ACCESS 2021 & 365

Customizing Reports

Database reports summarize the data contained in tables or displayed in query results and enable you to provide information in a page layout suitable for printing. Although forms and reports serve different purposes within the context of a relational database, the techniques used to customize them are similar. In this chapter, you will import reports from other databases and use features to create custom reports.

LEARNING OBJECTIVES

- Import a report into a database
- Add a subreport to a main report
- Create a report from a subreport
- Create calculated controls on a subreport
- Set page breaks in reports
- Add a chart to a report

CHAPTER TIMING

- Concepts & Practice: 01:20:00
- Self-Assessment: 00:15:00
- Total: 01:35:00

PROJECT: BILLING CUSTOMERS

The company manager of Winchester Web Design, a small web page design company, wants you to improve its invoice report for customer billing. After reviewing invoices from several companies, the company manager has sketched out a design for the new invoice report layout. Your job is to create a sample of the new invoice report for the company's executive team.

Importing a Report into a Database

Access offers a variety of ways to create reports. In addition to using the Report Wizard or starting from scratch in Design View, you can import reports from another database. Because most companies require some type of invoice to send with customer orders, locating a sample invoice report to import is not difficult.

Sometimes you have the report you want, but during its design it may have become corrupted, either due to inadvertent changes to the report itself or because of changes to an underlying query. That's when backups are invaluable. If a report becomes corrupted, you can restore it by importing database objects from a backup copy of a database. The record source should already match, and there should be no need to edit the properties or the field names.

Identifying Report Record Sources

Reports you import retain two connections to their original database. The first is the source database table or query name, shown in the Record Source property, and the second are the field names, which appear in report text boxes. As a result, when you import a report from another database, you often must establish new control sources to the destination database. You can accomplish this by:

- Editing the imported report's Record Source property to link to a table or query in the destination database.
- Editing, if necessary, the field names in the imported report's text boxes to match those in the new record source table or query.

External Data→Import & Link→New Data Source→From Database→Access

DEVELOP YOUR SKILLS: A8-D1

In this exercise, you will import a report from a backup copy of a database. You will rename the report and view data from an existing table using the imported report.

1. Open **A8-D1-WinDesign** from your **Access Chapter 8** folder and save it as:
   A8-D1-WinDesignRev
2. Look in the Reports section in the Navigation pane and notice the database contains three reports.
3. Choose **External Data→Import & Link→New Data Source→From Database→Access**.
   The Get External Data – Access Database dialog box appears.
4. Click the **Browse** button and navigate to your **Access Chapter 8** folder.
5. Choose the file **A8-D1-WinDesign-Backup** and click **Open**.
   This database is a backup copy of the WinDesign database.
6. Leave the **Import tables, queries, forms, reports** storage setting selected and click **OK**.
   Access opens the Import Objects dialog box and displays object names contained in the backup database in tabbed groups.
7. Click the **Reports** tab, choose **CustomerInvoices**, and click **OK**.

8. Leave the Save Import Steps box unchecked and click **Close**.

   The CustomerInvoices report is added to the Reports section of the Navigation pane.

   Reports

   - CustomerInvoices
   - EmployeeSales
   - InvoiceDetailsReport
   - ProductsReport
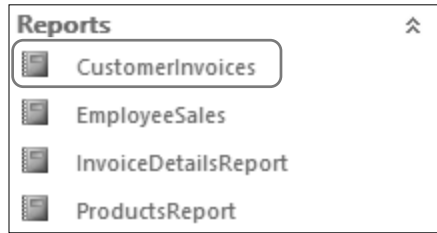
9. Double-click the **CustomerInvoices** report to open it in **Report View**.

10. Scroll down as necessary to see the empty space between the customer information and signature blocks.

    This is a great spot to insert a subform/subreport that includes the invoice detail lines.

Adding a Subreport to a Main Report

Subreports display subsets of data in reports and are derived from related database tables, similar to subforms on forms. However, a subreport can display table data by using a table, query, form, or another report as its source object. Forms are frequently created before reports and often already display the required report data. To streamline the report design and layout, it's best to use a subform as the basis of a subreport.

This invoice report uses a subform to display invoice details.

Adding a Subreport

The procedures used to add a subreport to a report are basically the same as those used to add a subform to a form. You can create the subreport using the Report Wizard or add an unbound subreport control to the report. Then you identify the database object containing the fields you want to display as a subreport.

