SKILLS REVIEW (CONTINUED)

d. Enter your name in the Sales sheet footer, compare your Sales sheet to Figure L-23, save the workbook, then preview and print the worksheet.

e. Close the workbook and exit Excel.

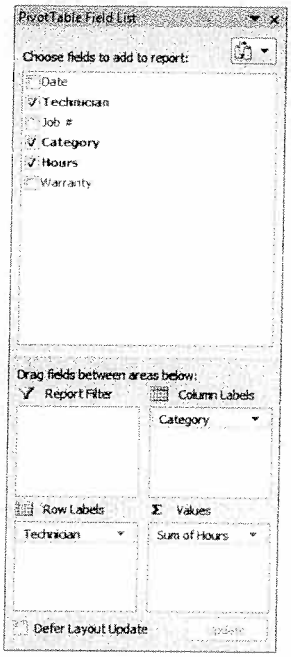
FIGURE L-23

	A	B	C	D	E	F
1	Product	Region	Store	Sales	Sales Rep	
2	Game	West	LA	$10,934	H. Jeung	
3	DVD	West	LA	$16,512	H. Jeung	
4	VHS	West	LA	$18,511	H. Jeung	
5	Game	East	NY	$11,989	K. Lyons	
6	DVD	East	NY	$10,750	K. Lyons	
7	VHS	East	NY	$8,843	K. Lyons	
8	Game	West	Houston	$13,998	M. Holak	
9	DVD	West	Houston	$20,550	M. Holak	
10	VHS	West	Houston	$15,690	M. Holak	
11	Game	East	DC	$10,850	J. Forum	
12	DVD	East	DC	$16,225	J. Forum	
13	VHS	East	DC	$19,331	J. Forum	
14	Game	West	LA	$4,655	D. Janes	
15	DVD	West	LA	$6,850	D. Janes	
16	VHS	West	LA	$3,778	D. Janes	
17	Game	East	NY	$8,400	L. Sorrento	
18	DVD	East	NY	$10,500	L. Sorrento	
19	VHS	East	NY	$8,234	L. Sorrento	
20	Game	West	Houston	$9,900	T. Leni	
21	DVD	West	Houston	$10,500	T. Leni	
22	VHS	West	Houston	$6,200	T. Leni	
23	Game	East	DC	$7,900	M. Gregoire	
24	DVD	East	DC	$15,700	M. Gregoire	
25	VHS	East	DC	$6,308	M. Gregoire	
26						
27			LA Sales for July:	$61,240		
28						
29						

INDEPENDENT CHALLENGE 1

You are the accountant for Appliance Depot, an appliance repair company that employs three technicians. Until recently, the owner had been tracking the technicians' hours manually in a log. You have created an Excel worksheet to track the following basic information: service date, technician name, job #, job category, hours, and warranty information. The owner has asked you to analyze the billing data to give him information about the number of hours being spent on installations versus the time spent with repairs. He also wants to find out how much of the technicians' work is covered by manufacturer's warranties. You will create a PivotTable that sums the hours by category and technician. Once the table is completed, you will create a column chart representing the billing information.

FIGURE L-24



a. Start Excel, open the file titled EX L-3.xlsx from the drive and folder where you store your Data Files, then save it as **Appliances**.

b. Create a PivotTable on a separate worksheet that sums hours by technician and category. Use Figure L-24 as a guide.

c. Name the new sheet **PivotTable** and apply the Pivot Style Medium 6.

d. Add the Warranty field to the Report Filter area of the PivotTable. Display only the PivotTable data for jobs covered by warranties.

e. Create a clustered column PivotChart that shows the warranty hours. Move the PivotChart to a new sheet named **PivotChart**.

f. Add the title **Warranty Hours** above the chart .

g. Change the PivotChart filter to display hours where the work was not covered by a warranty. Edit the chart title to read **Nonwarranty Hours**.

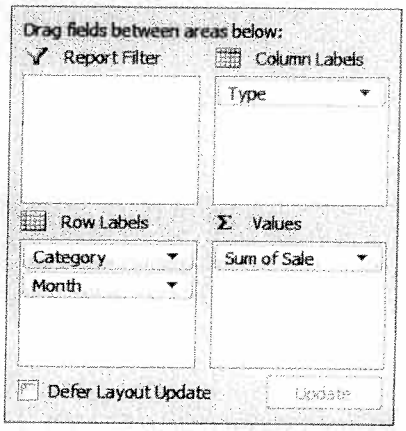
h. Add your name to the center section of the PivotTable and PivotChart footers, then save the workbook. Preview and print both the PivotTable and the PivotChart.

i. Close the workbook and exit Excel.

INDEPENDENT CHALLENGE 2

You are the owner of an art supply store called Portfolio based in Vancouver. You sell products at the store as well as online. You also take orders by phone from your catalog customers. You have been using Excel to maintain a sales summary for the second quarter sales of paint, brushes, and paper. You want to create a PivotTable to analyze and graph the sales in each category by month and type of order.

FIGURE L-25



a. Start Excel, open the file titled EX L-4.xlsx from the drive and folder where you store your Data Files, then save it as **Portfolio Sales**.

b. Create a PivotTable on a new worksheet named **PivotTable** that sums the sales amount for each category across the rows and each type of sale down the columns. Add the month field as an inner row label. Use Figure L-25 as a guide.

c. Move the month field to the Report Filter location. Display the sum of sales data for the month of April.

INDEPENDENT CHALLENGE 2 (CONTINUED)

d. Turn off the grand totals for the columns. (*Hint*: Use the Grand Totals button on the Design tab and choose On for Rows Only.)

e. Change the summary function in the PivotTable to Average.

f. Format the sales values using the Currency format with no decimal places and the $ English (Canada) symbol.

g. Format the PivotTable using the Pivot Style Dark 7.

h. On the Sales worksheet, change the April online paint sales in cell D2 to $53,225. Update the PivotTable to reflect this increase in sales.

i. Sort the average sales of brushes from smallest to largest values.(*Hint*: Be sure to select the Left to Right option button in the Sort by Value dialog box.)

j. Create a stacked column PivotChart report for the average April sales data for all three types of sales.

k. Change the PivotChart to display the June sales data.

l. Move the PivotChart to a new sheet and name the chart sheet **PivotChart**.

m. Add the title **Average June Sales** above your chart .

Advanced Challenge Exercise

- Filter the PivotTable to display both the April and May sales data.
- Remove the Row Labels and Column Labels headers in cells A4 and B3 using the Field Headers button.
- Check the PivotChart to be sure that the new data has been added, and change the chart title to describe the charted sales.

n. Add your name to the center section of the PivotTable and PivotChart worksheet footers, save the workbook, then print the PivotTable and the PivotChart.

o. Close the workbook and exit Excel.

INDEPENDENT CHALLENGE 3

You manage Motivation Travel, a national travel agency that specializes in incentive travel for North American corporations with offices in the United States and Canada. Management has asked you to provide a summary table showing information on your sales staff, including their locations, status, and titles. You have been using Excel to keep track of the staff in the San Francisco, Los Angeles, Chicago, Minneapolis, Toronto, Montreal, Vancouver, Boston, and New York offices. Now you will create a PivotTable and PivotChart summarizing this information.

a. Start Excel, open the file titled EX L-5.xlsx from the drive and folder where you store your Data Files, then save it as **Travel Employees**.

b. On a new worksheet, create a PivotTable that lists the number of employees in each city, with the names of the cities listed across the columns, the titles listed down the rows, and the status indented below the titles. (*Hint*: Remember that the default summary function for cells containing text is Count.) Use Figure L-26 as a guide. Rename the new sheet **PivotTable**.

c. Change the structure of the PivotTable to display the data as shown in Figure L-27.

d. Add a report filter using the region field. Display only the U.S. employees.

FIGURE L-26

3	Count of Last Name	Column Labels									
4	Row Labels	Boston	Chicago	Los Angeles	Minneapolis	Montreal	New York	San Francisco	Toronto	Vancouver	Grand Total
5	⊟ Sales Manager	1	2	1	2	1	2	3	3	1	16
6	Full-time		2	1	1	1	2	2	2	1	12
7	Part-time	1			1			1	1		4
8	⊟ Sales Representative	4	2	5	2	4	7	7	3	3	37
9	Full-time	3	1	4	1	3	5	5	2	2	26
10	Part-time	1	1	1	1	1	2	2	1	1	11
11	Grand Total	5	4	6	4	5	9	10	6	4	53

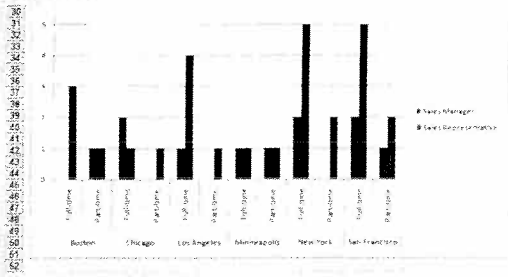
FIGURE L-27

3	Count of Last Name	Column Labels		
4	Row Labels	Full-time	Part-time	Grand Total
5	⊟ Sales Manager	12	4	16
6	Boston		1	1
7	Chicago	2		2
8	Los Angeles	1		1
9	Minneapolis	1	1	2
10	Montreal	1		1
11	New York	2		2
12	San Francisco	2	1	3
13	Toronto	2	1	3
14	Vancouver	1		1
15	⊟ Sales Representative	26	11	37
16	Boston	3	1	4
17	Chicago	1	1	2
18	Los Angeles	4	1	5
19	Minneapolis	1	1	2
20	Montreal	3	1	4
21	New York	5	2	7
22	San Francisco	5	2	7
23	Toronto	2	1	3
24	Vancouver	2	1	3
25	Grand Total	38	15	53

INDEPENDENT CHALLENGE 3 (CONTINUED)

e. Rearrange the fields on the PivotTable to create the PivotChart shown in Figure L-28. Move the chart to its own sheet named **PivotChart**.

