

# **Crystal Reports XI Designer 2 Workshop**

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This course covers Crystal Reports® XI

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# Introduction

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***Introduction******Introduction Objectives***

This manual is written to give you a step-by-step guide for your classroom training and a handy reference for your daily work. In this Introduction, you will learn how to use this training guide effectively. This section covers the following topics:

- An introduction to the Crystal Reports application
- Pre-Qualification Exercise
- Class objectives
- Help with using this training guide
- Information on how to start the program



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**Introduction****About Crystal Reports**

In today's information intensive environment, every business has a database of some sort. After all, business today is all about information and databases give you a handle on the massive amounts of information you must deal with. Therefore, your business has a database and from that database, you need reports. The problem is, most reporting capabilities that come with database programs are limited. They only report on data from that program. Many users need to report on data from multiple sources, even databases that are in SQL (Structured Query Language), such as Oracle, Microsoft SQL Server, Informix or Sybase.

Crystal Reports is one of the most powerful reporting programs available with the ability to pull data from all types of data sources. You can use Crystal Reports to generate reports from any of the standard PC database programs, Access, Paradox, or FoxPro, as well as from a mainframe or server database. Crystal also has a powerful web-reporting server that allows you to distribute your reports over the web.

Crystal Reports is bundled with more than 160 other programs including Visual Basic, some medical applications, many accounting packages and several ERP solutions. It makes report generation easy without requiring you to be a programmer or a database expert. If you know how to work in a Windows environment and are familiar with the data you want to use, you can create a Crystal Report that looks professional and makes sense.

**Training Philosophy**

Studies show that people retain 10% of information they see, 20% of information they hear, 50% of what they see and hear, and 80% of what they see, hear and do. In line with this, this class utilizes a hands-on method of training. You will see the effects of new procedures on the screen, hear the instructor explain how and why to use features, and perform the actions yourself as you learn.

In addition, this class focuses on your ability to perform tasks using the most productive techniques. The manual may contain several methods of accomplishing a certain task. However, class time does not allow for practice of all methods for each task. Your instructor will guide you in the most effective method of performing a task, but inform you of other methods that are available.

Questions are encouraged. While we give our best effort to explain new concepts in understandable terms, you may need to hear the concept again or have it explained more thoroughly. Please let the instructor know when you need more information!

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**Introduction*****Pre-Qualification Exercise for the Designer 2 Workshop*****Why Should You Pre-qualify Yourself for the Designer 2 Workshop?**

The Crystal Reports Designer 2 Workshop is designed for the experienced Crystal Reports user. It covers the more complex and powerful features of the program. The class discusses very technical issues and includes several fast-paced, comprehensive exercises. Our instructors have years of experience helping students to get the most out of their training. However, it is not always possible in a high level workshop to assist students with basic tasks.

In order to maximize the benefit you receive from the Crystal Reports Designer 2 Workshop, you should come into the training with a certain skill level. We assume all students who sign up for this workshop have a comfortable level of understanding regarding relational databases. Students should also be able to perform the following tasks in Crystal Reports:

- Create a new report, insert fields, save the report and refresh the data.
- Add multiple tables to the report using the Data Explorer.
- Use the select expert to pull only the data needed from the database.
- Insert groups and summarize fields within the group.
- Perform formatting tasks.
- Create, save and use formulas in the report.

If you would like to evaluate for yourself whether this is the correct level course, take our self-evaluation exercise. The exercise consists of writing a report in Crystal Reports. When you are finished, compare your report to the one our experts have done to see how well you understand the basic features of Crystal Reports. You can obtain the exercise and the results report from the Vision Harvest web site, [www.visionharvest.com](http://www.visionharvest.com), or by e-mailing us at [training@visionharvest.com](mailto:training@visionharvest.com).

If you have trouble creating the report or getting the correct results, or if you cannot perform some of the above-mentioned tasks, then we strongly recommend that you take the Crystal Reports Quick Start Workshop before attending the Designer 2 Workshop. By assuring that you are well prepared for the Designer 2 Workshop, you maximize the benefits you receive from this in-depth look at advanced report writing.

**Introduction****Pre-qualification Exercise**

Using the Xtreme sample database that ships with Crystal Reports, create a report that invoices customers for each order. The report needs to show the customer billing address, the PO#, the sales person, the order date, the requested date, the ship date and company that shipped the order. The Details section should list the product ID, the product name, the description, the unit price, the quantity, and the line item total.

Select only those orders with an Order Amount greater than zero and with a ship date between January 1, 2001 and March 31, 2001. Group on the Customer ID, then on the Order ID. Display each order on its own page. Sum the line item total amount for each Order ID. Calculate the sales tax for the order at 6% and total the subtotal and sales tax.

You will need to pull data from the following tables:

Customer	Product
Orders	Product Type
Orders Detail	Employee

You will need to create the following formulas:

Line Item Total that multiplies the unit price times the quantity for each product ordered.

Sales Tax that multiplies the sum of each line item total times 6%.

Order Total that adds the sum of each line item total and the sales tax.

Product Description that contains nested *if...then....else* statements to show the Size field if the Color field is empty, the Color field if the Size field is empty, and both fields, separated by a comma, if both contain data.

You will need to create the following text boxes:

An address box with the text **To:** then the company name, the address, the city, region postal code and country.

An employee box with the employee first name, a space, then the last name.

Format the report to look like the illustrations on the following pages:

**Introduction****Invoice****Date:** December 27, 2002**Invoice Number:** 1143

**To: City Cyclists**  
7464 South Kingsway  
Suite 2006  
Sterling Heights, MI 48358  
USA

**Order Date:** January 6, 2001**Required Date:** January 9, 2001**Ship Date:** January 8, 2001**Ship Via:** FedEx**Sales person:** Nancy Davolio

Product	Product Name	Description	Unit Price	Quantity	Line Total
4102	InFlux Crochet Glove	med	\$12.83	1	\$12.83
1107	Active Outdoors Lycra Glove	xsm	\$16.50	3	\$49.50
<b>Subtotal:</b>					<b>\$62.33</b>
<b>Sales Tax:</b>					<b>\$4.05</b>
<b>Order Total:</b>					<b>\$66.38</b>

**Introduction****Invoice****Date:** December 27, 2002**Invoice Number:** 1246

**To: City Cyclists**  
**7464 South Kingsway**  
**Suite 2006**  
**Sterling Heights, MI 48358**  
**USA**

**Order Date:** January 30, 2001  
**Required Date:** January 30, 2001  
**Ship Date:** January 30, 2001  
**Ship Via:** Pickup

**Sales person:** Margaret Peacock

Product	Product Name	Description	Unit Price	Quantity	Line Total
1108	Active Outdoors Lycra Glove	sm	\$14.85	3	\$44.55
103151	Endorphin	15	\$899.85	1	\$899.85
101152	Descent	15	\$2,939.85	1	\$2,939.85
<b>Subtotal:</b>					<b>\$3,884.25</b>
<b>Sales Tax:</b>					<b>\$252.48</b>
<b>Order Total:</b>					<b>\$4,136.73</b>

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**Introduction****Class Objectives**


This class is a performance based instructional system. It is geared to provide you with the tools you need to build and distribute reports the quickest, most efficient way. After completing this course, you will be able to perform the following tasks:

- Refresher Exercise
- Use multiple sections in reports for advanced formatting techniques
- Underlay graphics and charts to print beside data
- Calculate running totals in reports
- Develop parameter fields to prompt users for information
- Limit user entry into parameter fields
- Solve table link problems with advanced linking techniques
- Understand Crystal Reports data handling and Evaluation Time functions
- Comfortably make use of variables in formulas
- Work with arrays and control structures in formulas for more flexible decision making
- Use additional reports within a main report as subreports
- Create linked subreports to tie data from another report to the current report
- Format subreports to display on demand only
- Customize groups in the report with formulas and custom names and create hierarchical groups
- Perform group selection based on summary field values
- Create and format Cross-Tab reports and create charts from Cross-Tabs
- Working with Report Alerts
- Creating and using Report Templates
- Creating Custom Functions
- Reviewing Advanced Formula Syntax
- Create SQL Commands and SQL Expressions
- Review Advanced Database Concepts

**Introduction****About This Manual**

Each section of this manual contains objectives to provide you with the overall goals for the lesson. Lessons have descriptions of features and concepts followed by systematic directions for completing a specific task. Each section ends with a challenge exercise to help you practice the skills you learned in the lesson. Challenge exercises provide you with tasks to accomplish. Try to complete these exercises on your own.

As you work in this Training Guide, certain conventions are used to identify specific procedures. Use the following table as a guide:

TRAINING GUIDE CONVENTIONS	
Item	Illustrated As
Menu Commands	Underlined letters for accessing menu commands are shown:  Example: <u>F</u> ile/ <u>O</u> pen
Command Buttons	Commands in dialog boxes are shown as buttons:  Example: <span style="border: 1px solid black; padding: 2px;">ENTER</span>
Categories, Radio Buttons, Text Boxes, Check Boxes	All options within dialog boxes are listed in italicized text:  Example: the <i>Keep Group Together</i> check box the <i>Other</i> radio button
Keystrokes	Keyboard keys are indicated by uppercase text:  Example: press ENTER  Keyboard combinations are shown in uppercase text with a plus sign (+) between the keys that need to be pressed simultaneously.  Example: press CTRL + S to save
Toolbar Buttons	Toolbar buttons are indicated by the button name and a graphic image of the button:  Example: click the Print  button
Typing or File Selections	Text to be typed or file names to be selected are printed in bold letters:  Example: type <b>Henry</b> select <b>grouping.rpt</b>
Exercises	Step-by-Step exercises in the text are indicated by bold text and the ❖ symbol.  For example: ❖ <b>Exercise - Format Objects</b>

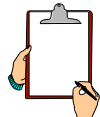
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**Introduction*****Tips, Notes, and Warnings***

Tips, notes and warnings display with the following icons. Text for these additional comments display in bold and italics.



