

Excel Review TUTORIAL: **Tracking and Analyzing GBI Accessory Sales**

This tutorial serves as a review of spreadsheet development skills.¹ It assumes that you have a basic understanding of spreadsheets, spreadsheet terminology, and Microsoft Excel. In terms of our curriculum, it assumes you have completed CMIS 108. The tutorial is based on Excel 2013.

In completing this tutorial, you will: create an Excel workbook containing several worksheets, properly format cells and worksheets, consolidate data into a summary worksheet, use range names and the VLOOKUP function, prepare a pivot table and chart, and use scenario manager.

Business Situation

Global Bike Inc. (GBI) has a pragmatic design philosophy that comes from its deep roots in both off-road trail racing and long-distance road racing sports.² Its founders designed their first bikes out of necessity: they had races to win and the bikes that were available at the time did not



perform to their extremely high standards. So they took matters into their own hands and built bikes that would outlast and outperform the competition. From these humble origins, GBI was born and continues to deliver innovative high-performance bicycles to the world's most demanding riders.

In addition to producing touring bikes and off-road bikes, GBI sells two accessory products: water bottles and t-shirts. They don't produce these accessory products; they get them from supplier companies and then sell them to their biking customers. While staff in the warehouse and procurement departments handle the ordering of these accessory products from suppliers, an administrative assistant in the home office (Pam Beesly) tracks sales of the accessory products in order to determine which items are most popular with their biking customers.³

For years, Pam has been tracking and analyzing sales of the accessory products manually. This is tedious and time-consuming. In this tutorial, you will design and build an Excel workbook that gives Pam a more efficient way to track and analyze these sales.



¹ The spreadsheet tutorial in the 2009 4th (and final, the book is no longer being updated) edition of *MIS Cases: Decision Making with Application Software* by Lisa Miller provided a basis for the development of this tutorial.

² The GBI company background is adapted from SAP University Alliance collaborative teaching materials.

³ Our use of characters from *The Office* (<http://www.nbc.com/the-office>) is for educational purposes only.

Specifications for the Spreadsheet Application

At the close of each business day, Pam manually records the daily sales for accessory products on a Daily Sales Activity Report. Figure 1 shows a copy of this report. At the end of each day, Pam fills in the Unit Sales and Dollar Sales columns.

Figure 1. Daily Sales Activity Report

GBI Accessory Products Daily Sales Activity Report		
For Date: _____		
ITEM	UNIT SALES	DOLLAR SALES
T-shirt S		
T-shirt M		
T-shirt L		
T-shirt XL		
T-shirt XXL		
Water Bottle Red		
Water Bottle Clear		

At the end of the week, Pam uses the Daily Sales Activity Reports to prepare a Weekly Sales Activity Report. This weekly report uses the same format as the daily report (Figure 1) except that it reflects the sales totals for the week.

In discussing the business need with Pam, you determine that Pam needs a spreadsheet workbook for each month of the year. Each month’s workbook will contain a set of worksheets:

- The four weekly worksheets, with each weekly worksheet providing columns to capture the sales activity for each day of the week
- A summary worksheet for the month, which consolidates the weekly sales data
- A price list worksheet, containing the current price for each of the accessory products

The price list worksheet will have the format and content shown in Figure 2.

Figure 2. Price List

Global Bike Inc. Price List	
T-shirt	\$25.00
Water Bottle	\$15.00

In this tutorial, you will create the monthly workbook for October. After creating those worksheets to track the accessory product sales, you set up some additional elements in the workbook to help Pam analyze the sales data. Specifically, you:

- Create a pie chart that compares the monthly sales of t-shirts vs. water bottles.
- Perform a what-if analysis to observe how dollar sales might change if they raise the price of the t-shirts.

Ready? Set? Let's do it!

Creating the Workbook

We will create the workbook through a sequence of four activities:

1. Establish the workbook with six worksheets
2. Create the PriceList worksheet
3. Create the four Weekly worksheets
4. Create the Summary worksheet

Activity 1: Establish the workbook and the six worksheets

This involves three tasks: create and save a new workbook, insert five additional worksheets, and rename the worksheets.

Task 1a. Create and save a new workbook:

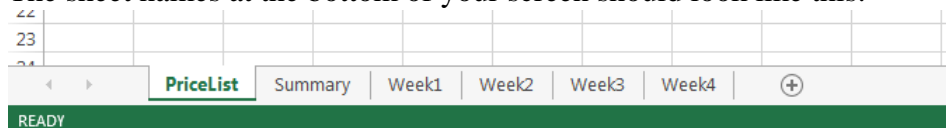
1. Start Microsoft Excel 2013.
2. Create a new workbook.
3. Save your new workbook as name "GBI".

Task 1b. Insert five additional worksheets:

1. **To add a worksheet:** From the Cells group located on the HOME tab, click the arrow on the Insert button. Select the Insert Sheet command.
2. Repeat until you have 6 sheets in your GBI workbook.

