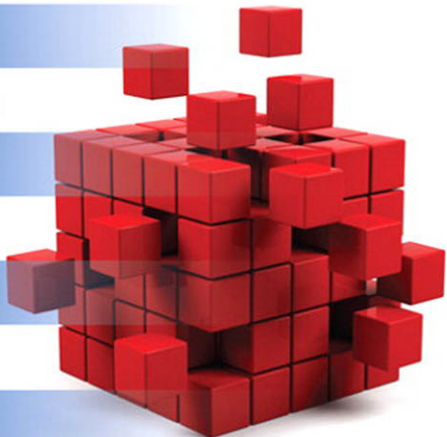


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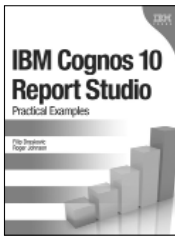


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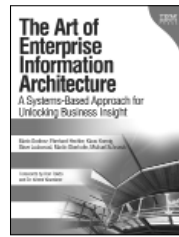
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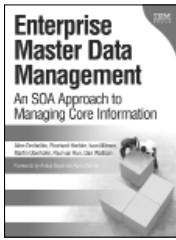
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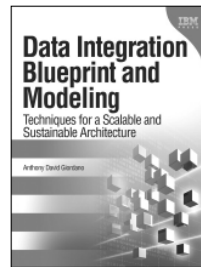
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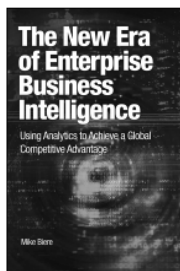
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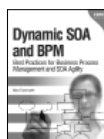
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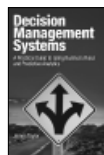
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# **IBM Cognos Business Intelligence v10**

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**Sangeeta Gautam**

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*With my deepest gratitude, respect, and appreciation  
I dedicate this book to my mentor  
Dr. Daisaku Ikeda.*

*Thank you, Sensei, for being my mentor, for always believing in me,  
and for teaching me how to live a creative and contributive life.*

\* \* \* \*

*I thank my mom, Sudha, the most amazing woman and my best friend—  
my Dad, Sureshwar—for making me a part of your lives  
and for the many beautiful memories I hold in my heart forever!*

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# Foreword

Business Analytics is one of IBM's core initiatives, as defined by our Chairman. It's core because it is IBM's goal to bring to its clients and business partners tools and technologies that can accelerate the process of gaining greater insights from data to drive better outcomes. We at IBM have been committed to this goal for more than a century, starting with time-recording systems and punched cards to the world's first magnetic storage systems. The tools have changed but the drive to deliver value to our clients remains, and our commitment to provide the best tools and technologies, along with the services to implement them, drives every IBM employee in the Business Analytics and Optimization group.

The book is unique in that it captures techniques and leading practices to successfully implement a Cognos BI solution. It embraces the entire Cognos BI audience and integrates the knowledge required by the different roles people play in a Cognos BI implementation. It does this by bringing forward the key questions you should be thinking about for the role you play as a Project Manager, Cognos BI Architect, Cognos Developer, End-User, and so on, and provides an overarching approach to integrating these roles into a cohesive delivery plan.

IBM Cognos BI v10 brings to the BI industry a complete suite of reporting and analysis tools that easily integrates with other Cognos software, such as IBM Cognos TM1, SPSS, and Cognos Insight, to provide a complete and robust performance management platform. In this new era of big data where so much information is available readily, in both structured and unstructured form, the challenge at hand is to timely and effectively use this information to make decisions. That is what this book and IBM's approach to Business Analytics and Optimization is all about—enabling you to make sound decisions quickly and with the maximum amount of relevant data. No longer is it sufficient to base decisions solely on “gut instinct”; the implications of bad decisions are too great in the current environment. Rather, leveraging experience with data to lead to better, fact-based decisions is where we think the future is, and our tools enable this process.

*Adam L. Crafton*

*Vice President, Business Analytics and Optimization, IBM Global Business Solutions*



# Preface

As the author, I am excited and happy to bring to you *IBM Cognos Business Intelligence v10!* The driving force behind my writing the book is to bring to you the new exciting features of IBM Cognos BI v10 and the concepts and techniques that are essential when implementing an IBM Cognos BI solution, all in one place! I hope you will discover features, concepts, and approaches that enable you to unleash the power of IBM Cognos BI v10 and successfully and efficiently implement an IBM Cognos BI solution.

The key features of the book include:

- **New IBM Cognos BI v10 features are discussed in a way that is easy to understand and implement:** The book focuses on bringing to you the features available in IBM Cognos BI v10 (that you have always waited to use!), in a way that is easy to understand, use, and implement. Topics covered are followed by step-by-step instructions and supplemented with screen shots to support your learning experience.
- **Features and components available in IBM Cognos BI v10 and its suitable audience, that is, who should use it:** The book describes features and components and its targeted audience. This information should be especially helpful to the stake holders/end users, IBM Cognos BI architects, business analysts, and project managers as they plan to build an IBM Cognos BI solution. I hope it helps with the decision-making process, that is, which components of IBM Cognos BI should be used to implement the requirements when planning the Cognos BI solution.
- **Empower team understanding and integration points:** The book embraces all the IBM Cognos BI audience, for example, end user, business analyst, project manager, Cognos developer, IBM Cognos BI architect, and Cognos administrator thus providing a base for the entire team to converge. Irrespective of the role you play on the IBM Cognos BI project, you should read through the section, “In a Nutshell: Reviewing by IBM Cognos BI Audience,” at the end of each chapter. This section helps bridge the gap between the different team roles by bringing forth the high-level, role-specific questions that you should be thinking about. This section enables and enhances the understanding and appreciation of the high-level tasks performed by each subteam you interact with.

- **Introduces basic concepts of Data Warehousing and Business Intelligence:** The book introduces you to the concepts of Business Intelligence and data warehousing, and gives you a jump start if you are new to the realm of Business Intelligence. The concepts are explained in an easy-to-understand manner to enable you to get an understanding and appreciation of how Business Intelligence solutions are implemented.
- **IBM Cognos Project Management outline:** The book covers topics on Cognos Project Management that will be useful to project managers implementing an IBM Cognos BI solution. It includes the different types of IBM Cognos BI implementations. It also outlines the phases in a typical IBM Cognos BI project and its related tasks as well as associated resources.
- **Cognos Certification Test questions:** The book includes sample Cognos Certification questions and related information to help you prepare for the exam.

This book can provide valuable insights and help you to unleash the power of IBM Cognos BI v10 and serve as a handbook and companion on your journey to implementing a robust IBM Cognos BI solution.

I hope you will enjoy using the book as much as I enjoyed bringing it to you!

# Acknowledgments

I am appreciative of IBM for providing a unique culture to grow, learn, and express myself. I am thankful for the opportunity to work with an amazing team of proactive, talented, and supportive professionals around the globe. Without their unrelenting support and guidance, the book-writing journey would not have been a complete, exciting, and a wonderful experience! Thank YOU for making IBM a truly wonderful place to be!

I am thankful to IBM MAIN for providing a forum to network and learn from my peers and senior executives. My warmest gratitude, appreciation, and thanks to MAIN executive sponsors for connecting me to IBM Press and always being ready to help and guide MAIN.

I thank John Hoh for providing opportunities to grow, while always watching over me as I waded through the chartered territories—being a wild-duck (must watch IBM Centennial film!).

I express my deepest gratitude to IBM Press, the team at Pearson, and others who have worked tirelessly behind the scenes to make this book possible. I offer my appreciation and gratitude to Mary Beth Ray, executive editor at Pearson for supporting me in every way and patiently guiding me through the entire process; to Christopher Cleveland, senior development editor for helping me with all the details along the way and for his amazing editing skills that makes the book a little better with each edit; Eleanor Bru for her help with the editing process; Lori Lyons, senior project editor, for her invaluable support in getting to production; Vanessa Evans, editorial assistant, for always making herself available when I needed help; and San Dee Phillips, copy editor, Kathy Ruiz, proofreader, for helping make the content easy and embraceable for the audience worldwide.

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I am grateful to my many colleagues who remain unnamed here and have contributed graciously both their time and insights. I want you to know I am truly thankful for your behind-the-scene support.

I thank my family and friends for their loving presence in my life because each of you makes the rainbow of my life complete!

I am thankful to all the IBM clients, coworkers, and those in my environment for making me think beyond what was readily available; the book is a manifestation of your inquisition, queries, pain points, and desire to accomplish your goals using IBM Cognos BI. My hope is you will find here answers to your uppermost questions as you plan and work through your IBM Cognos BI implementation.

Thank YOU, the readers of the book who have chosen it as your companion on your journey to implementing an IBM Cognos BI solution. It is your reading that gives the book its true meaning and worth!

Bon Voyage!

# About the Author

**Sangeeta Gautam** is a Certified IBM Consultant for IBM Global Business Services, Business Analytics and Optimization (BAO). Sangeeta joined IBM (USA) in 2002 as a part of Pricewaterhouse Consulting acquisition, with rich international experience in the field of Information Technology. Since coming to IBM she has served as a Cognos Subject Matter Expert and has been teaching Cognos at IBM for last 5 years, along with consulting.

She has more than 10 years of hands-on experience working with Cognos and has worked as Technical Lead in both private and public sector projects. She took on multiple lead roles for IBMs product design and development of *WorkForce Analytics* during its inception, working closely with the Cognos Software Development group. She was also co-presenter at the Cognos User Forum in Boston presenting with the Client the Cognos solution in Education industry and speaker at IBM's Business Analytic Forum, Information on Demand.

A mathematician by education, Sangeeta is also a Certified Project Management Professional (PMP). She specializes in the field of Data Warehousing and Business Intelligence solutions.

Always eager to learn and share, she spontaneously adventures into the uncharted territories enjoying the new experience as it unfolds! Passionate about leaving a better world for the next generation, she enjoys supporting activities like Victory Over Violence and building a peaceful world through exchange of peace, education, and culture.