***This icon indicates a TIP or shortcut.***



***This icon points out a NOTE of additional information.***



***This icon calls attention to a WARNING or very important note.***



# Notes Page

# Notes Page

# **Section 1:**

## **Power Formatting and Formulas**

**Lesson 1: Refresher Exercise**

**Lesson 2: Power Formatting with Multiple Sections**

**Lesson 3: Using the Running Totals Feature**

**Lesson 4: Prompting with Parameters**



# **Lesson 1**

## **Refresher Exercise**

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**Lesson 1: Refresher Exercise****Lesson Objectives**

After completing this lesson, you will be able to:

- **Plan and Create a report from a set of business requirements**  
*Review the techniques needed to plan and create a report.*
- **Add multiple groups to reports**  
*Create groups within groups to subdivide your reports how you want.*
- **Summarize different group levels**  
*You can effectively summarize information at any group level or all group levels.*
- **Insert simple lines and boxes for formatting**  
*Make reports professional and attractive with graphical features.*
- **Utilize the Repeated Group Header feature**  
*Add a "Continued..." message when a group prints across pages*

---

**Lesson 1: Refresher Exercise****Review of Planning a Report**

To make the report creation process efficient, you must plan the report. A little work up front before you ever open Crystal Reports can save you a lot of time putting the report together. It can also save problems caused by adding more tables to the report that can change the number of records displayed.

You must look at the business requirements for the report and decide what fields you need and the tables in which they are located. It is also helpful to look at things such as groupings, whether you need Cross-Tabs and what fields they contain, fields needed for formulas and selection criteria.

Suppose someone asks you to create a report based on the Xtreme Sample Database 11. Below are the business requirements for the report:

- The person requesting the report needs to see monthly customer sales by Supplier and Product Type. They want the Order ID, the Product Name, the line item Unit Price and Quantity and a total for the line items.
- They want the sales amounts summarized for each supplier, product type and month.
- They only need to see sales for 2004.
- Some of the groups are large enough to display on more than one page. They want the Supplier Name and Product Type repeated at the top of each page. If the group continues from the previous page, they want the word "Continued..." to print.
- The person requesting the report has supplied you with a printout of what the report should look like. See the sample on the next page.

**Lesson 1: Refresher Exercise**

## Monthly Sales by Supplier and Product Type



**Supplier Name: Active Outdoors**  
**Product Type: Gloves**

**January 2004**

<u>Order ID</u>	<u>Product Name</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Line Total</u>
1194	Active Outdoors Lycra Glove	\$16.50	1	\$16.50
1148	Active Outdoors Lycra Glove	\$16.50	3	\$49.50
1159	Active Outdoors Lycra Glove	\$16.50	3	\$49.50
1246	Active Outdoors Lycra Glove	\$14.85	3	\$44.55
1243	Active Outdoors Crochet Glove	\$14.50	1	\$14.50
1189	Active Outdoors Crochet Glove	\$14.50	2	\$29.00
1190	Active Outdoors Lycra Glove	\$16.50	3	\$49.50
1175	Active Outdoors Lycra Glove	\$16.50	2	\$33.00
1170	Active Outdoors Lycra Glove	\$16.50	1	\$16.50
1147	Active Outdoors Crochet Glove	\$14.50	3	\$43.50
1174	Active Outdoors Crochet Glove	\$14.50	2	\$29.00
1131	Active Outdoors Crochet Glove	\$13.78	2	\$27.56
1233	Active Outdoors Crochet Glove	\$13.78	1	\$13.78
1207	Active Outdoors Crochet Glove	\$14.50	1	\$14.50
1221	Active Outdoors Lycra Glove	\$16.50	3	\$49.50
1126	Active Outdoors Lycra Glove	\$16.50	2	\$33.00
1146	Active Outdoors Crochet Glove	\$13.78	2	\$27.56
1143	Active Outdoors Lycra Glove	\$16.50	3	\$49.50
1238	Active Outdoors Crochet Glove	\$14.50	1	\$14.50
1203	Active Outdoors Crochet Glove	\$14.50	1	\$14.50
1132	Active Outdoors Crochet Glove	\$14.50	2	\$29.00
				<b>\$648.45</b>

To create this report, first determine which fields you need.

- For the Detail section, you need the Order ID field, Product Name field, the Unit Price field and the Quantity field.
- For the Line Total formula, you need to multiply the Unit Price field and the Quantity field.
- For grouping, you need the Supplier Name, the Product Type Name, and the Order Date.
- Finally, you need to select orders from 2004 based on the Order Date.

Next, decide which tables you need to add to get the required fields.

- The Supplier Name field is in the Suppliers table.
- The Product Name field is in the Products table.
- The Order ID and Order Date fields are in Orders.
- The Unit Price and Quantity fields are in Orders Detail.
- The Product Type Name field is in the Product Type table.

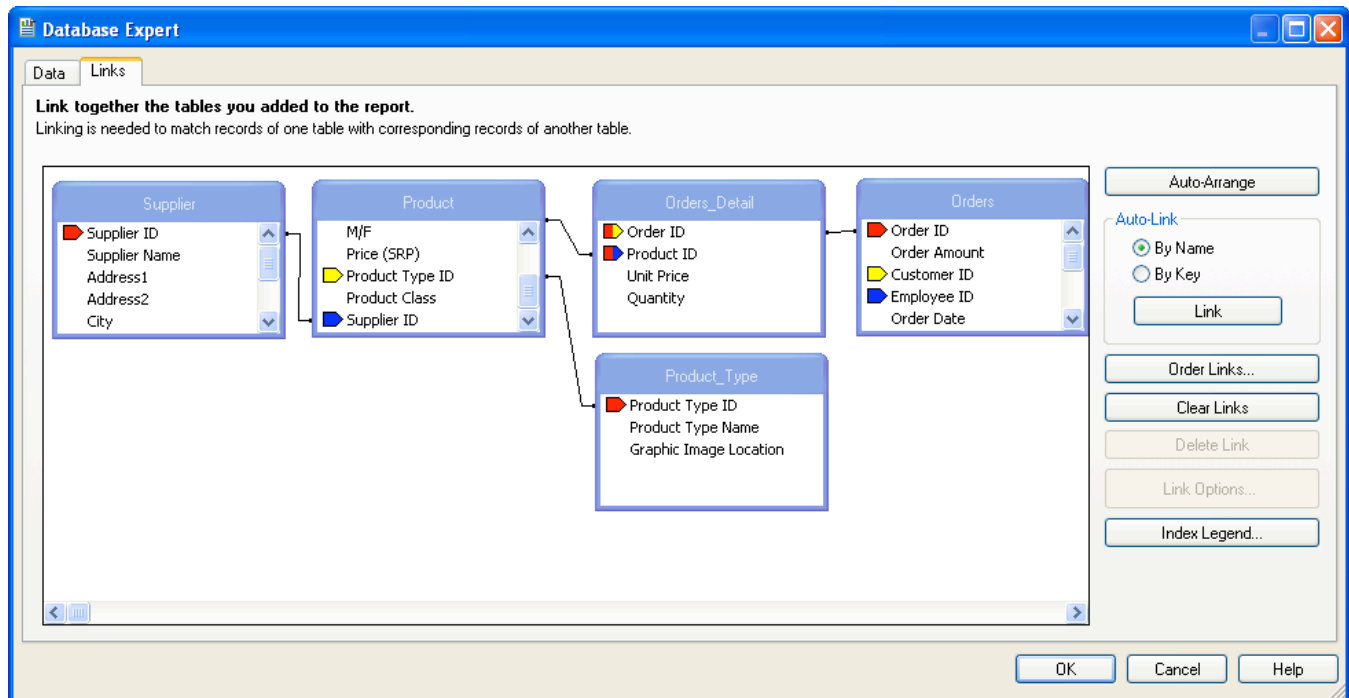


## Lesson 1: Refresher Exercise

Since the Supplier Name is the main grouping, the Suppliers table should be the Primary table. From there you want to link Suppliers to Products with the Supplier ID field, link Products to Orders Detail with the Product ID field, link Orders Detail to Orders using the Order ID field, and, finally link Products to Product Type using the Product Type ID field.

## Creating the Report

Since you have given this some thought and figured out the tables and the links, adding the tables in the correct order and creating the links is easy. The links should look like the following illustration:



Remember that you can add multiple tables to a report from the Database Expert. You work with links using the Links tab on the Database Expert. The Database Expert is accessed under the Database menu or by selecting the Database Expert button on the Expert Tools toolbar.



***The order in which the tables are displayed in the Link tab is partly determined by the order they are displayed in the Selected Tables section of the Data tab in the Database Expert. Order and links of the tables can be manually changed once they are displayed in the Link tab.***

---

**Lesson 1: Refresher Exercise****Placing Fields on the Report**

Remember that you have five ways of placing fields on a report. Select the field in the Field Explorer, then:

- Click the Insert button, then click in the report
- Double click the field, then click in the report
- Press ENTER, then click in the report
- Drag the field to the report
- Right mouse click, choose Insert to Report from the short cut menu, then click in the report

Remember, when you place a field in the Details section, Crystal Reports adds a detail field title in the Page Header section and aligns the field and field title with a guideline. You can drag the guideline marker in the ruler to move the field and its title together.

Now that you have planned the report, you are ready to use Crystal Reports to create the report.

