orientation

Purpose:
You have been asked to build a PDF report that contains a list report and a crosstab report. You will use PDF Page Setup properties to display individual report pages as portrait or landscape. You will then create a secured version of the report.

Portal:	**http://vclassbase:9300/bi**
User/Password:	**brettonf/Education1**
Package:	**Team content\Samples\Models\GO data warehouse (query)**
Report Type:	**List**
Folder:	**Sales and Marketing (query)**

Task 1. Create the list.

1. Open a new **List** template using the **GO data warehouse (query)** package.
2. From the **Source** tab, add the following query items to the new list report object:
   - Sales order: **Order number**
   - Retailers: **Retailer name**
   - Time: **Year**
   - Sales fact: **Revenue**

Order number	Retailer name	Year	Revenue
<Order number>	<Retailer name>	<Year>	<Revenue>
<Order number>	<Retailer name>	<Year>	<Revenue>
<Order number>	<Retailer name>	<Year>	<Revenue>

3. Double-click the text in the header to edit, change the current text to **Revenue by Order Number**, and then click **OK**.
4. Left justify the text within its block.

   You will make a copy of this page so that you have a page header and footer on the second page.
5. On the **Navigate** tab, click **Report pages**.
6. In the **Report pages** pane, right-click **Page1**, and then click **Copy**.
7. Right-click the white space below Page1, and then click **Paste.**
8. Double-click the new **Page2**.
9. Click the list **Container Selector**, and then from the toolbar, click **Delete.**

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Task 2. Create the crosstab.

1. On the work area, click **Add**, click **Crosstab**, and then click **OK** to close the **Object and query name** dialog box and accept the defaults.
2. From the **Data/Source** tab, add the following query items to the new crosstab:
   - **Rows** area:
     - Time: **Year**
   - **Columns** area:
     - Products: **Product line**

       Nested under Product line
       - Sales fact: **Revenue**, **Quantity**
       - **Gross margin**

	<#Product line#>			<#Product line#>		
	<#Revenue#>	<#Quantity#>	<#Gross margin#>	<#Revenue#>	<#Quantity#>	<#Gross margin#>
<#Year#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

3. Click the **<#Gross margin#>** fact cells, and then in the **Properties** pane, under **DATA**, double-click **Data format.**
4. From the **Format type** list, select **Percent**, in the **Properties** pane, click **Number of decimal places**, and then select **2** from the list.
5. Click **OK.**
6. Click the **<#Revenue #>** fact cells, and then in the **Properties** pane, under **DATA**, double-click **Data format.**
7. From the **Format type** list, select **Number**, in the **Properties** pane, click **Number of decimal places**, and then select **0**.
8. Click **OK.**
9. Click the list, on the **Properties** header, click **Select Ancestor**, and then click **Report**
10. In the **Properties** pane, under **REPORT**, double-click **PDF page setup**.

    The Orientation is set to Portrait by default. This is the setting for the entire report
11. Click **OK**, and then run the report in **PDF**.
12. Scroll down to the last two pages.

    The crosstab gets split across two pages, because the page is not wide enough to display all data together, when portrait page orientation is used.
13. Close the rendered report tab.

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Task 3. Change the page orientation from portrait to landscape.

1. On **Page2**, click anywhere below the crosstab to select the entire page.
2. On the **Properties** pane header, click **Select Ancestor**, and then click the **Page** object.
3. In the **Properties** pane, under **GENERAL**, double-click the **PDF page setup** property.
4. Select **Override the page setup for this page**, click **Landscape**, and then click **OK**.
5. Click **Page views**, and then click **Page structure**.
6. Expand **Page - Page2**, then **Page body**, and then click **Crosstab** to select it.
7. From the **Properties** pane, under **GENERAL**, double-click **Pagination**.
8. Clear **Allow horizontal pagination**, and then click **OK**.
9. Run the report as **PDF**.
10. Scroll down to the last page.

    The crosstab now fits on a single page. You can vary the orientation by page.
11. Close the rendered report tab.
12. Save the report to **My content**, naming it **Demonstration 4_Enhance Report Layout**.

    This report will be used in the next tasks, as well as in Demonstration 5.

Task 4. Explore an unsecured PDF version of the report.

In this task, you will open and copy some text from a PDF report and paste it into a Notepad document to prove that there is no security on the PDF document. In the next task, you will create a PDF output which will require a password to open.

1. From the **Welcome** to **IBM Cognos Analytics** screen, click **My content**.
2. For **Demonstration 4_Enhanced Report Layout**, click the vertical ellipsis icon to the right.
3. Click **Run as**, and then enable **Run in background** (checkmark appears).
4. In the list of file options, select **PDF**, and then clear **HTML**.
5. Click the **Advanced** header, and then click **>** next to **Delivery**.
6. Verify **Save the report on the system** is selected.
7. Click **Done**, and then click **Run**.
8. Wait about five minutes for the report to be generated.

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Task 5. Opening the PDF report.

1. From the **Welcome** screen, click **My content,** and then click the vertical ellipsis icon to the right of the **Demonstration 4_Enhanced Report Layout**.
2. Click **View Versions**. You should see a timestamp from about five minutes ago.
3. Click the most recent timestamp. You should see the symbol **PDF** .
4. Click the **PDF** to open it.
5. Once the **PDF** is visible, click and drag the cursor over the report to highlight some of the text, right-click the highlighted text, and then click **Copy** to copy the text to the clipboard.
6. From the **Start** menu, click **All Programs**, click **Accessories**, and then click **Notepad**.
7. Paste the text into the **Notepad** document.

   This proves that you can copy the content from the PDF document into another document.
8. Close **Notepad** without saving the document, and then go back to **IBM Cognos Analytics**.

Task 6. Secure a PDF report.

1. From the **Welcome** screen of **IBM Cognos Analytics**, click **My Content**.
2. Click the vertical ellipsis icon at the right of **Demonstration 4_Enhance Report Layout**.
3. Click **Run as**, and then click the switch for **Run in background** to enable it.
4. Select the **PDF** checkbox, and then clear the **HTML** checkbox.
5. Click **Advanced** and then click the **>** to the right of **PDF**.
6. Select the checkbox for **Requires a password to open the report**.
7. In the **Password** and **Confirm Password** textboxes, type **Education1**
8. Click the **< Back** tab at the top, and then click **Run.**
9. Wait about five minutes for the report to be generated.

Task 7. A secured PDF report.

1. From the **Welcome** screen, click **My content**.
2. Click the vertical ellipsis icon at the right of **Demonstration 4_Enhance Report Layout**.
3. Click **View versions**.
4. Open the most recent time stamp and then open the **PDF**.
5. When the **PDF** appears, you are prompted to type a password because you secured this version of the report.

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6. Type the password **Education1**, and then click **OK**.
7. Close the rendered tab.

Results:
You created a PDF report that contains a list report and a crosstab report. You used PDF Page Setup properties to display individual report pages as portrait or landscape. You then created a secured version of the report that required a password to access.

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IBM Training

Format objects across a report

- Format reports quickly and consistently using Cascading Style Sheet (CSS) classes.

Enhance report layout

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Format objects across a report

CSS classes are used in reports and templates.

To determine what class an object uses, select the object and view the Classes property. An object also inherits the classes set for its parent objects.

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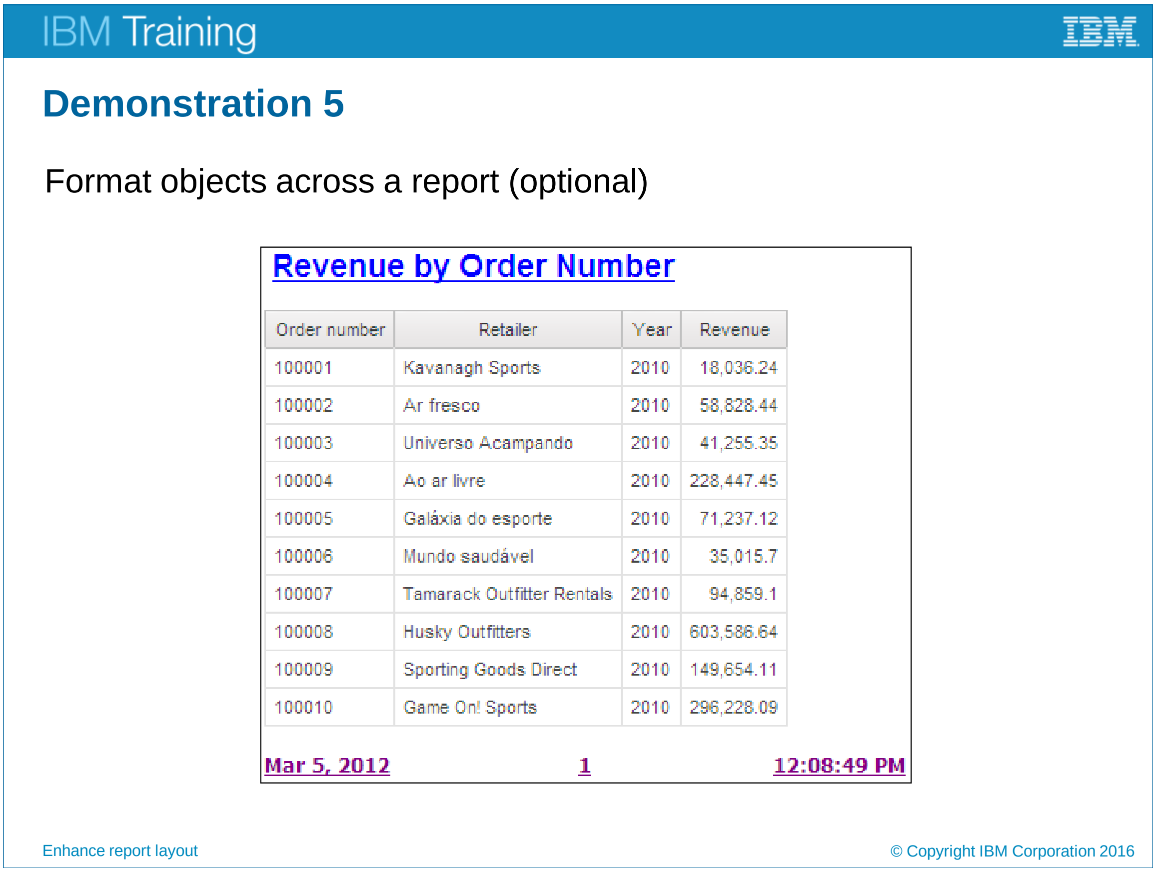

Order number	Retailer	Year	Revenue
100001	Kavanagh Sports	2010	18,036.24
100002	Ar fresco	2010	58,828.44
100003	Universo Acampando	2010	41,255.35
100004	Ao ar livre	2010	228,447.45
100005	Galáxia do esporte	2010	71,237.12
100006	Mundo saudável	2010	35,015.7
100007	Tamarack Outfitter Rentals	2010	94,859.1
100008	Husky Outfitters	2010	603,586.64
100009	Sporting Goods Direct	2010	149,654.11
100010	Game On! Sports	2010	296,228.09

Demonstration 5: Format objects across a report (optional)

This is an optional demonstration; however, to complete it, you must first complete Demonstration 4.

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Demonstration 5: Format objects across a report (optional)

Purpose:
In Reporting, you will override a global style to modify the way report title objects appear in the report. You will also add a local style and will use it to format the report footer text. You will then create a report and observe how these style changes affect it.

You will need to complete Demonstration 4 before starting this demonstration.

Portal: **http://vclassbase:9300/bi**

User/Password: **brettonf/Education1**

Task 1. Explore Global Class Extensions.

1. Click **My content,** and then to the right of **Demonstration 4_Enhance Report Layout**, click the vertical ellipsis.
2. Click **Edit report**.
3. Click **Page views**, and then click **Page design**.
4. Click the report title text in the page header, and then in the **Properties** pane, under **MISCELLANEOUS**, ensure that the **Classes** property is set to **Report title text**.
5. In the **Properties** pane, click **Select Ancestor**, click **Block**, and then under **MISCELLANEOUS**, verify that the **Classes** property is set to **Report title area.**
6. Click **Navigate**, and then from **Page explorer**, click **Classes**.
7. In the **Global Class Extensions** list, select **Report title text.**

   Report title text class corresponds to the class name you set on Page1.

   In the Preview pane, Sample Text is underlined. You can explore the Report title area class to preview its style.

Task 2. Override a class style definition, and then add a new class.

You will now change the report title text style. The changes you make will apply only to instances of the style in this report.

1. With the **Report title text** style selected, in the **Properties** pane, under **FONT & TEXT**, double-click the **Font** property.
2. Click **Foreground Color**, click **Blue**, and then click **OK.**

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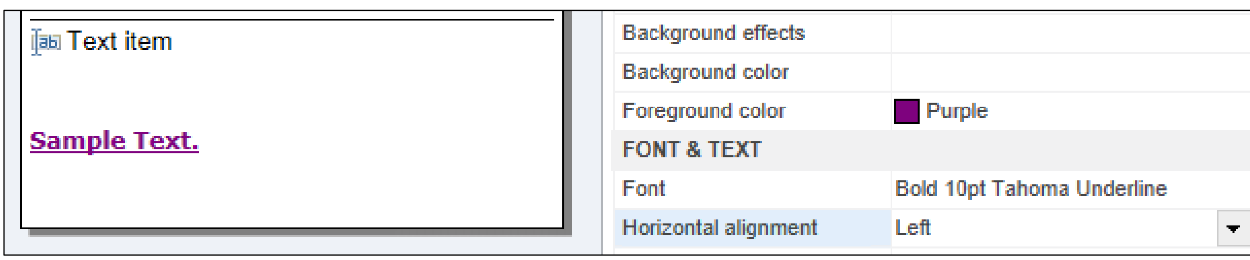
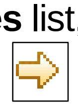
3. Click **OK** to close the **Font** dialog box, then within the **Page explorer**, click **Page1**.

   The change you made to the report title text style has been applied. You will now format the text in the footer of the report.
4. On the **Page explorer** tab, click **Classes**.
5. From the **Toolbox**, drag a **Class** object to the **Local Classes** pane.
6. In the **Properties** pane, under **GENERAL**, modify the **Label** property to be **ReportFooterText**, and then press **Enter**.
7. In the **Properties** pane, under **FONT & TEXT**, double-click **Font**, modify the properties to **Tahoma**, **10pt**, **Bold**, **Underline**, the **Foreground Color** as **Purple**, and then click **OK**.
8. Click **OK** to close the **Font** dialog box.

