

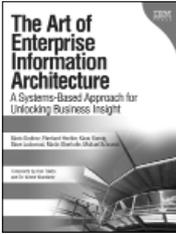
# IBM Cognos 10 Report Studio

Practical Examples

Filip Draskovic  
Roger Johnson



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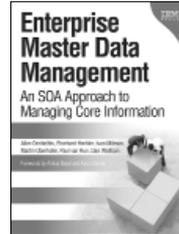
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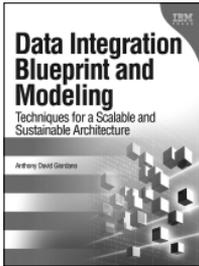
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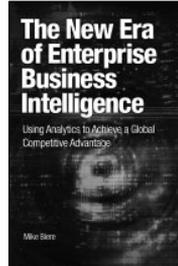
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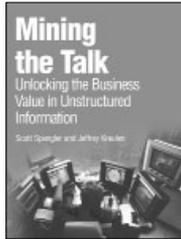
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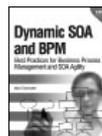
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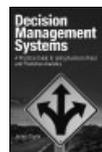
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**Filip Draskovic**

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*I'd like to thank my wife, Danijela, for encouragement and support throughout the writing of this book and for letting me check one item off my bucket list. I also would like to thank my son Luka and daughter Mia for showing me what really is important in life and my parents for showing me that hard work and perseverance do pay off.*

*—Filip Draskovic*

*I'd like to thank my wife, Pearl, and daughters, Sylvie and Sapphire, for allowing me to make the work/life balance lean too heavily in one direction. The love you give means so much to me. I also want to thank my parents, Bill and Pat, for all of their love and support over the years.*

*—Roger Johnson*

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Thank you to our Executive Editor, Mary Beth Ray, for allowing us the opportunity to create this book on a flexible schedule.

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We would also like to thank Jesus Salcedo for his assistance in reviewing the statistical analysis example. His understanding of statistics, matched with his passion, is an inspiration to us nonstatisticians.

Roger would like to thank Nathan Nyvall as the manager who interviewed him five years ago for the education specialist position and started him down the path of business analytics education. It has led to a continued effort toward “world domination.”

Also, he would like to thank Filip for teaming together on our international efforts in this book. I think we did a pretty good job.

Filip would like to thank Roger for talking him into doing this book and teaching him patience.

---

# About the Authors

**Filip Draskovic** has spent his professional career, which covers the past 11 years, living and breathing IBM Cognos. For the first 8 years of his career, he had been an IBM Cognos consultant and developed his skills applying IBM Cognos Business Intelligence and Planning solutions in multiple industries. Wanting to do something different, he spent the next 3 years as a Cognos trainer teaching public and private IBM Cognos courses in IBM's offices around North America. Following his desire to constantly gain new experiences and knowledge, he is currently filling the role of an IBM Cognos client technical professional. You can find him today in Toronto's financial district. At home, with his wife, he is enjoying raising their son and daughter.

**Roger Johnson** is a learning consultant on IBM Cognos technologies delivering a wide variety of courses focusing on the needs of his learners. His education experience has been honed over years of work in training software professionals, college students, and many types of technology users. After he started his career as a computer programmer, a co-worker said, "Hey, you do community theater productions. You would make a good trainer." With those words, his career took a different direction. Over the next 20 years, he never moved too far from either technology or education. As a learner, he has master's degrees in Systems Management and Education. Currently, he is researching the end-user adoption of technology as his doctoral dissertation at Capella University. He calls Orlando home, but is regularly seen around North America delivering any number of IBM Cognos courses. When he is home, he enjoys the time he gets to spend with family, and his dogs keep him busy jogging around the lake.

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# Foreword

When I was eight, I had a friend who could build absolutely anything out of those little bright-colored, plastic interlocking blocks. Spaceship with wings, solar-powered treehouse, prehistoric monster; you name it, he could build it. He had one giant pillowcase full of the blocks, and a stack of instructions by his bedside. I remember him looking at the step-by-step guides, picking and choosing among the patterns, and then combining them to provide me with the monster truck equipped with water skis that I had requested.

Mastering any creative process requires a thorough knowledge of available techniques and tools, as well as ongoing exposure to new ideas and ways to apply those techniques. I will not stretch my metaphor so much as to pretend that report authoring is as fun as building miniature skyscrapers. But if you are reading this book, you likely know that business analytics continue to be critical as available data increases in step with our need for information. Improving your skills in report authoring with IBM Cognos Report Studio allows you to deliver easily consumable information and business insights.

In the IBM Business Analytics curriculum development team, we develop courses that provide you with the skills you need to build effective reports. We write step-by-step instructions to help you practice report authoring techniques and build your competence with the variety of tools available to you. Self-paced courses offer flexible and quick ways to digest both the basics and the advanced techniques of IBM Cognos Report Studio. Online offerings enable you to attend class without incurring the added expense of travel. In-classroom courses deliver the skills practice combined with the expertise of experienced instructors.

This book does not replace training, nor does training replace the need for a book like this. They complement each other by giving you exposure to new techniques, new ideas. It is instructors like Roger and Filip who bring the classroom experience to life, who help you understand how report authoring techniques can be modified and adjusted to help you build the reports that impact your business. With this book, they are sharing with you the application of key concepts to a variety of problems. They have added a new stack of instructions to your bedside and some shiny new blocks for your pillowcase.

**Erin Pyka**  
**Business Analytics Curriculum Development**

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# Preface

As instructors, we have seen many students who want to learn more about business analytics. They ask us questions about how to apply concepts in class to their reports back at the office. We are pushed to understand more about the product to be able to help them apply the technology. This book was inspired by the many questions that were asked and by our belief that IBM Cognos Report Studio's uses are limited only by your imagination.

Readers of this book should already have a good understanding of creating reports in IBM Cognos Report Studio. This book should not be considered as a replacement for more formal training classes, but as a method to enhance the concepts developed in the classroom. If you have purchased this book and have not attended training yet, we would encourage you to attend a class. Okay, we are being a little selfish here in saying that you should come attend our classes, but we feel that the interaction of an instructor and a learner can spark many more ideas about how to enhance the experience of learning new technology.

The promise of business analytics can transform the way organizations process information. This technology can close the gap between information technology and the business users who consume the information presented. Instead of presenting 500-page reports that force analysts to sift through them, report writers can create a series of reports that follow how those analysts look at the data. Reports can be generated that use both textual and graphical formats to allow complex relationships to become quickly evident.

IBM Cognos Business Intelligence (BI) 10 is a huge step toward the delivery of that promise. IBM Cognos Report Studio allows information technology specialists to create powerful tools for business analysis. Our goal for this book is to help report writers to think about report development in new ways and to help them think of report creation from a different perspective.

## Approach

As an extension to your expertise in IBM Cognos Report Studio, this book looks to enhance your ability to create complex reports. While these reports are complete in their design, you may find

that some of the examples could be further improved based on your skills. Our goal in this book is to introduce you to techniques that may not be evident. Hopefully you'll find a few tips in each example that you did not know already. Also, we would challenge you to look for ways to further enhance the design and interactivity within these examples. This is the method we used to create this book, and this is how you can improve your ability to deliver the reports that the users need in order to improve their decision-making processes.

While the focus of this book is on using IBM Cognos 10 for report development, the first five chapters can be completed in a similar manner in IBM Cognos 8 BI. Chapter 6 focuses on the features that are available only in the latest version of the software. We tested this book using the 8.4 and 10.1 releases of IBM Cognos BI. Other releases may not perform identically to what you see in the book.

The examples are based on the sample data sources that are available to IBM Cognos administrators as a part of the installation process. If you are not an administrator, find out where the samples are installed and see whether you can access them.

Some of the reports may require capabilities that are beyond your permissions (creating custom SQL) or that require extra software installed on your IBM Cognos BI server (statistics data containers). Again, talk to your administrator to see whether these features are available to you.

To help you complete the various examples, we have created a couple of resources. The first is that each of the examples has been completed and added to a deployment package. Working with your administrator, these packages can be imported into your IBM Cognos BI environment for review. Additionally, we have created a number of files to help you with some of the typing tasks. You will be able to copy and paste sections of code.

All of the files needed for creating reports are available from the accompanying book website at [www.ibmpressbooks.com/title/9780132656757](http://www.ibmpressbooks.com/title/9780132656757). In the Downloads section under **More Information**, you will find a `supplements.zip` file. This compressed file contains a `readme` file, text files with all the code, and any other external files that will make the process of creating these reports easier. We are both report writers at heart and we want to make the process of creating these examples as easy as possible for you.

## How This Book Is Organized

Each example follows a similar format. The first section provides a scenario in which a customer needs a report. Here we show you how the completed report should look. Since you usually know what you want to design before beginning a report, we felt this would be helpful for you. As you go through the process to create the report, you will see that it is separated into different steps. We advocate a building-block approach to development in which you create a part of a report, test the smaller piece, and then continue to the next step. At the end of each chapter, you can see a recap of some of the concepts that were introduced.

- **Chapter 1, “Creating Consumer-Friendly Reports”:** This chapter looks at creating reports that are designed to match how business users process information.

- **Chapter 2, “Matching the Report to the Analysis”:** This chapter takes the ideas of Chapter 1 further by creating a series of reports that follow how managers would want to first see a dashboard of high-level metrics and then drill to reports focused on specific details.
- **Chapter 3, “Understanding the Report Hierarchy”:** This chapter uses techniques to standardize report content and to manipulate the hierarchical relationships between objects in reports.
- **Chapter 4, “Overriding the Data Model”:** This chapter looks at ways a report author can create complex queries that override the package information provided by the data modeler.
- **Chapter 5, “Additional Examples”:** This chapter provides some “bonus content” that shows you how to create reports integrating HTML and to create a complex union.
- **Chapter 6, “New Techniques in Version 10”:** This chapter provides examples that use the new graphing engine, active reports, and statistical analysis, which are all new features available only in IBM Cognos BI 10.

## Report Snapshots

As programmers who have used books like this one to improve our skills, we have had to page through an entire book to look for one feature or example that will help us complete a task. We wanted to provide another way for you to find what you need. This section provides screenshots of the final products of each example. Hopefully you will find it valuable to see report styles and functions that will help you.