**❖ Exercise 1.0 - Begin the Monthly Sales by Supplier and Product Type Report and Link the Tables Needed**

1. Start a new report *as a blank report*. Open the **Create a New Connection** folder then the **ODBC (RDO)** data sources and the **Xtreme Sample Database 11** data source. No password is needed to access this database. Add the tables indicated by the business requirements. Right click on the data source and select **Add to Favorites** as we shall be using this database throughout the class.
2. The **Auto-Link** feature should link the tables automatically. Clear the links and do them yourself.  
*When you are finished the links should look like the illustration on the previous page.*
3. Add the appropriate fields to the **Details** section.
4. Change the **Printer Setup** to a Portrait page layout, if necessary. Change the margins to be .5" on all four sides.

---

**Lesson 1: Refresher Exercise****Creating the Formulas**


You are also going to need two formulas for this report. It can be helpful to write out the formulas during the planning stage to be sure that you have accounted for all necessary fields. The formulas you need for this report are as follows:

**@Line Total**


{Orders\_Detail.Unit Price} \* {Orders\_Detail.Quantity}

**@Continued**

If InRepeatedGroupHeader then " Continued...."

Remember that formulas are created from the Field Explorer dialog box. Select Formula Fields, and then click the New  button. After naming the formula, the Formula Editor dialog box opens providing you with three lists to select fields, functions and operators.



**❖ Exercise 1.1 – Create the Formulas and Add to the Report**

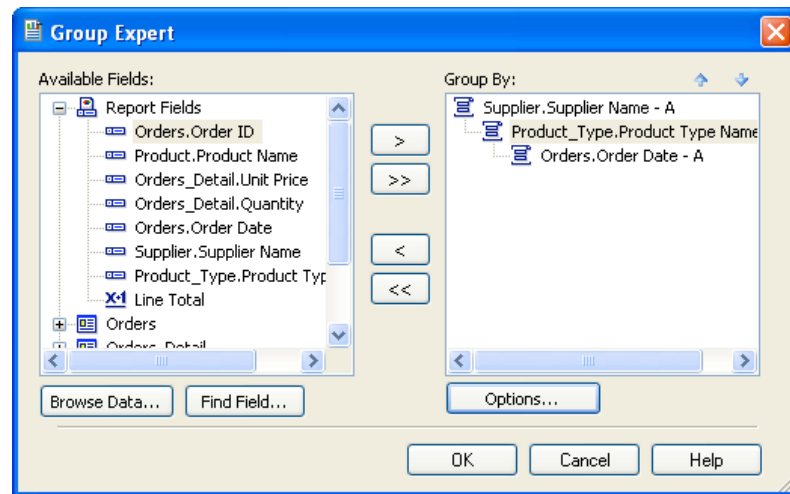
1. Select **Formula Fields:** in the **Field Explorer** dialog box, then click the  button.
2. Name the formula **Line Total** and select the **Use Editor** button.
3. Create the formula shown above.
4. Add the formula to the report **Details** section after the **Quantity** field.
5. Create the **Continued** formula, but do not add it to the report yet.



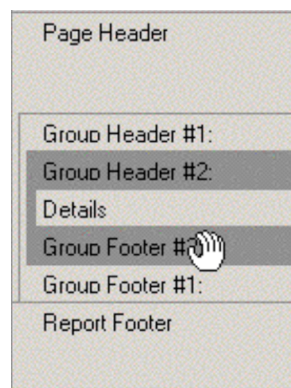
*You will add this formula later to display a "Continued" message in the group header. NOTE: The **InRepeatedGroupHeader** function is a function in the **Print State** category. Click the + sign to the left of **Print State** in the middle list in the Formula Editor, and then scroll to find the function. Double click the function to add it to the formula.*

**Lesson 1: Refresher Exercise****Advanced Grouping**

You can group data by using the Insert/Group... command or by clicking the Insert Group button  on the Insert Tools toolbar or the Group Expert button  on the Expert Tools toolbar. This report requires an Order Date group nested inside a Product Name group, nested inside a Supplier Name group as shown in the Group Expert illustration below.

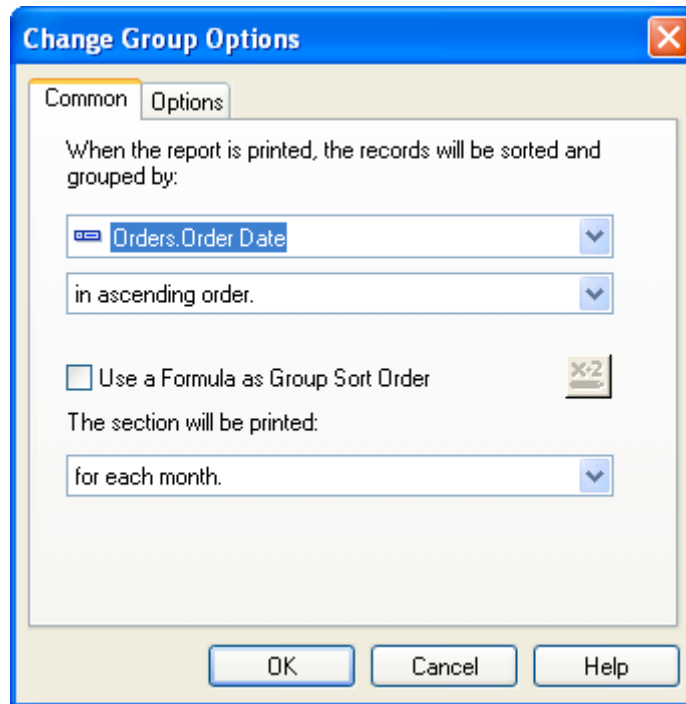


As you create groups, Crystal Reports nests each group inside the previous one you created. However, you can reorder groups in any order you want. To reorder groups, click the Group Header section name at the left of the Design screen, for the group you want to move. The group header and footer sections are highlighted. Drag the group to the new location. The mouse pointer changes to a grabbing hand as you drag. In the Group Expert shown above you simply move the group headers using the arrows in the top right of the window



**Lesson 1: Refresher Exercise**

**TIP:** When you group on a date field, Crystal Reports allows you to define the period for which the date is broken down; i.e. monthly, yearly, quarterly, etc. A third drop-down list appears automatically in the Insert Group options dialog box allowing you to specify when the group is printed.



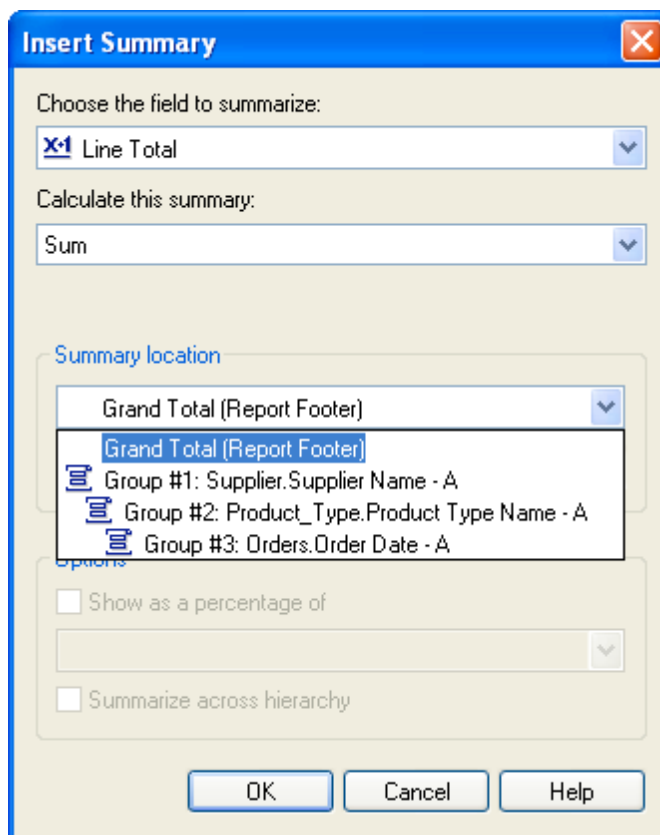
Remember that you can summarize any field by RIGHT clicking it, then choosing Insert Summary... You must specify the type of calculation you want Crystal Reports to perform and the group at which you want the summary to appear.

❖ **Exercise 1.2 – Create groups and summarize the Line Total field**

1. Open the **Group Expert** window using the **Group Expert** button. Create a group on the **Product Type Name** field. Turn on the *Repeat group header on each new page* feature by selecting the **Options** button
2. Create a second group on the **Supplier Name** field. Also, turn on the *Repeat group header on each new page* feature.
3. The report requirements call for the report to display information by Supplier Name and then Product Type. You need to change the order of the groups. Select the **Product Type Name** field in the **Group By** window of the **Group Expert**. Select the Down Arrow to reorder the groups.  
*The Supplier Name should be the first group in the Group Expert with the Product Type name nested underneath.*


**Lesson 1: Refresher Exercise**

4. Create a third group on the **Order Date**. Using the **Options** button and choose to print the section for each month.
5. Create a summary for the Line Total column. You will need to do this three times, once for each group.  
*All the summary fields should automatically line up on the guideline to which the field is attached.*

**Selecting Certain Records**

Remember that Crystal Reports pulls *all* records from the database unless you filter the records based on some criteria. The business requirements for this report requests only records from the year 2004. To specify this, use the *between* operator and specify all records with an order date range beginning 01/01/04 and ending 12/31/04.

**Lesson 1: Refresher Exercise****❖ Exercise 1.3 – Select records with an Order Date in 2004**

1. Make sure there are no fields selected on the report, and then click the **Select Expert**  button on the Expert Tools toolbar.
2. Choose the **Order Date** field.
3. Choose the *is between* operator.
4. In the first drop-down list, select **1/1/2004 0:00**.
5. In the second drop-down list notice that **12/31/2004** is not available for selection. Choose any date and change the entry to read **12/31/2004 0:00**
6. At this point save and preview the report. Name the report **Exercise1\_0.rpt**

**Helpful Hints for Formatting the Report****Adding and Working with Text Objects**

Once you have created a group, you can delete the group name field from the group header without affecting the grouping. You can delete the Supplier Name and Product Type Name fields from Group Headers #1 and #2, then create a text object in Group Header #2 that contains the Supplier Name and Product Type.