# Query Studio

*Query Studio is a core IBM Cognos BI component and is installed as part of the IBM Cognos BI Server install. It is an end-user ad-hoc query tool for business users and business analysts who need to explore the data to quickly answer various business questions. Query Studio is easy to use and requires little or no training.*

*Query Studio uses relationally and dimensionally modeled data and uses the same administration process and security already defined in the IBM Cognos BI environment. It is a web-based component used to perform analysis and explores data to answer simple business questions quickly. Like any other tool, you should be familiar with your organization's data to build meaningful queries.*

*Cognos Workspace Advanced is the logical upgrade path for IBM Cognos BI V10.x users that brings together Query Studio, Analysis Studio, and Report Studio Express features, all in one place. If you are a legacy IBM Cognos 8.x user, you can continue to use your queries from IBM Cognos BI 8.x in IBM Cognos BI v10.x; however if you plan to build new reports for query and analysis, it is recommended you tap into the rich capabilities of IBM Cognos Workspace Advanced.*

## Launch Query Studio

You can launch Query Studio from the Welcome screen by clicking **Query my data** under **My Actions** section or from the **IBM Cognos Connection** launch option, click **Launch > Query Studio**.

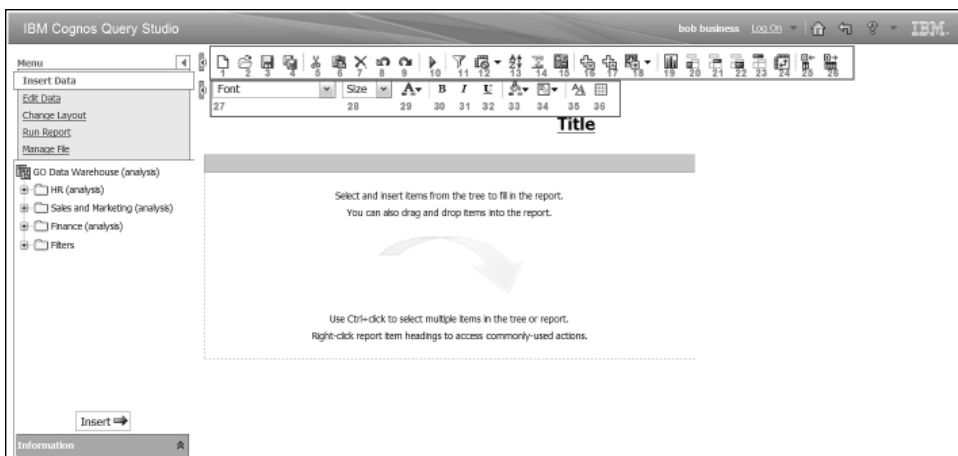
When you launch Query Studio, you must select a package that contains the metadata for your reporting, for example, *Go Data Warehouse (query)*. You can work with both dimensional and relational packages; although, relationally modeled data is more suited for Query Studio. You can work with one package at a time.

When you launch Query Studio and choose a package, you are taken to a blank Query page with data items and other prebuilt objects such as filters available in the package in the *Menu* pane.

Before you start creating your report using Query Studio, you must ensure that the meta-data is available via a Framework Manager package and has been published to IBM Cognos Connection. You should also ensure that the package contains all the information you need to build your report.

## Query Studio High-Level Interface

Query Studio interface is easy to use and consists of the following main areas: **Menu pane**, **Standard toolbar**, **Style toolbar**, **Information pane**, and the **Work area**, as shown in Figure 5.1.



**Figure 5.1** Query Studio – high-level interface.

The **Menu pane** has **Insert Data**, **Edit Data**, **Change Layout**, **Run Report**, and **Manage File** options. Commonly used features discussed here also display in the Standard toolbar for easy access. Each option is discussed in the sections that follow.

## Insert Data

The **Insert Data** menu enables you to add data items from the data tree to the report. It consists of three options:

- **Package Structure:** Displays the data tree of data items in the selected package that you can use to build your report
- **Insert button:** Adds the selected data item to the report in the work area
- **Information pane:** Displays related information on the selected data items enabling you to confirm that the selected item is the one that you want to work with

## Edit Data

The **Edit Data** menu enables you to work with data in your report and enhance your report by using options such as sort, suppress, filter, create calculations, and so on.

- **Filter:** Enables you to filter unwanted data from the report, as shown as option 11 in Figure 5.1.
- **Combine Filters:** Enables you to combine two or more filters to create a complex filter condition.
- **Suppress:** Enables you to suppress rows with *Zero values*, *Divide by zero*, *Missing values*, and *Overflow values* from the report, as shown as 12 in Figure 5.1.
- **Sort:** Specifies sort options as *Ascending (A–Z)*, *Descending (Z–A)*, and *Don't sort*. Sort option is shown as 13 in Figure 5.1.
- **Summarize:** Adds or removes footer values and changes how the footer values are calculated. You can choose a function appropriate for summarizing the data in the report, for example, *Total*, *Maximum*, *Minimum*, *Median*, *Average*, *Standard Deviation*, *Variance*, *Count*, *Count Distinct*, *None*, as shown as 14 in Figure 5.1. The options available to you are context-sensitive and depend upon the selected item in the report.
- **Format Data:** Specifies additional data formatting. The options available vary depending upon the item selected in the report. For numeric values you can specify the category of the item, for example, *Currency*, *Number*, *Percentage*, and *Scientific*. Depending upon the category you specify, the related additional options such as scale, number of decimal places, and more can be specified.
- **Calculate:** Enables you to create calculations, for example, items not already in the database, as shown as 15 in Figure 5.1.
- **Define Custom Groups:** Enables you to group columns in the report into other meaningful groupings required by the business for analysis.
- **Drill Down:** Displays lower level data in a dimensional report, as shown as 16 in Figure 5.1.
- **Drill Up:** Displays higher level data in a dimensional report, as shown as 17 in Figure 5.1.
- **Go To:** Displays links to any related target reports; clicking the link takes you to the selected report, as shown as 18 in Figure 5.1.
- **Rename Column Heading:** Enables you to change the default column heading.
- **Cut:** Enables you to remove the item and hold it in the clipboard, as shown as 5 in Figure 5.1.
- **Paste:** Enables you to paste items from the clipboard, as shown as 6 in Figure 5.1.
- **Delete:** Enables you to delete the selected item and remove it from the report, as shown as 7 in Figure 5.1.



- **Undo:** Enables you to undo your previous action, as shown as 8 in Figure 5.1.
- **Redo:** Enables you to redo a change that you undid using Undo, as shown as 9 in Figure 5.1.

## Change Layout

The **Change Layout** menu enables you to enhance the look and feel of the report by adding a title to the report, change fonts and styles, group the data, apply page breaks, and more.

- **Chart:** Displays the data in a chart form. You can choose from a variety of chart types, for example, pie, bar, line, gauge, scatter, and more, as shown as 19 in Figure 5.1.
- **Define Conditional Styles:** Highlights important information in the report when a business condition is satisfied.
- **Change Font Styles:** Formats an object in the report, for example, font, font size, font color, or the font background color, as shown as 29 in Figure 5.1.
- **Change Border Styles:** Enables you to format the borders of tables and sections in the report, as shown as 36 in Figure 5.1.
- **Reset Font and Border Styles:** Enables you to restore the styles from the template after making a change.
- **Apply Template:** Enables you to change the default systemwide Query Studio template to another template and give it a new look. The new template must be created in Report Studio and then used in Query Studio.
- **Edit Title Area:** Specifies the title and subtitles for the report.
- **Set Web Page Size:** Enables you to specify the number of rows you want to display on the screen.
- **Set Page Breaks:** Enables you to specify the page breaks based on a grouped or sectioned column. Each value of the grouped/sectioned column appears on a new page.
- **Group:** Groups identical values in a report column together, as shown as 20 in Figure 5.1.
- **Pivot:** Creates a Crosstab report using the data in the list report, as shown as 21 in Figure 5.1.
- **Ungroup:** Display repeated values in the report by removing the grouping applied via *Group* option, as shown as 22 in Figure 5.1.
- **Create Sections:** Enables you to break the report into different sections based on the column you choose to section on. The column used for creating a section displays as the section header, as shown as 23 in Figure 5.1.
- **Swap Rows and Columns:** Changes the existing rows in the report as column values and columns as rows to get another perspective of the same data, as shown as 24 in Figure 5.1.

- **Collapse Group:** Temporarily removes progressive levels of detail from the report, as shown as 25 in Figure 5.1.
- **Expand Group:** Restores the collapsed levels in the report, as shown as 26 in Figure 5.1.

## Run Report

The **Run Report** menu enables you to specify the report output type, such as PDF, Excel, and more. You can also enable or disable drill up, drill down, and drill through options from here as well as control summary options.

- **Run with All Data:** Runs the report using all the data from the data source, as shown as 10 in Figure 5.1
- **Preview with Limited Data:** Runs the report using partial data from the data source and works only with relational data source. Rollups are not computed in this mode. Reports based on packages with design filter have improved performance in this mode.
- **Preview with No Data:** Runs the report using no data and is typically used during designing the report.
- **View in PDF Format:** Enables you to generate the report output in PDF.
- **Specify PDF Options:** Enables you to specify the orientation and page size of the PDF report.
- **View in Excel 2007 Format:** Enables you to generate reports that you can view in Microsoft Excel 2007.
- **View in Excel 2007 Data Format:** Enables you to render the data for a list report to view in Microsoft Excel 2007.
- **View in Excel 2002 Format:** Enables you to generate reports that you can view in Microsoft Excel versions earlier than 2007.
- **View in CSV Format:** Enables you to view list reports in Comma Separate Values (CSV) format.
- **View in XML Format:** Enables you to view the report in XML format.
- **Advanced Options:** Provides two runtime options that you can enable or disable via check boxes.

### Query Options:

- **Automatically Generate Footer Summaries for Measure:** Turn off the automatic generation of summaries for measures by clearing the check box.
- **Automatically Summarize Detail Values, Suppressing Duplicates:** Turn off the automatic suppression of duplicates of detail values by clearing the check box.

**Drill Options:**

- **Enable Drill Up and Drill Down in the Report Output:** Turn off the drill up and drill down functionality by clearing the check box. By default, drill up and drill down is enabled. This is applicable to dimensional reports only.
- **Enable Drill Through from a Package in the Report Output:** Enables or disables navigation to another report for detail information. By default, this option is enabled. You can navigate to another Query Studio report, Report Studio report, Analysis Studio Analysis, IBM Cognos Series 7 cube action, and a Microsoft Analysis action.

**Manage File**

The **Manage File** menu enables you to manage your Query Studio report. For example, from here you can open the Query Studio report with Report Studio, save the currently opened report, create a new report, or open an existing report. Some options available here are also available to you from other menu options.