FIGURE L-28



f. Add the title **U.S. Sales Staff** above the chart .

g. Add the Pivot Style Light 14 format to the PivotTable.

h. Insert a new row in the Employees worksheet above row 7. In the new row, add information reflecting the recent hiring of Cathy Crosby, a full-time sales manager at the Boston office. Update the PivotTable to display the new employee information.

i. Add the label **Total San Francisco Staff** in cell G1 of the Employees sheet. Widen column G to fit the label.

j. Enter a function in cell H1 that retrieves the total number of employees located in San Francisco from the PivotTable. Change the page orientation of the Employees sheet to landscape.

Advanced Challenge Exercise

- Filter the Row Labels of the PivotTable to display only the cities of Boston and San Francisco.
- Filter the Column Labels of the PivotTable to display only the sales representatives.
- Verify that the number of San Francisco employees on the Employees sheet is now seven.

k. Add your name to the center section of all three worksheet footers, save the workbook, then print the PivotTable, the first page of the Employee worksheet, and the PivotChart. Close the workbook and exit Excel.

REAL LIFE INDEPENDENT CHALLENGE

PivotTables can be effective tools for analyzing your personal investments. You will use a PivotTable and a PivotChart to represent the market trends for four stocks by summarizing the performance of the stocks over five business days. You will use a PivotTable function to display each stock's weekly high, and you will use a PivotChart to represent each stock's five-day performance.

a. Start Excel, open the file EX L-6.xlsx , then save it as **My Stocks** in the drive and folder where you save your Data Files.

b. If you have stock information available you can replace the data in the file with your own data.

c. Create a PivotTable on a new worksheet that sums the stock prices for each stock across the rows and for each day down the columns. Rename the PivotTable sheet **PivotTable**.

d. Format the sales figures as Currency with two decimal places and apply the Pivot Style Light 18 format.

e. Turn off the grand totals for both the rows and columns.

f. Add the Exchange field to the Report Filter area of the PivotTable. Display only the NASDAQ data, then redisplay the data from both exchanges.

g. Create a clustered column PivotChart report from your data. Move the PivotChart to its own sheet named **PivotChart**. Change the column chart to a clustered bar chart. (*Hint*: Use the Change Chart Type button).

h. Add grand totals for the rows of the PivotTable. Change the summary function to MAX, then change the label in cell G4 from Grand Total to **Highest Price**. Widen column G to fit the label.

i. Enter the label **Highest Price** in cell F1 of the Stocks sheet. Widen column F to fit the label. Enter the VZ stock symbol in cell F2. If you are using your own data, enter one of your stock symbols in cell F2.

j. Enter a function in cell G2 that retrieves the highest price for the stock in cell F2 over the past five days from the PivotTable.

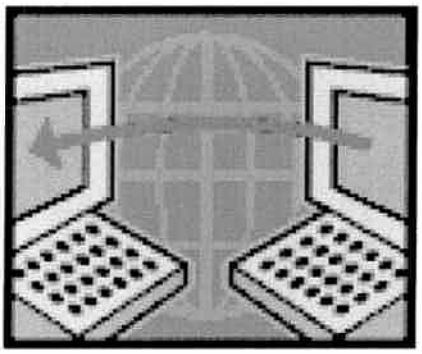
k. Display grand totals for both the rows and columns of the PivotTable. (*Hint*: Click the Grand Totals button, then click On for Rows and Columns.)

l. Change the structure of the PivotTable, moving the Day field to the Row (Labels) Area and Stock to the Column (Labels) Area. Verify that the highest price for the VZ stock (or your own stock if you are using personal data) is still correct on the Stocks worksheet.

m. Change the PivotChart type to a line.

n. Add your name to the center section of each worksheet footer, save the workbook, then print the PivotTable, the Stocks sheet, and the PivotChart. Close the workbook and exit Excel.

Assignment 5



This week "work through" Excel Unit L, Analyzing Data with PivotTables. You may skip pages Excel 288-289 on Using the GETPIVOTDATA function. To "work through" means reading and performing all hands-on exercises. The exercises give detailed step-by-step instructions with corresponding screen shot figures of the Excel interface tabs, menus, toolbars, dialog boxes, and correct output. You should perform all of these to learn how to complete each skill.

Objectives

Students will have mastered the material in Excel Unit L when they can:

- Plan and design a PivotTable report
- Create a PivotTable report
- Change a PivotTable's summary function and design
- Filter and sort PivotTable data
- Update a PivotTable report
- Change the structure and format of a PivotTable report
- Create a PivotChart report

Unit Study Tips

Placing a PivotTable on an Existing Worksheet

Use caution when specifying where the PivotTable will be placed. The default option is New Worksheet. If you choose Existing Worksheet, you need to specify the cell reference for the top-left corner of the PivotTable. If there is data under this cell or to the right of it, Excel may overwrite it as it generates the PivotTable.

Changing the PivotTable layout

The default layout for PivotTables is the compact form; the row labels are displayed in a single column and the second-level field items (such as the quarters in the US Sales example) are indented to easily tell them apart. You can change the layout of your PivotTable by clicking the PivotTable Tools Design tab, clicking the Report Layout button in the Layout group, then clicking either Show

in Outline Form or Show in Tabular Form. The tabular form and the outline form show each row label in its own column. The outline form places subtotals at the top of every column. The tabular and outline layouts take up more space on a worksheet than the compact layout.

Filtering PivotTables using multiple values

You can select multiple values when filtering a PivotTable report using a report filter. After clicking a field's report filter list arrow in the top section of the PivotTable Field List or in cell B1 on the PivotTable itself, click the Select Multiple Items check box at the bottom of the filter selections. This allows you to select multiple values for the filter. For example, selecting 1 and 2 as the report filter in a PivotTable with quarters would display all of the data for the first two quarters. You can also select multiple values for the row and column labels by clicking the Row Label list arrow or the Column Label list arrow in cells A4 and B3 on the PivotTable and selecting the data items that you want to display.

If you've added filters to more than one field and want to quickly remove them all at one time, click the PivotTable Tools Options tab, then click the Clear button in the Actions group, and then click Clear and Clear Filters.

Adding a calculated field to a PivotTable

You can use formulas to analyze PivotTable data in a field by adding a calculated field. A calculated field appears in the PivotTable Field List pane and can be manipulated like other PivotTable fields. To add a calculated field, click any cell in the PivotTable, click the PivotTable Tools Options tab, click the Formulas button in the Tools group, then click Calculated Field. The Insert Calculated Field dialog box opens, as shown in Figure L-11. Enter the field name in the Name text box, click in the Formula text box, click a field name in the Fields list that you want to use in the formula and click Insert Field. Use standard arithmetic operators to enter the formula you want to use. Click Add, then click OK. The new field with the formula results appears in the PivotTable, and the field will be added to the PivotTable Field List.

Grouping PivotTable data

You can group PivotTable data to analyze specific values in a field as a unit. For example, you may want to group sales data for quarters one and two to analyze sales for the first half of the year. To group PivotTable data, you need to first select the rows and columns that you want to group, click the PivotTable Tools Options tab, then click the Group Selection button in the Group group. After you group data you can summarize it by clicking the Field Settings button in the Active Field group, clicking the Custom button in the Field Settings dialog box, selecting the function that you want to use to summarize the data, then clicking

OK. To ungroup data, select the Group name in the PivotTable, then click the Ungroup button in the Group group.

Adding conditional formatting to a PivotTable

You can add conditional formatting to a PivotTable to make it easier to compare the data values. The conditional formatting is applied to cells in a PivotTable the same way as it is to non-PivotTable data. The conditional formatting rules will follow the PivotTable cells when you move fields to different areas of the PivotTable.

PivotCharts are Interactive

Like PivotTables, PivotCharts are interactive. That means you can rearrange your PivotChart on the fly, simply by dragging the fields in the PivotTable Field list from one section to another.

Graded Exercises to be Submitted

- Independent Challenge 1, Appliances, page Excel 293.
- Independent Challenge 2, Portfolio Sales, pages Excel 293-294. Omit the Advanced Challenge Exercise part of the exercise.
- Independent Challenge 3, Travel Employees, pages Excel 294-295. Omit steps i, j, and the Advanced Challenge Exercise part of the exercise.

Turn in each completed exercise to me using the assignment "delivery boxes" on the Moodle course site in the Week 6 section.