View the video "Adding a Subreport Using the Wizard."

Report Design→Controls→More→Subform/Subreport ⊞

DEVELOP YOUR SKILLS: A8-D2

In this exercise, you will add a subreport to the CustomerInvoices report. You will use the InvoiceDetailsSubform as the source for the subreport.

1. Display the **CustomerInvoices** report in **Design View**.
2. Choose **Design→Controls→More→Subform/Subreport** (at the bottom of the controls list).
3. Click just below the ZIP label to insert a control and launch the **SubReport Wizard**.
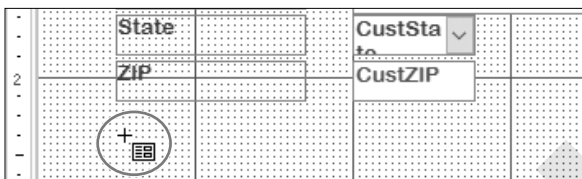
4. Choose the **Use an Existing Report or Form** option.
5. Choose **InvoiceDetailsSubform** from the list and click **Next**.
6. Click **Next** again to accept the *Choose from a list* linking method.
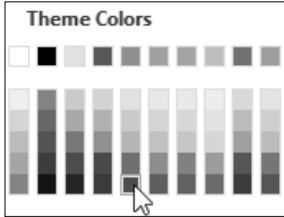7. Click **Finish** to accept *InvoiceDetailsSubform* as the name.

   The subform is inserted in the report.

Set Properties

8. Display the Property Sheet, if necessary, and click the **Data** tab.

   Notice the Source Object is set to Form.InvoiceDetails Subform.

9. Switch to the **Format** tab in the Property Sheet and set these properties:

Property	Setting
Width	5.6
Height	1.5
Top	2.9
Left	0.5

10. Click the **InvoiceDetailsSubform** label, which is just below the ZIP label, and set these properties:

Property	Setting
Caption	**Invoice Details**
Width	**1.2**
Height	**0.30**
Top	**2.5**
Left	**0.5**
Font Name	**Arial Rounded MT Bold**
Font Size	**10**
Fore Color	**Blue, Accent 1, Darker 50%**

Switch to **Report View** to see your completed report.

11. Use the Navigation bar and the scroll bar to review the database records.

The information in both the report and the subform changes each time a new record is displayed.

12. Close the report, saving the changes.

Creating a Report from a Subreport

Using a subform as the record source for a subreport is convenient because the subform already includes the needed data. However, when a subreport uses a form as the record source, any changes made to the subreport layout are reflected in the source form. If you don't want the source form to be changed, you can save the subreport as a separate report in the database, change the main report's Record Source property to the new report object, and then edit the subreport.

Access allows you to save an existing form as a new form and an existing report as a new report. When a subform is used as the record source for a subreport, you can open the subreport in a separate window and save it as a separate report.

File→Save As→Save Object As→Save As

DEVELOP YOUR SKILLS: A8-D3

In this exercise, you will create and save a new report based on the subreport from the CustomerInvoices report. You will then edit the source object property in the main report to display the new subreport.

1. Open **InvoiceDetailsSubform** from the Forms section of the Navigation pane.

2. Choose **File→Save As**, choose **Save Object As** from the File Types list, and then click the **Save As** button in the right pane.

3. Type **WWDCustomerInvoicesSubreport** as the name, choose **Report** from the As drop-down list, and click **OK**.

   A new report is added to the Reports section of the Navigation pane.

4. Close the InvoiceDetailsSubform.

5. Open the new **WWDCustomerInvoicesSubreport** in **Design View**.

6. Display the Property Sheet, if necessary, and then click the **All** tab and type **Customer Invoices Subreport** as the caption.

Create a Title for the Subreport

7. Choose **Report Design→Header/Footer→Title**.

   Access places a title and empty placeholder controls in the Report Header.

8. Type **Winchester Web Design Invoice Details** in the title control and tap Enter.

9. Set these property values for the new title control:

Property	Setting
Width	**3**
Height	**0.25**
Left	**1**
Font Name	**Arial**
Font Size	**12**
Text Align	**Center**

10. Click the **Report Header** section bar and set the Height property to: **0.3069**
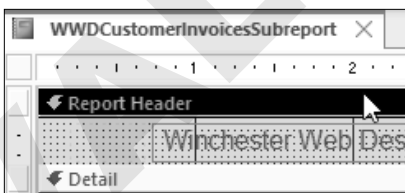
Inserting the title in the header widens the subreport, so you will now reset the width.

