# Report CE®

## Version 5

SYWARE® Inc.

# Table of Contents

# Introduction

## Overview of Report CE

Welcome to Report CE, the fastest and easiest way to design, view, and print reports for data collected with a Windows CE device.

Here are just some of the things you can do with Report CE:

- Quickly create report layouts tailored to your specific needs, with just the information you want, organized the way you want to see it.

- Automatically generate and display calculated data, such as sub-totals, grand totals, record counts, elapsed time, and more.

- Present selected data in colorful graphs (line, column, scatter, or pie chart) for easier comprehension and greater impact.

- Give your report a neat and well-organized appearance using Report CE's time-saving layout tools. Add lines and imported graphics such as logos. Use color for clarity and visual appeal.

- Apply customized page headers, footers, and labels, as well as automatic page numbering and timestamps.

- Combine data from multiple tables in a single report.

- When running a report, "drill down" to just the records you want to see.

- Use Report CE's built-in email link to send reports electronically with minimum effort.

You can use Report CE on any Windows CE device that runs Windows CE 3.0 or later, including Palm-size or Pocket PCs (P/PCs), Handheld PCs (H/PCs), and H/PC Professional devices (H/PC Pros). You can also run it on a desktop or laptop PC.

You can apply Report CE to data collected with Visual CE or any other application that stores data in a table in the Windows CE Database Object Store, a Pocket Access database (.cdb file), or a SQL Server CE database (.sdf file).

In addition, you can use Report CE with SYWARE's mEnable software and a wired or wireless network connection (including the Internet) to produce up-to-the-second reports of data stored on a remote computer in an ODBC-enabled data source such as Oracle, Microsoft SQL Server, or Microsoft Access.

**Sample Report**

# Report CE Basics

**Layouts**

A Report CE layout defines the way your report looks on screen and on paper.

You can create layouts using any device on which Report CE's Development Environment has been installed -- either a CE device or a desktop PC. Once you have saved the layout in a .RCE file, you can run the report by opening that file on any device that has access to the tables for which the layout was created.

You compose a report layout using three basic elements: tables, controls, and layout bands.

**Tables**

You can create a layout that reports data from multiple tables. All of the tables for a single layout must be stored in the same database. A database is defined as the entire Windows CE Database Object Store, a single .cdb file, or a single .sdf file. When used with SYWARE mEnable, a database is defined as a single ODBC data source, such as one .mdb file.

**Controls**

Controls are layout objects that you use to define and place static text, graphics, and data fields in the layout. Report CE provides eight types of controls:

| Control Type | Description | Layout placeholders |
|---|---|---|
| Label | Displays static text; useful for field labels, column headings, page titles, etc. | No placeholder; label displays in layout mode as it appears in the report. |
| Column | Displays record data from a table column. | Text: AAAAAAAAAAAAAAAAAA<br>Numeric: 99999999999999999<br>Money: 99999999999999.99<br>Date/time: Current date/time; e.g., 10/09/99 7:36:36 AM<br>Scribble: [gray box]<br>Yes/No: ⊠<br>Barcode: ▮▮ ▮ ▮▮▮ ▮ ▮▮▮ ▮ ▮▮ |
| Calculated field | Displays the result of an expression. | Text: AAAAAAAAAAAAAAAAAA<br>Numeric: 99999999999999999<br>Money: 99999999999999.99<br>Date/time: Current date/time; e.g., 10/09/99 7:36:36 AM<br>Barcode: ▮▮ ▮ ▮▮▮ ▮ ▮▮▮ ▮ ▮▮ |
| Picture | Displays pictures (.bmp, .jpg, or .gif) – either images stored in a table column or a static image used as part of the report design (e.g., a logo). | If placed as a static image, picture displays in layout mode as it appears in the report. Otherwise, a gray box indicates the size, shape, and placement of the picture box. |
| Timestamp | Displays the date and/or time that the report begins running. | Date/time: Current date/time; e.g., 10/09/99 7:36:36 AM<br>Barcode: ▮▮ ▮ ▮▮▮ ▮ ▮▮▮ ▮ ▮▮ |
| Lookup | Displays a value that is related to a record in the report but that is stored in a separate "lookup" table. | Text: AAAAAAAAAAAAAAAAAA<br>Numeric: 99999999999999999<br>Money: 99999999999999.99<br>Date/time: Current date/time; e.g., 10/09/99 7:36:36 AM<br>Yes/No: ⊠<br>Barcode: ▮▮ ▮ ▮▮▮ ▮ ▮▮▮ ▮ ▮▮ |

| | | |
|---|---|---|
| Line | A horizontal or vertical line used to organize the appearance of the report. | No placeholder; line displays in layout mode as it appears in the report. |
| Graph | Displays selected data in a line graph, column graph, scatter graph, or pie chart. | A sample graph indicates the size, shape, placement, and type of graph that will appear in the report. |

**Layout Bands**

Layout bands are a fixed series of horizontal strips that appear on the screen in layout mode. You use them to organize information in the report. Each type of band displays information in the report in a different way:

| Band Type | Description |
|---|---|
| Page Header | Prints at the top of every page (e.g., a title). |
| Table Header | Prints at the top of table detail data (e.g., column headers). See ❶ in the following two illustrations. |
| Table Detail | Prints table records. You define the table detail band just once in the layout, and Report CE prints one detail band for every record in the report. See ❷ in the following two illustrations. |
| Table Group | Prints summary data for groups of table records. Not shown in illustrations below; refer to the topic "Reporting Information about Groups," on page 119 for details. |
| Table Footer | Prints at the bottom of table detail data (e.g., column totals). See ❸ in the following two illustrations. |
| Page Footer | Prints the bottom of every page (e.g., page numbers). |

When you select multiple tables for a layout, you control how the table layout bands are "nested." In the illustration below and on the following page, Order records are nested under Customer records. For more information about table nesting, refer to the topic, "Beginning a New Report Layout," on page 67.

**Sample Report CE Layout for Two Tables (RCE_Customer and RCE_Orders)**

**Corresponding Report Displayed in Report CE Print Preview Window**



Note: The page footer is not shown in this illustration (it would appear at the bottom of the page).

**About .RCE Files**

You create a report layout using the Report CE Development Environment (ReportCE.exe). Report CE saves your layout in a .RCE file. If you open the .RCE file directly via Windows Explorer, Report CE automatically runs the layout against the tables and displays the results in the Print Preview Window. From there, you can then save, print, or email the report, but you cannot modify it.

If wish to modify the layout, you must open it in the Report CE Development Environment.

# About this Documentation

**Prerequisites**

This documentation assumes that you are familiar with how to:

- Use a mouse
- Open a menu
- Choose menu options
- Create and fill tables on the Windows CE device using Visual CE, Pocket Access, or SQL Server CE.

To review these techniques, consult the documentation for Windows, Visual CE, Pocket Access or SQL Server CE.

**How to Use This Documentation**

Once Report CE is installed, start with Quick Tour I to run a sample report on the CE device. Then in Quick Tour II, go step by step through the process of creating a basic report layout. Take Quick Tour III to master Report CE's advanced features, such as designing layouts for multiple tables and embedding calculated fields.

Once you've completed the Quick Tours, you're ready to create and use your own report layouts using the complete reference information provided in the sections, "Creating Your Own Report Layouts"  (page 55) and "Running, Printing, Saving, and Emailing Reports"  (page 143).

**About mEnable and sqlceEnable**

Throughout this documentation, you will see references to two other software products from SYWARE -- mEnable and sqlceEnable.

- **mEnable** makes it possible to apply Report CE layouts on a CE device or PC to an ODBC-enabled data source (such as Microsoft Access) on a remote server, via a wired or wireless connection.
- **sqlceEnable** is an optional add-on module for Report CE that makes it possible to create reports for SQL Server CE databases.

# Technical Support

For Report CE technical support, contact SYWARE, Inc. at **http://www.syware.com/support**.

You may wish to visit our web site **www.syware.com** for other helpful information and tools including free software utilities you can download, the latest product development news, frequently asked questions, tips of the month, and much more.

# Installing Report CE

## System Requirements

Report CE requires:

- A desktop PC:
    - ◊ IBM-compatible, 80486 processor or higher
    - ◊ Windows 95 (or higher) or Windows NT 4.0 (or higher)
    - ◊ At least 8MB RAM (16MB recommended)
    - ◊ 1MB free disk space
    - ◊ Hard disk and mouse

- A Windows CE device (including the Pocket PC):
    - ◊ Windows CE 3.0 or higher
    - ◊ Visual CE (any version or edition), Pocket Access, or SQL Server CE. Note: Use of SQL Server CE tables with Report CE requires SYWARE's sqlceEnable software.

- A printer with a working serial or infrared connection to the device from which you want to print (your CE device and/or desktop PC).

**Note:**

You can run and print reports of data in the Windows CE Database Object Store from either a Windows CE device or a desktop PC connected to the Windows CE device. If you want to use data from a Pocket Access database (.cdb file) or a SQL Server CE database (.sdf file), you can run and print reports *only* from the Windows CE device on which that data is stored.

# How to Install Report CE

The following instructions describe how to install Report CE simultaneously on your desktop PC and Windows CE device, enabling you to design and run reports on either device.

1  Connect your CE device to your desktop PC.

2  Insert the Report CE CD into your CD or DVD drive.

3  Report CE prompts you through two installation processes in sequence: one for the desktop PC and one for the CE device. Simply follow the instructions on the screen.

# Quick Tours

## Quick Tour I: Running a Report on the CE Device

### Overview

In this first quick tour, you will learn how to run and print a report using the sample layout and tables provided by SYWARE, Inc. This sample layout is nearly identical to the one that you will create in Quick Tour III.

Quick Tour I includes the following lessons:

- Quick Lesson 1: Running a Report
- Quick Lesson 2: Specifying a Filter
- Quick Lesson 3: Browsing the Report
- Quick Lesson 4: Printing the Report
- Quick Lesson 5: Saving the Report to a File
- Quick Lesson 6: Emailing the Report

# Quick Lesson 1: Running a Report

Imagine for the moment that you are an office supply salesperson responsible for the northeastern region of the U.S. You keep track of your customers and their orders on your CE device in three Windows CE tables named RCE_Customer, RCE_Order, and RCE_Item. Your home office has requested a report showing the value of each of your Massachusetts customer's outstanding orders, broken down item by item.

The sample report layout provided by SYWARE, Inc. just happens to automatically retrieve, organize, and total the sample customer orders in that way.

**Note**

You can perform any Report CE function on either the desktop PC or the CE device. For the purposes of this Quick Tour, you'll run the report on your CE device. It need not be connected to the desktop PC.

**To run the sample layout (it's named Sample.rce):**

- Click the Windows **Start** button, then select **Programs**, then **Sample**.

  Report CE opens the report layout in the background and the Define Filter dialog box in the foreground.
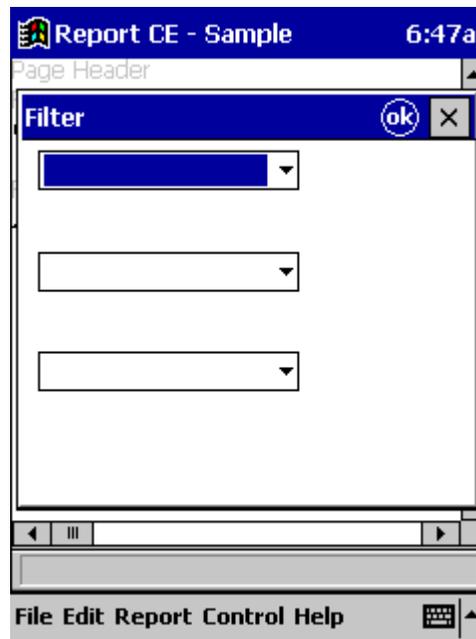
**Next:** Specifying a Filter

# Quick Lesson 2: Specifying a Filter

The filter lets you specify a set of conditions that a record must satisfy in order for it to appear in the report. If you don't specify any filter conditions and simply close the Filter box by clicking OK, the report will include all customers that have placed orders. In this case, you don't want your report to show all of them. You want just the ones in Massachusetts.

1  Click the drop-down arrow to the right of the first field in the dialog box.

   Report CE lists all of the columns in the sample customer table.
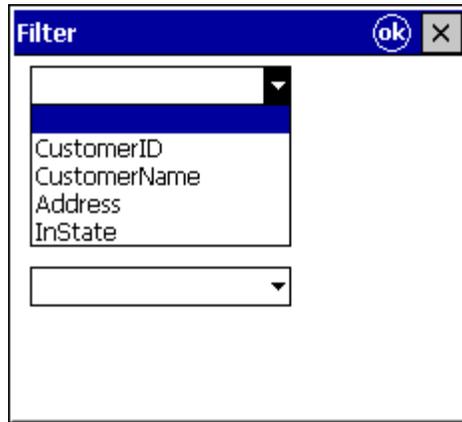


2  Select the column name **Address**.

   Report CE closes the list. It automatically adds two fields to the Filter dialog box and inserts the default comparison operator "=" in one of them.

3  Click the drop-down arrow for the comparison operator and select **contains**.

4  Type **MA** in the value field immediately below "Address."

   You've just specified the filter: in order for a customer to be included in the report, its address must contain the abbreviation MA. You're ready to ask Report CE to run the layout against the tables and produce the report.
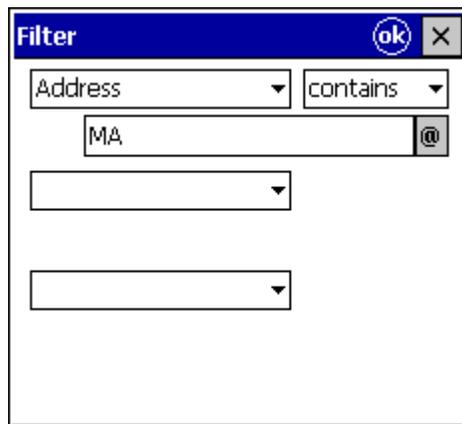


5  Click **OK** in the upper right corner of the Filter dialog box.

   Report CE begins running the report and, in just a short while, displays the results in the Print Preview window.

**Next:** Browsing the Report

# Quick Lesson 3: Browsing the Report

Before printing the report, you might want to view its contents to ensure that it includes all of the information you want to communicate to the home office.

Since the sample report layout was designed to fit on an 8 ½" by 11" sheet of paper, the report is too large to view all at once in the CE device's screen. To bring the hidden portions into view, you can use the window's horizontal and vertical scroll bars, the rocker switch on the CE device, or the Arrow keys on the soft keyboard.
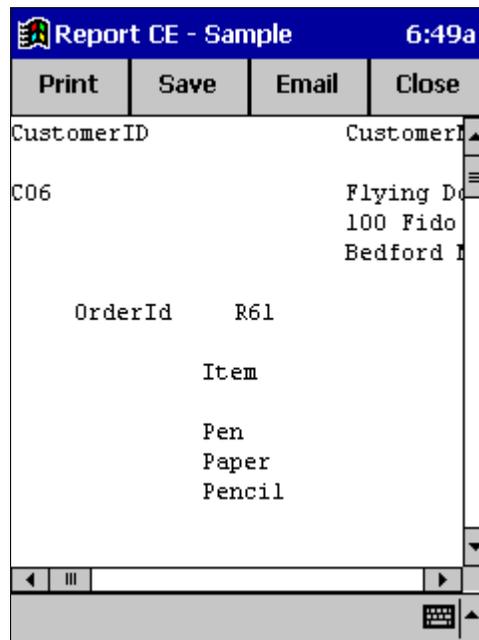
**Next:** Printing the Report

# Quick Lesson 4: Printing the Report

You're now ready to print a paper copy to give to the home office.

1   Click the **Print** button at the top of the Print Preview window.
    The Windows Print dialog box appears.

2   Set the options as desired and click **Start Printing** or **OK** (depending upon your system).
    In a few moments, your printer produces the report. That's all there is to it.


**Next:** Saving the Report to a File

# Quick Lesson 5: Saving the Report to a File

When you run a report, the results reflect the current contents of the tables. The next time you run it, the results will be different if the contents of the tables have changed. Report CE does not automatically save a report when you run it.

However, you can easily save a copy of the currently displayed report to a plain text (.txt) or Rich Text Format (.rtf) file. You can then open the file in Notepad, Word, or other text editor or word processor for later reference or additional manipulation.

1  Click the **Save** button at the top of the Print Preview window.

   Report CE displays the Save As dialog box.

2  Save the file with the default name and type (**Sample.txt**) to a location of your choosing. Click **OK**.


**Next:** Emailing the Report

# Quick Lesson 6: Emailing the Report

If your CE device is set up to send email, you also have the option of getting your report to the home office electronically. Report CE's link to Pocket Outlook makes this process especially quick and easy. Report CE not only opens a window in which you can write and address your message, but also automatically puts the letter in your Pocket Outlook outbox and attaches a copy of the currently-displayed report.

1  Click the **Email** button at the top of the Print Preview window.

   Report CE displays the Email Report dialog box.
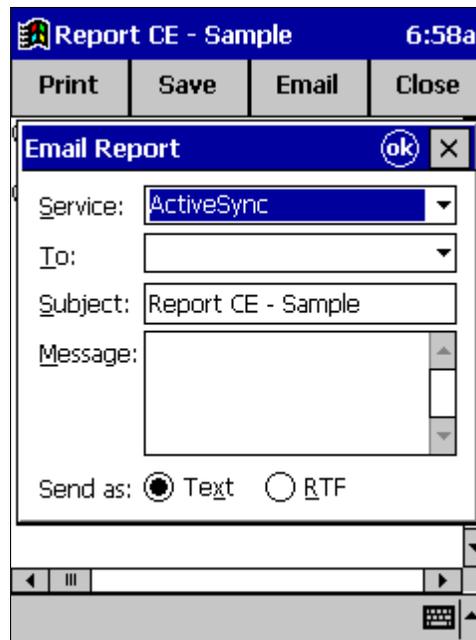


2  Complete the dialog box:
   - **Service:** Select the service you wish to use to send outgoing mail. **Note:** If you have not already set up an email service, refer to the documentation that came with your CE device.
   - **To:** Type or select the email address of the recipient.
   - **Subject:** You can leave the value supplied by Report CE, or type your own. Report CE uses your entry here as both the Subject label for the email, and as the filename for the attached report.
   - **Message:** Type the text you want to appear in the body of the email letter.
   - **Send As:** Select the file format for the attached report.
3  Click **OK**.

   Report CE displays a message indicating that your email letter and attachment have been placed in the Pocket Outlook Outbox.
4  Click **OK** to acknowledge the message.
5  Click the **Close** button at the top of the Print Preview window to close Report CE.

If you open Inbox on your CE device, you'll see that Report CE has placed the letter in your outbox, ready for sending.

You've now seen how easy it is to run, print, save, and email a report on the CE device using a Report CE layout. In the following Quick Tours, you'll learn how to use Report CE to create layouts, including the one you just ran.

**Next:** Quick Tour II – Creating a Basic Report Layout

# Quick Tour II: Creating a Simple Report Layout

## Overview

In this second quick tour, you will learn all of the basic steps required to create a report layout – from opening the Report CE development environment through downloading the layout file to the CE device.

Quick Tour II includes the following lessons:

- Quick Lesson 1: Starting Report CE's Development Environment
- Quick Lesson 2: Picking a Table
- Quick Lesson 3: Viewing the Default Layout in Print Preview Mode
- Quick Lesson 4: Rearranging the Default Layout
- Quick Lesson 5: Adding a Table Footer
- Quick Lesson 6: Adding a Page Header
- Quick Lesson 7: Adding a Page Footer
- Quick Lesson 8: Specifying a Record Sort Order as Part of the Layout Design
- Quick Lesson 9: Fitting the Layout to the Printed Page
- Quick Lesson 10: Saving the Layout
- Quick Lesson 11: Downloading the Layout to the CE Device
- Quick Lesson 12: Closing Report CE

# Quick Lesson 1: Starting Report CE's Development Environment

You're still working for the office supply company. You'd like to create a simple customer list, consisting of names and addresses, organized in a column and sorted alphabetically by name.

Your first step is to open Report CE's development environment. This is where you will create the report layout.

**Note**

You can create a report layout by working in Report CE's Development Environment on either the CE device or the desktop PC. For the purposes of this Quick Tour, you'll work on the desktop PC in connected mode.

1  Connect your CE device to your desktop PC.

2  On your desktop PC, click the Windows **Start** button, then **Programs**–**Report CE**–**Report CE**.
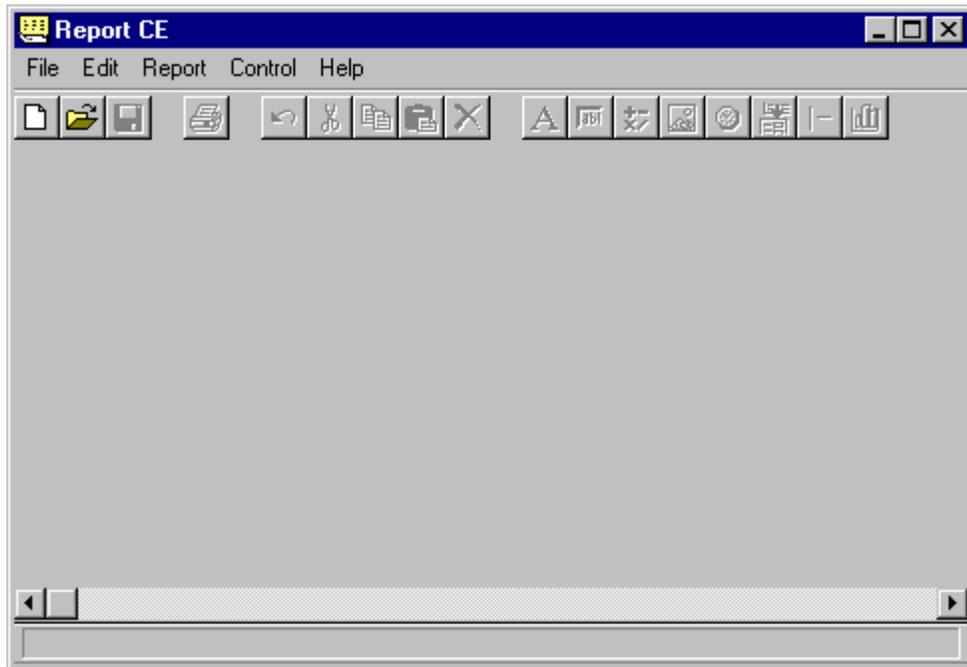
Report CE displays its development environment window.



Report CE's development environment window has five menus: File, Edit, Report, Control, and Help. You can select menu options by clicking them with the mouse pointer or by pressing the shortcut keys.

Its toolbar buttons provide a faster way to activate the most frequently used commands.

**Next:** Picking a Table

# Quick Lesson 2: Picking a Table

You create a layout to retrieve and format data from a specific table (or group of tables) that already exists on the CE device. When designing a new layout, you must first specify the tables with which you want to work. For the purposes of this Quick Tour, you'll use a single table—the sample table named RCE_Customer.

1 To open a new layout, select **File–New** or click the **New** button.

2 Report CE asks you to specify the database that contains the desired table. In that case, select **Windows CE Store**.

 Report CE displays the Report Tables dialog box.

3 Click **Add**.

 Report CE displays the Pick Table dialog box, which lists all eligible tables on your system.
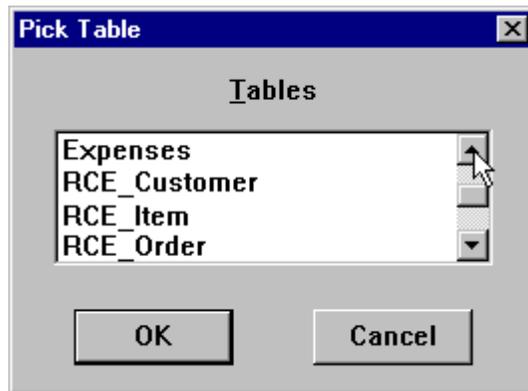
4 Highlight **RCE_Customer** in the list, and click **OK**. (You may have to scroll the list to bring it into view.)

Report CE displays the Select Columns dialog box. It lists the names of all columns in the selected table. Initially, all columns are selected.

**Select Columns**

Select columns

CustomerID
CustomerName
Address

All
None

OK          Cancel
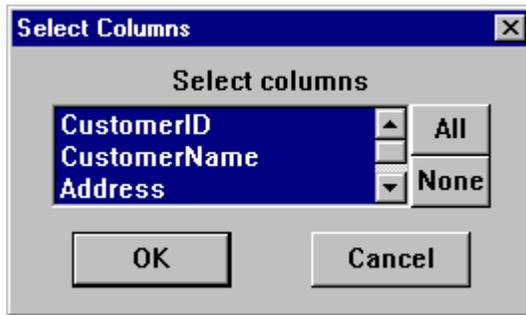
5  Scroll down so that **InState** is visible, then deselect it. (For the purposes of this tutorial, we don't want the contents of InState to appear in the report.) Click **OK**.

You are back at the Report Tables dialog box.

6  Click **Close**.

Report CE displays its default version of the layout.

**Report CE**

File   Edit   Report   Control   Help

Page Header
 RCE  Customer Header
CustomerID          CustomerName          Address
· RCE  Customer Detail
AAA AAAA AA AAAAA AA AAA AAAA AA AAAAA AA AAA AAAA AA AAAAA AA
 RCE  Customer Footer

Page Footer
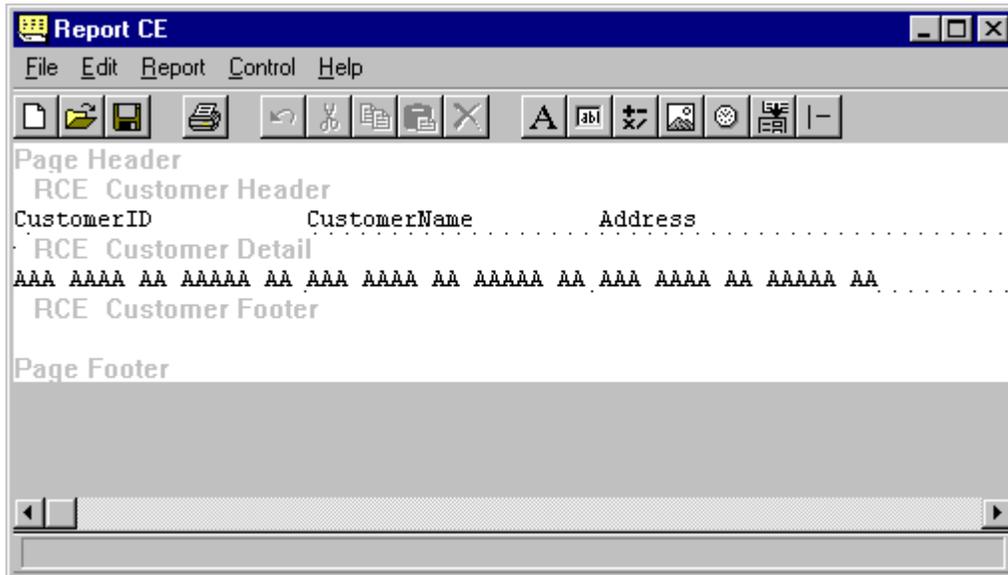
**Next:** Viewing the Default Layout in Print Preview Mode

# Quick Lesson 3: Viewing the Default Layout in Print Preview Mode

A layout arranges the way your data looks on the screen and on paper. It controls appearance only; it does not modify the data in the table in any way.

Report CE automatically creates a default layout for you. You can use this layout as is, or you can modify it in a number of ways.

Before deciding whether or not you want to change the default layout, you might want to preview how your data looks in it.

1  Select **File–Print Preview**.

Report CE opens the Print Preview window and displays the data from RCE_Customer in the default layout.



The city and state are stored in the Address column in the RCE_Customer table, but they do not appear in the report. You need to increase the space allocated to the Address field in the layout.

You may think of several other adjustments that you'd like to make—such as stacking the name and address and adding white space between the information for individual customers. You might want to add a title to the top and a page number at the bottom. You'll do all of these things and more in the following lessons.

2  Click the **Close** button to close the Print Preview window.

**Next:** Rearranging the Default Layout

# Quick Lesson 4: Rearranging the Default Layout

In this lesson, you will learn how to do the most basic type of layout adjustments--resizing and rearranging the elements that make up the report. The layout objects that you use to control the appearance of titles, labels, data fields and other report elements are called "controls." You organize the controls in a fixed series of horizontal strips called "bands."

Looking at the sample default layout, you'll notice that Report CE automatically created some controls for you, based on the table columns that you selected in Quick Lesson 2. It created data fields to display record information from each selected column, and labeled each field with the corresponding column name. In Report CE, column data fields are defined by "Column controls" and static text labels are defined by "Label controls."
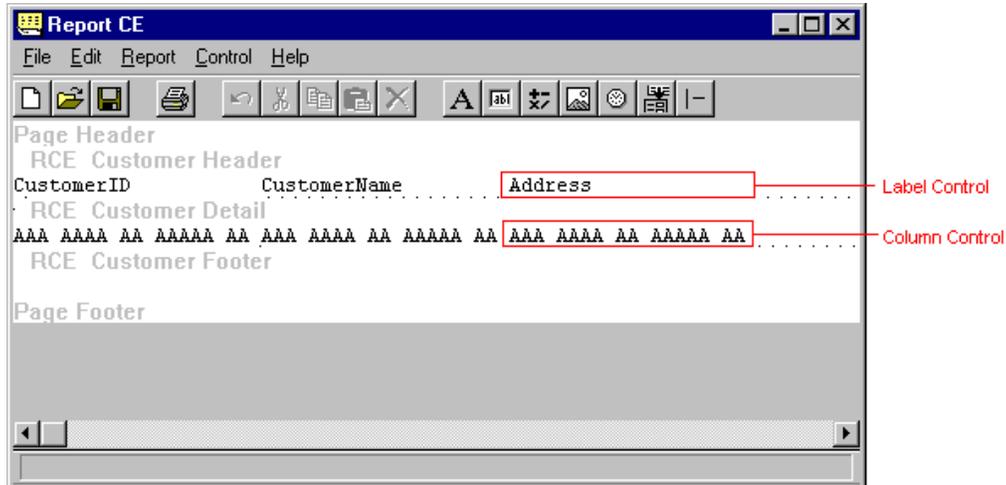


As you saw in the previous lesson, city and state are cut off in the report. That's because Report CE's default size for a Column control (one line high) does not accommodate the two lines of information stored for addresses. There are two ways to make the hidden information visible in the report—you can allow the column control to "stretch" automatically, or you can enlarge the control's fixed size. We'll explore both methods now, starting with "stretch."

**Turn on the Stretch Option:**

1  Double-click (or right-click) the Column Control for Address (indicated by the series of A's directly below the "Address" label).

   Report CE displays the Column Properties dialog box for the control.
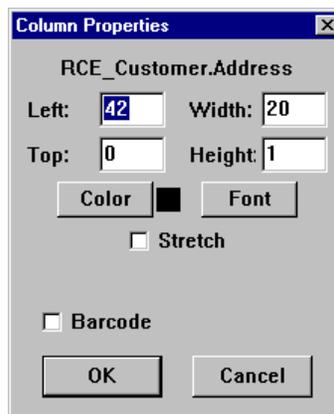


2  Select the **Stretch** checkbox, and click **OK**.

3  Select **File**–**Print Preview** to see the effect of the stretch option. Notice that the column control and the layout band automatically stretched vertically to accommodate the lines of text stored for each record in the Address column.