## Chapter 1 Report Snapshots

Chapter 1 presents several reports that are designed to leverage features to create reports that focus on a specific task. The report functions and associated screen results are as follows:

- Highlight selected text (see Figure I.1)

Product Catalog records for keyword - rope							
Product number	Product	Product Description	Product color	Product size	Introduction date	Discontinued date	
42110	Husky Rope 50	11 mm diameter standard rope. Length: 50 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Red	50 m	Jan 10, 2005 12:00:00 AM		
43110	Husky Rope 60	11 mm diameter standard rope. Length: 60 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Red	60 m	Jan 10, 2005 12:00:00 AM		
44110	Husky Rope 100	11 mm diameter standard rope. Length: 100 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Blue	100 m	Jan 10, 2005 12:00:00 AM		
45110	Husky Rope 200	11 mm diameter standard rope. Length: 200 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Blue	200 m	Jan 10, 2005 12:00:00 AM		
51110	Granite Belay	The Granite Belay is an ingenious single rope belay device that uses carabiner movement to brake the rope.	Black	Unspecified	Jan 10, 2005 12:00:00 AM		
50110	Granite Carabiner	Made from 12 mm rod stock aluminum and a radius suitable for almost any rope size. Locks tight with almost any belay/rappel combination. Individually tested.	Silver	12 mm	Jan 10, 2005 12:00:00 AM		

**Figure I.1** Completed enhanced product catalog

- Avoid query macros (see Figure I.2, Figure I.3, and Figure I.4)
- Create complex crosstab calculations (see Figure I.5)

**Prompt Page 1 - Select Filter Type**

\*  
→

- Filter by date range
- Filter by order method
- Filter by sales rep

Figure I.2 Main prompt page for conditional filters

**Prompt Page 2 - Select Filter Value**

From:

◀ 2011 ▶											
Jan	Feb	Mar	Apr	May	Jun						
Jul	Aug	Sep	Oct	Nov	Dec						
Sun	Mon	Tue	Wed	Thu	Fri	Sat					
						1	2				
3	4	5	6	7	8	9					
10	11	12	13	14	15	16					
17	18	19	20	21	22	23					
24	25	26	27	28	29	30					

To:

◀ 2011 ▶											
Jan	Feb	Mar	Apr	May	Jun						
Jul	Aug	Sep	Oct	Nov	Dec						
Sun	Mon	Tue	Wed	Thu	Fri	Sat					
						1	2				
3	4	5	6	7	8	9					
10	11	12	13	14	15	16					
17	18	19	20	21	22	23					
24	25	26	27	28	29	30					

Figure I.3 Conditional prompt page

**Product Line Summary for Filter by order method**

Fax

Revenue	Quantity	Revenue	Gross profit
Camping Equipment	413,958	23,054,398.48	8,675,557.15
Golf Equipment	102,651	15,241,303.27	7,269,748.7
Mountaineering Equipment	292,408	11,848,370.08	4,743,720.54
Outdoor Protection	311,583	1,966,484.72	1,190,874.37
Personal Accessories	359,414	17,962,985.46	7,168,417.72

Figure I.4 Completed order method report

	2004			2005			2006			2007	
	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue
Camping Equipment	332,986,338.06	361,495,088.97	92.11%	402,757,573.17	431,970,502.15	93.24%	500,382,422.83	531,010,839.07	94.23%	352,910,329.97	378,610,000.00
Golf Equipment	153,553,850.98	169,875,640.98	90.39%	168,006,427.07	182,227,978.19	92.20%	230,110,270.55	247,977,474.85	92.79%	174,740,819.29	190,170,000.00
Outdoor Protection	36,165,521.07	38,181,339.98	94.72%	25,008,574.08	26,157,261.77	95.61%	10,349,175.84	10,938,440.68	94.61%	4,471,025.26	4,720,000.00
Personal Accessories	391,647,093.61	398,923,067.59	98.18%	456,323,355.9	464,458,617.66	98.25%	594,009,408.42	602,227,218.07	98.64%	443,693,449.85	449,770,000.00
Mountaineering Equipment				107,099,659.94	113,363,106.75	94.47%	161,039,823.26	168,584,907.17	95.52%	141,520,649.7	148,620,000.00
Summary	914,352,803.72	968,475,137.52	94.41%	1,159,195,590.16	1,218,177,466.52	95.16%	1,495,891,100.9	1,560,738,879.84	95.85%	1,117,336,274.07	1,171,950,000.00

Figure I.5 Completed crosstab percentage calculation

## Chapter 2 Report Snapshots

Chapter 2 focuses on the creation of a dashboard for a shipping department of a fictional company. The dashboard reviews high-level metrics, from which several reports can be created that provide additional details, focusing the results of specific areas. Additionally, each of the reports has drill-through functionality to allow for analysis by the report consumer. The dashboard/report functions and associated screen results are as follows:

- Shipping dashboard (see Figure I.6)
- Returned/shipped report (see Figure I.7)
- Returns by product and reason report (see Figure I.8)
- Shipping volume by month report (see Figure 1.9)



Figure I.6 Completed shipping dashboard

<b>Volume Returned and Shipped for Americas</b>			
Americas Breakdown	Reason description	Return quantity	Quantity
<b>United States -- Return/Ship Ratio: 1.564%</b>		<b>163,362</b>	<b>10,444,575</b>
Returns by Reason for United States	Defective product	26,830	
	Incomplete product	17,712	
	Wrong product ordered	36,987	
	Wrong product shipped	16,068	
	Unsatisfactory product	65,765	
<b>Canada -- Return/Ship Ratio: 1.476%</b>		<b>59,810</b>	<b>4,052,045</b>
Returns by Reason for Canada	Defective product	10,942	
	Incomplete product	8,913	
	Wrong product ordered	16,062	
	Wrong product shipped	7,210	
	Unsatisfactory product	16,683	
<b>Mexico -- Return/Ship Ratio: 1.088%</b>		<b>29,459</b>	<b>2,706,418</b>
Returns by Reason for Mexico	Defective product	4,276	
	Incomplete product	2,189	
	Wrong product ordered	5,180	
	Wrong product shipped	6,357	
	Unsatisfactory product	11,457	
<b>Brazil -- Return/Ship Ratio: 1.342%</b>		<b>22,926</b>	<b>1,708,632</b>
Returns by Reason for Brazil	Defective product	4,124	
	Incomplete product	2,427	
	Wrong product ordered	10,291	

Figure I.7 Completed returned/shipped report

<b>2005 Returns for Products Under Camping Equipment</b>						
Return quantity		Q1 2005	Q2 2005	Q3 2005	Q4 2005	2005
Camping Equipment	Unsatisfactory product	6,318	2,134	4,339	6,291	19,082
	Wrong product ordered	2,835	1,914	4,491	6,247	15,487
	Wrong product shipped	4,131	2,208	3,674	3,044	13,057
	Incomplete product	3,468	3,676	1,833	2,394	11,374
	Defective product	1,719	1,294	2,257	1,989	7,259
	<b>Returns for Camping Equipment</b>	<b>18,471</b>	<b>11,226</b>	<b>16,594</b>	<b>19,965</b>	<b>66,256</b>
Cooking Gear	Unsatisfactory product	4,713	398	1,403	3,367	9,881
	Wrong product shipped	904	1,460	2,373	1,817	6,554
	Incomplete product	2,193	2,044	769	1,318	6,324
	Defective product	593	173	521	1,180	2,467
	Wrong product ordered		135		1,806	1,941
	<b>Returns for Cooking Gear</b>	<b>8,403</b>	<b>4,210</b>	<b>5,066</b>	<b>9,488</b>	<b>27,167</b>
TrailChef Water Bag	Unsatisfactory product	1,462			2,661	4,123
	Defective product					
	Wrong product shipped					
	Incomplete product					
	Wrong product ordered					
	<b>Returns for TrailChef Water Bag</b>	<b>1,462</b>			<b>2,661</b>	<b>4,123</b>
TrailChef Water Bag 1110	Unsatisfactory product	1,462			2,661	4,123
	Defective product					

**Figure I.8** Completed returns by product and reason report

<b>Expected Volume vs. Actual Quantity Shipped for Amsterdam For April 2005</b>		
Retailer	Retailer site	Quantity
<b>Expected Volume for: Amsterdam</b>		<b>48,880</b>
<b>Actual Quantity Shipped for: Amsterdam</b>		<b>59,285</b>
Extra Sport	Wageningen	14,201
<b>Extra Sport - Total</b>		<b>14,201</b>
Sportworld	Deventer	7,455
Sportworld	Beets	2,937
Sportworld	Amstelveen	1,045
<b>Sportworld - Total</b>		<b>11,437</b>
Beter Buitenleven	Amsterdam	6,018
Beter Buitenleven	Marken	4,983
<b>Beter Buitenleven - Total</b>		<b>11,001</b>
Klimgek Bv.	Amsterdam	5,755
<b>Klimgek Bv. - Total</b>		<b>5,755</b>
Kampeer Top Shop	Dronten	5,182
<b>Kampeer Top Shop - Total</b>		<b>5,182</b>
Holland Zonzoekers	Laren	2,993
<b>Holland Zonzoekers - Total</b>		<b>2,993</b>
Topforma	Groningen	2,810
<b>Topforma - Total</b>		<b>2,810</b>
Get Out	Varsseveld	2,794

**Figure I.9** Completed shipping volume by month report

### Chapter 3 Report Snapshots

Chapter 3 focuses on the hierarchical nature of formatting, querying, and delivering report information. The chapter concludes with the design of a briefing book that incorporates elements of all the other reports into a single report that can be delivered on a scheduled basis. The report functions and associated screen results are as follows:

- Layout library (see Figure I.10 and Figure I.11)
- Layout library use (see Figure I.12)
- Formatting inheritance (see Figure I.13)
- Structure inheritance (see Figure 1.14)
- Briefing book creation (see Figure 1.15)

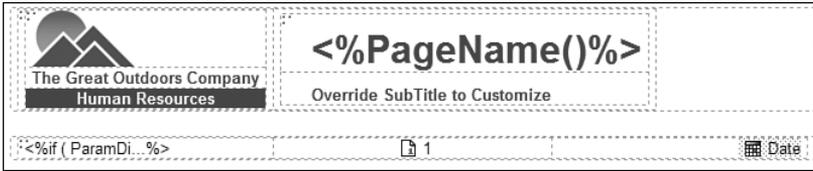


Figure I.10 Completed human resources header and footer



Figure I.11 Completed human resources footer with report ID populated

City		Date	Position name	Recruitment medium	Position filled date	Days to fill
Amsterdam		Feb 1, 2007	Payroll Clerk	CV Central	Mar 6, 2007	33
<b>Amsterdam - Summary</b>						
<b>33</b>						
Bilbao	Jan 8, 2007	Accounting Clerk	Pathfinder Personnel		Jan 29, 2007	21
	Apr 23, 2007	Accountant 1	Referral		Jun 8, 2007	46
	Jun 25, 2007	Payroll Clerk	Unspecified			
<b>Bilbao - Summary</b>						
<b>34</b>						
Boston		Jan 8, 2007	Payroll Clerk	Referral	Feb 5, 2007	28
<b>Boston - Summary</b>						
<b>28</b>						
Distrito Federal	May 7, 2007	Payroll Clerk	Pathfinder Personnel		Jun 11, 2007	35
	Jul 9, 2007	Budget Analyst	AAA Internet Job Bank		Jul 31, 2007	22
	Jul 20, 2007	Financial Analyst	Unspecified			
<b>Distrito Federal - Summary</b>						
<b>28</b>						
Genève	Jan 15, 2007	Accountant 2	Local Newspaper		Feb 26, 2007	42
	Mar 9, 2007	Accountant 2	AAA Internet Job Bank		Apr 6, 2007	28
	Apr 5, 2007	Accountant 1	Professional Publication		May 8, 2007	33
	Jun 15, 2007	Financial Analyst	Unspecified			

Figure I.12 Completed recruitment by organization report

Date		Employee name	Account name	Expense unit quantity	Expense total
Jan 31, 2007	Arjan Schuman	Benefits - health insurance		0.11	1,635.9
		Benefits - miscellaneous		0.03	446.15
		Benefits - pension plan		0.08	1,189.74
		Salaries & wages - type one		157.5	13,578.6
		Salaries & wages - type two		15	1,293.2
	Kazuki Sasaki	Benefits - health insurance		0.11	1,480.77
		Benefits - miscellaneous		0.03	403.85
		Benefits - pension plan		0.08	1,076.92
		Salaries & wages - type one		172.5	13,461.54
	Laura Bauer	Benefits - health insurance		0.11	1,759.29
		Benefits - miscellaneous		0.03	479.81
		Benefits - pension plan		0.08	1,279.49
		Salaries & wages - type one		165	15,298.22
		Salaries & wages - type two		7.5	695.37
	Maximilian Saltzman	Benefits - health insurance		0.11	1,635.9
		Benefits - miscellaneous		0.03	446.15