Task 1c. Rename the worksheets:

1. **To rename a worksheet:** Right click the sheet tab name, and then select the Rename command. Type the worksheet's new name.
2. Rename each of the 6 sheets, giving the worksheets THESE NAMES and keeping them IN THIS ORDER: PriceList, Summary, Week1, Week2, Week3, Week4
The sheet names at the bottom of your screen should look like this:



Activity 2: Create the PriceList worksheet

The PriceList worksheet contains the current prices for the GBI accessory products. This worksheet will serve as a lookup table for the weekly worksheets. When completed, the PriceList worksheet will look like Figure 2.

Creating the PriceList worksheet involves these three tasks: design and format the worksheet, enter the price data into the worksheet, assign a range name to the price data.

Task 2a. Design and format the worksheet:

1. Make the PriceList worksheet your active worksheet.
2. Adjust row 1's height to 30. Adjust row 2's height to 21. **To adjust row height**, you can:
 - o Select the row.
 - o From the Cells group located on the HOME tab, click the Format button. Then select the Row Height command.
3. Adjust column A's width to 30. Adjust column B's width to 10. **To adjust column width**, you can:
 - o Select the column.
 - o From the Cells group located on the HOME tab, click the Format button. Then select the Column Width command.
4. Enter the text "Global Bike Inc." into cell A1. Select the text you entered and the set the font size to 26. Bold the text. **To set things like font size, bold, italics, color, etc.**, use the Font group on the HOME tab.
5. Enter the text "Price List" into cell A2. Bold this text and set the font size to 16.
6. Select cells A1 and B1. **To merge the cells and center the content**: From the Alignment group on the HOME tab, click the Merge & Center button.
7. Select cells A2 and B2. Merge & Center these cells.
8. Select the cell range A1:B2. From the Font group on the HOME tab, click the arrow beside the Fill Color button. Click the color "Blue, Accent 1" (fifth column, top row).
9. If necessary, reselect the cell range A1:B2. From the Font group on the HOME tab, click the arrow beside the Font Color button. Select the color White (first column, top row).
10. Select the cell range A1:B4. **To control the appearance of borders for the selected area**: From the Font group on the HOME tab, click the arrow beside the borders button. Select the Outside Borders option.
11. Select the cell range A3:A4. Use the borders button to show the Right Border for this selected area.
12. Apply a bold format to the cell range A3:B4.
13. Select the cell range B3:B4. **To set the format for the content of these cells**: From the Number group located on the HOME tab, use the dropdown to select Currency as the number format.

This is a good time to save your work!

Task 2b: Enter data into the PriceList worksheet:

1. Enter the price data from Figure 2 into your PriceList worksheet.
2. Check to make sure you have not made any typing errors!

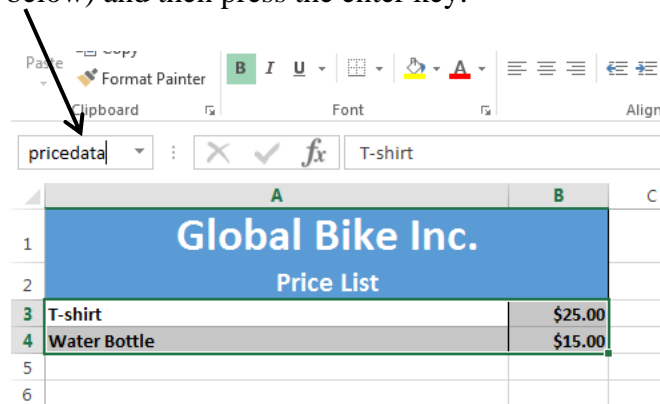
Task 2c: Assign a range name to the price data:

A “range name” is a name for a group of cells in a worksheet. By assigning a range name, you provide a quick way to refer to this particular set of cells.

The most common use of range name is to isolate the part of a worksheet that contains data that will be searched as a lookup table. This lets you leave out header rows and other areas of the worksheet that should not be examined during the search. Remember that in Excel, you can use the VLOOKUP function to search any worksheet. So when you assign a range name to a set of cells, you are most likely planning to search this data area with a “future” VLOOKUP! 😊

To assign a range name to the price data area in your PriceList worksheet:

1. Select the cell range A3:B4.
2. In the Name Box located on the formula toolbar, type the name “pricedata” (as shown below) and then press the enter key.



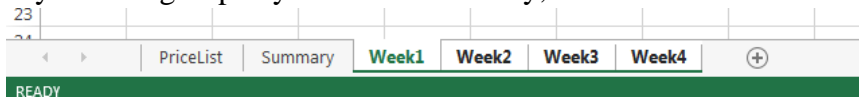
Before proceeding to Activity 3, be sure to save your work!

