

## Chapter 1

# Building Your First Report

EVERY BUSINESS THAT STORES data has a need to retrieve that data and build good reports. Organizations don't typically store data without reason. . .business intelligence (BI) is the reason, and reporting is the process of creating that business intelligence.

The process begins with locating the stored data. Sometimes this is an easy task; sometimes it is not. Crystal Reports can help you easily connect to your data. The next part of the task is to identify and format the pieces of data you need to answer a business question. A data customer will never come to you and say, "Hey, can you build a report with five fields, a graph, and a title?" Instead, they'll ask you if you can build a report to answer a business question, for instance, "How many five-star resorts do we have in our inventory?" The focus for users of data is on the business intelligence it provides, not on the data itself.

This makes your job similar to that of a good detective. You piece together all the clues using data and tell your audience at the end of the process "whodunit" using summary information and visual elements. Your job as the report designer is to convert business requests into the nuts and bolts of a report.

Featured in this chapter:

- ◆ Using a wizard to choose a report gallery style
- ◆ Choosing a data source
- ◆ Adding and formatting fields
- ◆ Grouping information
- ◆ Sorting information
- ◆ Adding summary information
- ◆ Understanding the report design area
- ◆ Using the toolbars and menus

## Setting Up the Right Report

In this first chapter, we have a simple goal: build a report. We'll take advantage of the built-in creation wizard in Crystal Reports and explain all the fundamentals along the way.

You can think of a report as the answer to a business question. Users, customers, and peers come to you with a question about their inventory, their sales, their competition, their expenses, and so on. Your answer gives a glimpse into the state of the business, and as a Crystal Reports developer, your job is to find the data and craft a report that answers their question.

To this end, whenever we build a report in this book, we'll first state the business question that the report you create will answer, as shown here:

*Business Question: How many resorts does VistaNations have in each country and what are their names?*

Okay, we're ready to go! The VistaNations folks have a Microsoft Access database for us to use. To get started with Crystal Reports 9, you may have a desktop icon you can double-click or you can use the following menu sequence: Start > Programs > Crystal Reports 9.

**NOTE** All menu sequences will be called out in this way. A Windows 2000 desktop environment is assumed, so your actual command sequences may vary slightly.

The Crystal Reports Welcome screen, shown in Figure 1.1, appears, and now you have to make your first decision.

**FIGURE 1.1**  
Crystal Reports  
Welcome screen



The top half of the screen provides radio buttons with choices on how to build your report:

- ◆ Using The Report Wizard
- ◆ As A Blank Report

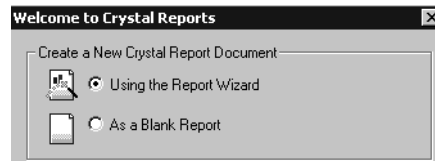
The bottom half of the screen displays a radio button to open existing report files. When a report is saved in Crystal Reports, it is saved as an operating system file with the three-letter file extension .RPT

for report. If you choose the radio button to open an existing report, you can choose from files shown in the file list directly below the radio button or you can click More Files to browse to any existing RPT file.

**TIP** Notice the check box at the bottom of the window to show the Welcome dialog at startup. Uncheck the option to prevent this particular window from displaying in the future. You can access the window in the future by choosing the menu options *Help > Welcome Dialog*.

At this point, we're going to use the Report Wizard, shown in Figure 1.2, by selecting the first radio button, Using The Report Wizard, and clicking the OK button. The Report Wizard provides a guide for adding key components to a report in a step-by-step manner. In later chapters, we'll revisit this screen and learn how to build a blank report.

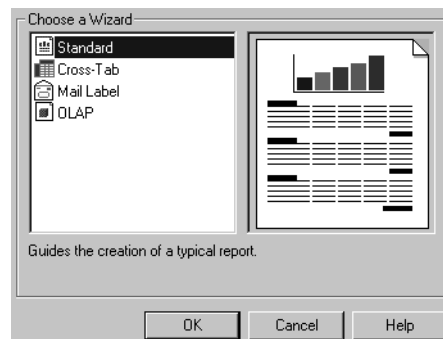
**FIGURE 1.2**  
Using the Report Wizard



**TIP** Well-designed applications for Microsoft Windows generally provide an OK button for you to click to acknowledge the acceptance of changes made to a dialog and to move forward in the application.

The bottom half of the Report Wizard screen is updated and presents a list of four typical report wizards in the Report Gallery shown in Figure 1.3.

**FIGURE 1.3**  
Report Gallery



Choosing one of the report types tells Crystal the physical layout to use to present the information. The Standard Report Creation Wizard is the most commonly used report type. Each of the report types is described in Table 1.1.

**TABLE 1.1:** TYPES OF REPORTS

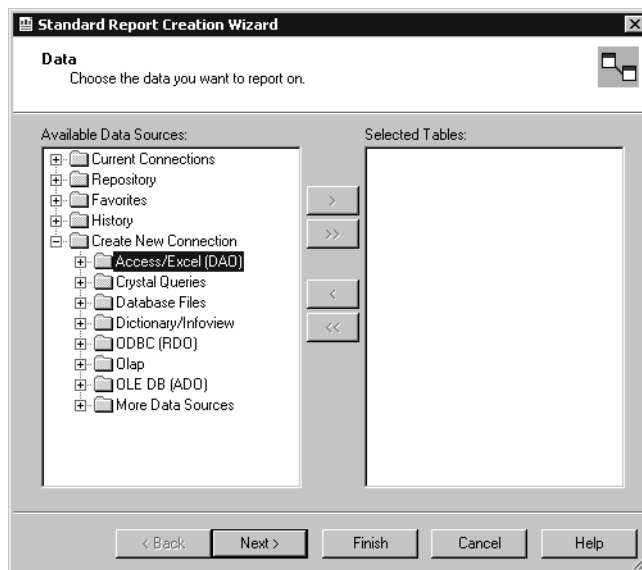
WIZARD	REPORT DESCRIPTION
Standard Report Creation	A report consisting of rows and columns of data
Cross-Tab	A report consisting of a table of summarized information
Mail Label	A report formatted to wrap data across multiple columns
OLAP	A report consisting of a summarized grid of data retrieved from an Online Analytical Processing database

For this example, we'll use a standard report, which is selected by default since the Standard Wizard is the first one in the list. Click OK to accept the options presented.

## Choosing a Data Source

The next step in building a report is to select the data that will be used to *populate* your report. The Standard Report Creation Wizard dialog, shown in Figure 1.4, allows you to choose your data source.