Figure I.13 Completed employee expense report



## Training by Manager

For Finance in April 2007

**Finance**

Employee name	Date	Course name	Course cost	Course days
<b>Anling Zhang</b>				
Baojia Chén	Apr 2, 2007	GO Communication	500	1
<b>Emma Sommer</b>				
Gregory Andrews	Apr 16, 2007	GO Communication	500	1
<b>Helen Jones</b>				
David Baxter	Apr 5, 2007	GO Ethics	250	0.5
	Apr 23, 2007	Economic and Tax Forecasting 1	2,500	2
	Apr 30, 2007	GO Finance 1	1,000	1
Emily Harris	Apr 9, 2007	GO Ethics	250	0.5
	Apr 17, 2007	GO Finance 1	1,000	1
	Apr 23, 2007	Economic and Tax Forecasting 1	2,500	2
Katharina Lehrer	Apr 10, 2007	GO Orientation	250	1
	Apr 19, 2007	GO Ethics	250	0.5
<b>Ian Roberts</b>				
Jean-Pierre Louvet	Apr 5, 2007	GO Ethics	250	0.5
	Apr 16, 2007	GO Finance 1	1,000	1

**Figure I.14** Completed training by manager report



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Franca Moretti .....	6
Helen Jones .....	7
Ian Roberts .....	9
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Kerstin Lagerskiöld .....	11
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Meifeng Toh .....	12

**Figure I.15** Completed HR briefing book table of contents

## Chapter 4 Report Snapshots

Chapter 4 focuses on creating a very functional, highly formatted, and easily maintained report. The report functions and associated screen results are as follows:

- Creating a union (see Figure I.16)

<b>Boston</b>			
January 2004			
Product type	Product	Closing inventory	Inventory on Hand
Binoculars	Seeker 35	2,443	
	Seeker 50	874	
	Seeker Extreme	631	
	Seeker Mini	805	
Climbing Accessories	Firefly Charger	0	
	Firefly Climbing Lamp	0	
	Firefly Rechargeable Battery	0	
	Granite Belay	0	
	Granite Carabiner	0	
	Granite Chalk Bag	0	
	Granite Pulley	0	
Cooking Gear	TrailChef Canteen	11,967	
	TrailChef Cook Set	7,049	
	TrailChef Cup	9,308	
	TrailChef Deluxe Cook Set	5,570	
	TrailChef Double Flame	3,201	
	TrailChef Kettle	11,736	
	TrailChef Kitchen Kit	8,990	
	TrailChef Single Flame	6,738	
	TrailChef Utensils	5,075	

Figure I.16 Completed inventory count report

- Joining SQL and model queries (see Figure I.17 and Figure I.18)

<b>Forecast Audit Report</b>				
<p>This report compares the results of the Revenue Forecast Report from the previous reporting tool to the results of the new data model for Report Studio. This page will display the summary results and the following pages will show the details of query results that are different and those that match in both queries.</p>				
Record status	Expected volume	New expected volume	Forecast revenue	New forecast revenue
<u>1. Totals are different between the two queries</u>	160,550,400	23,856,220	\$9,951,864,926.05	\$1,412,538,239.50
<u>4. Volume and revenue match</u>	51,640,790	51,640,790	\$2,861,757,832.60	\$2,861,757,832.60

Figure I.17 Completed query audit cover page

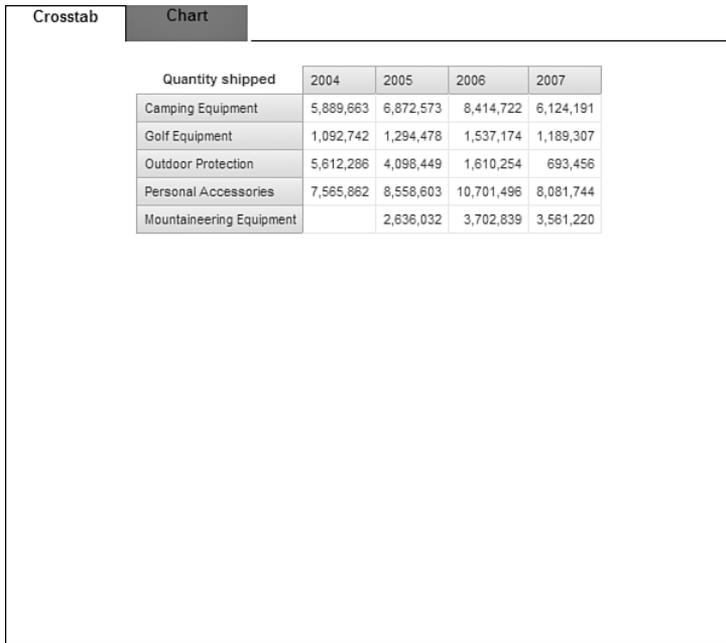
<b>Forecast Audit Report</b>							
Year	Month	Country	Product	Expected volume	Forecast revenue	New expected volume	New forecast revenue
<b>1. Totals are different between the two queries</b>							
2004	April	Austria	Mountain Man Analog	120	\$5,086.80	40	\$1,695.60
			Mountain Man Deluxe	80	\$6,969.60	40	\$3,484.80
			Polar Ice	60	\$5,805.00	30	\$2,902.50
			Polar Sports	210	\$25,907.70	30	\$3,701.10
			Polar Sun	400	\$23,104.00	50	\$2,888.00
2004	April	Brazil	Mountain Man Analog	225	\$9,537.75	75	\$3,179.25
			Mountain Man Deluxe	160	\$13,939.20	80	\$6,969.60
			Polar Ice	100	\$9,675.00	50	\$4,837.50
			Polar Sports	350	\$43,179.50	50	\$6,168.50
			Polar Sun	360	\$20,793.60	45	\$2,599.20
2004	April	Canada	Mountain Man Analog	570	\$24,162.30	190	\$8,054.10
			Mountain Man Deluxe	310	\$27,007.20	155	\$13,503.60
			Polar Ice	160	\$15,480.00	80	\$7,740.00

**Figure I.18** Completed query audit report

## Chapter 5 Report Snapshots

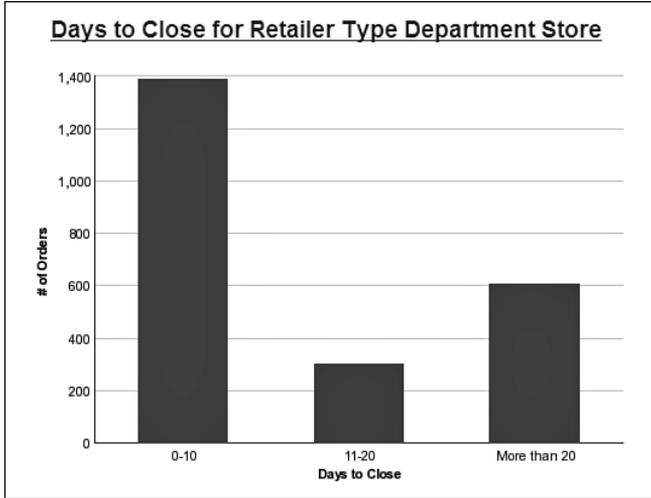
Chapter 5 focuses on how to take advantage of HTML technology to enhance the presentation of your report in a web browser. Additionally, you will see how to perform a union of three queries at one time. The report functions and associated screen results are as follows:

- Using HTML to enhance functionality (see Figure I.19)
- Integrating multiple queries into a complex report (see Figure I.20)



Quantity shipped	2004	2005	2006	2007
Camping Equipment	5,889,663	6,872,573	8,414,722	6,124,191
Golf Equipment	1,092,742	1,294,478	1,537,174	1,189,307
Outdoor Protection	5,612,286	4,098,449	1,610,254	693,456
Personal Accessories	7,565,862	8,558,603	10,701,496	8,081,744
Mountaineering Equipment		2,636,032	3,702,839	3,561,220

Figure I.19 Completed tab example



**Figure I.20** Completed chart with a union of grouping

## Chapter 6 Report Snapshots

Chapter 6 focuses on the key enhancements to IBM Cognos Report Studio in version 10. The report functions and associated screen results are as follows:

- Using active reports to replace HTML code (see Figure I.21)

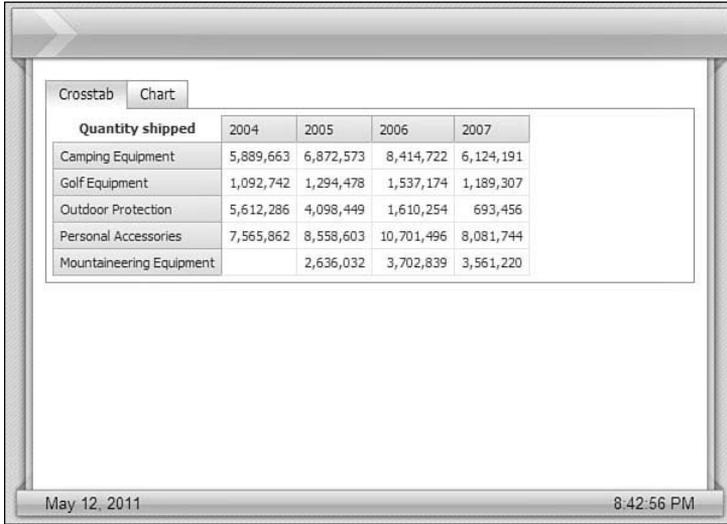


Figure I.21 Completed alternative tab example

- Adding local data sources to reports (see Figure I.22)
- New charting options and active reports (see Figure I.23)
- Statistical analysis (see Figure I.24 through Figure I.28)