Activity 3: Create the Weekly worksheets

Since the four weekly worksheets have the same design and format, you want to group the worksheets to design the layout of all four sheets at the same time. So creating the weekly worksheets will involve these tasks: group the weekly sheets, format the sheets, enter data into the sheets, and enter formulas into the sheets.

Task 3a: Group the weekly sheets:

1. **To group the worksheets:** Click the Week1 sheet tab. Then while holding down the Shift key, click the Week4 sheet tab. This makes those sheets and all sheets in between them a group.
2. If you have grouped your sheets correctly, the tabs will now look like this:



You can tell the sheets are grouped by the white background and green underscore. You also know when you are working with grouped worksheets because the word [Group] appears after your file name at the top of your screen. The active sheet of the group is indicated by green letters and an open top border on the sheet tab.

Task 3b: Format the sheets:

In sheet Week1 and with the worksheets grouped so that the formatting you are about to do applies to all four of the weekly sheets:

1. Set row 1's height to 30; set row 2's height to 21; set row 3's height to 26.
2. Adjust column A's width to 30. Adjust column B's width to 10. Adjust column R's width to 16.
3. In cell A1, enter the text "GBI Accessory Products". Select the cell range A1:R1. Merge & Center the content of these cells.
4. Select row 1 and set the font size to 26. Bold the text.
5. In cell A2, enter the text "Weekly Sales". Select the cell range A2:R2. Merge & Center the content.
6. Select row 2 and set the font size to 16. Bold the text.
7. Select the cell range A1:R3.
8. From the Font group on the HOME tab, use the Fill Color button to fill this area with color "Blue, Accent 1" (fifth column, top row).
9. From the Font group on the HOME tab, use the Font Color button to set the text color to White (first column, top row).
10. In cell C3, type the word "Sunday". Select the cell range C3:D3. Merge & Center the contents.

11. In cell E3, type the word “Monday”. Select the cell range E3:F3. Merge & Center the contents.
12. In cell G3, type the word “Tuesday”. Select the cell range G3:H3. Merge & Center the contents.
13. In cell I3, type the word “Wednesday”. Select the cell range I3:J3. Merge & Center the contents.
14. In cell K3, type the word “Thursday”. Select the cell range K3:L3. Merge & Center the contents.
15. In cell M3, type the word “Friday”. Select the cell range M3:N3. Merge & Center the contents.
16. In cell O3, type the word “Saturday”. Select the cell range O3:P3. Merge & Center the contents.
17. In cell Q3, type the words “Total Weekly Sales”. Select the cell range Q3:R3. Merge & Center the contents.
18. Select the cell range C3:R3. From the Font group located on the HOME tab, click the Bold button.
19. In cell A4, enter the text “ACCESSORY PRODUCT”.
20. In cell B4, enter the text “Size/Color”.
21. In cell C4, type “Sun Units”. In cell D4, type “Sun Sales”.
22. In cell E4, type “Mon Units”. In cell F4, type “Mon Sales”.
23. In cell G4, type “Tue Units”. In cell H4, type “Tue Sales”.
24. In cell I4, type “Wed Units”. In cell J4, type “Wed Sales”.
25. In cell K4, type “Thu Units”. In cell L4, type “Thu Sales”.
26. In cell M4, type “Fri Units”. In cell N4, type “Fri Sales”.
27. In cell O4, type “Sat Units”. In cell P4, type “Sat Sales”.
28. In cell Q4, type “Total Units”. In cell R4, type “Total Dollar Sales”.
29. Select row 4. Bold the content of those cells.
30. Select the cell range C4:R4. From the Alignment group in the HOME tab, click the Center button.
31. Select the cell range A4:R12. Set the font size to 8.
32. Enter the accessory product descriptions (T-shirt, Water Bottle) into the cell range A5:A6. Because this data will be used to search the PriceList lookup table, it is important that these product descriptions are entered EXACTLY as they are entered in your PriceList sheet. One way to ensure this is **to copy and paste the data from your PriceList worksheet**, using the usual Microsoft-y copy and paste (Control-C to copy, Control-V to paste) with this **WARNING**:
 - **Caution! When you do the Copy from the PriceList sheet, that action may UNGROUP your weekly sheets. So when you go back to Week1 to paste, be sure to RE-GROUP your four weekly sheets before doing the Paste.** Check your Week2, Week3, and Week4 sheets to make sure that you have your sheets grouped properly and that the paste of the product descriptions carried through to all four weekly sheets.

33. Pam tracks the sales of accessory products by size and color, so the weekly sales sheets need to contain a row for each size and color of product. GBI sells five sizes of their t-shirt: S, M, L, XL, XXL. GBI sells the water bottle in two colors: Red, Clear.