4  Click **Close** to return to layout mode.

5  For the purposes of this tutorial, re-open the Column Properties dialog box and turn off Stretch.

Another way to accommodate the hidden information is to enlarge the fixed space allotted to the Column control. But before you can enlarge the control using this method, you must enlarge the layout band that contains it.

**Enlarge the RCE Customer Detail band:**

1  If the "RCE Customer Detail" band is not already active, click on the gray type **RCE_Customer Detail**.

   Report CE displays two "rules" above and below the active band. (The RCE_Customer Detail band is active in the illustration at the beginning of this lesson. The style of the rule – dotted, as in the illustration, or solid – depends upon your system.)

   These rules indicate the depth (number of lines) allocated to the band.

2  Position the mouse pointer on the LOWER rule so that the pointer turns into a double-headed arrow.

```
· RCE  Customer Detail· · · · · · · · · · · · · · · · · · · · · · · · · · · · ·
AAA AAAA AA AAAAA AA AAA AAAA AA AAAAA AA AAA AAAA AA AAAAA AA  · ↕ · · · ·
```

3  Drag the rule down to make room for one more line in the band.

```
· RCE  Customer Detail· · · · · · · · · · · · · · · · · · · · · · · · · · · · ·
AAA AAAA AA AAAAA AA AAA AAAA AA AAAAA AA AAA AAAA AA AAAAA AA

· · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ↕ · · ·
```
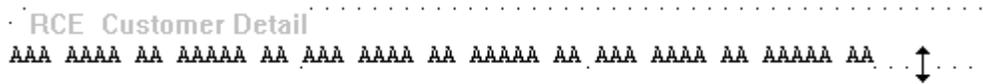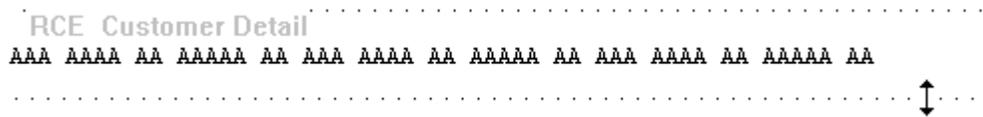
   As you drag the rule, you'll notice how it seems to "snap" to positions rather than moving smoothly. That's because Report CE automatically "snaps" report elements to an invisible grid. One vertical "notch" equals one line; one horizontal "notch,"  one character.

**Resize the Address Column control:**

1  This time, single-click the Column control for Address.

   Report CE puts a rectangular outline around the control to indicate that it is active.

2  Move the pointer to the control's lower center handle (the small, black square), so that the pointer turns into a double-headed arrow.

```
Address · · · · · · · · · · · · · · · ·
■AA AAAA ▲↕ AAAAA A■
· · · · · · · · · · · · · · · · · · · ·
```
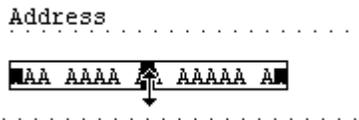
3  Drag the lower handle down one "notch" to increase the depth of the field by one line.

Select **File**–**Print Preview** to see how your modifications appear in the actual report.

Notice how the second line of the address is again visible. You've now learned two ways to make the only adjustment to the default layout that was really necessary—enlarging the space allotted to the address field.

But just for practice sake, let's stack the customer name and address.

**Drag the Address Column control into place:**

1  If you are still in Print Preview mode, click the **Close** button to return to layout mode.

2  To accommodate the additional space required for stacking the name and address fields, increase the depth of the RCE_Customer Detail band one more line by dragging the lower, dotted rule down another notch.

3  Move the Address Column control:

   ■  Click on the Address Column control to select it.

   ■  Move the cursor to the inside of the rectangular outline and, with the cursor still in the shape of a single-headed arrow, drag the control down one line and over to the left until its left edge aligns with the left edge of the field for the customer name.
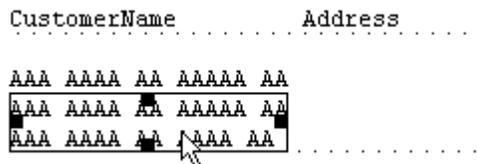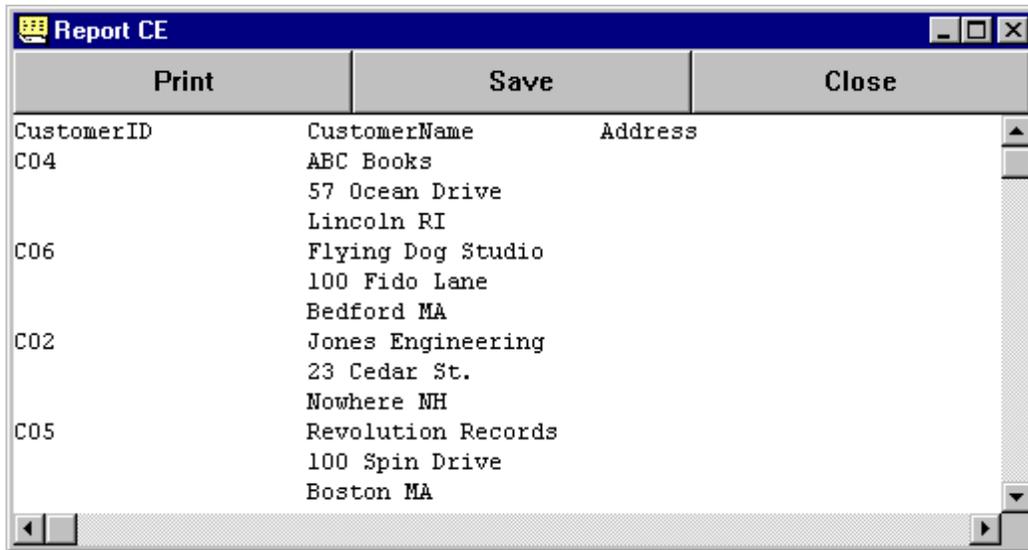
```
CustomerName        Address · · · ·
· · · · · · · · · · · · · · · · · · · · · · ·

AAA AAAA AA AAAAA AA
AAA AAAA ▲A AAAAA AA
AAA AAAA AA ↖AAA AA  · · · · · · · · · · · ·
```

Again, preview the report by selecting **File-Print Preview**.

```
Report CE                                    _ □ ×
        Print      |      Save      |      Close

CustomerID          CustomerName        Address        ▲
C04                 ABC Books
                    57 Ocean Drive
                    Lincoln RI
C06                 Flying Dog Studio
                    100 Fido Lane
                    Bedford MA
C02                 Jones Engineering
                    23 Cedar St.
                    Nowhere NH
C05                 Revolution Records
                    100 Spin Drive
                    Boston MA                           ▼
◄ |                                              |  ►
```

When you look at the report, notice something interesting about the RCE_Customer Detail band. In layout mode, you use the detail band to define how you want a single record displayed. When you view or print the report, there are as many detail bands as there are records in the table.

Notice also how there is no separation between the customer records in the report. That's because the gray titles that Report CE uses to identify the bands in the layout view don't take up any space in the report. (They are only for your reference while you work with the layout.)  You can make the report easier to read by adding a blank line to separate the records--just follow the instructions below.

**Add white space between records:**

To add a blank line between records printed on the report, simply make the table detail band one line deeper using the technique that you learned at the beginning of this lesson. The instructions are repeated here:

1  If you are still in Print Preview mode, click the **Close** button to return to layout mode.

2  Click on the gray type that reads **RCE Customer Detail** to make it the active band.
   Report CE displays two rules above and below the band.

3  Position the mouse pointer on the lower rule so that the pointer turns into a double-headed arrow.

4  Click and drag the rule down to make room for one more line in the band.

5  Select **File-Print Preview** to view your work.

There are just two more adjustments to make to the default layout in this lesson. Since the column labels don't make much sense anymore, you'll delete the address label and change the CustomerName label.

Close the Print Preview window so that you are back in layout mode.

**Delete the Address label:**

1  Click on the **Address** Label control to select it.

   Address

2  Either select **Edit-Delete** or click the Delete button ☒ .
   Report CE removes the label.

**Rename the Customer Name label:**

1  Double-click (or right-click) the **CustomerName** Label control.
   The Label Properties dialog box appears.



You can use this box to specify the label text, color, and font, as well as precisely define the control's position and size, as follows:

**Left:** The number of characters from the left edge of the page.

**Top:** The number of lines offset from the first line in the band.

**Width:** The width of the control, in characters.

**Height:** The height of the band, in lines.

2  Replace the existing label text, "CustomerName," with **Customer Name and Address**.

3  Since the label you just typed is 25 characters wide, enter **25** in the Width field. (Alternatively, you could leave the default values in place and manually resize the width of the field in the layout, as you did for the Address Column control earlier in this lesson.)

4  Leave the other values in place. Click **OK**.

5  Increase the depth of the RCE_Customer Header band one line, to separate the label from the records.


Preview the report to see the impact of your modifications. It should look like the example below.



Close the Print Preview window before continuing with the next lesson.

**Next:** Adding a Table Footer

# Quick Lesson 5: Adding a Table Footer

As you learned in the previous lesson, a Report CE layout is organized into a series of "bands" that can contain specific types of information. You've now worked with two of the bands used to define the body of the report: the Table Header and the Table Detail. The Table Detail band defines the layout for records, while the Table Header contains any information you want to appear above the records, such as column headings.

The last type of band that defines the report body is the Table Footer. As you might expect, it is similar to the Table Header band, except that it prints information below the records. The Table Footer is useful for printing summary information about the records, such as totals or record counts.

In this lesson, you'll place a Calculated Field control in the Table Footer to automatically count and display the number of records in the report. You'll also label the field.

**Create the Label:**

1  Make the Table Footer band active by clicking on the gray type that reads **RCE_Customer Footer**.

2  Select **Control–Label** from the menu bar or click the **Label** tool button ⒜ .

   Report CE displays the Label Properties dialog box.

3  In the Label field, type **Total Number of Current Customers:**

4  Enter **34** for width.

5  Click **OK.**

**Add the Calculated Field:**

1  With the RCE_Customer Footer band still active, select **Control–Calculated** from the menu bar or click the

   **Calculated Field** tool button ⒝ .

   Report CE displays the Calculated Properties dialog box. You can use this box to embed a calculation into the layout. In this lesson, you'll select one of Report CE's built-in functions.
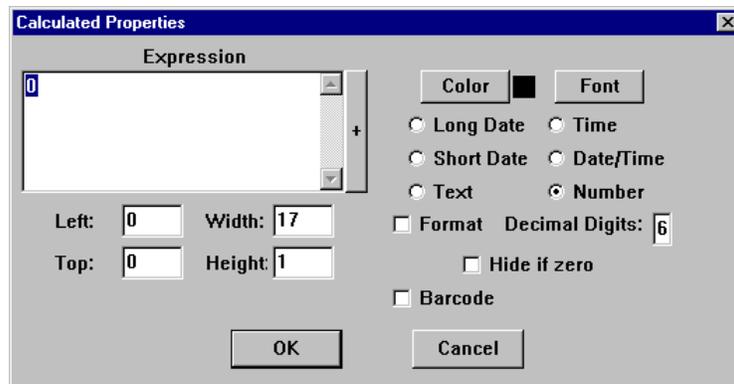


2  Select the count function as follows:

   ■ Click the **+** button to the right of the Expression field.
     A drop-down list appears.
   ■ Double-click the function **@count(RCE_Customer)**, so that it is displayed in the Expression field
   ■ Click the **+** button again to close the drop-down list

3  Still working in the Calculated properties dialog box, specify the control's other properties:

   ■ For Left, enter **35** and for Width, enter **3**
   ■ For number of Decimal Digits, enter **0**
   ■ Leave the remaining values in place, and click **OK**

4  Preview the report by selecting **File-Print Preview**.

   Notice that the count function automatically counts the number of customers in the report and displays the value in the table footer (you may have to scroll down to bring the table footer into view).

5  Close the Print Preview window before continuing to the next lesson.

**Next:** Adding a Page Header

# Quick Lesson 6: Adding a Page Header

The Page Header band lets you add information to appear at the top of every page of the report.

In this lesson, you'll add a page header that consists of static text and a timestamp that dynamically prints the date and time that the report begins running.

**Create the Label:**

1  Make the Page Header band two lines deep:

   ■ Click on the gray type that reads **Page Header**

     Two rules appear above and below the Page Header band

   ■ Drag the lower rule down two lines

2  Add the text:

   ■ Select **Control-Label** or click the **Label** button $\boxed{\text{A}}$.

     Report CE displays the Label Properties dialog box.

   ■ In the Label box, type **Customer List as of**. Enter **19** in the width field, so that the label control just accommodates the text. Click **OK**.

**Add a Timestamp:**

In Report CE, a Timestamp control automatically displays the date and/or time that a report began running.

1  Select **Control-Timestamp** or click the **Timestamp** button $\boxed{\circledcirc}$.

   Report CE displays the Timestamp button properties dialog box. This box enables you to specify a position, size, color, and font for the control, as well as select a format for the date/time.
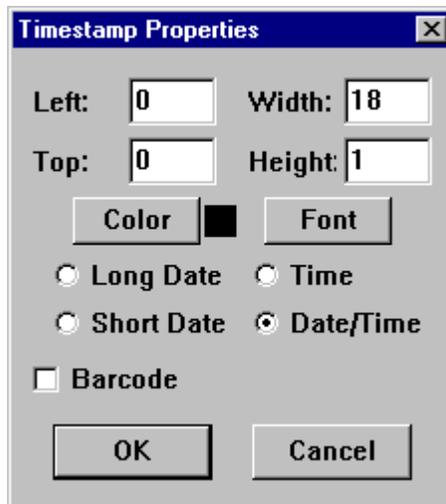


2  Click the radio button next to **Short Date**, and then click **OK**.

3  Drag the control into place in the layout.

4  Select **File-Print Preview** to see how it looks.

5  Close the Print Preview window before continuing to the next lesson.

**Next:** Adding a Page Footer

# Quick Lesson 7: Adding a Page Footer

The Page Footer band lets you add information to appear at the bottom of every page of the report.

In this lesson, you'll add a report footer that consists of static text and a Calculated Control function that dynamically numbers each page in the report.

**Create the Label:**

1   Make the Page Footer band two lines deep:
   - Click on the gray type that reads **Page Footer**
     Two rules appear above and below the Page Footer band
   - Drag the lower rule down two lines.

2   Add the text:

   - Select **Control-Label** or click the **Label** button .
     Report CE displays the Label Properties dialog box.
   - In the Label box, type **Page**. Enter **4** in the width field, and then click **OK**.

**Add a Page Number Function:**

Report CE includes a function that automatically numbers the report's pages, beginning with 1.

1   Select **Control-Calculated** or click the **Calculated Field** button .

   Report CE displays the Calculated Properties dialog box.

2   Select the page count function as follows:
   - Click the **+** button to the right of the Expression field
     A drop-down list of choices appears
   - Double-click the function **@page**
   - Click the **+** button to close the drop-down list

3   Click **OK** to close the Calculated Properties dialog box.

4   Drag the control to the right of its label, and resize it so that it's 2 or 3 characters wide.

5   Select **File-Print Preview** to see how your work looks. You'll probably have to scroll down quite a bit to see the footer, since it's at the bottom of the page.

6   Close the Print Preview window before continuing to the next lesson.

You've now successfully completed the report layout!  Before downloading the report, you may want to add a few more finishing touches.

**Next:** Specifying a Record Sort Order as Part of the Layout Design

# Quick Lesson 8: Specifying a Sort Order as Part of the Layout Design

You can specify that records in the report be sorted by any indexed column in the table. For the purposes of this example, you will sort the records by customer name.

1   Select **Report–Tables** from the menu bar.

Report CE displays the Report Tables dialog box. The RCE_Customer table is selected.

2   Click the **Edit** button.

Report CE displays a dialog box for the RCE_Customer table.



3   Click the small arrow to the right of the **Sort On** field.

4   In the drop-down list that appears, select **CustomerName**. Then click **OK**.

5   Click **Close** in the Report Tables dialog box.

If you preview the report, you'll see that the customer records are now organized alphabetically by name. Close the Print Preview window before continuing to the next lesson

**Next:** Fitting the Layout to the Printed Page

# Quick Lesson 9: Fitting the Layout to the Printed Page

Report CE enables you to fit a report to a sheet of paper by specifying the number of characters that must fit across the width of the page. The default values are 111 characters across and 52 lines high. Assuming an 8 ½" by 11" sheet of paper, this yields comfortably sized type. If you are designing a layout with a lot of data to squeeze in, you could specify more characters across and more lines down. The type would of course be smaller on the printed page.

Since your sample report is very narrow, getting it to fit on the page is not an issue. You could enlarge the type for easier reading, though.

1   Select **Report–Page Size** from the menu bar.

Report CE displays the Page Size dialog box.



2   Enter **100** in the width field and click **OK**.

The white area that represents the page appears smaller on screen. But actually, the paper size stays the same and the type prints proportionally larger in the report.

**Note**

This feature assumes that your report uses the default font size setting, "dynamic" (which is the case in this Quick Tour). The Page Size feature does not apply when you specify a point size for the type. Refer to the topic, "Specifying Font Properties for a Control," on page 101 for details.

**Next:** Saving the Layout

# Quick Lesson 10: Saving the Layout

Once you are satisfied with the layout, be sure to save it. Report CE saves the layout in an ".rce" file on your desktop PC.

1  Select **File–Save** from the menu bar or click the **Save** tool button .

   The Save As dialog box appears.

2  Name the file **MyList.rce** and (if desired) navigate to a location of your choosing. Be sure to keep the .rce extension! Click **Save**.


**Next:** Downloading the Layout to the CE Device

# Quick Lesson 11: Downloading the Layout to the CE Device

In order to run reports on the CE device using your new layout, you must download the .rce file.

1  Select **File-Download**.

   Report CE displays the Save dialog box.

2  Enter **MyList.rce** in the Name field (if it's not already there), and click **OK**.

   Report CE downloads the layout to your CE device within seconds. You can now run the report on the CE device using the techniques you learned in Quick Tour I.

**Next:** Closing Report CE

# Quick Lesson 12: Closing Report CE

If you'd like to take a break before continuing with Quick Tour III, close Report CE on the desktop PC. Choose **File-Close** from the menu bar or click the **Exit** button [×].

**Next:** Quick Tour III: Applying Advanced Layout Features

# Quick Tour III: Applying Advanced Layout Features

## Overview

In the second Quick Tour, you mastered the basic features and functions of Report CE by creating a layout for a single table. In this Quick Tour, you will expand upon what you've already learned by creating a layout that displays data taken from multiple tables. You will also learn more about calculated controls by building in functions and arithmetic expressions that automatically calculate and display money subtotals, taxes, and grand totals in the report.

Quick Tour III includes the following lessons:

- Quick Lesson 1: Opening an Existing Layout
- Quick Lesson 2: Adding a Table to the Layout
- Quick Lesson 3: Moving Controls from One Band into Another
- Quick Lesson 4: Adding Another Table
- Quick Lesson 5: Creating a Money Subtotal
- Quick Lesson 6: Inserting a Column Control
- Quick Lesson 7: Using an If-Then-Else Expression in a Calculated Control
- Quick Lesson 8: Creating a Money Grand Total
- Quick Lesson 9: Excluding Customers without Orders
- Quick Lesson 10: Printing One Record Per Page
- Quick Lesson 11: Saving Email Defaults with the Layout

# Quick Lesson 1: Opening an Existing Layout

A single Report CE layout can report data for multiple tables. In this Quick Tour, you will recreate the report layout that you ran in Quick Tour I, which utilizes three sample tables: RCE_Customer, RCE_Order, and RCE_Item.

You'll start with the layout for the RCE_Customer table that you created in the previous quick tour. You could start from scratch, of course, but for the purposes of this Quick Tour you may find it easiest to build on work you've already done.

**Note**

> For this Quick Tour, you'll continue to work on the desktop PC in connected mode.

1  If you have taken a break, start the Report CE development environment on the desktop PC.

2  Select **File-Open** from the menu bar or click the **Open** tool button ⬚.
   Report CE displays the Open File window.

3  Navigate to the folder where you saved **MyList.rce** and open it.
   Report CE displays the layout.

4  Select **File-Save As**.
   Report CE displays the Save As window.

5  Name the new file **MyOrders.rce** and save it to a directory of your choosing.
   Report CE displays the new file name in the development environment window's title bar. You can now modify the layout without affecting the original MyList.rce file.

```
Report CE - MyOrders                              _ □ ✕
 File   Edit   Report   Control   Help

 [tools]

Page Header
Customer List as of 3/7/02

 RCE  Customer Header
CustomerID              Customer Name and Address

 RCE  Customer Detail
AAA AAAA AA AAAAA AA AAA AAAA AA AAAAA AA
                     AAA AAAA AA AAAAA AA
                     AAA AAAA AA AAAA AA

 RCE  Customer Footer
Total Number of Current Customers: 999 . . . . . . . . . . . . . . . .
Page Footer
Page 999
```
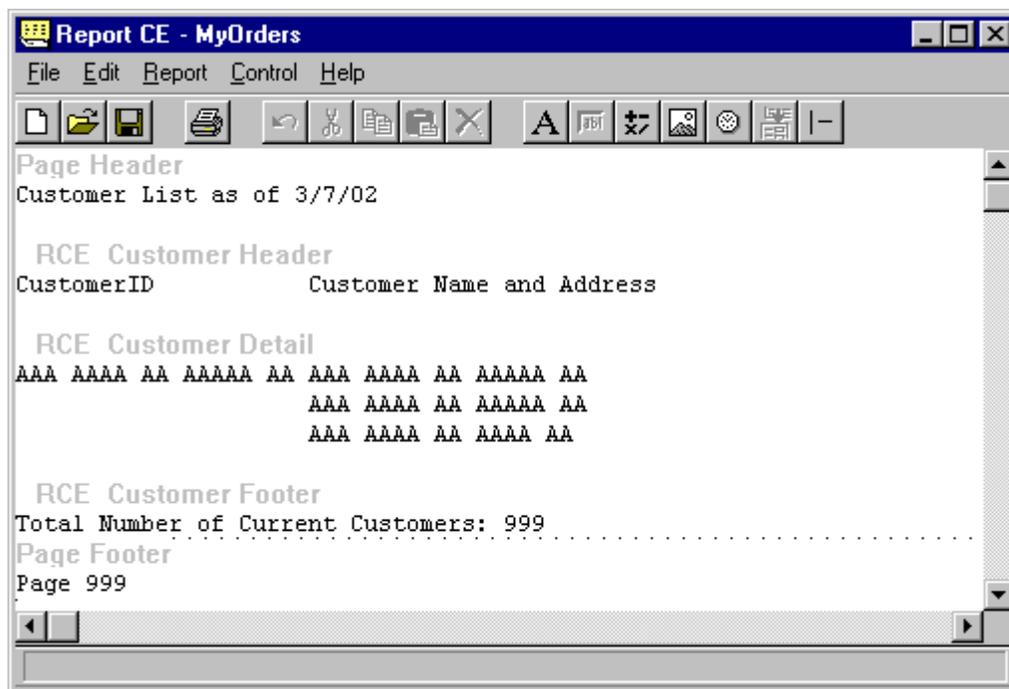
**Next:** Adding a Table to the Layout

# Quick Lesson 2: Adding a Table to the Layout

When you add a table to a layout, the table must be in the same database and have at least one column in common with the previously selected table. (A database is defined as a single .cdb or .sdf file, a single ODBC data source, or the entire Windows CE Store.)

For example, you can add the RCE_Order table to the current layout, because both RCE_Order and RCE_Customer are in the Windows CE Store, and both have a column for CustomerID.

1  Select **Report-Tables** from the menu bar.

Report CE displays the Report Table dialog box. The RCE_Customer table is listed because it is already part of the layout.

2  Click **Add**.

In a few moments, Report CE displays the Pick Table dialog box.

3  Highlight **RCE_Order**, and click **OK**.

Report CE displays the Select Columns dialog box.

4  Deselect CustomerID and Freight – so that only **OrderID** and **OrderDate** are highlighted. Click **OK**.

You are back at the Report Tables dialog box. You can now either select the third table for the layout, or wait until after you have adjusted the layout for the RCE_Order table. For the purposes of this Quick Tour, you'll adjust the layout table-by-table.

5  Click **Close** to close the Report Table dialog box.

Report CE displays the default version of the layout bands for RCE_Order (header, detail, and footer), "nested" in the RCE_Customer layout.
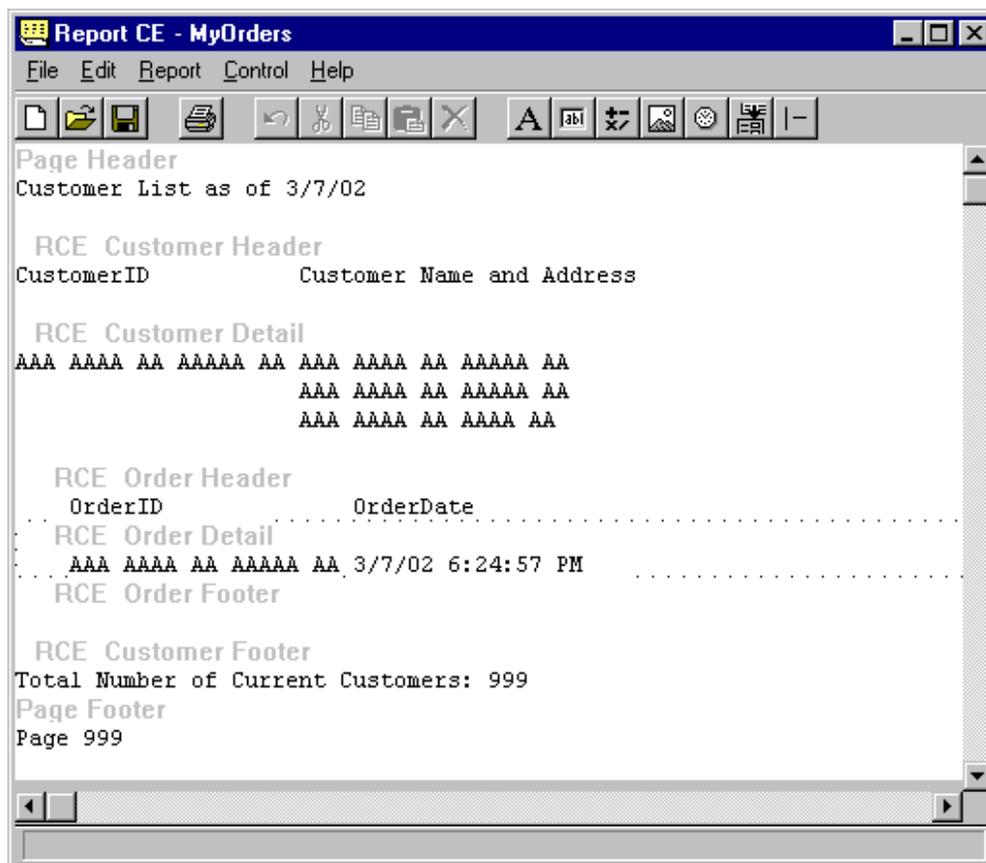


Notice that Report CE placed the layout bands for the sub-table (RCE_Order) below and indented under the detail band of the top-level table (RCE_Customer). In that way, records from the sub-table will be grouped by their relationship to records in the top-level table.

To see how this works, select **File-Print Preview** from the menu bar.

```
┌──────────────────┬──────────────────┬──────────────────┐
│      Print       │       Save       │      Close       │
├──────────────────┴──────────────────┴──────────────────┤
│Customer List as of 3/7/02                             ▲│
│                                                       ▓│
│CustomerID             Customer Name and Address        │
│                                                        │
│C04                    ABC Books                        │
│                       57 Ocean Drive                   │
│                       Lincoln RI                       │
│                                                        │
│    OrderID                OrderDate                    │
│    R41                    5/15/99 12:00:00 AM          │
│    R42                    9/1/99 12:00:00 AM           │
│                                                        │
│C06                    Flying Dog Stdio                 │
│                       100 Fido Lane                    │
│                       Bedford MA                       │
│                                                        │
│    OrderID                OrderDate                    │
│    R61                    10/15/99 12:00:00 AM         │
│                                                        │
│C02                    Jones Engineering                │
│                       23 Cedar St.                     │
│                       Nowhere NH                       │
│                                                        │
│    OrderID                OrderDate                    │
│                                                        │
│C05                    Revolution Records              ▼│
│◄▐                                                    ▶│
└─────────────────────────────────────────────────────────┘
```

Notice that ABC Books has two orders (R42 and R41); Flying Dog Studio has one (R61), and the remaining customers have none.

6  Click **Close** to return to the layout mode.

**Next:** Moving Controls from One Band into Another

# Quick Lesson 3: Moving Controls from One Band into Another

In this lesson, you'll modify the layout for the order information by cutting and pasting the text labels from the header band into the detail band.

1  Decrease the width of the OrderID Column control in the RCE_Order Detail band to make room for the label.

OrderID

←▪▪▪ ▪▪▪ ▪▪▪
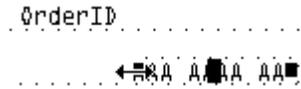
2  Move the OrderID label from the RCE_Order Header band into the RCE_Order Detail band. You cannot drag a control from one band into another, but you can cut and paste it, as follows:

   ■ Click on the **OrderID** Label control to select it

   ■ Select **Edit–Cut** from the menu bar or click the **Cut** tool button.

   ■ Click on the gray type that reads **RCE_Order Detail** to make it the active band.

   ■ Select **Edit–Paste** from the menu bar or click the **Paste** tool button.
     Report CE pastes the control at the report's left edge.

   ■ Drag the control to the right until it abuts the Order ID column control

3  Repeat this procedure to move the OrderDate label into the RCE_Order Detail band.

4  Change the format of the order date display to short date:

   ■ Double-click (or right-click) the **OrderDate** Column control (indicated by the current date and time)

   ■ Report CE displays the Column Properties dialog box

**Column Properties**

RCE_Order.OrderDate

Left: 35   Width: 20

Top: 0    Height: 1

Color ■   Font

○ Long Date  ○ Time
○ Short Date ● Date/Time

☐ Barcode

OK   Cancel
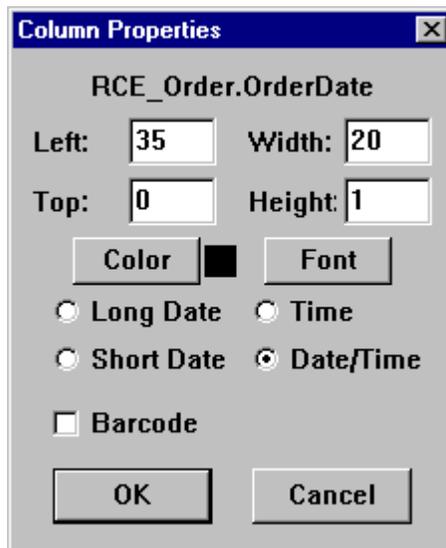
   ■ Click the radio button next to **Short Date**, then click **OK**

5  Remove the extra line in the RCE_Order Header band by dragging its lower rule up one notch.

6  Preview your work by selecting **File-Print Preview**.

```
┌─────────────────────┬─────────────────────┬─────────────────────┐
│        Print        │        Save         │        Close        │
├─────────────────────┴─────────────────────┴─────────────────────┤
│ Customer List as of 3/7/02                                     ▲│
│                                                                 ▓│
│ CustomerID             Customer Name and Address                ▓│
│                                                                  │
│ C04                    ABC Books                                 │
│                        57 Ocean Drive                            │
│                        Lincoln RI                                │
│                                                                  │
│    OrderID  R41           OrderDate 5/15/99                      │
│    OrderID  R42           OrderDate 9/1/99                       │
│                                                                  │
│ C06                    Flying Dog Stdio                          │
│                        100 Fido Lane                             │
│                        Bedford MA                                │
│                                                                  │
│    OrderID  R61           OrderDate 10/15/99                     │
│                                                                  │
│ C02                    Jones Engineering                         │
│                        23 Cedar St.                              │
│                        Nowhere NH                                │
│                                                                  │
│                                                                  │
│ C05                    Revolution Records                        │
│                        100 Spin Drive                            │
│                        Boston MA                                ▼│
│ ◄ ▌                                                          ► │
└──────────────────────────────────────────────────────────────────┘
```

7  Click **Close** to return to layout mode.


**Next:** Adding Another Table

# Quick Lesson 4: Adding Another Table

In this lesson, you'll add the RCE_Item table, the third and last table you need for the layout.