**FIGURE 1.4**  
Available data sources



### Available Data Sources

The Data dialog contains a list of available data sources on the left side of the window. Crystal Reports 9 supports a long list of data sources. There's a good chance the type of data you're using

will be listed directly; if not, you can use the Create New Connection option to access the database. Table 1.2 describes the five general categories of data sources.

**NOTE** Think of “available data sources” as being any database or data file located on your machine or accessible through a network connection from your computer.

**TABLE 1.2: CATEGORIES OF DATA SOURCES**

SOURCE	DESCRIPTION
Current connections	Displays the databases to which Crystal Reports is currently connected.
Repository	Lists data stored in Crystal’s common object repository.
Favorites	Displays a list of databases that you have manually added to your Favorites.
History	Shows data sources you have recently used; during the current Crystal session, all databases you access will appear; once closed and reopened, Crystal displays the most recent five data sources.
Create new connections	Allows a connection to any data source that you can access.

The process of specifying data for your report is to select a data source from the window on the left (Available Data Sources) and use the arrow in the middle to move your selected data source to the window on the right (Selected Tables).

**NOTE** The + (plus sign) to the left of a word or phrase indicates that this is an expandable category that contains subcategories, as shown previously in Figure 1.4.

The VistaNations organization uses a Microsoft Access database. In the collapsed format, the Standard Report Creation Wizard does not list the VistaNations database, so we need to go and find it. This will often be the case in your organization. . . finding the data can be an adventure!

## Making a New Connection

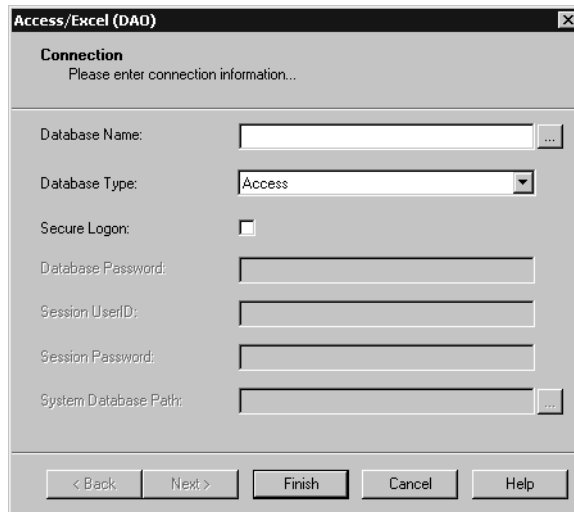
Since we know the data source is a Microsoft Access database and we haven’t worked with it before, the option to create a new connection sounds promising. In fact, whenever you start working with a database you haven’t used previously in Crystal Reports, this is your starting point. Once you make a connection to a database, it appears directly in the list. Double-clicking the Make New Connection option opens the Connection dialog shown in Figure 1.5.

The Connection dialog provides an area to specify the database name, the type of database you’re accessing, and whether you need to access the database with a user ID and password, in another words, a secure logon.

The options to add a database password, a session user ID, a session password, and a system database path become active and available only when the Secure Logon check box is marked.

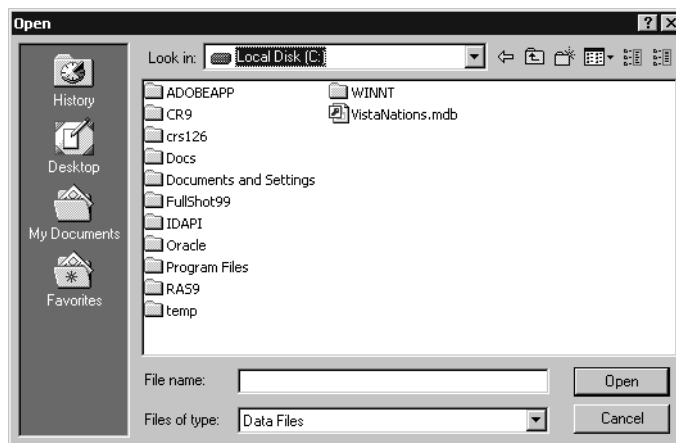
Minimally, you can provide just the database name and its type to make the connection. You can enter this information directly, browse to it, or use a drop-down list to help you.

**FIGURE 1.5**  
Connection dialog



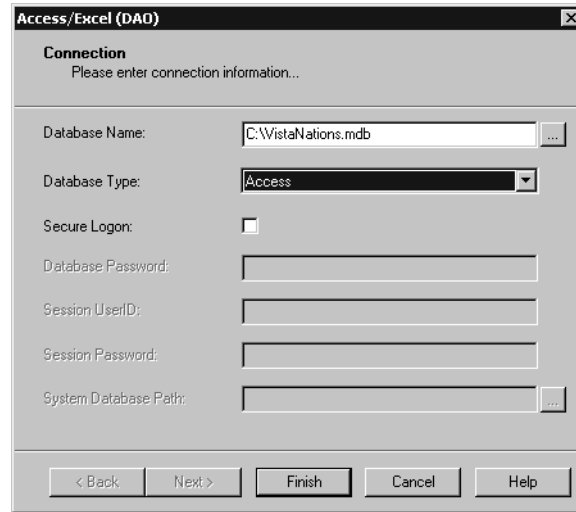
Let's find a database using the browse button (the button with three ellipsis points on it). The browse button brings up a dialog window to let you find and open any data file. In our example, the VistaNations database is located directly on the Local Disk (C:), as shown in Figure 1.6.

**FIGURE 1.6**  
Open dialog



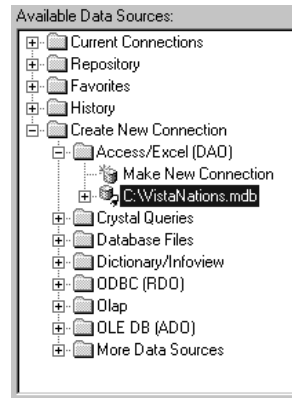
The VistaNations database is read-only and does not require any userID or password, so we'll leave the Secure Logon check box unmarked. Figure 1.7 shows the database name and database type properly filled in, so you're ready to click the Finish button to make the connection.

**FIGURE 1.7**  
Connection settings



This completes the task of choosing a data source. The VistaNations data source now appears in your list of Available Data Sources, as shown in Figure 1.8, and you're ready to choose tables and fields.