   Notice that the preview window shows the changes that have been made.
9. In the **Properties** pane, under **FONT & TEXT**, click the **Horizontal alignment** property, and then from the list, select **Left**.



Task 3. Apply the new class to the report, add details, and run the report.

1. From **Navigate**, on the **Page explorer** tab, click **Page1**.
2. In the page footer, click the first table cell, and then Ctrl+click the two remaining cells.
3. In the **Properties** pane, under **MISCELLANEOUS**, double-click the **Classes** property.
4. From the **Local classes** list, click **cls1:ReportFooterText**, click **Add to select classes**  (right arrow), and then click **OK**.

   The style from the Report footer text class you created has been applied.

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5. Run the report as **HTML**.

   A section of the results appear as follows:

Revenue by Order Number

Order number	Retailer	Year	Revenue
100001	Kavanagh Sports	2010	18,036.24
100002	Ar fresco	2010	58,828.44
100003	Universo Acampando	2010	41,255.35
100004	Ao ar livre	2010	228,447.45
100005	Galáxia do esporte	2010	71,237.12
100006	Mundo saudável	2010	35,015.7
100007	Tamarack Outfitter Rentals	2010	94,859.1
100008	Husky Outfitters	2010	603,586.64
100009	Sporting Goods Direct	2010	149,654.11
100010	Game On! Sports	2010	296,228.09

Mar 5, 2012 1 12:08:49 PM

   The formatting that you applied using the named styles appears in the report.

6. Close the rendered report tab.

Results:
In Reporting, you overrode a global class style and added a new local class style to the report.

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IBM Training

Unit summary

- Force page breaks in reports
- Modify existing report structures
- Apply horizontal formatting
- Specify print options for PDF reports
- Format data and report objects

Enhance report layout

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Unit summary

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IBM Training

Exercise 1

Analyze retailer contacts by country

Country: Australia

City	Retailer name	Contact first name	Contact last name	Contact phone number	Contact extension
Melbourne	Beach Beds Pty Ltd.	Paul	Balesrieri	+(61) 02 5138 2922	
	Kanga Kampers	Linda	Balfe	+(61) 02 9437 1967	
	Blue Mountains Golfing Company	Adam	Balla	+(61) 03 7210 8227	
	Beach Beds Pty Ltd.	Scott	Crawford	+(61) 09 9321 3237	
	Kanga Kampers	Doug	Crease	+(61) 07 7238 1065	
	Top End Equipment	Cynthia	Garland	61-7-5444557	3225
	Gone Bush Supplies	Kenneth	Gartner	61-52-5488779	8787
	4 Golf only	Paul	Gasper	61-39-6599874	557
	Kanga Kampers	David	Giddey	+(61) 02 9437 5764	
	Beach Beds Pty Ltd.	Steve	Girvan	+(61) 03 9556 4876	
	Black Stump Camping Supplies	Emily	Goddard	61-70-2366548	877
	OutBack Pty	William	Horne	61-7-2355489	1223
	Southern Cross Pty.	Ernest	Jackson	61-9-8799544	125
	Harbour Pty Ltd.	Karen	Jakobson	61-9-6559033	741
	Jackos Enviro Shop	Laurie	James	61-2-5488773	147
	Kanga Kampers	Norman	Janac	+(61) 03 9321 4650	
	Beach Beds Pty Ltd.	Jake	Jenkins	+(61) 03 7210 3237	
	Watson's Golf Supplies	Julie	Mercer	61-3-9877889	8777
	Can't Beat The Bush Supplies	Tony	Merrett	61-2-6550088	6558

Enhance report layout

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Exercise 1: Analyze retailer contacts by country

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Exercise 1: Analyze retailer contacts by country

You have been asked to prepare a report that contains retailer contact information for each retailer for every country. The report must be broken into separate sections for each country so that the country appears as a section at the top, and only that country's contacts are displayed on each page.

To create the report, you must perform the following high-level tasks:

- Add the following query items to a new list using GO data warehouse (query)\Sales (query):
  - Employee by region: Country
  - Employee by region: City
  - Retailers: Retailer name
  - Retailers: Contact first name
  - Retailers: Contact last name
  - Retailers: Contact phone number
  - Retailers: Contact extension
- Section on Country; group on City.
- Apply page sets to display all contacts per Country per page.

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

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Exercise 1: Tasks and Results

Task 1. Create the list.

- **Toolbar**: Open a new **List** template, using the **GO data warehouse (query)** package.
- **Source tab**: Navigate to **Sales and Marketing (query)/Sales (query)/Employee by region**.
  - Add **Country** and **City** to the list report object.
- **Source tab**: Navigate to **Sales and Marketing (query)/Sales (query)/Retailers**.
  - Add **Retailer name**, **Contact first name**, **Contact last name**, **Contact phone number**, **Contact extension**.

  The results appear as follows:

Country	City	Retailer name	Contact first name	Contact last name	Contact phone number	Contact extension
<Country>	<City>	<Retailer name>	<Contact first name>	<Contact last name>	<Contact phone number>	<Contact extension>

- **Toolbar**: Section **<Country>**.
  - Group **<City>**.
  - Run the report in **HTML**.

  A section of the results appear as follows:

Country: Australia

City	Retailer name	Contact first name	Contact last name	Contact phone number	Contact extension
Melbourne	Beach Beds Pty Ltd.	Paul	Balesrieri	+(61) 02 5138 2922	
	Kanga Kampers	Linda	Balfe	+(61) 02 9437 1967	
	Blue Mountains Golfing Company	Adam	Balla	+(61) 03 7210 8227	
	Beach Beds Pty Ltd.	Scott	Crawford	+(61) 09 9321 3237	
	Kanga Kampers	Doug	Crease	+(61) 07 7238 1065	
	Top End Equipment	Cynthia	Garland	61-7-5444557	3225
	Gone Bush Supplies	Kenneth	Gartner	61-52-5488779	8787
	4 Golf only	Paul	Gasper	61-39-6599874	557
	Kanga Kampers	David	Giddey	+(61) 02 9437 5764	

- Close the rendered report tab.

Task 2. Add page sets to the report.

- **Navigate**: Open **Report pages**.
- **Toolbox**: Add a **Page set** to the **Report pages** pane.
- **Properties pane**: Associate the **Page set** to **Query1**.

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Task 3. Define the grouping structure for the page set.

- **Properties pane**: Add **Country** to the **Groups** folder, under **Grouping & sorting**.
- **Report Pages** pane: Drag **Page 1** into the **Detail Pages** folder.
- **Toolbar**: Run the report in **HTML.**

  The results appear as follows:

Country: Australia

City	Retailer name	Contact first name	Contact last name	Contact phone number	Contact extension
Melbourne	Beach Beds Pty Ltd.	Paul	Balesrieri	+(61) 02 5138 2922	
	Kanga Kampers	Linda	Balfe	+(61) 02 9437 1967	
	Blue Mountains Golfing Company	Adam	Balla	+(61) 03 7210 8227	
	Beach Beds Pty Ltd.	Scott	Crawford	+(61) 09 9321 3237	
	Kanga Kampers	Doug	Crease	+(61) 07 7238 1065	
	Top End Equipment	Cynthia	Garland	61-7-5444557	3225
	Gone Bush Supplies	Kenneth	Gartner	61-52-5488779	8787
	4 Golf only	Paul	Gasper	61-39-6599874	557
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	Beach Beds Pty Ltd.	Steve	Girvan	+(61) 03 9556 4876	
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	OutBack Pty	William	Horne	61-7-2355489	1223
	Southern Cross Pty.	Ernest	Jackson	61-9-8799544	125
	Harbour Pty Ltd.	Karen	Jakobson	61-9-6559033	741
	Jackos Enviro Shop	Laurie	James	61-2-5488773	147
	Kanga Kampers	Norman	Janac	+(61) 03 9321 4650	
	Beach Beds Pty Ltd.	Jake	Jenkins	+(61) 03 7210 3237	
	Watson's Golf Supplies	Julie	Mercer	61-3-9877889	8777
	Can't Beat The Bush Supplies	Tony	Merrett	61-2-6550088	6558

You have created a report that contains retailer contact information for each retailer for each country. The report has been sectioned for each country so that the country appears as a section header at the top, and each country's contacts are displayed on a separate page.

- Close the rendered report tab.
- Sign out of **IBM Cognos Analytics**.
- Close the Web Browser.

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Appendix A Introduction to IBM Cognos Analytics

IBM Training

Introduction to IBM Cognos Analytics

IBM Cognos Analytics (v11.0)

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IBM Training

Unit objectives

- Describe IBM Cognos Analytics and its position within an Analytics solution
- Describe IBM Cognos Analytics components
- Describe IBM Cognos Analytics at a high level
- Describe IBM Cognos Analytics security at a high level
- Explain how to extend IBM Cognos Analytics

Introduction to IBM Cognos Analytics (v11.0)

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Unit objectives

The content presented in this unit is a subset of a high-level overview of IBM Cognos Analytics available in Overview of IBM Cognos Analytics (v11.0).

Students who want to gain a more detailed overview of IBM Cognos Analytics can visit IBM training (www.ibm.com/services/learning) to enroll in the overview course: Overview of IBM Cognos Analytics (v11.0).

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IBM Training

What is IBM Cognos Analytics?

- Complete web-based solution
- Consistent user experience
  - desktop and mobile devices
  - connected and disconnected
- Smarter self-service
  - Navigate
  - Interact
  - Create
- Single environment for departmental and enterprise reporting

Introduction to IBM Cognos Analytics (v11.0)

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What is IBM Cognos Analytics?

IBM Cognos Analytics is a complete web-based BI and analytics solution, offering a unified user experience that works the same on the web, the desktop, or on mobile devices.

The smarter self-service offered by Cognos Analytics allows users across your organization to navigate to relevant data, interact with information to gain insight, and to create reports and dashboards without requiring access to a technical expert.

The Cognos Analytics environment is designed to be used at all levels of business, from departmental reporting and analysis, to broader enterprise reporting.

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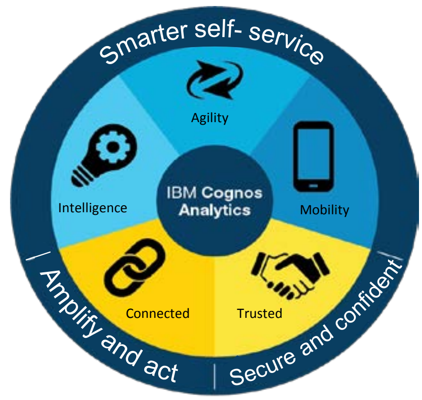
IBM Training

Redefined Business Intelligence

- Smarter self-service
  - guided
  - built-in intelligence
- Amplify and Act
  - make findings available to others
  - re-use and augment
  - increase collective intelligence
- Security and Confidence
  - user profiles and access to curated data
  - data cleansing
  - security and authentication
  - scalable single environment



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Redefined Business Intelligence

The built-in intelligence provided by Cognos Analytics helps to guide users with an intuitive interface and intelligent analysis of your data to recommend appropriate visualizations to represent your data.

The single, shared solution allows sharing and re-use of information across self-service and enterprise reporting to make findings available to others.

IBM Cognos security protects your data by controlling access to data and bringing data from multiple sources together into a single, trusted data source.

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IBM Training

Self-service

- Supports many different types of users:
  - Consumers
    - static reports
    - interactive reports
  - Creators
    - dashboards and infographics
    - Data Modules and ad-hoc reports
  - Power users
    - data model
    - professional reports

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Self-service

IBM Cognos Analytics supports consumers who want to understand their data, through static and interactive reports, intuitive navigation, and search capabilities.

Self-service reporting allows users to create powerful dashboards and customized Data Modules based on keywords, without requiring the assistance of an IT specialist.

Power users are able to create complex data models, and detailed, professional reports to draw insight from varied data sources.

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IBM Training

Navigate to content in IBM Cognos Analytics

- A single, unified web experience on all devices
- Smart search (in context)
- Recently-viewed

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Navigate to content in IBM Cognos Analytics

Cognos Analytics provides a unified experience across all devices, whether you are on a desktop system or a mobile device, even disconnected from your network. Navigation to locate data, reports, and dashboards functions the same regardless of how you are using Cognos Analytics.

Context-sensitive search provides targeted, relevant results based on your current context, allowing you to quickly locate reports, dashboards and data.

The Recently-viewed feature in Cognos Analytics helps you quickly find content you work with on a regular basis.