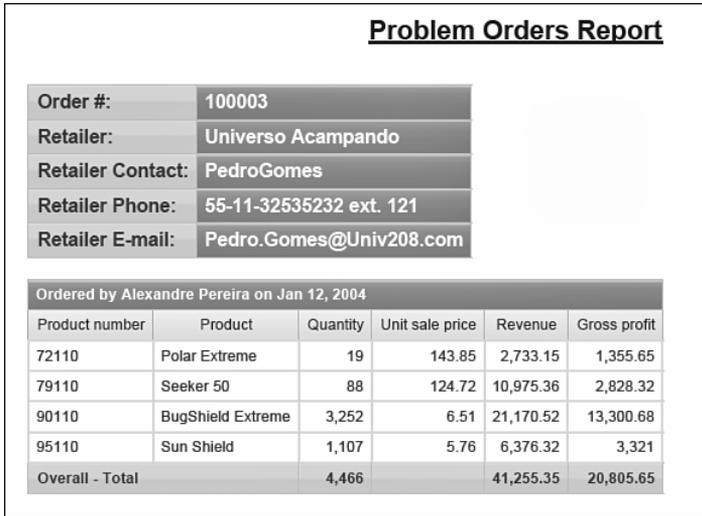


Figure I.22 Completed problem orders report

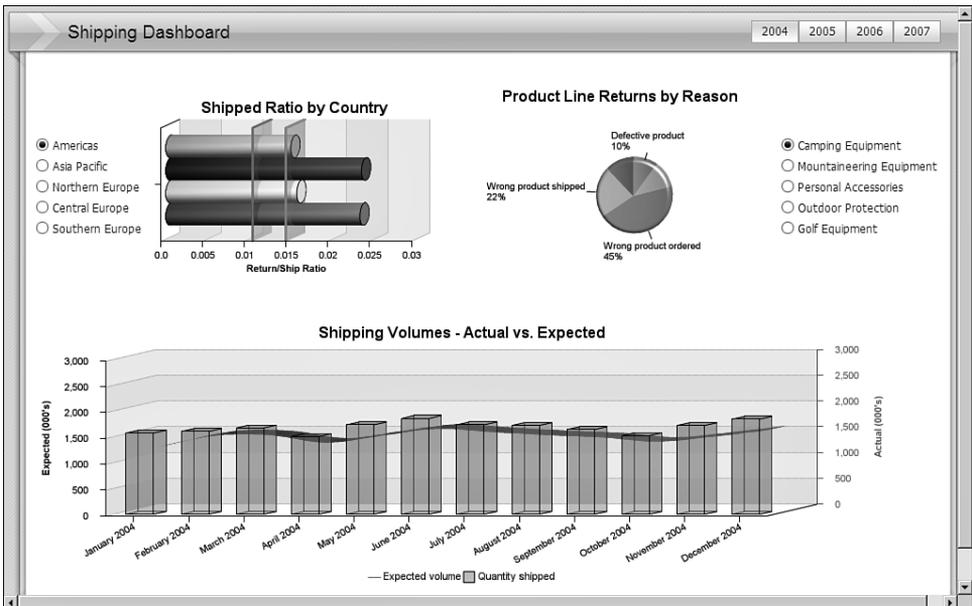


Figure I.23 Completed complex active report

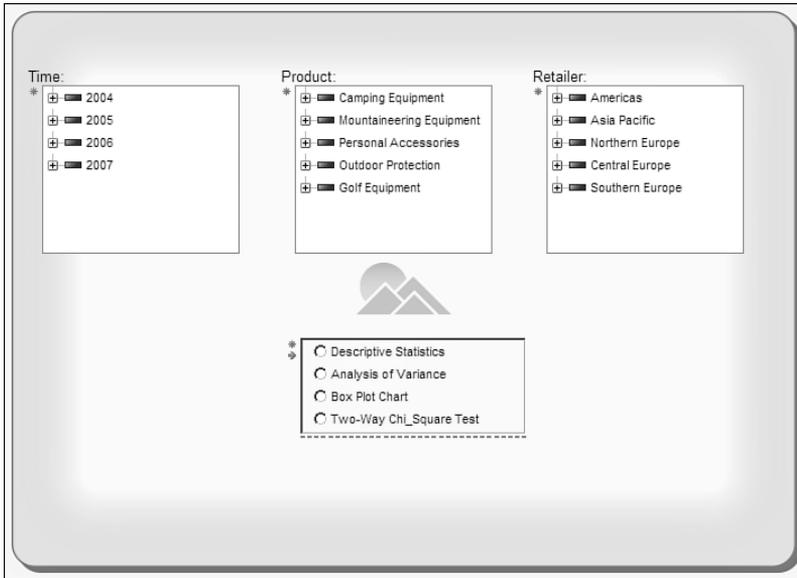


Figure I.24 Completed prompt page for statistical analyses

**Analysis of Variance**

Gross profit

**ANOVA**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4374614581.852	4	1093653645.463	15.605	.000
Within Groups	12474758372.164	178	70082912.203		
Total	16849372954.016	182			

**Post Hoc Tests**

Gross profit

**Multiple Comparisons**

	(I) Campaigns Only	(J) Campaigns Only	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Bonferroni	TrailChef Campaign	EverGlow Campaign	4,069.309	1,628.846	.134	-560.60	8,699.22
		Hibernator Campaign	-4,670.576	1,768.359	.098	-9,753.90	412.74
		Canyon Mule Campaign	-8,514.457 <sup>(*)</sup>	2,433.860	.006	-15,432.58	-1,596.33
		Rising Star Campaign	-9,390.754 <sup>(*)</sup>	1,966.700	.000	-15,037.85	-3,743.66
	EverGlow Campaign	TrailChef Campaign	-4,069.309	1,628.846	.134	-8,699.22	560.60

Figure I.25 Completed descriptive statistics report

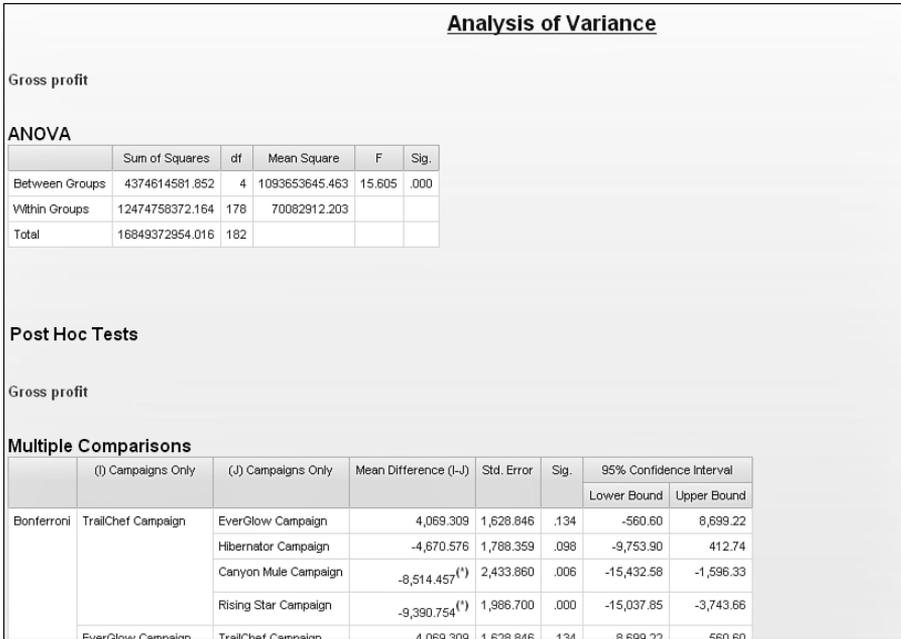


Figure I.26 Completed analysis of variance report

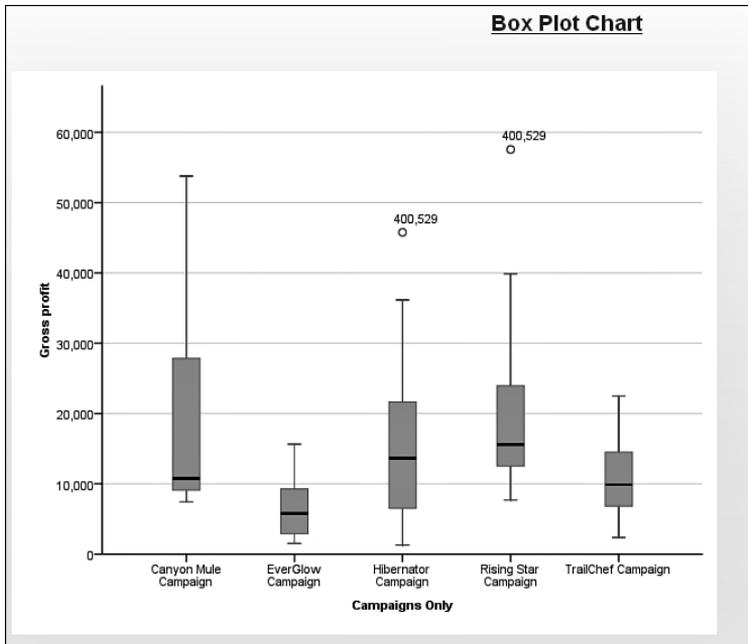


Figure I.27 Completed box plot report

% within Campaign

**Campaign \* Order method type Crosstabulation**

		Order method type							Total
		Web	Special	Telephone	Sales visit	E-mail	Mail	Fax	
Campaign	Regular sale	35.0%	2.1%	23.9%	19.6%	13.5%	2.3%	3.5%	100.0%
	TrailChef Campaign	23.3%	6.7%	31.7%	18.3%	13.3%	3.3%	3.3%	100.0%
	EverGlow Campaign	33.3%		26.7%	20.0%	20.0%			100.0%
	Hibernator Campaign	38.0%		30.0%	18.0%	12.0%		2.0%	100.0%
	Canyon Mule Campaign	53.3%		6.7%	6.7%	20.0%		13.3%	100.0%
	Rising Star Campaign	26.9%		38.5%	23.1%	11.5%			100.0%
Total		34.7%	2.0%	24.5%	19.5%	13.7%	2.2%	3.4%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40.511 <sup>(1)</sup>	30	.095
Likelihood Ratio	47.809	30	.021
Linear-by-Linear Association	.175	1	.676
N of Valid Cases	2512		

<sup>1</sup> 18 cells (42.9%) have expected count less than 5. The minimum expected count is .30.

**Figure I.28** Completed chi-square test page

## Creating Consumer-Friendly Reports

One of the biggest advantages of creating reports in IBM® Cognos® Business Intelligence (BI) is that you can now create one (or more) reports that can be designed to match how business users process information. These consumers do not need to wade through waves of report pages. A series of small reports that independently focus on specific information can link to other reports. We will take a look at using drill-through in the next chapter, but you should look for ways to simplify the reports at every opportunity.

This means you, as the report author, should look for ways to present the data in a format that makes the exploration process easier for the consumers. This chapter provides examples of simple reports that present data.

In our training classes, we regularly hear from students who want to create very complex reports. We begin by asking what the users need to accomplish with the report and begin to build the report using an iterative building block process.

This chapter presents several reports that are designed to leverage features to create reports that focus on a specific task.

---

**NOTE** If you want some help with the files and typing involved in this chapter, go to [www.ibmpressbooks.com/title/9780132656757](http://www.ibmpressbooks.com/title/9780132656757) and download the supplements.zip file from the Downloads section under **More Information**.

---

### Highlight Selected Text

You have been asked by the product marketing staff to create a product catalog. When you ask how it will be used, the market analyst wants to be able to find descriptions of products that use specific phrases to ensure that the proper messages are reaching the customer.

Search technology has become sophisticated enough that documents can be searched for text and the phrases can be highlighted to allow the searcher to focus on the text. The analyst would like to simulate that functionality in the report.

This report should be able to prompt the user for a search phrase and return a list of product descriptions that contain the phrase and highlight the selected text. The final result should look like Figure 1.1.

Product Catalog records for keyword - rope							
Product number	Product	Product Description	Product color	Product size	Introduction date	Discontinued date	
42110	Husky Rope 50	11 mm diameter standard rope. Length: 50 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Red	50 m	Jan 10, 2005 12:00:00 AM		
43110	Husky Rope 60	11 mm diameter standard rope. Length: 60 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Red	60 m	Jan 10, 2005 12:00:00 AM		
44110	Husky Rope 100	11 mm diameter standard rope. Length: 100 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Blue	100 m	Jan 10, 2005 12:00:00 AM		
45110	Husky Rope 200	11 mm diameter standard rope. Length: 200 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Blue	200 m	Jan 10, 2005 12:00:00 AM		
51110	Granite Belay	The Granite Belay is an ingenious single rope belay device that uses carabiner movement to brake the rope.	Black	Unspecified	Jan 10, 2005 12:00:00 AM		
50110	Granite Carabiner	Made from 12 mm rod stock aluminum and a radius suitable for almost any rope size. Locks tight with almost any belay/rapel combination. Individually tested.	Silver	12 mm	Jan 10, 2005 12:00:00 AM		

Figure 1.1 Completed enhanced product catalog

## Design

The trick to solving this problem is to utilize several string functions that are available in IBM Cognos Report Studio in order to find the requested part of the text and then cut the preceding and succeeding text. Once the searched text field has been separated into three parts, we can use the logic within our query items to put the strings back together within a single column and highlight only the searched text.

The list report should filter on only those products that contain the search text.

## Step-by-Step

The key steps involve the creation of a query that parses the product description and removes any products that do not have the matching phrase. With the query built and tested, the list report is designed.

### Step 1: Start the Report

1. Launch **Report Studio** and select the **GO Data Warehouse (query)** package.
2. Click on the **Create new** option.

---

**COGNOS 8 NOTE** The option is **Create a new report or template**.

---

3. Select the **List** report template and click **OK**.

We will be using the **Sales (query)** namespace inside the **Sales and Marketing (query)** folder.