**FIGURE 1.8**  
An available data source

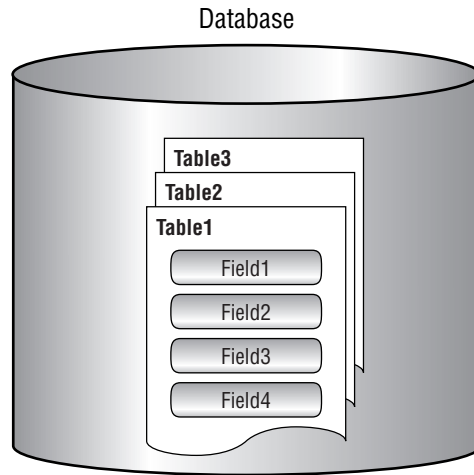


## Choosing a Table

Database software (such as Microsoft Access) stores data in files that can contain any number of database tables. Within each table, any number of fields can be stored. The typical database components are depicted in Figure 1.9. Microsoft Access stores its data in a file that has an .MDB extension.

**FIGURE 1.9**

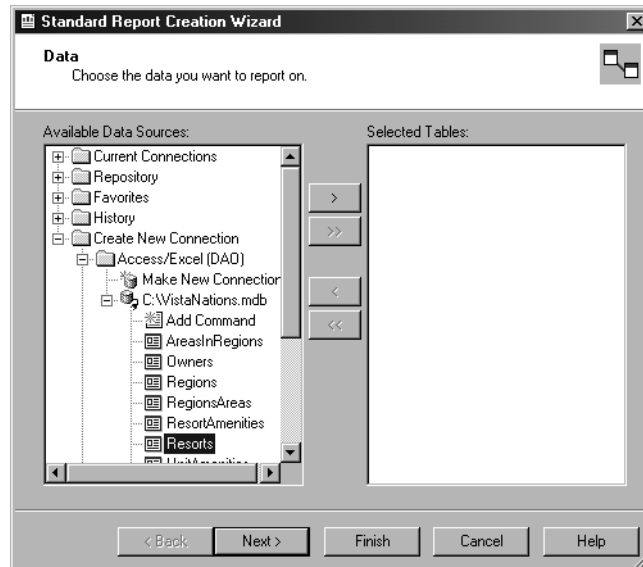
Database components



The Data dialog shown in Figure 1.10 shows a list of Available Data Sources on the left and a list of Selected Tables on the right: the tables you have selected to use in this particular report. When you begin a new report, this list is empty.

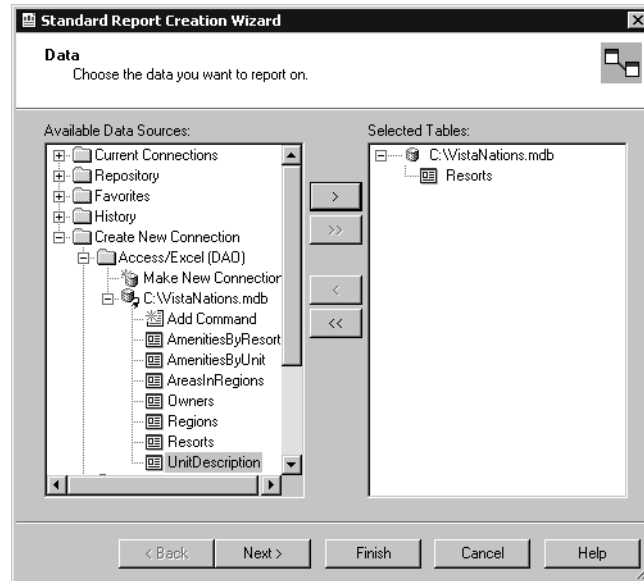
**FIGURE 1.10**

Data dialog



The VistaNations organization has several tables in its database; we'll build a report with one of them. By clicking a table, for instance, Resorts, you select that table from the list of Available Data Sources. With a table selected, the buttons in the middle become active. A single click on the first button copies the table to your Selected Tables list, as shown in Figure 1.11.

**FIGURE 1.11**  
Selected table



## DIALOG BUTTONS

Let's spend a moment discussing the Crystal-specific behavior of the five button options at the middle of the Data dialog. The first button, Back, is grayed out (disabled), signaling that moving to the previous dialog is not an option at this point. This is common practice in applications written for Microsoft Windows.

The Next button is available, and it is the button you use to move step-by-step through the Report Creation Wizard. So, the Back and Next buttons move you in either direction through the Report Creation Wizard. The nice thing about this is if you want to change one of the choices you've made during the creation process, simply use the Back button to go back and correct the option and the Next button to return to where you were and keep going.

The Finish button is also active and available. The behavior of the Finish button in Crystal is to stop the wizard at any point you choose, take the information collected up to that point, and use it to create and display the report. That means you don't have to use all the screens in the wizard in order to create a report! As a point of reference for when to do this, though, take note that if you were to click Finish at this point, you'd have a pretty dull report since you haven't chosen any field data.

The Cancel button also stops the wizard, halting the report-building activity completely and closing all open dialogs. The behavior of the Cancel button should be familiar to you Windows users out there!

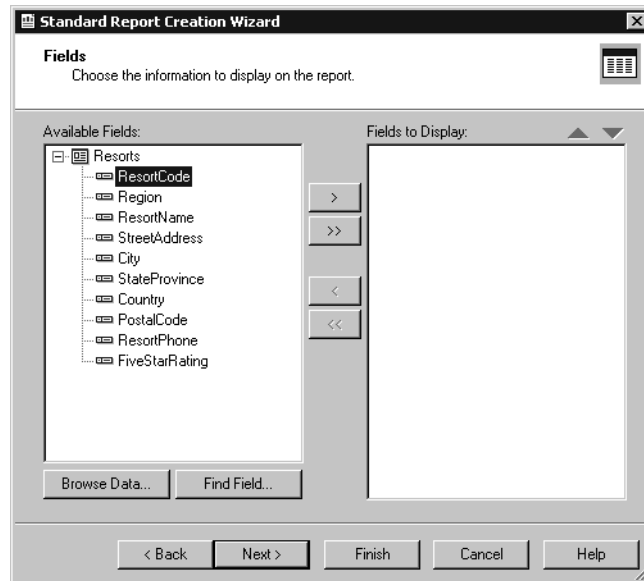
The Help button opens a context-sensitive help window. An appropriate help window for the task you are doing will appear. Crystal Reports 9 has a very complete help file and provides a wealth of information. This feature has been vastly improved in Crystal Reports 9, so enjoy!