For Assignment 6, you will find these 3 "delivery boxes" in the Week 5 section:

- ✓ Appliances
- ✓ Portfolio Sales
- ✓ Travel Employees

Solution printouts (in PDF format) is provided for each of the above files. Compare your output to the solution printout to gauge correctness. The printout identifies the items that will be checked in your submitted file.

Note that turning in assignment files to be graded by email attachment is not acceptable. Use of the Moodle assignment "delivery boxes" enables recording of grades and feedback on the Moodle course website.

United States Sales

Product ID	Category	Branch	Quarter	Sales
250	Travel Accessory	Chicago	1	$ 2,300.56
250	Travel Accessory	Chicago	2	$ 5,767.76
250	Travel Accessory	Chicago	3	$ 4,883.65
250	Travel Accessory	Chicago	4	$ 5,697.45
100	Travel Insurance	Chicago	1	$ 980.65
100	Travel Insurance	Chicago	2	$ 2,634.69
100	Travel Insurance	Chicago	3	$ 2,500.74
100	Travel Insurance	Chicago	4	$ 3,612.93
350	Tour	Chicago	1	$ 8,995.43
350	Tour	Chicago	2	$ 7,976.43
350	Tour	Chicago	3	$ 8,232.65
350	Tour	Chicago	4	$ 8,631.98
780	Travel Accessory	Chicago	1	$ 999.65
780	Travel Accessory	Chicago	2	$ 2,334.56
780	Travel Accessory	Chicago	3	$ 2,210.32
780	Travel Accessory	Chicago	4	$ 1,245.67
640	Travel Insurance	Chicago	1	$ 1,289.65
640	Travel Insurance	Chicago	2	$ 6,434.56
640	Travel Insurance	Chicago	3	$ 6,100.32
640	Travel Insurance	Chicago	4	$ 6,345.67
510	Tour	Chicago	1	$ 999.43
510	Tour	Chicago	2	$ 1,954.43
510	Tour	Chicago	3	$ 2,412.65
510	Tour	Chicago	4	$ 2,661.98
250	Travel Accessory	Miami	1	$ 1,394.32
250	Travel Accessory	Miami	2	$ 3,231.80
250	Travel Accessory	Miami	3	$ 3,511.65
250	Travel Accessory	Miami	4	$ 2,687.95
100	Travel Insurance	Miami	1	$ 6,634.43
100	Travel Insurance	Miami	2	$ 8,324.65
100	Travel Insurance	Miami	3	$ 8,324.65
100	Travel Insurance	Miami	4	$ 8,824.65
350	Tour	Miami	1	$ 7,790.34
350	Tour	Miami	2	$ 6,814.87
350	Tour	Miami	3	$ 8,883.54
350	Tour	Miami	4	$ 8,976.43
780	Travel Accessory	Miami	1	$ 1,766.34
780	Travel Accessory	Miami	2	$ 3,524.21
780	Travel Accessory	Miami	3	$ 2,307.53
780	Travel Accessory	Miami	4	$ 2,403.43
640	Travel Insurance	Miami	1	$ 1,376.34
640	Travel Insurance	Miami	2	$ 3,394.21
640	Travel Insurance	Miami	3	$ 2,587.53
640	Travel Insurance	Miami	4	$ 2,923.43
510	Tour	Miami	1	$ 2,310.34
510	Tour	Miami	2	$ 2,524.87
510	Tour	Miami	3	$ 2,183.54
510	Tour	Miami	4	$ 2,548.43
250	Travel Accessory	New York	1	$ 1,940.57

Product	Region	Store	Sales	Sales Rep
Game	West	LA	$10,934	H. Jeung
DVD	West	LA	$16,512	H. Jeung
VHS	West	LA	$18,511	H. Jeung
Game	East	NY	$11,989	K. Lyons
DVD	East	NY	$9,750	K. Lyons
VHS	East	NY	$8,843	K. Lyons
Game	West	Houston	$13,998	M. Holak
DVD	West	Houston	$20,550	M. Holak
VHS	West	Houston	$15,690	M. Holak
Game	East	DC	$10,850	J. Forum
DVD	East	DC	$16,225	J. Forum
VHS	East	DC	$19,331	J. Forum
Game	West	LA	$4,655	D. Janes
DVD	West	LA	$6,850	D. Janes
VHS	West	LA	$3,778	D. Janes
Game	East	NY	$8,400	L. Sorrento
DVD	East	NY	$10,500	L. Sorrento
VHS	East	NY	$8,234	L. Sorrento
Game	West	Houston	$9,900	T. Leni
DVD	West	Houston	$10,500	T. Leni
VHS	West	Houston	$5,200	T. Leni
Game	East	DC	$7,900	M. Gregoire
DVD	East	DC	$10,700	M. Gregoire
VHS	East	DC	$5,308	M. Gregoire

LA Sales for July:

250	Travel Accessory	New York	2	$ 2,374.32
250	Travel Accessory	New York	3	$ 3,216.65
250	Travel Accessory	New York	4	$ 2,735.43
100	Travel Insurance	New York	1	$ 4,921.45
100	Travel Insurance	New York	2	$ 3,319.92
100	Travel Insurance	New York	3	$ 4,176.89
100	Travel Insurance	New York	4	$ 2,639.43
350	Tour	New York	1	$ 6,369.43
350	Tour	New York	2	$ 7,628.78
350	Tour	New York	3	$ 8,198.90
350	Tour	New York	4	$ 7,732.76
780	Travel Accessory	New York	1	$ 1,758.43
780	Travel Accessory	New York	2	$ 5,413.98
780	Travel Accessory	New York	3	$ 4,317.98
780	Travel Accessory	New York	4	$ 5,429.54
640	Travel Insurance	New York	1	$ 1,418.43
640	Travel Insurance	New York	2	$ 2,183.98
640	Travel Insurance	New York	3	$ 2,577.98
640	Travel Insurance	New York	4	$ 2,789.54
510	Tour	New York	1	$ 2,119.43
510	Tour	New York	2	$ 3,880.78
510	Tour	New York	3	$ 6,728.90
510	Tour	New York	4	$ 6,442.76

Appliance Depot

Date	Technician	Job #	Category	Hours	Warranty
2/3/2010	Burton	100	Install	6	Yes
2/2/2010	Burton	103	Install	8	No
2/2/2010	Reilly	109	Repair	4	No
2/2/2010	Burton	116	Estimate	1	Yes
2/1/2010	Burton	122	Install	7	Yes
2/1/2010	Burton	134	Repair	6	Yes
2/3/2010	Juarez	153	Install	7	Yes
2/5/2010	Reilly	161	Estimate	1	No
2/2/2010	Juarez	164	Repair	4	No
2/3/2010	Reilly	165	Estimate	1	No
2/5/2010	Juarez	166	Repair	7	Yes
2/1/2010	Juarez	167	Install	9	Yes
2/6/2010	Burton	173	Repair	7	Yes
2/2/2010	Reilly	175	Repair	7	No
2/2/2010	Juarez	177	Install	7	No
2/5/2010	Juarez	181	Install	6	No
2/2/2010	Reilly	185	Install	3	Yes
2/2/2010	Juarez	187	Estimate	1	Yes
2/6/2010	Reilly	188	Install	4	Yes
2/5/2010	Burton	190	Install	14	Yes
2/6/2010	Reilly	192	Install	9	No
2/1/2010	Reilly	194	Install	10	No
2/2/2010	Reilly	195	Install	4	No
2/6/2010	Juarez	197	Install	8	Yes
2/3/2010	Burton	198	Repair	6	No

Month	Type	Category	Sale
April	Online	Paint	$ 43,225
April	Online	Paper	$ 18,444
April	Online	Brushes	$ 5,645
April	Phone	Paint	$ 45,444
April	Phone	Paper	$ 27,554
April	Phone	Brushes	$ 5,377
April	Store	Paint	$ 42,221
April	Store	Paper	$ 18,009
April	Store	Brushes	$ 11,899
May	Online	Paint	$ 489,557
May	Online	Paper	$ 27,452
May	Online	Brushes	$ 3,133
May	Phone	Paint	$ 2,445
May	Phone	Paper	$ 11,550
May	Phone	Brushes	$ 8,511
May	Store	Paint	$ 30,458
May	Store	Paper	$ 15,222
May	Store	Brushes	$ 5,556
June	Online	Paint	$ 45,454
June	Online	Paper	$ 25,444
June	Online	Brushes	$ 15,452
June	Phone	Paint	$ 48,442
June	Phone	Paper	$ 20,776
June	Phone	Brushes	$ 4,845
June	Store	Paint	$ 49,554
June	Store	Paper	$ 25,664
June	Store	Brushes	$ 4,845