## Step 2: Begin the Report Query

The key component of this report is the capability to parse the text of the report description for selected text. This step defines the two fields.

1. In the **Explorer Bar**, mouse over the **Query Explorer** tab and select the **Query1** object.
2. From the **Source** tab of the **Insertable Objects** pane, drag the **Product description** query item from the **Products** query subject into the **Data Items** pane of the query design window.

3. From the **Toolbox** tab of the **Insertable Objects** pane, drag a **Data Item** into the **Data Items** pane below **Product Description**.

The Data Item Expression window opens.

4. Type the following code in the **Expression** definition window:

```
?SearchText?
```

This creates a parameter called **SearchText** and assigns the value to the Data Item we just created. We will be searching for the text that will be typed into the server-generated prompt because we will not create a prompt page on our own in this example.

5. Validate the expression and click **OK** to close the dialog box.
6. In the **Properties** window for the **Data Item**, use the **Name** property to rename the **DataItem1** data item to **SearchText**.

## Step 3: Include the Search Functionality

In this section, we will add the key functionality to the query. First, we will add a function to search for the matching text. If a match is found, we will break up the description into three fields. If a match is not found, we will leave the description in the first field.

1. From the **Toolbox** tab of the **Insertable Objects** pane, drag another **Data Item** into the **Data Items** pane below the **SearchText** data item.

The Data Item Expression window opens.

2. Create the following expression:

```
position([SearchText], [Product description])
```

---

**HINT** Drag and drop the **SearchText** and **Product** description data items from the **Data Items** tab of the **Available Components** pane to avoid having to type in the whole expression. When referencing data item and query item names in IBM Cognos Report Studio, the names are case-sensitive.

---

The position function returns an integer value that represents where the first character of the searched text begins within the Product description string. If no match is found, the position function returns a zero.

3. Validate the expression and click **OK** to close the dialog box.
4. In the **Properties** window for the **Data Item**, use the **Name** property to rename the **DataItem1** data item to **Position**.
5. From the **Toolbox** tab of the **Insertable Objects** pane, drag another **Data Item** into the **Data Items** pane below the **Position** data item.

The Data Item Expression window opens.

6. Create the following expression:

```
IF ([Position]=0) THEN
    ([Product description])
ELSE
    (substring([Product description], 1, [Position]-1))
```

If the searched text does not exist in the Product description field, then we will set this first field to the full product description.

In case the string is found, we want to cut off the text that precedes the string we are looking for, including the space before the string. This is why we use [Position] - 1 as the third argument in the substring function.

7. Validate the expression and click **OK**.
8. In the **Properties** window for the **Data Item**, use the **Name** property to rename the **DataItem1** data item to **PartOne**.
9. From the **Toolbox** tab of the **Insertable Objects** pane, drag another **Data Item** into the **Data Items** pane below the **PartOne** data item.

The Data Item Expression window opens. This field contains the text to be highlighted only if the text is found.

10. Create the following expression:

```
IF ([Position]=0) THEN
    ( '')
ELSE
    ([SearchText])
```

---

**NOTE** The expression has two single quotes without spaces. If the searched text does not exist in the Product description field, we will just default to an empty string (two single quotes indicate an empty string).

---

11. Validate the expression and click **OK**.
12. In the **Properties** window for the **Data Item**, use the **Name** property to rename the **DataItem1** data item to **PartTwo**.
13. From the **Toolbox** tab of the **Insertable Objects** pane, drag another **Data Item** into the **Data Items** pane below the **PartTwo** data item.

The Data Item Expression window opens.

14. Create the following expression:

```
IF ([Position]= 0) THEN
    ( '' )
ELSE
    (substring ([Product description], [Position] +
        char_length([SearchText]), char_length([Product
        description]) - char_length([SearchText]) -
        char_length([PartOne])))
```

---

**NOTE** The expression has two single quotes without spaces.

---

If the searched text does not exist in the Product description field, we will just default to an empty string.

If we do find the text, PartThree needs to contain text that is after the searched string, including the space after the searched string. This is why we need to use character length functions to figure out the positioning of the starting point for the substring function and the length of the remaining string.

15. Validate the expression and click **OK**.
16. In the **Properties** pane for the **Data Item**, change the **Name** property to **PartThree**.  
This completes our report query build.
17. Click on the **Run** menu item and choose the **View Tabular Data** option to test the Report query before starting the report design. The warning message pop-up can be dismissed by clicking the **OK** button.  
Sample text for a search that you could use is **rope**.  
Your results will be similar to Figure 1.2.
18. Close the **IBM Cognos Viewer** window to return to IBM Cognos Report Studio.

Product description	SearchText	Position	PartOne	PartTwo	PartThree
11 mm diameter standard rope. Length: 100 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	rope	25	11 mm diameter standard	rope	. Length: 100 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.
11 mm diameter standard rope. Length: 200 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	rope	25	11 mm diameter standard	rope	. Length: 200 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.
11 mm diameter standard rope. Length: 50 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	rope	25	11 mm diameter standard	rope	. Length: 50 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.
11 mm diameter standard rope. Length: 60 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	rope	25	11 mm diameter standard	rope	. Length: 60 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.
3.6x opera glasses maintain image and color fidelity in all lighting conditions. The brushed aluminum body fits snugly into any purse or pocket. Includes a soft leather case and carrying loop.	rope	0	3.6x opera glasses maintain image and color fidelity in all lighting conditions. The brushed aluminum body fits snugly into any purse or pocket. Includes a soft leather case and carrying loop.		
8x27x50 zoom binoculars include compass and range-finding reticle, multi-coated optics, and textured rubber armoring. Waterproof and lightweight.	rope	0	8x27x50 zoom binoculars include compass and range-finding reticle, multi-coated optics, and textured rubber armoring. Waterproof and lightweight.		
A compact tool that includes LED light, blade, tweezers, reamer, screwdriver, file, corkscrew and can opener.	rope	0	A compact tool that includes LED light, blade, tweezers, reamer, screwdriver, file, corkscrew and can opener.		
A complete medical kit suitable for families with children. Contains cough syrup, oral rehydration salts, advanced wound management, and more. Size: 22 x 12 x 7 cm. Weight: 0.6 kg.	rope	0	A complete medical kit suitable for families with children. Contains cough syrup, oral rehydration salts, advanced wound management, and more. Size: 22 x 12 x 7 cm. Weight: 0.6 kg.		

Figure 1.2 Tabular data view

## Step 4: Create the Report Design

Now we will add the three parts to a list column named Product description.

1. Mouse over **Page Explorer** and click on **Page1**.
2. From the **Data Items** tab of the **Insertable Objects** pane, drag the following data items into the **List** object: **PartOne**, **PartTwo**, and **PartThree**.
3. Unlock the **List** object cells by clicking on the **Unlock (currently locked)** button on the toolbar.
4. Click on the **PartTwo** text item within the **PartTwo** list column body to select it. Drag it over into the list column body of the **PartOne** column to the right of the **PartOne** text item.
5. Click on the **PartThree** text item within the **PartThree** list column body to select it. Drag it over into the list column body of the **PartOne** column to the right of the **PartTwo** text item.
6. Click on the **PartTwo** text item and then click on the **Foreground Color** button on the toolbar and select the drop-down arrow. From the **Named Colors** menu, change the foreground color to **Red**. Click the **Bold** button on the toolbar to change the font effect to bold.

Your design should look similar to Figure 1.3.

PartOne	PartTwo	PartThree
<PartOne><PartTwo><PartThree>		
<PartOne><PartTwo><PartThree>		
<PartOne><PartTwo><PartThree>		

Figure 1.3 Start of the report design

7. Click on the **PartOne** text item within the **PartOne** list column title area.
8. In the **Properties** pane, change the **Source Type** property to **Text**.
9. Double-click the **Text** property and type **Product Description**.
10. Click **OK** to close the dialog box.
11. Lock the **List** object cells by clicking on the **Lock (currently unlocked)** button on the toolbar.
12. Ctrl-click the **PartTwo** and **PartThree** list column bodies and press **Delete** on the keyboard to remove them from the report design. Your design should now look similar to Figure 1.4.

Product Description
<PartOne><PartTwo><PartThree>
<PartOne><PartTwo><PartThree>
<PartOne><PartTwo><PartThree>

Figure 1.4 Key report design

13. From the **Run** menu, select **Run Report – HTML** to view the report.  
When prompted, click in the **Provide a value** prompt box and type **glasses**.  
Your results should look similar to Figure 1.5.
14. Close the **IBM Cognos Viewer** window to return to IBM Cognos Report Studio.

Product Description
3.6x opera glasses maintain image and color fidelity in all lighting conditions. The brushed aluminum body fits snugly into any purse or pocket. Includes a soft leather case and carrying loop.
8x27x50 zoom binoculars include compass and range-finding reticle, multi-coated optics, and textured rubber armoring. Waterproof and lightweight.
A compact tool that includes LED light, blade, tweezers, reamer, screwdriver, file, corkscrew and can opener.
A complete medical kit suitable for families with children. Contains cough syrup, oral rehydration salts, advanced wound management, and more. Size: 22 x 12 x 7 cm. Weight: 0.6 kg.
A durable plastic cooler with hinged top, perfect for storing small items. Size: 100 x 50 x 50 cm.
A general purpose mountaineering axe for snow and glacier travel. Excellent mid-weight axe. Weight: 638 g
A high quality aluminum flashlight with Krypton bulb. Uses two D batteries, included.
A light-weight GPS receiver with a 56mm monochrome display and 24MB internal memory. Requires two AA batteries for 26 hours of service. Weighs only 156 grams.
A perfect tent for biking and hiking trips, compact and very light. Features three shock cord aluminum poles, and three large mesh windows. Packed size: 15 x 40 cm. Weight: 0.5 kg.
A personal first aid kit is recommended for every outdoor hiker or camper. Contains basic wound management, advanced infectious control, and more. Size: 17 x 10 x 7 cm. Weight: 0.3 kg.
A rubberized and water-resistant GPS receiver that includes a 70mm color screen, electronic compass and altimeter. Uses a 64MB memory card. Requires two AA batteries for 18 hours of service. Weighs 238 grams.
A single burner stove with integral tank. It features precise flame control so you will never have to settle for burnt camp food again. Weight 624 g, fuel is white gas.
A single tent peg made of heavy-duty plated steel. Long enough even for hard, rocky ground. Length: 25 cm
A solid hammer made with a solid hard wood handle and steel head. Weight: 800g.
A versatile pocket tool that includes LED light, 1GB memory stick, pen, serrated blade, corkscrew and serrated cutter. Comes with a life time warranty.
A weekend getaway requires this pack. It features a large front compression pocket, harness and waist belt, foam molded back panel, vinyl covered gear loops. 50,000 cu. cm.
Acrylex lenses in the Polar Wave sunglasses absorb up to 90% of visible light, 96% ultraviolet, and 82% infrared light. Unbreakable nylon frames.
Adjustable brightness control with auto ignition. Safely stores in its own protective case. Approximate burn time 5 hours on one 0.25 liter butane canister, included.
All you will ever need on the trail. Pot gripper and nylon carrying bag included. 1.5 and 2 liter pots with individual lids. Weight: 750 g.
All-purpose stainless steel pliers. Sheath included. Length (closed) 12cm, (open) 16 cm. Weight: 200 g.

Figure 1.5 Report view

## Step 5: Finalize the Report Design

The core development of this report is finished; what is left are the finishing touches. We will add additional data elements for the product catalog and filter the report to show only the products whose descriptions contain the keyword that was entered at runtime.