**NOTE** After the wizard completes and you are in the Crystal Reports design environment, you can add additional tables or change your data source altogether using the toolbar. Notice the icon in the top-right corner of the Data dialog, shown in Figure 1.11. This icon will appear on the Crystal Reports toolbar later.

## Adding Fields

With a data source's table identified, the Report Creation Wizard next guides you to choose fields from the table to add to the report using the Fields dialog shown in Figure 1.12.

**FIGURE 1.12**  
Choosing fields



### Choosing Fields

The Fields window should feel familiar since it is similar in design to the previous dialog we examined. Your job is to select fields in the list of Available Fields on the left side of the dialog and copy them to the right side of the dialog, Fields To Display, using the buttons between the two lists. Referencing the business question, we'll choose appropriate fields from the 10 available in the Resorts table.

*Business Question: How many resorts does VistaNations have in each country and what are their names?*

To satisfy this business question, we'll need the following fields:

- ◆ ResortName
- ◆ Country

You can click each field individually to select it and then use the first button between the two lists to copy the field to the list of Fields To Display. When you've finished adding fields to the list of Fields To Display, you can click Next to move to the next step.

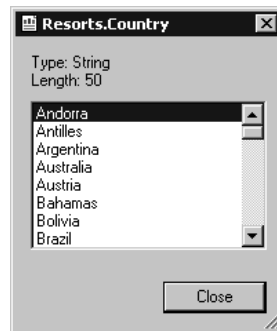
**NOTE** The first two buttons shown in Figure 1.12 move fields to the list of Fields To Display; the second two buttons in Figure 1.12 (shown disabled here) remove fields from the display list.

**TIP** You can use the Microsoft keyboard shortcuts Ctrl or Shift while selecting fields to highlight individual or adjacent fields as a group.

### Browsing Data and Finding Fields

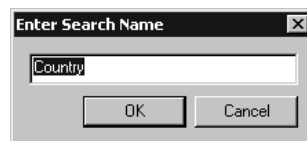
There are two buttons on the Fields dialog: Browse Data and Find Field. The Browse Data field is used to take a peek at the type of data that is stored in the field before adding it to your report. For instance, with the Country field selected in the Available Fields list, clicking the Browse Data button displays sample data and tells you what type of data is stored. Figure 1.13 shows the Browse Data window for the Country field. You can scroll through the list box to view the data that is stored in the field. Along the top, you can see that the field data type is String and its length is 50.

**FIGURE 1.13**  
Browse Data window



The Find Field button is useful when a long list of fields is displayed and you want to avoid scrolling to find a particular field. You can type in the exact name of the field you're looking for or as much of the name, starting at the beginning, as you know, as shown in Figure 1.14.

**FIGURE 1.14**  
Find Field window



## Sequencing Fields

With a set of fields to display shown in the Fields dialog, you can determine the order in which the fields are added to the report. Click the upward- or downward-pointing triangle, visible here in Figure 1.15, to move the selected field higher or lower in the list of fields.

**FIGURE 1.15**  
Sequencing fields

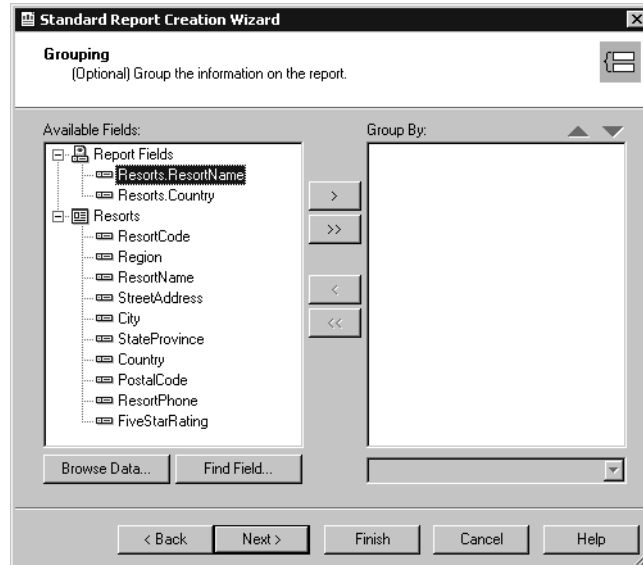


**NOTE** After the wizard completes and you are in the Crystal Reports design environment, you can still add fields using the toolbar. Notice the icon in the top-right corner of the Fields dialog, shown previously in Figure 1.12. This icon will appear on the Crystal Reports toolbar later.

## Grouping and Sorting Information

The Grouping dialog follows the same familiar approach of selecting items from the left and copying them to the right. On the Available Fields list, however, there are now two categories, as shown in Figure 1.16.

**FIGURE 1.16**  
Grouping the information



**TIP** Navigate to the Grouping and Sorting dialog using the Next button or by clicking directly on the tab.

## Choosing a Field to Group By

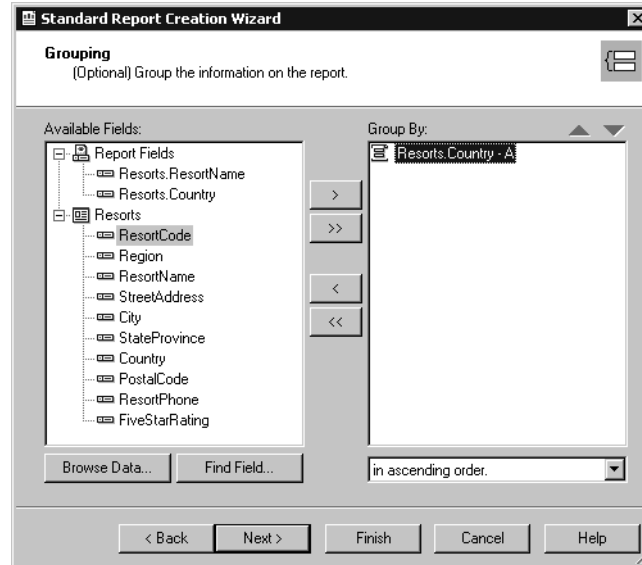
The first category of fields is Report Fields. You can think of these as the fields you've already asked to be included in your report. The second grouping shows all the fields in the data source being used for the report, including the ones from your report, meaning there is inherent duplication.

If you choose a field to group by that is not represented by the Report Fields category, the new field will be automatically added to the list of fields that display in your report.