Last Name	First Name	Title	City	Region	Status
Walsh	George	Sales Representative	Boston	U.S.	Full-time
Stinson	Greg	Sales Representative	Boston	U.S.	Part-time
Spinale	Eva	Sales Representative	Boston	U.S.	Full-time
Hart	Jeanne	Sales Representative	Boston	U.S.	Full-time
Ng	Joyce	Sales Manager	Boston	U.S.	Part-time
Juarez	Jose	Sales Manager	New York	U.S.	Full-time
Merk	Joe	Sales Manager	New York	U.S.	Full-time
Lincoln	Michael	Sales Representative	New York	U.S.	Part-time
Martin	Daniel	Sales Representative	New York	U.S.	Part-time
Levine	Andy	Sales Representative	New York	U.S.	Full-time
Lenni	Paul	Sales Representative	New York	U.S.	Full-time
Curtis	Betty	Sales Representative	New York	U.S.	Full-time
Hanley	Elaine	Sales Representative	New York	U.S.	Full-time
Weir	Troy	Sales Representative	New York	U.S.	Full-time
Clay	Duane	Sales Manager	Minneapolis	U.S.	Part-time
Bates	Julie	Sales Manager	Minneapolis	U.S.	Full-time
Riley	Pat	Sales Representative	Minneapolis	U.S.	Part-time
Lavoie	John	Sales Representative	Minneapolis	U.S.	Full-time
McCormick	Sue	Sales Manager	Chicago	U.S.	Full-time
Bayard	Grace	Sales Representative	Chicago	U.S.	Full-time
Zelan	Michelle	Sales Representative	Chicago	U.S.	Part-time
Gorahm	Fred	Sales Manager	Chicago	U.S.	Full-time
Casey	Jack	Sales Representative	Vancouver	Canada	Part-time
York	Eddie	Sales Manager	Vancouver	Canada	Full-time
Hassan	Denise	Sales Representative	Vancouver	Canada	Full-time
Hatem	Robert	Sales Representative	Vancouver	Canada	Full-time
Edwards	Jen	Sales Manager	Montreal	Canada	Full-time
James	Martin	Sales Representative	Montreal	Canada	Part-time
Kerman	Tim	Sales Representative	Montreal	Canada	Full-time
Rich	Jan	Sales Representative	Montreal	Canada	Full-time
Forsythe	Pete	Sales Representative	Montreal	Canada	Full-time
Manno	Dorothy	Sales Manager	Toronto	Canada	Part-time
Neil	Luciana	Sales Manager	Toronto	Canada	Full-time
Sable	Paul	Sales Representative	Toronto	Canada	Part-time
Wilbur	Diane	Sales Manager	Toronto	Canada	Full-time
Leary	Jeff	Sales Representative	Toronto	Canada	Full-time
Jerreck	Wiley	Sales Representative	Toronto	Canada	Full-time
Bailey	Holly	Sales Representative	Los Angeles	U.S.	Part-time
Otis	Valencia	Sales Representative	Los Angeles	U.S.	Full-time
Healey	Lily	Sales Representative	Los Angeles	U.S.	Full-time
Norris	Peter	Sales Representative	Los Angeles	U.S.	Full-time
Yanchez	Harry	Sales Representative	Los Angeles	U.S.	Full-time
Walker	Sue	Sales Manager	Los Angeles	U.S.	Full-time
Murray	John	Sales Representative	San Francisco	U.S.	Part-time
Prout	Kevin	Sales Representative	San Francisco	U.S.	Full-time
Hansen	Edward	Sales Manager	San Francisco	U.S.	Part-time
Flatley	Marge	Sales Representative	San Francisco	U.S.	Full-time
Kelley	Larry	Sales Representative	San Francisco	U.S.	Full-time
Collins	Joe	Sales Manager	San Francisco	U.S.	Full-time
Carter	Francis	Sales Representative	San Francisco	U.S.	Full-time
Ingram	Kathy	Sales Representative	San Francisco	U.S.	Full-time

Harris	William	Sales Manager	San Francisco	U.S.	Full-time
Hawthorne	Nathan	Sales Representative	San Francisco	U.S.	Part-time

Stock	Day	Price	Exchange
HPQ	1	$36.40	NYSE
HPQ	2	$36.35	NYSE
HPQ	3	$36.78	NYSE
HPQ	4	$34.87	NYSE
HPQ	5	$35.11	NYSE
SBUX	1	$33.64	Nasdaq
SBUX	2	$33.48	Nasdaq
SBUX	3	$34.68	Nasdaq
SBUX	4	$34.01	Nasdaq
SBUX	5	$34.01	Nasdaq
MSFT	1	$26.79	Nasdaq
MSFT	2	$26.86	Nasdaq
MSFT	3	$27.18	Nasdaq
MSFT	4	$26.90	Nasdaq
MSFT	5	$26.66	Nasdaq
VZ	1	$37.07	NYSE
VZ	2	$36.78	NYSE
VZ	3	$36.02	NYSE
VZ	4	$36.01	NYSE
VZ	5	$36.09	NYSE

Month	Category	Branch	Sales
Jan	Mortgage	Miami	$ 25,043,225
Jan	Mortgage	NY	$ 70,518,444
Jan	Mortgage	DC	$ 17,505,645
Jan	Home Equity	Miami	$ 21,045,444
Jan	Home Equity	NY	$ 39,027,554
Jan	Home Equity	DC	$ 15,505,377
Jan	Refinance	Miami	$ 2,742,221
Jan	Refinance	NY	$ 8,018,009
Jan	Refinance	DC	$ 4,511,899
Feb	Mortgage	Miami	$ 80,489,557
Feb	Mortgage	NY	$ 50,027,452
Feb	Mortgage	DC	$ 30,503,133
Feb	Home Equity	Miami	$ 19,002,445
Feb	Home Equity	NY	$ 28,011,550
Feb	Home Equity	DC	$ 67,508,511
Feb	Refinance	Miami	$ 9,030,458
Feb	Refinance	NY	$ 3,015,222
Feb	Refinance	DC	$ 6,505,556
Mar	Mortgage	Miami	$ 19,045,454
Mar	Mortgage	NY	$ 40,025,444
Mar	Mortgage	DC	$ 38,515,452
Mar	Home Equity	Miami	$ 40,048,442
Mar	Home Equity	NY	$ 77,020,776
Mar	Home Equity	DC	$ 62,504,845
Mar	Refinance	Miami	$ 9,049,554
Mar	Refinance	NY	$ 11,025,664
Mar	Refinance	DC	$ 8,504,845

Microsoft Excel 2007 - Illustrated

Analyzing Data with Pivot Tables

UNIT
L
Excel 2007

UNIT
L
Excel 2007

Objectives

- Plan and design a PivotTable report
- Create a PivotTable report
- Change a PivotTable's summary function and design
- Filter and sort PivotTable data

UNIT L Excel 2007

Objectives

- Update a PivotTable report
- Change the structure and format of a PivotTable report
- Create a PivotChart report
- Use the GETPIVOTDATA function

Unit Introduction

UNIT L Excel 2007

- Use the PivotTable feature to summarize data in a worksheet, then list and display that data in a table format
  - The interactive quality of a PivotTable allows you to freely rearrange, or "pivot," parts of the table structure around the data
  - Summarize data values within the table

UNIT L
Excel 2007

Planning and Designing a PivotTable Report

- Use the following guidelines to create a PivotTable:
  - Review the source data
  - Determine the purpose of the PivotTable and write down the names of the fields you want to include
  - Determine which field contains the data you want to summarize and which summary function you want to use
  - Decide how you want to arrange the data
  - Determine the location of the PivotTable

Planning and Designing a PivotTable Report (cont.)

