

K2's Road to Excellence

Part 11

This Excel Magic session will continue our work on PivotTables. In this webinar we will focus on building PivotTables that consolidate data from multiple data ranges.

If you have been leery of working with PivotTables or have struggled to realize their many benefits, this series of webinars is for you. With a little information, guidance, and coaching, you will be ready to use PivotTables to analyze and report on very large data sets in a fraction of the time you are spending presently to complete such tasks.

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What is a PivotTable?

A PivotTable report is an interactive table that automatically extracts, organizes, and summarizes data. A PivotTable report can be used to analyze data — for example, to make comparisons, to detect patterns and relationships, or to uncover trends. PivotTables are extremely useful for summarizing and analyzing large amounts of data efficiently and effectively. For example, an accountant might need to summarize an Excel-based check register into a summary of cash disbursements by month for the purposes of preparing a financial statement. Alternatively, a public practitioner evaluating audit risk may need to summarize all of a client's bill payment checks by vendor and by quarter. In both examples, users would like to be able to drill on the summarized totals in the report to see the detailed transactions that underlie the totals. PivotTables can provide all of this functionality and more, quickly and with computational accuracy.

Excel uses specific terms to identify the elements of a PivotTable report. The main elements, shown in Figure 1 - Parts of a PivotTable., are filters¹, values fields, column fields, items, row fields, and the data area.

	A	B	C	D	E	F	G
1							
2							
3							
4							
5							
6							
7							
8							
9	Vendor	(All)					
10							
11	Sum of Amount		Quarter				
12	Account	Check Number	Qtr1	Qtr2	Qtr3	Qtr4	Grand Total
13	Beverages		14,620.76	14,630.86	16,476.61	14,706.65	60,434.88
14	Food		72,545.64	70,502.27	69,699.27	75,644.18	288,391.36
15	Insurance		1,281.99	1,281.99	1,521.07	1,640.61	5,725.66
16	Payroll Expense		75,715.47	83,907.75	90,288.01	97,520.26	347,431.49
17	Rent		7,200.00	7,200.00	7,200.00	7,200.00	28,800.00
18	Supplies		4,778.96	6,032.00	5,235.41	5,689.92	21,736.29
19	Utility Expense		5,130.76	7,217.52	7,949.89	5,207.34	25,505.51
20		2184	1,541.68				1,541.68
21		2220	2,156.87				2,156.87
22		2255	1,432.21				1,432.21
23		2285		2,794.58			2,794.58
24		2325		1,301.54			1,301.54
25		2360		3,121.40			3,121.40
26		2385			1,798.33		1,798.33
27		2426			3,297.45		3,297.45
28		2458			2,854.11		2,854.11
29		2504				1,257.14	1,257.14
30		2513				2,156.88	2,156.88
31		2571				1,793.32	1,793.32
32	Grand Total		181,273.58	190,772.39	198,370.26	207,608.96	778,025.19
33							
34							
35							
36							
37							
38							
39							
40							
41							

Figure 1 - Parts of a PivotTable

1. **Filters** are fields from the source data that act as filters in a PivotTable report. Vendor is a report field in Error! Reference source not found.. The vendor field could be used to display data from a single vendor or multiple vendors as required.

¹ Filters were known as “page fields” in versions of Excel prior to Excel 2007.

2. **Values Fields** are fields from the source data that contain values to be summarized. Amount is a values field in Error! Reference source not found.. For numeric data, users can choose how to summarize the data (sum, average, count). For text data, users can count the number of times a specific text entry, such as Yes or No, appears in a field.
3. **Column Fields** are fields from the source data that are assigned to a column layout. Quarter is a column field in Error! Reference source not found..
4. **Items** are the subcategories of a row, column, or report filter. In this example, the Account and Cheque Number fields contain these items: Beverages, Food, Insurance, Payroll Expense, Rent, Supplies, Utility Expense with the corresponding cheque number details.
5. **Row Fields** are fields from the source data that are assigned to a row layout in a PivotTable. Account and Cheque Number are row fields in Error! Reference source not found..
6. The **Data Area** is the range of cells in a PivotTable report that contains summarized data. For example, the value in cell C19 summarizes the total cheques written in Qtr1 for Utility Expense.

Now that we understand what a PivotTable is and are familiar with the terminology used by Microsoft to describe the various elements of a PivotTable, let's begin our coverage of PivotTables.

Simple PivotTables

A large portion of the productivity and information analysis benefits of using PivotTables is gained with the simplest of PivotTables. In other words, you need not be a PivotTable expert or know how to apply the advanced features of PivotTables in order to take advantage of their power and functionality. *The Law of Diminishing Returns applies!* As our PivotTables become more complex, the amount of learning required to take advantage of their more complex functionality increases. For most analyses, a simple PivotTable that auto-summarizes or auto-tabulates our data will be very effective and will provide all of the power that we need.