- **New:** Enables you to create a new Query Studio report, as shown as 1 in Figure 5.1 on the Standard toolbar.
- **Open:** Enables you to open an existing Query Studio report, as shown as 2 in Figure 5.1 on the Standard toolbar.
- **Open in Report Studio:** Enables you to open the Query Studio report in Report Studio.
- **Save:** Enables you to save the report that you can use later, as shown as 3 on the Standard toolbar in Figure 5.1.
- **Save As:** Enables you to save the report with a new name and reuse the work done earlier, as shown as 4 on the Standard toolbar in Figure 5.1.
- **Report Definition:** Enables you to troubleshoot report problems. It has two options:
  - **Report Definition:** Displays the expression for each report item.
  - **Query Information:** Displays the query information for each report item. Using this option you can view the XML definition of the report; it is useful when troubleshooting with Cognos Support.
- **My Preferences:** Enables you to specify the default settings for your session. Changes you make here are valid for your session only and do not impact other users. Use this option to change the settings for the following:

**Default data display:**

- Run with All Data (default)
- Preview with Limited Data
- Preview with No Data

**Default template:**

- Apply a template (Select a template)

**Default filter dialog for value selection:**

- Default (default)
- Pick values from a list
- Search for values
- Type in values

**Advanced Run-time Options:**

- **Query Options:**
  - Automatically generates footer summaries for measures
  - Automatically summarizes detail values, suppressing duplicates
- **Drill Options:**
  - Enables drill up and drill down in the report output
  - Enables drill through from a package in the report output

**Standard Toolbar Options**

The Standard toolbar contains icons for frequently performed actions for easy access. These options are also available via the Menu pane and are discussed there. Standard toolbar options are demonstrated in Figure 5.1.

Options **New** (shown as 1 in Figure 5.1), **Open** (shown as 2), **Save** (shown as 3), **Save As** (shown as 4), **Cut** (shown as 5), **Paste** (shown as 6), **Delete** (shown as 7), **Undo** (shown as 8), and **Redo** (shown as 9), have same functionality as discussed in the section “Menu Pane” earlier in the chapter.

- **Run:** Enables you to choose the report output type, for example, HTML, PDF, Excel, CSV, or XML.
- **Filter:** Enables you to define a filter for the report to remove unwanted data. You can combine filters to create complex filter conditions using AND and OR operators.
- **Suppress:** Enables you to suppress row with *Zero values*, *Divide by zero*, *Missing values*, and *Overflow values* from the report.
- **Sort:** Specifies sort options as ascending or descending.
- **Summarize:** Enables you to create summary calculations for selected sets, for example, *Sum*, *Average*, *Maximum*, *Minimum*, *Median*, *Variance*, *Standard Deviation*, and *Count*.
- **Calculate:** Creates a calculation for one or more columns. Options available depend upon the number of rows (or columns) selected.

- **Drill-Down:** Displays lower levels of detail in dimensional reports. You can drill down in the report until you reach the lowest level.
- **Drill-Up:** Displays higher levels of detail in dimensional reports. You can use drill up until you reach the highest level in the report.
- **Go To:** Enables you to invoke a related Cognos report for further analysis.
- **Chart Type:** Enables you to choose a chart type appropriate for your analysis, for example, Column, Bar, Pie, Line, Pareto, Area, Radar, and Point.
- **Group:** Enables you to remove duplicate values in the report and display them as a group.
- **Pivot:** Creates a Crosstab report.
- **Ungroup:** Enables you to ungroup the column you grouped using **Group**.
- **Create Sections:** Enables you to divide the report based on a column on which you create a section. The sectioned column becomes the header and is removed from the list report. A section is created for each distinct value of the sectioned column.
- **Swap Rows and Columns:** Changes the existing rows in the analysis as column values and columns as rows to get another perspective of the same data.
- **Collapse Group:** Enables you to collapse the detail portions of the report and display only the high-level information. You can collapse only those reports that have a measure and do not have custom groups.
- **Expand Group:** Enables you to restore the collapsed information in the report. This option is applicable to reports that have a measure and do not contain custom groups.

## Report Types

You can create both relational and dimensional reports using Query Studio. You should choose to create a relational report if you do not require drill-up and drill-down capability. Dimensional reports are appropriate if you need to drill up and drill down the data. The package type, relational or dimensional, is designed by the metadata modeler for you. Figure 5.2 illustrates the different options available to you in the relational and dimensional model, and how they appear in the user interface.

### Relational Style

Relational style reports use relational data sources. You can create List, Crosstab, and Charts using relational data.

In the *Insert Data* menu the metadata tree is organized in *Namespaces*, which contain *Query Subjects*, as shown in Figure 5.2. *Query Subjects* are like tables in a database that contain logically related items together. *Query Subjects* are made of one or more *Query Items*. You can compare *Query Items* to columns in a table. You may either drag and drop an entire *Query Subject* in to your List report or selected query items.

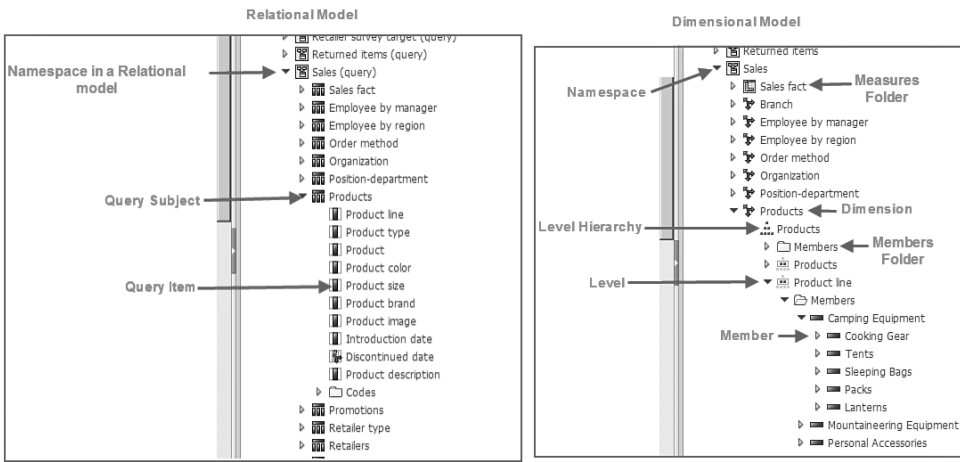


Figure 5.2 Relational and dimensional model structures.

### Dimensional Style

To work with dimensional style reports, you should work with dimensionally modeled relational data sources or an OLAP data source. When working with the dimensional style, the *Insert Data* menu shows in the data tree: dimensions and members.

Before you build your report in Query Studio, you should become familiar with the objects available to you in the dimensional model. Listed next are objects you can use to build your Query Studio report. These options are also illustrated in Figure 5.2.

*Namespaces* are logical or functional groupings of dimensions and measures.

*Dimensions* are logical groupings of descriptive data that aligns with a business function, for example, Branch, Order Method, Products, as demonstrated in Figure 5.2. *Dimensions* are further made up of levels, members, and hierarchy. *Levels* and *members* provide detailed information about the dimension.

*Hierarchy* is the further grouping of data within the dimension and determines the navigation paths available for the dimension.

*Members* contains members for the hierarchy or level.

*Level* defines the position within the dimensional hierarchy that contains information at the same level of detail with common attributes. Each level has its own set of items that show up as rows or columns in a crosstab report. This information is derived from the underlying data source.

The data tree may appear as shown in Figure 5.2, for example, **Package > Folder > Namespace > Fact > Measure**. In the same namespace you can have **Dimension > Hierarchy > Level > Level Attribute > Member**.

Dimensions, Measures, hierarchies, and more are explained in further detail in Chapter 11, “IBM Cognos Framework Manager.”

Using Query Studio you can build List, Crosstab, and Chart reports. One report type is not better than the other; the choice is typically guided by the preference of the report audience and purpose of the report.

### List, Crosstab, and Chart Reports

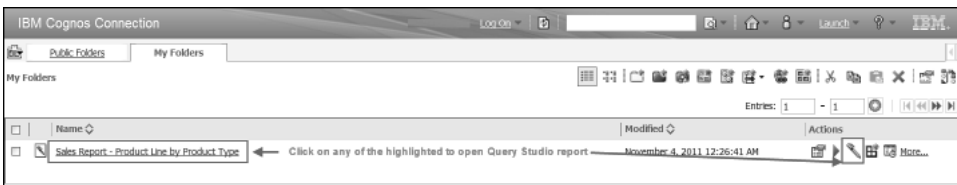
A **List** report is a good option when you want to display detailed information in a tabular format. By default, repeated information displays multiple times until you group the data on one or more repeated columns as needed for your reports. Use the *Group* or *Ungroup* option from the toolbar. You can define Headers, Footers, and Summaries using a List report.

**Crosstab** reports are ideal for matrix type reports where you can have data items in rows and columns and numeric value, that is, a measure or metric, in the intersection cells. You can nest a Crosstab report by adding rows and columns or even measures. Crosstab reports enable you to enhance the reports and broaden the perspective using nested rows and columns. You can also display multiple measures in the same report to provide a comparison between different key performance indicators or metrics.

Use **Charts** to display data graphically. These are best-suited for showing key information quickly. There are many chart types available to you for use. Some of them are discussed later in this chapter. Query Studio supports Column, Line, Column and Line, Area, Bar, Pie, and Radar chart types. When working with charts you can choose the chart to be Standard, Stacked, 100 Percent Stacked, or 3-D Axis.

### Open an Existing Report

You can open an existing Query Studio report from IBM Cognos Connection, as shown in Figure 5.3. Clicking the report name or the query sign in the **Actions** column opens the report in Query Studio.



**Figure 5.3** Open a Query Studio report.

## Create a List Report

You can create a List report by inserting data items from the **Insert Data** menu. You can either drag and drop items from the data tree onto the work area (in certain browsers only) or use the insert button to add it to the report. When you use the **Insert** button, by default the column is added to the report as the rightmost column. However, if you click a column in the report and then click the **Insert** button, the new column is added to the left of the currently selected column in the report.

If there is more data than that can fit on a page, you see links for **Page Navigation** at the bottom of the work area, for example, **Top**, **Page Up**, **Page Down**, and **Bottom**. These links are context-sensitive and are available depending upon where you are in the report; for example, if you are on the first page of the report, the *Top* and *Page up* links will be disabled.

**Top:** Takes you to the first page, that is, the top of the report

**Page up:** Takes you to the previous page

**Page down:** Takes you to the next page

**Bottom:** Takes you to the last page of the report

**NOTE:** You can change the number of rows per page via the Change Layout > Set Web Page Size > Number of rows option.

## Steps to Create a Report

The steps to create a List report are described as follows and illustrated in Figure 5.4.