The RCE_Item table is related to the RCE_Order table.

1 Select **Report-Tables** from the menu bar.
Report CE displays the Report Tables dialog box.

2 Highlight **RCE_Order**, and click **Add**.
Report CE displays the Sub Table dialog box.
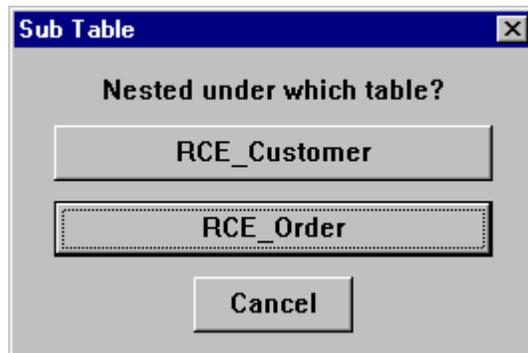


3 Since we want Items displayed by Order (not by Customer), pick **RCE_Order**.
Report CE displays the Pick Table dialog box.

4 Select **RCE_Item**, then click **OK**.
Report CE displays the Select Columns dialog box.

5 Deselect **OrderID** and click **OK**.
You are back at the Report Tables dialog box.

6 Click **Close**.
Report CE displays the updated layout. Notice how Report CE nested the three layout bands for RCE_Item under the RCE_Order detail band. (Note: The layout on your screen will appear slightly different from the illustration below. The illustration has been condensed horizontally.)
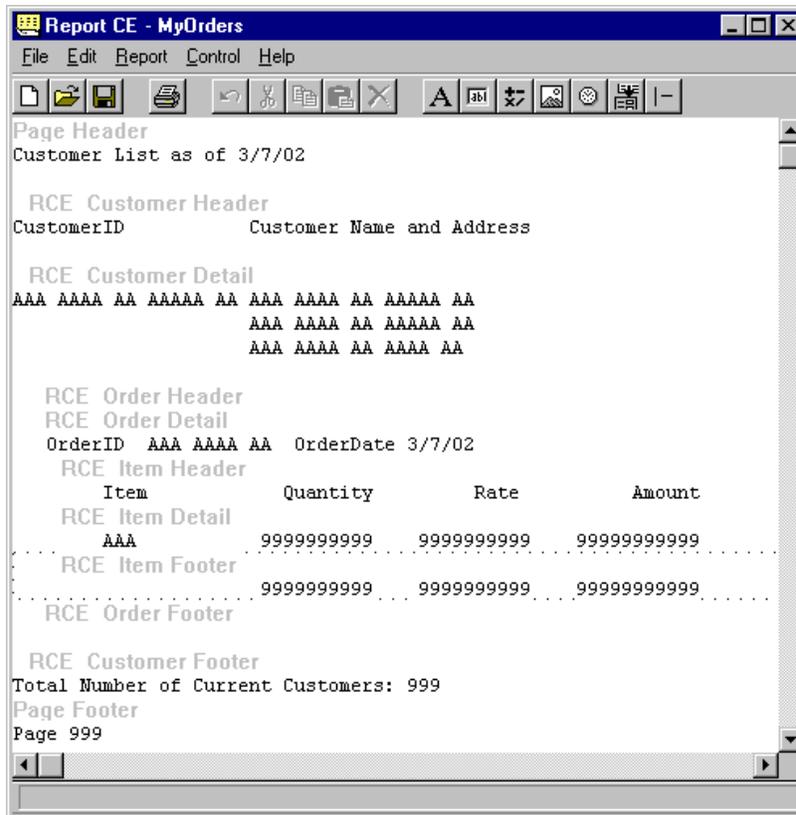
The default layout for the RCE_Item table introduces some features you haven't seen in the previous Quick Tours. For example, notice how the Column controls for Quantity, Rate, and Amount are represented by a series of 9s – indicating that the columns contain numeric data. In addition, note that Report CE automatically added default controls to the RCE_Item Footer band. Those are calculated controls that automatically sum the numeric values in the columns in the detail band above them.

7  To see how this works, select **File-Print Preview**.
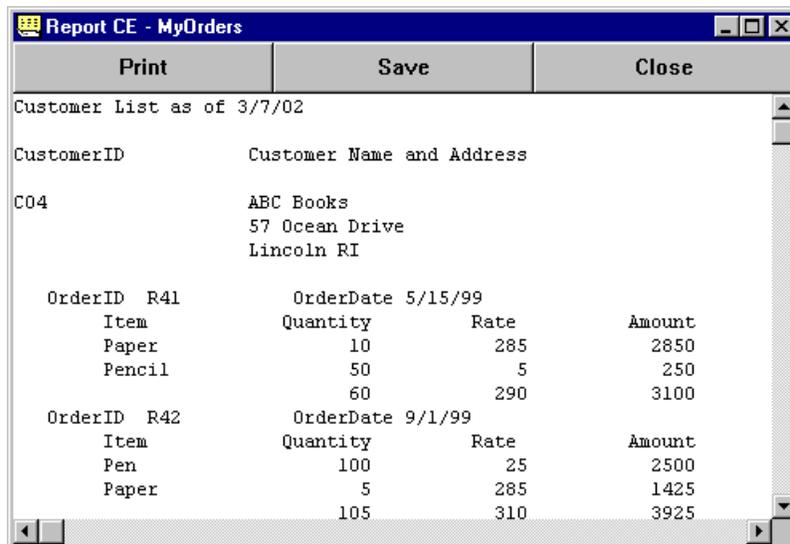


Notice how the RCE_Item Footer band displays totals for the columns in the detail band above it.

8  Click **Close** to return to layout mode.

**Next:** Creating a Money Subtotal

# Quick Lesson 5: Creating a Money Subtotal

In this lesson, you will learn how to display numeric data as money values (numbers with two decimal places), as well as clean up the layout in preparation for creating other controls. You'll also learn how to move controls as a group.

1  Double-click the Rate Column control (the series of 9s in the RCE_Item Detail band, directly below "Rate").

Report CE displays the Column Properties dialog box. Notice that the box identifies the column you are working with using the "table.column" convention; e.g., RCE_Item.Rate –– the Rate column in the RCE_Item table.
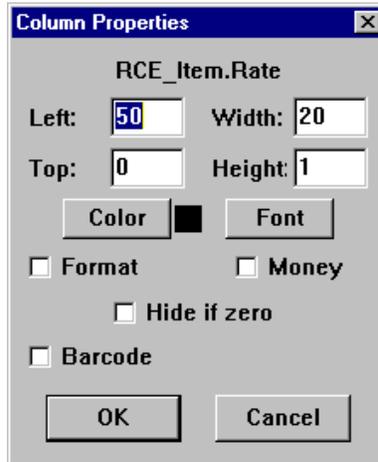
2  Click the **Money** checkbox, then click **OK**.

Notice that Report CE has placed a decimal point in the Rate field in the layout.

3  Using the same procedure you just applied in steps 1 and 2, modify the Amount Column control in the RCE_Item Detail band so that it displays money values.

4  Make the Amount Calculated control in the RCE_Item Footer band display its results as money values:

- Double-click the Amount Calculated control (the series of 9s in the RCE_Item Footer band, below the "Amount" label).

- Report CE displays the Calculated Properties dialog box

- Update the expression to divide the sum by 100: **@sum(RCE_Item. Amount)/100**
  The expression should look like this:
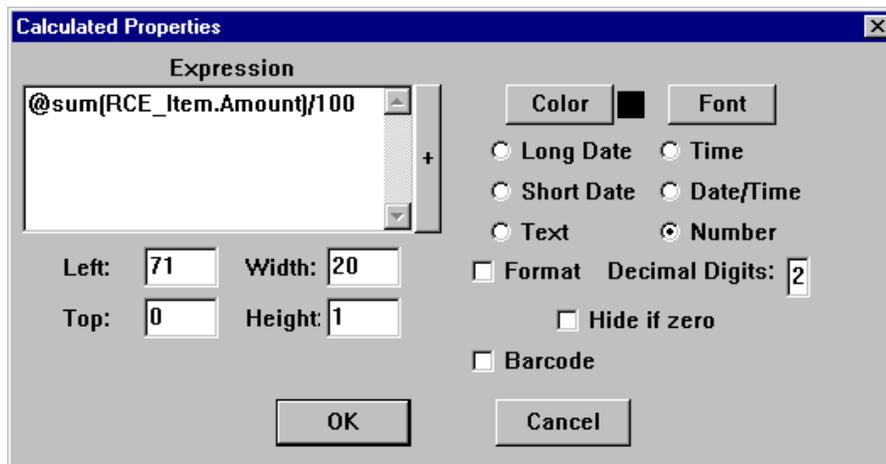
- Enter **2** for Decimal Digits

**Tip**

Alternatively, you can select the **Format** checkbox, and then the **Money** checkbox that appears. In that case, Report CE displays the values according to the Currency format selected in the Windows Regional Settings on the device running the report.

- Click **OK** to close the Calculated Properties dialog box

Note that Report CE has placed a decimal point in the Amount field in the layout. This affects the display only.

5  Delete the Calculated controls in the RCE_Item footer band for Rate and Quantity.

6  Add a "Sub-total" Label to the left of the Amount Calculated control in the RCE_Item Footer band.

7  Add a blank line to the top of the RCE_Item Footer to separate its contents from the RCE_Item Detail band:

- With the RCE_Item footer band still active, drag its lower rule down one notch

- Here's a trick to move multiple controls as a group: While pressing the Ctrl key on your keyboard, select both controls in the RCE_Item footer band. With the Ctrl key still depressed, drag the controls down one notch. (Tip: This method works even if the controls are in different bands.)

8  Preview your work by selecting **File-Print Preview** from the menu bar.

Your report should look similar to the one below (this illustration has been condensed horizontally).

```
┌──────────────────┬──────────────────┬──────────────────┐
│      Print       │       Save       │      Close       │
├──────────────────┴──────────────────┴──────────────────┤
│ Customer List as of 3/7/02                           ▲  │
│                                                         │
│ CustomerID          Customer Name and Address           │
│                                                         │
│ C04                 ABC Books                           │
│                     57 Ocean Drive                      │
│                     Lincoln RI                          │
│                                                         │
│    OrderID  R41          OrderDate 5/15/99              │
│                                                         │
│        Item             Quantity        Rate     Amount │
│        Paper                  10         2.85      28.50 │
│        Pencil                 50         0.05       2.50 │
│                                                         │
│                                 Sub-total          31.00 │
│    OrderID  R42          OrderDate 9/1/99               │
│                                                         │
│        Item             Quantity        Rate     Amount │
│        Pen                   100         0.25      25.00 │
│        Paper                   5         2.85      14.25 │
│                                                         │
│                                 Sub-total          39.25 ▼ │
│ ◄ ░                                                   ► │
└─────────────────────────────────────────────────────────┘
```

9  Click **Close** to return to layout mode.

**Next**: Inserting a Column Control

# Quick Lesson 6: Inserting a Column Control

In this lesson, you will learn how to add a Column control to the layout. Specifically, you'll add Freight to the RCE_Item Footer. Freight is a column in our sample RCE_Order table, but we did not include it in the initial layout (Quick Lesson 2 in this Quick Tour).

1  Make **RCE_Item Footer** the active band, and add four more blank lines to it. The blank lines will accommodate not only the Freight value that you'll add in this lesson, but also the other values you'll add in the following lessons.

2  With RCE_Item Footer still the active band, select **Control-Column** from the menu bar or click the **Column** tool button [abl].

Report CE displays the Select Column dialog box.
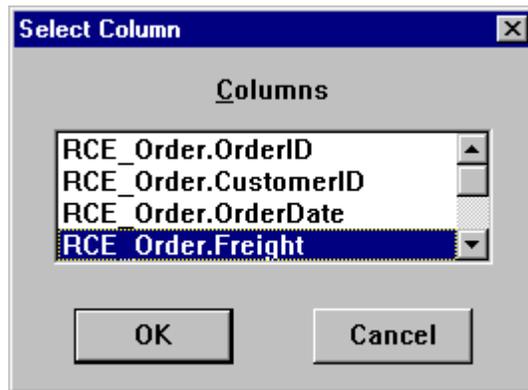


3  Select **RCE_Order.Freight** and click **OK**.
   Report CE displays the Column Properties dialog box for the Freight Column control.

4  Click the **Money** checkbox, then click **OK**.

5  Position the Freight Column control underneath the Sub-total Calculated Field control, and size it accordingly.

6  Create a label with the word "Freight" and place it to the left of the new Column control.


**Next:** Using an If-Then-Else Expression in a Calculated Field Control

# Quick Lesson 7: Using an If-Then-Else Expression in a Calculated Field Control

In this lesson, you will create a Calculated Field control that automatically calculates a 5% sales tax for Massachusetts customers' orders and displays the result in the report.

The control that you'll create contains the following "If-Then-Else" expression:

```
If RCE_Customer.InState <> 0 then (@sum(RCE_Item.Amount) * 0.05) / 100 else 0.00
```

With an "If-Then-Else" expression, Report CE compares each record in the connected table using a Boolean expression (the "If" clause). If the record meets the condition, Report CE applies the expression specified in the "then" clause. If the record does not meet the condition, Report CE applies the expression specified in the "else" clause. Report CE displays the resulting value in the calculated control.

In our example, Report CE looks at the value stored for each customer in the "RCE_Customer" table's "InState" column. If the value is not equal to "0" (meaning in this example that the customer is in Massachusetts), Report CE's applies the "then" clause. The @sum function totals the cost of the items in the order, multiples the result by 0.05 to compute the sales tax, and divides the value by 100 to create a money value with two decimal places. On the other hand, if the value is equal to "0," Report CE simply returns the constant, 0.00.

**To create the expression:**

1  With **RCE_Item Footer** still the active band, select **Control-Calculated** from the menu bar or click the Calculated

   tool button ⊞.

   Report CE displays the Calculated Properties dialog box.

2  Specify the Boolean expression that Report CE will use to evaluate each record:

   - In the Expression field, type **if**
   - Click the **+** button to the right of the Expression list box
     Report CE displays a list of functions, operators, and column names that you can use to create an expression
   - Double-click the column name **RCE_Customer.InState**
   - Double-click the "not equal to" comparison operator: **<>**
   - Click the **+** button to close the list box
   - To complete the expression, type **0**

3  Specify the "then" clause:

   - Type **then**
   - Click the **+** button to the right of the Expression list box
   - Double-click the function **@sum(RCE_Item.Amount)**
   - Double-click the multiplication operator **∗**
   - Click the **+** button to close the list box
   - Type **0.05**
   - Enter parentheses around the clause so that it looks like this:
     (@sum(RCE_Item.Amount) * 0.05)
   - Since the result should be a money value, you must divide the value by 100. To do so, type **/100**

4  Specify the "else" clause:

   - Type **else 0.00**

The expression should look like this:
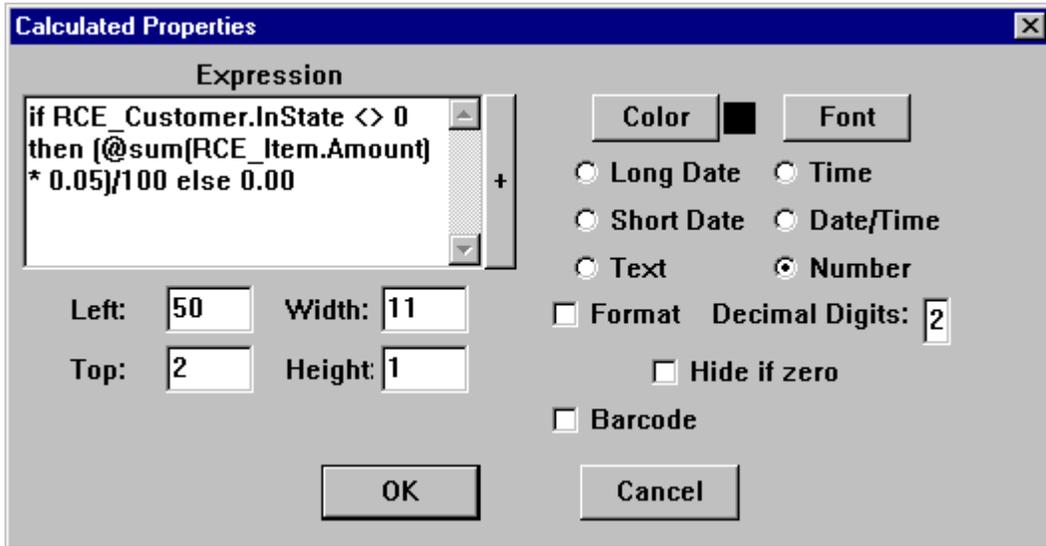


5  Enter **2** for Decimal Digits, and leave the default values in place for the remaining fields.

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

7  Size and drag the new control so that it is right-aligned with the calculated controls for Subtotal and Freight.

8  Create a label with the word "Tax" and place it to the left of the new Calculated control.
   Your RCE_Item footer should look similar to this:

```
Sub-total    9999999999999999.99
Freight      9999999999999999.99
Tax          9999999999999999.99
```

9  Select **File-Print Preview** to see the results of your work.
   Notice that the Massachusetts customer's order has a 5% tax charge, but the Rhode Island customer's order does not.

10  Click **Close** to return to layout mode.


**Next:** Creating a Money Grand Total

# Quick Lesson 8: Creating a Money Grand Total

In this lesson, you will create a calculated control that sums and displays the total value of an order in the report.

**To create the expression:**

1  Make **RCE_Item Footer** the active band.

2  Select **Control-Calculated** from the menu bar or click the **Calculated** tool button ⊞.
   Report CE displays the Calculated Properties dialog box.

3  Using the techniques that you learned in the previous lesson, create the expression shown below.
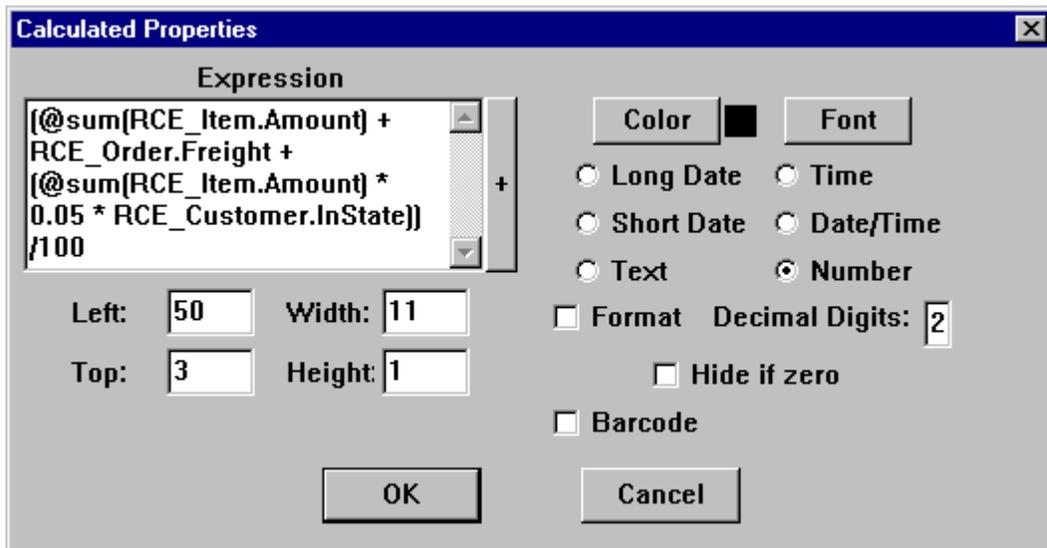


4  Enter **2** for Decimal Digits, and leave the default values in place for the remaining fields.

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

6  Resize and drag the control into place.

7  Create a label with the word "Total" and place it to the left of the new Calculated control.

8  Select **File-Print Preview** to see the results of your work.
   You've now completed the basic layout for Quick Tour III. If desired, apply the layout techniques that you have mastered to change the page header to reflect the new report contents.

9  Click **Close** to return to layout mode.


**Next:** Excluding Customers without Orders

# Quick Lesson 9: Excluding Customers without Orders

In this lesson, you will specify that the report include only customers that have orders.

1  Select **Report-Tables** from the menu bar.

   Report CE displays the Report Tables dialog box.

2  Make sure that **RCE_Customer** is highlighted and click **Edit**.

   A dialog box for RCE_Customer appears. This box gives you several options for controlling the report's content and organization.



3  Remove the check for **Show even if no RCE_Order**, then click **OK**.

   By removing this option, you've directed Report CE to report only customers that have orders.

   You are back at the Report Tables dialog box.

4  Click **Close**.

5  Click **File-Print Preview**.

   As you might recall from Quick Lesson 2 earlier in this Quick Tour, only two customers had orders. If you scroll down the display, you'll see that only those two customers appear in this report.

6  Click **Close** to return to layout mode.


**Next:** Printing One Record per Page

# Quick Lesson 10: Printing One Record Per Page

In this lesson, you'll learn how to print the information for each top-level record on its own page.

1   Select **Report-One Per Page** from the menu bar.

2   Select **File-Print Preview**.
    Notice how Report CE begins a new page at the beginning of each new customer record.

3   Click **Close** to return to layout mode.


**Next:** Saving Email Defaults with the Layout

# Quick Lesson 11: Saving Email Defaults with the Layout

In Quick Tour I, you saw how Report CE's automatic link with Pocket Outlook makes emailing a report fast and simple. In this lesson, you'll learn how to store default values for email recipient, title, and the attachment's file format with the layout.

1 Select **Report-Email Defaults** from the menu bar.

Report CE displays the Email Defaults dialog box.



2 Complete the dialog box:

- **Subject**: Enter **Report CE Tutorial**

  Note: Report CE uses your entry as the title for the email letter and as the filename for the attachment (the exported file containing the report)

- **Address Default:** Type an email address of your choosing

- **Add Contacts to address list:** If you select this option, email addresses stored in Pocket Outlook Contacts will appear in a pick list from which the report user can select a recipient

- **Send as:** Select the file format for the attachment

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

4 To save your practice layout, select **File-Save** from the menu bar or click the **Save** tool button 🖫.

5 To download your layout to the CE device, select **File-Download**, then save as desired.

Congratulations! You have now completed all of the Quick Lessons and, as a Report CE expert, are ready to create and use your own custom-designed report layouts.

**Next:** Reference sections

You'll find detailed instructions for each Report CE feature in the remaining sections, "Creating Your Own Report CE Layouts," (page 55) and "Running, Printing, Saving, and Emailing Reports" (page 143).

There are a few major features described in these reference sections that were not touched on in the tutorials:

- Dividing layout bands into sections to accommodate stretched fields and multi-page detail data - page 78
- Reporting summary data for groups of records - page 119
- Graphing data - page 124

# Creating Your Own Report CE Layouts

## Overview

**What is a Layout?**

A layout arranges the way your data looks on the screen and on paper. It does not modify the contents of a table in any way. When you run a report, Report CE applies the layout to the current contents of the table(s) and displays the results.

The size, organization, and style of your layout are completely up to you – Report CE places few limitations. You can create and use many different layouts for the same table or group of tables.

**What is in this Section?**

This section describes all of the Report CE tools and controls that you can use to create your own report layouts:

- Using the Report CE Development Environment
    - ◊ Opening and Closing
    - ◊ About the Development Environment Window
- Starting a Report Layout
    - ◊ Preparing to Create a Layout for an mEnable Database
    - ◊ Creating a New Report Layout
    - ◊ Opening an Existing Report Layout for Modification
- Working with Tables
    - ◊ Adding Tables to an Existing Layout
    - ◊ Removing Tables from the Layout
- Working with Layout Bands
    - ◊ The Six Kinds of Bands
    - ◊ Selecting a Band
    - ◊ Adding or Deleting Lines (Vertical Space) in a Band
    - ◊ Splitting a Band into Sections
- Adding and Modifying Controls
    - ◊ What are Controls?
    - ◊ Creating a Label Control
    - ◊ Creating a Column Control
    - ◊ Creating a Calculated Field Control
        - ◊ Using Date/Time Values in an Expression
        - ◊ Using If-Then-Else in a Calculated Field
        - ◊ Using Basic Functions in a Calculated Field
        - ◊ Using Advanced Functions in a Calculated Field
    - ◊ Creating a Picture Control
    - ◊ Creating a Timestamp Control
    - ◊ Creating a Lookup Control
    - ◊ Creating a Line Control
    - ◊ Creating a Graph Control
    - ◊ Specifying Font Properties for a Control
    - ◊ Viewing or Modifying Control Properties
    - ◊ Changing Properties for Multiple Controls

- Arranging Controls on the Layout
  - ◊ Sizing Controls Manually
  - ◊ Dragging Controls
  - ◊ Aligning and Sizing Controls as a Group
  - ◊ Positioning and Sizing Controls Precisely
  - ◊ Cutting, Copying, and Pasting Controls
  - ◊ Deleting Controls
- Controlling Record Display
  - ◊ Specifying a Filter as Part of the Layout Design
  - ◊ Specifying a Sort Order as Part of the Layout Design
  - ◊ Eliminating Unused Table Headers and Footers
  - ◊ Excluding Childless Parent Records from the Report
- Grouping Records
  - ◊ Reporting Information about Groups
  - ◊ Removing Groups from a Layout
- Creating Graphs
  - ◊ Overview
  - ◊ Creating Column Series Graphs
  - ◊ Creating Row Series Graphs
- Viewing, Saving, Printing, and Emailing in Print Preview Mode
  - ◊ Viewing Your Layout in Print Preview Mode
  - ◊ Printing. Saving, and Emailing from the Development Environment
- Formatting for Print
  - ◊ Specifying Page and Dynamic Type Size
  - ◊ Printing One Record Per Page
  - ◊ Inserting Page Numbers in the Report
- Saving Email Defaults with the Layout
- Saving a Report Layout
- Downloading a Report Layout to the CE Device
- Distributing Reports (Report CE Pro and Visual CE Enterprise Editions Only)

# Opening Report CE's Development Environment

You can run Report CE's development environment on either a desktop PC or a CE device. Both versions of Report CE are full-featured. You may find that the desktop PC's larger screen provides a more comfortable work space, though, especially if you are designing your layout for an 8 ½" by 11" sheet of paper. (You can format the layout for any size of paper that is compatible with your printer. See the topic, "Specifying Page and Dynamic Type Size," on page 136 for details.)

**Note to mEnable Users**

Before you can create a layout to use with an mEnable database, you must have already created a File DSN for the data source on the server. Refer to the topic, "Preparing to Create a Layout for an mEnable Database," on page 66 for details.

**To start Report CE on a desktop PC:**

1 Connect your desktop PC to the computer on which the table(s) are stored:

   **If you are creating a layout for tables in the Windows CE Store**, it is recommended that you connect the desktop PC to the CE device.

   You can run Report CE's development environment on the desktop PC without a connection to the CE device, but some functions are disabled. For example, you cannot create a layout for a table that is new or has been modified since the last time you ran Report CE in connected mode. Nor can you download layouts to the CE device.

   **If you are creating a layout for Pocket Access tables (.cdb file) or SQL Server CE tables (.sdf file)**, the desktop PC must be connected to the CE device on which the .cdb or .sdf file is stored. The .cdb or .sdf file must be stored in the same folder on the CE device in which you will eventually store the completed .rce file.

   **If you are creating a layout for an mEnable database**, the desktop PC must be able to connect to the mEnable server and you must have already created a File DSN for the data source. Refer to the topic, "Preparing to Create a Layout for an mEnable Database," on page 66 for details.

2 On the desktop PC, click the Windows **Start** button, then select **Programs-Report CE-Report CE**.

   Report CE displays its development environment window (see next page).

**To start Report CE on the CE device:**

■ On the CE device, click the Windows **Start** button, then select **Programs-Report CE**.

   Report CE displays its development environment window (see next page).

# The Development Environment Window

Report CE's Development Environment Window is where you create and modify report layouts.
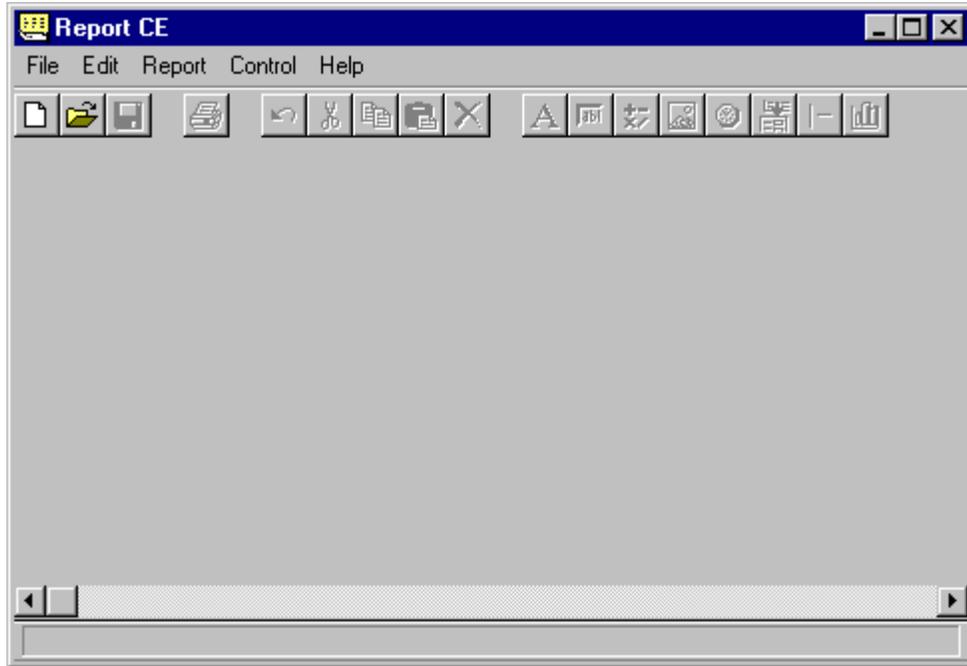


Report CE's development environment window has five menus: File, Edit, Report, Control, and Help. You can select menu options by clicking them with the mouse pointer or by pressing the shortcut keys.

Its toolbar buttons provide a faster way to activate the most frequently used commands.