The table of data in **Figure 2** contains a check register that a restaurant owner maintained in Excel. Each row in the spreadsheet contains the details of a check written during the year. The spreadsheet contains five columns of data – Date, Check Number, Amount, Vendor, and Account. This data serves as the data source for our initial PivotTable examples.

Our sample data set includes the details of 430 cheques, although other data sets may have thousands, tens of thousands, hundreds of thousands, or even millions of rows, and the data that serves as the foundation of PivotTables need not even reside in Excel. There are no limits on the amount of data that can be used in a PivotTable, but the more data there is to summarize or analyze, the greater the power of PivotTables.

	A	B	C	D	E
1	Date	Check Number	Amount	Vendor	Account
2	January-2010	2154	\$ 2,400.00	Washington Properties, LLC	Rent
3	January-2010	2155	\$ 7,423.68	Adams & Jefferson, CPAs	Payroll Expense
4	January-2010	2156	\$ 1,541.68	City Utilities	Utility Expense
5	January-2010	2157	\$ 427.33	Gamble Insurance	Insurance
6	January-2010	2158	\$ 6,234.56	Adams & Jefferson, CPAs	Payroll Expense
7	January-2010	2159	\$ 1,419.28	Wholesale Beverage	Beverages
8	January-2010	2160	\$ 1,205.92	Fresh Meats, Inc.	Food
9	January-2010	2161	\$ 375.54	RSI, Inc.	Supplies
10	January-2010	2162	\$ 1,567.87	Farmer's Produce	Food
11	January-2010	2163	\$ 1,205.04	Farmer's Produce	Food
12	January-2010	2164	\$ 922.53	Farmer's Produce	Food
13	January-2010	2165	\$ 1,188.00	Fresh Meats, Inc.	Food

Figure 2 - Data for Simple PivotTable Examples

In our first example, we would like to tabulate cash disbursement figures by Account and by Date of expenditure to create a set of financial statements. Our completed PivotTable will have rows for the Account and Date for the columns.

To create a simple PivotTable from our data, do the following.

1. Place the cursor in the data and choose **PivotTable** from the **Insert** tab, as shown in **Figure 3**.

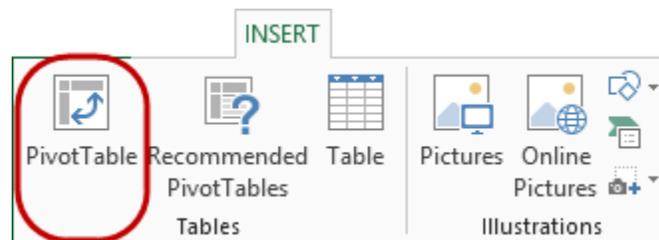


Figure 3 - Select PivotTable from the Insert Tab

2. In the resulting **Create PivotTable** dialog box, shown in **Figure 4**, the data range should already be defined. If not, click the **Collapse Dialog** button and highlight the data range. Make sure that your entire data range is selected, including the field names at the top of the data columns. Select **New Worksheet** and then click **OK**. Note that a Table can serve as a dynamic data range for a PivotTable in the 2007, 2010 and 2013 versions of Excel.

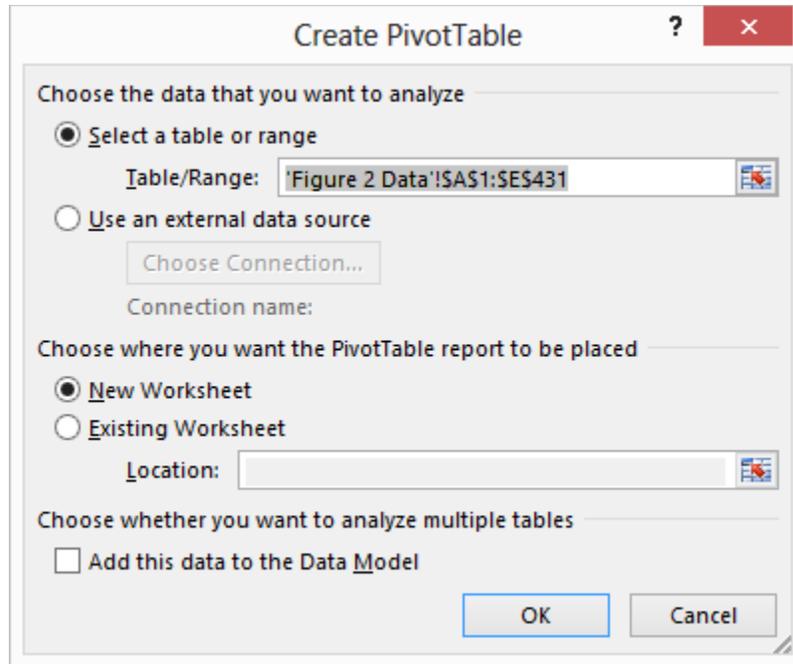


Figure 4 - Highlight the Data Range and Select New Worksheet

3. A new worksheet, like the one shown in **Figure 5**, will be inserted in the workbook. On the left side of the worksheet is a placeholder for the PivotTable report to be created. On the right side is the **PivotTable Task Pane**. The layout of the task pane can be customized to a user's needs by clicking the drop down button in the top right corner of the task pane just below the title bar.