1. In the **Explorer Bar**, mouse over the **Query Explorer** tab and select the **Query1** object.
2. From the **Data Items** pane, drag the **Position** data item into the **Detail Filters** pane.

The Detail Filter Expression dialog box opens and shows [Position] in the Expression Definition box.

3. Add the following code in the **Expression Definition** window after the [Position] expression:

```
<> 0
```

Your expression should now be this:

```
[Position] <> 0.
```

4. Click **OK** to close the Detail Filter Expression dialog box.

This ensures that only product records with descriptions containing the keyword get retrieved from the database.

5. Mouse over **Page Explorer** and click on **Page1**.
6. Click on the **Report Title** text to select it.
7. Change the **Source Type** property to **Report Expression**.

8. Double-click the **Report Expression** property.  
The Report Expression dialog box window opens.
9. Create the following expression in the **Expression Definition** box:  
`'Product Catalog records for keyword - ' + ParamDisplayValue('SearchText')`
10. Validate the expression and click **OK** to close the Report Expression dialog box.
11. From the **Source** tab of the **Insertable Objects** pane, Ctrl-click and drag the **Product** query item from the **Products** query subject and the **Product Number** query item from the **Codes** folder as columns in front of the **Product Description** column in the report list.

---

**COGNOS 8 NOTE** The **Product** query item is called **Product name**.

---

12. From the **Source** tab of the **Insertable Objects** pane, Ctrl-click and drag the **Product color**, **Product size**, **Introduction date**, and **Discontinued date** query items from the **Products** query subject as columns after the **Product Description** column in the report list.  
Your report design should now look similar to Figure 1.6.

<%'Product Cat...%>						
Product number	Product	Product Description	Product color	Product size	Introduction date	Discontinued date
<Product number>	<Product>	<PartOne><PartTwo><PartThree>	<Product color>	<Product size>	<Introduction date>	<Discontinued date>
<Product number>	<Product>	<PartOne><PartTwo><PartThree>	<Product color>	<Product size>	<Introduction date>	<Discontinued date>
<Product number>	<Product>	<PartOne><PartTwo><PartThree>	<Product color>	<Product size>	<Introduction date>	<Discontinued date>

**Figure 1.6** Final report design

13. From the **Run** menu, select **Run Report – HTML** to view the report. When prompted, click in the **Provide a value** prompt box and type **rope**.  
Your results should look like Figure 1.7.
14. Close the **IBM Cognos Viewer** window to return to IBM Cognos Report Studio.

By using a combination of string functions, we were able to split the original text field into three text items that contained all text before the searched string, the actual search string, and all text after the searched string, respectively. Once the query was built, we were able to use a simple IBM Cognos Report Studio built-in feature to unlock the report list cells in order to be able to condense the report and combine all the row data in one defined column.

Product Catalog records for keyword - rope							
Product number	Product	Product Description	Product color	Product size	Introduction date	Discontinued date	
42110	Husky Rope 50	11 mm diameter standard rope. Length: 50 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Red	50 m	Jan 10, 2005 12:00:00 AM		
43110	Husky Rope 60	11 mm diameter standard rope. Length: 60 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Red	60 m	Jan 10, 2005 12:00:00 AM		
44110	Husky Rope 100	11 mm diameter standard rope. Length: 100 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Blue	100 m	Jan 10, 2005 12:00:00 AM		
45110	Husky Rope 200	11 mm diameter standard rope. Length: 200 m. Weight: 78 g per meter. Impact Force: 7.2 kN. Static Elongation: 7.8%. Number of UIAA Falls: 16.	Blue	200 m	Jan 10, 2005 12:00:00 AM		
51110	Granite Belay	The Granite Belay is an ingenious single rope belay device that uses carabiner movement to brake the rope.	Black	Unspecified	Jan 10, 2005 12:00:00 AM		
50110	Granite Carabiner	Made from 12 mm rod stock aluminum and a radius suitable for almost any rope size. Locks tight with almost any belay/rappeal combination. Individually tested.	Silver	12 mm	Jan 10, 2005 12:00:00 AM		

**Figure 1.7** Final enhanced product catalog

Our careful string manipulation and simple font-color change allowed us to create an illusion of word highlighting within a larger text field based on the word search entered by the user at runtime.

## Avoiding Query Macros

In class, we teach students that query macros can be written to take advantage of the IBM Cognos BI capability to dynamically change the report queries at runtime. Query macros can be built to integrate information about the report consumer or to enhance the queries that are written. Unfortunately, the query macros are not easy to master because the documentation exists only in the IBM Cognos Framework Manager documentation. In our example, we will show how the solution to the common business problem can be resolved without resorting to the use of query macros.

The sales team wants to be able to quickly analyze how each retailer region is performing according to product quantities sold, revenue produced, and gross profit achieved. The sales team would like to be able to filter the results in one of three ways: by selected date, by selected order method, or by selected employee.

The team would like one report where they can select the type of filter and the value to include for the filter and see the results in a crosstab so that they can quickly compare the numbers between the products and the regions. The final prompt result we are trying to achieve should look similar to Figure 1.8.

**Prompt Page 1 - Select Filter Type**

Filter by date range  
 Filter by order method  
 Filter by sales rep

**Figure 1.8** Main prompt page

After the prompt is selected, the report will run with a completely different filter option, and in case the prompt triggers another parameter, a new corresponding prompt will show up for the user to make the final selection.

Different second-page prompts are illustrated in Figures 1.9, 1.10, and 1.11.

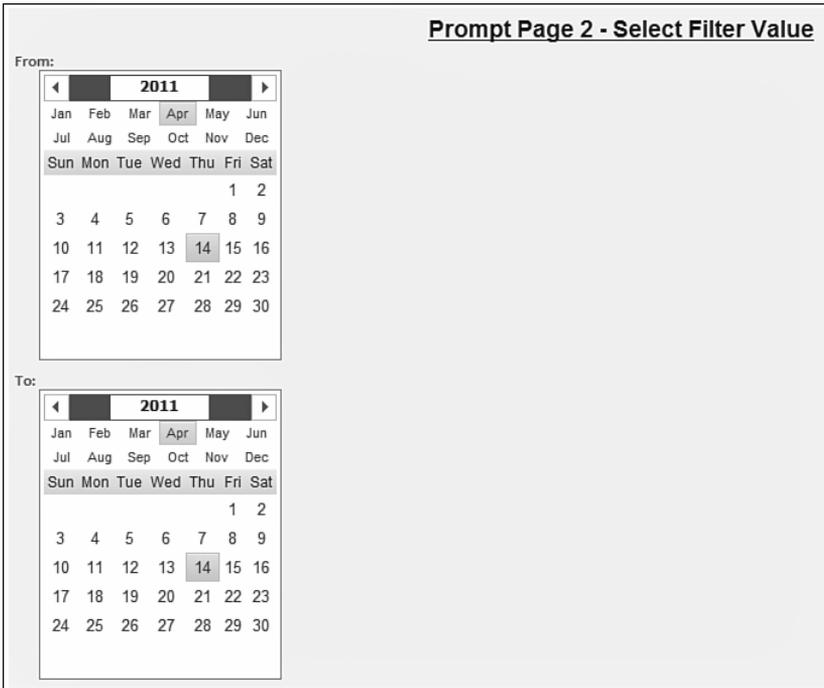


Figure 1.9 Second conditional prompt page: Date Range

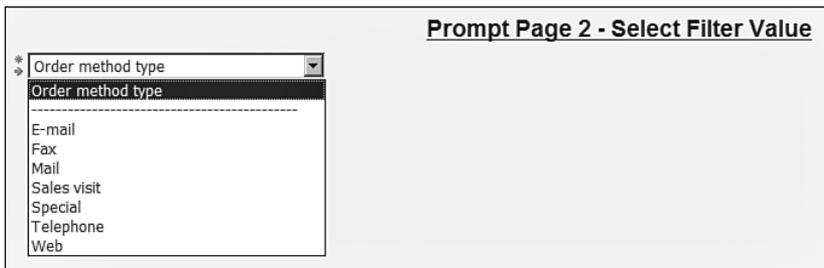
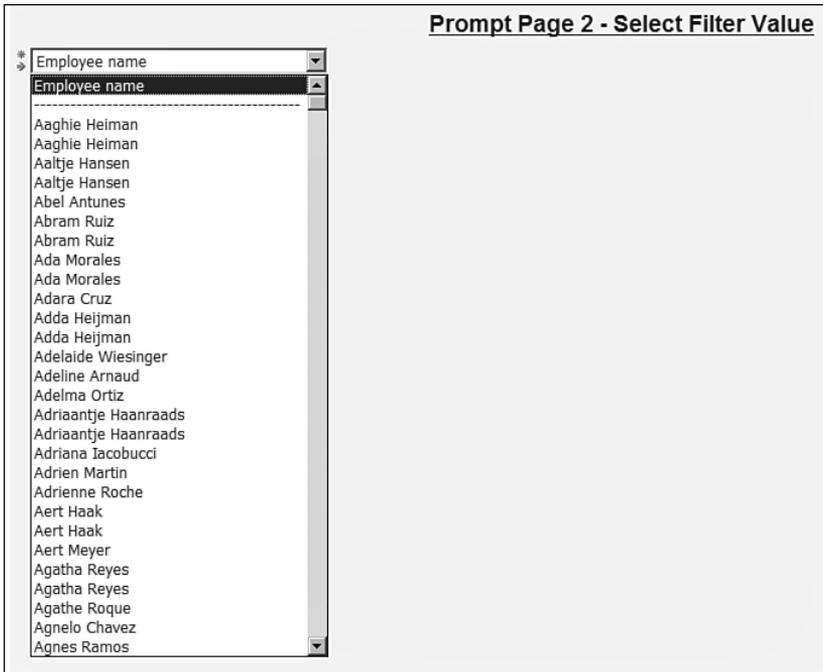


Figure 1.10 Second conditional prompt page: Order Method



**Figure 1.11** Second conditional prompt page: Employee

Figure 1.12 illustrates the final report that is desired (we are assuming an Order method prompt selection and a specific order method selection).

<b>Product Line Summary for Filter by order method</b>			
Fax			
Revenue	Quantity	Revenue	Gross profit
Camping Equipment	413,958	23,054,398.48	8,675,557.15
Golf Equipment	102,651	15,241,303.27	7,269,748.7
Mountaineering Equipment	292,408	11,848,370.08	4,743,720.54
Outdoor Protection	311,583	1,966,484.72	1,190,874.37
Personal Accessories	359,414	17,962,985.46	7,168,417.72

**Figure 1.12** Final report

## Design

We have discovered that macro code syntax help is not readily available for IBM Cognos Report Studio developers. It is covered extensively in IBM Cognos Framework Manager training and materials but not in IBM Cognos Report Studio user guides.

We have to change the syntax of the filter expression depending on what the user selects in the prompt at runtime.

The reason we cannot just pass the filter expression as a parameter value is that it will be treated by the report engine as a text value and not as “code” that has to be used as a filter expression.

For this reason, the expression is captured in a prompt macro function. However, writing the macro function or finding out what the correct syntax is may be difficult for novice report developers who may not have access to the IBM Cognos Framework Manager developers who can help them.

The solution we are proposing in this example will completely avoid the use of macros, and it will be easy for business users to understand and replicate.

Our sample report will be a crosstab report that will be filtered in one of the three ways that users select at runtime. The options will be by date range, by order method, or by sales rep.

## Step-by-Step

We will start with a simple crosstab template.