*Business Question: How many resorts does VistaNations have in each country and what are their names?*

Our business question requires that we determine how many resorts are in each country, so we'll create a grouping based on the Country field. We select the Resorts.Country field from the list on the left and use the buttons in the middle to copy the field to the Group By list on the right, as shown in Figure 1.17.

**FIGURE 1.17**  
Group By Country



## Sorting a Group

By default, a group is sorted in ascending order. The sorting drop-down box is located at the lower right of the Grouping dialog (see Figure 1.17). You can change the sort order to descending if you wish.

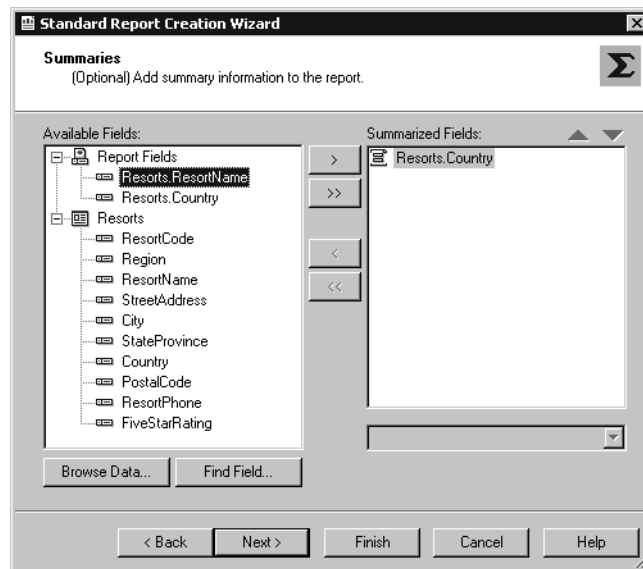
The -A to the right of the field name in the Group By list tells you that the Resorts.Country field will be sorted in ascending order; -D would appear for descending order.

**NOTE** After the wizard completes and you are in the Crystal Reports design environment, you can still add groups using the toolbar. Notice the icon in the top-right corner of the Grouping dialog, shown in Figure 1.17. This icon will appear on the Crystal Reports toolbar later. Notice also that this part of the screen identifies grouping as an optional step. This is the first time you've seen this feature in the Report Creation Wizard. The icon is a signal to you that you can expect reasonable results at any point when you click the Finish button.

## Summarizing Data

After grouping the fields, the Report Creation Wizard helps you summarize the data you've selected. If you've grouped the data, the fields involved in the grouping are automatically added to the Summarized Fields list. The Summaries dialog is shown in Figure 1.18. To summarize data, you choose a field to summarize and a summarization method.

**FIGURE 1.18**  
Summaries dialog

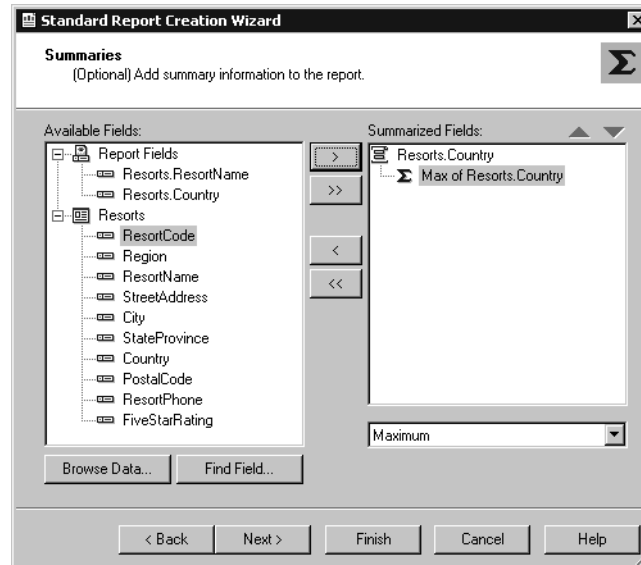


*Business Question: How many resorts does VistaNations have in each country and what are their names?*

Our business question requires that we count how many resorts are in each country. Count is a summarization method. We will summarize based on the Country field using a count summarization. We select the Country field from the list on the left and copy it to the list on the right using the buttons between the two lists.

A default summarization method will be automatically set for you, as shown in Figure 1.19, but you can change to another type of summarization method by selecting it from the drop-down list. The default method set is based on the type of data contained in the field you are summarizing. Table 1.3 describes each of the summarization methods.

**FIGURE 1.19**  
Summarization  
default



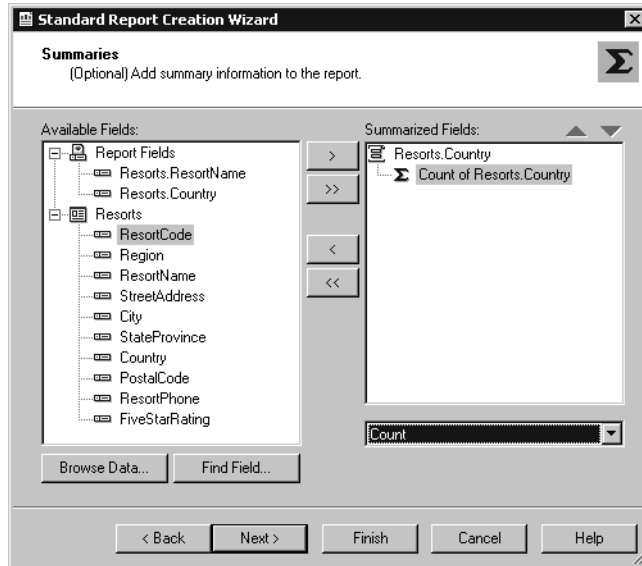
**TABLE 1.3: SUMMARIZATION METHODS**

SUMMARIZATION	DESCRIPTION
Maximum	Given a set of values, returns the largest value
Minimum	Given a set of values, returns the smallest value
Count	A number representing how many times the value appears in the field
Distinct Count	A number representing how many times the value uniquely appears in the field
Mode	Given a set of values, returns the value that occurs most frequently in the field
Nth largest, N is:	Type a value for N as an integer number (e.g., 5) and from a set of values in the report, Crystal returns the N largest values (in this case, the 5 largest values)
Nth smallest, N is:	Type a value for N as an integer number (e.g., 7) and from the set of all values, Crystal returns the N smallest values (in this case, the 7 smallest values)
Nth most frequent, N is:	Type a value for N as an integer number (e.g., 9) and from the set of values in the data source, returns the N most frequently occurring values; similar to Mode.