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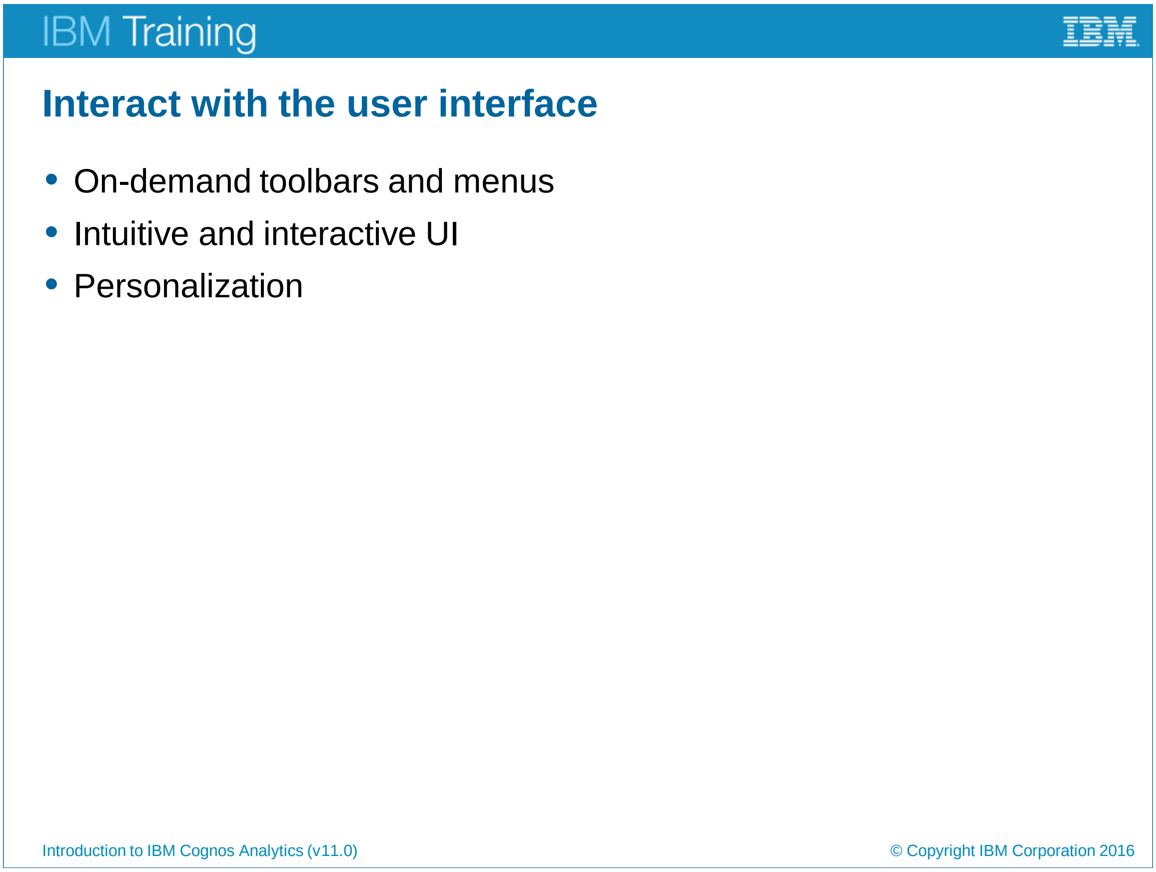

Interact with the user interface

On-demand toolbars and menus give you access to tools and options in context, so that power users and casual users can improve productivity within the same interface.

An intuitive user interface anticipates user intent and automates processes to improve user performance and reduce training requirements.

The user interface can also be personalized by individual users to meet their own specific requirements.

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IBM Training

Model data with IBM Cognos Analytics

- Easy access to data
- Easily combine Data Modules
- Intent-driven modeling
- Accelerated authoring

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Model data with IBM Cognos Analytics

Users can easily access data from a variety of sources, including enterprise data, as well as personal data sources.

Data Modules allow users to combine data from different sources into a single data source for reporting, and an automated model generation system allows self-service users to quickly generate a data module based on keywords.

By enabling users to access data on-demand, authors can quickly generate reports to gain insights into their data.

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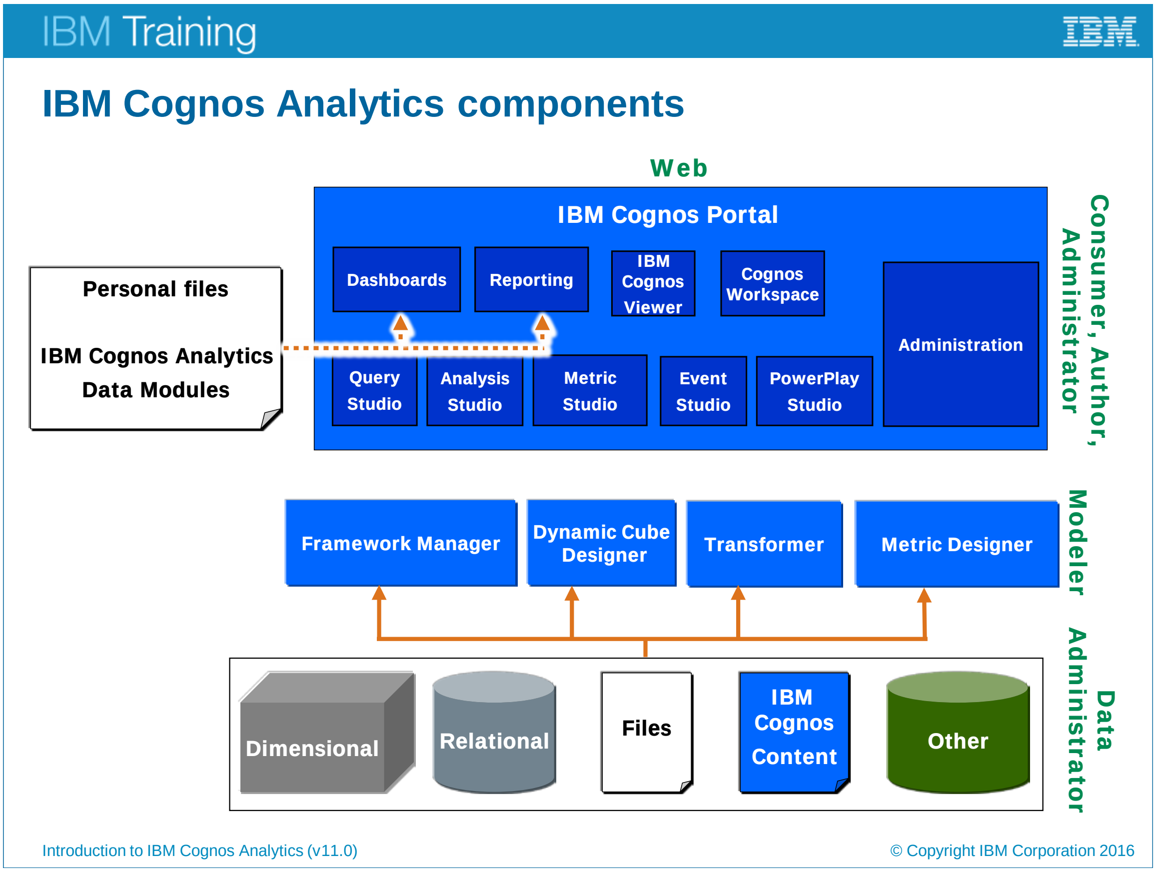

IBM Cognos Analytics components

IBM Cognos Analytics capabilities provide reporting, analysis, scorecarding, dashboard creation, business event management, and data integration from a wide array of corporate and personal data sources. IBM Cognos Analytics includes:

- IBM Cognos Portal, which is the Web portal for BI content presentation, management, and administration.
- Web and desktop reporting and analysis tools to author and analyze corporate data.
- Metadata modeling tools, including Framework Manager, Dynamic Cube Designer, Transformer, as well as Data Modules.

Use Dashboards to create personal dashboards. Packages cannot be used in dashboards in Cognos Analytics v11.0.

Use IBM Cognos Analytics - Reporting to view reports, and perform both self-service reporting and advanced reporting to build sophisticated reports against multiple data sources, including personal data sources.

Use Framework Manager to create basic query packages, relationally based packages, and dimensional analysis packages.

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Use Dynamic Cube Designer to create, edit, import, export, and deploy virtual cube models over a relational warehouse schema.

Use Transformer to create PowerCubes for dimensional analysis.

Existing customers can enable legacy support to use additional tools from previous IBM Cognos BI releases:

- Use IBM Cognos Viewer to view reports.
- Use Query Studio to perform ad hoc querying and quickly answer a focused question.
- Use Analysis Studio to perform analyses of data to discover trends, risks, and opportunities.
- Use Event Studio to create agents which notify users of key operational or performance-related events in their business.
- Use PowerPlay Studio to perform multidimensional analysis using IBM Cognos PowerCubes.
- Use Metric Studio to manage performance by monitoring and analyzing metrics.
- Use Metric Designer to create scorecard applications for use in Metric Studio.

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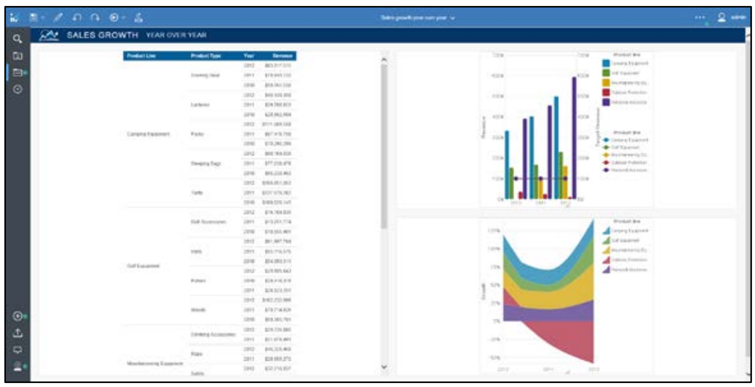
IBM Training

Create reports with IBM Cognos Analytics - Reporting

- Unified environment for report authoring and analysis
- Intuitive search and navigation of data
- Data visualizations
- Templates and themes to accelerate report development
- Report subscriptions



Introduction to IBM Cognos Analytics (v11.0)

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Create reports with IBM Cognos Analytics - Reporting

IBM Cognos Analytics - Reporting is a unified environment for reporting and analysis.

Consumers can view reports to analyze data, and report creators and power users can seamlessly transition to editing reports without needing a separate authoring environment.

Search tools, and an intuitive navigation system help you to quickly find the data you are looking for, and data visualizations allow you to present data in a way that makes it easier to draw insights about the data.

Predefined templates and themes allow you to create a professional-looking report quickly, without needing a lot of authoring expertise.

You can subscribe to reports of interest to get regular updates as your data changes. You cannot subscribe to dashboards in Cognos Analytics v11.0.

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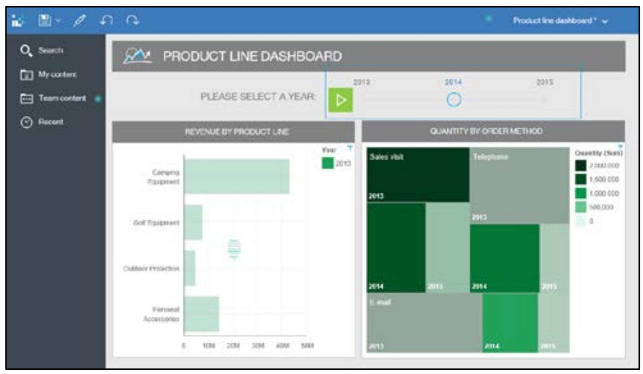
IBM Training

Perform self-service analysis with Dashboards

- Quickly and easily explore data to make decisions
- Templates to accelerate dashboard creation
- System-recommended visualizations
- Drag and drop data from existing data sources
- Smart filtering



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Perform self-service analysis with Dashboards

IBM Cognos Dashboards lets you quickly and easily explore data to make decisions. Templates and system-recommended visualizations help you to better understand your data.

Data from personal files and Data Modules can be dragged and dropped onto the dashboard canvas to build dashboard content, and smart filtering allows you to focus the dashboard on data that is relevant to your analysis. Content from existing reports cannot be used in a dashboard in IBM Cognos Analytics v11.0.

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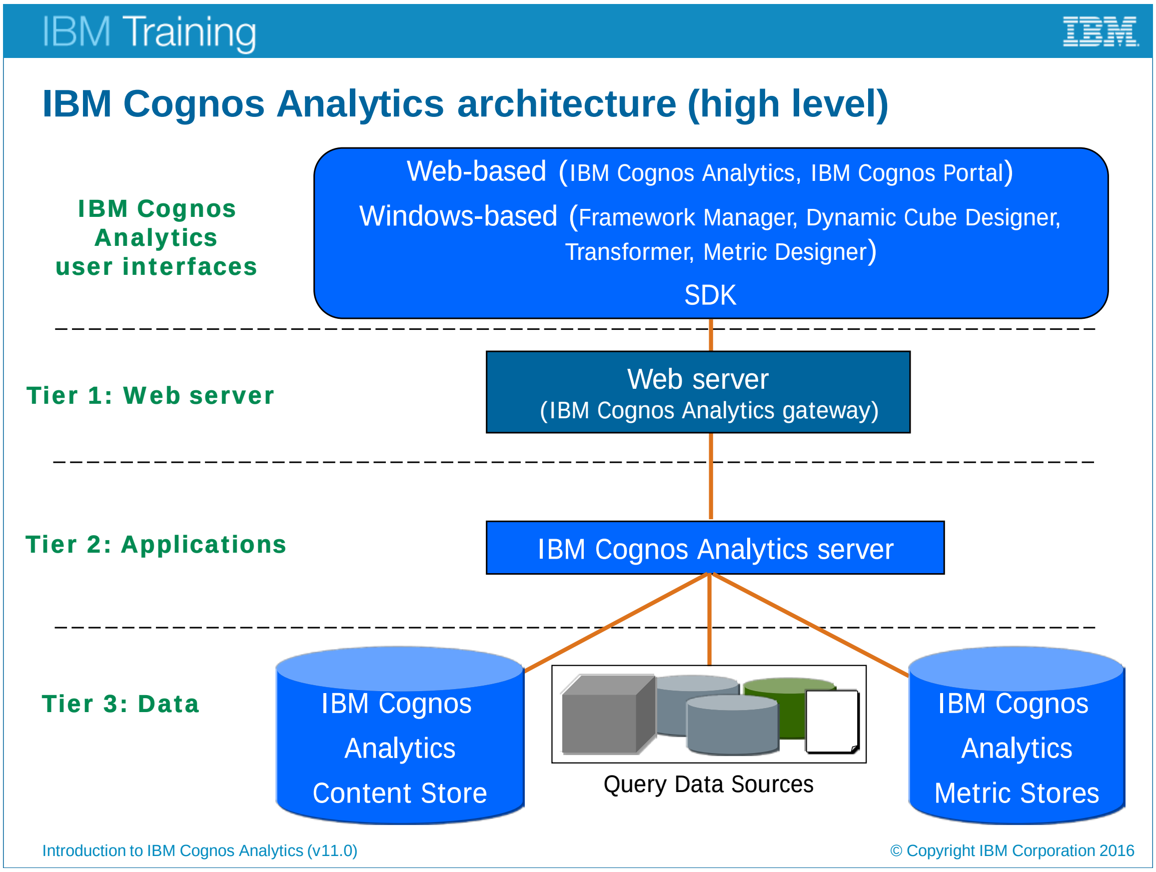

IBM Cognos Analytics architecture (high level)

IBM Cognos Analytics is a Web-based architecture, which is separated into three tiers; Web server, applications, and data. For the web server tier, you have the option of installing the gateway component on your own web server, or using the default gateway component.