### Step 1: Start the Report

1. Launch **Report Studio** and select the **GO Data Warehouse (query)** package.
2. Click on **Create new** option.

---

**COGNOS 8 NOTE** The option is **Create a new report or template**.

---

3. Select the **Crosstab** report template and click **OK**.

We will be using the **Sales (query)** namespace inside the **Sales and Marketing (query)** folder (same as for the previous example).

### Step 2: Set Up the Crosstab and the Query

When it comes to creating reports, there are two approaches. As in this example, you can build the query and the report layout at the same time. Our first example provides an approach where you can build the query first and then create the report layout.

1. From the **Source** tab of the **Insertable Objects** pane, drag the following query items into the **Crosstab**:
  - **Product Line** from the **Products** query subject to the **Rows** drop zone
  - **Quantity**, **Revenue**, and **Gross profit** from the **Sales fact** query subject to the **Columns** drop zone

---

**COGNOS 8 NOTE** The **Products** query subject is called **Product**, and **Time** is called **Time Dimension**.

---

2. In the **Explorer** bar, mouse over the **Query Explorer** and select **Query1**.
3. From the **Toolbox** tab of the **Insertable Objects** pane, drag the **Filter** object into the **Detail Filters** pane.

The Detail Filters Expression box pops up.

4. Create the following filter expression:

```
CASE ?choice?
WHEN 1 THEN ([Sales (query)].[Time].[Date] in_range ?Date?)
WHEN 2 THEN ([Sales (query)].[Order method].[Order method code]
= ?OrderMethod?)
ELSE ([Sales (query)].[Employee by region].[Employee key] =
?Employee?)
END
```

5. Validate the expression, choosing any prompt values, and click **OK** to close the dialog box.

---

**NOTE** This is the filter expression we are using instead of the prompt macro expression, which would look like this:

```
#prompt('choice', 'token')#
```

---

6. To return to the page design, mouse over the **Page Explorer** tab and select **Page1**.
7. Click on any whitespace in the page body to select it and click on the **Center** button on the toolbar.
8. Click on the report title text to select it, and change the **Source Type** property from **Text** to **Report Expression**.
9. Double-click on the **Report Expression** property box.

The Report Expression dialog box opens.

10. Create the following expression:

```
'Product Line Summary for ' + ParamDisplayValue('choice')
```

11. Validate the expression, choosing any prompt values, and click **OK**.

Our crosstab report setup is complete at this point.

### Step 3: Set Up the First Prompt Page

1. Mouse over **Page Explorer** and select the **Prompt Pages** folder.
2. Drag a **Page** object from the **Insertable Objects** pane into the **Prompt Pages** pane.  
This will be Prompt Page1.
3. Double-click on **PromptPage1** to enter page design mode.

4. Change the page title text to this:  
Prompt Page 1 - Select Filter Type
5. From the **Toolbox** tab of the **Insertable Objects** pane, drag a **Value Prompt** object into the page body of the prompt page.  
The Prompt Wizard dialog box opens.
6. Click on the **Use existing parameter** radio button, and from the drop-down menu, select the **choice** parameter.
7. Click on the **Finish** button to close the Prompt Wizard dialog box.
8. Click on the newly created value prompt to select it.
9. Double-click the **Static Choices** property in the **Properties** pane.  
The Static Choices dialog box is displayed.
10. Click on the **Add** button in the lower-left corner of the **Static Choices** dialog box.  
The Edit dialog box opens.
11. Type in the value **1** in the **Use** property text box and type **Filter by date range** in the **Display** property text box.
12. Repeat the preceding step to add two more static values:
  - Use: **2** and Display: **Filter by order method**
  - Use: **3** and Display: **Filter by sales rep**Your Static Choices dialog box should look similar to Figure 1.13.

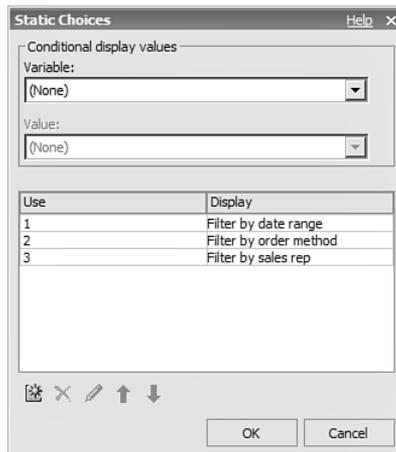


Figure 1.13 Static Choices dialog box

13. Click **OK** to close the Static Choices dialog box.
14. While you still have the value prompt selected, change the **Select UI** property to **Radio button group**.
15. Change the **Auto-Submit** property to **Yes**.
16. Click on any whitespace in the prompt page body to select it and click on the **Center** button on the **Toolbar**.
17. Click on the page footer (which has all the prompt buttons) and **Delete** it.

We do not need the buttons because the prompt control we built on this page has the auto-submit property turned on, and it will submit the selections as soon as the user clicks on one of the radio buttons.

We have completed the first prompt page.

#### Step 4: Set Up the Second Prompt Page

The prompt controls shown on the second prompt page will depend on the selections made in the first page.

1. Mouse over **Page Explorer** and select the Prompt Pages folder.
2. Drag a **Page** object from the **Insertable Objects** pane into the **Prompt Pages** pane below Prompt Page1.  
This will be Prompt Page2.
3. Double-click on **PromptPage2** to enter prompt page design mode.
4. Change the page title text to this:  
`Prompt Page 2 - Select the Filter Value`
5. From the **Toolbox** tab of the **Insertable Objects** pane, drag the **Conditional Blocks** object into the prompt page body.

---

**NOTE** We will use the conditional blocks to display a different prompt based on selection from the previous prompt page.

---

6. Click on the **Conditional Blocks** object to select it.
7. Double-click on the **Block Variable** property in the **Properties** pane.  
The Block Variable dialog box opens.
8. From the **Variable** drop-down menu, select the **<New string variable>** option.  
The New Variable dialog box opens.
9. Make the **Name** of the new variable **choice**.

10. Click on the **Add** button in the lower-left corner of the dialog box.  
The Add dialog box opens.
11. Enter the value **1** and click **OK**.  
We will repeat the previous steps to add two more values: 2 and 3.
12. Click on the **Add** button again in the lower-left corner of the dialog box.  
The Add dialog box opens.
13. Enter the value **2** and click **OK**.
14. Click on the **Add** button one more time in the lower-left corner of the dialog box.  
The Add dialog box opens.
15. Enter the value **3** and click **OK**.  
Your New Variable dialog box will look similar to Figure 1.14.

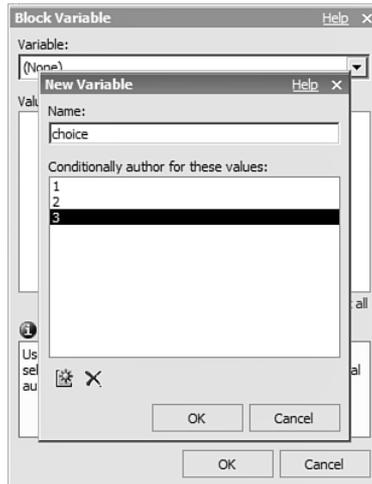


Figure 1.14 New Variable dialog box

16. Click **OK**.  
The Report Expression dialog box window opens.
17. Create the following expression:  
`ParamValue('choice')`
18. Validate the expression and click **OK** twice to close the Report Expression and Variable dialog boxes.
19. Change the **Current Block** property value from **(Other)** to **1**.  
We will now design the prompt for when the users select a date range filter type.

20. From the **Toolbox** tab of the **Insertable Objects** pane, drag a **Date** prompt into the conditional block.  
The Prompt Wizard dialog box is displayed.
21. Click on the **Use existing parameter** radio button, and from the drop-down menu, select the **Date** parameter.
22. Click the **Finish** button to close the Prompt Wizard dialog box.
23. Click on the newly inserted **Date prompt** control to select it.
24. Change the **Multi-Select** property to **No**.
25. Click on the background of the **Conditional Block** to select it.
26. Change the **Current Block** property to **2**.  
We will now design the prompt for when the users select an order method filter type.
27. From the **Toolbox** tab of the **Insertable Objects** pane, drag a **Value** prompt into the conditional block.  
The Prompt Wizard dialog box opens.
28. Select the **Use existing parameter** radio button and from the drop-down menu select the **OrderMethod** parameter.
29. Click the **Next** button.
30. Change the **Name** property from **Query2** to **OrderMethodPrompt**.
31. Set the **Values to display** value to **[Sales (query)].[Order method].[Order method type]**.

---

**COGNOS 8 NOTE** The **Order method type** query item is called **Order method**.

---

32. Click on the **Finish** button to close the Prompt Wizard dialog box.
33. Click on the background of the **Conditional Block** to select it.
34. Change the **Current Block** property to **3**.  
We will now design the prompt for when the users select an employee filter type.
35. From the **Toolbox** tab of the **Insertable Objects** pane, drag a **Value** prompt into the conditional block.  
The Prompt Wizard dialog box opens.
36. Click on the **Use existing parameter** radio button, and from the drop-down menu, select **Employee** parameter.
37. Click on the **Next** button.
38. Change the **Name** property from **Query2** to **EmployeePrompt**.

39. Set the **Values to display** value to `[Sales (query)].[Employee by region].[Employee name]`.
40. Click on the **Finish** button to close the Prompt Wizard dialog box.

Our second prompt page design is finished at this point. It can be enhanced by the addition of text boxes for additional instructions to the users, or prompt controls can be modified to have a different UI.

You can now test the report prompt page flow.

### Step 5: Adjust the Report Title to Show the Selected Prompt Value

The objective is to dynamically display the prompt selections that the user selected at runtime.

1. Mouse over **Page Explorer** and select the **Page1** object.
2. From the **Toolbox** tab of the **Insertable Objects** pane, drag the **Conditional Blocks** object into the page header area below the report title block.  
We will reuse the variable we created for the purposes of the second prompt page.
3. Click on the **Conditional Block** object we have just inserted, and double-click on the **Block Variable** property in the **Properties** pane.  
The Block Variable dialog box opens.
4. From the **Value** drop-down menu, select the **choice** variable that was created during the second prompt page design.
5. Click **OK** to close the Block Variable dialog box.
6. Change the **Conditional Block** property value from **(Other)** to **1**.
7. From the **Toolbox** tab of the **Insertable Objects** pane, drag a **Layout Calculation** object into the **Conditional Block**.  
The Report Expression dialog box opens.
8. Click on the **Parameters** tab of the **Available Components** section of the dialog box.
9. Drag the **Date** parameter into the **Expression Definition** area.
10. Validate the expression and click **OK** to close the Report Expression dialog box.
11. From the **Toolbar**, click the **Center** button to center the parameter expression in the report title area.
12. Change the **Current Block** property value to **2**.
13. From the **Toolbox** tab of the **Insertable Objects** pane, drag a **Layout Calculation** object into the **Conditional Block**.  
The Report Expression dialog box opens.
14. Click on the **Parameters** tab of the **Available Components** section of the dialog box.

15. Drag the **Order Method** parameter into the **Expression Definition** area.
16. Validate the expression and click **OK** to close the Report Expression dialog box.
17. From the **Toolbar**, click the **Center** button to center the parameter expression in the report title area.
18. Change the **Current Block** property value to **3**.
19. From the **Toolbox** tab of the **Insertable Objects** pane, drag a **Layout Calculation** object into the **Conditional Block**.  
The Report Expression dialog box opens.
20. Click on the **Parameters** tab of the **Available Components** section of the dialog box.
21. Drag the **Employee** parameter into the **Expression Definition** area.
22. Validate the expression and click **OK** to close the Report Expression dialog box.
23. From the toolbar, click the **Center** button to center the parameter expression in the report title area.

Our report design is completed for this example.