The summarization techniques available are determined by the data values stored in the field. To answer our business question, the Count summarization method makes the most sense, as shown in Figure 1.20. It allows you to summarize nonnumerical data by counting instances of a value.

**FIGURE 1.20**

Count  
summarization  
method



Notice that the sigma symbol appears indented under the grouping symbol in the graphic above. What this means is that the report will show a count for each unique grouping. For instance, if the Country is Canada, there will be a number representing how many resorts are in Canada. Likewise, if the Country is the United States, there will be a number representing how many resorts are in the United States. The indenting gives you a visual idea of how the summarization will be done in the report.

**NOTE** After the wizard completes and you are in the Crystal Reports design environment, you can summarize field data using the toolbar. Notice the icon in the top-right corner of the Summaries dialog, shown in Figure 1.20. This icon will appear on the Crystal Reports toolbar later.

## Creating the Reports

At this point you've done the following:

- ◆ Connected to a data source
- ◆ Chosen a table and fields to use in the report
- ◆ Created a group based on sorted field data
- ◆ Summarized data based on a field

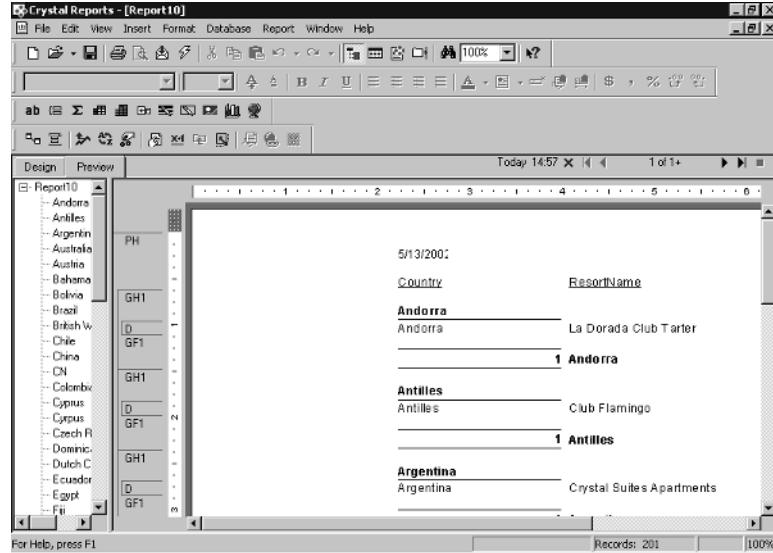
You're ready to generate the report! To do this using the Report Creation Wizard, simply click the Finish button.

## The Report Design Area

The result of the Standard Report Creation Wizard is the generation of a report that is opened in Preview mode in the Crystal Reports designer, as shown in Figure 1.21.

**FIGURE 1.21**

Previewing  
the report



## Navigating the Report

How can you tell you're in Preview mode? Well, the screen is quite busy, and we'll explore all of it, but let's focus our attention on a horizontal area a third of the way down the screen under the toolbars (see Figure 1.21). This horizontal area contains the following:

- ◆ Tabs for Design and Preview mode
- ◆ The current date and time
- ◆ An X button you can click to close this report but stay in Crystal Reports
- ◆ Forward and backward navigation buttons to move one page at a time through the report
- ◆ First and last navigation buttons to move to the first page or last page in the report
- ◆ An estimate of the number of pages in the report and the current page number

**WARNING** *The page count estimate is usually incorrect until you navigate through the pages directly. For instance, the estimate in Figure 1.21 shows pages 1 of 1+. At this point, Crystal has made its best guess and knows that there is more data than will fit on a single page, but it does not yet know how many pages will be required to display it. Clicking the forward and backward buttons will update the page count estimator.*

## Using Preview Mode

The intent of Preview mode is to display the data as the user of the report will see it. From Figure 1.22, you can see that we have a column of data for Country and a column of data for ResortName, the two fields we chose using the Report Creation Wizard. We grouped the data based on Country and sorted it in ascending order, and sure enough our data is being displayed using these criteria.

**FIGURE 1.22**

Preview mode

<u>Country</u>	<u>ResortName</u>
<b>Andorra</b>	
Andorra	La Dorada Club Tarter
<b>1 Andorra</b>	
<b>Antilles</b>	
Antilles	Club Flamingo
<b>1 Antilles</b>	
<b>Argentina</b>	
Argentina	Crystal Suites Apartments
<b>1 Argentina</b>	

Notice that Crystal took care of arranging the fields in the report automatically. While this was thoughtful, it might not be aesthetically pleasing, so rest assured that you can change it to your liking in Design mode.

## GROUP TREE

Whenever you perform grouping in your report, a group tree is displayed in Preview mode in the Crystal Reports design area. The group tree is a vertical area that appears anchored to the left side of the screen, as shown in Figure 1.23. It is used as a navigation technique to let the user jump to a particular group within the report.

By clicking a group name in the group tree, the data that appears in the preview area changes to the data that references the chosen group. For instance, we clicked the text line Bahamas in the group tree, and the display area moved the Bahamas group to the top of the screen, indicating that there are two resorts in the Bahamas, as shown in Figure 1.24.

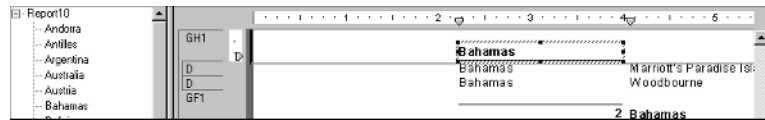
**FIGURE 1.23**

Group tree



**FIGURE 1.24**

Using the group tree

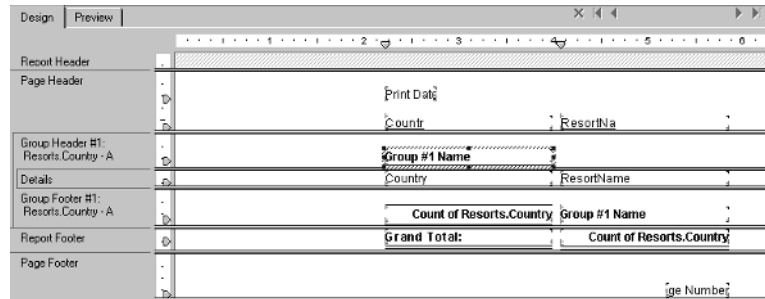


## Design Mode

The Design mode layout area is where you'll do most of your work. In this area, you rearrange, add, and delete text, fields, and objects to create a visually appealing report. Notice in Figure 1.25 that we don't see actual data in Design mode; instead, we see placeholders for fields, group names, and summarization totals.