Remember that text objects can contain text you type and fields from the report. You can add a field to a text object by dragging the field from the Field Explorer dialog box into the text object. Once you have a field selected, the mouse pointer changes to an arrow with a + sign when you are pointing into a text object. You can also move a field from the report into a text object. The text object must be in Edit Mode (flashing insertion bar in the text box and a small ruler in the horizontal ruler at the top of the report).



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**Lesson 1: Refresher Exercise**

Also remember that you can format all or part of a text object:

- To format the entire text object select the object (there are handles around the object) then apply the formatting.
- To format part of a text object, double click the object to enter Edit Mode, and then select the part you want to format. When the part is highlighted, apply the formatting.
- To format a field inside a text object, double click the object to enter Edit Mode, and then click on the field. Once the field is highlighted, apply the formatting.

**Hiding and Suppressing Sections**

Remember that you can hide or suppress sections in a report by RIGHT clicking on the section name in Design view and choosing the appropriate command. Hiding a section causes the section details to not display in the Preview tab. However, users can double click summaries to display hidden details. Suppressing a section causes the section to not display without any options for viewing it. A hidden or suppressed section will be grayed out in the Design tab.

**Guidelines**

As a reminder, you can add horizontal guidelines to the rulers at the left of each section and snap the tops or bottoms of objects to the guidelines to horizontally align them.

**❖ Exercise 1.4 - Format the Report**

1. Return to the **Design** view. It is easier to add and format objects from **Design** view.
2. Add the title and format as you see it in the sample report on page on page 18. Add the **Xtreme** logo to the right side of the **Report Header**.
3. Delete the **Group #1 Name** and **Group #2 Name** fields from **Group Headers #1 and #2**.



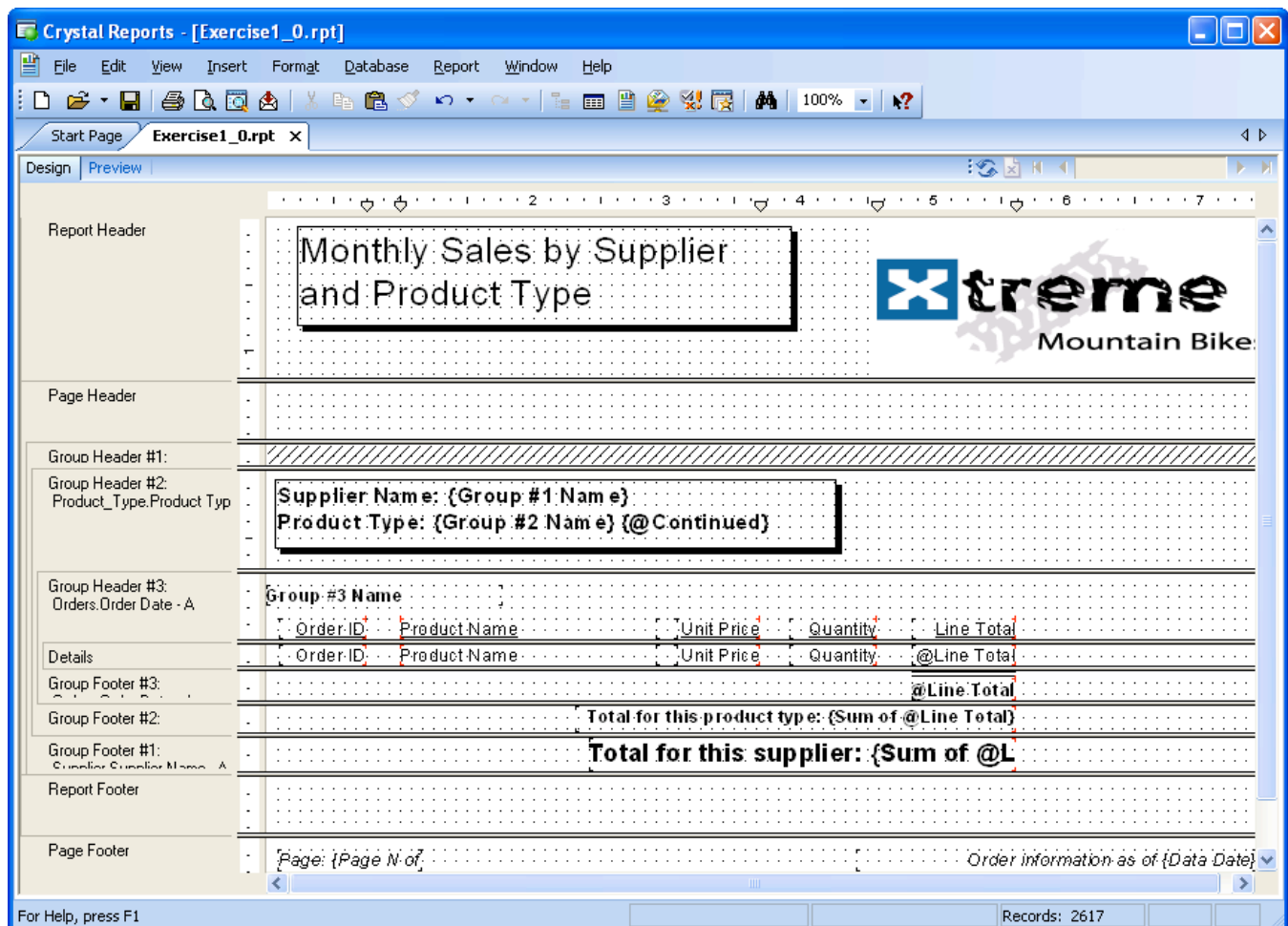
**Lesson 1: Refresher Exercise**

4. Using the sample report, create a text box in **Group Header #2**. Type the text **Supplier Name:** then add the **Group #1 Name: Supplier Name** field from the Group Name fields in the Field Explorer. On the second line of the text object type the text **Product Type:** then add the **Group #2 Name: Product Type Name** field. Format all objects in the text box to Bold. You may need to resize the text box. See the sample on the next page for final formatting.  
*HINT: Format the text object border rather than drawing a box around the object. It is easier and you only have one object to deal with plus if you resize the text object the border will grow with it whereas a box will not.*
5. Hide **Group Header #1**. It no longer contains anything you need to see in the report.
6. Add a text box to the **Group Footer #1** with the text **Total for this supplier:**. Move the summary field into the text object. Format the entire object to be Bold, 14 pt., and right aligned.
7. Add a text box to the **Group Footer #2** with the text **Total for this product type:**. Move the summary field into the text object. Format the entire object to be Bold and right aligned.
8. Format the summary field in the **Group Footer #3** section to have a top double line border. Make sure the summary field and text boxes are all snapped to the guideline on their right edges so they line up.
9. Snap the field titles to a horizontal guideline. Use the guideline to move the field names from the **Page Header** section to the **Group Header #3** section under the Group #3 Name field. Format the titles so they have no underline.  
*By placing the titles in this section, the titles will reprint with each month's data.*
10. Format the **Order ID** field to display without a comma. Format the **Unit Price** field, the **Line Total** formula, and all the summary fields to have a floating \$.  
*HINT: Refer to the bullets on page 19 for directions on how to format the summary fields inside the text boxes.*
11. Depending on how you have the default formats set for **Date/Time** fields; you may need to reformat the **Group #3 Name** fields. The date should look like this: **January 2004**.
12. Add a text box to the left of the **Page Footer**. Use **Special Fields** to indicate **Page N of M**. Add another text box to the right of the page footer that reads **Order information as of**. Add the **Data Date** special field after the text. Format both boxes to be italics.

**Lesson 1: Refresher Exercise**

13. To add the word "**Continued...**" for a product or supplier group that is continued on an additional page, place the **@Continued** formula field in the text object that contains the Supplier and Product Names.
14. Save and preview the report. Do not forget that you can navigate easily through the report using the **Group Tree** section at the left of the screen. Just click the group you want to view. Close the report.

The Design view of the report should be similar to the following illustration:



# Notes Page

# Notes Page

# **Lesson 2**

## **Power Formatting with Multiple Sections**

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**Lesson 2: Power Formatting with Multiple Sections****Lesson Objectives**

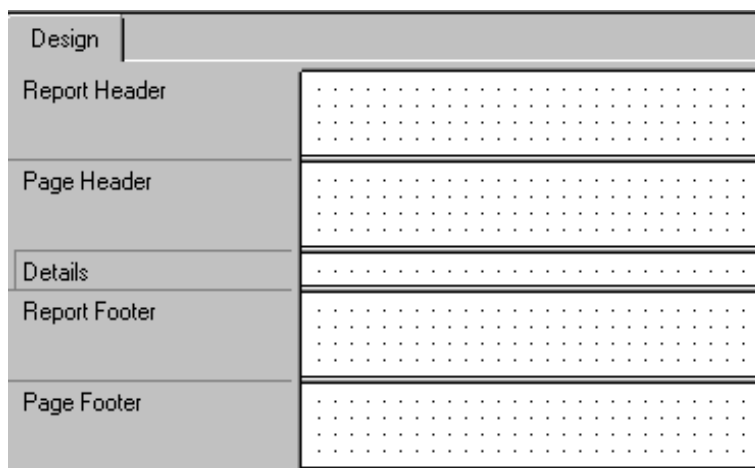
After completing this lesson, you will be able to:

- **Create multiple sections**  
*Expand your formatting power by learning how to add sections to the report.*
- **Underlay a section**  
*Display a graphic or chart beside the data it represents by utilizing the underlay feature.*
- **Use multiple sections for conditional formatting**  
*Add additional sections that only display under certain conditions.*

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**Lesson 2: Power Formatting with Multiple Sections****Using Multiple Sections in Reports**

By default, Crystal Reports gives you five design areas to use when building your report: Report Header, Page Header, Details, Report Footer, and Page Footer.