11. Click the report selector button and set the Width property to: **5.6**
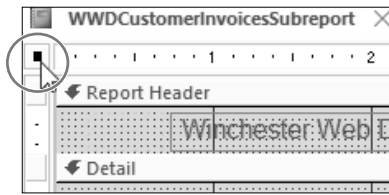
12. Close the subreport, saving the changes, and then open the **CustomerInvoices** report in **Design View**.

13. If necessary, display the Property Sheet and click the **Data** tab.

14. Click the subreport to select it.

15. Click in the **Source Object** property box.

    A drop-down menu button appears at the far right of the property box.

16. Choose **Report.WWDCustomerInvoicesSubreport** from the drop-down menu.

17. Switch to **Report View** to see how the new subreport looks.
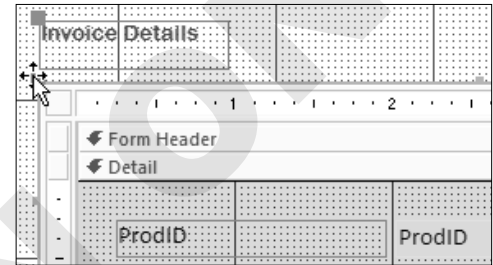
    Notice the change in appearance compared to the subform used previously.

18. Scroll through the report, seeing how the subreport always shows the correct invoice details.

19. Close the CustomerInvoices report, saving the changes.

Numbering Items in a Report

As the number of records in a table grows, the length and number of records in a report or subreport also grows. You can number the records in a report to help track the items listed. If a report is grouped, you can set the count to restart numbering at the beginning of each group.

Setting Properties to Number Items

By adding a text box to the Detail section and setting its Control Source property to =*1*, you can automatically number items in a report. In addition, you can set the Running Sum property to identify the portion of a report for which you want to count items. For example, suppose you have an invoice report that groups services by invoice number. You can set the Running Sum property to count the items in each group and then start counting again with the next group.

Numbering Subreports Separately

Access does not permit numbering items in a subreport control on a main report. However, because you saved the subreport as a separate report, you can add the numbering controls directly to the subreport by opening it in a separate window. Any edits you make when it is open as a separate item are reflected in the main report the next time you open it.

DEVELOP YOUR SKILLS: A8-D4

In this exercise, you will reposition the controls in the WWDCustomerInvoicesSubreport page header and add a text box control to count the number of line items.

1. Display the **WWDCustomerInvoicesSubreport** in **Design View**.
2. Right-click the **Detail** section bar and choose **Page Header/Footer**.

    You will add labels to the Page Header section.
3. Click the **Page Header** section bar and change the Height property to: **0.3**
4. Select the **ProdID** label in the Detail section and use Ctrl+X to cut the control.
5. Click in the **Page Header** section bar and use Ctrl+V to paste the label.
6. With the **ProdID** label still selected, set both the Width and Left properties to: **0.5**
7. Use the procedure in steps 4–6 to move the **Description**, **Price**, **Qty**, and **LineTotal** labels one at a time into the Page Header section, setting the Width and Left properties as follows:

Property	Width	Left
Description	**2**	**1.25**
Price	**0.75**	**3.5**
Qty	**0.3**	**4.5**
LineTotal	**0.75**	**5**

8. If necessary, click the **Description**, **Price**, **Qty**, and **LineTotal** labels and use the up arrow ↑ key to nudge them so they're vertically aligned with the ProdID label.
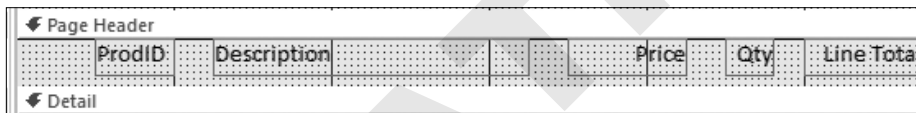

Move and Resize Report Text Box Controls

9. Set these property values for the text boxes in the Detail section:

Text Box Control	Width	Top	Left
ProdID	**0.5**	**0.1**	**0.5**
ProdDescription	**2**	**0.1**	**1.25**
Price	**0.75**	**0.1**	**3.5**
Qty	**0.3**	**0.1**	**4.5**
LineTotal	**0.75**	**0.1**	**5**

10. Click the **Detail** section bar and set the Height property to: **0.5**
11. Click the **Selection Type menu** button ⌄ at the top of the Property Sheet and choose **Report**.