The task pane contains the **PivotTable Field List** at the top and four quadrant boxes into which fields are dragged from the list to create the PivotTable. The quadrants correspond to the four areas of a PivotTable report: Filters, Columns (column fields), Rows (row fields), and Values (data area).



Experienced PivotTable users will recognize Filters as Report Filters or Page Fields in earlier versions of Excel. Filters serve the same function and work exactly as Report Filters or Page Fields.

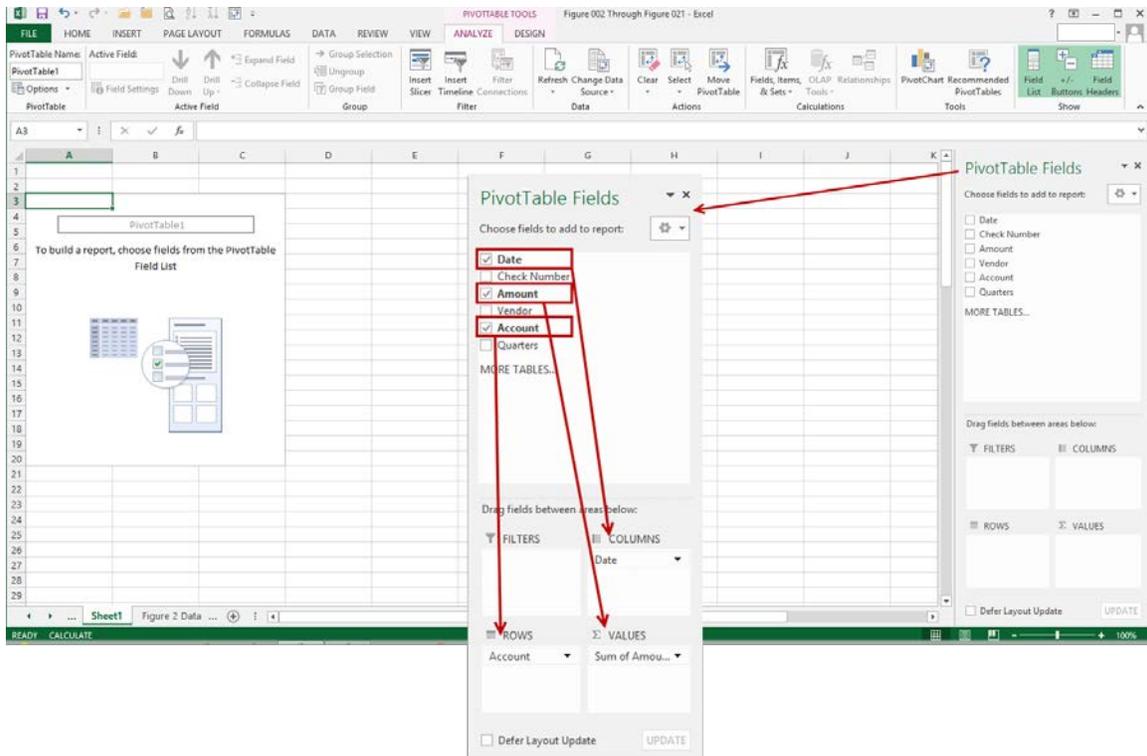


Figure 5 - Creating a PivotTable by Dragging Fields to the Quadrants

4. Now, drag each of the fields, in turn, from the field list at the top of the **PivotTable Task Pane** to the report quadrants at the bottom, as shown in **Figure 5**.
5. Click on the **Date** field, hold down your left mouse button, drag and point to the **Columns** quadrant, and then release your left mouse button.
6. Click on the **Account** field, hold down your left mouse button, drag and point to the **Rows** quadrant, and again release your left mouse button.
7. Click on the **Amount** field, hold down your left mouse button, drag and point to the **Values** quadrant, and then release your left mouse button.

We have just created our first PivotTable. **Figure 6** shows the results of our efforts. Note that some of the monthly columns have been removed from the PivotTable for presentation. The table summarizes the raw data into a two-dimensional table with Date across the top and Account down the left margin. Also, note how Excel totaled each row and column automatically.