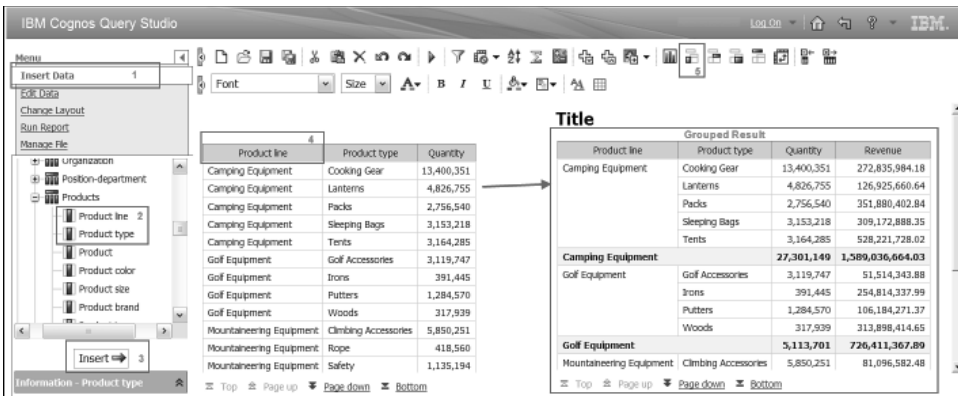


Figure 5.4 Create a List report and Group on Product line.

1. In **IBM Cognos Connection**, click **Launch > Query Studio**.
2. Select **GO Data Warehouse (query)** package, when prompted to select a package.



3. In the **Insert Data** menu navigate to **GO Data Warehouse (query) > Sales and Marketing (query) > Sales > Products > Product line** > click the **Insert** button.
4. In the **Insert Data** menu navigate to **GO Data Warehouse (query) > Sales and Marketing (query) > Sales > Products > Product type** > click the **Insert** button.
5. In the **Insert Data** menu, navigate to **GO Data Warehouse (query) > Sales and Marketing (query) > Sales > Sales fact > Quantity** > click the **Insert** button.

**NOTE:** There are repeated rows for Product line.

## Group Data

Group Data option enables you to group the data in report columns. You can group one or more columns.

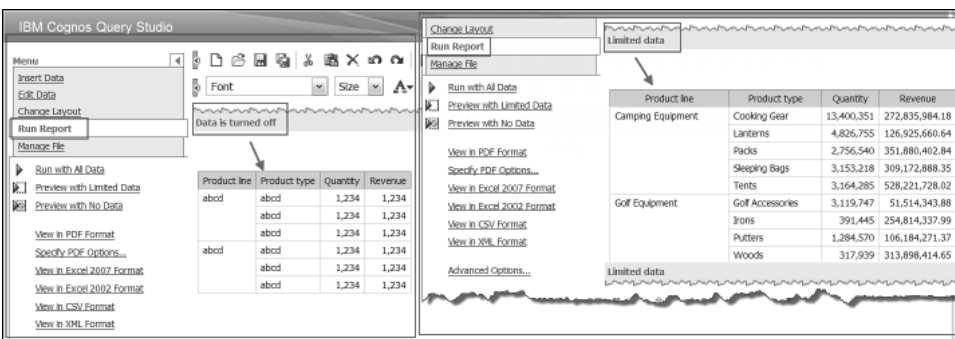
To group data, perform the following steps:

1. Click **Product line** > click the **Group** icon on the Standard toolbar.
2. Right-click **Sales fact > Revenue** column > select **Insert** to add *Revenue* to the report.

**NOTE:** For Internet Explorer users, if you use the drag and drop option, remember you must drop the Revenue column only when you see three blinking lines indicating the drop zones. Also, examine that the Revenue column is automatically summed based on the grouped column.

## Run the Report

To see the output of the report or to run the report in another format, that is, PDF, Excel 2007, and so on, use the **Run Report** menu option, as shown in Figure 5.5.



**Figure 5.5** Run data options – preview with no data and preview with limited data.

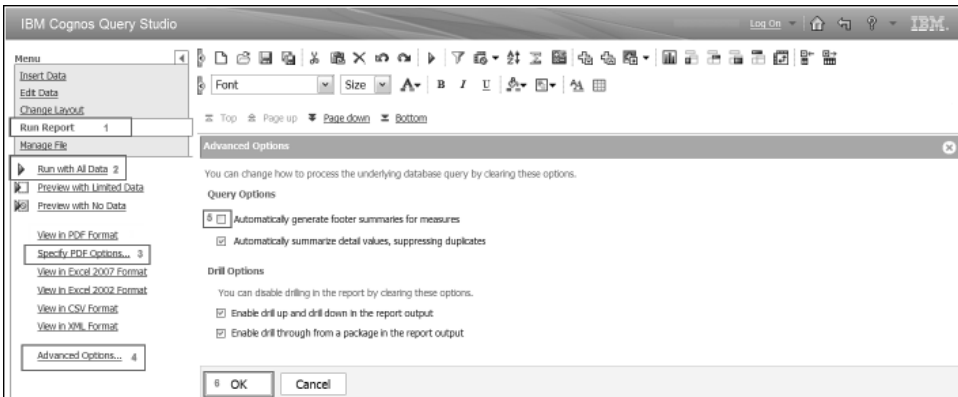
When you run the report, you can choose to run it without any data (**Preview with No Data**), with limited data (**Preview with Limited Data**), or all data (**Run with All Data**). While designing the report, running with no data or limited data is a good option because it reduces the traffic to the server to retrieve data until you are ready to test the data in the report.

You noticed that summaries were automatically generated when you added a numeric column to the report. You can suppress this via the **Run Report >Advanced Options... > uncheck the Automatically Generate Footer Summaries for Measure** option.

Running the report always displays current data from the database.

## Steps to Run the Report

Figure 5.6 demonstrates steps to run a report in Query Studio as described in the list that follows.



**Figure 5.6** Run a report.

1. Click **Run Report** menu > ensure **Run with All Data** is selected.
2. Click **Specify PDF Options...** > select **Paper size A3**.

**NOTE:** You can specify **Orientation** as *Portrait* (default) or *Landscape* via the radio button and enable or disable the **Page scaling** option via the check box.

3. Click **OK**.
4. Click **Advanced Options...** > under the **Query Options** section uncheck **Automatically Generate Footer Summaries for Measures**.

**NOTE:** You can also enable or disable the option **Automatically Summarize Detail Values, Suppressing Duplicates** (enabled by default).

5. Click **OK**.

**NOTE:** Notice that the Summaries are now removed from the report.

6. Click **View in PDF**.

You can access most options by right-clicking the report, as shown in Figure 5.7.

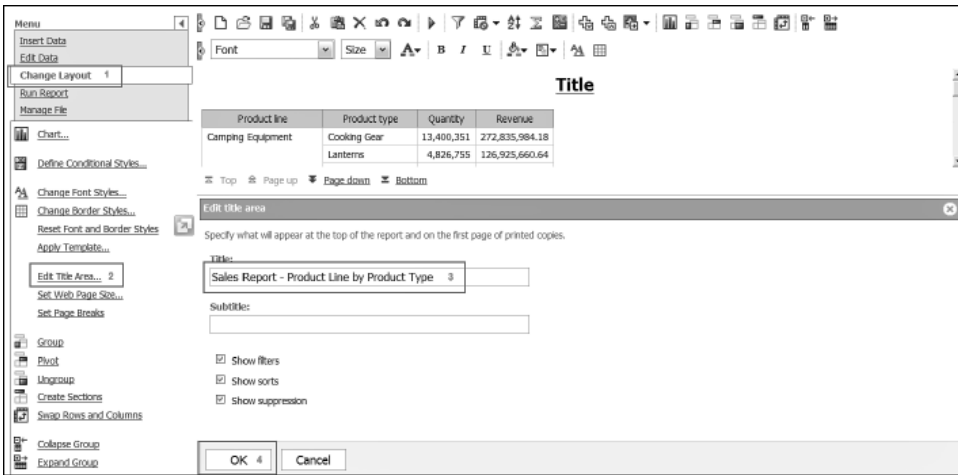
Product line	Product type	Quantity
Camping Equipment	Cooking Gear	12,400,351
	Lanterns	
	Packs	
	Sleeping bags	
Tents		
<b>Camping Equipment</b>		
Golf Equipment	Golf Accessories	
	Irons	
	Putters	
	Woods	
<b>Golf Equipment</b>		
Mountaineering Equipment	Climbing Access	
	Rope	
	Safety	
	Tools	
<b>Mountaineering Equipment</b>		
Outdoor Protection	First Aid	
	Insect Repellent	
	Sunscreen	
<b>Outdoor Protection</b>		

**Figure 5.7** Options available via right-clicking.

Additional options are available to you from here, for example, **Lineage** and **Glossary**. The *Lineage* option is available to you only if it has been configured by your Cognos BI Administrator. *Lineage* is helpful if you want to trace the data item in the report to its source, for example, which item it maps to in the package and the data sources the package uses. This is especially useful if similar data items exist in multiple data sources used in the package or report. It also enables you to view the filters applied by the data modeler and report author. You can either use the *Lineage* tool that comes with your IBM Cognos BI software or use another one that your Cognos BI Administrator can configure. The *Glossary* includes the terms and definitions in your IBM Cognos BI environment.

## Change Layout

Change Layout provides options that enable you to enhance the report format and layout, for example, provide report title, hide or show filter, sort, and suppression options in the report, as illustrated in Figure 5.8 and described in the list that follows.



**Figure 5.8** Change report title.

1. Click **Change Layout > Edit Title Area... > Type Sales Report – Product Line by Product Type** in the Title box.

**NOTE:** You can also provide a subtitle for the report here. By default any filter, sorting, and suppressions you have applied displays in the report; however, you can disable them by unchecking the options **Show filters**, **Show Sorts**, and **Show Suppression**, as required.

2. Click **OK**.

## Page Breaks

You can specify page breaks in the report to print logically or functionally related data on the same page, described in the steps that follow.

1. Click the **Product Line** (or any grouped or sectioned column in your report) > Click the **Set Page Breaks** link (in the **Change Layout** menu), as shown in Figure 5.9.
2. Click the **Undo** icon in the Standard toolbar to undo the page break settings.