UNIT L
Excel 2007

Column fields

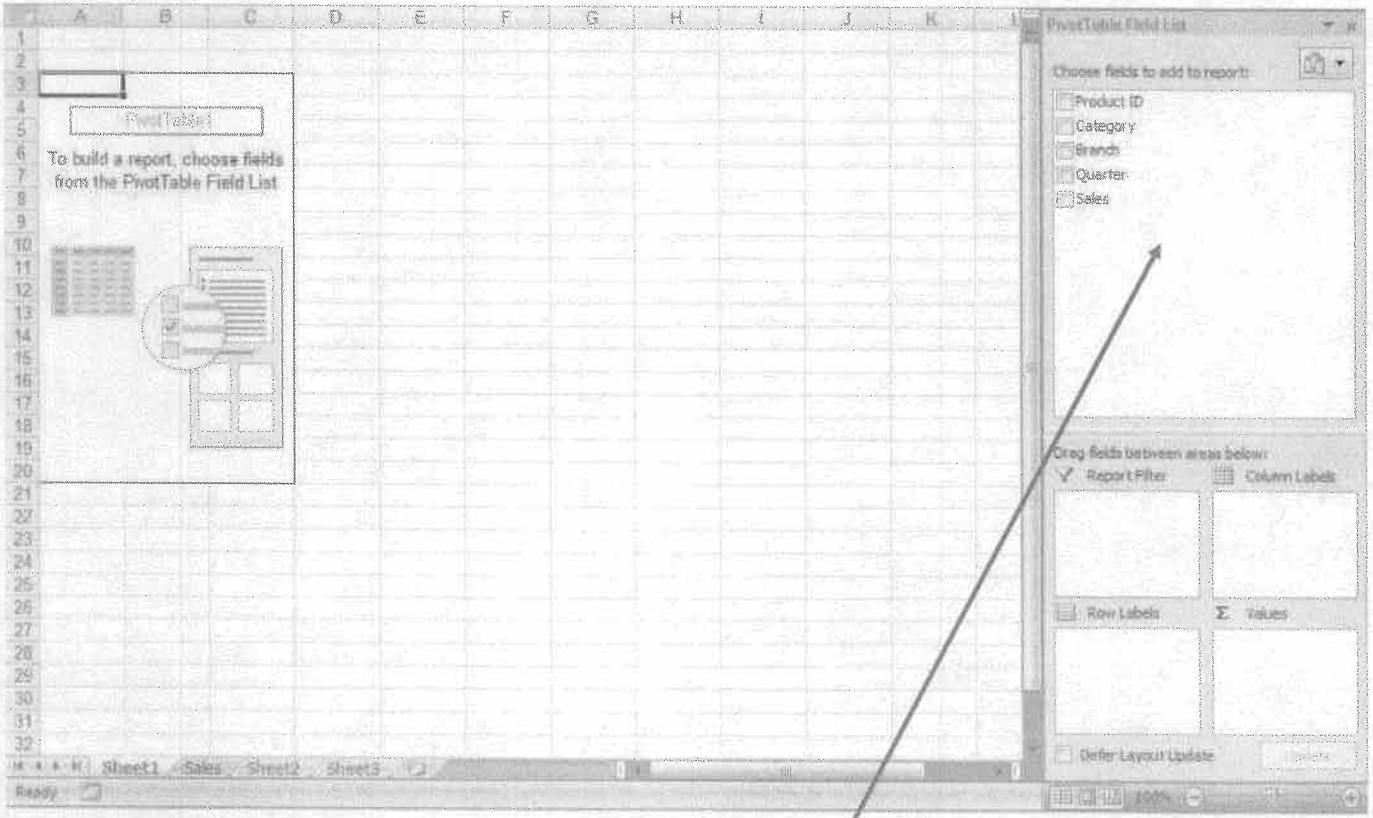
Row fields

	A	B	C	D	E	F	G	H	I
1									
2									
3	Sum of Sales	Column Labels							
4	Row Labels	100	250	350	510	640	780	Grand Total	
5	Chicago	9729.01	18649.42	33836.49	8028.49	20170.2	6790.2	97203.81	
6	1	980.65	2300.56	8995.43	999.43	1289.65	999.65	15565.37	
7	2	2634.69	5767.76	7976.43	1954.43	6434.56	2334.56	27102.43	
8	3	2500.74	4883.65	8232.65	2412.65	6100.32	2210.32	26340.33	
9	4	3612.93	5697.45	8631.98	2661.98	6345.67	1245.67	28195.68	
10	Miami	32108.38	10825.72	32465.18	9567.18	10281.51	10001.51	105249.48	
11	1	6634.43	1394.32	7790.34	2310.34	1376.34	1766.34	21272.11	
12	2	8324.65	3231.8	6814.87	2524.87	3394.21	3524.21	27814.61	
13	3	8324.65	3511.65	8883.54	2183.54	2587.53	2307.53	27798.44	
14	4	8824.65	2687.95	8976.43	2548.43	2923.43	2403.43	28364.32	
15	New York	15057.69	10266.97	29929.87	19171.87	8969.93	16919.93	100316.26	
16	1	4921.45	1940.57	6369.43	2119.43	1418.43	1758.43	18527.74	
17	2	3319.92	2374.32	7628.78	3880.78	2183.98	5413.98	24801.76	
18	3	4176.89	3216.65	8196.9	6728.9	2577.98	4317.98	29217.3	
19	4	2639.43	2735.43	7732.76	6442.76	2789.64	6429.64	27769.46	
20	Grand Total	56895.08	39742.11	96231.54	36767.54	39421.64	33711.64	302769.55	
21									

Data summary field

UNIT
L
Excel 2007

Creating a PivotTable Report



Click to add a field to the PivotTable

UNIT L
Excel 2007

Creating a PivotTable Report (cont.)

Column fields

Row fields

Sum of Sales	Column Labels						
Row Labels	100	250	350	510	640	780	Grand Total
Chicago	9729.01	18649.42	33836.49	8028.49	20170.2	6790.2	97203.81
1	980.65	2300.56	8995.43	999.43	1289.65	999.65	15565.37
2	2634.69	5767.76	7976.43	1954.43	6434.56	2334.56	27102.43
3	2500.74	4883.65	8232.65	2412.65	6100.32	2210.32	26340.33
4	3612.93	5697.45	8631.98	2661.98	6345.67	1245.67	28195.68
Miami	32108.38	10825.72	32465.18	9567.18	10281.51	10001.51	105249.48
1	6634.43	1394.32	7790.34	2310.34	1376.34	1766.34	21272.11
2	8324.65	3231.8	6814.87	2524.87	3394.21	3524.21	27814.61
3	8324.65	3511.65	8883.54	2183.54	2587.53	2307.53	27798.44
4	8824.65	2687.95	8976.43	2548.43	2923.43	2403.43	28364.32
New York	15057.69	10266.97	29929.87	19171.87	8969.93	16919.93	100316.26
1	4921.45	1940.57	6369.43	2119.43	1418.43	1758.43	18527.74
2	3319.92	2374.32	7628.78	3880.78	2183.98	5413.98	24801.76
3	4176.89	3216.65	8198.9	6728.9	2577.98	4317.98	29217.3
4	2639.43	2735.43	7732.76	6442.76	2789.54	5429.54	27769.46
Grand Total	56895.08	39742.11	96231.54	36767.54	39421.64	33711.64	302769.55

Data area

UNIT L Excel 2007

Changing a PivotTable's Summary Function and Design

- A PivotTable's summary function controls what type of calculation is applied to the table data
  - Unless you specify otherwise, Excel applies the SUM function to numeric data and the COUNT function to data fields containing text
  - Easily change the SUM function to different summary function

Changing a PivotTable's Summary Function and Design (cont.)

UNIT L
Excel 2007

PivotTable showing averages

Average of Sales	Column Labels						
Row Labels	100	250	350	510	640	780	Grand Total
Chicago	2432.2525	4662.355	8459.1225	2007.1225	5042.55	1697.55	4050.15875
1	980.65	2300.56	8996.43	999.43	1289.65	999.65	2594.228333
2	2634.69	5767.76	7976.43	1954.43	6434.56	2334.56	4617.071667
3	2500.74	4883.66	8232.66	2412.65	6100.32	2210.32	4390.055
4	3612.93	5697.45	8631.98	2661.98	6345.67	1245.67	4699.28
Miami	8027.095	2706.43	8116.295	2391.795	2570.3775	2500.3775	4385.395
1	6634.43	1394.32	7790.34	2310.34	1376.34	1768.34	3646.351667
2	8324.65	3231.8	6814.87	2524.87	3394.21	3524.21	4635.768333
3	8324.65	3511.65	8883.54	2183.54	2587.53	2307.53	4633.073333
4	8824.65	2687.95	8976.43	2548.43	2923.43	2403.43	4727.386667
New York	3764.4225	2566.7425	7482.4675	4792.9675	2242.4825	4229.9825	4179.844167
1	4921.45	1940.57	6369.43	2119.43	1418.43	1758.43	3087.956667
2	3319.92	2374.32	7628.78	3880.78	2183.98	5413.98	4133.626667
3	4176.89	3216.65	8198.5	6728.5	2677.98	4317.98	4869.55
4	2639.43	2735.43	7732.76	6442.76	2789.54	5429.54	4628.243333
Grand Total	4741.256667	3311.8425	8019.295	3063.961667	3285.136667	2809.303333	4205.132639

Filtering and Sorting PivotTable Data

UNIT L
Excel 2007

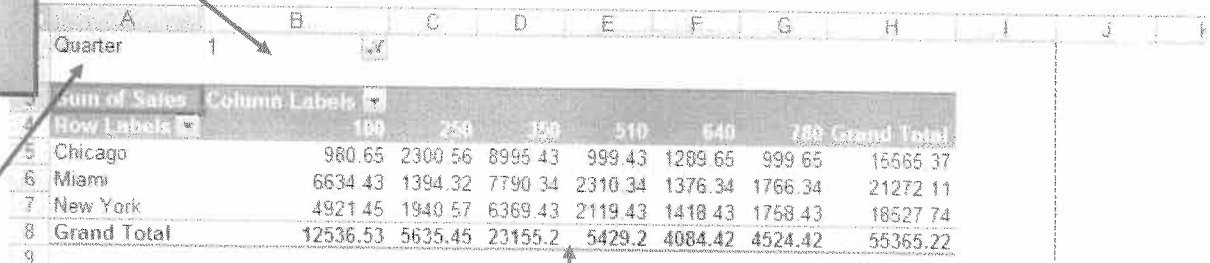
- You can filter a PivotTable using a **report filter**
- Moving a field to the Report Filter area of a PivotTable filters the report data by that field.
- You can also sort PivotTable row and column data to organize it in ascending or descending order.

Filtering and Sorting PivotTable Data (cont.)