12. Set the Width property to: **6**
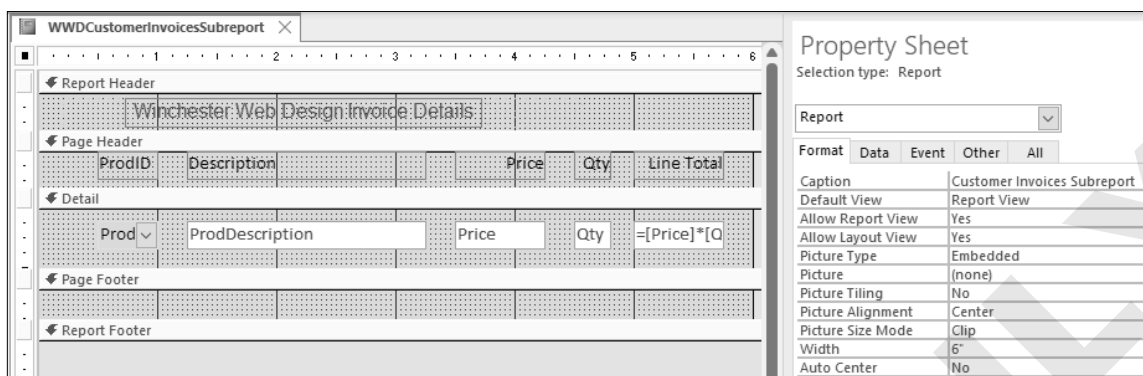

13. Switch to **Report View**.

There is room for a small field to the left of the ProdID field, which is where you will insert numbering.

Add and Format a Text Box

14. Switch to **Design View** and choose **Report Design→Controls→Text Box**.
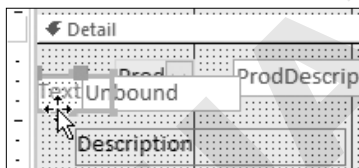
15. Click to the left of the ProdID text box in the Detail section to position the new box in that area.

The precise location is not important, as you will set the position, using specific properties, in a moment.
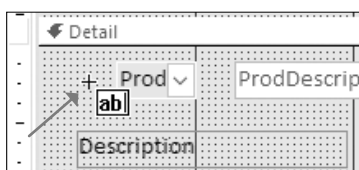
16. Click the new label control and tap ⌷Delete⌷ to remove it.

You may need to move your new text box if it is obscuring the label.

17. Click the new text box control and set these property values using the **All** tab in the Property Sheet:

Property	Setting
Name	**txtCount**
Width	**0.3**
Top	**0.1**
Left	**0.1**
Back Style	**Transparent**
Border Style	**Transparent**

Set Control Properties to Sum

18. Click the **Data** tab and set the Control Source property to **=1** and the Running Sum property to **Over Group**.

19. Switch to **Report View** and scroll through the report.

Notice that the numbering continues sequentially throughout the report.

20. Close the WWDCustomerInvoicesSubreport, saving the changes.

21. Display the **CustomerInvoices** report in **Design View**.

22. Click the **InvoiceDetailsSubform** and set the Width property to: **6**

23. Switch to **Print Preview** and use the navigation bar to review the various report pages.

Each invoice begins on a new page and the invoice detail line items begin at number 1 for each invoice.

24. Close Print Preview and then close the CustomerInvoices report, saving the changes.

Creating Calculated Controls on a Subreport

Reports summarize data in tables and queries to present useful, organized information. This means that a report would typically show subtotals, grand totals, and averages to summarize a specified group of data. You can do this by adding calculated controls.

Positioning Calculated Controls

Calculated controls are built-in reports using the Control Source property of an unbound text box control to which you add a formula. The section or group where a calculated control is placed determines how Access performs the calculation.

A calculated control in a Detail section
performs a calculation for each detail line.

A calculated control in a Group Footer
section calculates the total for the group.