# File Menu Commands

| Command | Button | Shortcut | Function |
|---|---|---|---|
| New | | Ctrl+N | Begins the creation of a new layout. |
| Open | | Ctrl+O | Opens an existing layout for viewing and/or modifying. |
| Save | | Ctrl+S | Saves the layout currently displayed in the development environment window to an .RCE file. |
| Save As | (none) | (none) | Allows you to save the currently displayed layout under another name or in another location. |
| Download* | (none) | (none) | Downloads the current layout to the connected CE device. |
| Print Preview | (none) | (none) | Lets you preview how your report will display and print with information in place. |
| Print | | Ctrl+P | Sends the report to a printer. |
| Print to File | (none) | (none) | Saves the report to a file. |
| Email** | (none) | (none) | Exports the currently displayed report to a .txt or .rtf file, attaches the file to an email letter, and places the email in the Pocket Outlook Outbox. |
| Create Distribution Files* | (none) | (none) | Starts wizard to create installation files for distributing your layout to other users. |
| Close | | Ctrl+W | Closes the Report CE development environment. |

*Available only on desktop PC version of development environment.

**Available only on handheld version of development environment.

# Edit Menu Commands

| Command | Button | Shortcut | Function |
|---|---|---|---|
| Undo | | Ctrl+Z | Undoes last edit. |
| Cut | | Ctrl+X | Cuts the currently selected control and saves it to the clipboard. |
| Copy | | Ctrl+C | Copies the currently selected control and saves the copy to the clipboard. |
| Paste | | Ctrl+V | Pastes the contents of the clipboard onto the development area. You can copy or cut controls from one band or layout and paste them into another. |
| Delete | | Delete | Deletes all currently selected controls. |
| Create Section | (none) | (none) | Splits the currently selected layout band or section into two sections (applies to table bands or sections, not page bands). |
| Remove Section | (none) | (none) | Removes the currently selected section from the layout. |
| Select All | (none) | Ctrl+A | Selects all controls in the development area. |
| Property | (none) | (none) | Displays the currently selected control's Properties dialog box to allow you to modify control properties. Note: Double-click or right-click any control to display and/or modify its properties. |
| Align | (none) | (none) | Enables you to align selected controls with one another along their right, left, top, or bottom edges; or to make a group of selected controls the same height or width. |

# Report Menu Commands

| Command | Function |
| --- | --- |
| Page Size | Allows you to specify the number of characters across and lines down printed per page. |
| One Per Page | Determines page breaks. If this option is on, Report CE begins a new page for each top-level record. If this option is off, Report CE prints the number of lines you specified with the Page Size option, then begins a new page. |
| Tables | Allows you to add and delete tables from the layout, and to specify other options that control the organization and content of the report |
| Email Defaults | Allows you to store default values for email address, subject title, and export file format (.txt or .rtf) with the report layout. |

# Control Menu Commands

| Command | Button | Function |
|---------|--------|----------|
| Label | | Creates a Label control that displays static text. |
| Column | | Creates a Column control that displays record data from a table column. |
| Calculated | | Creates a Calculated field control that displays the results of an expression or function. |
| Picture | | Creates a Picture control that displays pictures (.jpg, .gif, or .bmp files) from a table column or a static image that's part of the layout design, such as a logo. |
| Timestamp | | Creates a Timestamp control that displays the date and/or time that the report begins running. |
| Lookup | | Creates a Lookup control that displays a value that is related to a record in the report but that is stored in a separate "lookup" table. |
| Line | | Inserts a horizontal or vertical line in the layout. |
| Graph | | Creates a line graph, column graph, scatter graph, or pie chart of selected data. |

# Toolbar Buttons

| Button | Name | Function |
| --- | --- | --- |
| | New | Begins the creation of a new layout. |
| | Open | Opens an existing layout for viewing and/or modifying. |
| | Save | Saves the layout currently displayed in the development environment window to an .RCE file. |
| | Print | Sends the report to a printer. |
| | Undo | Undoes the last edit. |
| | Cut | Cuts the currently selected control and saves it to the clipboard. |
| | Copy | Copies the currently selected control and saves the copy to the clipboard. |
| | Paste | Pastes the contents of the clipboard onto the development area. You can copy or cut controls from one band or layout and paste them into another. |
| | Delete | Deletes the currently selected controls. |
| | Label | Creates a Label control that displays static text. |
| | Column | Creates a Column control that displays record data from a table column. |
| | Calculated | Creates a Calculated field control that displays the results of an expression or function. |
| | Picture | Creates a Picture control that displays pictures (.jpg, .gif, or .bmp files) from a table column or a static image that's part of the layout design, such as a logo. |
| | Timestamp | Creates a Timestamp control that displays the date/time that the report begins running. |
| | Lookup | Creates a Lookup control that displays a value that is related to a record in the report but that is stored in a separate "lookup" table. |
| | Line | Inserts a horizontal or vertical line in the layout. |
| | Graph | Creates a line graph, column graph, scatter graph, or pie chart of selected data. |

# Shortcut Keys

**File Functions**

| To do… | Press |
|---|---|
| Begin creation of a new layout. | Ctrl+N |
| Open an existing layout to view or modify. | Ctrl+O |
| Save the layout currently displayed in the development window. | Ctrl+S |
| Print the report | Ctrl+P |
| Close the Report CE development environment. | Ctrl+W |

**Edit Functions**

| To do… | Press |
|---|---|
| Undo last edit. | Ctrl+Z |
| Cut the currently selected control and save it to the clipboard. | Ctrl+X |
| Copy the currently selected control to the Windows clipboard. | Ctrl+C |
| Paste information from the Windows clipboard into the development area. | Ctrl+V |
| Delete all currently selected controls. | Delete |
| Select all controls in the development area. | Ctrl+A |

**Help**

| To do… | Press |
|---|---|
| Display online help contents. | F1 |

**Selecting and Arranging Controls**

| To do… | Press |
|---|---|
| Select multiple controls. | Ctrl while selecting |

# Closing Report CE's Development Environment

You can close the Report CE development environment window when you have finished creating a report layout, or at any point during layout development.

- Select **File-Close** from the menu bar or click the **Close** button  on the title bar.

# Starting a Report Layout

## Preparing to Create a Layout for an mEnable Database

**Note**

This topic applies to mEnable users only; all other users should start with the following topic, "Beginning a New Report Layout."

mEnable makes it possible to run a Report CE layout (.rce file) on a client device against tables on a remote server, in real time over a wired or wireless connection.

The process of creating a Report CE layout for use with mEnable is the same as creating any other layout, with one additional step: before you open Report CE's development environment to start the layout, you must have already created a File DSN that makes it possible to connect with the database on the server.

**To create a File DSN for the database on the server computer:**

- Working on the mEnable server machine, open the ODBC Driver Manager -- typically, **Start - Control Panel - Administrative Tools - Data Sources (ODBC)**. Add a **File DSN**. With the exception of username and password, this File DSN must contain all of the information required to establish a connection to the database on the server. For example, if your File DSN identifies the MS Access ODBC driver, it would have to identify which .mdb file to use.

    **Important:**

    *When creating the File DSN, do **not** select the SYWARE mEnable driver. Instead, select the driver for the type of database you will be connecting to, for example, Microsoft Access.*

When you begin a new layout in Report CE's development environment (**File-New**), Report CE will ask you to select the database type. Choose **mEnable database**, and then select the File DSN. From then on, you can use all of the features of Report CE's development environment to create the layout, as described in this guide.

# Beginning a New Report Layout

This topic provides step-by-step instructions for starting a new report layout, including how to:

- Select the database, tables, and columns that contain the information you want to appear in the report, and

- Control the organization of records in the report by:
    - ◊ the order in which you pick tables, and
    - ◊ for layouts that report data from more than two tables, choosing how the records from sub-tables are grouped ("nested") under the records from higher level tables.

**Note**

If you have not already done so, open Report CE's Development Environment (refer to the topic, "Opening Report CE's Development Environment," on page 57 for details).

1   Select **File-New** from the development environment menu bar or click the **New** tool button .

Report CE displays the Database Type dialog box.
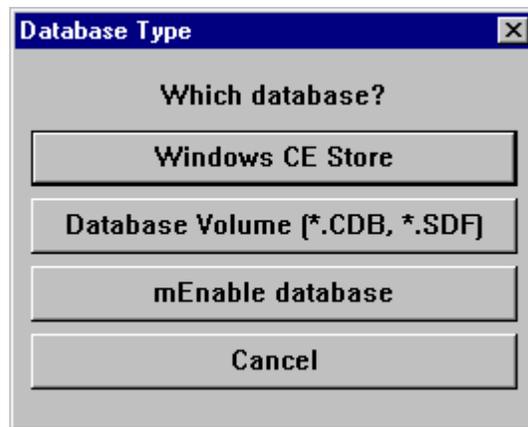


2   Select the type of database in which the data are stored:

- **Windows CE Store:** Tables created with Visual CE or stored in the Windows CE Database Object Store.

- **Database Volume**: Tables created with Pocket Access or SQL Server CE and stored in a .cdb or .sdf file on CE device.

- **mEnable database:** Tables created with any ODBC-enabled application (such as Microsoft Access) and stored in an ODBC data source (such as an .mdb file). If you choose this option, Report CE asks you to select the File DSN for the database. The topic, "Preparing to Create a Layout for an mEnable Database," on page 66 explains how to create a File DSN.

Report CE displays the Report Table dialog box.



3  Click **Add**.

In a few moments, Report CE displays the Pick Table dialog box, which displays the names of all eligible tables.

4  Select a table for the report.

**Note**

If you are creating a layout that will draw data from multiple tables, keep in mind that the order in which you select the tables influences how records are organized in the report. Report CE uses the records in the first table you pick to group (nest) related records for all succeeding tables.

For example, say that you have two tables, "Customers" and "Orders." The illustration below depicts how records from these two tables would be organized in the layout, depending upon which table you picked first.
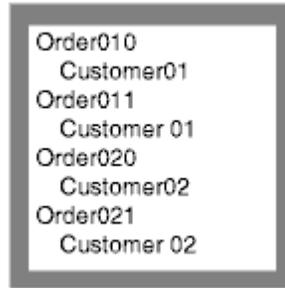


5  Click **OK**.

Report CE displays the Select Columns dialog box. Initially, the names of all columns in the table are selected.
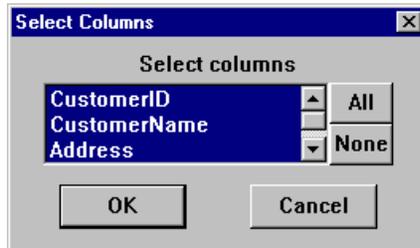


6  Deselect any columns that you do not want to appear in the report. **Tip:** If there are many columns in your table and you want to include just a few of them, click the **None** button to deselect the entire list. Then, highlight just the columns you want.

When you are satisfied with your selections, click **OK**. You are back at the Report Tables dialog box.

7  If you want to add a second table, click **Add**. Select a table and columns as you did in steps 4 – 6.

**Note**

You can select up to five tables for a report, keeping in mind the following:

- All of the tables must be contained in a single database, defined as:
    - ◊ For Visual CE tables, the entire Windows CE Database Object Store.
    - ◊ For Pocket Access tables, a single .CDB file.
    - ◊ For SQL Server CE tables, a single .SDF file.
    - ◊ For mEnable databases, a single ODBC File DSN, such as a single .mdb file.

- Each table you add must have at least one column that matches a column in the previously selected table. (Report CE uses values in the match columns to identify related records in the two tables.) The match column in the lower (nested) table must be indexed; the corresponding column in the higher level table doesn't have to be. Refer to your *Visual CE User's Guide* or database documentation for instructions on indexing columns. **Tip for Pocket Access Users:** SYWARE offers a free utility, Index CDB, for indexing table columns in Pocket Access tables. You can download a copy from the SYWARE web site: **http://www.syware.com/support**.

8  If you want to add still another table, click **Add.**

When you click **Add** for an additional table (after the first and second), Report CE displays the "Sub Table" dialog box.
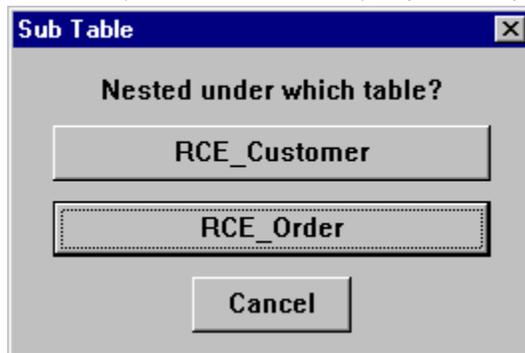


9  Select the table whose records you want to use to group records in the next table you pick. In other words, do you want to group (nest) records from the new table under related records from the first table or the second?

For example, say you want to add the Items table to the previously-selected Customer and Order table. The illustration below shows the result of nesting the new table (Items) under the second-level table (Orders).

As another example, say you have selected two tables, Company and Employees. You want to add a third table, Products. The illustration below shows the result of nesting the new table (Products) under the top-level table (Company).

Third table nested under first

```
Company01
    Employee010
    Employee011
    Product01A
    Product01B
Company02
    Employee020
    Employee021
    Product02A
    Product02B
    Product02C
```

10  In the Pick Table dialog box, select the table you wish to add and click **OK**.

11  Deselect any columns that you do not want to appear in the report, then click **OK**.

You are back at the Report Tables dialog box. Notice that the way the tables are indented in the list reflects the nesting scheme that you selected in step 9.

12  Repeat steps 8 - 11 for as many tables as you want to appear in the layout (up to five).

13  When you are done selecting tables, click **Close**.

Report CE displays a default version of the table layout. You can use the layout as is, or modify it as desired using any of the techniques described in the following topics.

**Tip**

You can include data from additional tables using Lookup Controls. Refer to the topic, "Creating a Lookup Control," on page 96 for details.

# Opening an Existing Report Layout for Modification

Report CE layouts are stored as .RCE files.

**To open an existing report layout in the development environment:**

1 Select **File-Open** from the development environment menu bar or click the **Open** tool button.
   Report CE displays the Open File window.

2 Navigate to the folder where you saved the layout file, and open it. (Report CE layouts are identified by the .rce

   extension and the Report CE icon .)
   Report CE displays the layout in the development environment window.

3 If you want to use the existing layout as the basis for a new layout, select **File-Save As** from the menu bar.
   Report CE displays the Save As window.

4 Rename the file – but be sure to keep the .rce extension! – and save it to a directory of your choosing.

**Note:**

To modify a report layout, you must open it in the development environment window as described above. If you open a

.RCE file by double-clicking its icon  in Windows Explorer,  Report CE displays the report in its Print window.
You cannot modify the layout in the Print window.

# Working with Tables

## Adding Tables to an Existing Layout

You can add a table to a layout at any time (up to a total of five tables for one layout).

**To add a table:**

1  Select **Report–Tables** from the development environment menu bar.

   Report CE displays the Report Table dialog box, with the names of previously-selected tables displayed in the list box.



2  Add tables as desired. Refer to the topic, "Beginning a New Report Layout," beginning at step 7 (page 69).

# Removing Tables from the Layout

You can remove a table from the layout at any time.

**To remove a table from the layout:**

1  If the Report Tables dialog box is not already open, select **Report–Tables** from the development environment menu bar.

2  Select the table, then click **Remove**.

# Working with Layout Bands

## Introducing the Six Kinds of Layout Bands

Report CE organizes information in a fixed series of horizontal strips called "bands." There are six types of bands, which fall into two categories. Each type of band displays information in a different way:

- Page Bands **-** Control what appears on every page of the report. There are two types of page bands:

  ◊ **Page Header** – Prints a title or other information you want to appear at the top of every page.

  ◊ **Page Footer** – Prints a page number or other information you want to appear at the bottom of every page.

- Table Bands – Control what appears for each table that you've included in the report:

  ◊ **Table Header** – Prints column labels or other information you want to appear once above the table detail (record) data.

  ◊ **Table Detail** – Prints data for each record. While you define the appearance of the table detail band just once per table, there are as many detail bands in the report as there are found records.

  ◊ **Table Group** – Allows you to group records in the table by column values or an expression applied to column values, and to display summary information about each group. You must explicitly create a Table Group band; Report CE does not automatically supply this type of band as it does the others. Refer to the topic "Reporting Information about Groups" on page 119 for details.

  ◊ **Table Footer** – Prints totals or other information you want to appear once below the table detail data. Any summary information reported here is for the aggregate of all records reported for the table.

When you add a sub-table to a layout, the bands for that table are nested under the detail band of the higher-level table.

The following topics explain how to work with layout bands.

**Tip**

You can split any table band into sections. This is useful if you need to accommodate controls that stretch vertically, or if you have large amounts of detail data that span multiple pages and you want to control page breaks. Refer to the topic, "Splitting a Band into Sections," on page 78 .

# Selecting a Band

Before you can add, delete, or modify the contents or size of a band, you must make it the active band:

- Click on the gray type that identifies the band.

  Report CE displays two "rules" (lines) above and below the active band. The rule may be dotted or solid, depending upon your system. In the illustration below, RCE_Customer Detail is the active band.
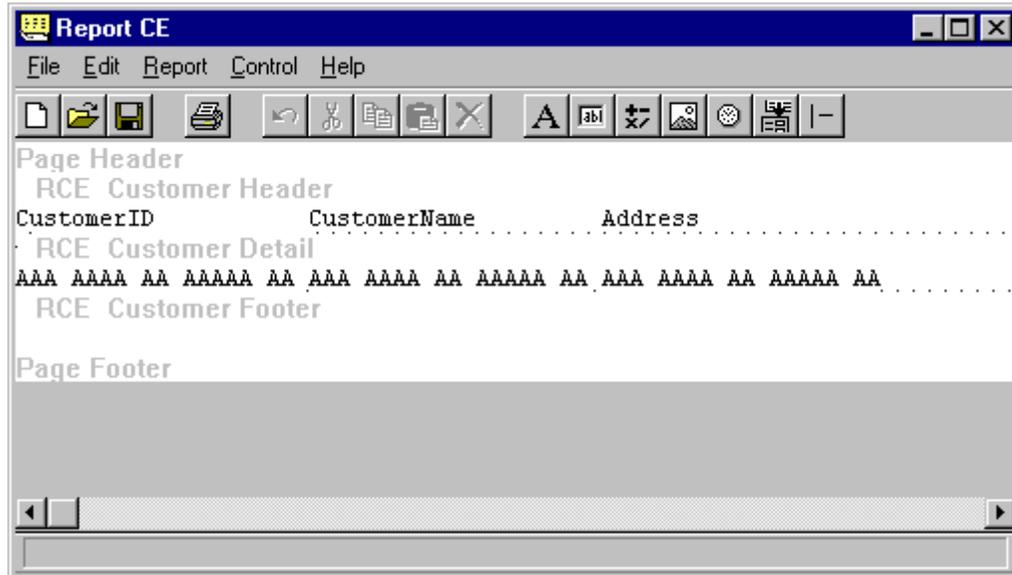
# Adding or Deleting Lines (Vertical Space) in a Layout Band

A band can be zero or more lines deep. The gray type that identifies the band in layout mode takes up no lines in the report.

Before you can add a control to a band, there must be at least one line in the band to accommodate it.

You can also create white space in the report by increasing the depth of a band.

**To add or delete lines in a layout band:**

1  Click on the band to make it active.

Report CE displays two "rules" (lines) above and below the active band. The rule may be dotted or solid, depending upon your system. In the illustration below, RCE_Customer Detail is the active band.
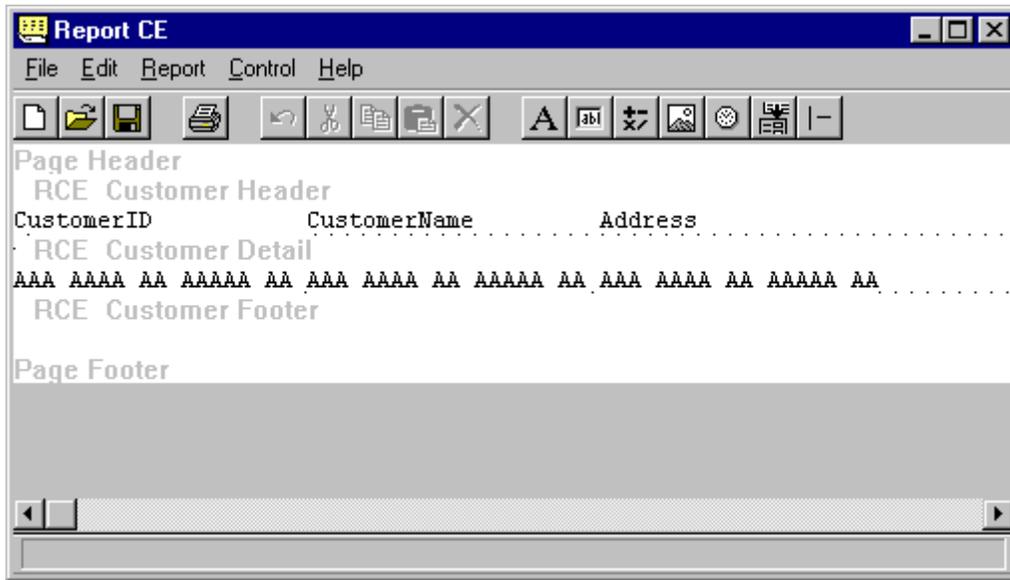


2  Position the mouse pointer on the LOWER rule so the pointer turns into a double-header arrow.



3  Drag the rule downward to add a line, or upward to delete a line



As you drag the rule, notice how it "snaps" to positions rather than moving smoothly. Each vertical "notch" equals one line in the report.

**Note**

You cannot delete a line unless it is empty.

# Splitting a Band into Sections

You can subdivide any table band into sections. This feature is useful in two situations:

- **Accommodate a control that stretches**: If you select the Stretch option for a control, the depth of the control automatically expands to accommodate the field's contents. This works well if the stretched control is at the bottom of the band. However, if you place another control below the stretched control in the same band, the stretched control will expand over the lower control, hiding it in the report. You can avoid this problem by splitting the band into sections and placing the stretched control either at the bottom of a section or in its own section.

- **Split detail data that spans multiple pages:** When a report is printed, data contained in a band not subdivided into sections is kept together. If the band is too tall to fit on the current page, Report CE automatically inserts a page break before it. This may cause your report to contain large areas of unwanted white space. You can avoid this problem by manually splitting the band into sections. When printing a band that is too tall to fit on the current page, if the band is subdivided into sections, Report CE will put as many sections as possible, a page break, and then the remaining sections on the next page.

You can apply sections to any type of table band, and you can divide a band into any number of sections. You cannot split a page header or page footer band into sections.

**To split a table band into sections:**

1 Click on the band to make it active.

2 Select **Edit–Create Section** from the development environment menu bar.

Report CE inserts the new section. You can now add vertical lines and controls to the sections, just as you would any band of the same type.
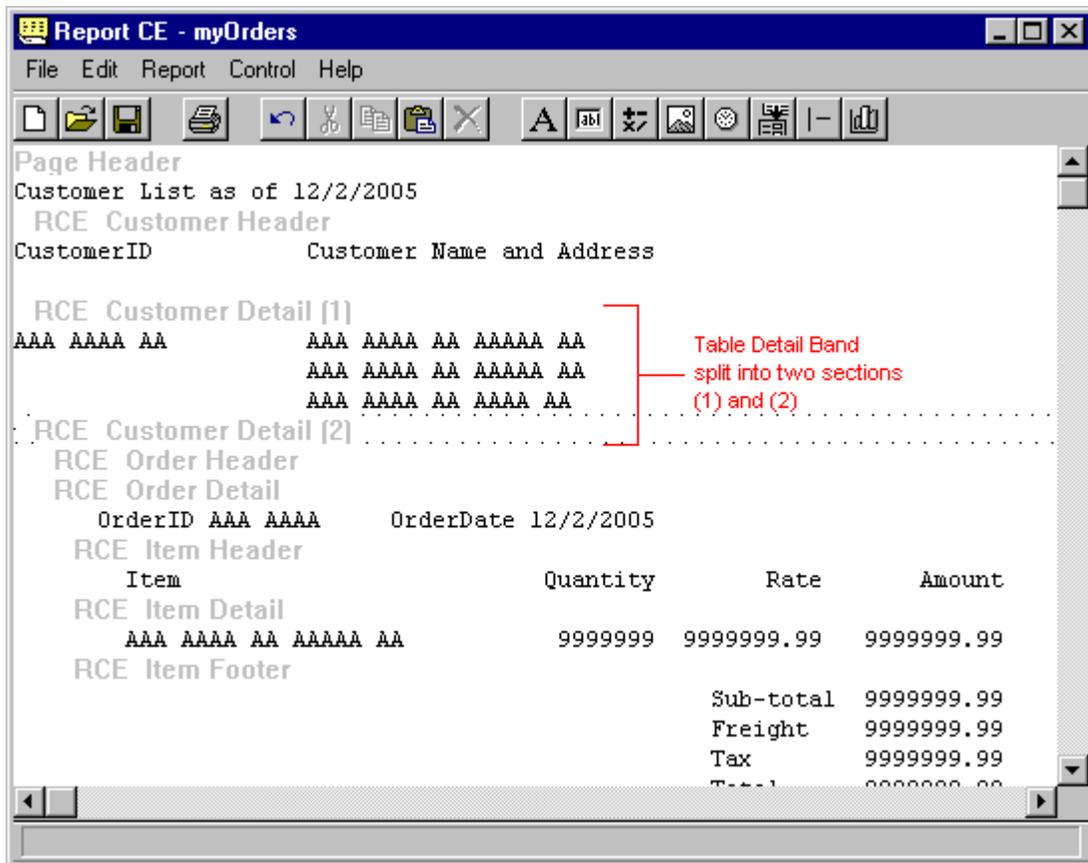
# Removing a Section

You can remove a section from a layout, as long as the section is empty.

**To remove a section:**

1  Click on the section to make it active.

2  Select **Edit–Remove Section** from the development environment menu bar.
   Report CE removes the section.

# Adding and Modifying Controls

## Introducing Controls

Controls are objects that you use to insert and define the properties of titles, labels, data fields, and other elements that determine the content and appearance of the report.

Report CE offers eight types of controls:

- **Label** – page 81
- **Column** – page 82
- **Calculated** – page 84
- **Picture** – page 94
- **Timestamp** – page 95
- **Lookup** – page 96
- **Line** – page 99
- **Graph** - page 124

The following topics explain how to create each type of control. Later topics explain how to arrange the controls in the layout.

# Creating a Label Control

Label controls display static text. You can use a label to identify other controls, such as Column or Calculated controls, or to display page titles or column headers.

A label can be virtually any length. If you want the label to appear on more than one line, you can either let the text wrap automatically according to the size of the invisible box that contains it in the layout; or you can specify line breaks in the text, as described below.

You can put a Label control in any type of layout band.

**To create a Label control:**

1  Select the layout band or section in which you want to add the control. If necessary, add a line (vertical space) to the layout band to accommodate the control.

2  Select **Control–Label** from the development environment menu bar or click the Label tool button .

Report CE displays the Label Properties dialog box, which contains the following fields:

| Field | Description |
|-------|-------------|
| Label | Enter the text to appear in the layout. You can use carriage returns and spaces for formatting. |
| Left | The control's horizontal position, expressed as number of characters from the left edge of the page (0 refers to the left-most character on the page). |
| Top | The control's vertical position, expressed as number of lines from the top of the layout band or section (0 refers to the top-most line in the band or section) |
| Width | The width of the control, in number of characters. |
| Height | The height of the control, in number of lines. |
| Color | The color of the label's type. |
| Font | Specify font, font size, and style. Refer to the topic, "Specifying Font Properties," on page 101 for more information. |

3  After you have made the changes required to the Label properties, click **OK**.

4  If necessary, resize and drag the label to the desired location.

# Creating a Column Control

Column controls display values from the database. The values can be text, numeric, money, date/time, yes/no, and pictures. If the values are text, numeric, money, or date/time, you can even have Report CE display and print them as barcodes.

You can place a Column control in any type of band. Page headers and footers display values from columns in the top-level table only.

You can specify that a Column control take up a fixed number of characters and lines on the layout, or that its depth automatically "stretch" to accommodate the amount of information in the database field. In that case, the layout band or section that contains it stretches along with the control. The stretch feature is useful when the amount of information stored in the column associated with the control varies from record to record.

**Note about Visual CE scribbles and other picture types**

Report CE supports a wide variety of picture types—specifically, .gif, .jpg, and .bmp, as well as a special category called Visual CE scribbles, which are simple drawings that Visual CE users enter on the CE device. The Visual CE form may include a background image that users scribble over. If you want your report to display Visual CE scribbles and optionally the background image, it is recommended that you use a Column control, as described below. For all other picture types, it is strongly recommended that you use a Picture control instead. See page 94.

**To create a Column control:**

1  Select the layout band or section in which you want to add the control. If necessary, add a line (vertical space) to accommodate the control.

2  Select **Control–Column** from the development environment menu bar or click the **Column** tool button [abl].

Report CE displays the Select Column dialog box, which displays the names of columns that you can select for the active layout band. The columns are identified using the "table.column" convention.

**Note**

If you selected a table's detail band in step 1, Report CE lets you choose from all columns in that table, as well as all higher-level tables. If you selected a table's header or footer band, only columns for higher-level tables are available.

3  Select the desired column and click **OK**.

Report CE displays the Column Properties dialog box. The fields in this box depend upon the type of data stored in the selected column: text, numeric, money, date/time, yes/no, or Visual CE scribbles.

| Field | Description |
|---|---|
| [table.column] | The table column to which the control relates – cannot be changed. |
| Left | The control's horizontal position, expressed as number of characters from the left edge of the page (0 refers to the left-most character on the page). |
| Top | The control's vertical position, expressed as number of lines from the top of the layout band or section (0 refers to the top-most line in the band or section). |
| Width | The width of the control, in number of characters. |
| Height | The height of the control, in number of lines. |
| Color | The color of the type displayed in the control. |
| Font | The font, font size, and style. Refer to the topic, "Specifying Font Properties," on page 101 for more information. |
| Stretch | If the control is associated with a text or memo column, the Stretch checkbox is displayed. If Stretch is checked, the depth of the control (and the band that contains it) automatically expands to accommodate the field's contents. **Note:** When placing a stretch control, avoid placing another control below it in the same band. Otherwise, when the report runs, the depth of the stretch control could expand over the lower control, hiding it in the report. You can avoid this problem by splitting the band into sections, and placing the stretch control at the bottom of a section or in its own section. Refer to the topic, "Splitting a Band into Sections," on page 78. |

| | |
|---|---|
| Format | If the control is associated with a numeric column, the Format checkbox is displayed. If Format is checked but Money is unchecked, values are formatted according to the Number format selected in the Windows Regional Settings on the device running the report. If both the Format and Money checkboxes are selected, values are displayed using the Currency format in the Regional Settings, rather than the Number format. |
| Money | If the control is associated with a numeric column, the Money checkbox is displayed. If Money is checked but Format is unchecked, values are simply displayed with two decimal places. If both Money and Format are checked, values are displayed in the Currency format selected in the Windows Regional Settings on the device running the report; for example, $ 20.00 rather than 20.00. |
| Hide If Zero | If the control is associated with a numeric column, the Hide If Zero checkbox is displayed. When Hide If Zero is checked, the report field is blank when the column value is 0. |
| Decimal Digits | If the control is associated with floating point numbers, the Decimal Digits field is displayed. Specify the desired number of places to the right of the decimal point for displayed values. |
| [Date/time options] | If the control is associated with dates/times, four options are available for the display format: Long Date, Short Date, Time, or Date/Time. **Note:** The display format associated with each option is determined by the Windows Regional Settings on the device that runs the report. For example, the user can choose among several different formats for short dates, such as m/d/yy or yyyy-MM-dd. |
| Background Image | If the control is associated with Visual CE scribbles, the Background Image field is displayed. You can specify an image to appear behind the scribbles in the report. (You would typically use this feature to display the same background image that was used in the Visual CE form.) The image must be a .gif, .jpg, .bmp or .2bp file stored on the CE device (not the desktop PC). You can either type the path and filename (e.g., \windows\cubes.2bp), or use the browse button [...] to navigate to the file. |
| Barcode | Select this option if you want the data in the column to be displayed/printed in the report as a barcode. Once you select this option, Report CE lets you choose the barcode symbology. |

4  Make any changes necessary to the control properties, and then click **OK**.

5  If necessary, resize and drag the control to the desired location.

**Tip**

Report CE indicates the location and size of column controls on the layout with placeholders. The style of the placeholders indicates the data type.

| Data Type | Placeholder |
|---|---|
| Text | AAAAAAA |
| Numeric (Integer, Floating Point, or Money) | 99999999 |
| Date/Time | Current date/time |
| Scribble or Picture | |
| Yes/No (Boolean) | ⊠ |
| Barcode | |

# Creating a Calculated Field Control

A Calculated Field control displays the results of a calculation. The results can be numeric, text, or date/time. You can even have Report CE display/print the results as a barcode.