Make sure your weekly sheets are grouped and Week1 is your active sheet. Then insert four rows and copy your “T-shirt” into those so that you have five “T-shirt” rows, and enter the different sizes in the “Size/Color” column of those rows. Insert another row and copy your “Water Bottle” row into it, then enter the two different colors in the “Size/Color” column. When you are done, this part of your worksheet should like the following:

3	S		
4	ACCESSORY PRODUCT	Size/Color	Sun Unit
5	T-shirt	S	
6	T-shirt	M	
7	T-shirt	L	
8	T-shirt	XL	
9	T-shirt	XXL	
10	Water Bottle	Red	
11	Water Bottle	Clear	

34. Select the cell range A5:B11. If the content of these cells is not already Bold, use the Font group to Bold the content of these cells. While you have this area selected, also use the Borders button to state No Borders (to remove any borders that may have copied over from PriceList).

SAVE your work before going on to Task 3c!

Task 3c: Enter data into the sheets:

To enter data into each of the four weekly worksheets:

1. Ungroup your worksheets. You no longer want what you are doing to apply to all four weekly sheets. **To ungroup your worksheets:**
 - Right click the Week1 sheet tab.
 - Select the Ungroup Sheets option.
2. Select the Week1 sheet tab and enter the Unit Sales data shown in Table 1.

Table 1. Week 1 Unit Sales

Week 1 Unit Sales							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Accessory Product	Units	Units	Units	Units	Units	Units	Units
T-shirt S	25	25	6	30	10	10	3
T-shirt M	10	10	5	10	9	2	2
T-shirt L	5	5	4	12	4	7	8
T-shirt XL	5	5	13	5	5	9	10
T-shirt XXL	1	1	7	4	6	4	12
Water Bottle Red	25	25	10	10	5	4	6
Water Bottle Clear	10	10	9	15	10	12	4

3. Select the Week2 sheet tab and enter the Unit Sales data shown in Table 2.

Table 2. Week 2 Unit Sales

Week 2 Unit Sales							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Accessory Product	Units	Units	Units	Units	Units	Units	Units
T-shirt S	12	1	1	1	5	8	10
T-shirt M	4	5	6	7	8	10	1
T-shirt L	5	1	2	3	4	7	8
T-shirt XL	9	1	2	3	1	3	3
T-shirt XXL	5	1	2	4	7	8	10
Water Bottle Red	1	10	2	2	2	9	10
Water Bottle Clear	4	7	1	10	15	1	12

4. Select the Week3 sheet tab and enter the Unit Sales data shown in Table 3.

Table 3. Week 3 Unit Sales

Week 3 Unit Sales							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Accessory Product	Units	Units	Units	Units	Units	Units	Units
T-shirt S	1	1	2	6	10	7	4
T-shirt M	3	2	0	7	2	5	4
T-shirt L	4	2	0	8	1	2	4
T-shirt XL	7	2	0	2	2	2	6
T-shirt XXL	2	2	3	2	8	1	2
Water Bottle Red	2	5	3	1	0	5	5
Water Bottle Clear	0	4	2	0	0	8	2

5. Select the Week4 sheet tab and enter the Unit Sales data shown in Table 4.

Table 4. Week 4 Unit Sales

Week 4 Unit Sales							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Accessory Product	Units	Units	Units	Units	Units	Units	Units
T-shirt S	2	4	2	7	7	1	0
T-shirt M	1	2	2	6	2	2	0
T-shirt L	1	5	2	5	2	1	0
T-shirt XL	0	5	5	2	1	2	2
T-shirt XXL	1	6	2	6	3	1	2
Water Bottle Red	5	3	2	4	1	1	2
Water Bottle Clear	2	1	2	1	1	1	2

This is a good time to SAVE your work!

Task 3d: Enter formulas into the sheets:

You want to enter formulas into the sheets to calculate the dollar Sales associated with each Units entry. To do this, you will use VLOOKUP to search the price data (the range name you set up in your PriceList worksheet) to find the current price of each accessory product. The price value that VLOOKUP returns will be multiplied by the number of Units to determine the associated dollar Sales amount.

Developing these formulas provides a **refresher on absolute cell references**:

By default, when you copy a formula to another cell, Excel will adjust cell references to reflect the new location. If you do NOT want that to happen, you need to indicate an absolute reference. You do this by putting a \$ in front of the reference. You can make the column reference absolute (e.g., \$A5) or the row reference absolute (e.g., A\$5) or both (e.g., \$A\$5).

Examples:

- A5 This is a plain old cell reference. Excel will adjust both row and column if you copy it to another location.
- \$A\$5 This is an absolute reference. If you copy this reference to another location, Excel will not change it; this reference will ALWAYS point to column A row 5.
- \$A5 This is a mixed reference (column is absolute, but row is not). If you copy this reference to another location, the column will ALWAYS be column A, and Excel will adjust the row to the new location.
- A\$5 This is a mixed reference (row is absolute, but column is not). If you copy this reference to another location, the row will ALWAYS be row 5, and Excel will adjust the column to the new location.