Each area contains only a single section when you first begin your report. There are certain reporting tasks that you can perform most efficiently by creating multiple sections within an area, such as:

- Putting conditional messages in form letters
- Formatting objects/sections differently based on field values
- Alternating background colors on a row-by-row basis
- Eliminating blank lines when fields are empty
- Adding blank lines under specific conditions

When you understand the power of multiple sections, you discover many ways that you can use them to produce the report effects you want. The following are some ideas for using multiple sections:

Suppose you want to display current order amounts in the Details section. If the customer has outstanding amounts you want to display them as well. You add an additional Details section b, and conditionally format to display only if there are outstanding order amounts.

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**Lesson 2: Power Formatting with Multiple Sections**

You are printing an employee listing grouped by Employee Name. You have information on each employee, including address, telephone, start date, and sales for the last month. You also have a field that displays the employee's picture that you want to display beside the printed data. You cannot put it in the Employee Name group header because it prints above the rest of the data and takes up too much space. So you create a second group header section, put the picture there, and then underlay the second section under the Details for each employee.


You need a single page summary report of the top twenty customers. Included in the report, you need a graph that shows each region's percent of total sales. There is not enough room to print the graph above or below the customer listing. You can put the graph in a Report Header b section and underlay it under the Details section to print the graph beside the data.

Your report prints customer invoices and a list of the orders in the last month. You want to include a nice letter to thank paid up customers for keeping their account current. For overdue customers, you want a more forceful letter asking them for payment. You can create two Group Header sections and conditionally suppress each one depending on the condition of the account. The Detail section would show all orders that have not been paid along with their due dates.

These are only some ideas for using multiple sections. You are going to try some of these ideas in following exercises.

***Using the Section Expert to Work with Sections***

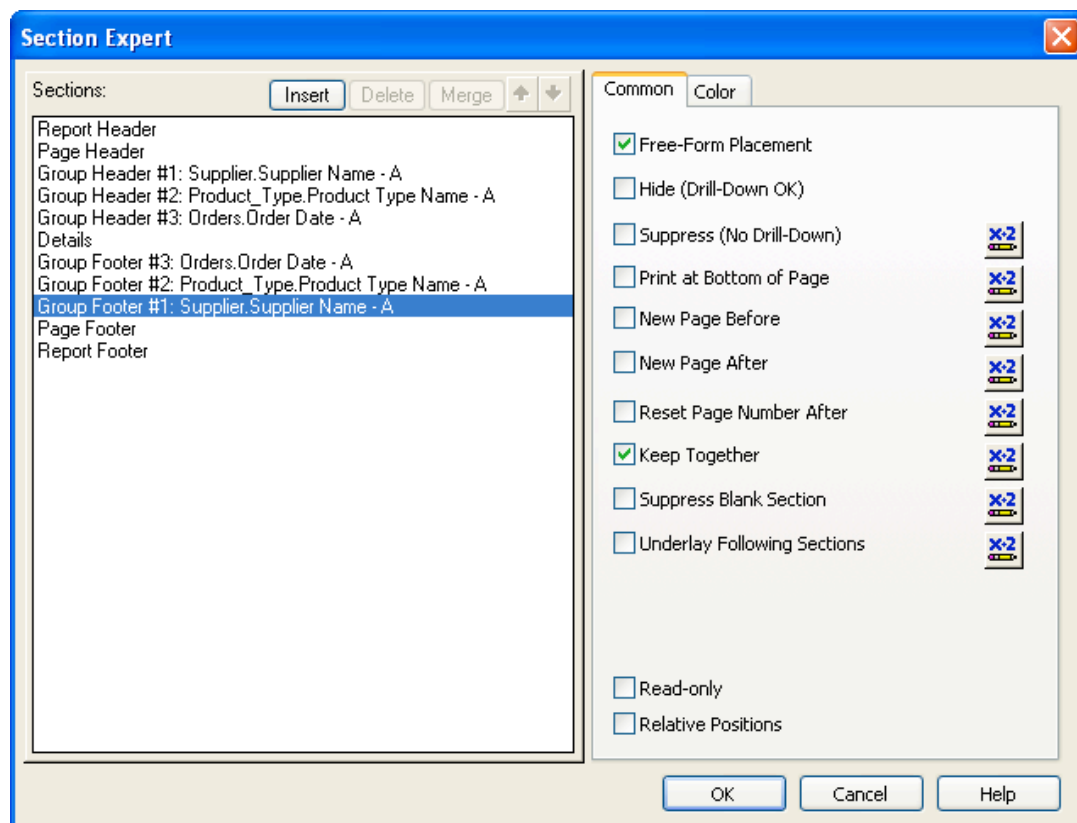
In the Section Expert, you can easily insert, merge and delete sections. You can also move sections within an area and conditionally format sections. Remember, you can open the Section Expert in three ways:

- Choose Report|Section Expert...
- Click the Section Expert button  on the Expert Tools toolbar
- RIGHT click the section name you want to format, then choose Section Expert from the shortcut menu

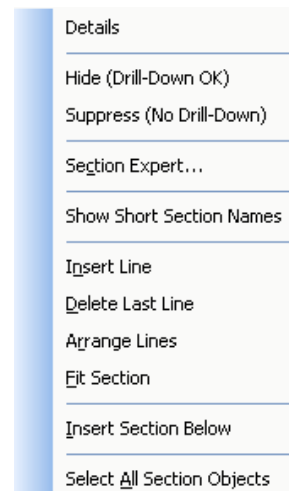


**Lesson 2: Power Formatting with Multiple Sections**

In the Section Expert, you can select the area with which you want to work in the *Sections:* list, and then click the Insert, Delete, or Merge buttons to manipulate additional sections in that area. The arrow buttons allow you to move sections within an area.



You can also perform all these section procedures from the Section shortcut menu. RIGHT click on the left side of the screen where you see the section name of the section you wish to change. The shortcut menu contains commands for inserting, merging, deleting and moving sections.

**Lesson 2: Power Formatting with Multiple Sections**

**WARNING:** *If there is currently only one section in an area, the Merge, Move and Delete commands do not display. You only see the Merge command if you RIGHT click on a section that has another section of the same type below it.*

Crystal Reports has a true shortcut for inserting a section below an existing section. Left click on the vertical separator bar in the section you wish to add. Hold down the mouse button until the mouse pointer changes to a double-headed arrow with a single line horizontally separating the arrows. Drag the line up or down and release. This method of inserting a new section keeps all the formatting from the section above.



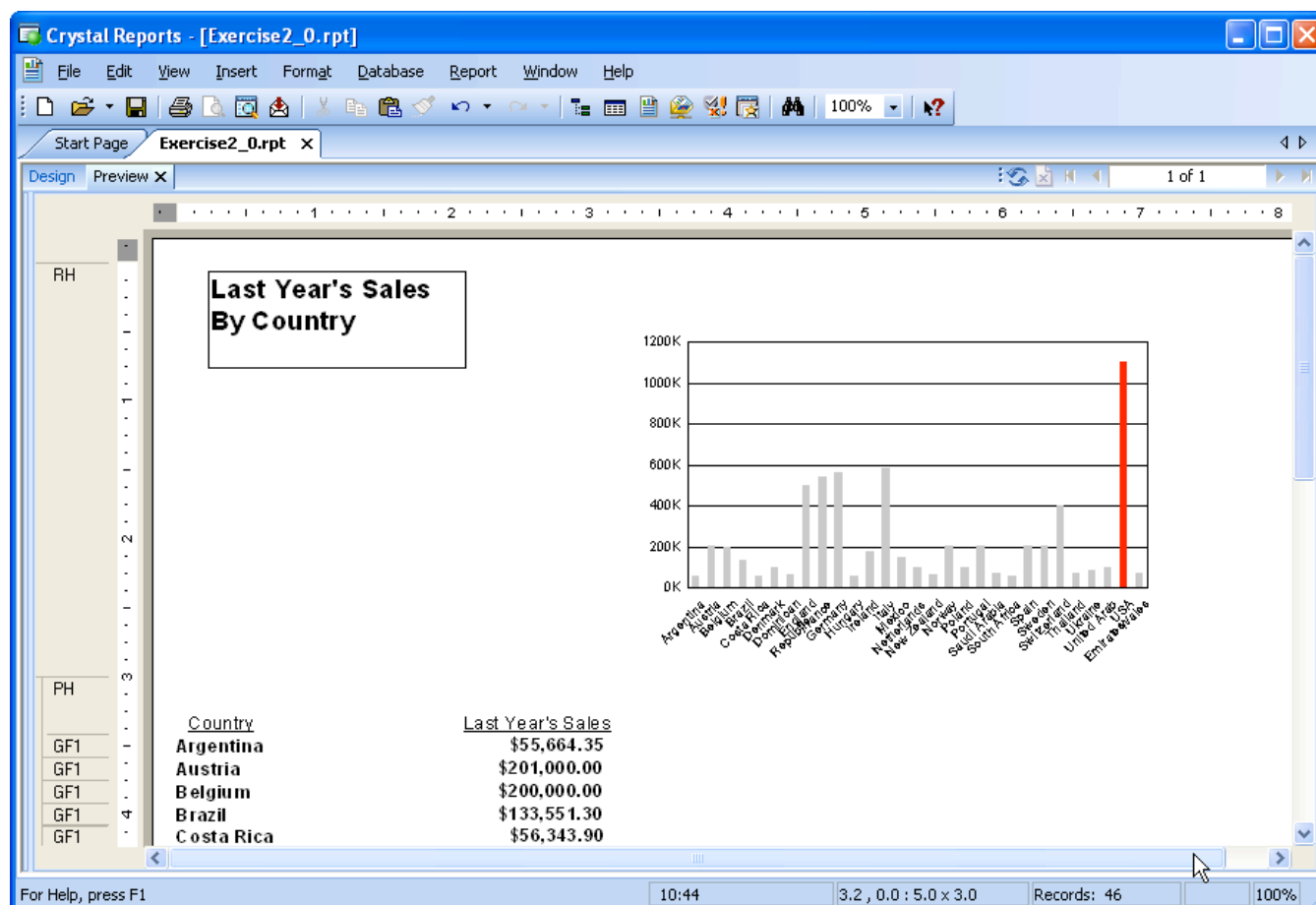
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**Lesson 2: Power Formatting with Multiple Sections****❖ Exercise 2.0 – Insert an Additional Report Header Section**