When you create a Calculated Field control, you enter a formula (called an "expression") specifying the calculations you want Report CE to perform when the report is run.

Here are a few examples:

| This Expression | Returns |
|---|---|
| `Item.Price * Item.Quantity` | `3.00` when the value in the Price column is `1.50` and the value in the Quantity column is `2` |
| `"Emp.First Name" & ' ' & "Emp.Last Name"` | `'Jane Smith'` when the value in the First Name column is `'Jane'` and the value in the Last Name column is `'Smith'` |
| `@now + (5 * @days)` | The date five days from today |

**About Constants, Column Names, Functions, and Operators**

An expression can include any combination of constants, column names, functions, and operators (depending upon the layout band that contains the control):

■ **Constants**

A constant is a value that does not change. Constants can be text, numeric, or date/time.

- ■ **Text constants**: Text constants *must always* be enclosed in single quote marks; e.g., `'client'`.

- ■ **Date/Time constants:** Date/time constants *must always* be enclosed in single quote marks and use the following formats:

  | Date: | `'yyyy-mm-dd'` | `'2006-02-14'` for February 14, 2006 |
  |---|---|---|
  | Time: | `'hh:mm:ss'` | `'13:41:27'` for 1:41:27 p.m. |
  | Date/time: | `'yyyy-mm-dd hh:mm:ss'` | `'2006-02-14 13:41:27'` for 1:41:27 p.m. on Feb. 14, 2006 |

■ **Column Names**

If you include a reference to a column in the expression, Report CE uses the value stored in the column for the current record. You can refer to columns that store text, numbers, yes/no, or dates/times. You must use the *table.column* convention when referring to a column.; e.g., `Item.Price`. If the name includes blanks or special characters, you must enclose it in double quotes; e.g. `"Employees.First Name"`.

■ **Functions**

Functions are pre-defined, named formulas included with Report CE. They perform a wide variety of useful calculations. You specify the function by name, and Report CE performs the calculation.

Functions are identified with a leading `@` sign, and use this syntax: `@functionName(parameter, parameter…)`, where `functionName` is the name recognized by Report CE for the calculation, and `parameter` is an argument required by the function. A parameter can be any expression (including one that contains another function). Some functions require more than one parameter, in which case you must separate individual parameters with a comma.

Report CE's most frequently used functions are described in the topic, "Using Basic Functions," on page 89. Report CE offers other, more advanced functions, which are described in the topic, "Using Advanced Functions" on page 91.

■ **Operators**

Operators are symbols that specify the operation to perform.

- ■ Mathematical operators (use with numeric arguments):
  - `+` addition
  - `–` subtraction
  - `*` multiplication
  - `/` division

  If you use more than one operator, Report CE evaluates the expressions from left to right, and performs multiplication and division before addition and subtraction. You can change the precedence by inserting parentheses: Report CE performs the operations enclosed in parentheses first. For example, the result of 500 - 300 - 100 is 100. You could insert parentheses to change the expression to 500 – (300 – 100), which returns 300 instead.

- **Text operator** (use with text arguments)

  `&` concatenation

It is important to match the operator to the data type of the arguments. Report CE automatically interprets arguments on either side of a mathematical operator as numbers, and those on either side of a concatenation operator as text. Consider the following expression:

`(3 + 9) & (1 + 3)`

It returns `'124'`, a text string.

### About IF-THEN-ELSE

You can also create special expressions that return a different result depending upon a comparison. These "IF-THEN-ELSE" expressions are described in the topic, "Using If-Then-Else in a Calculated Field," on page 88.

### To create a Calculated Field Control:

1  Select the layout band or section in which you want to add the control. If necessary, add a line (vertical space) to accommodate the control.

2  Select **Control–Calculated** from the development environment menu bar or click the **Calculated** tool button ⊞.
   Report CE displays the Calculated Properties dialog box.

3  Enter the expression in the Expression box. You can type the expression, choose elements from a convenient pick list (as explained below), or use a combination of both entry methods. To use the pick list:

   - Click the **+** to the right of the Expression box.
     Report CE displays a drop-down list containing some of the elements that you can use to build the expression.

   - Double-click an element in the list to copy it into the Expression box.

   - To close the drop-down list, either click the cursor in the Expression box or click the **+** button.

4  Complete the remaining fields in the Calculated Properties dialog box to specify how you want the results displayed in the report, then click **OK**:

| Field | Description |
|---|---|
| Left | The control's horizontal position, expressed as number of characters from the left edge of the page (0 refers to the left-most character position on the page). |
| Top | The control's vertical position, expressed as number of lines from the top of the band or section (0 refers to the top-most line in the band or section). |
| Width | The width of the control, in number of characters. |
| Height | The height of the control, in number of lines. |
| Color | The color of the type displayed in the control. |
| Font | The font, font size, and style. Refer to the topic, "Specifying Font Properties," on page 101 for more information. |
| [Result options] | Specify the display format for the results. |
| | Note: The display format associated with each date/time option is determined by the Windows Regional Settings on the computer that runs the report. |
| Stretch | Available when you select the Text radio button. Check this option to allow the depth of the control (and the band that contains it) to stretch to accommodate the number of characters in the result. **Note:** When placing a stretch control, avoid placing another control below it in the same band. Otherwise, when the report runs, the depth of the stretch control could expand over the other control, hiding it in the report. You can avoid this problem by splitting the band into sections, and placing the stretch control at the bottom of a section or in its own section. Refer to the topic, "Splitting a Band into Sections," on page 78. |

| | |
|---|---|
| Format | Available when you select the Number radio button. If Format is checked, values are formatted according to the Windows Regional Settings on the device running the report. Further, if Format is checked and Money is unchecked, the Regional Setting's Number format is applied. If both Format and Money are checked, the Regional Setting's Currency format is applied instead. |
| Decimal Digits | Available when you select the Number radio button and Format is off. Specify the desired number of places to the right of the decimal point for displayed values. |
| Money | Available when both the Number radio button and Format checkbox are selected. If checked, values are displayed using the Currency format selected in the Windows Regional Settings on the device running the report; for example, `$ 20.00`. |
| Hide If Zero | Available when you select the Number radio button.  When Hide If Zero is checked, the report field is blank when the expression returns 0. |
| Barcode | Select this option if you want the result to be displayed/printed as a barcode. Once you select this option, Report CE lets you choose the barcode symbology. |

5  After you have changed the Calculated Field control properties as desired, click **OK**.

6  If necessary, resize and drag the control to the desired location.

# Using Date/Time Values in a Calculated Field Expression

You can use date/time values in a Calculated Field expression to determine duration – that is, the number of minutes that elapsed between two date/times of interest.

For example, if your billing rate were $50 per hour, the following expression would calculate the charge for the time spent on a job, assuming that you had a Job table with two columns named End_time and Start_time:

```
((Job.End_time – Job.Start_time) / 60) * 50
```

(Tip: Since the result is money, be sure to specify two decimal places in the Calculated Properties dialog box.)

When building an expression that refers to date/time values, you can use the same kinds of references that you use to refer to other data types; that is, date/time constants, the names of table columns that contain date/time values, and functions that return date/time values (such as @now):

- **Date/Time Constants and Column Names:** For instructions on formatting date/time constants and column names, refer to the section, "About Constants, Column Names, Functions, and Operators," in the topic, "Creating a Calculated Field Control," on page 84.

- **Functions that Return Date/Time Values:** For information about the functions @now, @today, and @days, refer to the topic, "Using Basic Functions in a Calculated Field," on page 89. Many other date/time functions are available; refer to page 93.

**Note**

> The internal representation for date/time values in Report CE is the number of minutes from an arbitrary point in time, established as part of the software design. You can therefore add, multiply, and divide these values, but it is really only meaningful to subtract one value from another to determine the duration.

# Using If-Then-Else in a Calculated Field

You can create a Calculated Field control in which Report CE applies a different calculation depending upon whether or not the current record meets a specified condition. This type of calculated field expression is called "If-Then-Else."

For instance, say you want to apply a 5% discount to sales orders over $500. You could use the following If-Then-Else expression to compute the discount:

```
if subtotal > 500 then subtotal * 5/100 else 0
```

**Syntax**

Create If-Then-Else expressions using the following syntax:

```
if <Boolean-expression> then <expression1> else <expression2>
```

Where:

- <boolean-expression> is the condition that Report CE uses to evaluate the current record. This expression compares the result of two expressions using any of the following comparison operators:
  - <    less than
  - <=   less than or equal to
  - =    equals
  - >    greater than
  - >=   greater than or equal to
  - <>   not equal to

  You can use the logical connectors AND, OR, and NOT to join nested Boolean expressions.

- <expression1> Specify the expression that Report CE applies when the Boolean expression is true for the current record.

- <expression2> Specify the expression that Report CE applies when the Boolean expression is false for the current record.

**Tip - Testing for empty record fields:**

You can test whether or not the current record contains a null value (is empty) by comparing the table column to an empty string.

The syntax of the boolean expression must be:

```
<column_name> = ''
```

That is, the name of the table column, equals sign, then two single quote marks without an intervening space.

Example:

```
RCE_Customer.CustomerName = ''
```

# Using Basic Functions in a Calculated Field

Report CE provides several basic functions that you can use in a Calculated Field expression: @now, @today, @count, @sum, @min, @max, @days, @deviceName, @page, and @pagecount. (In addition, Report CE offers many advanced functions which are described in "Using Advanced Functions in a Calculated Field," on page 91. For general rules about using functions in a calculated field expression, refer to the topic, "Creating a Calculated Field Control, on page 84.)

Some basic functions can be used only in certain types of layout bands, as described below. As you work, the Expression field in the Calculated Properties dialog box automatically displays all of the basic functions that are allowed in the selected layout band.

| Function | Returns... |
|---|---|
| @now | Current date/time. Can be used in any type of layout band. Useful for calculating the elapsed time between a date/time of interest and now. |
| @today | Current date, without time. Can be used in any type of layout band. Useful for displaying the current date or calculating the number of elapsed days between a date of interest and today. |
| @count(*tableName*) | Number of found records in *tableName*. Can be used only in table footer and table group bands. May be applied to the current table (the one to which the footer belongs) or to a nested (lower-level) table. |
| @sum(*expression*) | The sum of an expression. Can be used only in table footer and table group bands. If the expression refers to a column, that column must be in the current table (the one to which the footer belongs) or in a nested (lower-level) table. |
| @min(*expression*) | The minimum value of the expression. Can be used only in table footer and table group bands. If the expression refers to a column, that column must be in the current table (the one to which the footer belongs) or in a nested (lower-level) table. |
| @max(*expression*) | The maximum value of the expression. Can be used only in table footer and table group bands. If the expression refers to a column, that column must be in the current table (the one to which the footer belongs) or in a nested (lower-level) table. |
| @days | The number of minutes in a day. It is useful for including in a formula to find a date some number of days before or after a given date. Can be used in any type of layout band. |
| @deviceName | Returns the name of the handheld, as specified in its Control Panel. Can be used in any type of layout band. |
| | Note: To find the name of a Pocket PC, point to Start – Settings – System – About – Device ID – Device Name. To find the name of an H/PC, go to Start – Settings – Control Panel – Communications – Device Name. |
| @page | Page number. Can be used only in page header and page footer bands. Refer to the topic, "Inserting Page Numbers in the Report," on page 138. |
| @pagecount | Total number of pages in report. Can be used only in page header and page footer bands. Refer to the topic, "Inserting Page Numbers in the Report," on page 138. |

**Examples:**

■ To find someone's age in years (assuming that a table named "Employees" stores birth dates in a column named "birthday"):

```
(@today – Employees.birthday) / (@days * 365.25)
```

■ To find the average expense amounts (total of all values in the Expenses.Amounts column divided by the number of records):

```
@sum(Expenses.Amount) / @count(Expenses)
```

■ To find the total of an order:

```
@sum(Item.Quantity * Item.Rate)
```

- To find the due date of a bill:

  ```
  "Invoices.Invoice Date" + (30 * @days)
  ```

  If the invoice date stored in the record was November 18, 2001, the result would be December 18, 2001.

- To display an audit trail for the report:

  ```
  'This report was run on ' & @deviceName & ' on ' @now
  ```

  A sample result might be: `This report was run on Luann's CE device on 8/23/01 10:47:49AM`

# Using Advanced Functions in a Calculated Field

Report CE offers a large collection of advanced functions that perform a variety of useful calculations. They fall into five categories, according to the type of data on which they operate: **Text** (described below), **Numeric** (page 92), **Date/Time** (page 93), **Global Variables** (page 93), and **GPS** (page 93).

You can use an advanced function anywhere in the layout (there are no restrictions on the type of layout band in which you can use an advanced function).

Here are a few examples of advanced functions:

| This function | Returns |
|---|---|
| @repeat('abc', 3) | 'abcabcabc' |
| @sqrt(144) | 12 |
| @year(Employees.Birthday) | 1980 when the value stored in Birthday is 1/1/1980 |

**Tip**

In addition to the specialized functions described in this topic, Report CE offers ten other functions, which are described in the topic, "Using Basic Functions in a Calculated Field," on page 89. For general rules about using functions in a calculated field expression, refer to the topic, "Creating a Calculated Field Control," on page 84.)

## Text Functions

Text functions manipulate text — they count, combine, search for, insert, replace, and convert character strings.

| Function | Description |
|---|---|
| @ascii(*text*) | Returns the ASCII code value (integer) of the leftmost character in *text*. |
| @char(*ASCII_code_value*) | Returns the character that has the specified ASCII code value. The value must be between 0 and 255, otherwise, the return value is undefined. |
| @fileexists(*file_pathname*) | Searches CE device for *file_pathname*. Returns non-zero value if file is found; returns 0 if file is not found. |
| @insert(*text*, *start*, *length*, *insert_text*) | Returns a character string, where number of characters specified by *length* have been deleted from *text*, beginning with the character position indicated by the value of *start*, and where *insert_text* has been inserted into *text*, beginning at *start*.<br><br>For example, @insert('ABCDF',3,2,'XYZ') returns 'ABXYZF' |
| @lcase(*text*) | Returns *text* as all lowercase. |
| @left(*text*, *count*) | Returns the leftmost *count* characters in *text*. |
| @length(*text*) | Returns the number of characters in *text*, excluding trailing blanks. |
| @locate(*search_string*, *text*, *start*) | Returns the starting position of the first occurrence of *search_string* within *text*. The search begins with the character position indicated by the value of *start* (1 indicates the first character position). If the search string is not found, the function returns 0. |
| @ltrim(*text*) | Returns the characters in *text*, without leading blanks. |
| @repeat(*text*, *count*) | Returns the characters in *text*, repeated *count* times. |
| @replace(*text*, *search_string*, *replacement_text*) | Search *text* for *search_string*, and replace with *replacement_text* in all occurrences. |
| @right(*text*, *count*) | Returns the rightmost *count* characters in *text*. |
| @rtrim(*text*) | Returns the characters in *text*, without trailing blanks. |
| @serialnumber | Returns the serial number of the CE device. If not supported by the device, returns an empty string. |
| @space(*count*) | Returns a character string consisting of *count* blank spaces. |

| @substring(*text*, *start*, *length*) | Returns characters in *text*, beginning at the character position specified by *start*, through the number of characters specified by *length*. |
|---|---|
| @ucase(*text*) | Returns *text* as all uppercase. |

## Numeric Functions

Numeric functions manipulate numeric data.

| Function | Description |
|---|---|
| @abs(*number*) | Returns the absolute value of *number*. |
| @acos(*number*) | Returns the arccosine of *number* as an angle, expressed in radians. |
| @asin(*number*) | Returns the arcsine of *number* as an angle, expressed in radians. |
| @atan(*number*) | Returns the arctangent of *number* as an angle, expressed in radians. |
| @atan2(*number1*, *number2*) | Returns the arctangent of the x and y coordinates, specified by *number1* and *number2*, respectively, as an angle, expressed in radians. |
| @ceiling(*number*) | Returns the smallest integer greater than or equal to *number*. |
| @cos(*number*) | Returns the cosine of *number*, where *number* is an angle expressed in radians. |
| @cot(*number*) | Returns the cotangent of *number*, where *number* is an angle expressed in radians. |
| @degrees(*number*) | Returns the number of degrees converted from *number* radians. This is especially useful for converting the results of other functions to degrees. |
| @exp(*number*) | Returns the exponential value of *number*. |
| @floor(*number*) | Returns the largest integer less than or equal to *number*. |
| @log(*number*) | Returns the natural logarithm of *number*. |
| @log10(*number*) | Returns the base 10 logarithm of *number*. |
| @mod(*number*, *divisor*) | Returns the remainder (modulus) of *number* divided by *divisor*. |
| @pi | Returns the constant value of pi as a floating-point value. |
| @power(*number1*, *number2*) | Returns the value of *number1* to the power of *number2*. |
| @radians(*number*) | Returns the number of radians converted from *number* degrees. |
| @rand | Returns a random floating-point value. |
| @round(*number*, *precision*) | Returns *number* rounded to the number of decimal places in *precision*. If *precision* is negative, *number* is rounded to @abs(*precision*) places to the left of the decimal point; e.g., -1 rounds *number* to the nearest ten, -2 to the nearest 100, and so on. |
| @sign(*number*) | Returns an indicator of the sign of *number*: -1 when *number* is negative; 0 when *number* equals zero; and 1 when *number* is positive. |
| @sin(*number*) | Returns the sine of *number*, where *number* is an angle expressed in radians. |
| @sqrt(*number*) | Returns the square root of *number*. |
| @tan(*number*) | Returns the tangent of *number*, where *number* is an angle expressed in radians. |
| @truncate(*number*, *precision*) | Returns *number* truncated to the number of decimal places in *precision*. If *precision* is negative, *number* is truncated to @abs(*precision*) places left of the decimal point; for example, @truncate(12654.6, -3) returns 12000 |

## Date/Time Functions

Date/Time functions manipulate and calculate dates and/or times.

| Function | Description |
|---|---|
| @dayname(*datetime*) | Returns the name of the day for *datetime*. For example, @dayname('2002-02-14') returns Thursday. |
| @dayofmonth(*datetime*) | Returns the day of the month for *datetime* as a integer in the range 1-31. |
| @dayofweek(*datetime*) | Returns the day of the week for *datetime* as an integer in the range 1-7, where 1 represents Sunday. |
| @dayofyear(*datetime*) | Returns the day of the year for *datetime* as an integer in the range 1-366. For example, @dayofyear('2005-02-02') returns 33. |
| @hour(*datetime*) | Returns the hour in *datetime* as an integer in the range 0-23. |
| @minute(*datetime*) | Returns the minute in *datetime* as an integer in the range 0-59. |
| @month(*datetime*) | Returns the month in *datetime* as an integer in the range 1-12. |
| @monthname(*datetime*) | Returns the name of the month for *datetime*. For example, @monthname('2002-02-14') returns February. |
| @quarter(*datetime*) | Returns the quarter for *datetime* as an integer value in the range 1-4, where 1 represents January 1 through March 31. |
| @second(*datetime*) | Returns the second in *datetime* as an integer in the range 0-59. |
| @year(*datetime*) | Returns the year in *datetime*. |

## Global Variable Function

| Function | Description |
|---|---|
| @var(*n*) | Returns the value that has been assigned to the variable in a Visual CE application. The value can be a text string, date/time, or number; but not a picture. |
| | *n* is the identifier of the variable, which must be either a constant between 0 and 99 or an expression that returns a value between 0 and 99. You can use up to 100 global variables: @var(0), @var(1)….@var(99). A value assigned to a variable is available for all Visual CE applications and Report CE layouts on the device, and persists until a new value is assigned (even after the device is turned off). |
| | For more information about global variables, refer to the Visual CE documentation. |

## GPS Functions

GPS functions return specified data from GPS (Global Positioning System) sentences. These functions are typically applied to text strings returned by a Communicate | GPS command button in a Visual CE application (refer to your Visual CE documentation).

| Function | Description |
|---|---|
| @alt(*gpssentence*) | Returns the value for altitude from the *gpssentence**. |
| @lat(*gpssentence*) | Returns the value for latitude from *gpssentence** in decimal degrees. |
| @long(*gpssentence*) | Returns the value for longitude from the *gpssentence** in decimal degrees. |
| | **gpssentence* is either the name of a table column that holds the GPS data or a global variable that has been assigned GPS data. For example, @alt(gps) or @alt(@var(0)) |

# Creating a Picture Control

A Picture control is a box that displays pictures—.gif, .jpg, bmp, or .2bp files. You can use picture controls in two ways:

- To display pictures stored in a table column. The table column may be either a picture column that stores the image files, or it may be a text column that stores a link to the image files. In either case, the report will display the images.

- To place a static design element on the layout. For example, you might insert your company logo in the page header so that it appears at the top of every page of the report. The image must be stored on the CE device.

**Note about Visual CE scribbles**

If you want to report Visual CE scribbles, it is recommended that you use a Column control instead of a Picture control. Column controls enable you to include any background image that was used in the scribble box on the Visual CE form. Refer to page 82.

**To create a Picture control:**

1  Select the layout band or section in which you want to add the control. If necessary, add a line (vertical space) to accommodate the control.

2  Select **Control–Picture** from the development environment menu bar or click the **Picture** tool button . Report CE displays a message asking whether the image depends on a value in a column of the table.

   - If you want the report to display pictures stored or referenced in the table, select **Yes**. Go to step 3.

   - If you intend to use the image control to display a static image as part of the report design (e.g., a company logo), select **No**. Go to step 4.

3  Report CE displays the Select Column dialog box. Choose either a picture column that stores the image files, or a text column that stores links to the image files. Click **OK**.

4  Report CE displays the Picture Properties dialog box.

| Field | Description |
|---|---|
| Left | The control's horizontal position, expressed as number of characters from the left edge of the page (0 refers to the left-most character on the page). |
| Top | The control's vertical position, expressed as number of lines from the top of the layout band or section (0 refers to the top-most line in the band or section). |
| Width | The width of the control, in number of characters.* |
| Height | The height of the control, in number of lines.* |
| Image | **If the Picture control is not associated with a column (that is, if the image will be a static element that is part of the form design, such as a company logo):** Specify the path and filename of the image you want to insert in the report. You can either type this information or use the browse button  to navigate to the file. |

**\*Tip**

When displaying or printing the report, Report CE sizes the image to fit the dimensions of the control. To avoid distorting the image, specify a width-to-height ratio that matches the image's. Also, when doing so, keep in mind that Report CE's height unit is approximately twice the size of its width unit. If you want to place a square graphic, for example, specify twice as many width units as height units (for example, Width = 10, Height = 5).

5  Change the control properties as necessary, and click **OK**.

6  If necessary, resize and drag the control to the desired location.

# Creating a Timestamp Control

A timestamp automatically displays the date and/or time that the report begins running. You can have Report CE display and print the timestamp as a barcode.

**To create a Timestamp control:**

1  Select the layout band or section in which you want to add the control. If necessary, add a line (vertical space) to accommodate the control.

2  Select **Control-Timestamp** or click the **Timestamp** button ⬚.
   Report CE displays the Timestamp Properties dialog box, which contains the following fields:

| Field | Description |
| --- | --- |
| Left | The control's horizontal position, expressed as number of characters from the left edge of the page (0 refers to the left-most character on the page). |
| Top | The control's vertical position, expressed as number of lines from the top of the layout band or section (0 refers to the top-most line in the band or section). |
| Width | The width of the control, in number of characters. |
| Height | The height of the control, in number of lines. |
| Color | The color of the type displayed in the control. |
| Font | The font, font size, and style. Refer to the topic, "Specifying Font Properties," on page 101 for more information. |

| [Date/time options] | Option | Sample* |
| --- | --- | --- |
| | Long Date | Monday, April 26, 1999 |
| | Short Date | 4/26/99 |
| | Time | 9:30:37 AM |
| | Date/Time | 4/46/99 9:30:37 AM |

| | |
| --- | --- |
| | * These samples are the defaults. Report CE utilizes the date/time formats specified in the Windows Regional Settings on the device running the report. |
| Barcode | Select this option if you want the timestamp to be displayed/printed as a barcode. Once you select this option, Report CE lets you choose the barcode symbology. |

3  After you have changed the Timestamp control properties as desired, click **OK**.

4  Drag the control to the correct position, then resize it if necessary.

# Creating a Lookup Control

A Lookup control displays a value that is related to a record in the report but that is stored in a separate "lookup" table. The lookup table may be one of those that you selected as part of the report layout design, but it doesn't have to be.

You can use Lookup controls to report text, numeric, yes/no, or date/time values, but not pictures or Visual CE scribbles. You can have Report CE display and print lookup values as barcodes.

Lookup controls are especially useful in the following circumstances:

■ The Visual CE form that was used to collect the data contains a lookup field that is "display only." That is, the lookup values are maintained in a separate lookup table; they are not saved in the same table as the records being reported. If you include a Lookup control in your report layout, Report CE automatically retrieves the correct values from the lookup table and displays them with the records in the report.

■ The Visual CE form used to collect the data contains a drop-down list connected to a numeric column in the table. When the user makes a selection from the drop-down list, Visual CE stores a compact numeric code in place of the text name that appears in the list. If you use a Column control in the report layout, the report displays the numeric code, which may not be meaningful to people looking at the report. On the other hand, if you use a Lookup control in your report layout, Report CE automatically retrieves the name and displays it in place of the code. (Refer to the Visual CE documentation for more information about drop-down lists that are connected to numeric columns.)

In order for Report CE to match records in the report table with the corresponding records in the lookup table, the two tables must have one column in common--call this the "key" column. The columns must have the same name and store the same data type. Both tables must be in the same database (i.e., the Windows CE Database Object Store, a single .cdb or .sdf file, or a single ODBC data source such as one .mdb file.) Additionally, the key column in the lookup table must be indexed. Refer to your Visual CE or database documentation for information about indexing. Tip for Pocket Access Users: SYWARE offers a free utility, Index CDB, for indexing columns in Pocket Access tables. You can download a copy from the SYWARE web site at http://www.syware.com/support.

**Note**

If you are working on a desktop PC, the CE device must be connected throughout the following procedure.

1  Select the layout band or section in which you want to place the control. If necessary, add a line (vertical space) to the band to accommodate the control.

2  Select **Control-Lookup** or click the **Lookup** button [icon].

Report CE displays the Pick Table dialog box.

3  Select the table that stores the lookup values.

If the report table and the lookup table have more than one column in common, Report CE displays the Link Criteria dialog box. Otherwise, go to step 5.
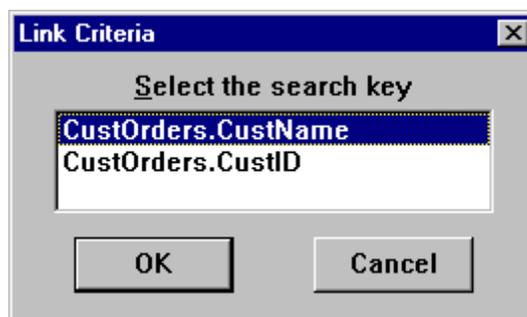


4  Select the "key" column—the column that stores the values Report CE will use to match records in the lookup table with those in the report table.

Report CE displays a dialog box that lists the columns in the lookup table.
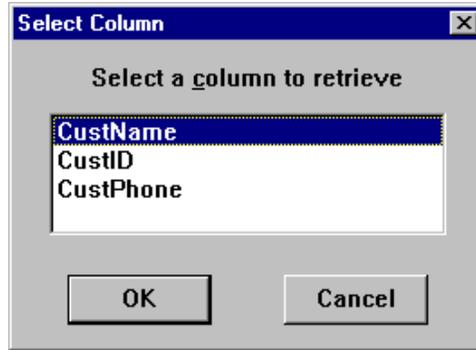
5  Select the column that contains the values you want to display in the lookup field in the report.

Report CE displays the Lookup Properties dialog box.
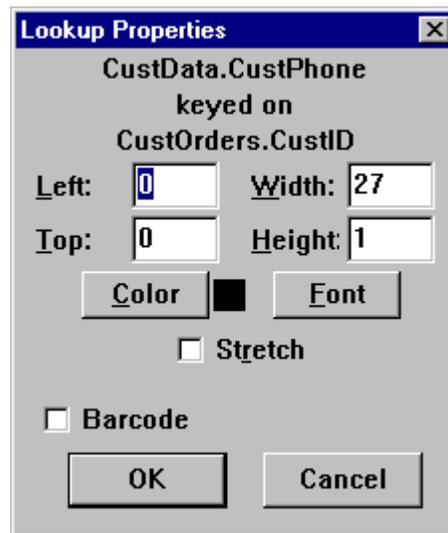


The fields in this dialog box vary depending upon the type of data stored in the selected column: text, numeric, money, yes/no, or date/time.

| Field | Description |
| --- | --- |
| [column] | The column in the lookup table from which Report CE will retrieve the lookup value – cannot be changed. |
| Keyed on: [column] | The report table column that contains the value Report CE will use to find the matching record in the lookup table |
| Left | The initial horizontal position of the left side of the control. |
| Top | The initial vertical position of the top of the control. |
| Width | The initial width of the control. |
| Height | The initial height of the control. |
| Color | The color of the type displayed in the control. |
| Font | The font, font size, and style. Refer to the topic, "Specifying Font Properties," on page 101 for more information. |
| Stretch | If the control is associated  with a text or memo column, the Stretch checkbox is displayed. If Stretch is checked, the depth of the control automatically expands to accommodate the field's contents. **Note:** When placing a stretch control, avoid placing another control below it in the same band. Otherwise, when the report runs, the depth of the stretch control could expand over the other control, hiding it in the report. You can avoid this problem by splitting the band into sections, and placing the stretch control at the bottom of a section or in its own section. Refer to the topic, "Splitting a Band into Sections," on page 78. |

| | |
|---|---|
| Format | If the control is associated with a numeric column, the Format checkbox is displayed. If Format is checked but Money is unchecked, values are formatted according to the Number format selected in the Windows Regional Settings on the device running the report. If both the Format and Money checkboxes are selected, values are displayed using the Currency format in the Regional Settings, rather than the Number format. |
| Money | If the control is associated with a numeric column, the Money checkbox is displayed. If Money is checked but Format is unchecked, values are simply displayed with two decimal places. If both Money and Format are checked, values are displayed in the Currency format selected in the Windows Regional Settings on the device running the report; for example, $ 20.00 rather than 20.00. |
| Hide If Zero | If the control is associated with a numeric column, the Hide If Zero checkbox is displayed. When Hide If Zero is checked, the report field is blank when the column value is 0. |
| Decimal Digits | If the control is associated with floating point numbers, the Decimal Digits field is displayed. Specify the desired number of places to the right of the decimal point for displayed values. |
| [Date/time options] | If the control is associated with date/time values, four options are available for the display format: Long Date, Short Date, Time, or Date/Time. Note: The display format applied for each option is determined by the Windows Regional Settings on the device that runs the report. |
| Barcode | Select this option if you want the lookup values to be displayed/printed as a barcode. Once you select this option, Report CE lets you choose the barcode symbology. |

6 Make any changes required to the control properties, and then click **OK**.

7 Drag the control to the correct position, and resize it if necessary.

**Tip**

Report CE indicates the location and size of Lookup controls on the layout with placeholders. The style of the placeholders indicates the data type.

| Data Type | Placeholder |
|---|---|
| Text | AAAAAAA |
| Numeric (Integer, Floating Point, or Money) | 99999999 |
| Date/Time | Current date/time |
| Yes/No (Boolean) | ⊠ |
| Barcode | ▮▮ ▏▮▮▮ ▏▮▮▮ ▏▮▮ |

# Creating a Line Control

The Line control enables you to draw horizontal and/or vertical lines in your report. You can specify a line's location, width/height, and weight.