Developing these formulas also provides a [refresher on using the VLOOKUP formula](#):

VLOOKUP is used to search a worksheet for a particular row of data. To tell this formula exactly what you want it to do, you provide values for these four parameters in this order:

- The value you are searching for. VLOOKUP will look for this value in the first (leftmost) column of the data area you are searching. The data area being searched is commonly called a lookup table.
- The data area (lookup table) you want to search.
- The number of the column in the lookup table that holds the value you want returned.
- If you are only interested in an exact match, you state the fourth parameter as *False*. In this case, the lookup table is searched line-by-line and the rows of the lookup table do not have to be sorted into any particular order.
 - If *False* is not coded, this parameter defaults to *True*. *True* means:
 - The lookup table is assumed to be sorted into ascending order of the first column. This facilitates a binary search, which is a more efficient search process.
 - If an exact match is not found, an approximate match will be returned.

In most spreadsheet applications you develop, you can code the fourth parameter as False. But when the lookup table you are searching is quite large, you should sort the contents of the table and use True to perform a binary search.

Okay, now we're ready to create the formulas:

1. Group your Week1, Week2, Week3, and Week4 worksheets again. This will apply the formulas we create to all four worksheets. Make Week1 your active sheet.
2. In the Week1 sheet, in cell D5, you want to insert the formula to calculate Sunday Sales. Once we have this formula, we can copy it to other cells in the worksheet.

The formula will retrieve the price of the product accessory from the price data in your PriceList sheet (remember setting up that range name? now you are going to search that area of the PriceList sheet!) and then multiply that price by the number of Sun Units sold.

First step is to code the VLOOKUP function to retrieve the price of the accessory product. *What will you enter for each of the four parameters?*

\$A5 points to the value that you want to search for. This mixed reference is saying ALWAYS column A, but adjust the row number when the formula is copied to another location.

pricedata is the name of the data area (lookup table) you want to search.

2 is the number of the *column in pricedata* that holds the value you want from the lookup table (the current price of the product).

False

So your VLOOKUP function is coded as:

=VLOOKUP(\$A5,pricedata,2,False)

The function will return the product price. You need to multiply that product price by the Sun Units to arrive at Sun Sales. So the full formula that you will enter into cell D5 is:

=VLOOKUP(\$A5,pricedata,2,False)*C5

Why **C5**? C5 is the cell containing Sun Units. We want Excel to adjust the row and column when we copy the formula to other cells, so no \$ absolute references.

3. Make sure that your worksheets are still grouped. Make sure that cell D5 in all four weekly worksheets shows the formula you created. Regroup your worksheets if necessary.
4. Now, with the four weekly sheets grouped, copy the formula from D5 to these cell ranges: D6:D11, F5:F11, H5:H11, J5:J11, L5:L11, N5-N11, P5:P11. Remember to paste as *Formulas*. Also remember the trick about pulling the corner of a cell to copy to a set of adjacent cells (you can do this to copy the formula down the columns).
5. Format the cells containing dollar values of Sales to be a Currency format showing 2 decimal places. Be sure to do this for the last column too (Total Dollar Sales). If necessary, adjust the column widths so the full values show.
6. Now we need to create the formula for Total Units in cell Q5. This will be the sum of the seven Units columns:

=C5+E5+G5+I5+K5+M5+O5

Why no \$ absolute references? Because you want Excel to adjust both the column and row when you copy this formula in the next step...

7. Copy the formula from cell Q5 to cells Q6:Q11. Make sure your weekly sheets are still grouped so this is being accomplished in all four sheets.
8. Similar to how you did the formula for Total Units, create the formula for Total Dollar Sales in cell R5. Copy that formula to cells R6:R11.
9. Let's add a grand total line and formulas for the grand totals. To do this:
 - Be sure that your weekly sheets are still grouped.
 - Make cell A12 your active cell. Set the font size to 11 and Bold. Enter the text "Total Daily Sales".
 - You want the sum of the Sunday units in cell C12. An easy way to accomplish this is **to use the AutoSum button to generate the appropriate formula**: Select the cells you want to add together, then click the AutoSum button in the Editing group on the HOME tab.
 - Do the same (use the AutoSum button) to complete the remaining grand totals in columns D through R.
 - Select the cell range C12:R12. Set the contents to Bold.
10. Finally, let's format the borders of the weekly sheets:
 - Select the cell range A1:R12. Use the Borders button to Set Outside Borders.
 - Select the cell range A11:R11. Set a Bottom Border.
 - Select the cell range A3:R3. Set a Bottom Border.
 - Select the cell range A4:R4. Set a Bottom Border.

Weekly worksheets are done! You can UPGROUP them and SAVE your work. At this point, your Week1 worksheet should look like Figure 3.