**FIGURE 1.25**

Design mode



The wizard placed the following objects into appropriate places on the report:

Fields:

Country, ResortName

Groups:

Group #1 Name: This is the group created on the Country field.

Summary:

Count of Country: This is the summarization on the Country field.

Text Labels:

Country (field name), ResortName (field name), and Grand Total

Graphic Elements:

Single underline beneath each group name

Single underline beneath the last item in each group

Double underline beneath the Grand Total

### **AUTOMATIC FIELDS**

Also notice in Figure 1.25 that Crystal added some additional information that you did not request while you were working through the Report Creation Wizard. Namely, the following two pieces of information were automatically added to the report for you:

- ◆ Print Date
- ◆ Page Number

Print Date is a variable that shows the date the report was displayed on the screen or printed to a printer. Page Number is a variable that, as you would expect, displays the sequential page number currently being viewed.

### **Sections**

How did Crystal know where to place the variety of elements it created during report generation? It followed some simple rules regarding section bands. Crystal Reports is known as a *banded report writer*. It has five basic *bands*, or sections, that information can be added to in a report. When you use the Report Generation Wizard, Crystal adds information to the appropriate band based on the element's type. Once the report is generated, you can make changes to the placement that Crystal set up for you.

The five basic bands represent physical layout areas on a piece of paper, and their purposes are described in Table 1.4.

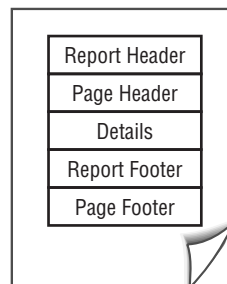
**TABLE 1.4: FIVE BASIC REPORT BANDS**

BAND NAME	DESCRIPTION	EXAMPLES OF ELEMENTS
Report Header	Items placed in this section appear once per report; the information is placed at the very beginning of the report.	Report title
Page Header	Items placed in this section appear once per page and on every page of a report; the information is placed at the very beginning of the page.	Column headings, print date
Details	Items placed in this section repeat for each data record retrieved from the data source.	Fields
Report Footer	Items placed in this section appear once per report; the information is placed at the end of the Details section.	Grand totals
Page Footer	Items placed in this section appear once per page and on every page of a report; the information is placed at the end of the page.	Page number

From the above descriptions, you'll notice that the Page Footer appears after the Report Footer. This is indeed correct. The information placed in the Report Footer appears at the end of the data from the Details section. Imagine a page that has data only to about the one-third of the page mark. At that point, the Report Footer prints. The Page Footer, on the other hand, appears at the very end of the page in the last inch of the printable area. Figure 1.26 shows the bands as they relate to their physical layout on a piece of paper.

**FIGURE 1.26**

The five basic bands



### ADDITIONAL SECTIONS

In addition to the five basic bands, or sections, two additional sections are added for each group that you create. We added one grouping based on the Country field, so our report shows a header and footer band for that group:

- ◆ Group Header #1: Resorts.Country-A
- ◆ Group Footer #1: Resorts.Country-A

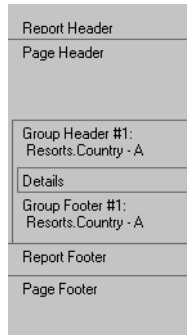
As with the other header and footer areas, items placed in the header area appear above the group, while items placed in the footer area appear below the group.

### SECTIONS IN DESIGN MODE

In Design mode, the five basic section bands appear anchored to the left side of the screen and next to the design layout area. Additional header and footer bands appear for each group created, as shown in Figure 1.27.

**FIGURE 1.27**

Design mode sections



### SECTIONS IN PREVIEW MODE

In Preview mode, a section band appears to the right of the group tree and to the left of the actual data in the preview area. The names of the band may appear abbreviated, such as PH for Page Header and GH1 for Group Header #1, or will display with their complete names.

For each group added, an incrementing number identifies the group. The report we're creating has only one group, so you see GH1 and GF1 for Group Header #1 and Group Footer #1 repeated for each new country. Remember that Country was the field upon which we based our group.

## Toolbars and Menus

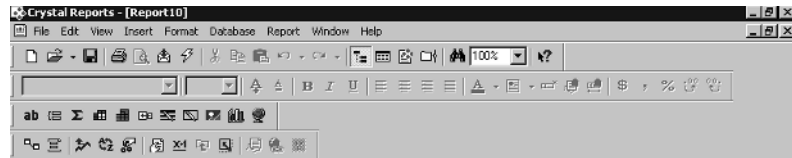
Good Windows applications are consistent, and Crystal Reports is a good Windows application. It conforms to the standards of having a title bar at the top, a menu beneath the title bar, and toolbar icons below the menu. Table 1.5 describes what each of these areas do for you, and Figure 1.28 displays them.

**TABLE 1.5: GOOD WINDOWS CONVENTIONS**

AREA NAME	PURPOSE
Title bar	Every window should have a title; it displays the name of the application, in this case, Crystal Reports, and the name of the current object, in this case, the report name.
Menu	Contains drop-down text-based navigation to the tasks that can be performed in the application; the first two and last two menus are standard in most applications: File, Edit, Window, and Help.
Toolbar	Contains shortcut icons to menu items; moving the mouse slowly over the icon displays a short tool tip in text to describe the task performed by the icon.

Crystal Reports follows the typical Windows convention for changing the menu options and toolbar options available at any given point by displaying context-appropriate options.

**FIGURE 1.28**  
Toolbars and menus



*TIP* You can drag and drop the toolbar sections alongside one another and reorder them; click very near the left edge of the section you want to move to select it.

## Putting On the Finishing Touches

At this point, the report we created answers the business question of how many resorts VistaNations has in each country and the names of the resorts. We can make the report a little more visually appealing by making some simple changes and using some basic graphic elements. This will also give you a chance to use the design interface, toolbar, and menus a bit.

### Indenting Groups

One of the first and easiest enhancements to make is to indent the detail data beneath a group name. By default, Crystal left-aligns the group name and the data. You can easily change this by doing the following:

1. Click the Design tab.
2. Click the Country field in the Details section.
3. Press the right arrow key twice to indent the field data.
4. Click the Preview tab to see the effect of your change.