## Create Sections

The Sections feature displays the data in sections. Creating a section divides the data in the report by the column it is sectioned on. The sectioned column becomes the section header, as shown in Figure 5.10.

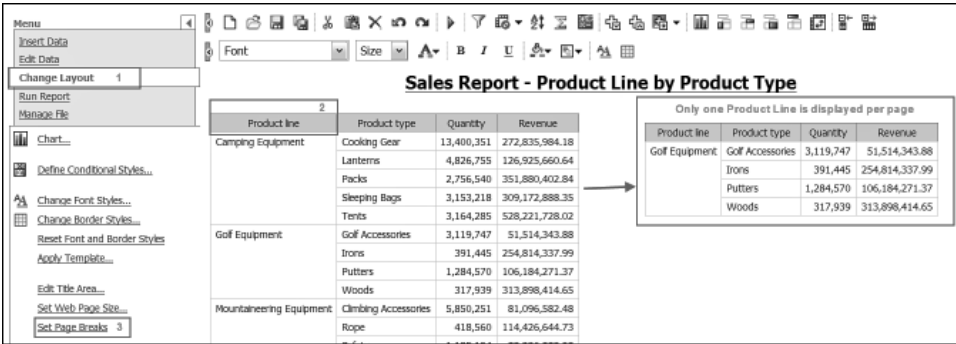


Figure 5.9 Set page breaks in the report.

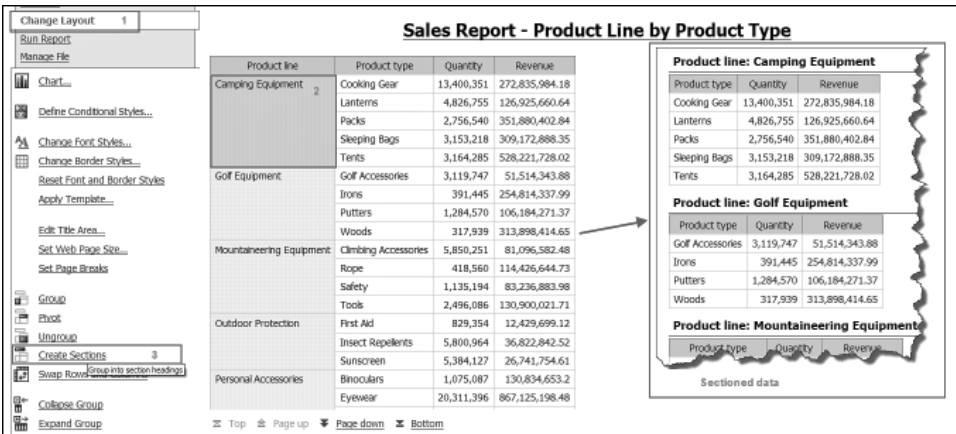


Figure 5.10 Display data in sections.

To create a section on the *Product line* column, click **Product line** column in the report > click **Create Sections** on the **Change Layout** menu.

**NOTE:** The sectioned column displays as the header and is no longer part of the list.

## Create a Crosstab Report

Crosstab reports provide another perspective on the same data you see in the list report. You can use the **Pivot** option from the **Change Layout** menu or use the **Pivot** icon on the Standard toolbar to create a crosstab report, as shown in Figure 5.11. Notice in the figure that nested columns provide a wider perspective to the same data.

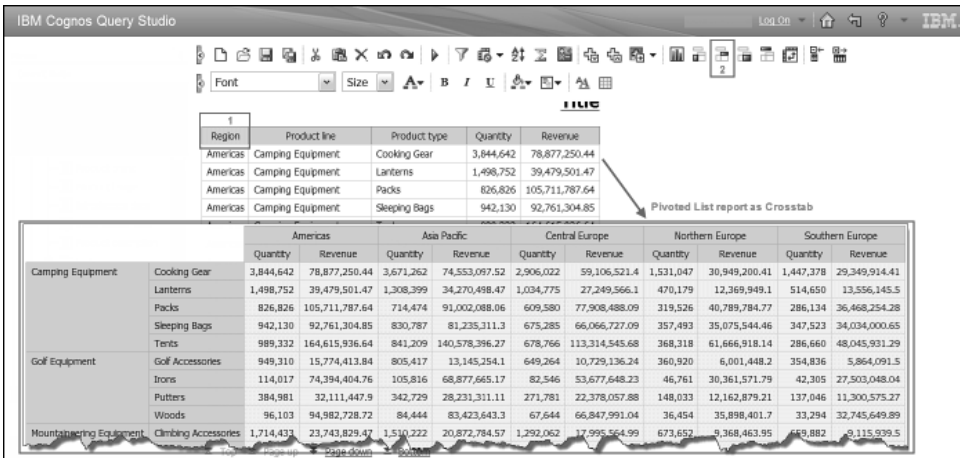


Figure 5.11 Create a Crosstab report via the Pivot option.

1. Click the **New** icon on the Standard toolbar to create a new report.  
**NOTE:** This example uses **GO Data Warehouse (query)** package.
2. Expand **Retailers** > locate **Region**.
3. Click the **Insert** button.
4. Ctrl+click **Products** > **Product line**, **Product type**.
5. Ctrl+click **Sales fact** > **Quantity** and **Revenue** > click the **Insert** button.
6. Click the **Region** column > click the **Pivot (Creates a Crosstab)** icon on the Standard toolbar.

**NOTE:** The List report is now pivoted to a Crosstab report. The column you select when you choose Pivot becomes the column in the Crosstab. All measures are nested.

To switch the values currently displayed as rows to columns and columns to rows for another perspective of the data, you can use this option, as shown in Figure 5.12.

7. Click the **Swap Rows and Columns** icon on the Standard toolbar.  
**NOTE:** The rows become columns and columns switch to rows. The measures remain at the intersection.

Swap Rows and Columns option switches rows into columns and columns into rows

	Cooking Gear		Lanterns		Packs		Sleeping Bags		Tents		Golf Accessories		Irons	
	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue
Americas	3,844,642	78,877,250.44	1,498,752	39,479,501.47	826,826	105,711,787.64	942,130	92,761,304.85	989,332	164,615,936.64	949,310	15,774,413.84	114,017	74,394,404.76
Asa Pacific	3,671,262	74,553,097.52	1,308,399	34,270,498.47	714,474	91,002,088.06	830,787	81,235,311.3	841,209	140,578,396.27	805,417	13,145,254.1	105,816	68,877,665.17
Central Europe	2,906,022	59,106,521.4	1,034,775	27,249,566.1	609,580	77,908,488.09	675,285	66,066,727.09	678,766	113,314,545.68	649,264	10,729,136.24	82,546	53,677,648.23
Northern Europe	1,531,047	30,949,200.41	470,179	12,369,949.1	319,526	40,789,784.77	357,493	35,075,544.46	368,318	61,666,918.14	360,920	6,001,448.2	46,761	30,361,571.79
Southern Europe	1,447,378	29,349,914.41	514,650	13,556,145.5	286,134	36,468,254.28	347,523	34,034,000.65	286,660	48,045,931.29	354,836	5,864,091.5	42,305	27,503,048.04

Figure 5.12 Swap rows and columns.

### Create Filters

You can create filters to display data that is relevant and remove unwanted data from the report, as shown in Figure 5.13 and outlined in the list that follows.

**Sales Report - Product**

Product line	Product type	Quantity	Revenue
Camping Equipment	Cooking Gear	13,400,351	272,835,984.18
	Lanterns	4,826,755	126,925,660.64
	Packs	2,756,540	351,880,402.84
	Sleeping Bags	3,153,218	309,172,888.35
	Tents	3,164,285	528,221,728.02
<b>Camping Equipment</b>		<b>27,301,149</b>	<b>1,589,036,664.03</b>

Figure 5.13 Create Filter on the Product line column.

1. Click the **New** option on the Standard toolbar to create a new report.
- NOTE:** This example uses GO Data Warehouse (query) package.
2. Insert **Products > Product line** into the report.
  3. Insert **Products > Product type** into the report.
  4. Insert **Sales fact > Quantity** into the report.

5. Insert **Sales fact > Revenue** into the report.
6. Click the **Product line** column > click **Group** option on the Standard toolbar.
7. Click the **Product line** column > click the **Filter** icon on the Standard toolbar.
8. Select the check box for **Mountaineering Equipment, Outdoor Protection, and Personal Accessories**.
9. In the **Condition** section > select **Do not show the following (NOT)** from the drop-down list, as shown in Figure 5.14.

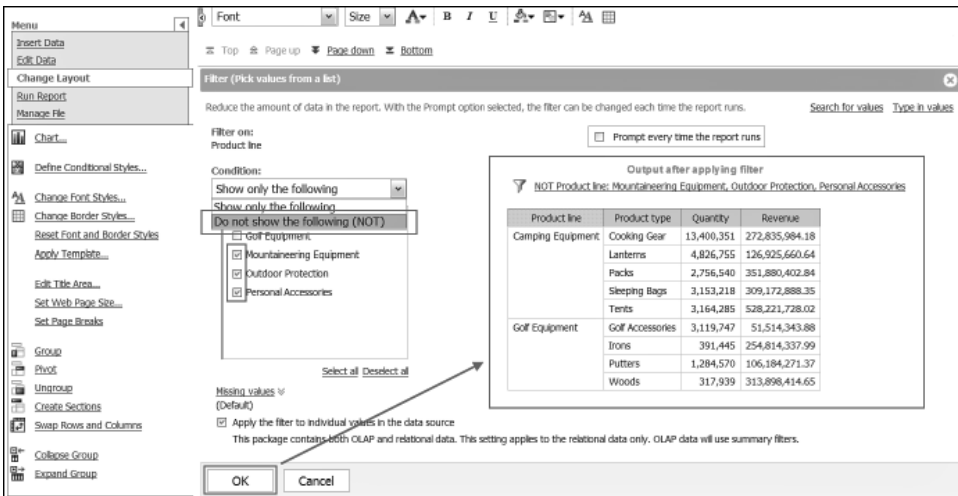


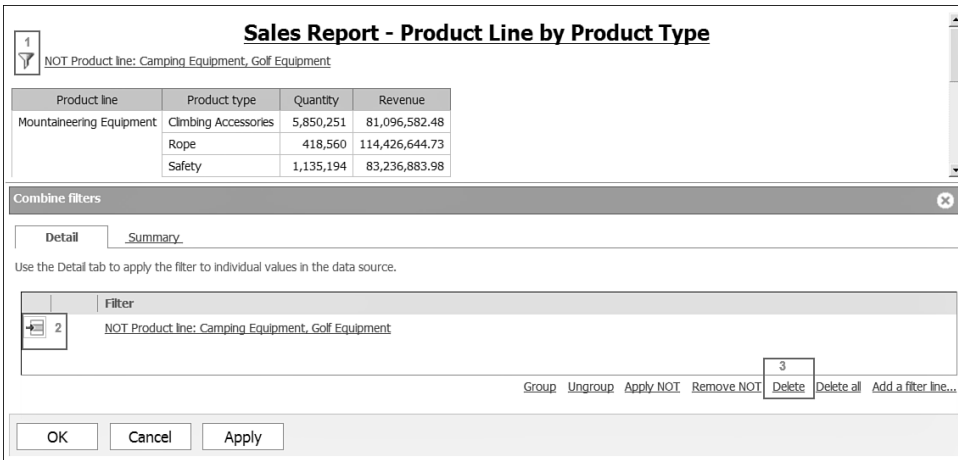
Figure 5.14 Create Filter options.