A calculated control in a Page Footer
section calculates the total for the page.

A calculated control in a Report Footer
section calculates the total for the entire report.

DEVELOP YOUR SKILLS: A8-D5

In this exercise, you will add a calculated control to the report footer section in the WWDCustomerInvoicesSubreport.

1. Display the **WWDCustomerInvoicesSubreport** in **Design View**.

2. Click the **Report Footer** section bar and set the Height property to: **0.3**
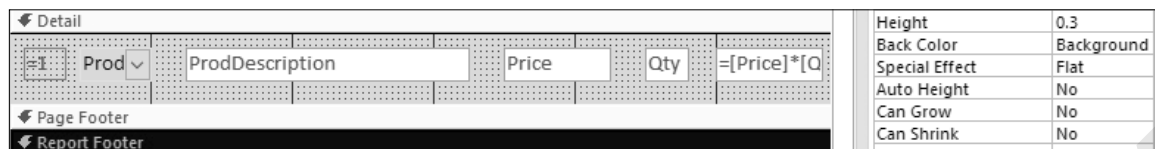
3. Choose **Report Design→Controls→Text Box.**

4. Click anywhere in the **Report Footer** section.

5. Switch to the **All** tab in the Property Sheet and set these properties for the new text box control:

Property	Setting
Name	**CustomerTotal**
Control Source	**=Sum([Price]*[Qty])**
Format	**Currency**
Height	**0.25**
Top	**0**
Left	**4.75**

6. Click the new label control and set these property values:

Property	Setting
Caption	**Invoice Total**
Width	**1.2**
Height	**0.25**
Top	**0**
Left	**3**
Fore Color	**Text Dark**

7. Close the subreport, saving the changes.

8. Display the **CustomerInvoices** report in **Report View**.

Growing and Shrinking a Subreport

When the number of records or amount of data displayed in a subreport varies, you can set the Can Grow and Can Shrink properties to allow the subreport space to expand or shrink so more data displays vertically. You can also change the orientation of the print layout to allow more horizontal space on each report page.

The subform without the Can Grow property enabled displays less vertical data, requiring a scroll bar.

Winchester Web Design Invoice Details					
1	01HP	Home Page, Nav, CSS, Design	$400.00	1	$400.00
2	02SP	Secondary Page	$200.00	5	$1,000.00

Winchester Web Design Invoice Details					
1	01HP	Home Page, Nav, CSS, Design	$400.00	1	$400.00
2	02SP	Secondary Page	$200.00	5	$1,000.00
			Invoice Total		$1,400.00

The subform with the Can Grow property enabled is expanded to display more vertical data.

DEVELOP YOUR SKILLS: A8-D6

In this exercise, you will adjust the margins of the CustomerInvoices report and set the Can Grow and Can Shrink properties. These properties will adjust the size of the subreport to fit the contents.

1. Display the **CustomerInvoices** report in **Design View**.
2. Choose **Page Setup→Page Size→Margins→Narrow**.
3. Click the **InvoiceDetailsSubreport**.
4. If necessary, display the Property Sheet; on the **Format** tab, set the Can Grow property to **No**.
5. Switch to **Report View** and scroll through the report.

   The subform now displays a vertical scroll bar in order to view additional records.

6. Switch to **Design View** and click the **InvoiceDetailsSubreport**.
7. Click the **Format** tab on the Property Sheet and, if necessary, set the Can Grow and Can Shrink properties to **Yes**.
8. Switch to **Report View** and scroll through the report.

   The subreport grows and shrinks to best fit the contents.

9. Save the report.

Setting Page Breaks and Customizing Controls

As you view the Winchester Web Design CustomerInvoices report in Report View, you may notice that the number of invoice records displayed on each screen varies depending on the number of items ordered. To ensure each customer invoice starts on a new page, you can add a page break control. By default, when you view a report in Print Preview, data for each customer/record automatically appears on a separate page; however, multiple records appear on the same page when the report is displayed in Report View.

To add a title or general company information to an invoice, place title controls in the Page Header rather than the Report Header, which prints only on the first page.

> **TIP!** Add the page break at the end of the Detail section so Access knows to start a new
> page before printing the next page header.