This architecture is scalable from a software and hardware perspective. For example, you can have several IBM Cognos servers for faster response times and load balancing.

IBM Cognos leverages existing corporate IT resources such as web servers, authentication providers, and application servers, and also supports multiple languages and locales in order to serve a global audience.

IBM Cognos is customizable to adopt your corporate look and feel and can be extended and integrated into other applications through the IBM Cognos SDK.

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IBM Cognos Analytics security

- The IBM Cognos Analytics security model combines existing enterprise security solutions with IBM Cognos Analytics security to achieve:
  - Authentication - Who are you?
  - Authorization - What can you see/do?
  - Administration - What/where can you manage?

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IBM Cognos Analytics security

IBM Cognos authentication is based on the use of third party authentication providers. These define users, groups, and roles used for authentication. User names, IDs, passwords, regional settings, and personal preferences are some examples of information stored in the providers. Based on the type of installation, a built-in authentication provider may be available.

Authorization is the process of granting or denying access to content, and specifying the actions that can be performed on that content, based on a user identity. Authorization assigns permissions to users, groups, and roles that allow them to perform actions, such as read or write, on objects, such as folders and reports. Permissions can be granted to users, groups, or roles directly from authentication providers or through membership in Cognos namespace groups and roles.

The Cognos namespace is the built-in namespace from IBM Cognos. It contains the IBM Cognos objects, such as groups, roles, data sources, distribution lists, and contacts. During the content store initialization, built-in and predefined security entries are created in this namespace, and include default access to functionality.

You can configure and administer IBM Cognos security using IBM Cognos Configuration and IBM Cognos Administration. You can also configure some security settings using the Manage button in IBM Cognos Analytics.

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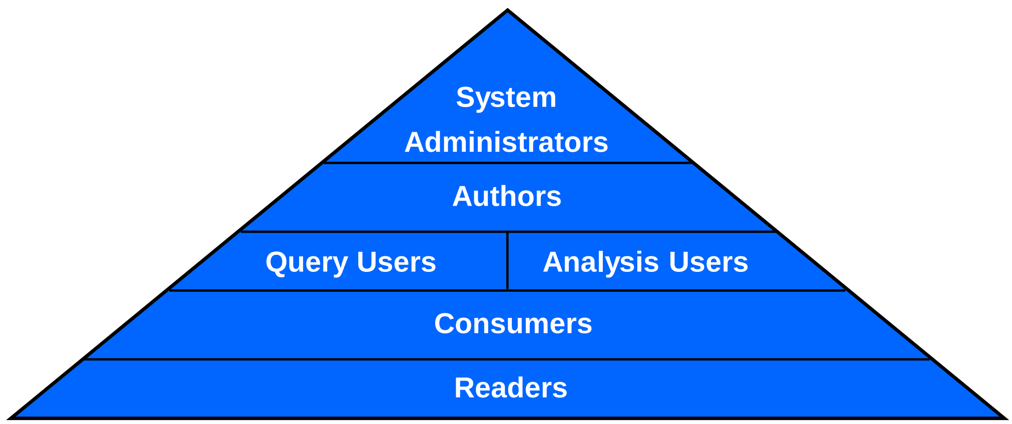
IBM Training

IBM Cognos Analytics groups and roles

- IBM Cognos Analytics provides default groups and roles for security, such as:



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IBM Cognos Analytics groups and roles

Take advantage of IBM Cognos groups and roles from the Cognos namespace to secure your IBM Cognos environment and content. The group or role to which a user belongs determines how much access the user has to the IBM Cognos environment and functionality.

Besides the default groups and roles, you can create new groups and roles that are specific to your IBM Cognos needs. Simply add users from your authentication source to specific groups and roles as required.

Not only can you use the groups and roles defined in the IBM Cognos namespace to control access to contents, you can use groups in your authentication provider as well.

Using the IBM Cognos namespace does not require the IT department and creates a more portable environment.

There are many different groups and roles the administrator can use to restrict what you can see, what you can do, etc.

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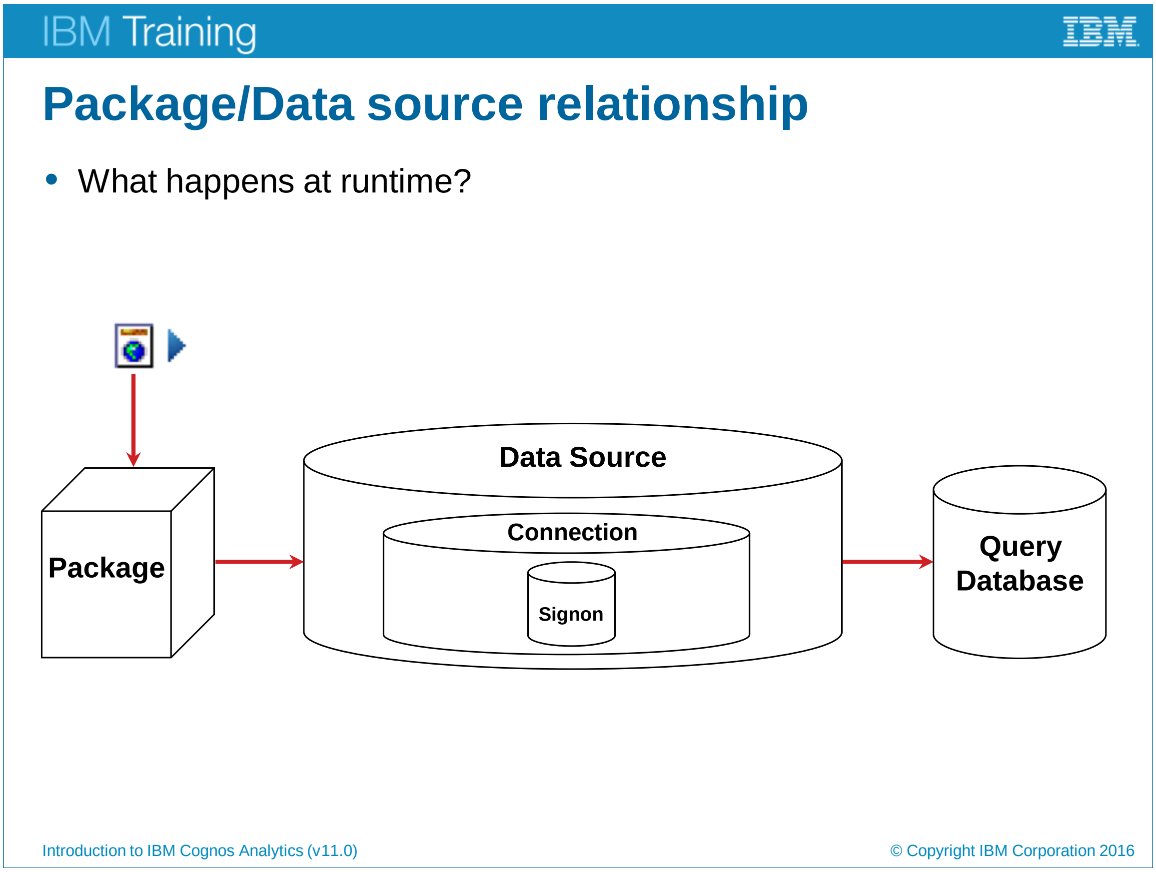

Package/Data source relationship

When a user runs a report, interactively or in the background, the metadata and data in the report are accessed through a combination of the package from which the report was authored, and the data source from which the package was modeled. The data source includes a connection string to the database and may include a signon that allows access to the database. The data source is used to query the database and retrieve the appropriate data, and the result set is presented back to the user.

There may be multiple connections for a given data source and multiple signons for a given connection.

Each object (report, package, data module, data source, connection, and signon) may have security applied.

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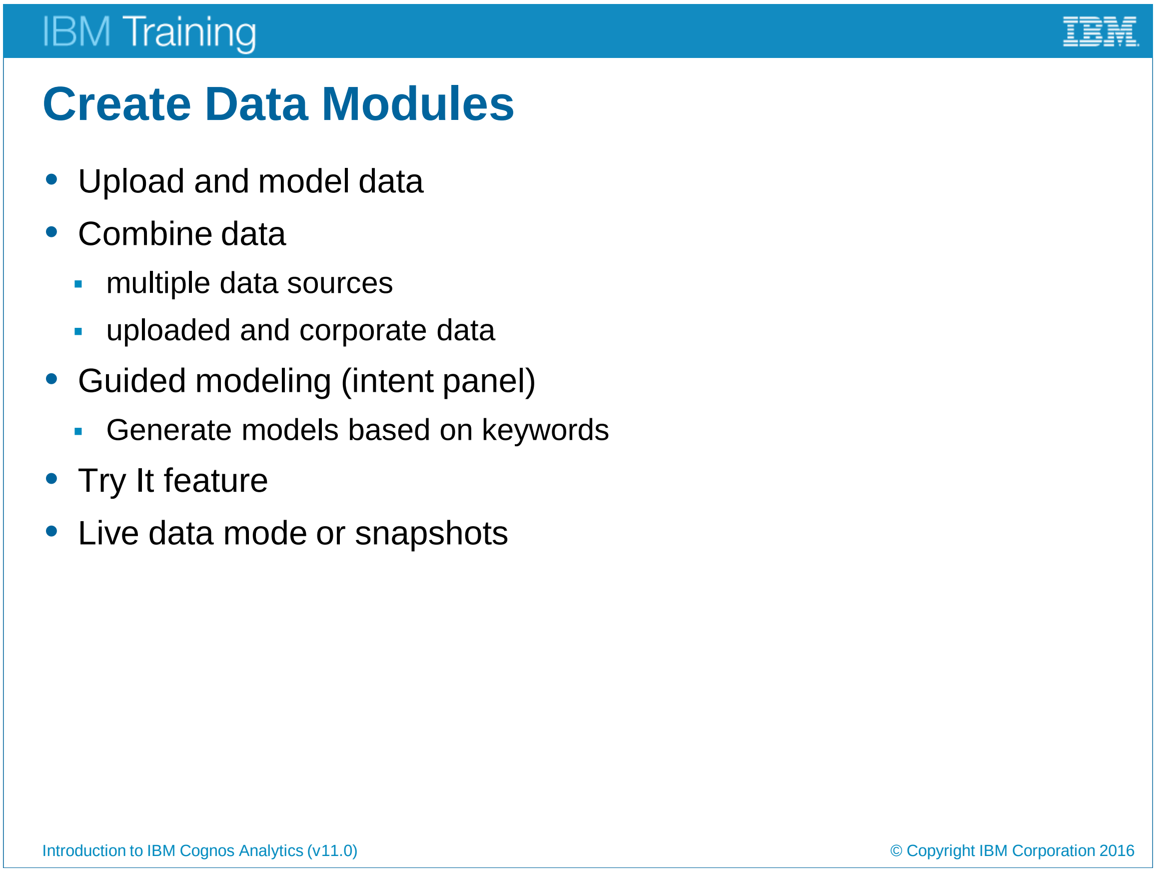

Create Data Modules

Data Modules allow you to upload data to IBM Cognos Analytics, and model data from different sources into a single, trusted data source for reporting and analysis.

Using guided modeling, keywords can be used to indicate the type of data you would like to model, and IBM Cognos Analytics will analyze your data and recommend a model based on your requirements.

Once you have modified the recommended model to meet your specific requirements, Cognos Analytics will automatically build the data model for you.

The Try It feature allows you to test out your newly-created model in a reporting environment to ensure the model works as intended.

By default, Data Modules run in live data mode. Queries are submitted directly to the underlying data server, and reports will reflect the most current data. If you encounter load issues, snapshots of Data Modules can be used to improve query performance and reduce database load during peak periods. Snapshots are cached copies of data for a data module. Their data is stored in a file system location accessible to the Cognos Analytics server.

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IBM Training

Upload files

- Upload personal or external data
- Integrate with other data sources in a data model

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Upload files

Personal and external data, such as external data files, can be uploaded to the Cognos Analytics environment using the Upload Files feature.

IBM Cognos Analytics stores data from delimited text and Excel files in a high-speed columnar storage format on the file system, rather than in-memory or in an RDBMS. Uploading a file using this capability does not create a separate model or package that must be managed by the user.

Data uploaded from external sources can then be integrated with existing corporate data in a custom data model for self-service reporting.

In order to use content from uploaded files in a report, the content must be modeled into a Data Module.

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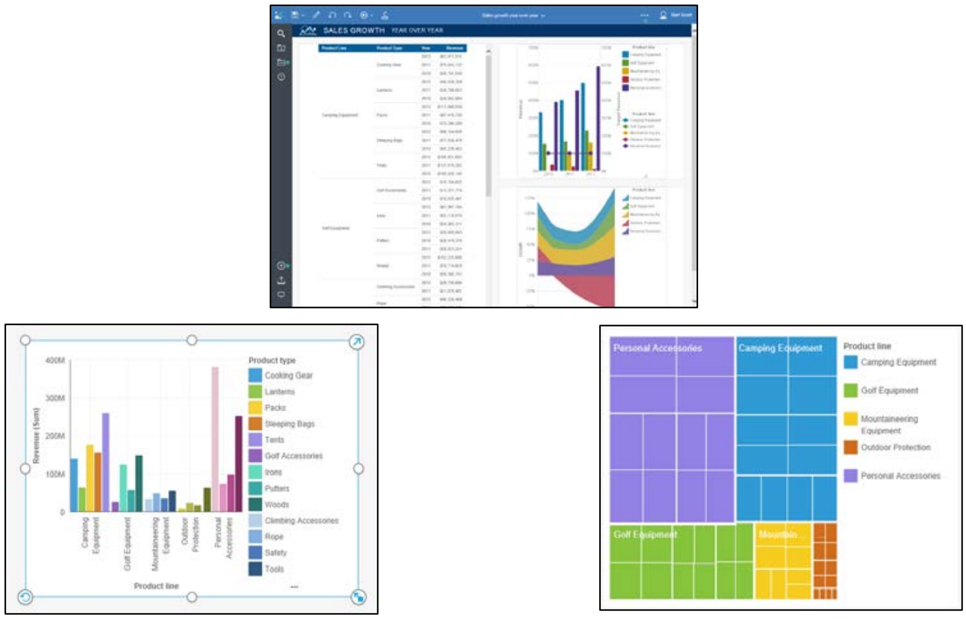
IBM Training

Demonstration 1

Explore IBM Cognos Analytics



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Demonstration 1: Explore IBM Cognos Analytics

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Demonstration 1: Explore IBM Cognos Analytics

Purpose:
You will obtain a high-level view of how IBM Cognos Analytics works by navigating through the system and tracing the lifecycle of a data item, from its appearance in a report to its existence in an underlying data source. You will take on different roles including a(n):

- Consumer who runs reports or performs analysis to answer business questions

- Author who creates reports using various data items from a metadata package

- Data Modeler who imports data from the underlying data source, models it, and publishes a metadata package to make it available for Authors

- Administrator who creates and manages data source connections

You will conclude by identifying how the data item from the report appears as a column in the underlying data source.