	A	B	C	D	N
1					
2					
3	Sum of Amount	Column Labels ▼			
4	Row Labels ▼	Jan	Feb	Mar	Grand Total
5	Beverages	5098.91	4448.02	5073.83	60434.88
6	Food	25562.79	23221.12	23761.73	288391.36
7	Insurance	427.33	427.33	427.33	5725.66
8	Payroll Expense	13658.24	32601.41	23201.77	347431.49
9	Rent	2400	2400	2400	28800
10	Supplies	1510.8	1632	1636.16	21736.29
11	Utility Expense	1541.68	2156.87	1432.21	25505.51
12	Grand Total	50199.75	66886.75	57933.03	778025.19

Figure 6 - Simple PivotTable Report Created with a Few Clicks

Using Field Settings to Summarize Data

In the previous examples, the individual data elements were summed to produce the report. By changing field settings, we can display the average sales in each cell or the minimum or maximum sales or the variance or standard deviation of the sales distribution, etc. We can also change the format of the number and assign a custom name to the field by modifying field settings. Field settings are accessible in numerous ways, including the following.

- Position the cursor in a cell containing a **Value** and select **Field Settings** from the **Active Field** group on the **PivotTable Tools, Analyze** contextual tab.
- Click the drop-down arrow of any field button in the **Value** quadrant box on the PivotTable Task Pane and select **Value Field Settings** from the menu.
- This action can also be performed by selecting **Values Field Settings** from the contextual menu that appears after you right-click on any **Value** in the PivotTable.

To change the summary function for any value field, open the **Value Field Settings** dialog box using any of the described methods. In the **Summarize value field by** list box, select the function to use in summarizing the field's values. To summarize the selected field by calculating averages, select **Average** as shown in **Figure 7**.

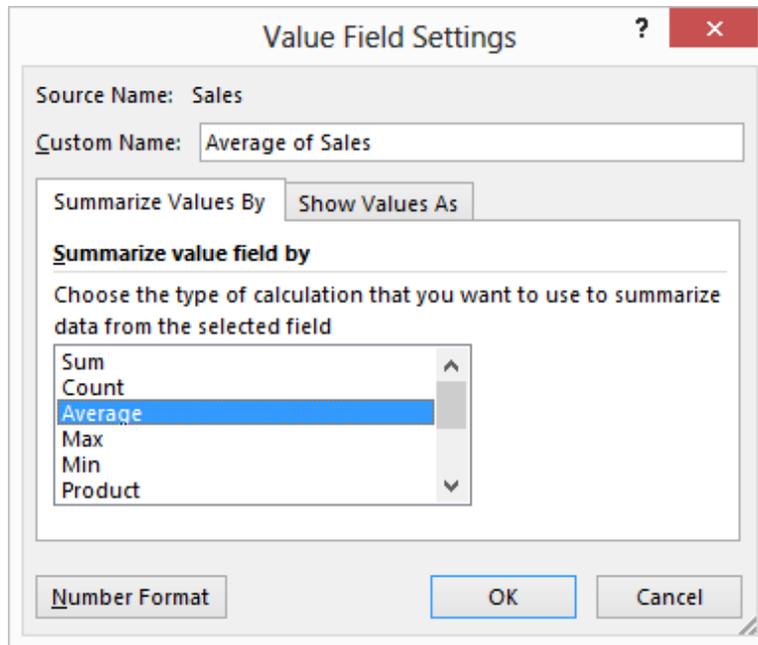


Figure 7 – Changing the Summary Function for a Value Field

You can also change how the PivotTable summarizes a value field by right-clicking on the field in the PivotTable and choosing **Summarize Values By** in the resulting contextual menu.

In the next example, a PivotTable report that displays four columns, one each for the total annual sales by product, the average sales by product, and the minimum and maximum sales by product will be created. Since the statistics are calculated on sales data, the sales field must be dragged to the **Values** quadrant four times, once for each summary column to be displayed. The Field Settings (field name and summary function) for each field are then modified, in turn, to reflect the appropriate calculation. **Figure 8** illustrates this process and the finished report.

Choose fields to add to report:

Month
 Product
 Sales

MORE TABLES...