Figure 3. Completed Week 1 Worksheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	GBI Accessory Products																	
2	Weekly Sales																	
3			Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Total Weekly Sales	
4	ACCESSORY PRODUCT	Size/Color	Sun Units	Sun Sales	Mon Units	Mon Sales	Tue Units	Tue Sales	Wed Units	Wed Sales	Thu Units	Thu Sales	Fri Units	Fri Sales	Sat Units	Sat Sales	Total Units	Total Dollar Sales
5	T-shirt	S	25	\$625.00	25	\$625.00	6	\$150.00	30	\$750.00	10	\$250.00	10	\$250.00	3	\$75.00	109	\$2,725.00
6	T-shirt	M	10	\$250.00	10	\$250.00	5	\$125.00	10	\$250.00	9	\$225.00	2	\$50.00	2	\$50.00	48	\$1,200.00
7	T-shirt	L	5	\$125.00	5	\$125.00	4	\$100.00	12	\$300.00	4	\$100.00	7	\$175.00	8	\$200.00	45	\$1,125.00
8	T-shirt	XL	5	\$125.00	5	\$125.00	13	\$325.00	5	\$125.00	5	\$125.00	9	\$225.00	10	\$250.00	52	\$1,300.00
9	T-shirt	XXL	1	\$25.00	1	\$25.00	7	\$175.00	4	\$100.00	6	\$150.00	4	\$100.00	12	\$300.00	35	\$875.00
10	Water Bottle	Red	25	\$375.00	25	\$375.00	10	\$150.00	10	\$150.00	5	\$75.00	4	\$60.00	6	\$90.00	85	\$1,275.00
11	Water Bottle	Clear	10	\$150.00	10	\$150.00	9	\$135.00	15	\$225.00	10	\$150.00	12	\$180.00	4	\$60.00	70	\$1,050.00
12	Total Daily Sales		81	\$1,675.00	81	\$1,675.00	54	\$1,160.00	86	\$1,900.00	49	\$1,075.00	48	\$1,040.00	45	\$1,025.00	444	\$9,550.00
13																		
14																		

Activity 4: Create the Summary worksheet

The Summary worksheet consolidates the data contained in the four weekly worksheets. Creating the Summary worksheet will involve these two tasks: format the summary worksheet, create formulas for the summary worksheet.

Task 4a: Format the Summary worksheet:

1. Click the Summary worksheet tab to make it your active sheet.
2. Set row 1's height to 30; set row 2's height to 20.25; set row 3's height to 26.
3. Adjust column A's width to 30. Adjust column B's width to 10. Adjust column L's width to 16.
4. In cell A1, enter the text "GBI Accessory Products". Select the cell range A1:L1. Merge & Center the content of these cells. Set the font size to 26. Bold the text.
5. In cell A2, enter the text "October Monthly Sales". Select the cell range A2:L2. Merge & Center the content. Set the font size to 16. Bold the text.
6. Select the cell range A1:L3. From the Font group on the HOME tab, use the Fill Color button to fill this area with color "Blue, Accent 1" (fifth column, top row). From the Font group on the HOME tab, use the Font Color button to set the text color to White (first column, top row).
7. In cell C3, enter the text "Week 1". Select the cell range C3:D3, then Merge & Center.
8. In cell E3, enter the text "Week 2". Select the cell range E3:F3, then Merge & Center.
9. In cell G3, enter the text "Week 3". Select the cell range G3:H3, then Merge & Center.
10. In cell I3, enter the text "Week 4". Select the cell range I3:J3, then Merge & Center.
11. In cell K3, enter the text "Total Weekly Product Sales". Select the cell range K3:L3, then Merge & Center.
12. Select the cell range C3:L3. Bold these cells.
13. In cell A4, enter the text "ACCESSORY PRODUCT".
14. In cell B4, enter the text "Size/Color".
15. In cell C4, type "W1 Units."
16. In cell D4, type "W1 Sales".
17. In cell E4, type "W2 Units."
18. In cell F4, type "W2 Sales".
19. In cell G4, type "W3 Units."
20. In cell H4, type "W3 Sales".
21. In cell I4, type "W4 Units."
22. In cell J4, type "W4 Sales".
23. In cell K4, type "Total Units."
24. In cell L4, type "Total Dollar Sales".

25. Select cell range C4:L4. Set the font size to 8. Center the content of these cells.
26. Select cell range A4:L4. Bold the text.
27. Rather than type in the accessory descriptions and size/color, let's copy them from one of the weekly worksheets:
 - o Click the Week1 sheet tab. Select and copy the cell range A5:B11.
 - o Click the Summary sheet tab. Right-click in cell A5, and select the Paste option.
28. In cell A12, enter the text "Totals". Bold the text.
29. Format these cell ranges as Currency format with 2 decimal places:
D5:D12, F5:F12, H5:H12, J5:J12, L5:L12. Bold the L5:L12 cell range.
30. Select the cell range: C5:L12. Ensure the font size to 8.