Before performing demonstrations in this unit, on the taskbar, click Services, and then ensure that the following services are started:

- Apache Directory Server - default (start this service first, if it is not already started)
- DB2 - DB2COPY1 - DB2
- DB2DAS -DB2DAS00
- Lotus Domino Server (CProgramFilesx86IBMLotusDominodata)

Server:	**localhost**
User/Password:	**scottb/Education1**
Packages:	**Go Data Warehouse (query), Go Data Warehouse (analysis)**
Folders:	**Sales and Marketing (query)**
Namespace:	**Sales (query)**

Task 1. Run a report from the IBM Cognos Portal.

1. Open **Internet Explorer**, and then navigate to **http://vclassbase:9300/bi**.
2. Log on as **scottb/Education1**.

   The Welcome page appears. Security is currently set in this environment and you have logged on as a member of the Consumers role. The interface displays only functionality that is available to a member of the Consumers role. As a Consumer, you have the ability to navigate to and run reports, and to create dashboards and Data Modules.

   You will view report content in the IBM Cognos Portal.

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3. Click **Search**.

   The search panel appears. You are searching for a report titled Sales Growth Year Over Year.

4. Type **sales growth**.

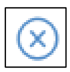
   The search results appear.

5. Click **Sales Growth Year Over Year**.

   You would like to save this search for future use.

6. Click **Save search** .

   The search is saved.

7. Click **Clear** .

   Under Saved searches, you can now see the search you saved.

   You could open the report directly from the search results, but instead, you will navigate to the report manually.

8. Click **Team content**, and then navigate to **Samples/Reports/Standard reports**.

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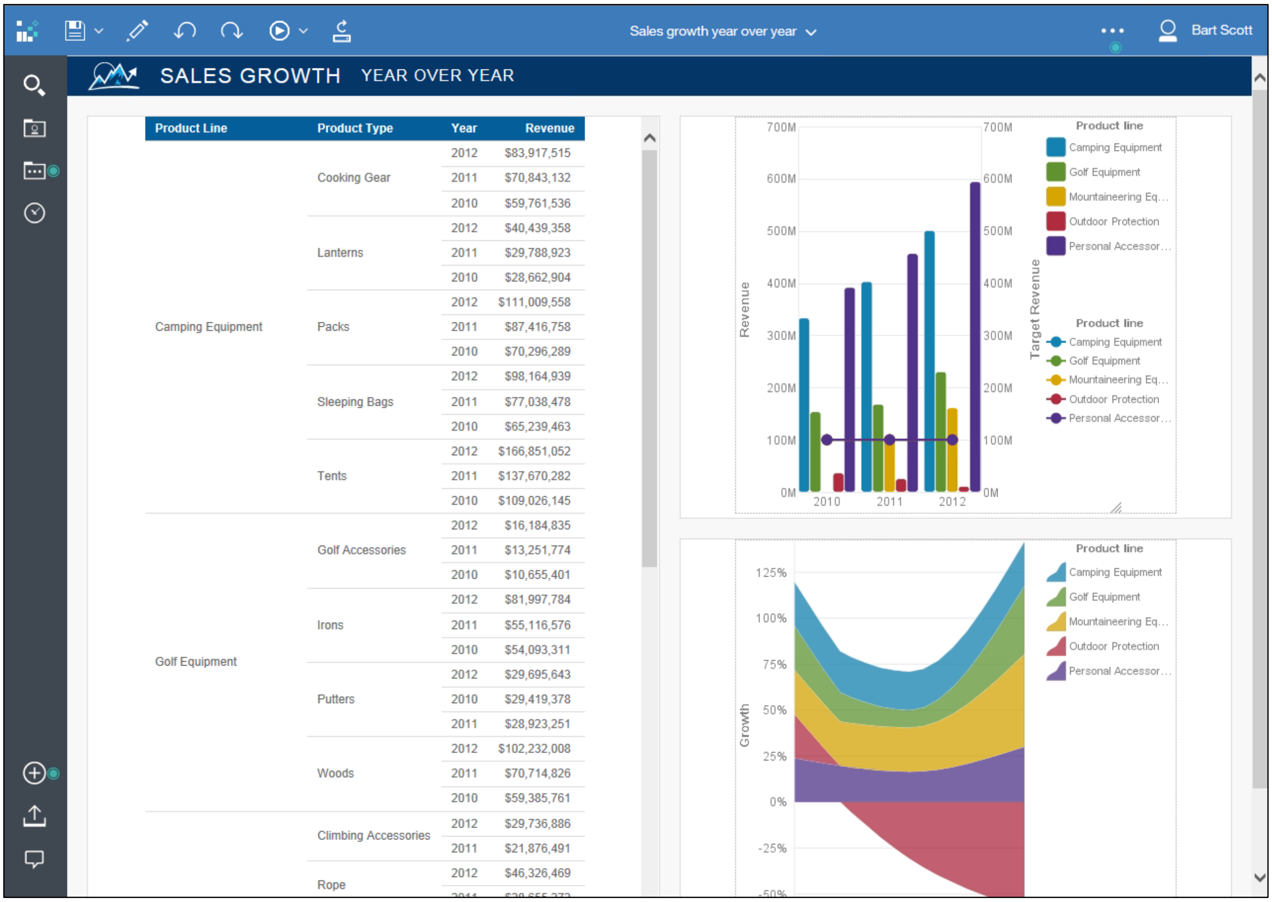
9. Click **Sales growth year over year**.

The underlying data source is queried for data, and the report opens in Cognos Analytics.

A section of the results appears as follows:



This report contains a list to display query data, as well as two charts to provide a visual representation of the data.

You will now create a dashboard.

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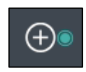
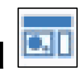
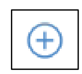
Task 2. Upload a personal file and create a dashboard in IBM Cognos Analytics.

1. On the **Side panel**, click **Upload files** .
2. In the **Choose File to Upload** dialog, browse to **C:\Training\B6058\Instructor Files**.
3. Click **SampleFile_GOSales.xlsx**, and then click **Open**.

   The system will take a few moments to load the file. A progress bar indicates the status of the upload. When it's finished, you will see a preview of the data, such as Retailer country, Order method type, Retailer type, etc.
4. On the **Side panel**, click **New** , and then click **Dashboard** .
5. Under **Select a template**, click **Freeform**, and then click **OK**.
6. Click **Sources** .
7. Next to **Selected sources**, click **Add a source** .

   Because we are creating a dashboard, we are only able to access uploaded data files and Data Modules. We do not have access to use packages.
8. In the **Open** dialog, navigate to **My content**, click **SampleFile_GOSales.xlsx**, and then click **Open**.

   The data is loaded and is ready to use in your dashboard.
9. Click **Product line**, Ctrl+click **Product type**, and then Ctrl+click **Revenue**.

   Each entry is highlighted with a bar to the left of the entry, and the text of each item is bolded, to show that it is part of the current selection.

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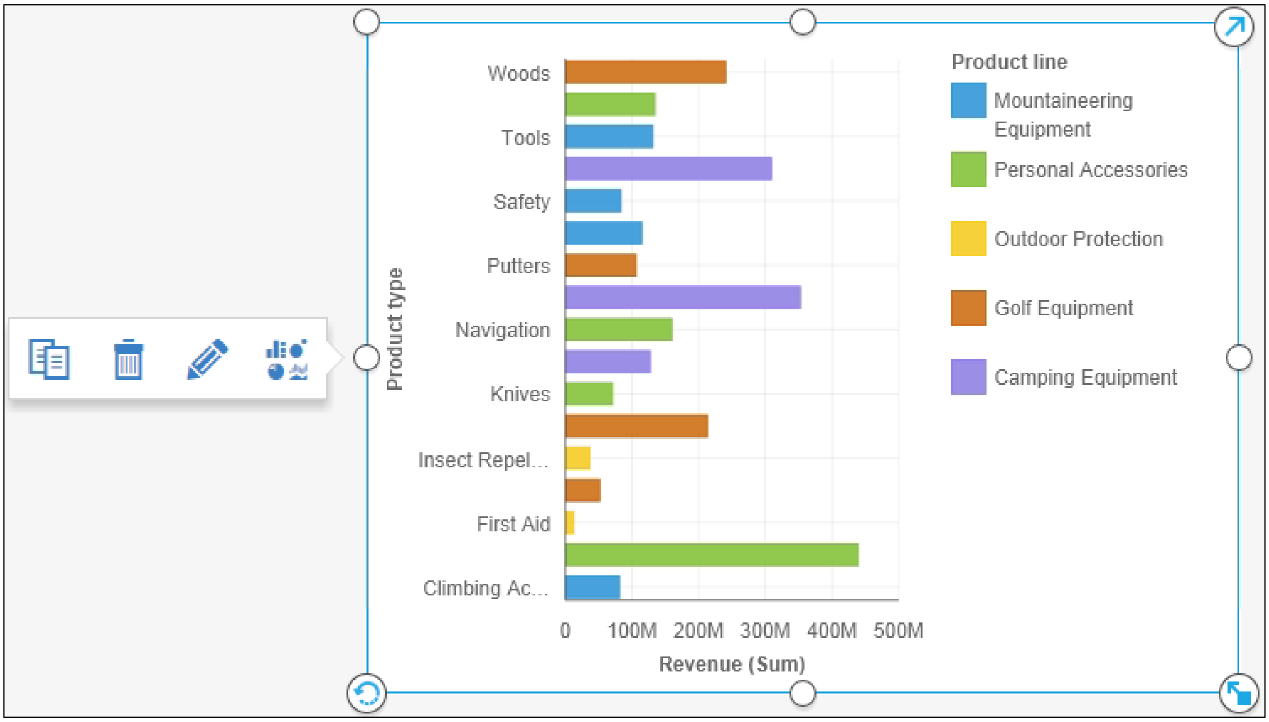
10. Drag the selected items to the canvas.

The results appear as follows:



IBM Cognos Analytics creates a default visualization to display the data.

11. Click the visualization so that its toolbar appears.

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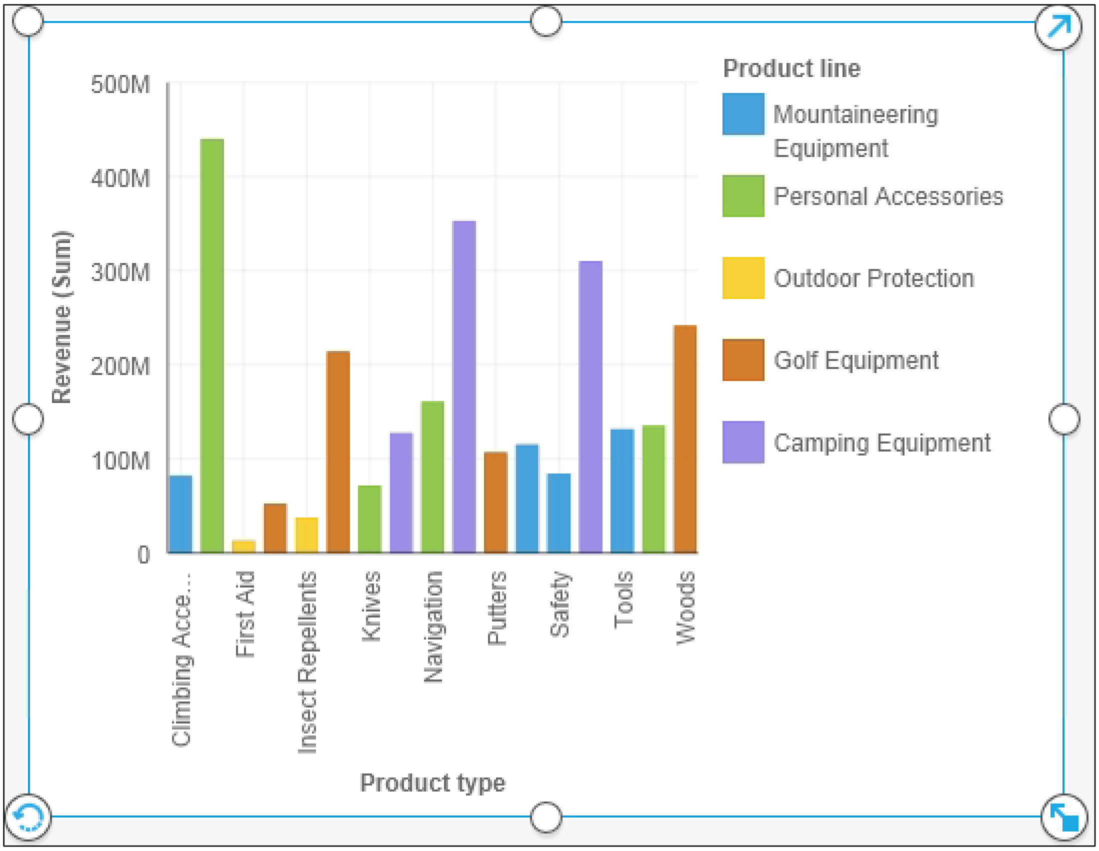
12. Click **Change visualization** , and then select **Column**.

    The results appear as follows:



    The visualization is updated to display a column chart.

13. From the available data pane, click **Product line**, and then Ctrl+click **Year**, **Quarter**, and **Gross profit**.