Drag fields between areas below:

FILTERS

COLUMNS
 Σ Values

ROWS
 Product

VALUES
 Total
 Average
 Min
 Sum of Sales3

Defer Layout Update UPDATE

Value Field Settings

Source Name: Sales
 Custom Name: Max

Summarize Values By: Show Values As

Summarize value field by
 Choose the type of calculation that you want to use to summarize data from the selected field

Sum
 Count
 Average
 Max
 Min
 Product

Number Format OK Cancel

	A	B	C	D	E
1					
2					
3		Total	Average	Min	Max
4	Pipe, Galv, 1-inch	47,360	3,947	2,640	6,110
5	Pipe, Galv, 2-inch	19,320	1,610	230	4,230
6	Pipe, Galv, 3-inch	77,070	6,423	310	13,460
7	Pipe, Sch 40, 1-inch	131,480	10,957	7,370	16,140
8	Pipe, Sch 40, 2-inch	109,720	9,143	5,220	12,810
9	Pipe, Sch 40, 3-inch	146,090	12,174	8,190	17,930
10	Tubing, Type L, 1-inch	151,160	12,597	8,370	21,050
11	Tubing, Type L, 2-inch	26,940	2,245	1,440	3,840
12	Tubing, Type L, 3-inch	97,670	8,139	4,470	12,080
13	Grand Total	806,810	7,470	230	21,050

Figure 8 – Creating a Multicolumn PivotTable to Display Sales Statistics

Let's add another column to our report. In this final example, the CFO would like to have a column that displays the sales of each product as a percentage of total sales. Since the column is to summarize sales data, the **Sales** field must be dragged to the **Values** area once again, a fifth time, between the Total and Average values. Click on the **Sum of Sales** value field and select **Value Field Settings**. Click on the **Show Values As** tab and in the **Show values as** drop-down list, select **% of Column Total**. Type in **Percent** as the new **Custom Name** and select **OK**. Adjust the column widths to complete the PivotTable report as shown in **Figure 9**.

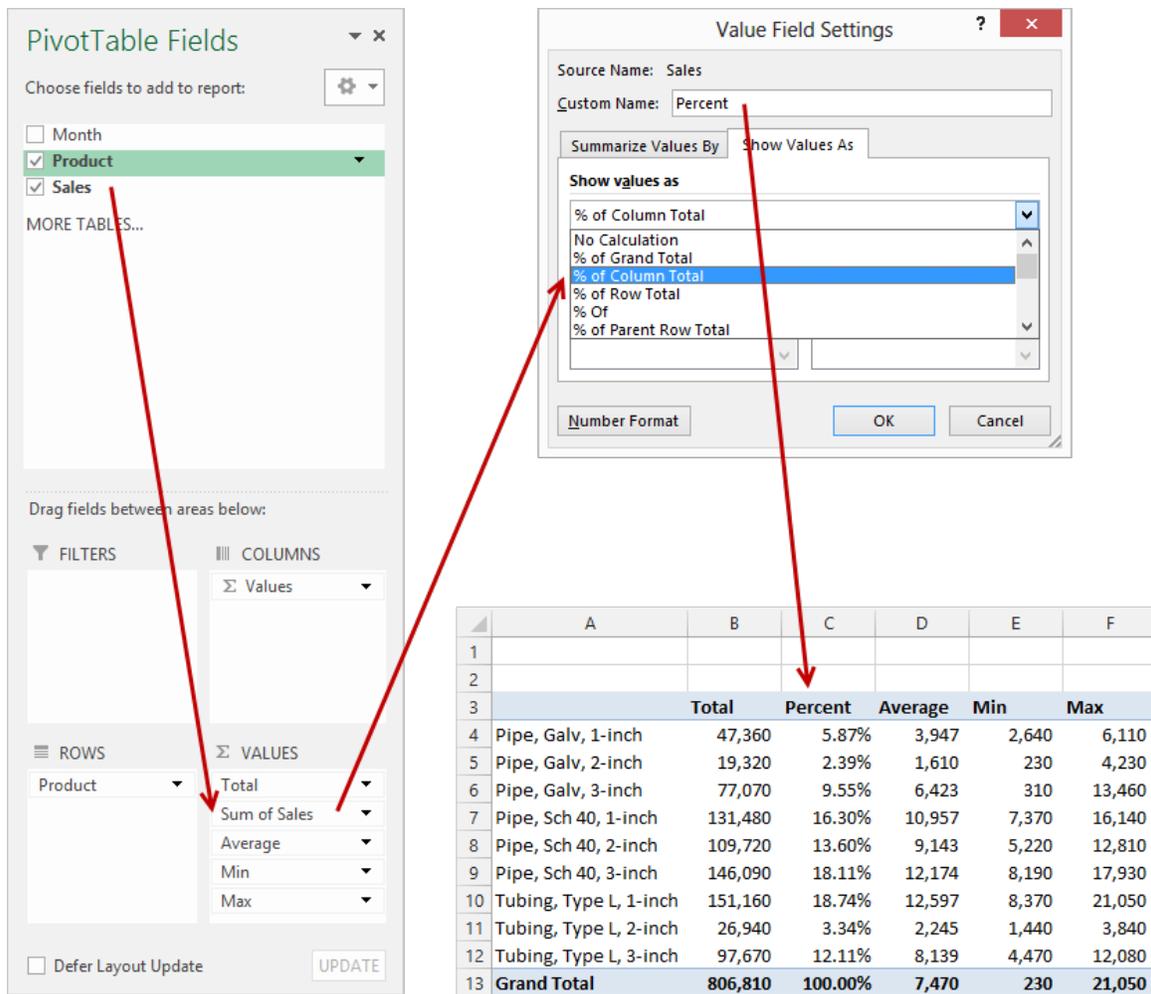


Figure 9 – Using Percentage of Column to Display Sales as a Percentage of Total Sales