The group data should now display indented, as shown in Figure 1.29.

**FIGURE 1.29**  
Indented group data

5/13/2002	
Country	ResortName
<b>Andorra</b>	
Andorra	La Dorada Club Tarter
<b>1 Andorra</b>	
<b>Antilles</b>	
Antilles	Club Flamingo
<b>1 Antilles</b>	
<b>Argentina</b>	
Argentina	Crystal Suites Apartments
<b>1 Argentina</b>	

## Boxes and Lines

Lines and boxes can be added around text labels and fields to call attention to a particular area of the report. In our report, we'll draw a box around the two column headings, Country and ResortName, by doing the following:

1. Click the Design tab.
2. Choose Insert > Box.
3. Use the pencil drawing tool to draw an outline box around the two column headings in the Page Header.

The result is shown in Preview mode in Figure 1.30.

**FIGURE 1.30**

Drawing boxes



*TIP* Another simple visual effect is to add a line by choosing the menu options Insert > Line.

## Pictures

One of the easiest ways to make your reports look more professional is to add a picture image. Let's add the VistaNations logo to the Page Header so that it appears at the top of every page in the report.

The VistaNations logo exists in a TIF image file. To add a graphic to the page header, do the following:

1. Click the Design tab.
2. Choose Insert > Picture.
3. Locate and select the image using the Open menu.
4. Click the mouse inside the Page Header section to anchor the image.

Table 1.6 shows the types of graphics that can be placed in a Crystal report.

**TABLE 1.6: TYPES OF GRAPHICS**

FILE EXTENSION	MEANING
.BMP	Microsoft Windows bitmap format
.WMF	Microsoft Windows Metafiles
.TIF	Tagged Information File format; also known as TIFF images
.JPG	Joint Photographic Expert Group format; also known as JPEG images
.PNG	Portable Network Graphics format

The result of adding the graphic can be seen by previewing your work, as shown in Figure 1.31.

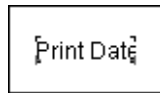
**FIGURE 1.31**  
Adding a graphic



## Resizing and Moving Objects

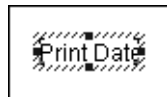
When Crystal adds fields and text to a report, it adds them in a default size that may or may not completely display the object. Notice the Print Date variable that was automatically added, as shown in Figure 1.32. You can see that the last letter appears to be cut off in Design mode and would display truncated in Preview mode as well.

**FIGURE 1.32**  
Print Date variable



You can fix this by manually resizing the field area using the object resize handles shown in Figure 1.33. These handles are shown as very small squares centered on each border of the object. Moving your mouse over the square displays a two-headed arrow, signaling that you can drag and drop the border to resize the object.

**FIGURE 1.33**  
Object resize handles



With an object selected and the object resize handles visible, you can reposition the object in the design or preview windows using drag-and-drop techniques. The resize symbol is an intersection set of two double-headed arrows. When you see this symbol, you can drag and drop the object to move it any place in the report, including to different sections.

## Saving a Report

We've done a good deal of work on this report. Let's save what we've done so that we can use it later. Saving a Crystal Reports file in the Windows environment is like saving any other type of file. Reports are saved in a file with an .RPT extension. To save a report, use the menu sequence File > Save. A Save As dialog opens to prompt you to provide a filename and automatically sets the type as Crystal Reports. We'll save this report as **CH01.RPT**. You can save it to any location accessible to your computer.

**WARNING** Files created with Crystal Reports 9 cannot be opened with older versions of Crystal Reports.

## A WORD ABOUT REPORT NAMING CONVENTIONS

Small companies may have just a few reports, while large companies may have hundreds of reports. It is a good investment of your time to sit down with the IT (Information Technology) folks in your organization and agree on some report naming conventions.

Each Crystal report is stored in an operating system file that has an .RPT extension. Some companies embed information in the name of a report; for instance, D582-CM.RPT is a report created in Department 582 by someone with the initials CM. Another convention might involve the content of the report, for instance, EmployeeSales.RPT or MonthlyProjections.RPT. (Check with your operating system rules before using blank spaces in filenames.)

Before you decide on conventions, consider the operating systems and devices to which you will be deploying reports. Many operating systems, including Microsoft's, allow long filenames, which means that you can make the portion of the filename that comes before .RPT very robust and meaningful and include spaces. Other operating systems, such as Unix, prefer the 8.3 (pronounced *eight-dot-three*) naming convention, or short filename, where the number of characters that comes before the period should be eight or fewer. Similarly, small handheld devices, such as cell phones, can store less information and have smaller output displays, so short filenames might be easier to manage.

Agreeing on a good naming convention early in the process will help you find your reports more easily later on!

## The Business Questions Answered

The simple report shown in Figure 1.34 and created in this chapter shows that there are a total of 201 resorts in VistaNations' inventory, with 94 of them being in the United States and the remainder spread out in smaller groups around the world. The report has a total of 9 pages. Further, it's an attractive document that is easy to read.

**FIGURE 1.34**

Last page of the report

US	Sunterra Pacific	
		<b>94 US</b>
<b>Venezuela</b>		
Venezuela	Margarita International	
Venezuela	Las Olas Resort	
		<b>2 Venezuela</b>
<b>Wales</b>		
Wales	Plas Talgarth Health &	
		<b>1 Wales</b>
<b>West Indies</b>		
West Indies	Marlin Quay	
West Indies	Southwinds Beach	
		<b>2 West Indies</b>
<b>Grand Total:</b>		<b>201</b>

## Summary

As you've seen in this chapter, creating a report with Crystal Reports is easy. Creating a good report, however, requires that you understand how to connect to the data, retrieve the pieces you need, and lay them out in an aesthetically pleasing and meaningful way. A solid understanding of your report-writing tool is essential.

The five basic sections, or bands, of a Crystal Report play a large role in the ultimate look, feel, and behavior of a report. The report wizard places fields and text automatically in appropriate sections, and with a little background information on why the wizard does what it does, you can confidently move data around to make the layout work for you. The Standard Report Creation Wizard helps you perform summarization and grouping during the first stages of report writing, which is where you start the process of converting raw data into meaningful information.

Beyond the wizard approach to building a report, you can add visual elements to a report, which can go a long way in delivering quality reporting. While you can't change the news the data delivers, sometimes the news is easier to swallow if it at least looks organized and neat in the report! We'll continue working with this report in the next chapter as we move beyond the Report Creation Wizard to additional Crystal Report features.