1. Create a report of Last Year's Sales by Country using the **Top Customer** view in the **Xtreme Sample Database 11** data source. Save and name the report **Exercise2\_0.rpt**.
2. Group by **Country**.
3. Insert the **Customer Name** and **Last Year's Sales** fields into the **Detail** section. Shorten the fields and move them to the left side of the report.
4. Summarize the **Last Year's Sales** field. Move the **Group #1 Name** field from the **Group Header** into the **Group Footer**.
5. Change the column title for the **Customer Name** to **Country**.
6. Hide the **Group Header #1** section and the **Details** section.
7. Place a text object into the **Report Header** section with the title **Last Year's Sales by Country**. Format the title like the illustration.
8. Create a bar chart to display in the **Report Header**. Open the **Chart Expert**. On the **Data** tab, graph the groups on change of **Country**. Set the value to **Sum of Last Year's Sales**. This is the default.
9. In the **Options** tab, set the *Bar Size* to average and turn off the Legend. In the **Text** tab, remove any text titles by turning off the *Auto-Text* and delete all the text in the labels.
10. On the Color Highlighting tab create a condition so that bars are all one color unless USA then the bar is red. When finished, click OK.
11. After Crystal Reports places the graph in the report, move it to the right.
12. Save the report as Exercise2\_0.rpt and preview the report.

**Lesson 2: Power Formatting with Multiple Sections**

The report should be be similar to the following illustration:



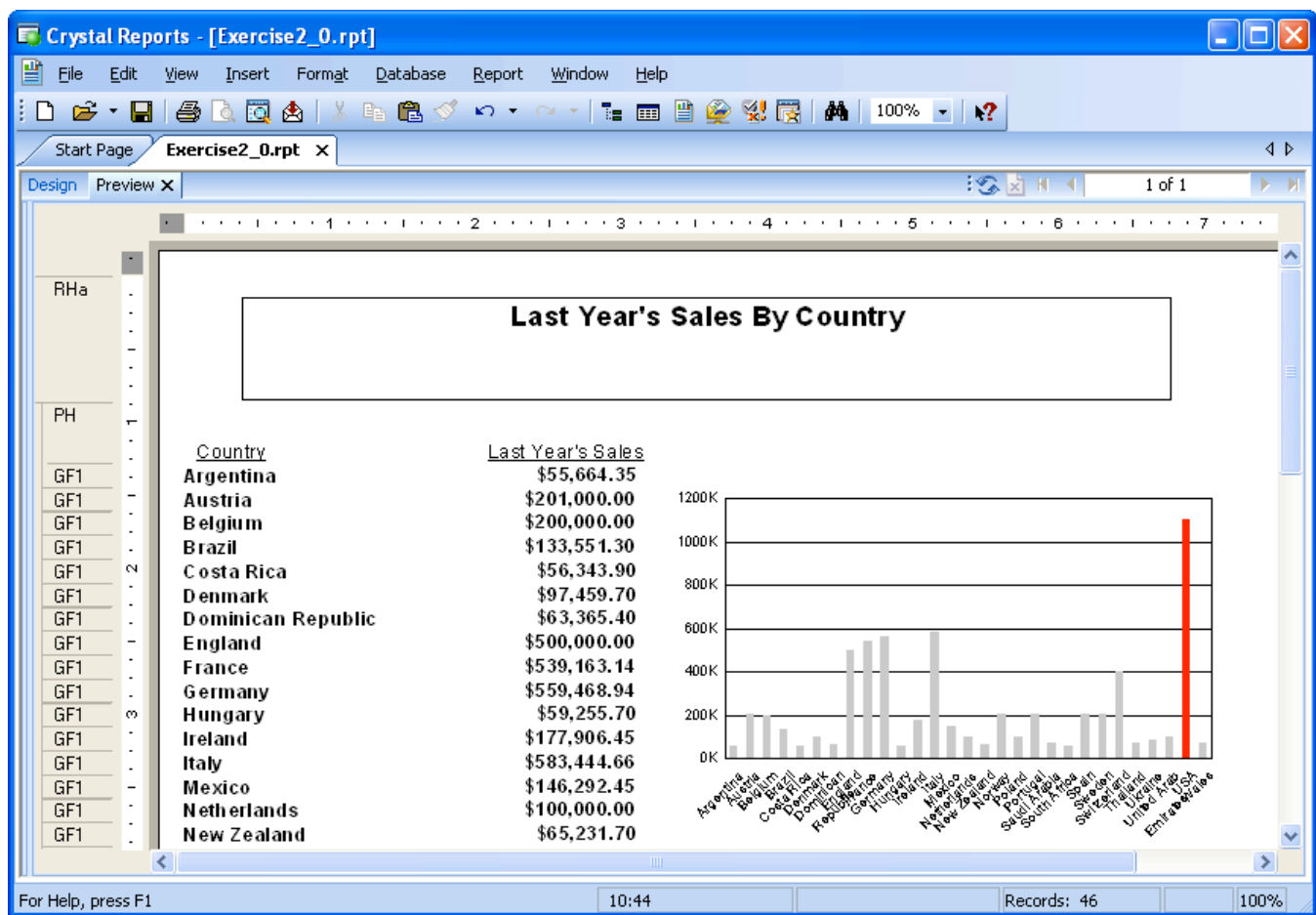
The report would look better if the graph displayed beside the records. You can underlay the Report Header to accomplish this. However, if you underlay the entire Report Header, then the title also displays under the customer information. We need to place the chart in a separate section below the title and then underlay Report Header b.

13. Return to **Design** view.
14. Insert a section below Report Header by right clicking in report header and choosing Insert Section Below. Move the chart to Report Header b. Right click in Report Header a and choose Fit Section.
13. RIGHT click the section name for **Report Header b**, then choose **Section Expert**.  
*Notice the Section Expert now displays both Report Header sections.*

**Lesson 2: Power Formatting with Multiple Sections****❖ Exercise 2.1 – Underlay a Section**

1. Click the *Underlay Following Sections* check box, then click **OK**.
2. The use of a second Report Header section also lets you center the report title without the under laid text printing on top of it. Move the title text object to the center of the Report Header a. Resize the title as shown in the sample.
3. Save as **Exercise2\_1.rpt** and preview the report.

The report should look like the following illustration:



## Lesson 2: Power Formatting with Multiple Sections


### Conditionally Formatting Multiple Sections

Now that you have a nice looking sales summary report, suppose you want to include a congratulations message to those countries' sales reps that collectively sold more than \$500,000. You want to display the message directly under the name and sales figure for the county.

The country name and sales figure are located in the **Group Footer** section. If you place the text message in the same **Group Footer** section underneath the field objects, it will create additional spacing for each group when the text message is suppressed.

To solve this problem, you can add another Group Footer section, add a text object with the message in **Group Footer #1b**, and then conditionally format to suppress this section if the **Sum of Last Year's Sales** field is less than 500000.