Consolidating Data with PivotTables

Consolidation PivotTables are used to report data that is already tabulated. For example, if a user wanted to combine divisional or departmental income statements or product line, business line, or channel profitability reports, consolidation PivotTables can be used to produce the combined reports. The only requirement is that the data layout of the individual worksheets to be consolidated is similar, but they need not be identical.

Preparing to Consolidate

An icon for Consolidation PivotTables is not available from the ribbon. Users must add the **PivotTable and PivotChart Wizard** icon to the **Quick Access Toolbar** (QAT) in Excel 2007/2010/2013/2016 or to the Ribbon in Excel 2010 and later to access this functionality.

In the following example, product line income statements will be combined into a single report with all of the reporting flexibility of a PivotTable. A sample of the data, which has an identical table for each of three product lines, is shown in **Figure 10**.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	DNM Distribution Company												
2	Comparative Budgeted Monthly Income Statements												
3													
4	Creams												
5		Jan-2012	Feb-2012	Mar-2012	Apr-2012	May-2012	Jun-2012	Jul-2012	Aug-2012	Sep-2012	Oct-2012	Nov-2012	Dec-2012
6	Revenue	100,000	115,000	132,000	152,000	175,000	201,000	231,000	266,000	306,000	352,000	405,000	466,000
7	Cost of Sales	50,000	53,000	56,000	59,000	62,000	65,000	68,000	71,000	74,000	77,000	80,000	83,000
8	Gross Margin	50,000	62,000	76,000	93,000	113,000	136,000	163,000	195,000	232,000	275,000	325,000	383,000
9	Distribution	10,000	13,000	16,000	19,000	22,000	25,000	28,000	31,000	34,000	37,000	40,000	43,000
10	SG&A	10,000	13,000	16,000	19,000	22,000	25,000	28,000	31,000	34,000	37,000	40,000	43,000
11	Facilities	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
12	Total Expense	25,000	31,000	37,000	43,000	49,000	55,000	61,000	67,000	73,000	79,000	85,000	91,000
13	Net Income	25,000	31,000	39,000	50,000	64,000	81,000	102,000	128,000	159,000	196,000	240,000	292,000

Figure 10 - Data to be Summarized Using a Consolidation PivotTable

Simple Consolidating PivotTables

In the first dialog box of the PivotTable Wizard, choose **Multiple consolidation ranges**. Click **Next**. Then, select how the Page fields are to be created. To insure maximum reporting flexibility, choose **I will create the page fields** and then click **Next**. The dialog box for the next step in the wizard appears as shown in **Figure 8**. Now, each of the data ranges in the single page field to be created must be defined, one range for each of the three product lines – Creams, Lotions, and Scrubs.

In our example, all of the ranges to be consolidated are on separate worksheets in a single workbook, but the data ranges can be consolidated from multiple workbooks. To consolidate ranges from multiple workbooks, simply open the other workbooks and point to the data ranges during the PivotTable creation process. Alternatively, type in the data ranges using the following format.

[workbook name] sheet name! range

Make sure to include the brackets around the workbook name and the exclamation point between the sheet name and the range specification. Using defined names to define the data ranges in the individual workbooks will make the task easier and less prone to error.