10. Click **OK**.
11. Click the **filter** link on top of the report.
12. Check the box for **Prompt every time the report runs**.
13. Uncheck **Outdoor Protection**.
14. Click **OK**.

## Remove Filters

You can remove any filter currently applied to the report, as shown in Figure 5.15 and described in the list that follows.





**Figure 5.15** Remove filter.

1. Click the **filter** icon (yellow funnel) > click the **existing filter** > click the **Delete** link.
2. Click **OK**.
3. **Save** > type a name for the report **SampleOutdoor Sales Report Product Line by Product Types**.

**NOTE:** Alternatively, you can right-click the filter line and choose **Delete**.

## Create a Complex Filter

You can create complex filters by combining two or more filters as described in the list that follows. To use this option the **Advanced Query Studio** capability must be enabled.

1. In **IBM Cognos Connection**, click **Launch** > **Query Studio**.
2. Select the **GO Data Warehouse (query)** package when prompted to select a package.
3. Click the **New** option to create a new report.
4. Ctrl+click **Product line**, **Product Type**, **Quantity**, and **Revenue**, and add it to the report via the **Insert** button.
5. Click **Quantity** column > click the **Filter** icon on the Standard toolbar.
6. In the *Filter* window, **Condition** section > type **3,000,000** in the **From** box, as shown in Figure 5.16.
7. Click **OK**.

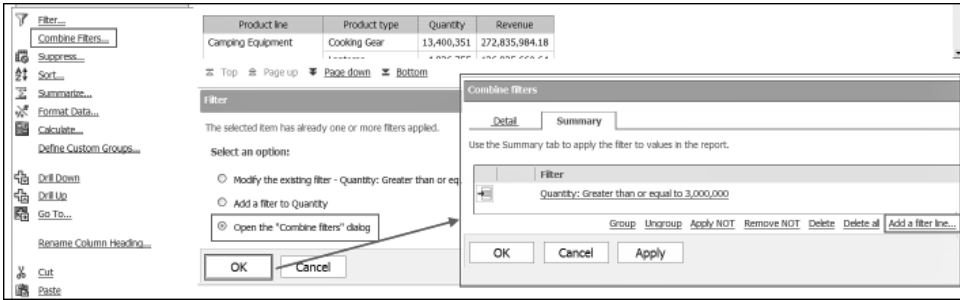


Figure 5.16 Combine filters to create a complex filter.

8. Click **Edit Data** menu > **Filters** > choose **Open the Combine Filters dialog**.

**NOTE:** Alternatively you can click **Edit Data** menu > **Filters** > **Combine Filters**. The example here also displays other options available to you.

9. Click **Add a filter line...** link.

10. In the **Condition** section > type **5,000,000** in the **To** box > click **OK** twice, as shown in Figure 5.17.

**NOTE:** All rows with quantities greater than 5,000,000 are removed from the report.

11. Click the **Change Layout** menu > **Edit Title Area...** > uncheck **Show filters** > click **OK**.

**NOTE:** The report does not show the filters applied to the report anymore.

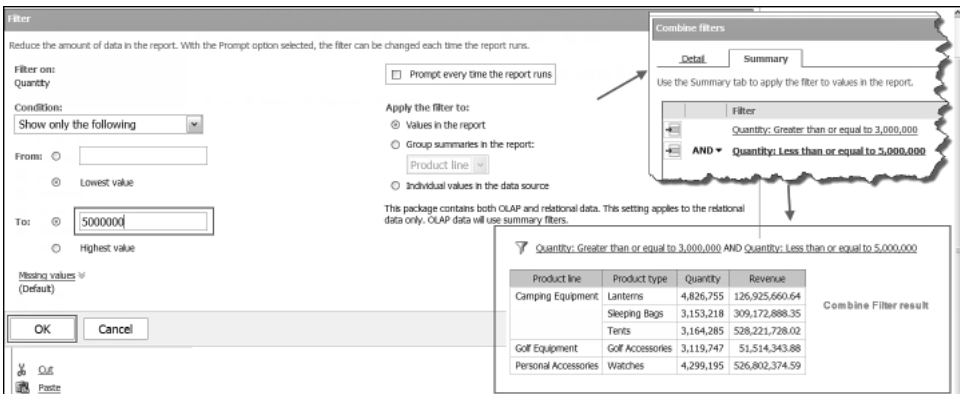


Figure 5.17 Create complex filters in Query Studio.

## Summarize Report

The Summarize option enables you to add or remove footer values. You can also use this option to change how the detail values are calculated in the report.

To summarize a report, perform the following steps:

1. Click the **New** option to create a new report.

**NOTE:** This example uses GO Data Warehouse (query) package.

2. Insert **Product line**, **Product type**, and **Quantity** in the report.
3. Click **Product line** > click **Group** option in the toolbar.

**NOTE:** The Quantity is automatically summarized using the Total function. This is the default.

4. Click the **Quantity** column header.
5. Click **Edit Data** menu > click **Summarize**.
6. In the *Summarize* window, choose **Average**.

**NOTE:** The Quantity is now averaged.

7. Click **OK**.

You can remove any summary from the report by performing the following steps:

1. Click the column header **Quantity** > **Edit Data** menu > **Summarize**.
2. In the *Summarize* window, on the **Summary for Footers** drop-down list > choose **None**.
3. Click **OK**.

**NOTE:** Navigate to the bottom of the page; notice that the footer summary has been removed.

## Sort Data

Use the Sort option to display data in ascending or descending order. You can also remove any Sort option currently applied to the report.

To sort data, perform the following steps:

1. In **IBM Cognos Connection**, click **Launch** > **Query Studio**.
2. Select the **GO Data Warehouse (query)** package when prompted to select a package.
3. Click **New** icon on the Standard toolbar to create a new report.
4. On the **Insert Data** menu, navigate to **Sales** > **Products** > **Product line** > click the **Insert** button.

5. On the **Insert Data** menu, navigate to **Sales > Order Method > Order Method Type >** click the **Insert** button.
6. On the **Insert Data** menu, navigate to **Sales > Sales fact > Quantity**.
7. Click **Order Method >** click the **Pivot** icon on the Standard toolbar.
8. Click **Order Method >** click the **Edit Data** menu. Click **Sort >** select **Descending**.

In addition, you can sort or filter items that do not appear in the report by right-clicking on the item in the metadata tree, as shown in Figure 5.18.

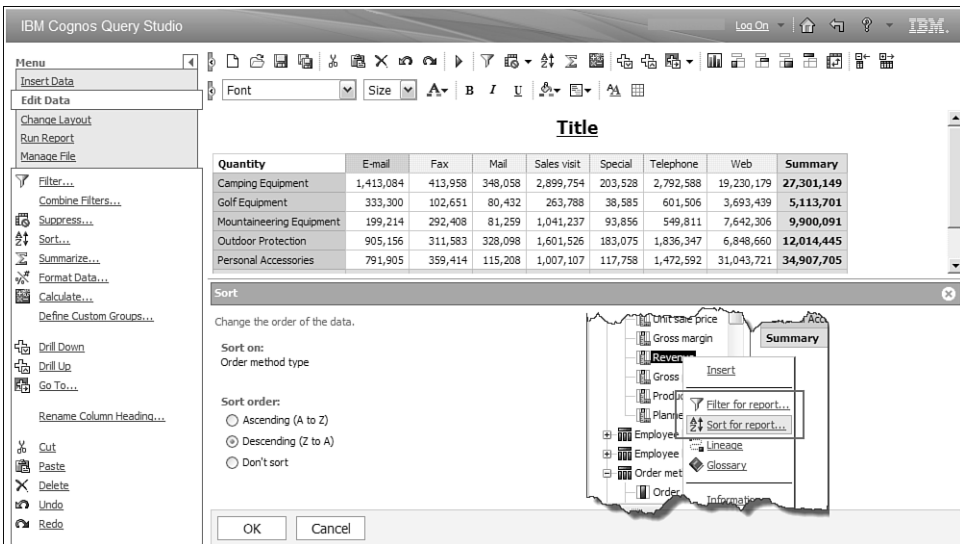


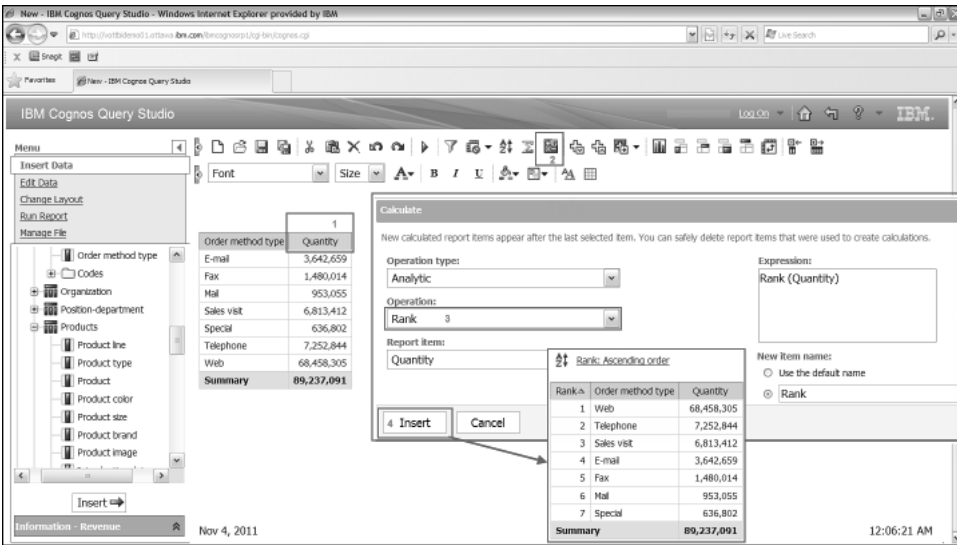
Figure 5.18 Sort or filter data items not included in the report.