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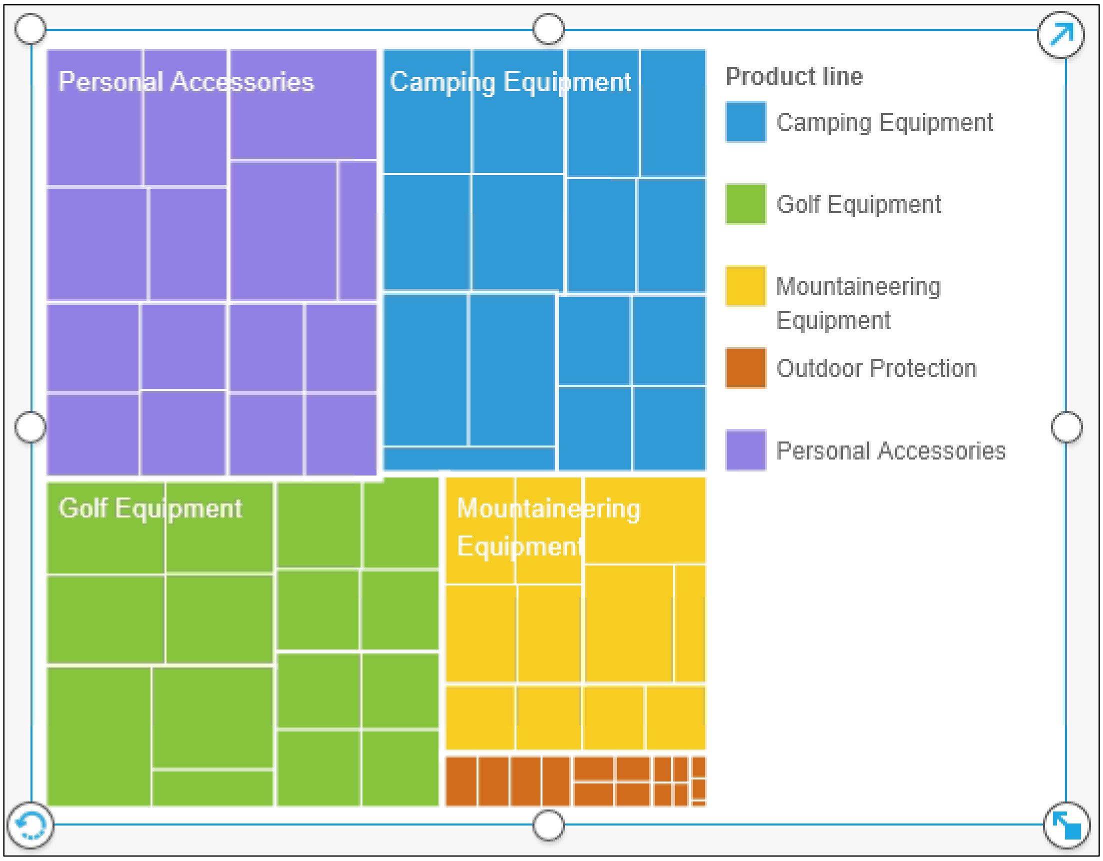
14. Drag the selection to the right of the column chart.
    The results appear as follows:



IBM Cognos Analytics displays a Tree Map to represent the data.

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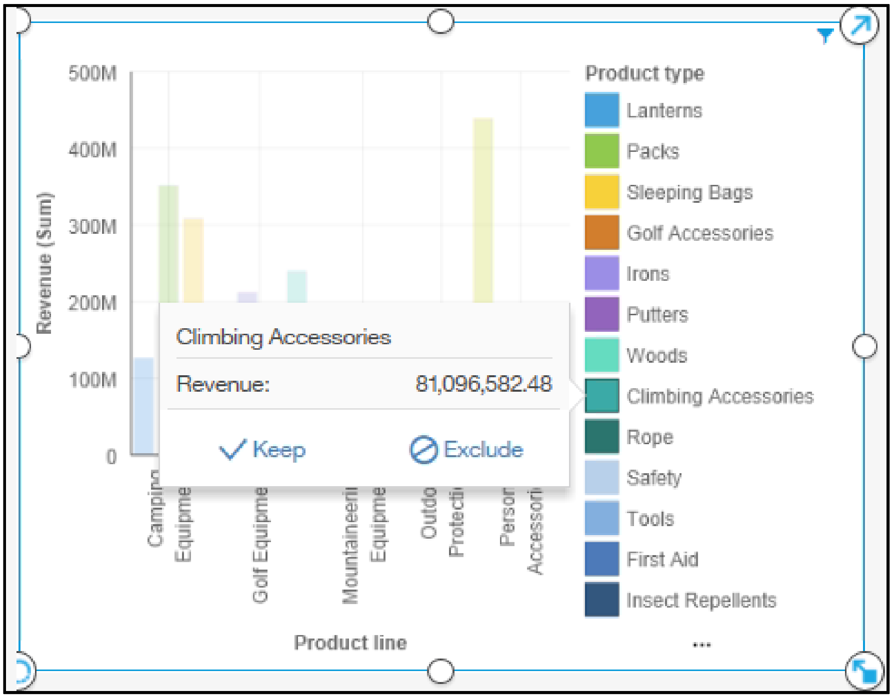
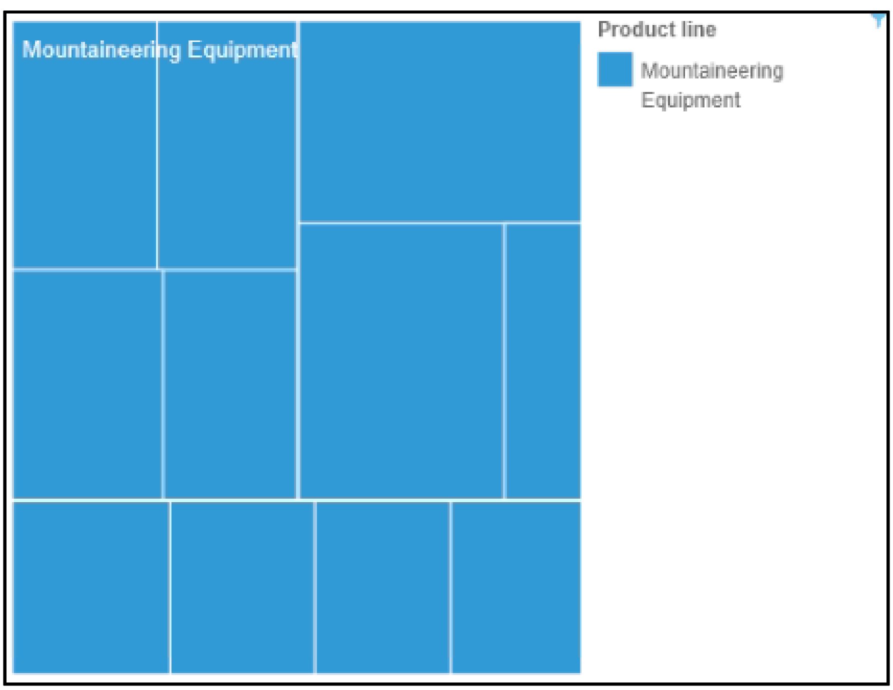
15. In the **Column chart**, click **Climbing Accessories**.

The results appear as follows:





You can see the total revenue for Climbing Accessories, as well as options to keep the data in the chart, or exclude it from the chart.

The Tree Map has also been updated, and now displays only the Mountaineering Equipment information. Both charts are linked automatically.

You will now create a second tab to display different information.

16. Click **Add a new tab**, click **Freeform**, and then click **Use**.

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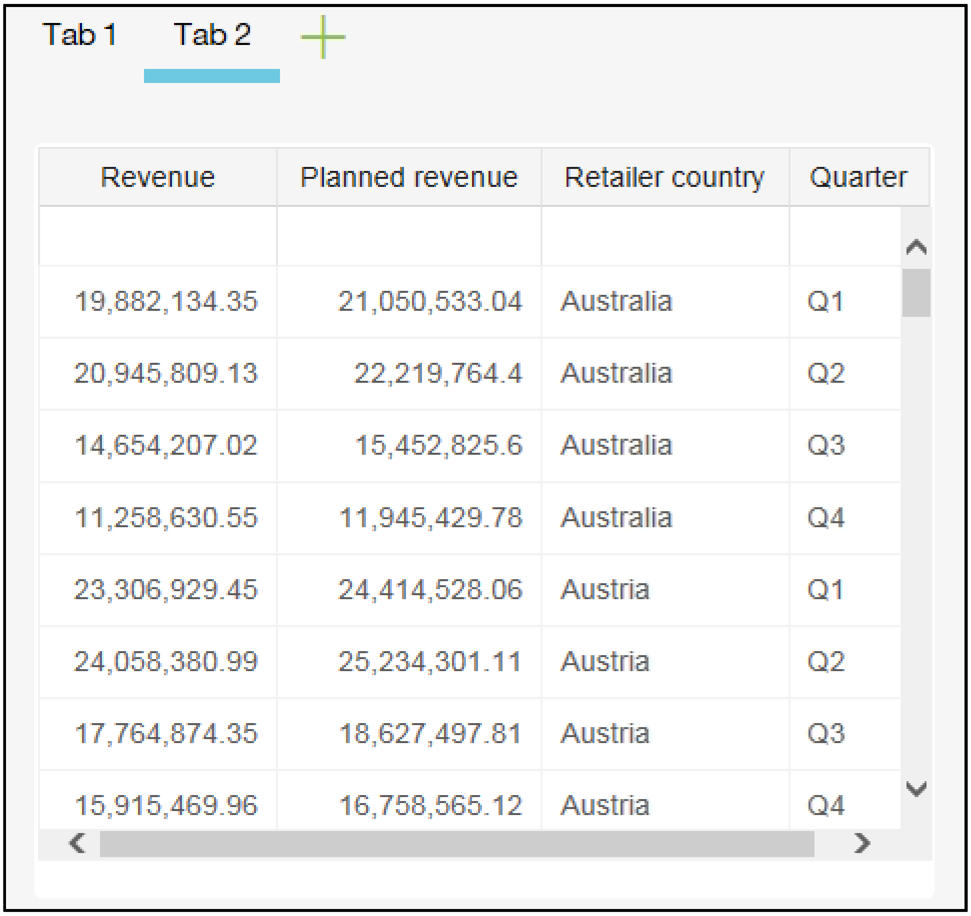
17. Click **Retailer country**, and then Ctrl+click **Quarter**, **Revenue**, and **Planned revenue**.
18. Click **Add**, then click change the visualization to a **Grid**.

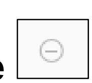
    The results appear as follows:



Revenue	Planned revenue	Retailer country	Quarter
19,882,134.35	21,050,533.04	Australia	Q1
20,945,809.13	22,219,764.4	Australia	Q2
14,654,207.02	15,452,825.6	Australia	Q3
11,258,630.55	11,945,429.78	Australia	Q4
23,306,929.45	24,414,528.06	Austria	Q1
24,058,380.99	25,234,301.11	Austria	Q2
17,764,874.35	18,627,497.81	Austria	Q3
15,915,469.96	16,758,565.12	Austria	Q4

19. Click **Tab 1**.
20. Click **Open data tray** .
21. In the **Data tray**, click **Retailer country**, and then click **Filter** .
22. Click **Canada**.

    The charts now display data specific to Canada.
23. Click **Tab 2**.

    The Retailer country column now only displays Canada, so the filter was applied across both tabs.
24. Click the arrow beside **New dashboard***, and then click **Remove**  beside **Sales growth year over year** and **New dashboard***.
25. Click **OK** to continue without saving.

    You will now examine the report you ran in the previous task using Reporting.

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Task 3. Examine a report using Reporting.

Note that while you are able to edit an existing report in Reporting, you will not be able to save it as a member of the Consumers role. You will now log in as Frank Bretton, a member of the Authors role.

1. Click **Bart Scott** 

, and then click **Sign out**.
2. Log on as **brettonf/Education1**.

   The Welcome page appears. Security is currently set in this environment and you have logged on as a member of the Authors role. The interface displays only functionality that is available to a member of the Authors role. As an Author, you have the additional ability to create and save reports.
3. Click **Team content**, and then navigate to **Samples/Reports/Standard reports**.
4. Click **Sales growth year over year**.
5. On the **Toolbar**, click **Edit** .

   The icons and buttons on the page update to reflect a Reporting context.
6. On the **Toolbar**, click **Page views** , and then click **Page structure**.
7. Expand **Page - Page 1**, and then expand the rest of the hierarchy.

   The report includes a hierarchical object structure, beginning with a Page object, which includes Page Body and Page Footer objects. The Page Body hierarchy includes, Table objects, which in turn include Table row objects, which in turn includes Table cell objects, etc.
8. On the **Toolbar**, click **Page views**, and then click **Page design**.
9. At the bottom of the report, double-click **<%AsOfDate()%>**.

   The Report expression dialog box opens showing the AsOfDate() expression. AsOfDate() is an embedded report function within the Reporting expression editor, which can be used to return and display the execution date for the report.
10. Click **Cancel**, and then repeat step **9** for **<%PageNumber()%>** and **<%AsOfTime()%>**.

    PageNumber() returns the current page number.

    AsOfTime() returns the report execution time.
11. In the list report object, double-click the **<Revenue>** column body.

    The objects used to define this expression come from the GO data warehouse (analysis) package, as shown in the Available Components pane on the left. You can see objects from the package by navigating the hierarchy.

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12. In the **Available Components** pane, expand **Sales and Marketing (analysis)** > **Sales** > **Sales fact** to locate the **Revenue** object.

    The hierarchy you have navigated matches what is displayed in the Expression Definition pane. Note that the Sales and Marketing (query) object is a folder and is excluded from the expression. You will become familiar with this object hierarchy when you create a report in Task 4.

13. Click **Cancel**, and then repeat steps **11** and **12** to identify the expressions and objects used to define them for the following items in the report:

    - <Product line>
    - <Product type>
    - <Year>

    Next you will create a report using metadata objects from a package.

Task 4. Create a report using Reporting.

1. Click **New** , and then click **Report**.
2. In the **New** dialog, click **List**, and then click **OK**.
3. Click **Data** .
4. Click Add report data.
5. In the Open dialog, navigate to Team content > Samples > Models > GO data warehouse (query), and then click Open.

   The Source pane on the left displays the contents of the GO data warehouse (query) package. This package has been published from IBM Cognos Framework Manager as a metadata source for authors to create reports.