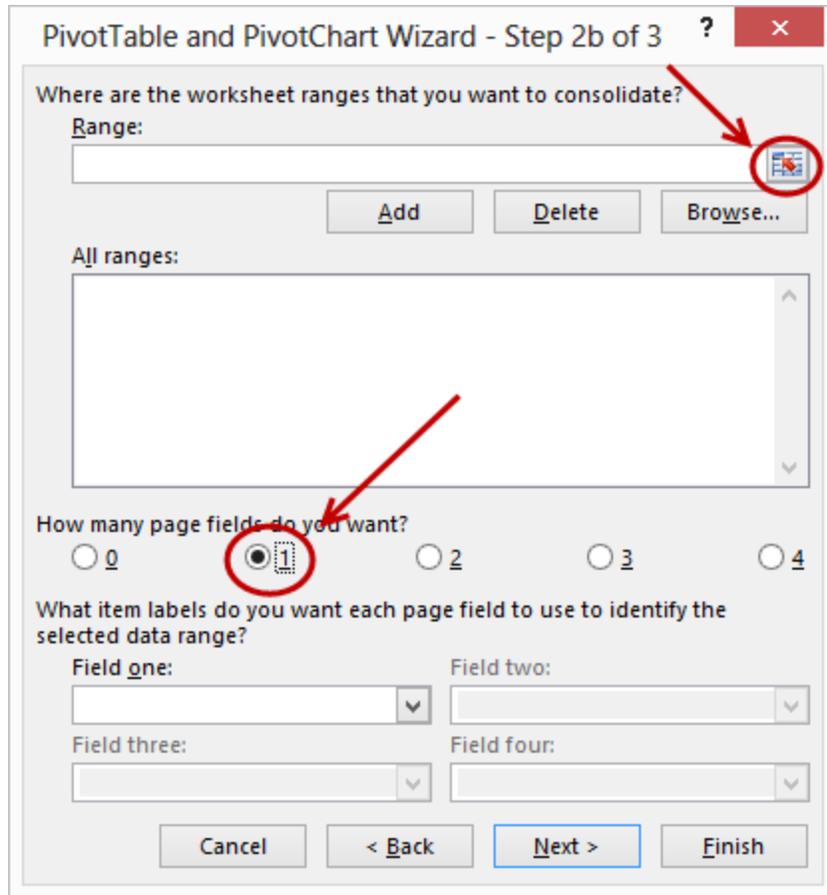


Figure 11 - Using the Collapse Dialog Button When Highlighting Ranges

Click on the **Collapse Dialog** button, shown in **Figure 11** at the right end of the **Range** box, to hide temporarily the dialog box. Then, using the mouse, highlight the range to be included in the report and click on the **Collapse Dialog** button to redisplay the dialog box. Click **Add** to add the range to the report. In the **Field one** box, enter the item name. Each of the ranges added in the dialog box will have its own item name – in this example, Creams, Lotions, and Scrubs. The completed dialog appears in **Figure 12**.

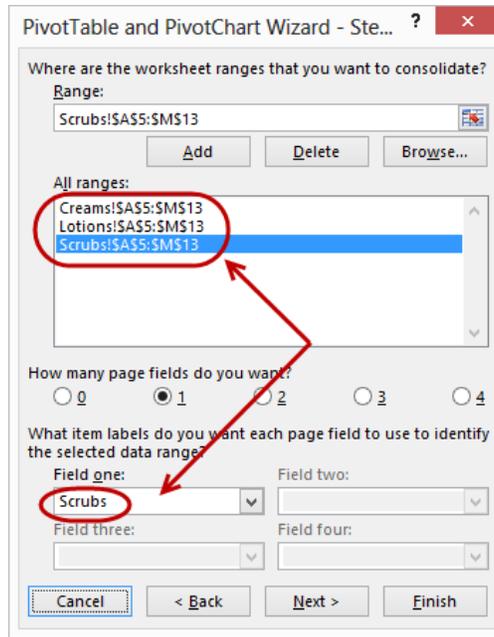


Figure12 - Naming Each Field as the Field Range is Added

Click **Next**. Choose to create the PivotTable on a new worksheet and then click **Finish**. After grouping Months into Quarters and making some minor formatting changes, the initial PivotTable should resemble the one shown in **Figure 13**.

The items in the report are no longer in income statement order but are in alphabetical order.

	A	B	C	D	E	F
1	Page1	(All)				
2						
3	Sum of Value					
4		Qtr1	Qtr2	Qtr3	Qtr4	Grand Total
5	Cost of Sales	549,000	641,000	733,000	825,000	2,748,000
6	Distribution	135,000	227,000	319,000	414,000	1,095,000
7	Facilities	51,000	51,000	51,000	51,000	204,000
8	Gross Margin	586,000	870,000	1,309,000	1,968,000	4,733,000
9	Net Income	265,000	365,000	620,000	1,089,000	2,339,000
10	Revenue	1,135,000	1,511,000	2,042,000	2,793,000	7,481,000
11	SG&A	135,000	227,000	319,000	414,000	1,095,000
12	Total Expense	321,000	505,000	689,000	879,000	2,394,000
13	Grand Total	3,177,000	4,397,000	6,082,000	8,433,000	22,089,000

Figure 7 - Initial Consolidation PivotTable Created from Product Data

Rearranging Items

Notice that the items in the Row item area, the income statement components, have been rearranged in alphabetical order. Click and drag the edge of each item until the order of the items is in income statement order. Click on an item to be moved and hover the cursor over the top or bottom edge of the cell so that the mouse pointer turns into a compass rose as shown in **Figure 14**. Click and hold the left mouse button and drag the item to the desired position in the list, releasing the mouse button to drop the item in place.