UNIT L
Excel 2007

Only the 1st quarter should e displayed

Quarter is in the Report Filter area



	A	B	C	D	E	F	G	H
1	Quarter	1						
2								
3	Sum of Sales	Column Labels						
4	Row Labels	100	250	350	510	640	780	Grand Total
5	Chicago	980.65	2300.56	8995.43	999.43	1289.65	999.65	15565.37
6	Miami	6634.43	1394.32	7790.34	2310.34	1376.34	1766.34	21272.11
7	New York	4921.45	1940.57	6369.43	2119.43	1418.43	1758.43	18527.74
8	Grand Total	12536.53	5635.45	23155.2	5429.2	4084.42	4524.42	55365.22
9								

Sales for 1st quarter only

Updating a PivotTable Report

UNIT L Excel 2007

- Data in a PivotTable Report looks like typical worksheet data
  - However, because the data is linked to a source list, the values and results in the PivotTable are read-only values
    - Unable to modify or move part of a PivotTable
  - To change, or refresh, PivotTable data, you must update the data in the list used to create the table, called the source list

Updating a PivotTable Report (cont.)

UNIT L Excel 2007

New record added

	A	B	C	D	E	F	G	H	I
1	Quarter	4							
2									
3	Sum of Sales	Column Labels							
4	Row Labels	495	780	510	100	260	640	350	Grand Total
5	Chicago		$1,245.67	$2,661.98	$3,612.93	$5,697.45	$6,345.67	$8,631.98	$28,195.68
6	Miami		$2,403.43	$2,548.43	$8,824.65	$2,687.95	$2,923.43	$8,976.43	$28,364.32
7	New York	$2,910.04	$5,429.54	$6,442.76	$2,639.43	$2,735.43	$2,789.64	$7,732.76	$30,679.50
8	Grand Total	$2,910.04	$9,078.64	$11,653.17	$15,077.01	$11,120.83	$12,058.64	$25,341.17	$87,239.50
9									

Total reflects new CD information

Changing the Structure and Format of a PivotTable Report

UNIT L Excel 2007

- PivotTable data can't be changed, but its structure and appearance can be changed
  - Change a PivotTable's appearance by moving or adding fields

Changing the Structure and Format of a PivotTable Report (cont.)

UNIT L
Excel 2007

Category is now in the Report Filter area

	A	B	C	D	E	F	G	H	I
1	Category	(All)							
2	Quarter	(All)							
3									
4	Sum of Sales	Column Labels							
5	Row Labels	100	250	350	510	640	780	490	Grand Total
6	Chicago	$9,729.01	$18,649.42	$33,836.49	$8,028.49	$20,170.20	$6,790.20		$97,203.81
7	Miami	$32,108.38	$10,825.72	$32,466.18	$9,567.18	$10,281.61	$10,001.51		$105,249.48
8	New York	$15,057.69	$10,266.97	$29,929.87	$19,171.87	$8,969.93	$16,919.93	$2,910.04	$103,226.30
9	Grand Total	$56,895.08	$39,742.11	$96,231.54	$36,767.54	$39,421.64	$33,711.64	$2,910.04	$305,679.59
10									

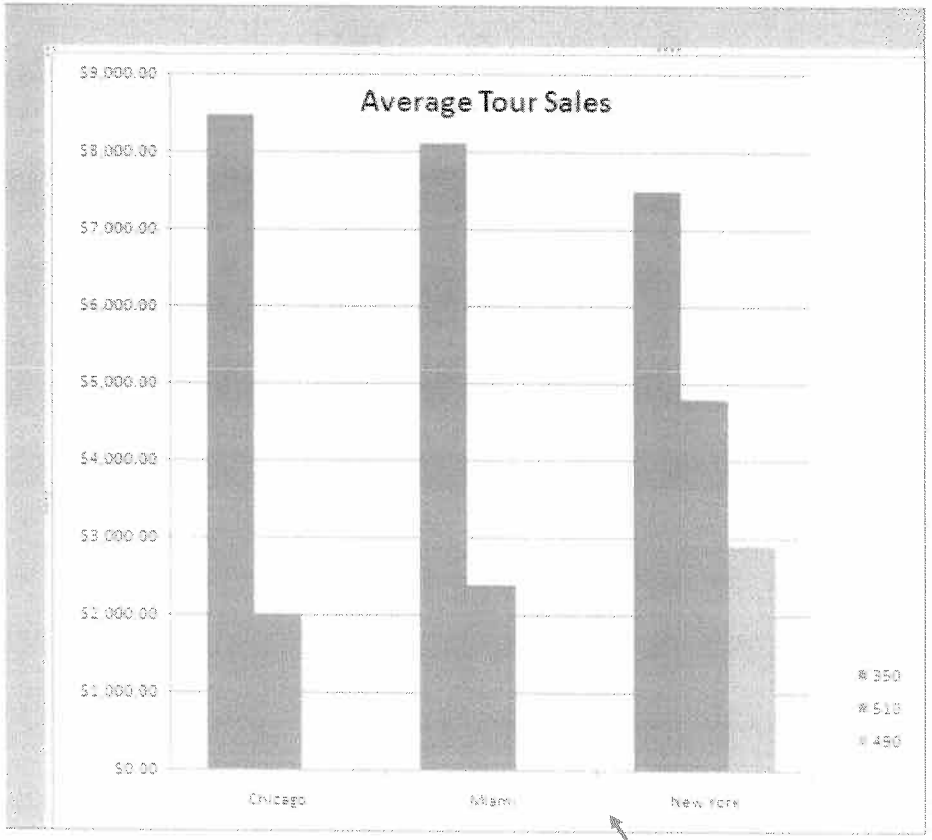
UNIT L Excel 2007

Creating a PivotChart Report

- A PivotChart report is a chart that you create from data or from a PivotTable report
  - A PivotChart has fields that you move to explore new data relationships
  - When you create a PivotChart directly from the data, Excel automatically creates a corresponding PivotTable report

Creating a PivotChart Report (cont.)

UNIT L Excel 2007



PivotChart

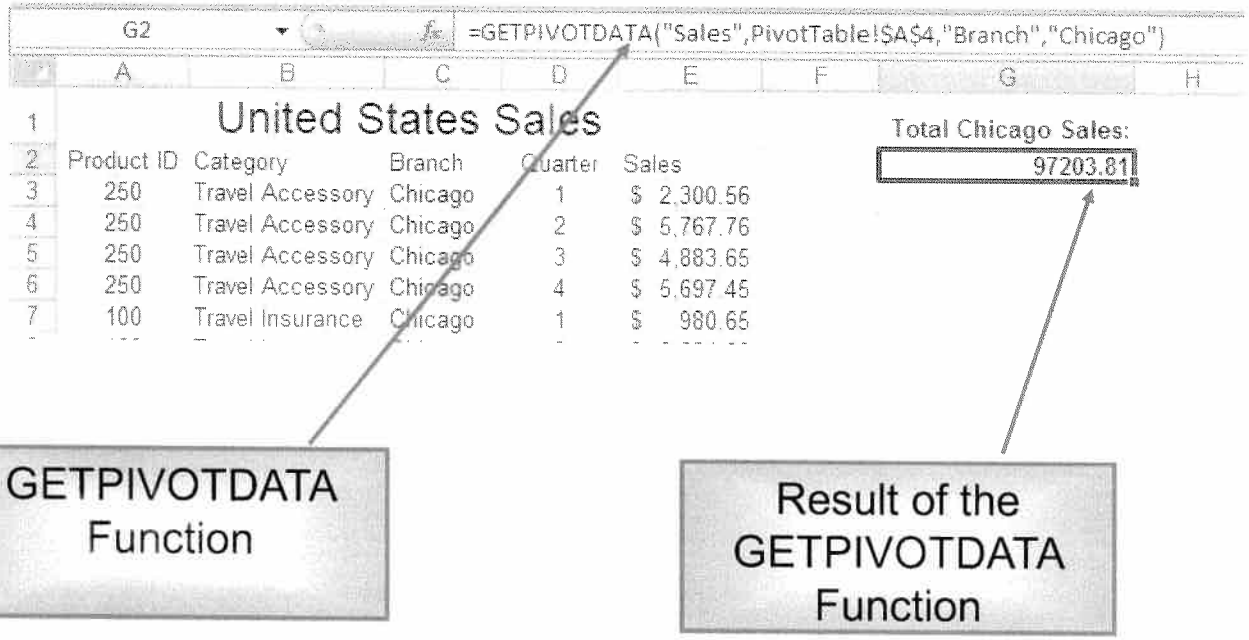
Using the GETPIVOTDATA Function

UNIT L Excel 2007

- Ordinary cell references will not work when you want to reference a PivotTable cell in another worksheet
  - If you change the way data is displayed in a PivotTable, the data moves, rendering an ordinary cell reference incorrect
  - To retrieve summary data from a PivotTable, you need to use the Excel GETPIVOTDATA function

Using the GETPIVOTDATA Function (cont.)

UNIT L Excel 2007



UNIT L Excel 2007

Summary

- Spend time planning your PivotTable
- Use the PivotTable dialog box to create a PivotTable
- Filter and sort PivotTable data
- Summary functions of PivotTables can be changed

Summary (cont.)