   The structure and organization has been defined in the IBM Cognos Framework Manager model. There are four folders in this package.

6. Expand **Sales and Marketing (query)**.

   At this level you are viewing namespaces. A namespace provides containment and name qualification for child objects.

7. Expand **Sales (query)**.

   At this level you are viewing query subjects. A query subject is a set of query items that have an inherent relationship. In most cases, query subjects behave like tables. Query subjects produce the same set of rows regardless of which columns were queried.

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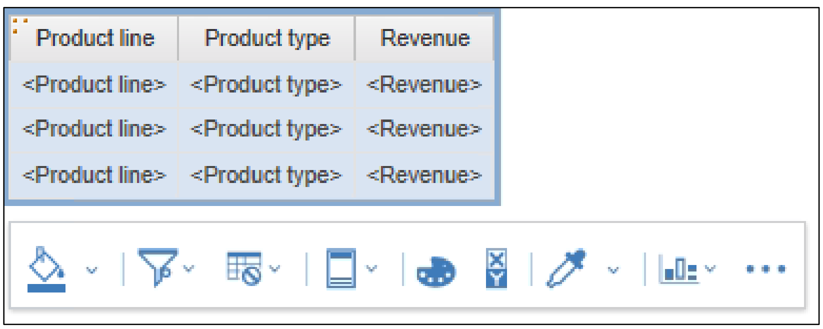
8. Expand **Sales fact**.

   At this level you are viewing query items. A query item represents a single characteristic, such as the date that a product was introduced. Query items are contained in query subjects or dimensions (if using a dimensional data source). For example, a query subject that references an entire table contains query items that represent each column in the table.

9. Drag the following items into the list object:

   - **Product line** (from **Products**)
   - **Product type** (from **Products**)
   - **Revenue** (from **Sales fact**)

   The results appear as follows:



10. From the **Toolbar**, click **Run options** .
11. Click **Run HTML**.

    The report runs in a separate tab.

12. Close **IBM Cognos Analytics** without saving the report.

    Next you will take on the role of a modeler/developer to identify how the objects from the package, including the Revenue query item, are made available to authors to create their reports.

Task 5. Examine a model in IBM Cognos Framework Manager.

1. From the **Start** menu, click **All Programs** > **IBM Cognos Framework Manager** > **IBM Cognos Framework Manager**.
2. Click **Open a project**, and then open **great_outdoors_warehouse_dq.cpf** from **C:\Program Files\IBM\cognos\samples\webcontent\samples\models\great_outdoors_warehouse_dq**.
3. Log on as **admin/Education1**.

   In the current security environment, Admin Person is a member of the System Administrators role, and by default, has access to the entire IBM Cognos Analytics system, including IBM Cognos Framework Manager.

   You will examine what was published from IBM Cognos Framework Manager.

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4. In the **Project Viewer** pane, expand **Packages**.

   The GO Data Warehouse (query) package appears. This is the package that you used in Report Studio to author the report.

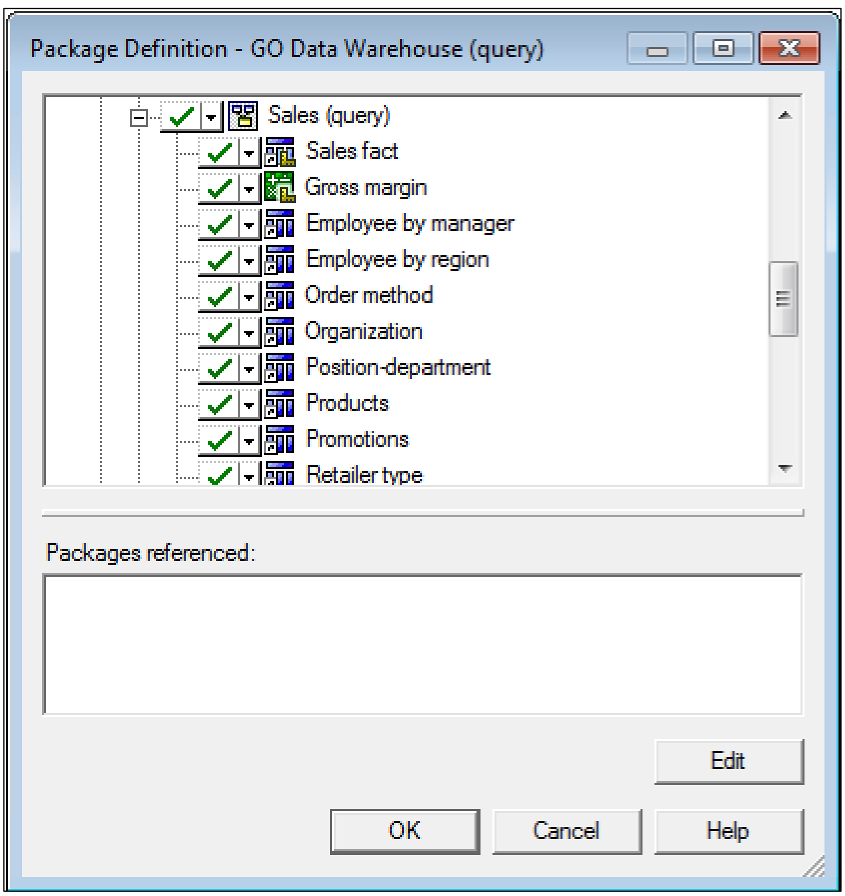
5. Double-click the **GO Data Warehouse (query)** package.

   The Package Definition window displays which objects have been included and excluded from the package. The included objects are set to either visible or hidden. Hidden meaning they are included for publishing but will be hidden for authors.

   Note the four folders that have been included and set to visible. These match the folders you identified when you were viewing the package in Reporting (Task 4, step 9).

6. Expand the **Sales and Marketing (query)** folder > **Sales (query)** namespace.

   The results appear as follows:



   The Sales (query) namespace contains shortcuts to other objects in the model.

   The Sales fact shortcut points to a source object that is also included in the package; however, you cannot trace the source using this window. To do this, you will examine the model.

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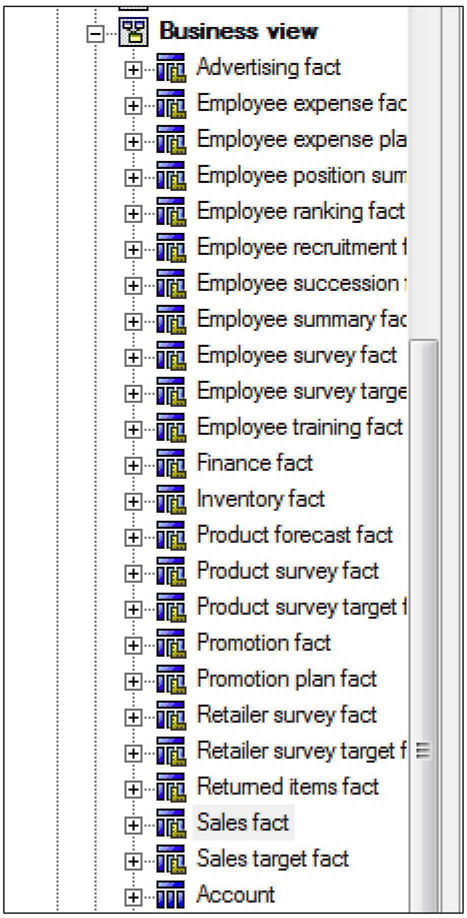
7. Click **Cancel**, and then in the **Project Viewer**, expand the **go_data_warehouse** namespace > **Sales and Marketing (query)** folder > **Sales (query)** namespace.

   Again, you can see the Sales fact shortcut, but now you can trace that shortcut back to its source.

8. Right-click **Sales fact**, and then click **Go To Target**.

   The results appear as follows:



   You are taken inside the Business View namespace (bolded text), to the Sales fact query subject (blue background).

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9. Expand **Sales fact**.

   This query subject includes the Revenue query item.

   Without going into detail on the structure of this model, you should note that, as a proven practice, this sample model has been organized to include multiple namespaces. The Database View namespace is used to contain query subjects and query items that have been imported directly from the data source. The Business View namespace is used to contain query subjects and query items on which various modeling tasks have been performed, such as:

   - combining query items from multiple query subjects
   - creating calculated query items
   - creating model filters and query item filters
   - modifying and creating relationships between query subjects
   - setting of various query subject and query item, properties

   Objects that will be made available to authors are typically kept outside of these namespaces, for example the Sales and Marketing (query) folder.

   The Sales and Marketing (query) folder contains only shortcuts to objects elsewhere in the model. Some of those objects, contained elsewhere in the model, have been included in the package. In the Package Definition, you noted that some objects were made hidden, including the Business View namespace. In Cognos Analytics, when the author creates the report and uses the Revenue item, they are using a shortcut to a hidden object in the package. In this case, it is the Revenue query item, from the Sales fact query subject, in the Business View namespace.

   You will now identify the source for the Revenue query item from the Sales fact query subject.

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10. Double-click the **Sales fact** query subject.

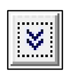
    This is a model query subject. Model query subjects can be used to create a more abstract, business-oriented view of a data source. For example, you can add business objects such as calculations and filters and combine query items from other query subjects, including other model query subjects.

    The Measures pane displays the measures and their source that make up this model query subject, including the Revenue measure. Also note that there are two calculated items: Product cost, and Planned revenue. For Revenue, there are two items to note:

    - The source is SLS_SALES_FACT.SALE_TOTAL.
    - The name is Revenue, indicating that the item was renamed from SALE_TOTAL

    From this, you can conclude that Revenue is sourced from SALE_TOTAL. To locate this object, you can search for it in the model.

11. Click **Cancel**, and then in the **Tools** pane on the right, click the **Search** tab.
12. Search for **SALE_TOTAL** using the **go_data_warehouse** model as the scope.

    Tip: Use the Search options  button to define your search.

13. Click the first instance that contains **SALE_TOTAL**.

    Objects in the Project Viewer pane expand, and you can see the SALE_TOTAL query item is located at go_data_warehouse > Database view > Sales and marketing data > SLS_SALES_FACT.

14. Double-click **SLS_SALES_FACT**.

    This is a data source query subject. Data source query subjects directly reference data in a single data source. IBM Cognos Framework Manager automatically creates a relational data source query subject for each table and view that you import into your model. It includes an SQL statement that will, at runtime, retrieve all the columns from the table. You will test this behavior and in turn locate the SALE_TOTAL column and its values.

15. Click the **Test** tab, click **Test Sample**, and then in the **Test results** window, scroll to the right to locate **SALE_TOTAL**.

    SALE_TOTAL is returned as a column.

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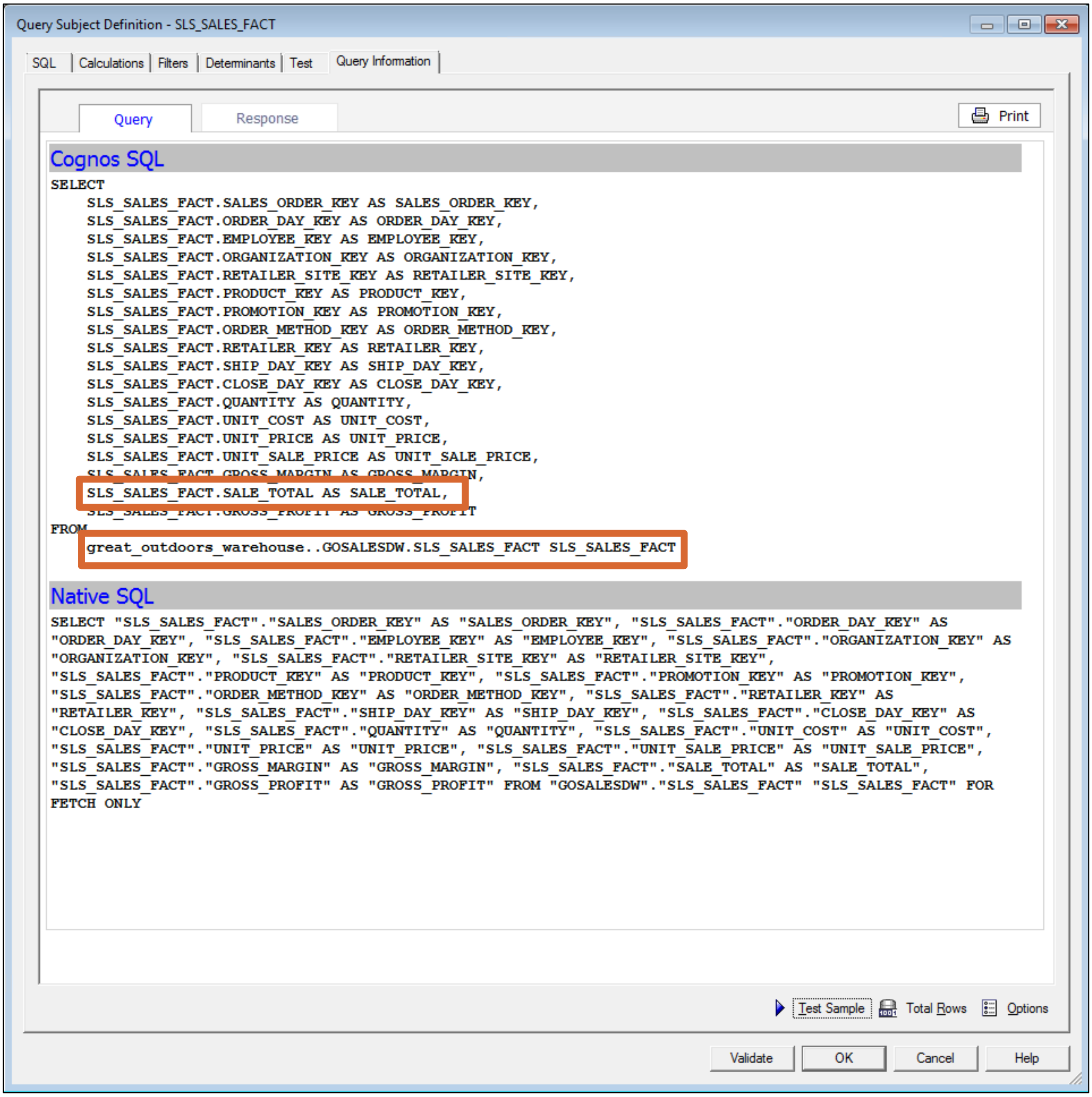
16. Click the **Query Information** tab.