#### ❖ Exercise 2.2 – Conditionally Format Multiple Sections

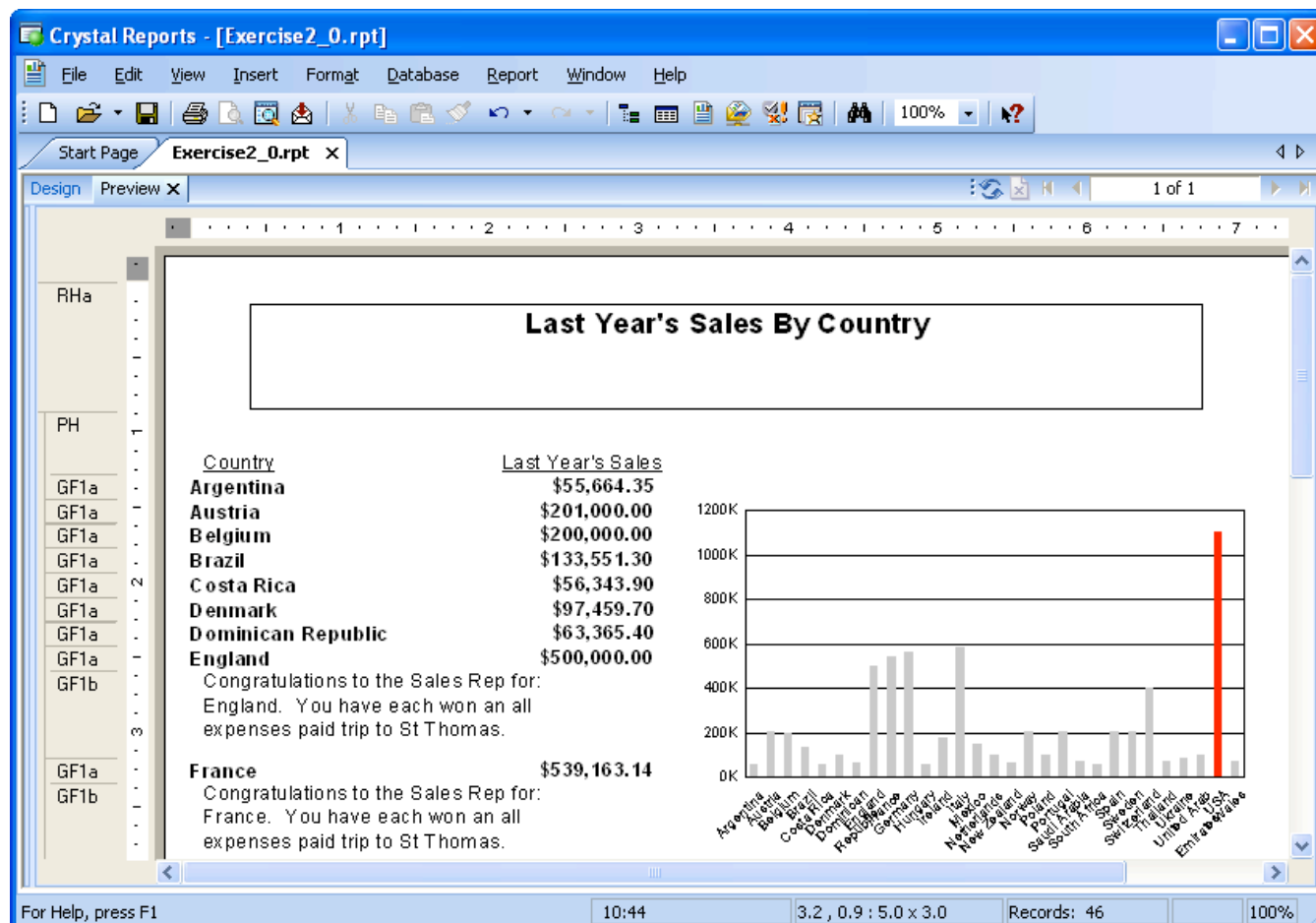
1. Return to **Design** view.
2. RIGHT click the **Group Footer #1** section name, then choose **Insert Section Below**.
3. Add a text object to the **Group Footer #1 b** section.
4. Type **Congratulations to the sales representatives for**. Select from the **Field Explorer**, the **Group #1 Name Country** field and place it into the text object. Continue to type **You have each won an all expense paid trip to St. Thomas!**  
*Note we have inserted a group name field so that the text reads with the correct country inserted.*
5. RIGHT click the **Group Footer #1 b** section name, then choose **Section Expert**.
6. Click the  button after the *Suppress (No Drill Down)* check box.
7. Enter the following formula:

**Sum ({Top\_Customers.Last Year's Sales},  
{Top\_Customers.Country}) < 500000**

8. Select the **Save and Close** button in the **Format Formula Editor**. Close the **Section Expert**. Save and preview the report.  
*The message should only appear for those countries that have a Sum of Last Year's Sales equal to or over \$500,000.*

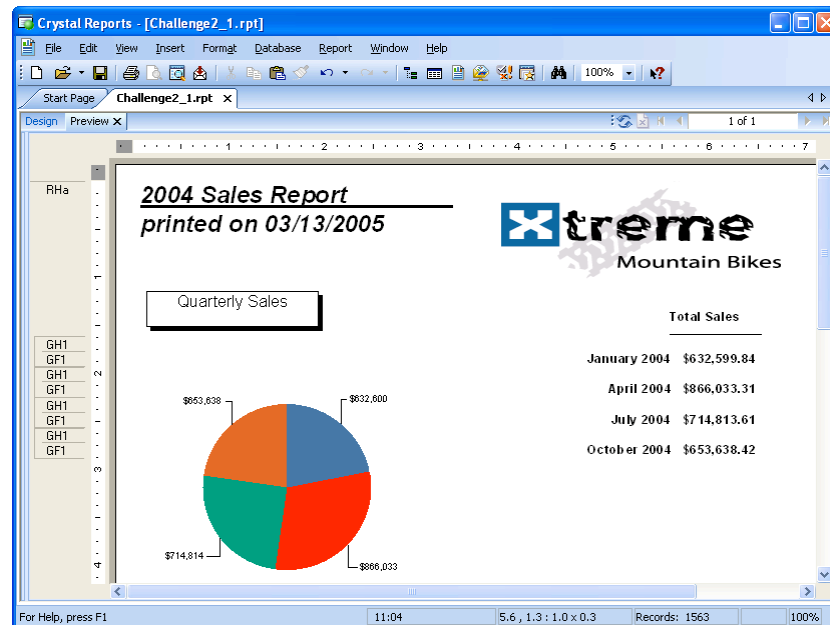
**Lesson 2: Power Formatting with Multiple Sections**

9. Save the report as Exercise2\_2.rpt and close the report. Your report should look like the sample.



**Lesson 2: Power Formatting with Multiple Sections****Challenge Exercise – Formatting with Multiple Sections**

Suppose you need to create a Quarterly Sales report that shows the sales for last year (2004). This will be a summary report including a graph of the sales for each quarter and the sales totals for each employee. The finished report needs to look like the following illustration:



1. Start by creating a new report based on the **Xtreme Sample Database 11**. Add the **Employee** and **Orders** tables.
2. Use the **Group Expert** to insert a group on the **Order Date** field. Choose to print the group once for each quarter. Insert another group on the **Last Name** field.
3. Select only records in 2004 using the **between** operator.
4. Put the **Order Date** field and the **Order Amount** field into the **Details** section at the RIGHT side of the report. Put the field headings into **Group Header 2**.
5. Summarize the **Order Amount** field by **Order Date** (Group #1) and by **Employee Last Name** (Group #2).



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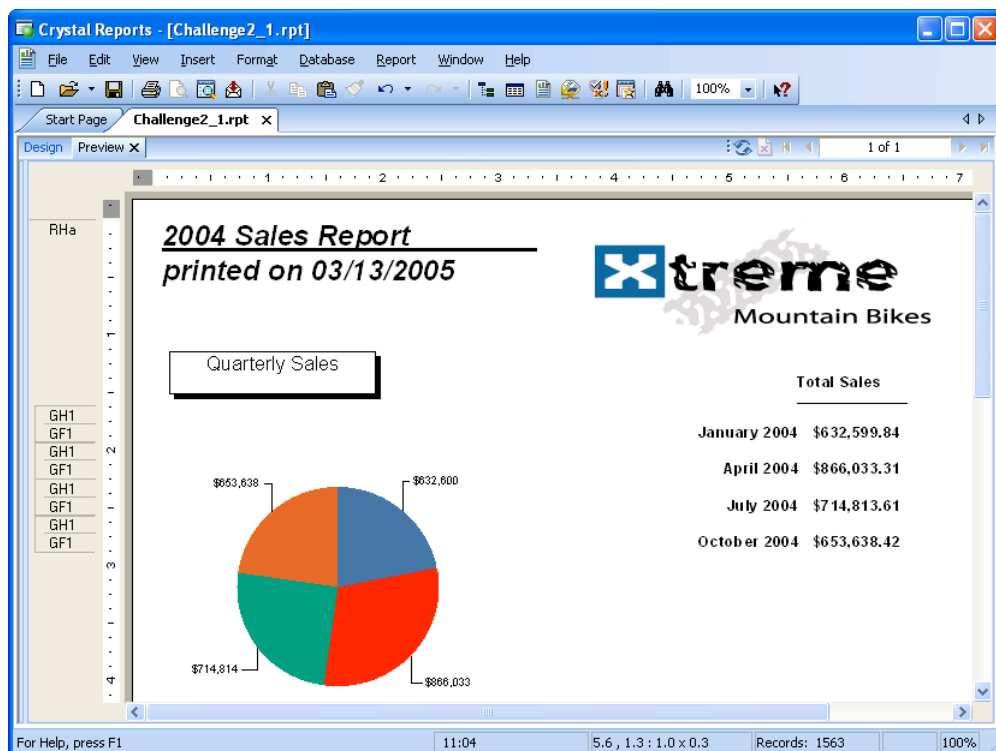
**Lesson 2: Power Formatting with Multiple Sections**

6. Move the **Group #1 Name** field into the **Group Footer #1** and position it close to the summary field. You may need to resize it. Do the same for the **Group #2 Name** field. Reformat the **Group #1 Name** field to look like the following: **January 2004**.
7. Add the title and the print date to the **Report Header** section. Format them like the example. Add the **Xtreme** logo. Add a subtitle "Quarterly Sales" as shown in the example.

*HINT: Use two text boxes and draw a line between the two text boxes. If you want to resize the image you may need to disconnect it from the repository before resizing.*

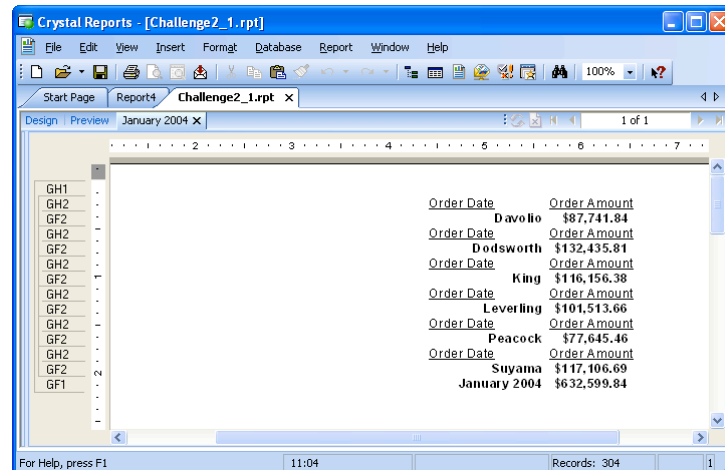
8. Suppress the **Page Header** and hide the **Group Header #2** section, the **Group Footer #2** section and **Details** section.
9. Now you are ready for the extra sections. The report needs to have a graph of the sales by quarter displayed beside the summary values by using the underlay feature. Since the graph appears once on the report, you need to put it in the **Report Header**. To accomplish this we need an additional **Report Header** section.
10. Insert a chart. Use the Chart Expert to ensure that it is a pie chart graphing **Sum of Order Amount** by Order Date. On the **Options** tab, display the values and format them to look like currency with no decimals (\$1). Turn off the *Legend*. Turn off all the *Auto-Text* entries on the **Text** tab and delete any text. If the Sum of Order Amount is greater than 800000 then color the piece of pie red.
11. Insert a section below the report header. Move the chart to the left of the **Report Header b** section and resize to be only 4" wide.
12. Turn on the *Underlay following sections* command for **Report Header b** but not for **Report Header a**.
13. Finally you want to add a title for the quarterly sales figures. Add a text object to **Report Header a** that lines up with the **Order Amount** summary field. Type **Total Sales**. Format the box to be bold with a bottom single border.