UNIT L Excel 2007

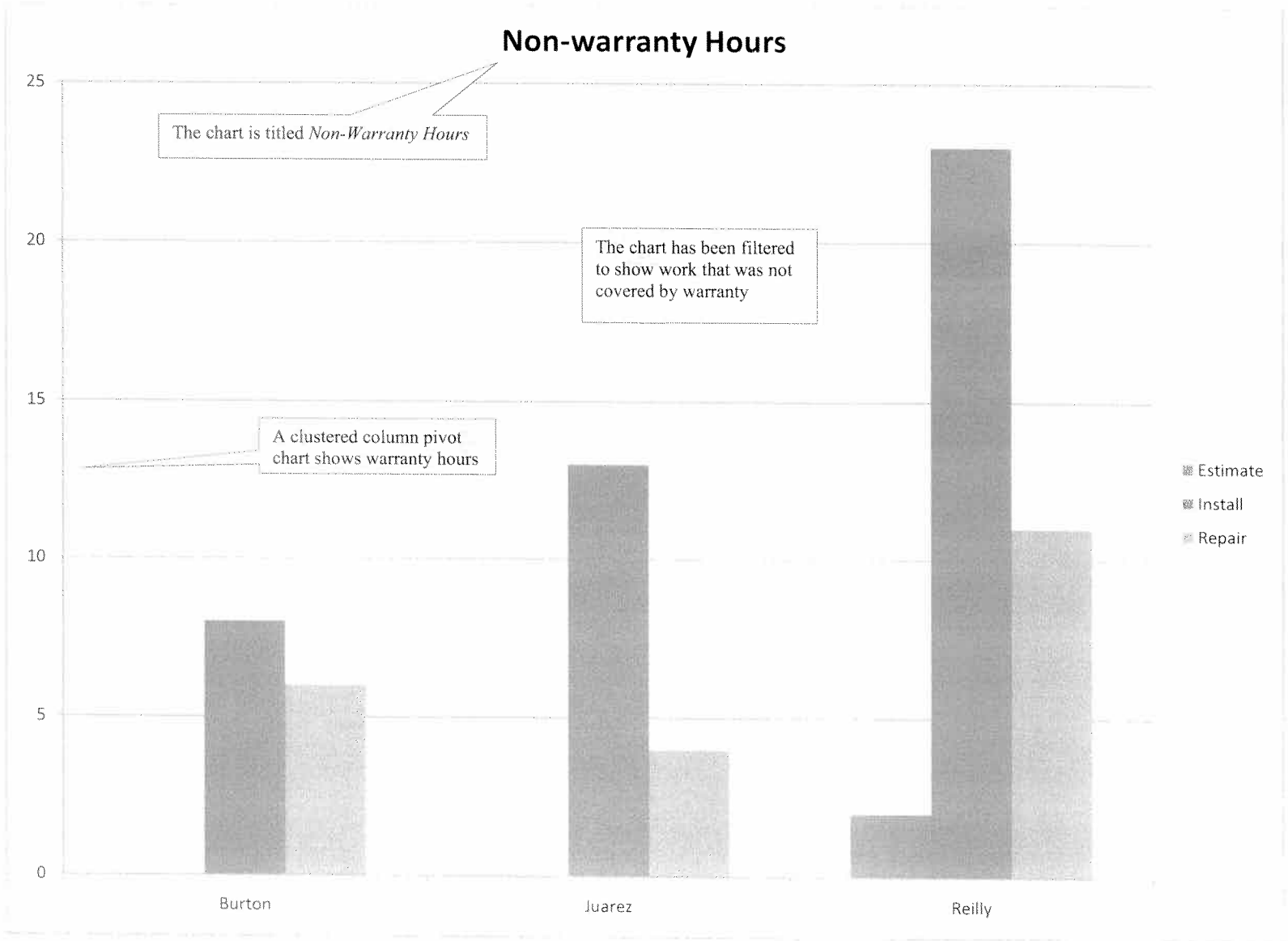
- Use the Refresh button to update PivotTables
- The structure of a PivotTable can be altered
- PivotChart reports can be created directly from PivotTables
- Use the GETPIVOTDATA function to extract information from a PivotTable

Warranty No

The PivotTable displays only the data for jobs not covered by warranty

Sum of Hours	Column Labels			
Row Labels	Estimate	Install	Repair	Grand Total
Burton		8	6	14
Juarez		13	4	17
Reilly	2	23	11	36
Grand Total	**2**	**44**	**21**	**67**

A PivotTable has been created that sums the hours by technician and category


Non-warranty Hours
The chart is titled *Non-Warranty Hours*
The chart has been filtered to show work that was not covered by warranty
A clustered column pivot chart shows warranty hours
25
20
15
10
5
0
Burton
Juarez
Reilly
Estimate
Install
Repair

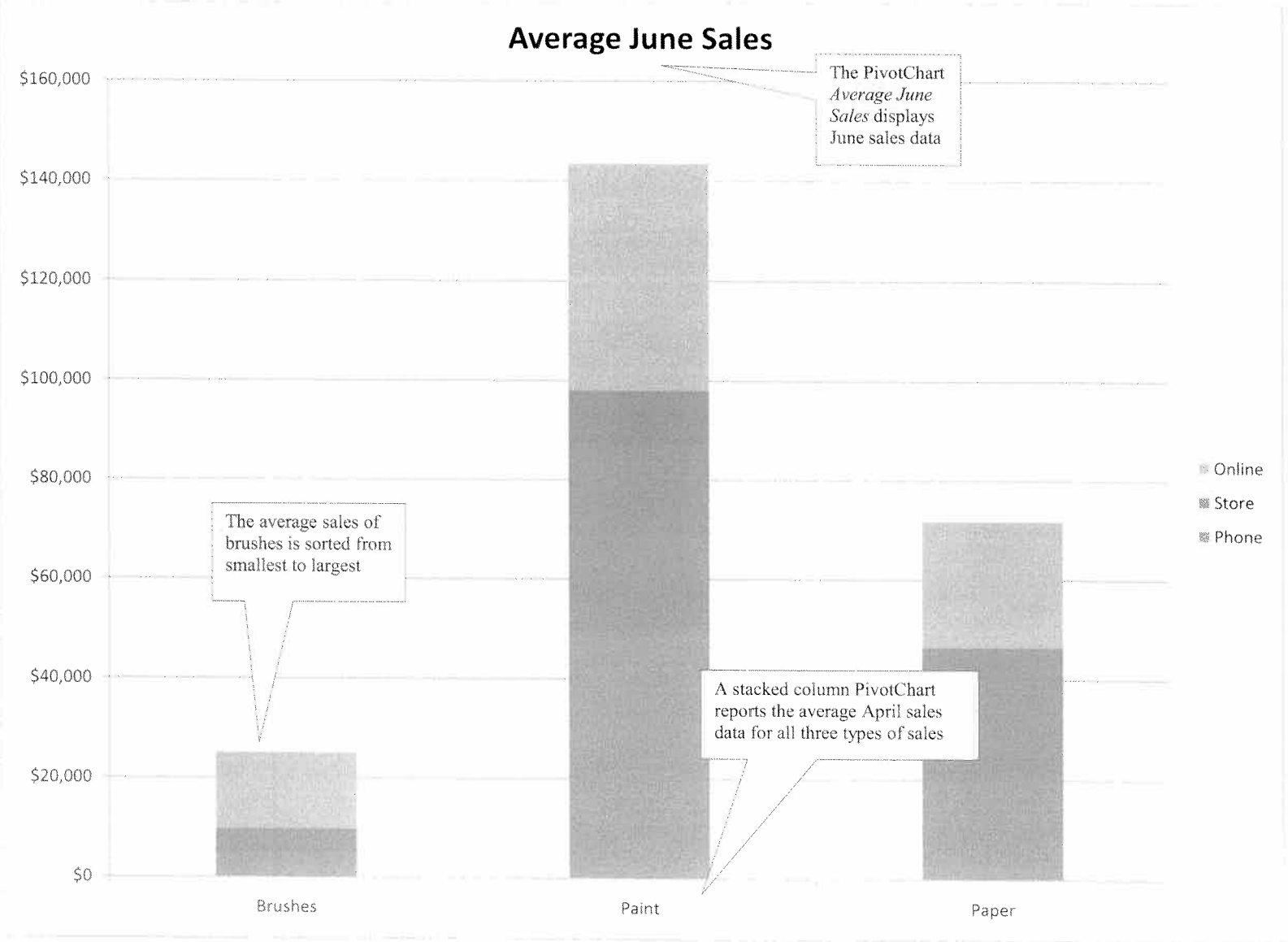
Your Name

Month	June			
Average of Sale	Column Labels			
Row Labels	Phone	Store	Online	Grand Total
Brushes	$4,845	$4,845	$15,452	$8,381
Paint	$48,442	$49,554	$45,454	$47,817
Paper	$20,776	$25,664	$25,444	$23,961

The PivotTable displays the average of the sales for the month of June

Pivot Style Dark 7 has been applied

Sales values are formatted using the Currency format with no decimal places and the $ symbol


Average June Sales
The PivotChart *Average June Sales* displays June sales data
$160,000
$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
The average sales of brushes is sorted from smallest to largest
A stacked column PivotChart reports the average April sales data for all three types of sales
Online
Store
Phone
Brushes
Paint
Paper