## Create Calculations

Use calculations to add derived information to the report that is not available in the database such as **Ranking** the rows to display the **top 5** or **bottom 5** performers, as shown in Figure 5.19.

### Steps to Create Calculations

Figure 5.19 illustrates steps to create calculations in Query Studio as described in the list that follows.



**Figure 5.19** Create calculations in Query Studio.

1. In **IBM Cognos Connection**, click **Launch > Query Studio**.
2. Select the **GO Data Warehouse (query)** package when prompted to select a package.
3. Click **New** icon on the Standard toolbar to create a new report.
4. Expand **GO Data Warehouse (query) > Sales and Marketing (query) > Sales (query)**.
5. On the **Insert Data** menu, Ctrl+click **Order Method Type** from **Order method** and **Quantity** from **Sales fact >** click the **Insert** button.
6. Click the **Quantity** column in **Sales Fact**.
7. Click the **Calculate** icon on the Standard toolbar.
8. In the *Calculate* window, select **Operation type > Analytic**.
9. In the *Calculate* window, select **Operation > Rank**.
10. In the *Calculate* window, for the **New** item, name the type **Rank**.
11. Click **Insert**.
12. Click the **Rank** column > click **Cut** on the Standard toolbar.
13. Click the **Order Method Type** column > click **Paste** on the Standard toolbar.
14. Click the **Rank** column > click the **Edit Data** menu > **Sort > Ascending**.

Calculations cannot be edited, and therefore if they are incorrect, you must delete and recreate them as required.

You can create complex calculations by creating multiple calculated items, for example, calculation A and calculation B. You can then create calculation C based on calculation A and calculation B. Finally, if you want to display only the final calculation, that is, calculation C, then you can delete calculation A and calculation B from the report.

### Define Custom Groups

Custom groups enable you to create grouping in data not already defined in the data source, as shown in Figure 5.20.

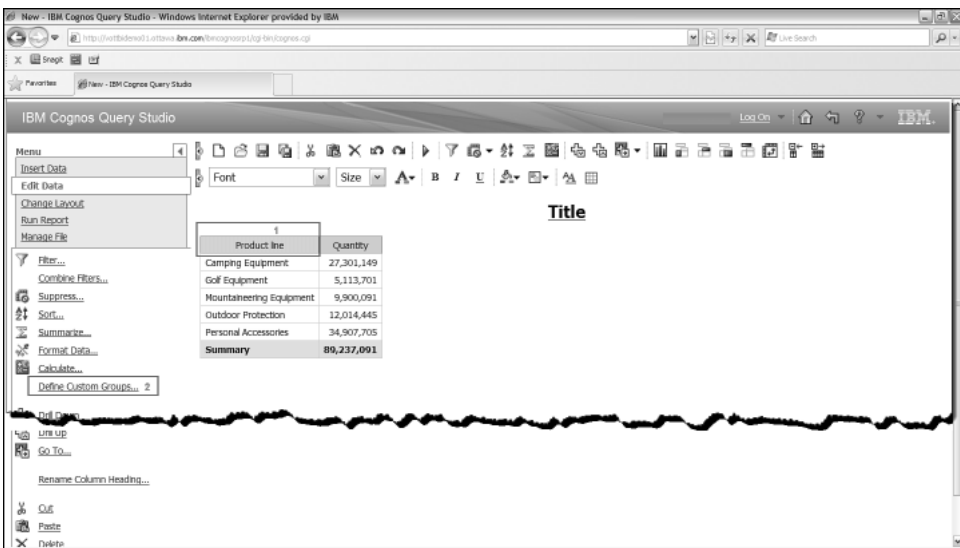


Figure 5.20 Create custom groups in Query Studio.

To create custom groups, perform these steps:

1. In **IBM Cognos Connection**, click **Launch > Query Studio**.
2. Select **GO Data Warehouse (query)** package when prompted to select a package.
3. Click the **New** icon on the Standard toolbar to create a new report.
4. Expand **GO Data Warehouse (query) > Sales and Marketing (query) > Sales (query)**.
5. Expand **Products > click on Product line > click Insert**.

6. Expand **Sales fact** > click **Quantity** > click **Insert**.
7. Select the **Product line** column.
8. In the **Edit Data** menu > click **Define Custom Groups**.
9. In the *Define custom groups* window, in the **New group name** box, type **Summer Promotion** > click the **down green arrow** to move it to the **Custom groups** box, as shown in Figure 5.21.

Create a report item with new values to suit your own needs. You create them by grouping the values of an existing item. Custom groups are useful to reorganize data, or to highlight ranges of values. Items that have been used in custom groups can safely be deleted.

\* Indicates a required field  
 \* Points to missing information

Customization type:  
 Individual values

New group name:  
 \* Summer Promotion

Custom groups:  
 Summer Promotion

Custom group values:  
 Camping Equipment  
 Golf Equipment  
 Mountaineering Equipment

Product line	Product line (Custom)	Quantity
Camping Equipment	Summer Promotion	27,301,149
Golf Equipment	Summer Promotion	5,113,701
Mountaineering Equipment	Summer Promotion	9,900,091
Outdoor Protection	Other	12,014,445
Personal Accessories	Other	34,907,705
<b>Summary</b>		<b>89,237,091</b>

Available values:  
 Outdoor Protection  
 Personal Accessories

All remaining values (including future values) ✕  
 Use the individual values as range names

New item name:

OK Cancel

**Figure 5.21** Custom group options and results.

10. In the **Available values** box, Ctrl+click **Camping Equipment**, **Golf Equipment**, and **Mountaineering Equipment** > click the **left green arrow** to move it to the **Custom group values** box.
11. In the **New group name** box, type **Other** to group all remaining values > click the **left green arrow** to move it down to the **Custom group values** box.
12. In the **Available values** box, Ctrl+click remaining values, that is, **Outdoor Protection** and **Personal Accessories**.
13. Click **OK**.

**NOTE:** A new column **Product line (Custom)** is added with values **Summer Promotion** and **Other** as defined, as shown in Figure 5.21.

## Create Charts

Charts enable you to display the data graphically and highlight the trends and relationships in the data that are not clearly visible in a report. When working with charts, Query Studio provides options to display the Chart only, or both the Chart and a table.

You can create **Column, Bar, Pie, Line, Column-Line, Area, and Radar** chart types in Query Studio. For each of the chart types other than Pie and Radar, you can choose them to be Standard, Stacked, or 100 Percent Stacked. Further customization options are available for charts depending upon the chart type selected.

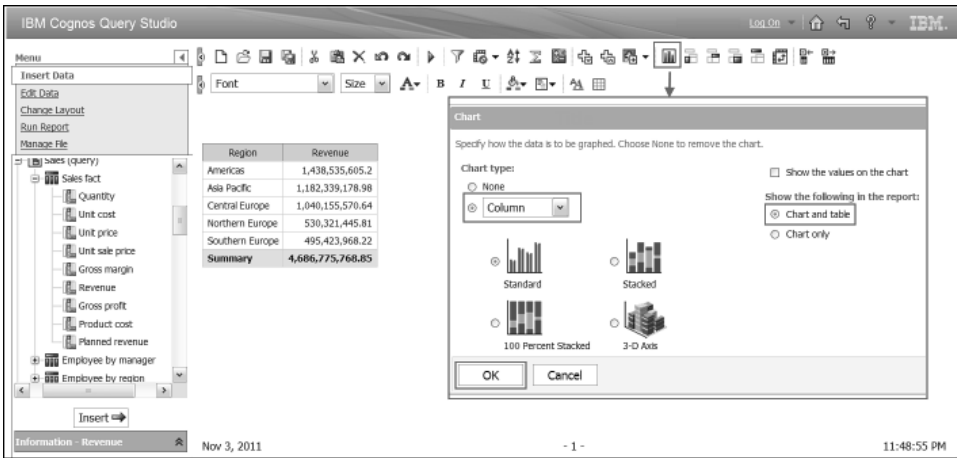
Some points to consider when choosing a chart type are as follows:

- **Column charts** are useful when you want to compare data or see trends over time.
- **Pie charts** are a good option to display a contribution of the parts to the whole. It can plot only one data series; if you require more than one, you should use another type and choose 100 Percent Stacked. When you display the report in PDF or HTML, you can show 16 pies or gauges per chart. For Pie charts you can choose from one of the four chart types: Standard, 100%, Standard with 3-D Visual Effect, and 100 Percent with 3-D Visual Effect configurations.
- **Line, Column, Area, and Bar charts** are commonly used to display trends in time or contrast values across different categories.
- **Column-Line charts** are typically used to compare different kinds of quantitative information.
- **Radar charts** are typically used to compare groups of related information against actual values.

To create charts, perform the following steps:

1. In **IBM Cognos Connection**, click **Launch > Query Studio**.
2. Select **GO Data Warehouse (query)** package when prompted to select a package.
3. Click the **New** icon on the Standard toolbar.
4. Expand **GO Data Warehouse (query) > Sales and Marketing (query) > Sales (query)**.
5. Expand **Retailers > click Region > click the Insert** button.
6. Expand **Sales fact > click Revenue > click the Insert** button.
7. Click the **Chart** icon on the Standard toolbar.
8. Choose the **Chart and table** option, as shown in Figure 5.22.
9. Click **OK**.





**Figure 5.22** Chart and table in a report.

- Expand **Products** > drag and drop **Product line** to the right of Region (as the middle column).

**NOTE:** The chart was automatically updated.

- Click anywhere in the list > click the **Pivot** icon on the toolbar to create a crosstab report.
- On the toolbar, click the **Swap Rows and Columns** icon > click **OK**.

**NOTE:** You can swap the rows and columns for either the chart or the list or both (default).

**NOTE:** The report now contains both the Chart and List reports. If you have a Crosstab report, you can also change the perspective by using the **Swap Rows and Columns** option, as shown in Figure 5.23.

## Define Conditional Styles

Conditional styles are used to highlight important information in the report. For example, you can choose to display all quantities < 500,000 as red and all quantities > 5,000,000 as green. This quickly highlights the ones that are not doing that well in the report. You can define thresholds that are meaningful to your business, as shown in Figure 5.24. You can define conditional styles for numeric, text, and date values.