Report Design→Controls→More→Insert Page Break

DEVELOP YOUR SKILLS: A8-D7

In this exercise, you will modify the CustomerInvoices report by adding a title and the current date as well as setting up page breaks to print each invoice on a separate page.

1. Display the **CustomerInvoices** report in **Design View**.

   To begin, you will modify the report title.

2. Click the **Customer Invoice** title control in the Page Header section and then click just in front of *Customer* to position the insertion point there.

3. Type **Winchester Web Design** and then press ⎙Shift⎘+⎙Enter⎘ to force *Customer Invoice* to a second line.

4. Click an empty area in the Page Header section and then click the title control once more to select it.

5. Set the Width property to **4** and the Left property to **2**.

Add a Date Control

In the next few steps, you will insert a date that will display in the report header.

6. Choose **Report Design→Header/Footer→Date and Time**.

7. Choose the third date option **MM/DD/YYYY** format, remove the check from the **Include Time** box, and click **OK**.

   Access places the new date control in the Report Header section. Next, you will move the date to the Page Header section so it appears on every page rather than just the first page of the report.

8. Select the date control and press ⎙Ctrl⎘+⎙X⎘ to cut it from the report header.

9. Click the **Page Header** section bar and press ⎙Ctrl⎘+⎙V⎘ to paste the date into the page header.
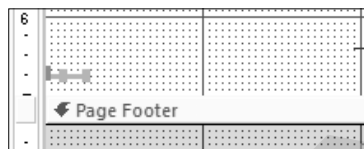
10. Set these properties for the date control:

Property	Setting
Width	**2**
Height	**0.2**
Top	**0.4**
Left	**5.8**

Add a Page Break Control

11. Scroll to the bottom of the Detail section.

12. Choose **Report Design→Controls→More→Insert Page Break**.

13. Place the page break in the Detail section just above the Page Footer section bar.
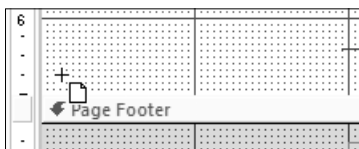
Before   After

14. Switch to **Print Preview** and use the navigation bar to browse the pages.

The date appears on each invoice because you added it in the Page Header section. Each invoice begins on a new page. Sometimes it's not necessary to add a page break to a report and doing so may add an unneeded page. If this occurs in your report, remove the page break.

15. Close Print Preview and then close the report, saving the changes.

Adding Charts

Summarized and numerical data is often displayed visually using a chart. By adding a chart to a report, the information and relationships between report data is more easily interpreted. While you can add charts to reports and forms, they're more commonly used in reports. Access offers multiple chart types, including column, bar, line, and pie, among others.

You can insert charts using the Chart control or the Insert Modern Chart command.

> Report Design→Controls→Insert Modern Chart 📊

Formatting Modern Charts

You can format and modify common settings using either the Property Sheet or the Chart Settings task pane, which means formatting charts in Access is similar to formatting charts in other Microsoft Office applications, like Excel and PowerPoint.

☁️ **View the video "Adding Modern Charts."**

> Report Design→Tools→Chart Settings 📊

Refreshing Chart Data

Like many other Access objects, charts use the contents in a table or query as the data source. When the data source of a chart is changed, the chart may not automatically reflect those changes. The Refresh All command manually updates a chart to match record source data.

Home→Records→Refresh All 🗎

DEVELOP YOUR SKILLS: A8-D8

In this exercise, you will modify Winchester's EmployeeSales report by adding a chart. You will then format the chart and manually update it after making changes to the record source.

1. Display the **EmployeeSales** report in **Design View**.
2. Choose **Report Design→Controls→Insert Modern Chart**.

   A menu appears allowing you to select the chart type.
3. Choose **Column→Clustered Column**.