Your Name

Last Name	First Name	Title	City	Region	Status
Walsh	George	Sales Representative	Boston	U.S.	Full-time
Stinson	Greg	Sales Representative	Boston	U.S.	Part-time
Spinale	Eva	Sales Representative	Boston	U.S.	Full-time
Hart	Jeanne	Sales Representative	Boston	U.S.	Full-time
Ng	Joyce	Sales Manager	Boston	U.S.	Part-time
Crosby	Cathy	Sales Manager	Boston	U.S.	Full-time
Juarez	Jose	Sales Manager	New York	U.S.	Full-time
Merk	Joe	Sales Manager	New York	U.S.	Full-time
Lincoln	Michael	Sales Representative	New York	U.S.	Part-time
Martin	Daniel	Sales Representative	New York	U.S.	Part-time
Levine	Andy		New York	U.S.	Full-time
Lenni	Paul		New York	U.S.	Full-time
Curtis	Betty		New York	U.S.	Full-time
Hanley	Elaine	Sales Representative	New York	U.S.	Full-time
Weir	Troy	Sales Representative	New York	U.S.	Full-time
Clay	Duane	Sales Manager	Minneapolis	U.S.	Part-time
Bates	Julie	Sales Manager	Minneapolis	U.S.	Full-time
Riley	Pat	Sales Representative	Minneapolis	U.S.	Part-time
Lavoie	John	Sales Representative	Minneapolis	U.S.	Full-time
McCormick	Sue	Sales Manager	Chicago	U.S.	Full-time
Bayard	Grace	Sales Representative	Chicago	U.S.	Full-time
Zelan	Michelle	Sales Representative	Chicago	U.S.	Part-time
Gorahm	Fred	Sales Manager	Chicago	U.S.	Full-time
Casey	Jack	Sales Representative	Vancouver	Canada	Part-time
York	Eddie	Sales Manager	Vancouver	Canada	Full-time
Hassan	Denise	Sales Representative	Vancouver	Canada	Full-time
Hatem	Robert	Sales Representative	Vancouver	Canada	Full-time
Edwards	Jen	Sales Manager	Montreal	Canada	Full-time
James	Martin	Sales Representative	Montreal	Canada	Part-time
Kerman	Tim	Sales Representative	Montreal	Canada	Full-time
Rich	Jan	Sales Representative	Montreal	Canada	Full-time
Forsythe	Pete	Sales Representative	Montreal	Canada	Full-time
Manno	Dorothy	Sales Manager	Toronto	Canada	Part-time
Neil	Luciana	Sales Manager	Toronto	Canada	Full-time
Sable	Paul	Sales Representative	Toronto	Canada	Part-time
Wilbur	Diane	Sales Manager	Toronto	Canada	Full-time

The worksheetincludes a new employee, Cathy Crosby

Cathy Crosby is a full-time sales manager at the Boston office

Your Name

Leary	Jeff	Sales Representative	Toronto	Canada	Full-time
Jerreck	Wiley	Sales Representative	Toronto	Canada	Full-time
Bailey	Holly	Sales Representative	Los Angeles	U.S.	Part-time
Otis	Valencia	Sales Representative	Los Angeles	U.S.	Full-time
Healey	Lily	Sales Representative	Los Angeles	U.S.	Full-time
Norris	Peter	Sales Representative	Los Angeles	U.S.	Full-time
Yanchez	Harry	Sales Representative	Los Angeles	U.S.	Full-time
Walker	Sue	Sales Manager	Los Angeles	U.S.	Full-time
Murray	John	Sales Representative	San Francisco	U.S.	Part-time
Prout	Kevin	Sales Representative	San Francisco	U.S.	Full-time
Hansen	Edward	Sales Manager	San Francisco	U.S.	Part-time
Flatley	Marge	Sales Representative	San Francisco	U.S.	Full-time
Kelley	Larry	Sales Representative	San Francisco	U.S.	Full-time
Collins	Joe	Sales Manager	San Francisco	U.S.	Full-time
Carter	Francis	Sales Representative	San Francisco	U.S.	Full-time
Ingram	Kathy	Sales Representative	San Francisco	U.S.	Full-time
Harris	William	Sales Manager	San Francisco	U.S.	Full-time
Hawthorne	Nathan	Sales Representative	San Francisco	U.S.	Part-time

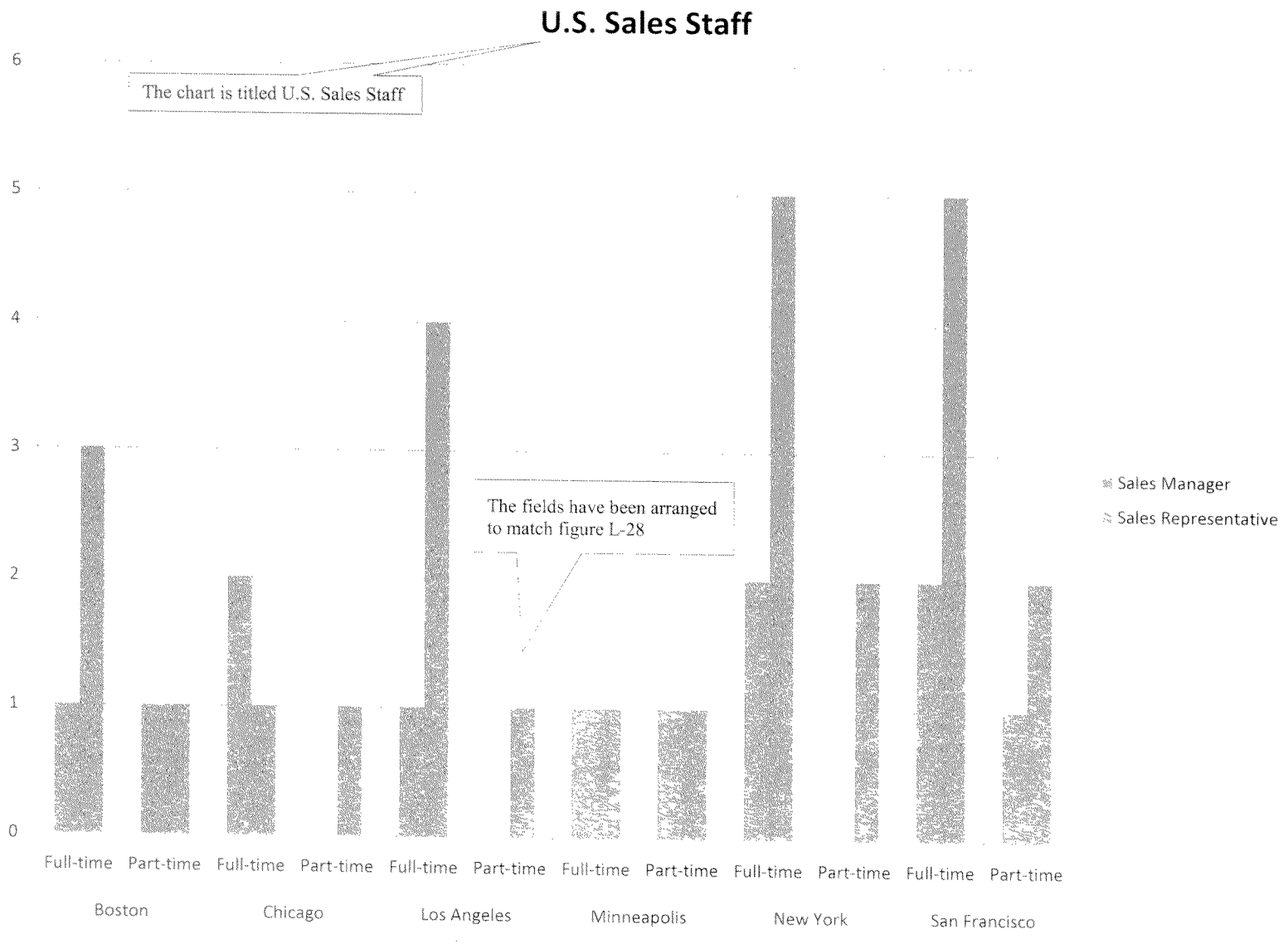
Your Name

Only the U.S. employees are displayed

Count of Last Name	Column Labels		
Row Labels	Sales Manager	Sales Representative	Grand Total
Boston	2	4	6
Chicago	2	2	4
Los Angeles	1	5	6
Minneapolis	2	2	4
New York	2	7	9
San Francisco	3	7	10
Grand Total	12	27	39

Pivot Style Light 14 has been applied

The PivotTable is structured to match Figure L-27


U.S. Sales Staff
The chart is titled U.S. Sales Staff
The fields have been arranged to match figure L-28
6
5
4
3
2
1
0
Full-time
Part-time
Full-time
Part-time
Full-time
Part-time
Full-time
Part-time
Full-time
Part-time
Full-time
Part-time
Boston
Chicago
Los Angeles
Minneapolis
New York
San Francisco
Sales Manager
Sales Representative

Your Name

Exercises submitted by midnight Thursday will be graded for feedback purposes by midnight Friday. Errors may be corrected and exercises resubmitted by midnight Saturday for full credit.

These problems are due according to the schedule given in the course syllabus. Independent Challenges 1, 2, and 3 are due by next Saturday evening. Note that the college requires a 20% penalty be imposed for all work submitted late in online courses.

As always, contact me by email if you have any questions or problems. If you have a question about a specific Excel exercise, you may attach your Excel file to your email. If you wish me to call you, then include your phone number in the email.