    The results appear as follows:



This window also displays the SQL that is sent to the data source (Native SQL) and the SQL generated by the IBM Cognos query engine (Cognos SQL). In the Cognos SQL, you can see that the select statement includes all columns from the SLS_SALES_FACT table, including the SALE_TOTAL column. You can see that the "from" statement includes an object called great_outdoors_warehouse, and one called GOSALEDW. These objects represent the data source connections that are used at runtime. You will examine how these connections are defined in Task 6 when you view them in IBM Cognos Administration. For now, you will continue to examine how they are used in IBM Cognos Framework Manager.

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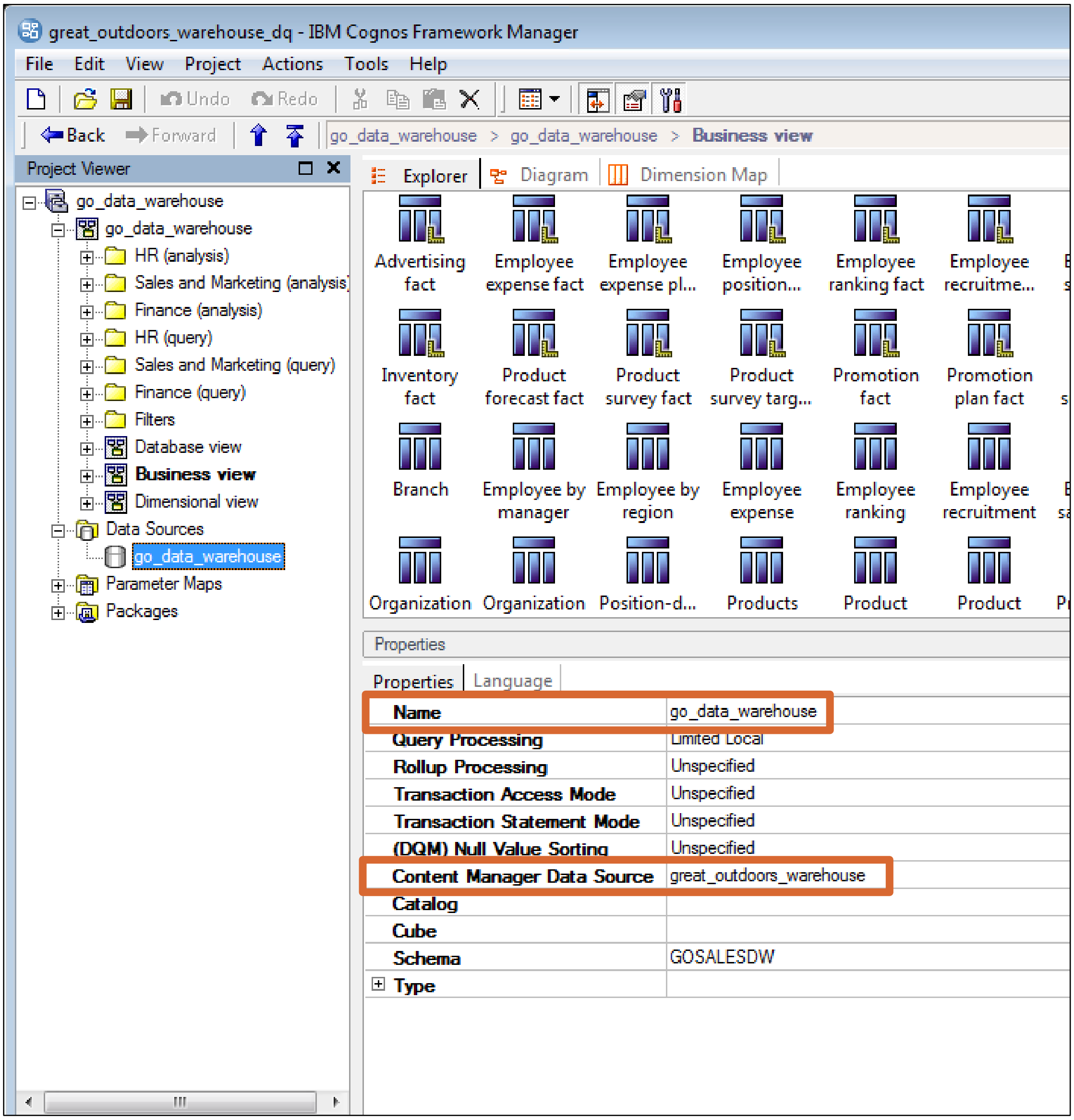
17. Click **Cancel**, and then in the **Project Viewer**, expand **Data Sources**, and then click **go_data_warehouse**.

    The results appear as follows:



From the information in the Properties pane, you can see that this model makes use of data source named go_data_warehouse, which uses a Content Manager data source named great_outdoors_warehouse. In this case, the modeler has opted to provide a different name for the model data source by editing the Name property in the Properties pane.

The Content Manager Data Source is the object through which:

- runtime data access is achieved
- the process of importing data source objects in to the model is accomplished

You will examine the import process by running the Metadata Wizard.

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18. In the **Project Viewer**, right-click **Database view**, and then click **Run Metadata Wizard**.

    You can import from a wide range of data source types.

19. Leave **Data Sources** selected, and then click **Next**.

    There are currently two or three data sources to choose from to perform the import. Clicking the New button will let you create a new data source provided you have the appropriate access rights to perform this action.

    One of the data sources is named great_outdoors_warehouse, and is the data source that was previously used to import objects in to this model. The name also matches the Content Manager data source name identified at step 16.

20. Click **great_outdoors_warehouse**, and then click **Next**.

    This data source points to a set of child data source objects, one of them being GOSALESDW. This name matches the object name identified when examining the SQL statement in step 16.

21. Expand **GOSALESDW** > **Tables**.

    This data source object includes a set of tables, which can be imported into the model. Included in this set is the SLS_SALES_FACT table.

22. Expand **SLS_SALES_FACT**.

    This table includes a set of columns, which can be imported into the model. Included in this set is the SALE_TOTAL column.

23. Click **Cancel**, and then close **IBM Cognos Framework Manager** without saving the project.

    Up to this point you have identified how the Revenue query item:

    - data values appear in an existing report in IBM Cognos Viewer
    - is used in a new report created in Report Studio
    - is made available to authors in a package that is published from IBM Cognos Framework Manager
    - is sourced and modeled in the IBM Cognos Framework Manager model
    - is imported into the IBM Cognos Framework model as the SALE_TOTAL column

Task 6. Examine data sources in IBM Cognos Analytics.

You will now take on the role of the administrator to examine how data source connections are defined in IBM Cognos Administration.

1. Open **Internet Explorer**, and then navigate to **http://vclassbase:9300/bi**.
2. Log on as **admin/Education1**.
3. On the **Side panel**, click **Manage**.

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4. Click **Administration console**.

   IBM Cognos Administration is the portal that allows you to monitor and administer the IBM Cognos Analytics system including servers, security, capabilities, data source connections, and the deployment of content. In the current security environment, Admin is a member of the Directory Administrators role, which by default, provides access to the Directory pages of IBM Cognos Administration, including the ability to create and manage data sources.

5. Click the **Configuration** tab.

   The first node selected is Data Source Connections. Here you can administer existing data sources and create new ones. Note: The New button on the toolbar provides the same user interface experience for creating a new data source that is available in IBM Cognos Framework Manager in the Metadata Wizard.

   Existing data sources display; these are the same data sources that appeared when you ran the Metadata Wizard in IBM Cognos Framework Manager, at Task 5, steps 18 and 19.

6. Click the **great_outdoors_warehouse** data source.

   This data source includes a single data source connection named great_outdoors_warehouse. Note: You can have multiple data source connections for a single data source. For example, if you have multiple databases with exactly the same structure (but different data), you can create one data source with multiple connections. The data source connection identifies which database you want to connect to.

7. Under **Actions**, click **Set properties - great_outdoors_warehouse** , and then click the **Connection** tab.

   This connection is configured to connect to a DB2 database. There are many types available for creating connections.

8. Beside the **Connection string** box, click **Edit the connection string** .

   The connection is to a database named GS_DB, and under Signon, a signon has been configured for this connection. You will now examine the signon.

9. Click **Cancel** twice, and then click the **great_outdoors_warehouse** connection.

   This connection includes a single signon named great_outdoors_warehouse. The database signon identifies the user's rights in the database. You can have multiple database signons that have access to different tables. Within the database, you can create sets of tables with different owners or schemas, and then provide access to these with the appropriate signon.

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10. Under **Actions**, click **Set properties - great_outdoors_warehouse**, click the **Signon** tab, and then click **Edit the signon**.

    This signon is configured to connect to the GOSALESDW schema using the credentials of the GOSALESDW user. The GOSALESDW schema is the object referenced in the generated SQL when you examined it in IBM Cognos Framework Manager (Task 5, step 16)

11. Close **Internet Explorer**, closing all tabs if prompted.

    You have identified how the connection is made to the underlying data source. Next, you will examine the required data source objects as they appear in IBM DB2.

Task 7. Examine underlying data source objects.

1. From the **Start** menu, navigate to **All Programs**>**IBM Data Studio**>**Data Studio 4.1.0.0 Client**.
2. Click **OK** to close the Workspace Launcher.
3. From the **Administration Explorer** pane, expand **localhost**, **50000**, and then double-click **GS_DB [DB2 Alias]**.
4. In the **Properties for GS_DB** window, on the **General** tab, in the **User name** field type **db2admin**, and then in the **Password** field type **Education1**.
5. Click the **Save password** check box, and then click **OK**.
6. Double-click and expand **GS_DB**.

   The GS_DB database connection is active and folders are displayed. This is the database identified at Task 6, step 6.

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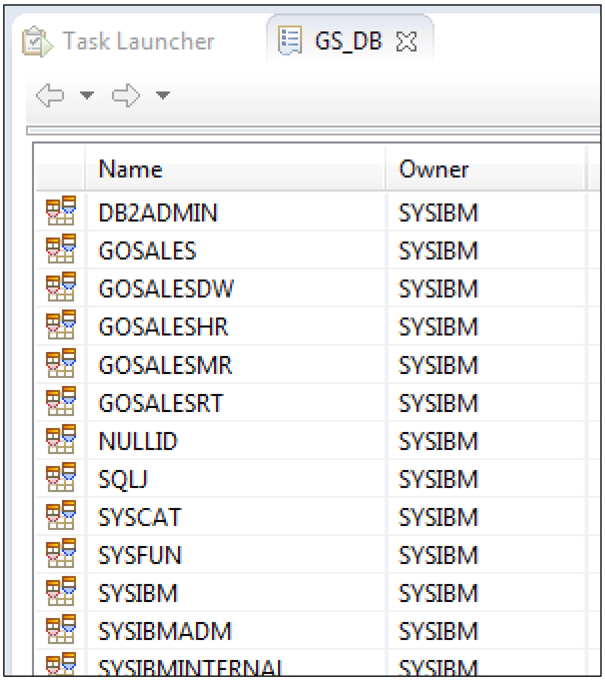
7. From the **Administration Explorer** pane, click the **Schemas** folder.

   The Schemas folder is displayed in the central pane. This is the schema that the great_outdoors_warehouse data source is connecting to as identified in Task 6, step 8.

   A section of the results appear as follows:



Name	Owner
DB2ADMIN	SYSIBM
GOSALES	SYSIBM
GOSALESDW	SYSIBM
GOSALESHR	SYSIBM
GOSALESMR	SYSIBM
GOSALESRT	SYSIBM
NULLID	SYSIBM
SQLJ	SYSIBM
SYSCAT	SYSIBM
SYSFUN	SYSIBM
SYSIBM	SYSIBM
SYSIBMADM	SYSIBM
SYSIBMINTERNAL	SYSIBM

8. From the **Administration Explorer** pane, click the **Tables** folder.
9. Scroll down to **SLS_SALES_FACT** (in the name column).
10. Right-click **SLS_SALES_FACT**, point to **Data**, and then click **New "Select" Script**.
11. From the toolbar, click **Run SQL** .

    The query executes and returns data from all the columns in the table.
12. From the **Properties** pane, at the bottom of the pane, click the **Result1** tab on the lower right pane.
13. Scroll to the right to locate the **SALE_TOTAL** column and its values.

    You have traced the Revenue item in the Total Revenue by Country report all the way back to its source in the underlying data source and have identified how the IBM Cognos Analytics system works.
14. Close all open windows.

Results:
You obtained a high-level view of how IBM Cognos Analytics works by navigating through the system and tracing the lifecycle of a data item, from its appearance in a report to its existence in an underlying data source.

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IBM Training

Extend IBM Cognos Analytics

- IBM Cognos provides a wide variety of ways to extend IBM Cognos Analytics.
- For more information, please visit the IBM Cognos Web site http://www-01.ibm.com/software/analytics/cognos/.

Introduction to IBM Cognos Analytics (v11.0)

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Extend IBM Cognos Analytics

Cognos products that extend IBM Cognos Analytics include:

- IBM Cognos for Microsoft Office (integrate IBM Cognos content with MS Office)
- IBM Cognos Mobile (IBM Cognos content on mobile devices)
- IBM Cognos Analysis for Microsoft Excel (multidimensional analysis on IBM Cognos BI data in MS Excel spreadsheets)
- IBM Cognos Mashup Service

For developers, there is also IBM Cognos Virtual View Manager, which allows for access to an even wider variety of data sources, and the IBM Cognos SDK for customization and application development.

For those requiring access to real-time monitoring of operational data, IBM Cognos offers IBM Cognos BI Real-time Monitoring, which delivers highly visual, interactive, and self-service dashboards, data integration, analysis, and reports.

You can incorporate TM1 widgets into IBM Cognos to allow users to interact with financial plans.

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IBM Training

Unit summary

- Describe IBM Cognos Analytics and its position within an Analytics solution
- Describe IBM Cognos Analytics components
- Describe IBM Cognos Analytics at a high level
- Describe IBM Cognos Analytics security at a high level
- Explain how to extend IBM Cognos Analytics

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Unit summary

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