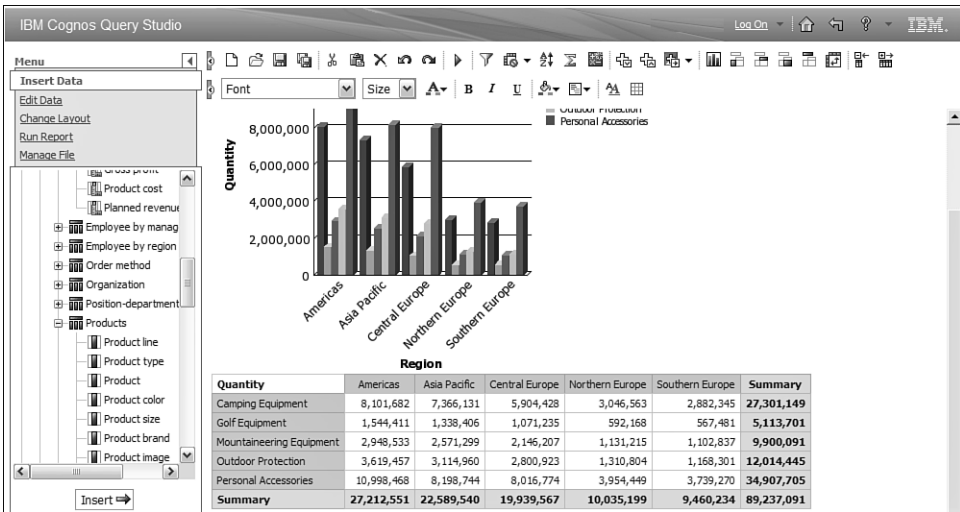


Figure 5.23 Swap Rows and Columns on the List.

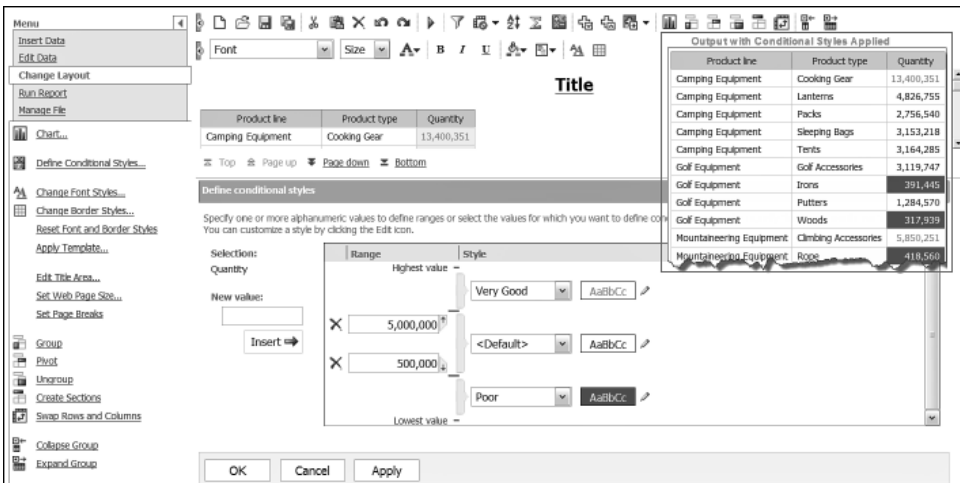


Figure 5.24 Define conditional styles to highlight quantity.

To define conditional styles, perform the following steps:

1. In **IBM Cognos Connection**, click **Launch > Query Studio**.
2. Select the **GO Data Warehouse (query)** package when prompted to select a package.

3. Click the **New** option to create a new report.
4. Select **GO Data Warehouse (query) > Sales and Marketing (query) > Sales (query)**.
5. Expand **Products** > add **Product line, Product type** to the report via the **Insert** button.
6. Expand **Sales fact** > click **Quantity** > click **Insert** button to the report.
7. In the report, click **Quantity**.
8. Click the **Change Layout** menu > click **Define Conditional Styles**.
9. In the **Range** column, in the **New value box**, type **5,000,000** > click **Insert**.
10. In the **Range** column, in the **New value box**, type **500,000** > click **Insert**.
11. In the **Style** column, for **5,000,000** from the drop-down list > select **Very good**. You can change the color using the pencil icon; the default is green.
12. In the **Style** column, for **500,000** from the drop-down list > select **Poor**. You can change the color using the pencil icon; the default is red.
13. Click **OK**.

**NOTE:** Notice that the rows with quantities > 5,000,000 are marked green and the rows with quantities < 500,000 are marked red. You can change both foreground and background colors to match your requirement.

## In a Nutshell: Reviewing by IBM Cognos BI Audience

Depending on your role in IBM Cognos BI project implementation, you may be interested to know those aspects of IBM Cognos Query Studio that relate to your role on the project. Following points review IBM Cognos Query Studio by role at a high level.

### Architect Perspective

*Architects* are interested to know the capabilities of the product, so they can appropriately recommend a tool or component for the overall BI implementation. Query Studio is a core component of IBM Cognos BI and is installed with the Cognos BI software install. Query Studio is an end user ad-hoc query tool suited for business authors and business analysts to help them explore the data for their various business questions. It uses the existing IBM Cognos BI security and data sources already defined in the IBM Cognos BI environment. Some of the key points to consider follow:

- Cognos Workspace Advanced is the logical upgrade path for Query Studio for IBM Cognos BI v10.x users. For new customers, Cognos Workspace Advanced instead of Query Studio is recommended. For legacy IBM Cognos 8.x customers, they can continue to use existing reports in Query Studio; however, it is recommended to use Cognos Workspace Advanced for creating brand new reports.

- Query Studio is an end-user tool and can be used as soon as the metadata package has been published to IBM Cognos Connection.
- Query Studio can use dimensionally and relationally modeled data from Framework Manager.
- Query Studio is an ad-hoc query and data exploration tool that can be recommended to business users.

## Project Manager Perspective

*Project Managers* are interested in knowing if Query Studio has been identified and recommended as part of the IBM Cognos BI solution. If it will be used, what are the related tasks, what skills and resources are required to implement the tasks, and what phase do these belong to? Here are some points to consider:

- Cognos Workspace Advanced is the recommended upgrade path for Query Studio for IBM Cognos BI v10.x users. Legacy IBM Cognos 8.x users can use their existing Query Studio reports from the IBM Cognos BI 8.x environment in the IBM Cognos BI v10.x environment after the upgrade.
- Query Studio is an end-user tool for data exploration and ad-hoc query to answer quick business questions and is targeted for business users and business analysts.
- Business users can start using Query Studio as soon as the Framework Manager package is published by the metadata modeler. It does not require any other task to be completed before users can start using Query Studio in a nonsecured environment. If the package contains sensitive data, the package must be secured in an IBM Cognos BI environment before turning it over to the end users.
- Query Studio is part of the IBM Cognos BI software install and does not need to be purchased separately.

## Business Analyst Perspective

*Business Analysts* should be familiar with the features of Query Studio and Cognos Workspace Advanced, so they can guide the end users appropriately. Cognos Workspace Advanced is the logical upgrade path for Query Studio users in IBM Cognos 8.x environment. Customers upgrading from IBM Cognos 8.x environment can use their existing queries and reports in IBM Cognos v10.x environment using Query Studio in the new environment. For new queries and reports, it should be recommended that they use Cognos Workspace Advanced. Using Cognos Workspace Advanced, they can use the enhanced features available to them. Some of the key points to consider follow:

- Query Studio is an end-user tool for business users and business analysts to help them answer their many business questions by dragging and dropping items to the report, applying filters, and creating calculations.
- Query Studio uses dimensionally and relationally modeled data. For dimensionally modeled data, the dimensions, hierarchies, levels, and measures (metrics or Key Performance Indicators), the requirement should be clearly understood and captured to enable the metadata modeler to build appropriate package.
- Users can also access reports with detail data via the drill-through options. If such need exists you should gather the requirement pertaining to these drill through reports and document it appropriately.
- If the data in the Framework Manager is sensitive and should not be accessible by all, understand the requirements and document it for the Cognos development team to help them secure the metadata appropriately.

## Developer Perspective

*Developer* refers to the Cognos development team. Some points to consider for Query Studio implementation are highlighted here:

- Query Studio works with dimensionally as well as relationally modeled data; ensure the package is built using the appropriate style.
- Capture the dimensions, hierarchies, levels, and measures per requirements, if the package is to be modeled dimensionally.
- Appropriate drill-through reports exist and have the required permissions for user access.
- Ensure filters and filter values are set up for efficient query execution when filtering on non-indexed or non-numeric columns.
- Ensure all security requirements are implemented in Framework Manager as well as IBM Cognos Connection, as required.

## End-User Perspective

*End User* refers to business users and business analysts who will be using Query Studio to create their queries to explore and analyze data. Some of the points you should consider are listed here:

- Cognos Workspace Advanced is the logical upgrade path for Query Studio. If you are a new Cognos user (are not moving from IBM Cognos 8.x or prior versions), it is recommended you use Cognos Workspace Advanced for data exploration and querying to tap into its rich capabilities.

- If you are a legacy Cognos 8.x user now upgrading to IBM Cognos BI v10.x, Cognos Workspace Advanced is the logical upgrade path you should consider for creating new reports.
- Query Studio works with both relationally and dimensionally modeled data. Share with the Business Analyst or Cognos development team your requirements for the different paths relevant to your reports, the metrics/KPIs you want to monitor, and so on, so they can be made available in the metadata package to fulfill your reporting needs. These requirements tell the metadata modeler how the data should be structured in the package to address your data exploration and reporting needs.
- If the metadata has sensitive information and should not be accessible by all, you must clearly communicate the security needs to the Business Analyst/IBM Cognos BI Administrator/Cognos development team, as appropriate in your organization.

## **IBM Cognos BI Administrator Perspective**

*IBM Cognos BI Administrators* should work together with the team to ensure that the Cognos BI system can cater to those needs with the existing Cognos BI installation. There are many situations when a choice has to be made between easy to implement and easy to maintain; you can help the team make the right decision based on the infrastructure, unique customer situation, and culture. Some of the points worth considering follow:

- Ensure Query Studio is accessible to all the users who need access.
- Is there any security requirement for who can see the metadata package required for querying and reporting in Query Studio?
- Ensure packages that must be accessed by Query Studio have been modeled with end users in mind.

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