**To insert a horizontal or vertical line:**

1  Select the layout band or section in which you want to add the control. If necessary, add a line (vertical space) to accommodate the control.

2  Select **Control–Line** from the development environment menu bar or click the **Line** tool button ⌧.

Report CE displays the Line type dialog box.
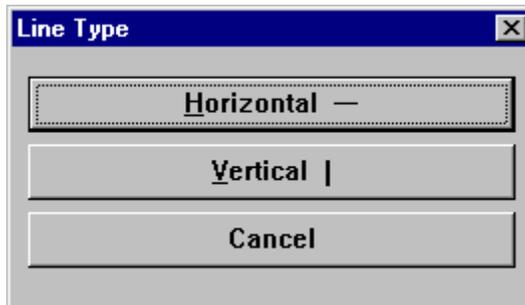
3  Select the type of line you want to insert.

Report CE displays the Line Properties dialog box, which contains the following fields:

| Field | Description |
|-------|-------------|
| Left | The control's horizontal position, expressed as number of characters from the left edge of the page (0 refers to the left-most character on the page). |
| Top | The control's vertical position, expressed as number of lines (vertical spaces) from the top of the layout band or section (0 refers to the top-most space in the band or section). |
| Width (or Height) | **Width** (applies to horizontal lines): The length of the line, in number of characters. |
| | **Height** (applies to vertical lines): The height of the line, in number of vertical spaces. |
| Thickness | The weight of the line, in pixels. |
| Color | The color of the line |
| Stretch | (Vertical lines only) If this option is checked, the line stretches as other controls in the layout band or section stretch. |

4  Change the control properties as necessary, and click **OK**.

5  If necessary, drag the control to the desired location.

**To manually modify the length of a line:**

Once you have inserted a line in a report, you can manually change its length:

1  Click on the line to highlight it.

Notice that selection handles -- a series of three dots--appear at either end of the line.

2  Position the cursor over either of the handles (dots), so that the cursor turns into a double-headed arrow.

3  Drag the cursor in the direction of the arrows to lengthen or shorten the line.

# Creating a Graph Control

Graph controls display selected data in column, line, pie, or scatter graphs.

Because they offer a great many options and require more complex setup than other controls, they are described in a section of their own. Refer to "Creating Graphs," beginning on page 124.
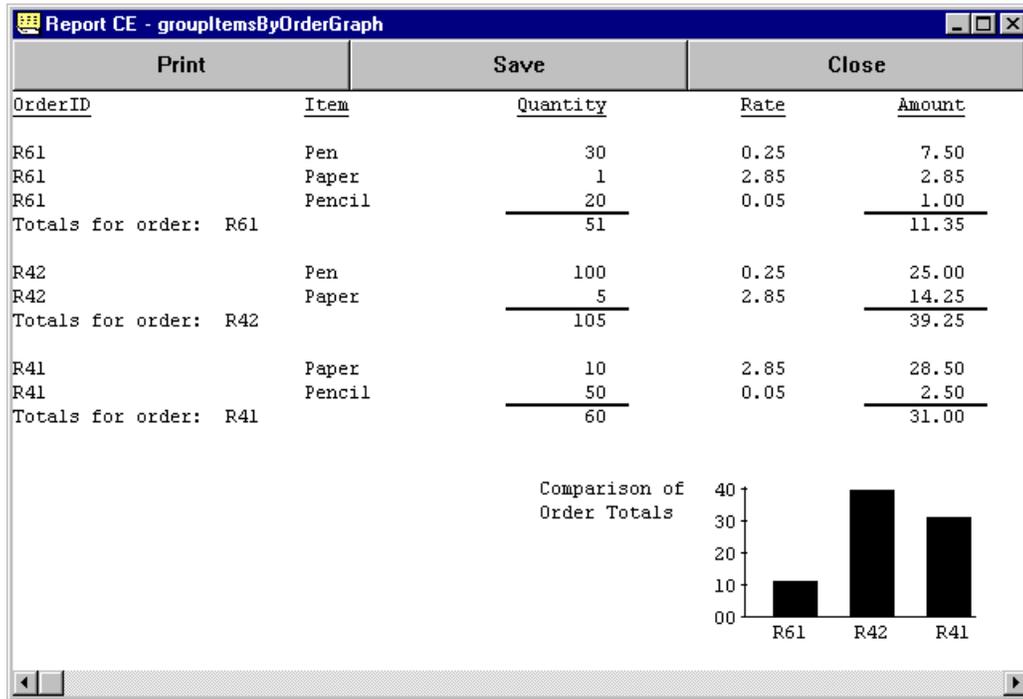
# Specifying Font Properties for a Control

The Edit Properties dialog boxes for Label, Column, Calculated Field, Lookup, Timestamp and Graph controls include a Font button. When you click this button, Report CE displays a Font dialog box that enables you to assign a font, size, and style to the characters displayed by the control. To distinguish and emphasize different parts of a report, you can customize the font properties for each control in the layout.
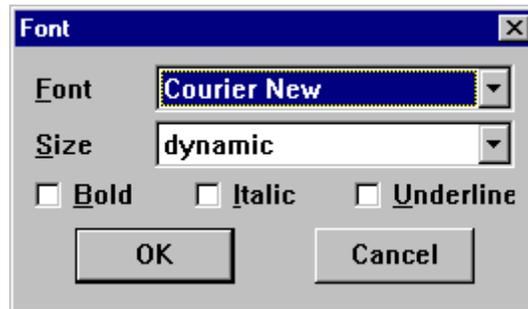
- **Font:** Choose between Courier New (a monospaced font), Arial (a proportional sans-serif font), and Times New Roman (a proportional serif font).

- **Size:** Choose "dynamic" or a specific point size.

  When you choose "dynamic," Report CE automatically sizes the type on the printed report according to the Width setting specified under **Report-Page Size**. (Refer to the topic, "Specifying Page and Dynamic Type Size," on page 136 for details.) On the other hand, when you specify a particular point size, Report CE uses that size and ignores the Page Size Width setting.

- **Bold, Italic, Underline:** You can apply any or all of these styles to the text.

**Note**

If you do not assign specific font properties to a control using the Font properties dialog box, Report CE automatically uses the default settings, which are Courier New, dynamic, with no styles.

# Viewing or Modifying Control Properties

Once you have created a control, you can change some of its properties, but not all.

The only properties you cannot change are:

- The type of control. For example, you cannot change a Label into a Column control.

- The column to which a Column control is associated.

**Note**

If you do need to change a control's type or column, delete the existing control and create a new one.

**To view and/or change the properties of an existing control:**

1 Display the control's properties using any one of the following methods:

- Double-click the control, or

- Click the control once and select **Edit-Property** from the development environment menu bar, or

- Right-click the control once.

Report CE displays the control's Properties dialog box.

2 Make any changes required, then click **OK** to close the dialog box.

**Tip**

You can change properties for several controls at once (refer to the topic, "Changing Properties for Multiple Controls," on page 103).

# Changing Properties for Multiple Controls

Using this feature, you can select two or more controls and set the position, size, font, and text color for all of them at once.

1  While pressing the Control key on the keyboard, select each control.

2  Select **Edit-Property**.

   Visual CE displays the Properties dialog box, which contains the following fields:

| Field | Description |
| --- | --- |
| Left | The horizontal position of the left side of the controls. |
| Top | The vertical position of the top of the controls. |
| Width | The width of the controls. |
| Height | The height of the controls. |
| Color | Color of type in the control |
| Font | The font, size and style of the type displayed by the controls. Click to modify. Refer to the topic, "Specifying Font Properties for a Control," on page 101 for instructions. |

**Note**

Report CE applies any changes you specify in this dialog box to all controls selected in step 1. If you want individual controls to retain their settings for some of the properties, simply leave the initial values for those properties in place.

3  Make any changes that you want to apply to ALL selected controls, then click **OK**.

# Arranging Controls on the Layout

Report CE provides several tools and methods for arranging the controls in a neat and easy-to-read format.

- Sizing Controls Manually
- Dragging Controls
- Aligning and Sizing Controls in a Group
- Sizing and Positioning Controls Precisely
- Cutting, Copying, and Pasting Controls
- Deleting Controls

# Sizing Controls Manually

You can quickly and easily modify the size and shape of the field that contains a control by dragging its outline.

If a field is too small, some of the information will be cut off in the display. If too large, the control may unnecessarily take up space that you could use for other controls.

**Note**

You can only make a control as high as the layout band or section that contains it. If necessary, increase the depth of the layout band or section before resizing the control vertically.

1  Click on the control to make it active.

Report CE displays a rectangular outline around the control. This outline defines the field that displays the control's contents.

2  Position the mouse pointer over any one of the four handles (small black boxes) on the outline, so that the pointer turns into a double-headed arrow.

999999999 999999.

3  Drag the arrow to the right (or left) to increase (or decrease) the number of characters allotted to the field. Or, if you selected one of the handles on the top or bottom of the handle, drag the arrow up or down to increase or decrease the number of lines allotted to the control.

**Note**

For instructions on resizing lines, refer to the topic, "Creating a Line Control," on page 99.

# Dragging Controls

You can quickly rearrange controls in the layout by simply dragging them into position.

**Notes**

You can drag a control only within its current layout band. If you want to move a control from one band to another, see the topic, "Cutting, Copying, and Pasting Controls," on page 109.

**To drag a single control:**

1 Click on the control to make it active.

Report CE displays a rectangular outline around the control.

2 Move the mouse pointer so that its tip is inside the outline. With the cursor still in the shape of a single-headed arrow, drag the control as desired. (Don't drag the edge of the rectangular outline with the double-headed arrow – that will change the size of the control, not its position.)

As you drag the control, notice how it seems to jump to positions rather than moving smoothly. That's because Report CE automatically "snaps" controls to an invisible grid. One vertical "notch" equals one line; one horizontal "notch," one character. This features helps you align and size the elements uniformly.

**To drag multiple controls as a group:**

Your group may include controls in different bands.

1 Press and hold the Ctrl key on the keyboard while clicking each of the controls. When you click the last one, keep the mouse button depressed. You can release the Ctrl key.

2 Drag the group horizontally and/or vertically. The position of the controls relative to one another stays the same as the group moves.

**To drag all controls in the layout as a group:**

This feature is especially useful for dragging all controls away from the left edge of the page to create a margin.

1 Select **Edit-Select All** from the menu bar.

2 Press the Ctrl key, position the pointer on one of the controls, and press the mouse button. You can release the Ctrl key, but continue pressing the mouse button. Drag the controls as desired.

# Aligning and Sizing Controls as a Group

You can use Report CE's Align Command in the Edit menu to precisely align and size selected controls relative to one another. The controls may be in different bands or sections.

1   While pressing the Ctrl key on the keyboard, click each of the controls that you want to align or size.

   **Note**

   Visual CE aligns or sizes all of the selected controls to the first control you select. The selection handles around that control have solid boxes, while the others have empty boxes.

2   Select **Edit-Align** and the alignment option you want:

| Option | Action |
| --- | --- |
| Top | Aligns the top edges of the controls. |
| Left | Aligns the left edges of the controls. |
| Right | Aligns the right edges of the controls. |
| Bottom | Aligns the bottom edges of the controls. |
| Width | Makes all selected controls the same width as the first selected. |
| Height | Makes all selected controls the same height as the first selected. |

# Positioning and Sizing Controls Precisely

As an alternative to dragging controls into place, you can position them precisely by specifying their "coordinates" in the layout. You can also specify their height and width numerically.

**Note**

You cannot make a control higher than its layout band, nor can you position it outside of its current band. Be sure to make the band deep enough to accommodate the control before resizing or repositioning it.

1  Display the Properties dialog box for the control, using one of the following techniques:

 - Double-click the control, or

 - Click the control once and select Edit-Property, or

 - Right-click the control once.

Report CE displays the control's Properties dialog box.

The fields in this box vary with the type of control, but all types use the Left, Top, Width, and Height fields. The values in these fields indicate the current position and size of the control, as follows:

| Field | Description |
| --- | --- |
| Left | The horizontal position of the left side of the control; e.g., the number of characters offset from the left edge of the page. 0 is the left-most character position. |
| Top | The vertical position of the control; e.g., the number of lines offset from the top-most line in the band or section. 0 is the top line, 1 is the second line, etc. |
| Width | The width of the control, in characters. |
| Height | The height of the control, in lines. |

2  Modify the values as desired.

# Cutting, Copying, and Pasting Controls

You can cut (or copy) and paste controls to duplicate or move a control. These options are especially useful for copying or moving a control from one band or section into another, or from one layout into another.

Cut, Copy, and Paste work with just one control at a time.

1 Select the control, then choose **Edit–Cut** or **Edit–Copy**. Alternatively, you can click the **Cut**  or **Copy**  tool button.

2 If you want to paste the control into another layout band or section, make that band or section active. Or, if you want to paste the control into another layout, open it.

3 Choose **Edit–Paste** or click the **Paste** button .

# Deleting Controls

To delete one or more controls from the layout:

1 Click the control to make it active. If you want to delete multiple controls, hold down the Ctrl key while clicking each one. If you want to delete all controls in the layout, select **Edit-Select All** from the menu bar.

2 Select **Edit-Delete** or click the **Delete** tool button  .

# Controlling Record Display

## Specifying a Filter as Part of the Layout Design

As you saw in Quick Tour I, Lesson 1, Report CE lets a user specify a record filter just before running a report.

You can create a default filter as part of the layout design. When a user runs the report, Report CE displays your default conditions in the Filter dialog box. The user can accept your default filter as is or modify it.

**More about Filters**

A filter lets you specify conditions that a record must satisfy in order for it to appear in the report. For each table in the report, you can specify one to three conditions, and you can specify whether the record must match just one, or all, of the conditions.

Each condition consists of a column name, a value, and a comparison operator that specifies how a record's value in the column must compare to the value in the filter. The filter value may be a constant or a Visual CE variable.

If your layout contains multiple tables, you can supply a filter for each table. The records displayed in the report are the result of the combination of all of the filters. When the report runs, the user has the option of modifying the filter for the top-level table only; any filters you supply for the lower-level tables are applied automatically and cannot be redefined by the user.

**To create a filter:**

1  Select **Report–Tables** from the development environment menu bar.

   The Report Tables dialog box appears.

2  Highlight the table that contains the columns you want to use for the filter, then click **Edit**.

   Report CE displays the Edit Table dialog box. The options on the dialog box vary depending upon the other tables you've selected for your layout.

3  Click the **Record Selection Criteria** button.

   Report CE displays the Filter dialog box.
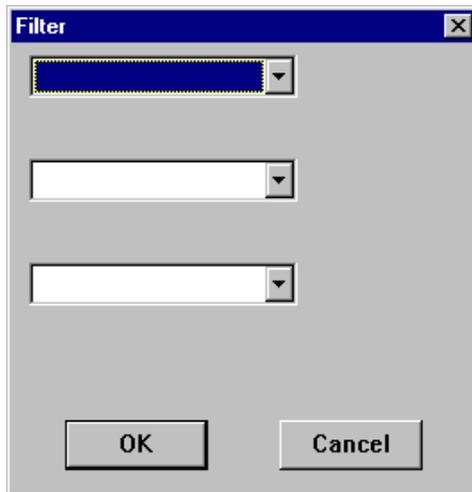
4  Specify the first condition:

- Click the drop-down arrow for the first field, and select the column that contains the data you want to compare.

- In the field that appears to the right of the column name field, select a comparison operator. Not all comparison operators are available for every type of column.

| Symbol | Comparison operator |
|---|---|
| = | Equal to |
| <> | Not equal to |
| < | Less than |
| > | Greater than |
| <= | Less than or equal to |
| >= | Greater than or equal to |
| Contains | Contains a specified text string; e.g., **contains cook** would find "John Cook," "Cooking," "Chocolate cookies," etc. |

- Specify the comparison value — either a constant or a Visual CE variable. To specify a constant, simply type it in the field. To specify a Visual CE variable, click the @ sign to the right of the field and select the variable from the list that appears.

  **Note:** Text comparisons are NOT case-sensitive.

5  If desired, add one or two more conditions in the remaining fields using the same procedure.

```
┌─────────────────────────────────────────┐
│ Filter                              [×]   │
├─────────────────────────────────────────┤
│  ┌──────────────────┐▼  ┌──────────┐▼    │
│  │ Address          │   │ contains │      │
│  └──────────────────┘   └──────────┘      │
│  ┌───────────────────────────────┐ ┌──┐   │
│  │ MA                            │ │ @│   │
│  └───────────────────────────────┘ └──┘   │
│  ┌──────────────────┐▼  ┌──────────┐▼    │
│  │ CustomerID       │   │ >=       │      │
│  └──────────────────┘   └──────────┘      │
│  ┌───────────────────────────────┐ ┌──┐   │
│  │ C03                           │ │ @│   │
│  └───────────────────────────────┘ └──┘   │
│  ┌──────────────────┐▼                    │
│  │                  │                      │
│  └──────────────────┘                      │
│                                            │
│  ⊙ Match all   ○ Match at least one        │
│     ┌──────────┐      ┌──────────┐         │
│     │   OK     │      │  Cancel  │         │
│     └──────────┘      └──────────┘         │
└─────────────────────────────────────────┘
```

6  If you supplied two or three conditions, choose one of the following:

- **Match all**  A record will be included in the report only if it satisfies **all** of the conditions
- **Match at least one**  A record will be included in the report if it satisfies **any one** of the conditions

7  Click **OK** to save your filter and close the dialog box.

8  *Optional* Repeat steps 2 through 7 to define filters for other tables in the report.

# Specifying a Sort Order as Part of the Layout Design

You can specify that records in the report be sorted by any indexed column in a table. If your layout has multiple tables, you can specify a sort order for each table.

For information about indexing columns, refer to your Visual CE or database documentation.

**Tip for Pocket Access Users:**

SYWARE offers a free utility, Index CDB, for indexing columns in Pocket Access tables. You can download a copy from the SYWARE web site at http://www.syware.com/support.

**To specify a sort order:**

1   Select **Report–Tables** from the development environment menu bar.
    The Report Tables dialog box appears.

2   Highlight a table, then click **Edit**.
    Report CE displays the Edit Table dialog box. The options on the dialog box vary depending upon the other tables you've selected for your layout.



3   Click the drop-down arrow to the right of the **Sort on** field.
    Report CE displays a list of column names for the selected table.

4   Select the column you want to use for sorting the records in the report.
    Report CE displays the name of the selected column in the sort on field.

5   Click **OK**.

# Eliminating Unused Table Headers and Footers

If you specify a header and/or footer for a table, Report CE ordinarily displays them in the report regardless of whether or not there are records in the report for them to identify. For example, in the illustration below, the Order Header ("OrderID," "CustomerID," and "OrderDate") appears under Jones Engineering and Revolution Records even though they have no orders.



You can eliminate unused headers/footers by selecting the "No header/footer if no records" option, as explained below.

**To turn off unused table headers and footers:**

1   Select **Report–Tables** from the development environment menu bar.

The Report Tables dialog box appears.

2   Highlight the desired table, then click **Edit**.

Report CE displays the Edit Table dialog box. The options on the dialog box vary depending upon the other tables you've selected for your layout.
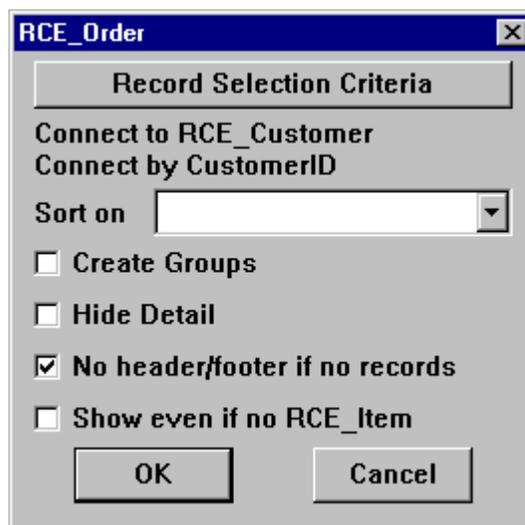
3  Click the checkbox for **No header/footer if no records** so that it is checked, then click **OK**.

The next time you display the report, the headers and/or footers will appear for the selected table only when there are records to identify.

The results for the sample report would look like this:

```
┌──────────────────┬──────────────────┬──────────────────┐
│      Print       │       Save       │      Close       │
├──────────────────┴──────────────────┴──────────────────┤
│ C06              Flying Dog Studio                    ▲ │
│                  100 Fido Lane                          │
│                  Bedford, MA                            │
│                                                         │
│      OrderID             OrderDate                      │
│      R61                 10/15/99 12:00:00 AM           │
│                                                         │
│ C02              Jones Engineering                      │
│                  23 Cedar St.                           │
│                  Nowhere, NH                            │
│                                                         │
│ C05              Revolution Records                     │
│                  100 Spin Drive                         │
│                  Boston, MA                             │
│                                                         │
│ C01              Smith Consulting                       │
│                  123 Main Street                        │
│                  Anytown, MA                          ▼ │
├─────────────────────────────────────────────────────────┤
│ ◄ │                                                 │ ► │
└──────────────────┴──────────────────────────────┴───────┘
```

# Excluding Childless Parent Records from the Report

Report CE gives you the option of excluding records that have no related records in a nested sub-table.

For example, say that the purpose of the sample report below is to show customers with orders. The customers ABC Books and Flying Dog Studio have order records; but Jones Engineering, Revolution Records, Smith Consulting, and SYWARE, Inc. do not.

```
┌─────────────────┬─────────────────┬─────────────────┐
│      Print       │       Save       │      Close       │
├─────────────────┴─────────────────┴─────────────────┤
│ C04                    ABC Books                      ▲│
│                                                        │
│     OrderID              OrderDate                     │
│     R42                  9/1/99 12:00:00 AM            │
│     R41                  5/15/99 12:00:00 AM           │
│                                                        │
│ C06                    Flying Dog Studio               │
│                                                        │
│     OrderID              OrderDate                     │
│     R61                  10/15/99 12:00:00 AM          │
│                                                        │
│ C02                    Jones Engineering               │
│                                                        │
│     OrderID              OrderDate                     │
│                                                        │
│ C05                    Revolution Records              │
│                                                        │
│     OrderID              OrderDate                     │
│                                                        │
│ C01                    Smith Consulting                │
│                                                        │
│     OrderID              OrderDate                     │
│                                                        │
│ C03                    SYWARE, Inc.                    │
│                                                        │
│     OrderID              OrderDate                    ▼│
└────────────────────────────────────────────────────────┘
```

You could limit the sample report to just customers with orders by turning off the "Show even if no [tableName]" option, as described below.

**To exclude records without dependent records:**

1  Select **Report–Tables** from the development environment menu bar.

   The Report Tables dialog box appears.

2  Highlight the parent table, then click **Edit**.

Report CE displays the Edit Table dialog box. The options on the dialog box vary depending upon the other tables you've selected for your layout.

**RCE_Customer**

Record Selection Criteria

Sort on [                    ▼]

☐ Create Groups

☐ Hide Detail

☐ No header/footer if no records

☑ Show even if no RCE_Order

[ OK ]          [ Cancel ]

3 Remove the check for **Show even if no [tableName]**, then click **OK**.

The next time you display the report, only records that have corresponding records in the nested sub-table will appear in the report.

For the sample report, the results would look like this:

| Print | Save | Close |
|---|---|---|

```
C04                 ABC Books

    OrderID             OrderDate
    R42                 9/1/99 12:00:00 AM
    R41                 5/15/99 12:00:00 AM

C06                 Flying Dog Studio

    OrderID             OrderDate
    R61                 10/15/99 12:00:00 AM
```

# Grouping Records

## Reporting Information about Groups

In addition to reporting summary information about all of the records in a table using a Table Footer band, you can also sub-divide table records into groups and report summary information for each group using a Table Group band. For example, you could find the total cost of all items for each order, the average cost of all orders for each customer, or count the number of orders for each month.

Each record is assigned to a group according to its value in a selected table column, or the result of an expression applied to its values in the record.

Summary information for each group might include, for example: total, minimum, maximum, average, and count. You can also graph the group data (refer to the section on graphs, which begins on page 124).

In the example below, we have grouped records in the tutorial's RCE_Item table by order ID, and applied sum functions to quantity and amount for each group.



Broadly speaking, you create and report on groups using these steps (explained in more detail on the following pages):

- Add the table whose records you want to group to the report layout.
- Specify a sort order for the table using the column that stores the grouping attribute.
  **Note**
  Before you can specify a sort order, the column used for sorting must be indexed in the table. For information about indexing columns, refer to your Visual CE or database documentation. For Pocket Access tables, SYWARE offers an indexing utility called Index CDB, which can be downloaded for free at http://www.syware.com/support.
- Create a calculated field control to define the grouping attribute. Typically the grouping attribute is a simple table.column reference (e.g., RCE_Item.OrderID), but you can also apply an If-Then-Else or other expression. Once you specify this "group by" control, Report CE automatically adds a Table Group band to the report layout and puts the new control in it.
- Create any additional controls you want to display for the group summary in the Table Group band.

When the report is generated, it lists the detail information for each member of the group, followed by the group summary information you specified in the Table Group band.

**Note**

If you are working on a desktop PC, the CE device must be connected throughout the following procedure.

**To report information about groups:**

1 If you have already added the table whose records you want to group to the layout, select **Report–Tables** from the development environment menu bar and go to Step 2. Otherwise, add the table following these steps:

- Select **Report–Tables** from the development environment menu bar.
  The Report Tables dialog box appears.

- Click **Add**.
  The Pick Table dialog box appears.

- Select the table containing the records you want to group, and click **OK**.
  The Select Columns dialog box appears.

- Select the columns you want to appear in the report for each group member and click **OK**.
  The Report Tables dialog box appears.

2 In the Report Tables dialog box, highlight the table containing the records you want to group, then click **Edit**.
Report CE displays the Edit Table dialog box.

3 In the **Sort on** field, select the column that contains the values that will be used to determine a record's group assignment. The "group by" values may be either the values stored in this column, or the result of an expression applied to the values stored in this column. (You will define this expression in a later step).

**Note**

This column must be indexed in the table.

4 Select the checkbox for **Create Groups** so that it is checked, then click **OK**.

**Note**

If you select **Hide Group**, records will still be grouped, but any controls you place in the Table Group band will be hidden in the report. This option is intended for use when graphing group data in column series graphs -- specifically, when you want to create the groups for graphing, but you won't want the values used to define the groups, or the summary data calculated for the group, to appear as raw data values in the report. If you select **Hide Detail**, the data values for individual records will be hidden in the report as well. Refer to the topic, "Creating Column Series Graphs" on page 125 for details.

The Calculated Properties dialog box opens.
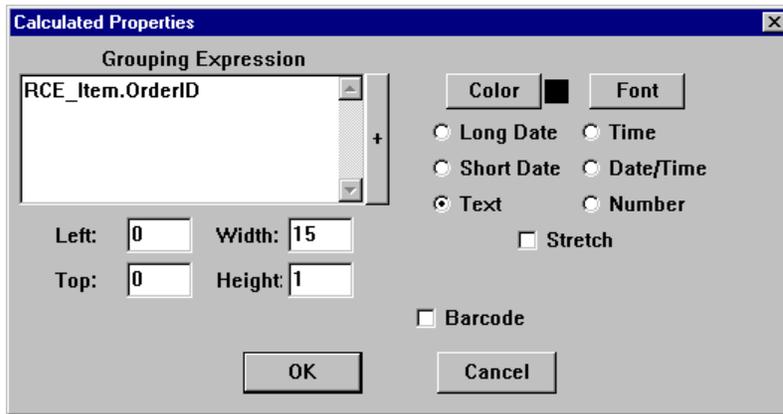


5 Use the Calculated Properties dialog box to create the control that defines the grouping attribute.

Typically, you will simply group records by their values in a selected table column. In that case, specify the column in the "Grouping Expression" box using the *table.column* convention. For example, to group records in the RCE_Item table by the OrderID column, you would enter `RCE_Item.OrderID`.

**Tip**

It is easiest to click the **+** button to the right of the Grouping Expression box and pick the table.column from the list that appears.

Alternatively, you can specify a more complex expression to calculate the grouping attribute. For example, the following expression would split the records in the RCE_Customer table into groups according to the first letter of the customer name:

```
@left(RCE_Customer.CustomerName, 1)
```

Refer to the topic, "Creating a Calculated Field Control," on page 84 for detailed instructions on creating expressions.

Complete the remaining options in the Calculated Properties dialog box as you would for any other Calculated Field control.

**Important**

Be sure that the data type you select on the right side of the dialog box (Date, Text, Number, etc.) matches the datatype of the contents of the table column or the results of the expression. If you do not specify the correct datatype, Report CE will display the message "Conversion Error" when you attempt to run the report.

6 Click **OK** to close the Calculated Properties dialog box and **Close** to close the Report Table dialog box.

Notice that Report CE has added a Table Group band to the layout. With the new "group by" control placed in it. A sample is shown below.
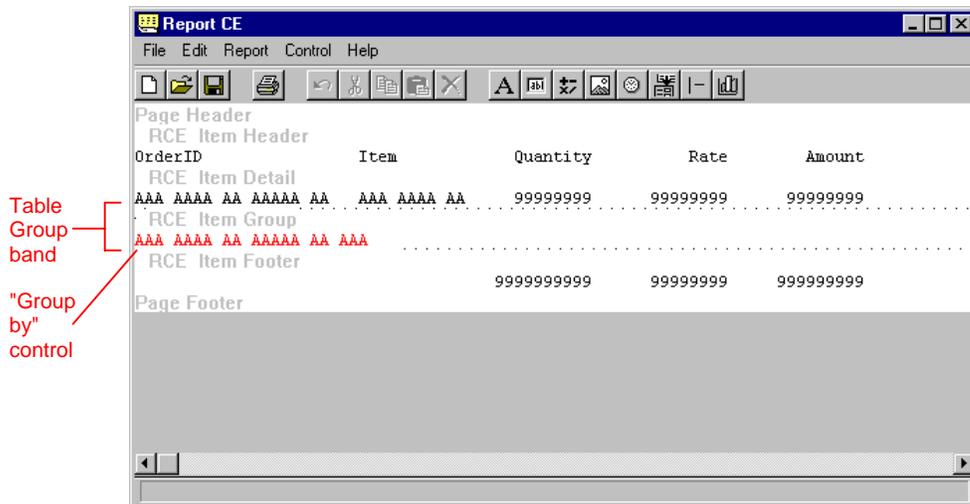
You can use **File - Print Preview** to see your new groups.