   Your mouse pointer changes to a chart icon with a plus sign.
4. Click in the upper-left corner of the **Page Footer** section to insert the chart control.
5. Close the Property Sheet and the Chart Settings pane, if necessary.
6. Hover your mouse pointer over the bottom right of the new chart control until a diagonal double-pointed arrow appears.
7. Resize the control by dragging to the bottom right until your chart is as tall as the Page Footer section and as wide as all text box controls in the Detail section.
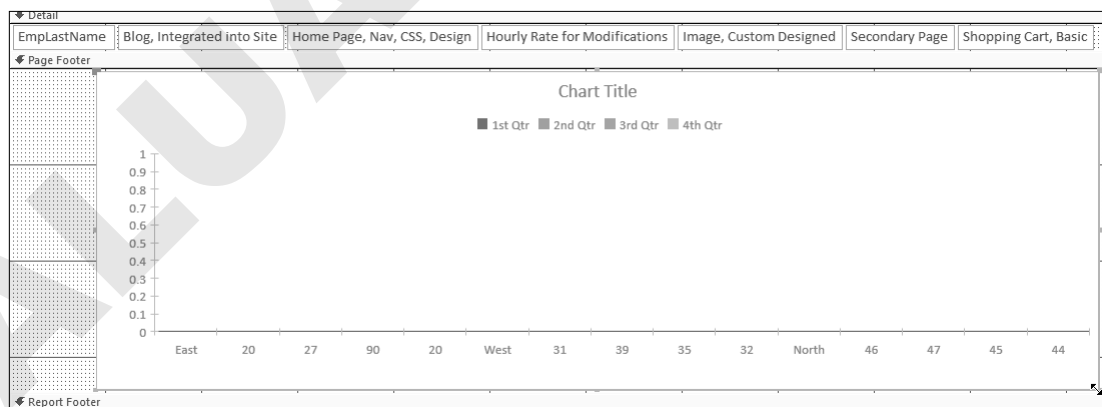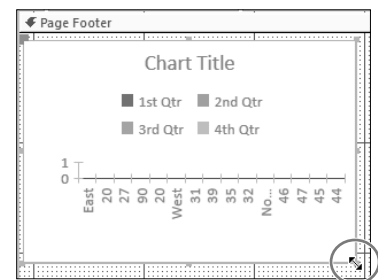
Format the Chart

8. Choose **Report Design→Tools→Chart Settings**.

   The Chart Settings pane appears.
9. Choose **EmployeeSales** from the Data Source drop-down list.
10. Choose **EmpLastName** for the Axis.

11. Choose **ProdDescription** as the Legend.

12. Choose **LineTotal** for the Values.

13. Open the Property Sheet and set these chart properties:

Property	Setting
Has Legend	**Yes**
Chart Title	**Total Sales**
Category Axis Font Size	**14**
Primary Values Axis Format	**Currency**

TIP! There are many chart properties and settings available. If you will use charts frequently, you may want to explore each of these settings.

14. Switch to **Report View** to see the newly created chart.
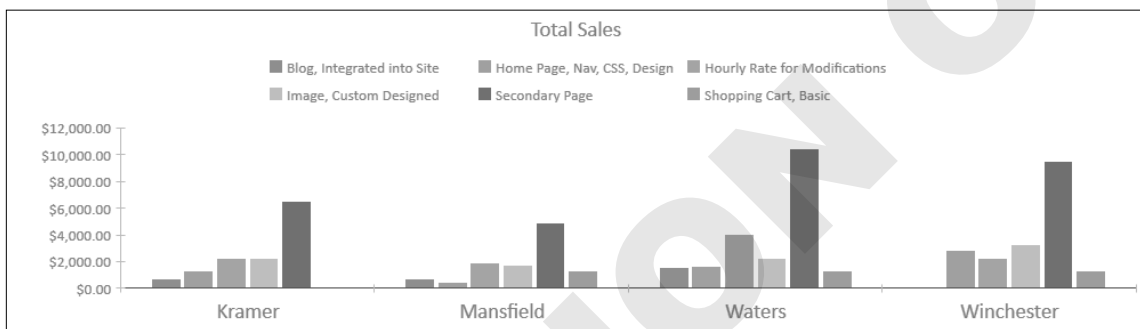
Refresh the Chart

15. Open the **InvoiceDetails** table and change the quantity for the first record to: **100**

16. Switch to the **EmployeeSales** report and choose **Home→Records→Refresh All**.

    The Home Page column for Winchester rises dramatically.

17. Switch to the **InvoiceDetails** table and change the quantity for the first record back to: **1**

18. Switch to the **EmployeeSales** report and refresh the chart using the **Refresh All** command.

    The chart data has normalized.

19. Close the EmployeeSales report, saving any changes, and then close the database.

Self-Assessment

Use the Self-Assessment quiz in the Student Resource Center to check your knowledge of the key concepts and skills introduced in this chapter.