Task 4b: Create formulas for the Summary worksheet:

You want to grab the totals from the weekly sheets and carry them over to the Units and Sales columns for Weeks 1, 2, 3, and 4 in the Summary worksheet. Then you will insert formulas to use those values to calculate the monthly Total Units and Total Dollar Sales for each accessory product in October. Finally, you will provide grand totals for the weekly columns and the total columns.

To reference a cell or cell range in a different sheet of a workbook: Use an exclamation point after the name of the worksheet being referenced, then state the cell or cell range. For example: Week1!A5:R5 references cell range A5:R5 in the Week1 worksheet.

To pull the weekly total units and sales for the accessory products from the weekly sales sheets and carry them into the Summary worksheet:

1. In cell C5 of the Summary sheet, enter this formula to pull the Week 1 units for the first product:
=Week1!Q5
Check the resulting value placed in cell C5 of your Summary worksheet to confirm that you coded the formula correctly. Then copy the formula down through cell C:11. (HINT: Grab the lower right corner of cell C5 and pull it down column C through row 11.)
2. In cell D5 of the Summary sheet, enter the formula to pull the Week 1 dollar sales for the first product:
=Week1!R5
Check to make sure the sales amount brought over is correct, then copy this formula down through D:11.
3. Repeat steps 1 and 2, accessing the Week2 worksheet to populate columns E and F with the Week 2 units and sales for all of the accessory products.
4. Repeat steps 1 and 2, accessing the Week3 worksheet to populate columns G and H with the Week 3 units and sales for all of the accessory products.

- Repeat steps 1 and 2, accessing the Week4 worksheet to populate columns I and J with the Week 4 units and sales for all of the accessory products.

Now you are ready to insert formulas to use the weekly totals to calculate monthly Total Units and Total Dollar Sales for each accessory product in October:

- In cell K5, insert the formula to add up the Units for all four weeks:
 $=C5+E5+G5+I5$
 Copy this formula down column K through cell K:11 for the rest of the accessory products.
- In cell L5, insert the formula to add up the Sales for all four weeks:
 $=D5+F5+H5+J5$
 Copy this formula down column L through cell L:11 for the rest of the accessory products.
- Now use the AutoSum button to generate the formulas for the 10 grand totals (columns C through L). HINT: You can select all these cells at once as C5:L11 and then click AutoSum to generate all the grand totals in one fell swoop!
- Finally, set appropriate borders in the Summary sheet:
 - Select the cell range A1:L12 and apply Outside Borders.
 - Select the cell range A3:L3 and apply a Bottom Border.
 - Select the cell range A4:L4 and apply a Bottom Border.
 - Select the cell range A11:L11 and apply a Bottom Border.

At this point, your Summary sheet should look like Figure 4. This is a good time to SAVE your work!

Figure 4. Completed Summary Worksheet

	A	B	C	D	E	F	G	H	I	J	K	L
1	GBI Accessory Products											
2	October Monthly Sales											
3			Week 1	Week 2	Week 3	Week 4	Total Weekly Product Sales					
4	ACCESSORY PRODUCT	Size/Color	W1 Units	W1 Sales	W2 Units	W2 Sales	W3 Units	W3 Sales	W4 Units	W4 Sales	Total Units	Total Dollar Sales
5	T-shirt	S	109	\$2,725.00	38	\$950.00	31	\$775.00	23	\$575.00	201	\$5,025.00
6	T-shirt	M	48	\$1,200.00	41	\$1,025.00	23	\$575.00	15	\$375.00	127	\$3,175.00
7	T-shirt	L	45	\$1,125.00	30	\$750.00	21	\$525.00	16	\$400.00	112	\$2,800.00
8	T-shirt	XL	52	\$1,300.00	22	\$550.00	21	\$525.00	17	\$425.00	112	\$2,800.00
9	T-shirt	XXL	35	\$875.00	37	\$925.00	20	\$500.00	21	\$525.00	113	\$2,825.00
10	Water Bottle	Red	85	\$1,275.00	36	\$540.00	21	\$315.00	18	\$270.00	160	\$2,400.00
11	Water Bottle	Clear	70	\$1,050.00	50	\$750.00	16	\$240.00	10	\$150.00	146	\$2,190.00
12	Totals		444	\$9,550.00	254	\$5,490.00	153	\$3,455.00	120	\$2,720.00	971	\$21,215.00
13												