"Group by" control value

7  You can now add any summary controls you want to appear for the group in the Table Group band, just as you would for all of the table records in a Table Footer band. For example, to sum the quantities and amounts for each group, we simply copied and pasted controls from the RCE_Item Footer band into the RCE_Item Group band (see below).



Summary controls for Table Group band

Summary controls for Table Footer band

You can use **File - Print Preview** to see the group summary information.



Group summary information displayed for each group by controls in Table Group band.

# Removing Groups from a Layout

Follow these steps to remove a Table Group band from a report layout so that the records in the report are no longer grouped.

**To remove a table group band:**

1  Delete all controls from the Table Group band except the "group by" control.

2  Select **Report –Tables** from the development environment menu bar.
   Report CE displays the Report Tables dialog box.

3  Highlight the table and click **Edit**.
   Report CE displays the Edit Table dialog box for the table.

4  Click the checkbox for **Create Groups** so that it is unchecked, then click **OK**.
   The Table Group band no longer appears in the report.

# Creating Graphs

## Overview

Report CE enables you to add graphs to reports.

You can choose from four graph styles -- column, line, pie, and scatter. While a Report CE graph only displays information from a single table, the information can be displayed in many different ways, and data points can be graphed from either a *column series* or a *row series*. (Excel users will be familiar with this concept.)

### About Column Series Graphs

Column series graphs generally compare values taken from a table column. The categories along the x-axis (or pie slices) represent different records or groups, and the corresponding values plotted on the y-axis (or the sizes of the pie slices) are the values of a column from that record or group (or the value of an expression over the columns in that record or group).

| Name | Q1 | Q2 | Q3 | Q4 | Year |
|------|------|------|------|------|------|
| Fred | $12,000 | $25,000 | $19,000 | $20,000 | $76,000.00 |
| Mary | $16,000 | $14,000 | $32,000 | $15,000 | $77,000.00 |
| Janet | $26,000 | $14,000 | $10,000 | $19,000 | $69,000.00 |
| Bill | $17,000 | $16,000 | $15,000 | $13,000 | $61,000.00 |

Column Series
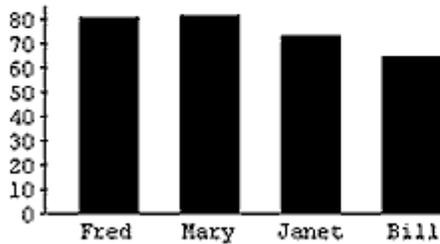
### About Row Series Graphs

Row series graphs generally compare values taken from a single record or group (e.g., row). At the time you design the report, you specify the categories for the x-axis (or the pie slices). The values plotted on the y-axis (or the size of the pie slices) for each category are the values of a column from the record or group (or values of an expression over the columns in that record or group).

Row series

| Name | Q1 | Q2 | Q3 | Q4 | Year |
|------|------|------|------|------|------|
| Fred | $12,000 | $25,000 | $19,000 | $20,000 | $76,000.00 |
| Mary | $16,000 | $14,000 | $32,000 | $15,000 | $77,000.00 |
| Janet | $26,000 | $14,000 | $10,000 | $19,000 | $69,000.00 |
| Bill | $17,000 | $16,000 | $15,000 | $13,000 | $61,000.00 |

The following two topics explain in further detail the differences between these two graph types, and how to create them.

# Creating Column Series Graphs

Column series graphs compare data values from a table column. The categories along the x-axis (or the slices of a pie chart) represent either individual records or individual groups. The data points plotted on the y-axis (or the size of the pie slices) are the values of a column for the record or group (or the value of an expression over the columns in that record or group).

Here is a sample report with a column series graph. The graph plots the yearly sales for each salesperson.
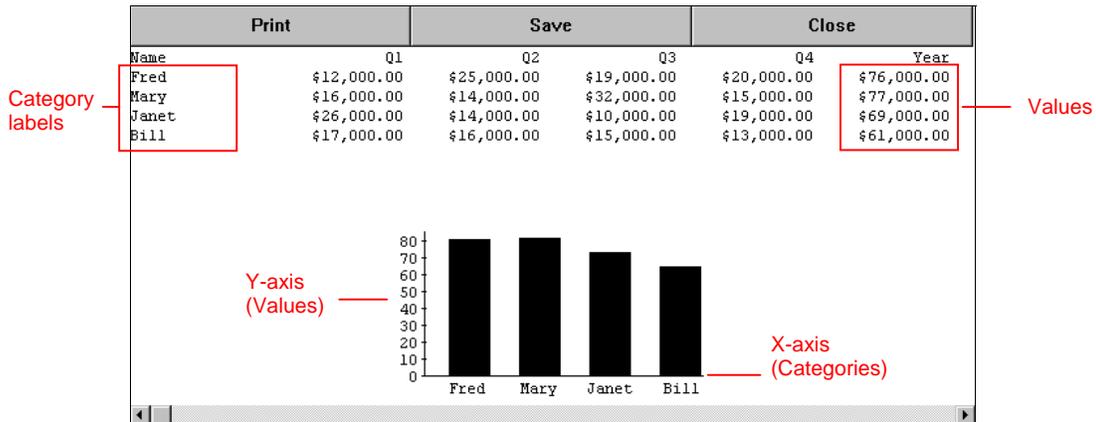


The layout used to generate the sample report is shown below.
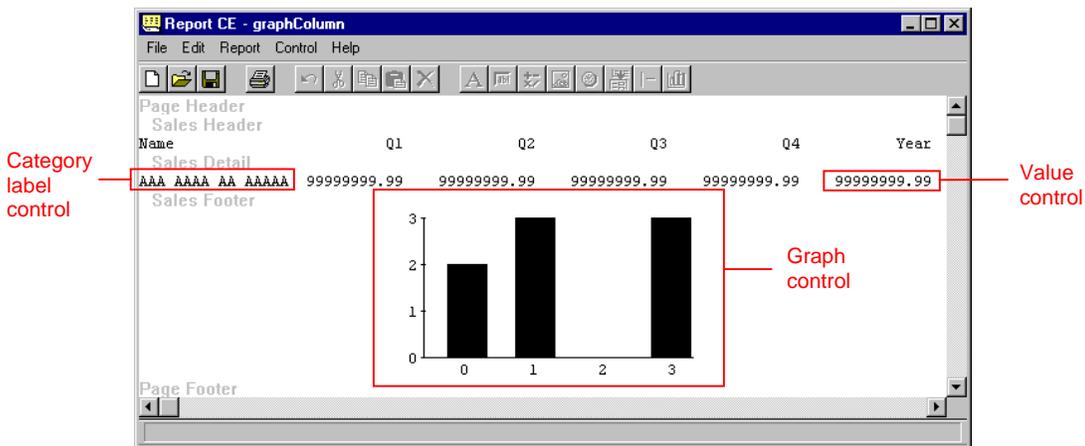


**To Create a Column Series Graph**

1  To start, you must create the controls that will provide the data to the graph.

   In a column series graph, you must supply two data controls: a **category label control** to label the categories (the elements along the x-axis or the pie slices) and a **value control** to supply the data values to be plotted on the y-axis (or to determine the sizes of the pie slices) for each element.

   **About Graphing Group Data:** In a column series graph of data in a group band, the **category label control** would most likely be the control that defines the groups (e.g., the "group by" control). The **value control** would most likely be one of the calculated field controls that returns a summary value for each group. Both controls must be in the table group band. (You may want to refer to "Reporting Information about Groups," on page 119 before creating the graph.)

   **About Graphing Individual Record Data:** If you want to graph data for individual records, you must place the data controls in the table detail band. The **category label control** should return a unique and meaningful value (label) for each record. The **value control** returns the value you want to plot for each record.

   **If you want to display the graph but not the raw data values it's plotting:** You can hide the layout band that contains the data controls, so that only the graph appears in the report. For example, in the illustration at the top of this page, if you chose to hide the Sales Detail band, the graph would appear in the report, but not the tabular values now

shown above it. To hide the raw data values in the report, select **Report – Tables**. Highlight the table that contains the data to be graphed, and click **Edit**. Select **Hide Group** or **Hide Detail**, depending upon whether you want to hide the contents of the Table Group or Table Detail band.

2   Select the table layout band in which you intend to place the Graph control.

Keep in mind that the band in which you place the Graph control determines the graph categories (the elements along the x-axis or the pie slices), as well as how many times the graph will appear in the report. As you might expect, if you put a Graph control in a table group band, the report will display one graph for each group. If you put a Graph control in the table footer band, the graph will appear once in the report.

When creating a column series graph, the data controls and the Graph control must be in different layout bands. The Graph control must be placed in a band below the band that contains the data controls, and those two bands must be from the same table.

You cannot put the Graph control in the Table Detail Band when creating a column series graph.

The following summarizes how the relative placement of a Graph control and data controls determines the graph results:

| If Graph control placed in… | If data (category and value) controls placed in… | result |
| --- | --- | --- |
| Table Group Band | Table Detail Band | Graphs data for individual records in each group; graph appears once for each group |
| Table Footer Band | Table Detail Band | Graphs data for individual records in table; graph appears once in the report |
| Table Footer Band | Table Group Band | Graphs data for individual groups; graph appears once in the report |

3   If necessary, add blank lines to the layout band to accommodate the height of the graph.

4   Select **Control – Graph** or click the **Graph** button  to place the Graph control.

Report CE places a Graph control in the selected layout band, and displays the Graph Properties dialog box.



Graph control in layout
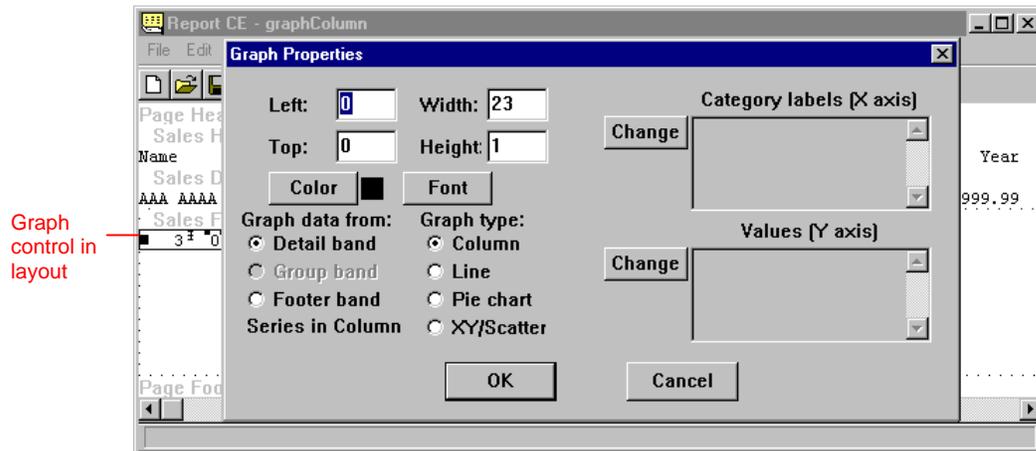
5   If desired, specify the position and size of the Graph control using the Left, Top, Width, and Height fields in the Graph Properties dialog box as summarized in the chart below. (Or, you can accept the defaults in these fields for now, and manually drag and resize the Graph control in the report layout later.)

| Field | Description |
| --- | --- |
| Left | The control's horizontal position, expressed as number of characters from the left edge of the page (0 refers to the left-most character position on the page). |
| Top | The control's vertical position, expressed as number of lines from the top of the band (0 refers to the top-most line in the band). |
| Width | The width of the control, in number of characters. |
| Height | The height of the control, in number of lines. |

6  For **Graph type** in the Graph Properties dialog box, select one of the four styles: **Column**, **Line**, **Pie chart**, or **XY/Scatter**.

7  If desired, select a color for the graph. The color options available depend upon the graph type selected:

- **For a pie chart**: Select the **Color** check box to display the slices in color. The colors are predefined in the system and cannot be changed. If you leave the Color box unchecked, the pie slices will be displayed in shades of black.

- **All other graph types**: Click the **Color** button and select a color from the palette that appears. Depending upon the graph type selected, the color will be applied to the columns or data points in the graph.

8  Click the **Font** button to specify the font, font size, and style of the graph labels. Refer to the topic, "Specifying Font Properties," on page 101 for more information

9  Under **Graph data from**, choose the table band that contains the controls that will supply data to the graph (that is, the controls you created in Step 1).

Remember, since you are graphing data from a column series, the table band you choose must be higher than the band in which you placed the Graph control. When you make your selection, report CE displays the message, "Series in Column."

If you choose the same band as the one containing the Graph control, Report CE displays the message "Series in Row." If you want to graph rows series, turn to the following topic for relevant instructions.

10  Select/change the control that labels the categories in your graph.

**Note**

If you are graphing data for groups, this is typically the "group by" control. If you are graphing data for individual records, it should be a record field (column) that contains a unique value for each record.

To select this control:

- First, click the **Change** button to the left of the **Category Labels (X axis)** box.
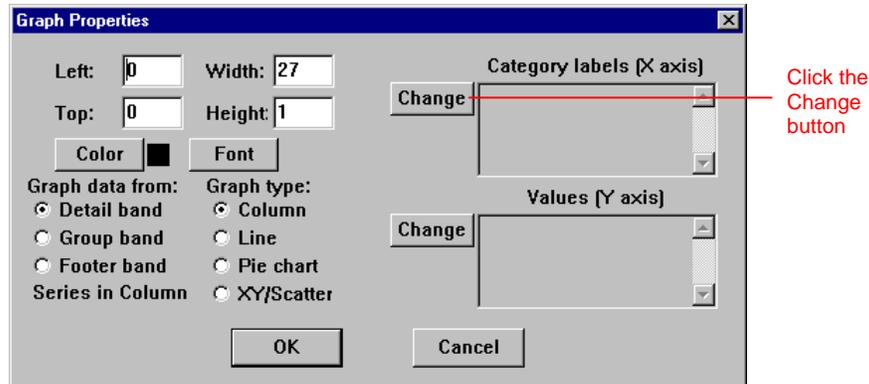


Report CE displays the instructions, "Click on a Control to Graph" in the lower right corner of the Graph Properties dialog box.

- Next, *in the report layout itself* (not the dialog box), click the control that will provide the category labels. If you select a control that cannot be used for some reason, Report CE beeps a warning.
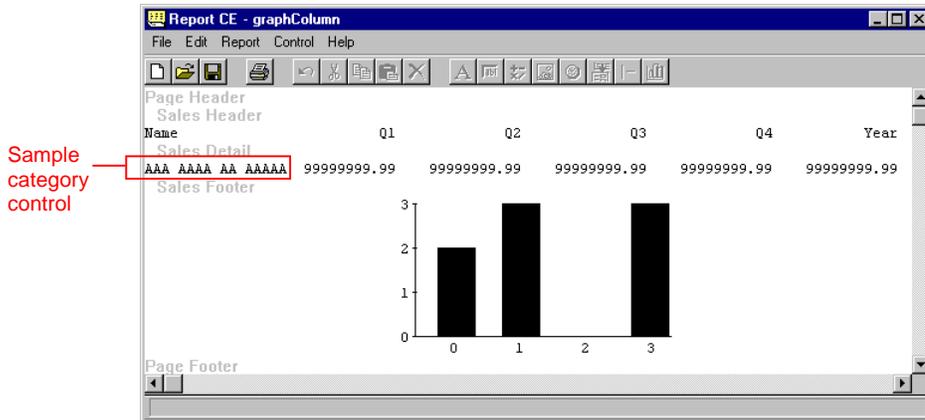
In the "Category labels (X axis)" box, Report CE displays the expression that returns values for the selected control.



Expression contained in category label control
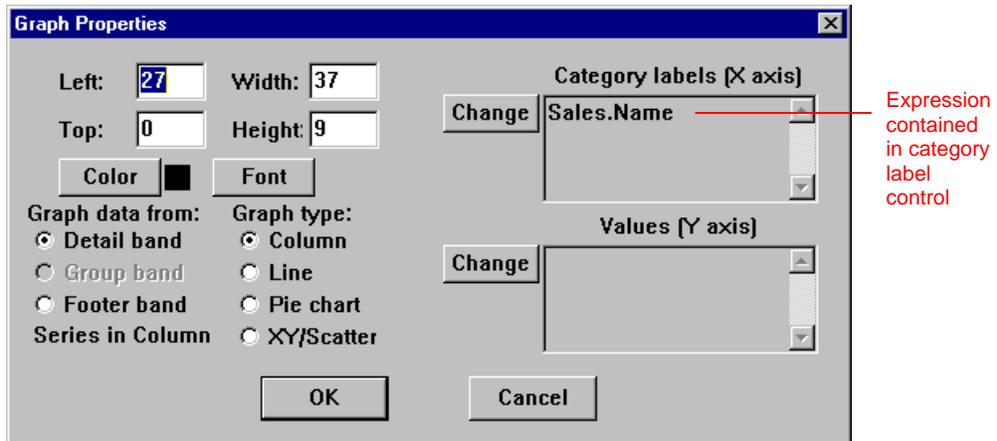
11  Select/change the control that returns the values to be plotted along the y-axis (or determines the size of the pie slices):

- First, click the **Change** button to the left of the **Values (Y axis)** box. Report CE displays the instructions, "Click on a Control to Graph."

- Next, in the report layout itself (not the dialog box), click the control that will supply the data values you want to graph for the records or groups.
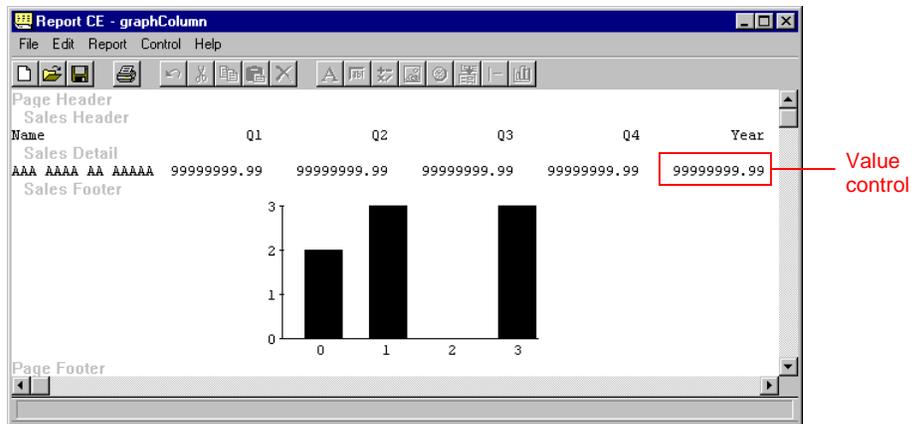


Value control

In the "Values (Y axis)" box, Report CE displays the expression that returns values for the selected control. If the selected control cannot be used, Report CE beeps a warning instead.



Expression contained in value control
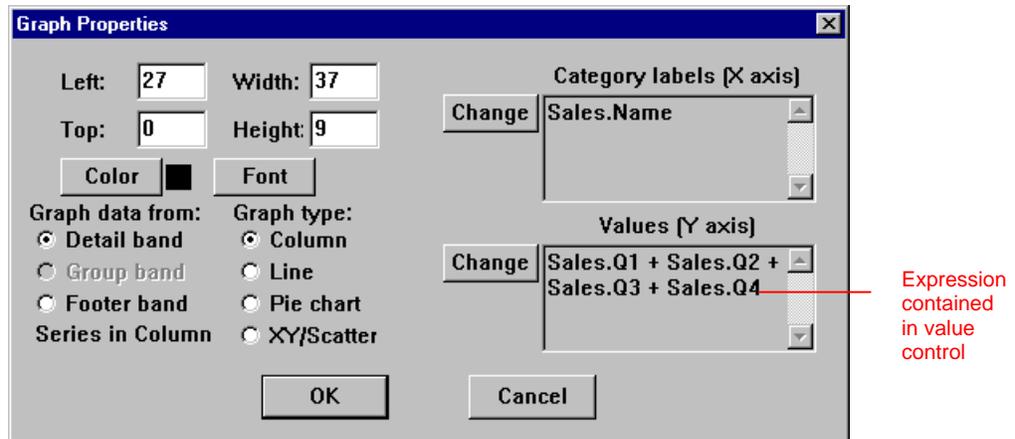
12  Click **OK** to close the Graph Properties dialog box.

13  Drag the Graph control to the desired position, and resize it to accommodate the contents of your graph.
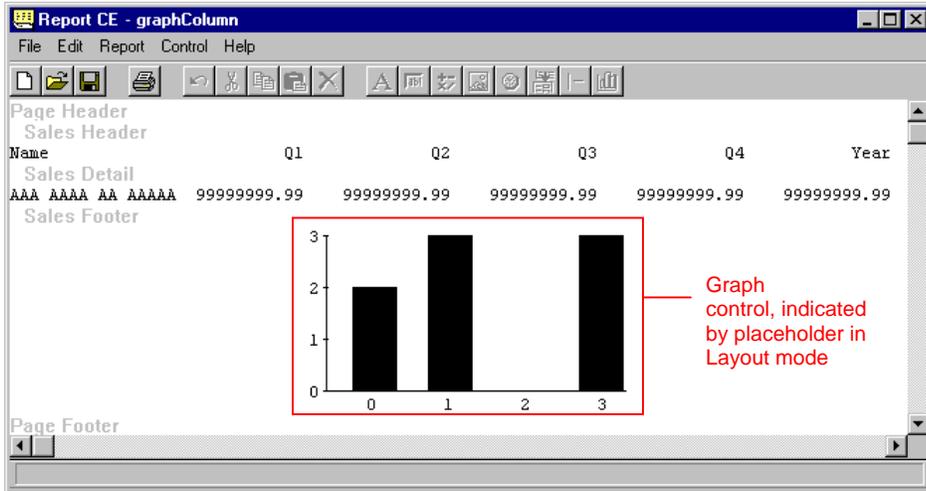


In layout mode, the Graph control is indicated by a placeholder that shows the type of graph only.

To view the graph with your data, select **File - Print Preview**.
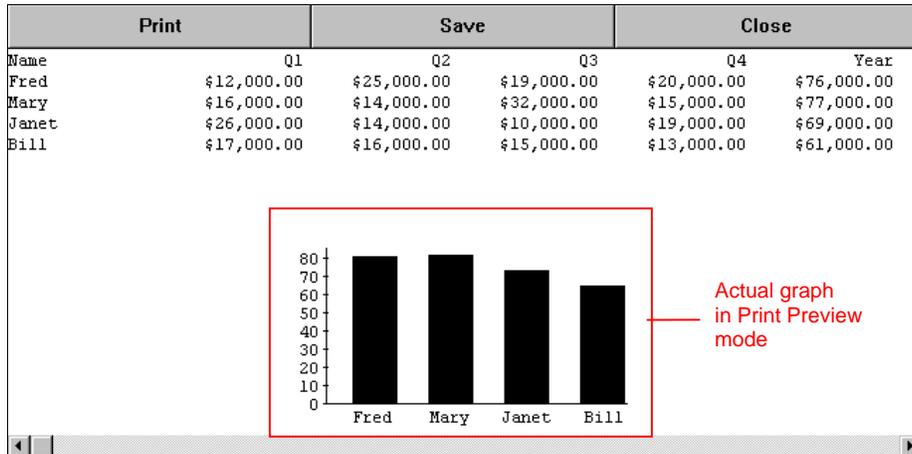
# Creating Row Series Graphs

Row series graphs compare data values in the same layout band.

The x-axis categories (or the slices in a pie chart) are specified at the time you design the report. The y-axis data points (or the sizes of the pie slices) are values from the layout band.

The sample report shown below includes row series graphs. In this example, there is one graph for each record in the report. Each graph compares the quarterly sales for one salesperson.
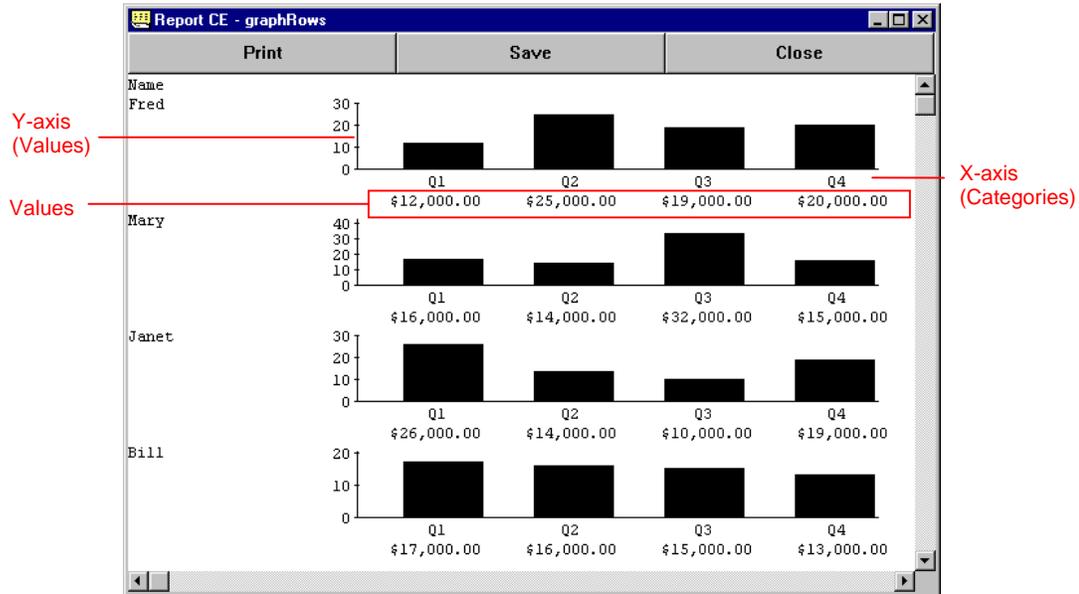


The layout used to generate the sample report is shown below.
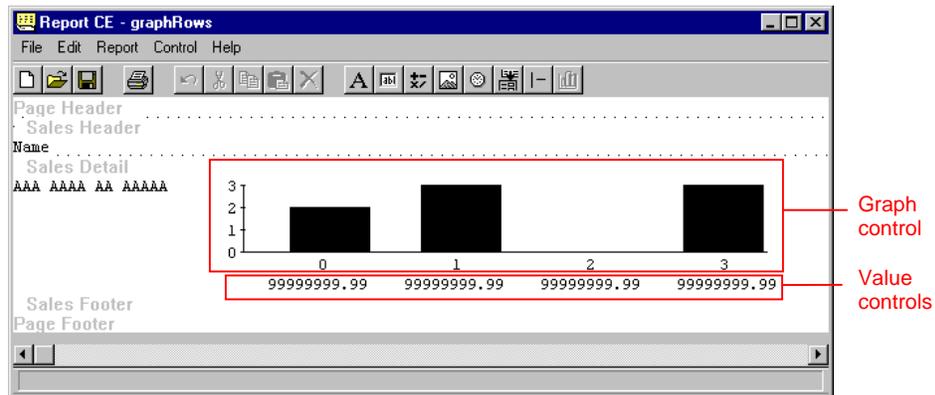


**To Create a Row Series Graph**

1 To start, you must create the value controls that will provide the data to the graph. For example, if you want to graph Q1 sales, you must have a column control that returns Q1 sales values.

   Supply one **value control** for each element that you want to appear along the x-axis (or each pie slice). It will provide the data that will determine the y-axis value (or the size of each pie slice).

   - If you want to graph data for individual records, put the value controls in the Table Detail Band. The report will display one graph for each record in the table (as illustrated in the sample report shown above.)

   - If you want to graph data for groups, put the data controls in the Table Group Band. The report will display one graph for each group in the table.

   - If you want to graph summary data for all records in the table, put the data controls in the Table Footer band.

2  Select the layout band in which you intend to place the Graph control. This must be the same layout band that contains the value controls from Step 1.

Remember, the layout band selection determines the number of times the graph appears in the report, as illustrated in the chart below:

| If value and Graph controls placed in… | result |
| --- | --- |
| Table Detail Band | Graphs data for individual records in the table; graph appears once for each record |
| Table Group Band | Graphs summary data for all records in the group; graph appears once for each group |
| Table Footer Band | Graphs summary data for all records in the table; graph appears once in the report |

3  If necessary, add blank lines to the layout band to accommodate the height of the graph.

4  Select **Control – Graph** or click the **Graph** button .

Report CE places a Graph control in the selected layout band, and displays the Graph Properties dialog box.
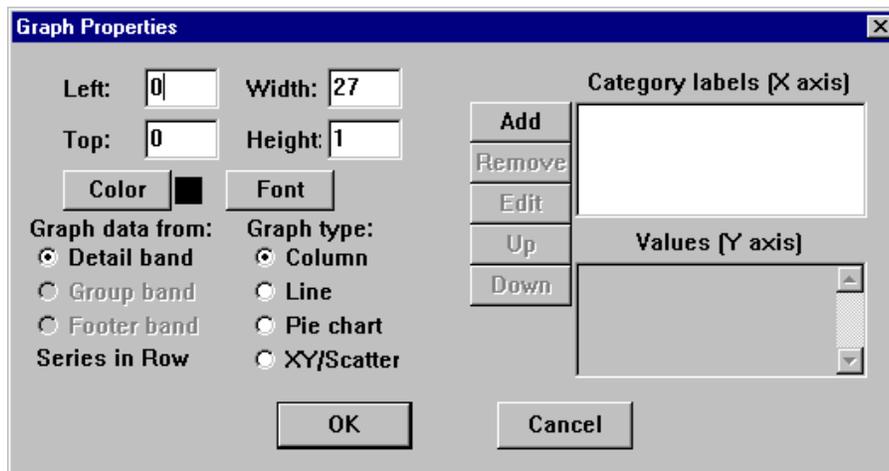


5  If desired, specify the position and size of the Graph control using the following fields (or, you can accept the defaults in these fields for now, and manually drag and resize the graph in the report layout later):

| Field | Description |
| --- | --- |
| Left | The control's horizontal position, expressed as number of characters from the left edge of the page (0 refers to the left-most character position on the page). |
| Top | The control's vertical position, expressed as number of lines from the top of the band (0 refers to the top-most line in the band). |
| Width | The width of the control, in number of characters. |
| Height | The height of the control, in number of lines. |

6  Under **Graph type**, select one of the four styles: **Column**, **Line**, **Pie chart**, or **XY/Scatter**.

7  If desired, select a color for the graph. The color options available depend upon the graph type selected:

   - **For a pie chart**: Select the **Color** check box to display the slices in color. The colors are predefined in the system and cannot be changed. If you leave the Color box unchecked, the pie slices will be displayed in shades of black.

   - **All other graph types**: Click the **Color** button and select a color from the palette that appears. Depending upon the graph type selected, the color will be applied to the columns or data points in the graph.

8  Click the **Font** button to specify the font, font size, and style of the graph labels. Refer to the topic, "Specifying Font Properties," on page 101 for more information.

9  Under **Graph data from**, choose the table band containing the controls that will supply data to the graph (that is, the controls you created in Step 1).

Remember, since you are graphing data from a row series, the table band you choose must be the same band in which you placed the Graph control. When you make your selection, Report CE displays the message, "Series in Row."