We have achieved the desired result by using a conditional block in a second prompt page, which will show different second prompt options depending on the selections made on the first prompt page.

Furthermore, we have integrated the dynamic filter logic without the use of macro functions in order to demonstrate that novice report developers can be quite capable of creating very complex dynamic prompts and filter reports without advanced macro programming knowledge.

Finally, we have shown you how to dynamically control what will be shown in the title of the report based on the user's selections during the prompt process.

## Complex Crosstab Calculations

Sometimes, the easiest of report requests give report developers the hardest time. The solution is easy; however, it takes time to find the correct property or “discover” the correct button that does the trick.

The final result we are trying to achieve should look similar to Figure 1.15.

### Design

The order of calculations in more complex data containers, such as crosstabs and charts, can sometimes cause report developers to get undesired results when summarizing data. In this example, we will explore the default behavior of summarizations in crosstabs and discover the alternatives and seldom-used properties.

	2004			2005			2006			2007	
	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue
Camping Equipment	332,986,338.06	361,495,088.97	92.11%	402,757,573.17	431,970,502.15	93.24%	500,382,422.83	531,010,839.07	94.23%	352,910,329.97	378,610,000.00
Golf Equipment	153,553,850.98	169,875,640.98	90.39%	168,006,427.07	182,227,978.19	92.20%	230,110,270.55	247,977,474.85	92.79%	174,740,819.29	190,171,000.00
Outdoor Protection	36,165,521.07	38,181,339.98	94.72%	25,008,574.08	26,157,261.77	95.61%	10,349,175.84	10,938,440.68	94.61%	4,471,025.26	4,720,000.00
Personal Accessories	391,647,093.61	398,923,067.59	98.18%	456,323,355.9	464,458,617.66	98.25%	594,009,408.42	602,227,218.07	98.64%	443,693,449.85	449,770,000.00
Mountaineering Equipment				107,099,659.94	113,363,106.75	94.47%	161,039,823.26	168,584,907.17	95.52%	141,520,649.7	148,620,000.00
Summary	914,352,803.72	968,475,137.52	94.41%	1,159,195,590.16	1,218,177,466.52	95.16%	1,495,891,100.9	1,560,738,879.84	95.85%	1,117,336,274.07	1,171,950,000.00

Figure 1.15 Completed crosstab percentage calculation example

### Step-by-Step

We will start with a simple crosstab template.

#### Step 1: Start the Report

1. Launch **Report Studio** and select the **GO Data Warehouse (analysis)** package.
2. Click on the **Create new** option.

---

**COGNOS 8 NOTE** The option is **Create a new report or template**.

---

3. Select the **Crosstab** report template and click **OK**.  
 We will be using the **Sales (analysis)** namespace inside the **Sales and Marketing (analysis)** folder, same as we did for the previous examples in this chapter.

#### Step 2: Set Up the Crosstab

1. From the **Source** tab of the **Insertable Objects** pane, drag the following levels into the Crosstab:
  - **Product Line** from the **Products** dimension and **Products** hierarchy to the **Rows** drop zone
  - **Year** from the **Time** dimension and **Time** hierarchy to the **Columns** drop zone
2. Drag **Revenue** and **Planned revenue** from the **Sales fact** measures to the **Columns** drop zone and nest them under the **Year** data item.

---

**COGNOS 8 NOTE** The **Products** and **Time** dimensions and hierarchies are called **Product** and **Time Dimension**.

---

3. Ctrl-click the **Revenue** and **Planned revenue** column headings in the **Crosstab**.
4. From the **Data** menu item, select **Calculate** and click on the **%(Revenue, Planned revenue)** option.

This will create a calculation item under each Year column and next to the Revenue and Planned revenue data items. The calculation will represent the percentage of planned revenue achieved. In addition, you will notice when you run the report that the formatting of the data will already be in percentage format.

5. Right-click the newly created **%(Revenue, Planned revenue)** column title in the **Crosstab** and select the **Show Text...** option.

---

**COGNOS 8 NOTE** The **Show Text...** option is called **Edit Text...**

---

The Edit label dialog box opens.

6. Change the text to **% of Plan** and click **OK** to close the dialog box.
7. In the **Crosstab**, click on the **Product Line** row title to select it.
8. From the toolbar, click on the **Summarize** button and select the **Total** option.

---

**COGNOS 8 NOTE** The **Summarize** toolbar button is the **Aggregate** button.

---

9. From the **Run** menu, select **Run Report – HTML** to view the report. Your results should be similar to Figure 1.16.

	2004			2005			2006			2007
	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue
Camping Equipment	332,986,338.06	361,495,088.97	92.11%	402,757,573.17	431,970,502.15	93.24%	500,382,422.83	531,010,839.07	94.23%	352,910
Golf Equipment	153,553,850.98	169,875,640.98	90.39%	168,006,427.07	182,227,978.19	92.20%	230,110,270.55	247,977,474.85	92.79%	174,740
Outdoor Protection	36,165,521.07	38,181,339.98	94.72%	25,008,574.08	26,157,261.77	95.61%	10,349,175.84	10,938,440.68	94.61%	4,471
Personal Accessories	391,647,093.61	398,923,067.59	98.18%	456,323,355.9	464,458,617.66	98.25%	594,009,408.42	602,227,218.07	98.64%	443,693
Mountaineering Equipment				107,099,659.94	113,363,106.75	94.47%	161,039,823.26	168,584,907.17	95.52%	141,521
<b>Total</b>	<b>914,352,803.72</b>	<b>968,475,137.52</b>	<b>375.40%</b>	<b>1,159,195,590.16</b>	<b>1,218,177,466.52</b>	<b>473.76%</b>	<b>1,495,891,100.9</b>	<b>1,560,738,879.84</b>	<b>475.80%</b>	<b>1,117,336</b>

**Figure 1.16** Initial crosstab view

Notice how the Total line for the percentage calculations is actually adding the percentages. This is not the desired result. We are expecting to see the overall % of Plan for each year.

- Close the **IBM Cognos Viewer** window to return to IBM Cognos Report Studio.  
We will showcase two ways of correcting this problem in Steps 3a and 3b.

**Step 3a: Fix the Crosstab Total Percentage Calculation**

- Click on the **% of Plan** column heading to select it.
- In the **Properties** pane, change the **Solve Order** property from a blank value to **2**.

By default, all the data item properties do not have this property set.

Solve Order property indicates which values will be calculated first in crosstabs and charts. The items with the lowest sort order values are calculated first; otherwise, the calculations on the detail rows are performed first, and then all the summaries.

The percentage calculation column should be calculated last, and since the summaries of the Revenue and Projected Revenue will already exist, the report server will use them to calculate the overall Year percentage.

- From the **Run** menu, select **Run Report – HTML** to view the report. The report results should look similar to Figure 1.17.

	2004			2005			2006			2007
	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue
Camping Equipment	332,986,338.06	361,495,088.97	92.11%	402,757,573.17	431,970,502.15	93.24%	500,382,422.83	531,010,839.07	94.23%	352,
Golf Equipment	153,553,850.98	169,875,640.98	90.39%	168,006,427.07	182,227,978.19	92.20%	230,110,270.55	247,977,474.85	92.79%	174,
Outdoor Protection	36,165,521.07	38,181,339.98	94.72%	25,008,574.08	26,157,261.77	95.61%	10,349,175.84	10,938,440.68	94.61%	4,
Personal Accessories	391,647,093.61	398,923,067.59	98.18%	456,323,355.9	464,458,617.66	98.25%	594,009,408.42	602,227,218.07	98.64%	443,
Mountaineering Equipment				107,099,659.94	113,363,106.75	94.47%	161,039,823.26	168,584,907.17	95.52%	14,
<b>Total</b>	<b>914,352,803.72</b>	<b>968,475,137.52</b>	<b>94.41%</b>	<b>1,159,195,590.16</b>	<b>1,218,177,466.52</b>	<b>95.16%</b>	<b>1,495,891,100.9</b>	<b>1,560,738,879.84</b>	<b>95.85%</b>	<b>1,117,</b>

**Figure 1.17** Final crosstab view

Notice how the Total line for the percentage calculations is now correct.

- Close the **IBM Cognos Viewer** window to return to IBM Cognos Report Studio.

**Step 3b: Try an Alternative Solution**

There is actually an easier and quicker way to achieve the same result. Instead of task 8 in Step 2, do the following simple task:

- From the **Toolbar**, click on the **Summarize** button and select the **Automatic Summary** option.

**COGNOS 8 NOTE** The **Automatic Summary** option is called **Aggregate**.

- From the **Run** menu, select **Run Report – HTML** to view the report. The results should resemble Figure 1.18.

	2004			2005			2006			2007
	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue	Planned revenue	% of Plan	Revenue
Camping Equipment	332,986,338.06	361,495,086.97	92.11%	402,757,573.17	431,970,502.15	93.24%	500,382,422.83	531,010,839.07	94.23%	352.9
Golf Equipment	153,553,850.98	169,875,640.98	90.39%	168,006,427.07	182,227,978.19	92.20%	230,110,270.55	247,977,474.85	92.79%	174.7
Outdoor Protection	36,165,521.07	38,181,339.98	94.72%	25,008,574.08	26,157,261.77	95.61%	10,349,175.84	10,938,440.68	94.61%	4.4
Personal Accessories	391,647,093.61	398,923,067.59	98.18%	456,323,355.9	464,458,617.66	98.25%	594,009,408.42	602,227,218.07	98.64%	443.6
Mountaineering Equipment				107,099,659.94	113,363,106.75	94.47%	161,039,823.26	168,584,907.17	95.52%	141
<b>Summary</b>	<b>914,352,803.72</b>	<b>968,475,137.52</b>	<b>94.41%</b>	<b>1,159,195,590.16</b>	<b>1,218,177,466.52</b>	<b>95.16%</b>	<b>1,495,891,100.9</b>	<b>1,560,738,879.84</b>	<b>95.85%</b>	<b>1,117.3</b>

**Figure 1.18** Final crosstab view

Notice how the Total line for the percentage calculations is also correct using this alternative suggested step.

- Close the **IBM Cognos Viewer** window to return to IBM Cognos Report Studio.

Sometimes the trick is just to find the correct property or a button. With the ever-changing list of features or options that are added to the new releases of IBM Cognos BI, you will keep discovering easier and better ways to solve the same report issues. Over time, you will notice that there are several ways to do the same thing, all correct, and it will come down to personal preference when you need to decide which approach to take.

## Summary

In this chapter, we wanted to focus on some practical tips and hints to help report authors get some new ideas for their report requirement solutions that simplify the presentation of the reports.

In class, we cover most of the commonly used IBM Cognos Report Studio object properties; however, it takes some time and report-building experience to find out what the rest of the properties are useful for.

The first example builds on the exceptional highlighting techniques we cover in the IBM Cognos Report Studio Fundamentals and Advanced classes. For example, the classes teach the students how to highlight values in individual cells or the whole rows of data based on some kind of static or user-defined thresholds. Our example takes exceptional highlighting to the next level by combining the highlighting techniques with some complex report expression building to achieve the desired results.

The second example allows users to change the filter expression and avoid complex macro expressions that are not really expected from the majority of business report authors.

The third example showcases some of the less-used IBM Cognos Report Studio object properties and provides alternative approaches to solving the same report requirements.

Some techniques that you may want to integrate into other reports include these:

- Various string manipulation functions
- Unlocking of the list container cells to condense reports
- Multiple prompt pages to guide the user to narrow down the focus of the report
- Conditional blocks in the prompt pages and in the report pages
- Reuse of report parameters and conditional variables in different areas of the report
- Solve Order property adjustment for crosstab reports to resolve aggregation issues

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