Analyzing the Sales Data

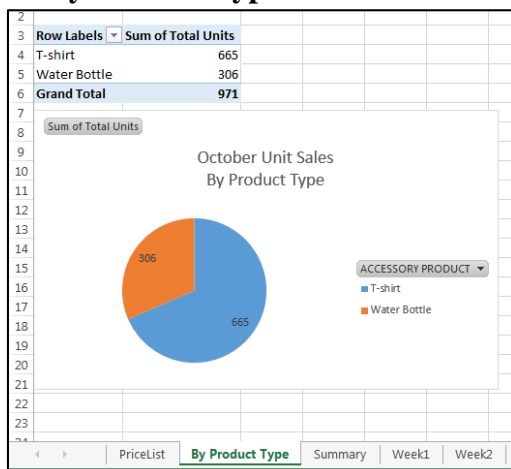
Pam tells you that she always eyeballs the *t-shirt sales vs. water bottle sales* at the end of each month. You offer to set up a pie chart that can make this easier on her eyes. Specifically, you create a pivot table and chart from the monthly Summary sheet, and you place them in a new additional worksheet in the workbook you are preparing for Pam.

Developing this chart for Pam provides a **refresher on PivotTables and PivotCharts**:

1. Make the Summary sheet your active sheet.
2. Select the detail data rows AND the column header row (A4:L11). *Always include the column header row (but NOT other header or footer rows) when you are creating a Pivot Table or Chart.*
3. Click the INSERT tab, then click down-arrow of PivotChart in the Charts grouping. Select PivotChart & PivotTable.
4. Choose to place this data in a New Worksheet.
5. Select these two fields from the Pivot Chart Fields listed at right: Accessory Product, Total Units.
6. Excel should automatically place Accessory Product in the AXIS (CATEGORY) list, and should place Total Units in the VALUES list as a summation. Confirm this, and adjust if necessary.
7. Excel will likely default to a column chart for this data. Pam would prefer a pie chart, so go to the DESIGN tab and select Change Chart Type. Choose a pie chart.
8. Use the + to the right of the pie chart to request the Data Labels (total unit values) show on the slices of pie.
9. Click the default chart title (“Total”) and change it to “October Unit Sales By Product Type”.
10. Drag the chart over to sit below the pivot table.
11. Rename this worksheet “By Product Type”.

Your “By Product Type” worksheet should look like Figure 5. Don’t forget to SAVE your work!

Figure 5. By Product Type Worksheet



While you are showing Pam the pie chart worksheet, her boss Michael Scott summons her to his office. He tells Pam they are considering raising the price of the t-shirts to \$28. Michael has his fortune-telling hat on and is trying to predict how the price change might affect their profits on accessory products. Pam offers to look at the numbers and see if she can provide some insight from the sales data.



When Pam tells you what Michael wanted, you offer to show her how to use Excel's scenario manager to perform a what-if analysis to help with decisions such as this.

To perform the what-if analysis:

1. Make the PriceList sheet your active sheet.
2. Select cell B3. This is the “changing cell” in your what-if analysis.
3. From the DATA tab, click the down-arrow of What-if Analysis in the Data Tools grouping. Select Scenario Manager.
4. In the Scenario Manager pop-up, click the Add button to add a scenario. **YOUR FIRST SCENARIO SHOULD BE THE CURRENT VALUES.** Name this scenario “Current Pricing” and click OK. At the Scenario Values pop-up, leave the current value of 25 and click OK.
5. Back at the Scenario Manager pop-up, click the Add button again to add our new pricing scenario. Name this one “Raising t-shirt to \$28” and click OK. At the Scenario Values pop-up, enter the price of 28 and click OK.

The two scenarios you've created are tied to the PriceList sheet of your workbook, and they will be saved with your workbook. To see (and invoke) one of these scenarios, the PriceList sheet needs to be your active sheet.

6. Back at the Scenario Manager pop-up, click the Show button to apply one of the scenarios, then Close the Scenario Manager pop-up. Now go look at your Summary sheet. Move between your PriceList sheet (to change scenarios) and your Summary sheet to compare the values in Total Sales (cell L12 of the Summary sheet) under each scenario. This reflects the change in monthly Total Sales that could occur if the t-shirt price is increased to \$28.

Assuming the price increase would not reduce the number of t-shirts sold, what does the analysis of the October sales data suggest as a monthly dollar increase in accessory product sales, if Michael were to implement this price change?

ANSWER: Dollar sales would go up by \$1,995.00

7. Return to the PriceList sheet and use Scenario Manager to put your workbook back to the “Current Pricing” scenario. Then SAVE your work.

Epilogue

Pam is thrilled with the spreadsheet application you created for her! She is certain it will save her at least one hour of time every week, and even more at month end. Perhaps most importantly, she and her boss Michael realize that the spreadsheet application facilitates more extensive analysis of the accessory product sales. And this can lead to more informed business decisions.

Michael is roaming the office telling everyone he sees about this magical application you created for them. He says you are the best thing since sliced bread and he boldly declares that his fortune telling days are over! (no one believes that)

Pam and Michael invite you to join them and their office colleagues for happy hour at their usual hangout, the local Chili's. Michael says he's buying! (no one believes that either)