If you choose a band other than the one containing the Graph control, Report CE displays the message "Series in Column." If you want to graph column series, turn to the previous topic.

10  Select the controls that will supply the data to your graph:

- First, click the **Add** button to the left of the **Category Labels (X axis)** box. Report CE displays the instructions, "Click on a Control to Graph" in the lower-right corner of the dialog box.
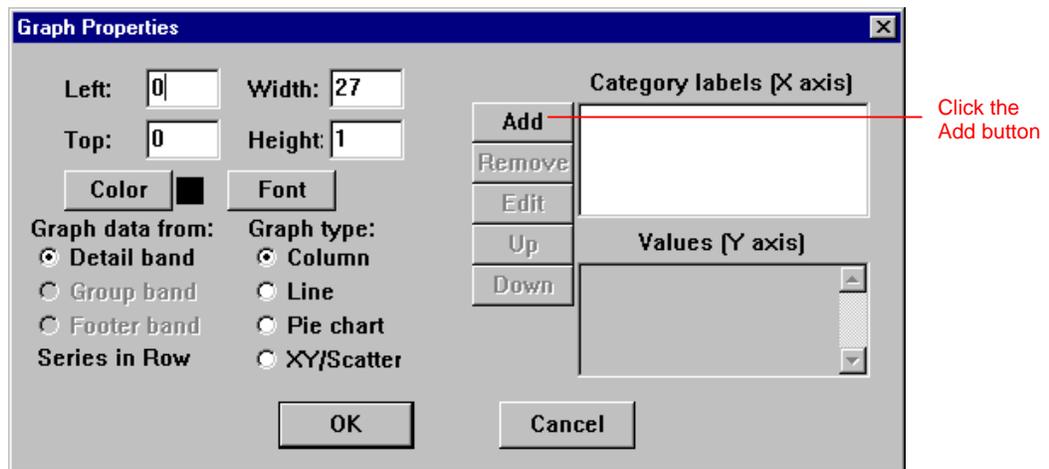


- Next, in the report layout itself (not the dialog box), click the control that will return the value for the first element on the x-axis (or the first pie slice). If you select a control that cannot be used, Report CE beeps a warning.
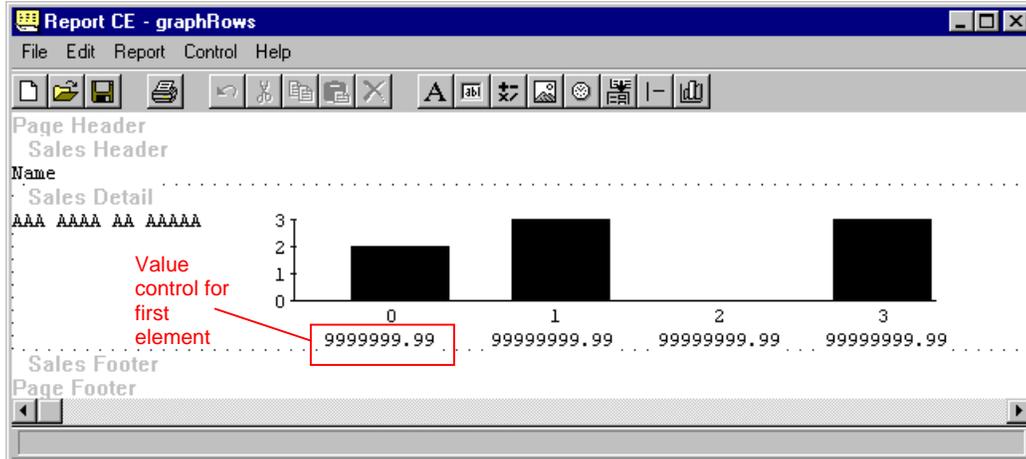


- Report CE displays the **Graph Item** dialog box. Type a label for the element or pie slice, and click **OK**.
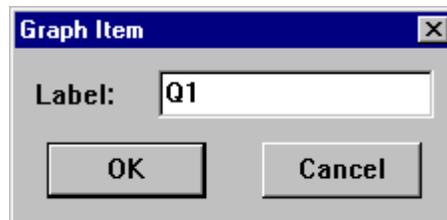


In the "Values (Y axis)" box, Report CE displays the expression that returns values for the selected control.

Expression contained in first value control
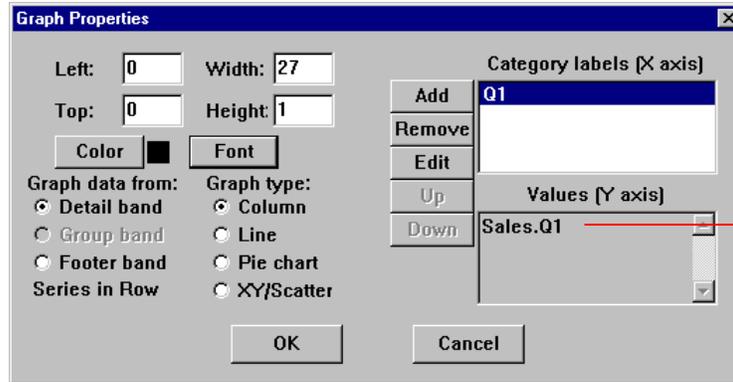
- Click **Add** and repeat the steps above for each element you want to appear in the graph.

- If you change your mind about an element you have added to the graph, select it in the "Category labels (X axis)" box and click one of the following buttons:

  **Remove:** Delete element from the graph.

  **Edit:** Revise the label for the element.

  **Up:** Shift element to the left on the x-axis.

  **Down:** Shift element to the right on the x-axis.

11  Click **OK** to close the Graph Properties dialog box.

12  Drag the Graph control to the desired position, and resize it to accommodate the contents of your graph.



Graph control, indicated by placeholder in Layout mode
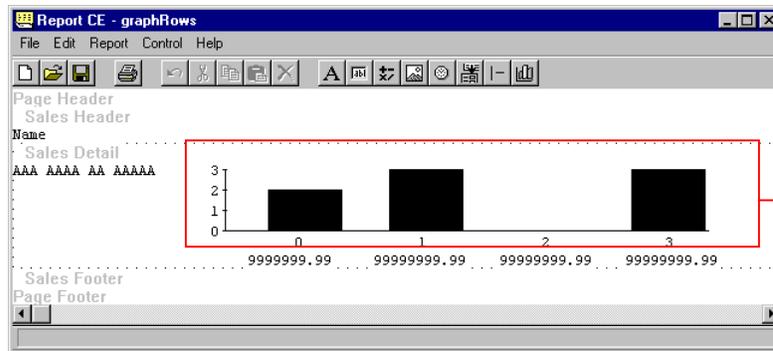
In layout mode, the Graph control is indicated by a placeholder that shows the type of graph only.

To view the graph(s) with your data, select **File - Print Preview**.
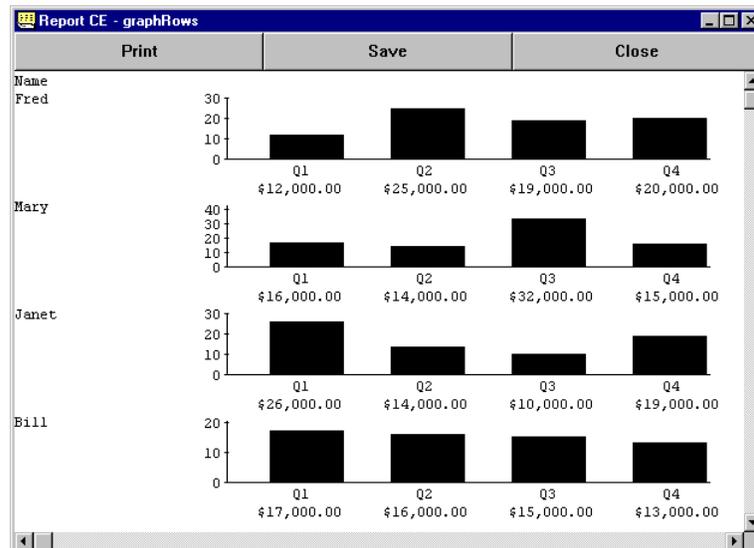


Actual graphs of data in Print Preview mode

# Viewing, Saving, Printing, and Emailing in Print Preview Mode

## Viewing Your Layout in Print Preview Mode

At any point while you are creating your layout, you can preview how it looks with data in it. In addition, you can apply any of the features of the Print Preview window.

1  Select **File-Print Preview** from the development environment menu bar.

   Report CE opens the Print Preview window. This window shows how your report will look.

2  To return to layout mode, click **Close**.

**Tip**

   To learn more about the features of the Print Preview window, refer to the section, "Running, Printing, Saving, and Emailing Reports," beginning on page 143.

# Printing, Saving, and Emailing Reports from the Development Environment

You can print a paper copy of a report, save it to a plain text (.txt) or Rich Text Format (.rtf) file, and (if you are working on a CE device) compose an email letter with the report as an attachment—all without leaving the development environment.

**To print a paper copy:**

1  Select **File-Print** from the development environment menu bar.

The Windows Print dialog box appears.

2   Set the print options and properties as desired, and click **OK**.

**To save to a file:**

1  Select **File-Print to File** from the development environment menu bar.

The Save As dialog box appears.

2   Specify a file name and type (either .txt or .rtf) and save it to a location of your choosing. Click **OK**.

**To email:**

Note: The email option is available on the handheld version of the development environment; not on the desktop PC version.

1  Select **File-Email** from the development environment menu bar.

The Email Report dialog box appears.

2  Complete the fields to address and compose the email; and select a file format for the attached report, either plain text (.txt) or Rich Text Format (.rtf). Click **OK**.

Report CE exports the report to a file, attaches it to the email letter, and puts the letter and attachment in your Pocket Outlook Outbox, ready for sending.

For more details about emailing, refer to the topics, "Saving Email Defaults with the Layout" on page 139  and "Emailing a Report" on page 150.

# Formatting for Print

## Specifying Page and Dynamic Type Size

Report CE prints the report according to the page size, orientation, and other print properties that you specify in the Windows Print dialog box, the same as any other application. (The Print dialog appears automatically whenever you ask Report CE to print a report.)

In addition, Report CE gives you control over how many characters across and how many lines down it prints per page.

**Note**

> You can use these settings to determine type size—the larger the number, the more information per page, but the smaller the type. However, these setting are active only when you have used the default Font size, "dynamic." (Refer to the topic, "Specifying Font Properties for a Control, on page 101 for details.) If you assigned a particular font size to a control using its Edit Properties dialog box, that size overrides the Width and Height settings described here.

1 Select **Report-Page Size** from the development environment menu bar.

Report CE displays the Page Size dialog box. This box enables you to fit your layout to the printed page.

```
┌─────────────────────────────────────────┐
│ Page Size                            [X] │
│                                          │
│  Width: [111]    Height: [52]            │
│                                          │
│        [   OK   ]    [  Cancel  ]        │
└─────────────────────────────────────────┘
```
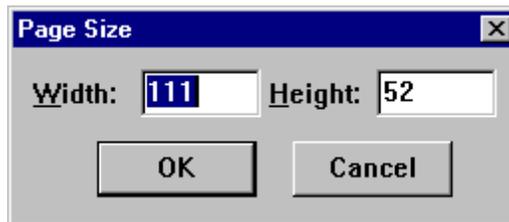
2 Specify the settings as desired:

- **Width** – Specify the number of characters that Report CE fits across the width of the page. Assuming that you have used the default type size "dynamic," this setting determines type size: the larger the number, the more information per page, but the smaller the type. Report CE ignores this setting if you have assigned specific sizes to the type.

- **Height** – Specify the number of lines Report CE prints per page. Assuming that you have used the default type size "dynamic," this setting determines type size: the larger the number, the more information per page, but the smaller the type. Report CE ignores this setting if you have assigned specific sizes to the type.

The default settings, 111 characters by 52 lines, yield comfortably sized type on letter-sized paper in portrait mode.

3 Click **OK**.

On screen, the type size remains the same and Report CE resizes the white area that represents the page. But when you print the report, the paper size stays the same and the type prints proportionally larger or smaller.

# Printing One Record Per Page

As you learned in the previous topic, Report CE prints the number of lines you specify per page, then starts a new page if there are more lines in the report.

Alternatively, you can specify that Report CE begin a new page for each record. If your report uses multiple tables, this feature applies just to records in the top-most table.

■ Select **Report-One Per Page** from the development environment's menu bar.

Report CE places a checkmark next to the menu option to indicate that it is active. This feature toggles on and off. To turn it off, remove the checkmark by selecting **Report-Once Per Page** again.

# Inserting Page Numbers in the Report

The @page function automatically numbers each page in the report, beginning with 1. The @pagecount function returns the total number of pages in the report. You can insert either function in the report's page header or page footer using a Calculated control.

1  Select the layout band in which you want to insert the page number and/or page count. If necessary, add a line (vertical space) to the layout band to accommodate the control(s).

2  Select Control-Calculated field or click the **Calculated Field** button .

   Report CE displays the Calculated Properties dialog box.

3  Select a page function as follows:

   ▪ Click the **+** button to the right of the Expression field
     A drop-down list of choices appears

   ▪ Select the function **@page** to number each page, or **@pagecount** to display the total number of pages in the report

   ▪ Click the **+** button to close the drop-down list

4  Click **OK** to close the Calculated Properties dialog box.

5  Size and drag the control to the desired location.

# Setting Email Defaults

## Saving Email Defaults with the Layout

You can save default values for email recipient and title with the layout. That way, when a user runs the report and selects the email option, the default values are already supplied.

**To save default email values with the layout:**

1  Select **Report-Email Defaults** from the development window menu bar.

   Report CE displays the Email Defaults dialog box.
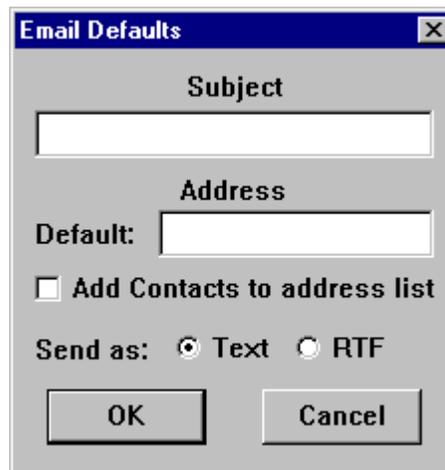


2  Complete the options as desired (it is not necessary to fill in all values):

   - **Subject:** Report CE uses your entry here as the default value for the email letter's subject label and the filename for the attachment (the exported file containing the report).

   - **Default Address:** Type the default email address.

   - **Add Contacts to address list:** If you select this option, Report CE automatically displays email addresses stored in the host computer's Pocket Outlook Contacts program in a pick-list.

   - **Send as:** Select the file format for the attachment.

3  Click **OK**.

When you save the report layout, the default values are saved as a part of it.

# Saving and Downloading Report Layouts

## Saving a Report Layout

Once you've created your report layout, you can save it for future modification and use, and (if you are working on the desktop PC) for downloading to the CE device. It's also a good idea to save the layout periodically as you work, to protect against loss should your system crash.

**To save the layout:**

1  Select **File-Save** from the development window menu bar or click the **Save**  tool button.

   If this is the first time you have saved the layout, Report CE displays the Save dialog box.

2  Name the file and save it to the desired location. Be sure to keep the .RCE extension!

   Report CE saves the layout in an .RCE file. You can now run a report from this file by opening it directly (e.g., opening

   it from the Windows Start menu, or by double-clicking its icon  ). Or, you can open it in the Report CE Development Environment for modification.

# Downloading a Report Layout to the CE Device from the Desktop PC

When you have completed the layout and saved it to your desktop PC (using the **File-Save** command), download it to the CE device. Downloading causes Report CE to save the layout on the CE device, where you can run it.

1  Select **File-Download**.

    Report CE displays the Save dialog box.

2  Name the file and save it to the desired location. Be sure to keep the .RCE extension!

    You can now run the report outside of the Report CE Development Environment using any of the instructions in the following section, "Running, Printing, Saving, and Emailing Reports," beginning on page 143.

# Distributing Report Layouts

## Creating Distribution Files (Visual CE Enterprise and Report CE Pro Editions Only)

If you purchased the Report CE Pro or Enterprise Edition, SYWARE grants you the right to distribute reports that you created to third-parties. The Report CE Personal Edition license does not allow redistribution.

Using the Distribution Files Wizard that is part of the Enterprise and Pro Editions, you can quickly and easily create a complete set of installation files for your users – including not only the report layout, but also any embedded images such as a logo, and a setup.exe. You can distribute these files to your users on a CD or other media. To install your report on their CE device and desktop PC, all your users have to do is connect the two machines and run setup.exe on the PC.

**To create an installation disk or CD for your users using the Distribution Files Wizard:**

1   Connect your CE device to your desktop PC.
2   Open the Report CE development environment on your desktop PC: Click the Windows **Start** button, then select **Programs-Report CE-Report CE**.
3   Select **File – Create Distribution Files**.

Report CE displays the Distribution Files Wizard.
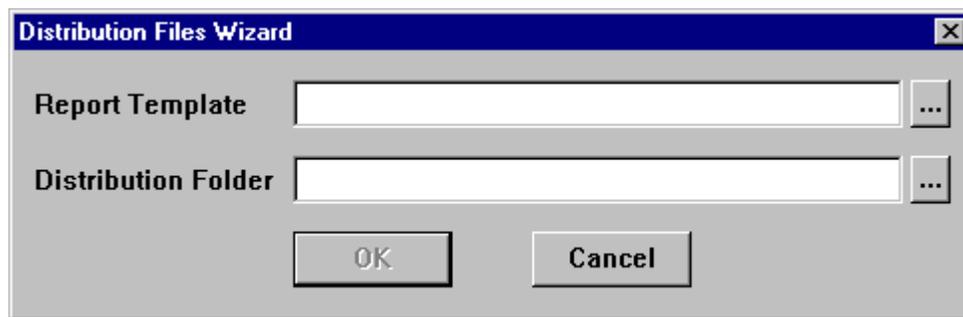


4   Click the Browse button [...] for **Report Template**, and navigate to the folder on the CE device that contains the report layout (.rce file). Select the layout and click **OK**.

5   Click the Browse button [...] for **Distribution Folder**.

Report CE displays the Save As dialog box. Navigate to – or create – a folder on the desktop PC where Report CE will put the installation files. To create a new folder now, navigate to the place in your file system where you want the new folder, click the New Folder Icon [icon] in the Save As dialog box, name the folder, and finally double-click the folder to open it. Once you have opened the desired folder, click **Save**.

6   After a short time, Report CE displays the message, "Creation of distribution files complete."
7   To create an installation disk for your users, simply copy the contents of the folder that you specified in Step 5 to a CD, disk, or other media.

**To install your application, your users need only:**

1   Connect the CE device and desktop PC.
2   Insert the CD in the drive (or copy the installation folder onto the PC hard drive).
3   Run setup.exe.

# Running, Printing, Saving, and Emailing Reports

## Overview

If you took Quick Tour 1, you already know how to use reports. This section provides reference information for running, printing, saving, and emailing reports.

- Running a Report
- Filtering Records
- Browsing a Report in the Print Preview Window
- Printing a Report
- Saving the Report to a File
- Emailing a Report
- Running a Report CE Layout with mEnable
- Running a Report from a Visual Basic or C/C++ Application

# Running a Report

You run a report by simply launching its .rce file. You can run a report on the CE device or the desktop PC.

**To run a report:**

1  This step varies depending upon the type of computer you're using:

   ■ **CE device:** Click the Windows **Start** button, then select **[layout name]**.

   ■ **Desktop PC** (must be connected to the CE device where the tables are stored): Use Windows Explorer to navigate to the .RCE file containing the layout. It is identified with the layout name and the Report CE icon

   

   .

   ■ **With an mEnable connection:** Refer to the topic, "Running a Report CE Layout with mEnable," on page 151.

   Report CE opens the report layout in the background and the Define Filter dialog box in the foreground. The filter may be empty, as shown below; or a default set of conditions may have been specified as part of the layout design.
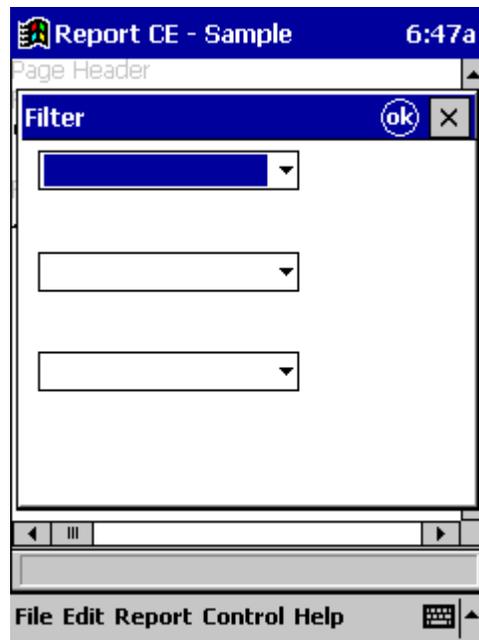


2  Modify the filter conditions using the instructions in the topic, "Filtering Records" on page 145, or accept the conditions as displayed. Click **OK**.

# Filtering Records

The filter lets you specify a set of conditions that a record must satisfy in order for it to appear in the report.

You can specify one to three conditions, and you can specify whether the record must match one, or all, of the conditions.

Each condition consists of a column name, a value, and a comparison operator that specifies how a record's value in the column must compare to the value in the filter. The filter value may be a constant or a Visual CE variable.

1 Click the drop-down arrow to the right of the first field in the Filter dialog box.

Report CE displays a list of table columns.
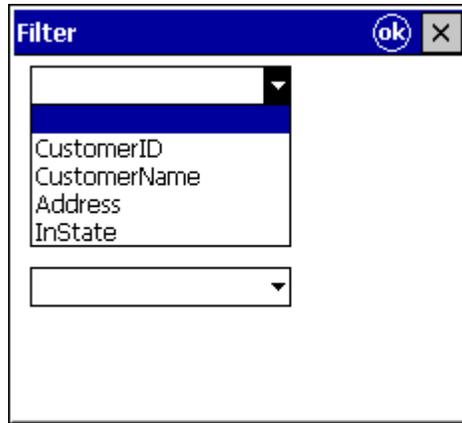


2 Specify the first condition:

- From the drop-down list, select the column that contains the data you want to compare.

- In the field that appears to the right of the column name field, select a comparison operator. Not all comparison operators are available for every type of column.

| Symbol | Comparison operator |
| --- | --- |
| = | Equal to |
| <> | Not equal to |
| < | Less than |
| > | Greater than |
| <= | Less than or equal to |
| >= | Greater than or equal to |
| Contains | Contains a specified text string; e.g., **contains cook** would find "John Cook," "Cooking," "Chocolate cookies," etc. |

- Specify the comparison value — either a constant or a Visual CE variable. To specify a constant, simply type it in the field. To specify a Visual CE variable, click the @ sign to the right of the field and select the variable from the list that appears.

    **Note:** Text comparisons are NOT case-sensitive.
    .

3 If desired, add one or two more conditions in the remaining fields using the same procedure.

4 If you supplied two or three conditions, choose one of the following:

- **Match all**  A record will be included in the report only if it satisfies **all** of the conditions
- **Match at least one**  A record will be included in the report if it satisfies **any one** of the conditions

5 Click **OK** to save your filter and close the dialog box.
Report CE begins running the report and, in just a short while, displays the results in the Print Preview window.

# Browsing the Report in the Print Preview Window

The Print Preview window lets you view a report on screen. If the report is too large to see all at once, you can use any of the following to bring the hidden portions into view:

- the window's horizontal and vertical scroll bars
- the rocker switch on the CE device
- the Arrow keys on the soft keyboard.
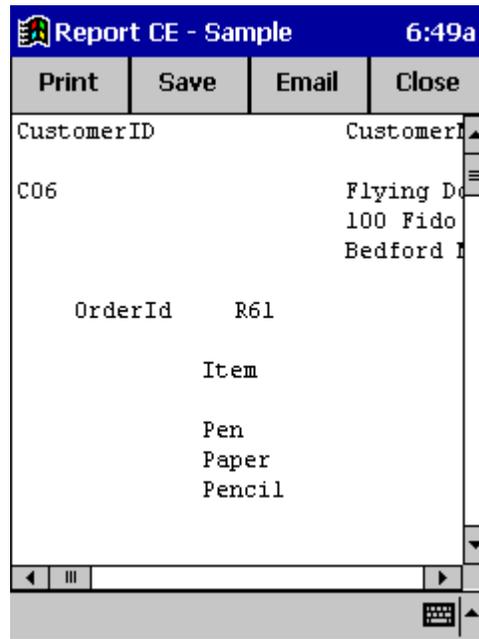


The window provides four buttons:

- **Print** Prints a paper copy of the report
- **Save** Saves the report to a file
- **Email** Attaches a copy of the report to an email letter, which you can address and place in your Pocket Outlook outbox without leaving the Print Preview window.
- **Close** Closes the report file

# Printing the Report

**To print a report:**

1  Click the **Print** button at the top of the Print Preview window.
   The Windows Print dialog box appears.

2  Set the options as desired and click **OK**.
   Report CE sends the report to your printer.

# Saving a Report to a File

When you run a report, the results reflect the current contents of the tables. The next time you run it, the results will be different if the contents of the tables have changed. Report CE does not automatically save a report when you run it.

However, before you close the Print Preview window, you can easily save a copy of the currently-displayed report to a plain text (.txt) or Rich Text Format (.rtf) file. You can then open the file in Notepad, Word, or other text editor or word processor for later reference or additional manipulation.

1 Click the **Save** button at the top of the Print Preview window.

Report CE displays the Save As dialog box.

2 Specify a file name and type (either .txt or .rtf) and save it to a location of your choosing. Click **OK**.

# Emailing a Report

If your CE device is set up to send email, you may want to take advantage of Report CE's automatic link with Pocket Outlook. Report CE not only opens a window in which you can write and address your message, but also automatically puts the letter in your Pocket Outlook outbox and attaches a copy of the currently-displayed report. The attachment that Report CE creates is identical to the file that would be exported if you clicked the Save button at the top of the Print Preview window.

**Note**

This feature is available in the version of Report CE that runs on CE devices, not desktop PCs.

1  Click the **Email** button at the top of the Print Preview window.

Report CE displays the Email Report dialog box.
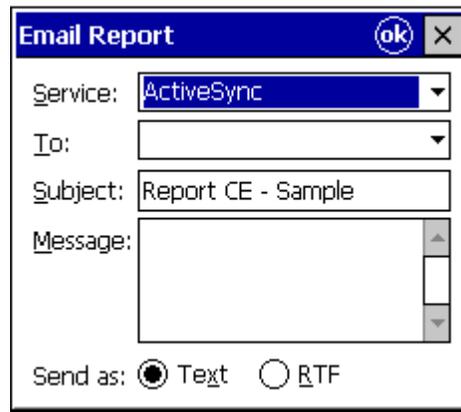


2  Complete the dialog box.

Some of the fields may already be filled in with default values supplied by the layout's designer (see page 139 for instructions on instructions on creating default values). You can use the default values as is, or change them as desired:

- **Service:** Select the service you wish to use to send outgoing mail. **Note:** If you have not already set up an email service, refer to the documentation that came with your CE device or computer.

- **To:** Type or select the email address of the recipient.  (If you have email addresses stored in the Outlook Contacts program and the "Add Contacts to address list" is selected in the Email Defaults dialog box, described on page 139, Report CE automatically displays them in the drop-down list.)

- **Subject:** You can leave the value supplied by Report CE, or type your own. Report CE uses your entry here as both the Subject label for the email and the filename for the attachment (the exported file containing the report).

- **Message:** Type the text you want to appear in the email.

- **Send as:** Select the file format for the attachment

3  Click **OK**.

Report CE displays a message indicating that your email letter has been placed in the Pocket Outlook outbox.

4  Click **OK** to acknowledge the message.

If you open Inbox on your CE device or computer, you'll see that Report CE has placed the letter in your outbox, ready for sending.

# Running a Report CE Layout with mEnable

**Notes**

- This topic applies to mEnable users only.

- mEnable can be used with any edition of Report CE.

mEnable makes it possible to run a Report CE layout (.rce file) on a client device against tables on a remote server, in real time over a wired or wireless connection.

In order to use Report CE with mEnable, you must have set up a File DSN to identify the ODBC data source, as described in the topic, "Preparing to Create a Layout for an mEnable Database," on page 66.

While you are using Report CE with a live mEnable connection, the mEnable Server software must be running on the server computer. Refer to the *mEnable User's Guide* for instructions.

Otherwise, every aspect of running a Report CE report with an mEnable connection is the same as running it without.

# Running a Report from a Visual Basic or C/C++ Application

If you launch a Report CE layout from a Visual Basic or C/C++ application (using ShellExecuteEx or CreateProcess), you can use optional switches on the command line.

Supply the switches using the following command syntax (where **/s** is one of the switches described below):

> ReportCE.exe **/s**argument layout_name.rce

You can supply multiple switches per command; for example:

> ReportCE.exe /einfo@syware.com /f13345 MyReport.rce

Nine switches are available:

**/e**email_address

Sets the default email address for the layout. This switch overrides the default address set using the **Report-Email Defaults** command in the Report CE Development Window. (For more information, refer to the topic, "Saving Email Defaults with the Layout," on page 139).

For example:
ReportCE.exe /einfo@syware.com MyReport.rce

**/eq**email_addresss

Automatically attaches a copy of the report to an email letter addressed to *email_address*, and puts the letter in the Pocket Outlook outbox -- all without displaying the "Email Report" dialog box to the user.

**/f**filtervalue

Restricts the report to just those records that have *filtervalue* stored in the "sort on" column in the top-level table of the report. (For information about designating the sort column, refer to the topic, "Specifying a Sort Order as Part of the Layout Design," on page 114.) If the filter value contains spaces, enclose it in double quotes. The filter value may be either a constant or the function that calls a Visual CE variable, @var(*n*). Refer to your Visual CE documentation for information about variables.

Example 1:
ReportCE.exe /f13345 MyReport.rce
If the top-level table of MyReport.rce has "sort on" set to the "partNumber" column, then the report will show only information about part number 13345.

Example 2:
ReportCE.exe /f"John Smith" MyReport.rce
If the top-level table of MyReport.rce has "sort on" set to the "name" column, then the report will show only information about John Smith.

Example 3:
ReportCE.exe /f@var(0) MyReport.rce
If the top-level table of MyReport.rce has "sort on" set to the "name" column, and @var(0) returns John Smith, then the report will show only information about John Smith.

**/n**

Suppresses the Filter dialog box display that normally occurs when a layout is first opened, and automatically applies the filter that is defined as part of the layout (if any). The /f switch, if supplied, is ignored.

**/g**

Automatically opens the report in Print mode, so that the first screen visible to the user is the Print dialog box.

**/gq**

Automatically prints the report without displaying the Print dialog box.

**/p**password

Password to connect to a SQL Server CE database.

**/v***file_pathname*

Saves the report to a file, so that the first screen visible to the user is the Save As dialog. The *file_pathname* is supplied as the default, but the user can override it. If *file_pathname* contains spaces, enclose it in double quotes.

**/vq***file_pathname*

Automatically saves the report to *file_pathname*, without displaying the Save As dialog box to the user. You can specify the file type by providing an extension: either .rtf or .txt. If you do not provide an extension, the file is automatically saved as a .txt file.  If *file_pathname* contains spaces, enclose it in double quotes.

For example:

```
ReportCE.exe /vq"my file.rtf" MyReport.rce
```

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