*HINT: Since the Order Amount summary field is a number and aligns on the right; select both the text object and the summary field, right click on the summary field and choose Align>Rights. Right align the text in the text object.*
14. Save this report and name it **Quarterly Sales**. Preview the report.

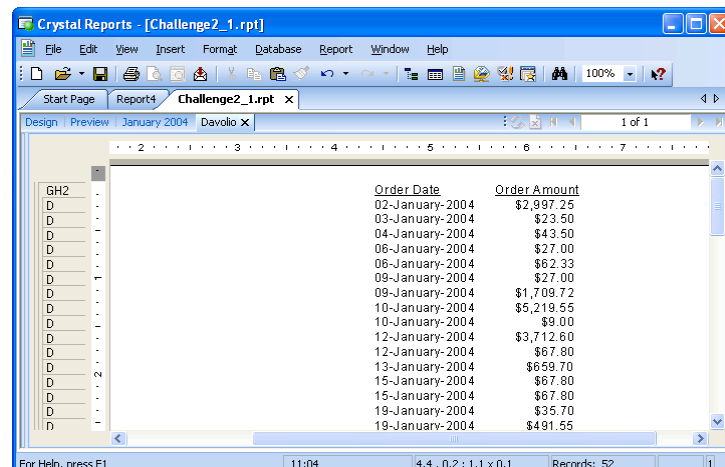
**Lesson 2: Power Formatting with Multiple Sections**

**Lesson 2: Power Formatting with Multiple Sections****Challenge Exercise – Conditionally Formatting Using DrillDownGroupLevel**

The Quarterly Sales report displays summary level information. However, when you created this report, you included the detailed information. The information in the Group #2 sections and the Details section was hidden in the previous exercise. If you drill down into the report by selecting the summary information for January 2004, you will notice that the report will display column headings for the first drill down. The drill down will look like the following example:




Obviously we do not want the column headings to appear at this level of detail. However, we do not want to delete them, because they will serve a useful purpose when you drill down to the order details for each employee. In order to prevent the column headings from appearing at the first drill down, we use a formatting option called DrillDownGroupLevel. By using this function in conjunction with conditional suppression of a section, the column headings will display at the order detail level, but not at the employee summary level.



---

**Lesson 2: Power Formatting with Multiple Sections**

In this exercise, you will format the report to only display the column headings at the order detail level.

1. Return to the **Design** view. Right click on the **Group Header #2** section and select the **Section Expert**.
2. Locate the  button beside the *Suppress* option.
3. The *DrillDownGroupLevel* function is found in the **Print State** functions list. The formula for preventing the group level drill down for **Group Header #2** is as follows:

**DrillDownGroupLevel = 1**

4. Save and close the **Format Formula Editor**.
5. Save and Preview the report.
6. On the **Preview** tab, double click the value for **January 2004**. *Notice the information for January 2004 now displays the employees and their summary information. The column headings no longer appear at this level of detail.*
7. Drill down to view the detail orders for Davolio. Notice the column headings appear above the order date and order amount columns.
8. Save the report as **Challenge2\_2.rpt** and close.




***If you are unsure what the *DrillDownGroupLevel* value is for the group you are working with, create a formula with the *DrillDownGroupLevel* value in it and place it into the header. You will then see the value as you drill down. Once you know the value, simply place it into the Format Formula Editor as shown above to prevent the heading from displaying on drill down.***

**Lesson 2: Power Formatting with Multiple Sections****Challenge Exercise – Conditionally Formatting Multiple Sections**

Suppose you also want to include a message in the report that congratulates all the sales reps with sales over \$120,000 for each quarter. The message only displays when the sales person drills down on the quarter to see employee sales for that quarter. You only want the message to appear under the employee names meeting the top sales goals for that quarter. The results should look like this:

Congratulations, Anne! You are one of the top sales producers for this quarter.	Davolio	\$87,741.84
	Dodsworth	\$132,435.81
	King	\$116,156.38
	Leverling	\$101,513.66
	Peacock	\$77,645.46
	Suyama	\$117,106.69
	January 2004	\$632,599.84

Since the sales per employee is a summary field, there is no way to compare it with summaries from other groups. So you need to add the message, then suppress it based on a combination of which quarter it is and the employee name.

1. Open the **Challenge2\_2.rpt** report and return to Design view.
2. RIGHT click the **Group Footer #2** section name at the left of the screen, then choose Insert Section Below.
3. Add a text box to the **Group Footer #2b** section. Type **Congratulations**, then insert the {Employee.First Name} field. Then type **! You are one of the top sales producers for this quarter.**
4. Resize the text object so it looks good to you.
5. Now you are ready to conditionally suppress the **Group Footer #2b** section. RIGHT click the **Group Footer #2b** section name, then choose **Section Expert**.
6. Click the  button after the *Suppress (No Drill Down)* check box.
7. Enter the following formula:

**Sum ({Orders.Order Amount}, {Employee.Last Name}) < 120000**

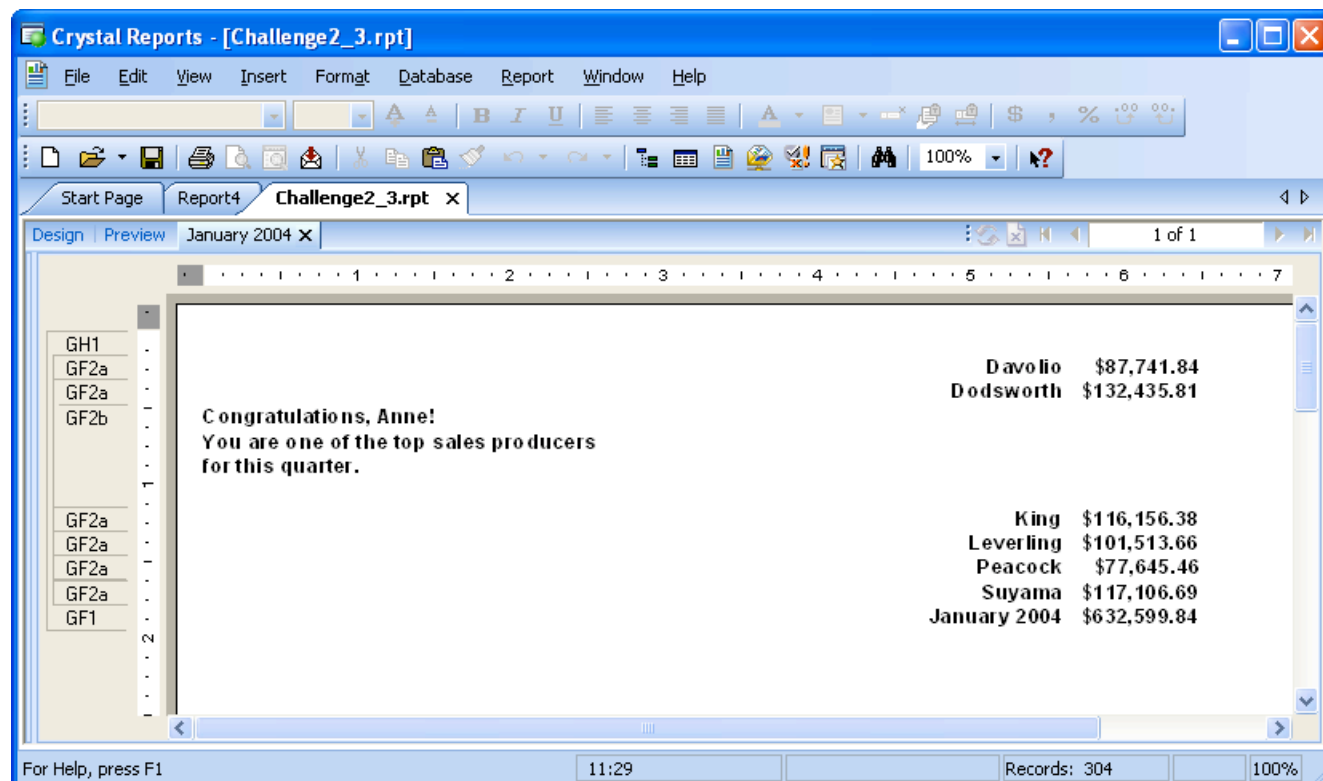
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**Lesson 2: Power Formatting with Multiple Sections**

8. Save and close the formula. Close the **Section Expert**. Save and preview the report. *Double click on the January 2004 sales to see if the formula worked.*
9. Save the report as **Challenge2\_3.rpt** and close the report.

**Lesson 2: Power Formatting with Multiple Sections**

The drill-down pages of the report should look similar to the following illustration:



## Notes Page