7	Facilities		
8	Gross Margin		
9	Net Income		

4		Qtr1	Qtr2
5	Revenue	1,135,000	1,511,000
6	Cost of Sales	549,000	641,000
7	Gross Margin	586,000	870,000
8	Distribution	135,000	227,000
9	Facilities	51,000	51,000
10	SG&A	135,000	227,000
11	Total Expense	321,000	505,000
12	Net Income	265,000	365,000

Figure 8 - Dragging Row Items into the Proper Order

Removing Meaningless Totals

The Grand Total created initially at the bottom of the report is meaningless because it adds together all of the income statement components. To remove the total, click **Grand Totals** on the **PivotTable Tools, Design** contextual tab and select **On for Rows Only**, leaving only the total for the rows as shown in **Figure 15**.

			Qtr3	Qtr4	Grand Total
5	Revenue		2,042,000	2,793,000	7,481,000
6	Cost of Sales	549,000 641,000	733,000	825,000	2,748,000
7	Gross Margin	586,000 870,000	1,309,000	1,968,000	4,733,000
8	Distribution	135,000 227,000	319,000	414,000	1,095,000
9	Facilities	51,000 51,000	51,000	51,000	204,000
10	SG&A	135,000 227,000	319,000	414,000	1,095,000
11	Total Expense	321,000 505,000	689,000	879,000	2,394,000
12	Net Income	265,000 365,000	620,000	1,089,000	2,339,000

Figure 9 - Removing Grand Totals from PivotTable

Alternatively, to remove the grand totals, right-click on the face of the PivotTable and select **PivotTable Options** from the context-sensitive menu. On the **Totals & Filters** tab, uncheck **Show grand totals for columns**.

The only task remaining is to complete the PivotTable for presentation. Hide the field headings, center the column headings, rename the Filter to **Product Line**, and give the values field a descriptive name, such as **Budgeted Income Statements**.

The completed PivotTable should resemble the one shown in **Figure 16**. Keep in mind that all of the drag-and-drop PivotTable functionality is available in the consolidated report.

	A	B	C	D	E	F
1	Product Line	(All) ▾				
2						
3	Budgeted Income Statements					
4		Qtr1	Qtr2	Qtr3	Qtr4	Grand Total
5	Revenue	1,135,000	1,511,000	2,042,000	2,793,000	7,481,000
6	Cost of Sales	549,000	641,000	733,000	825,000	2,748,000
7	Gross Margin	586,000	870,000	1,309,000	1,968,000	4,733,000
8	Distribution	135,000	227,000	319,000	414,000	1,095,000
9	Facilities	51,000	51,000	51,000	51,000	204,000
10	SG&A	135,000	227,000	319,000	414,000	1,095,000
11	Total Expense	321,000	505,000	689,000	879,000	2,394,000
12	Net Income	265,000	365,000	620,000	1,089,000	2,339,000

Figure 10 - Completed PivotTable

Pivoting Non-Identical Data Ranges

The tabulated data ranges that are to be combined using a multiple consolidated ranges PivotTable need not be identical. As a practical matter, they should be similar, but, again, there is no requirement that they have the same layout or content. In this example, we will combine several budget worksheets with different accounts and layouts. Combining data during the budget process consumes a significant portion of the total time spent by accounting staff in the budget process. Using PivotTables to make the combination can help reduce the time spent in the process and improve data accuracy while providing additional analytical capabilities.

Here is an overview of the characteristics of our sample data.

1. We have budget worksheets from three departments.
2. Two of the departments have identical accounts, but the third has one additional account. This makes the combination process using sum-through formulas cumbersome and error prone because the amounts on each worksheet do not line up properly. We would experience the same problem in situations where departmental managers altered the worksheet layouts or account structure in the budget process.
3. One of the departmental managers inexplicably changed the name of an account.

The departmental budgets are displayed in **Figure 17**. The manager in Product Design has changed the name of one account from Allocated Central IT to Central IT. The budget for Field Testing has an additional account, Outsourced Services, which is not found in the accounts of the other departments. Note that the amounts for each account on each budget are the same within quarters, so that we will be able to see from our example that the formulas are calculating correctly. Further, the differences in the accounts are highlighted with shading.

By combining these budgets in a PivotTable, the cumbersome task of summing through sheets that are not identical will be avoided while insuring computational accuracy and providing greater analytical capability. The process of creating the PivotTable is exactly the same as illustrated in the previous example. The initial PivotTable is displayed in **Figure 18**.

	A	B	C	D	E	F
1	Product Design					
2	Expense Budget					
3						
4		Q1	Q2	Q3	Q4	Total
5	Central IT	1,000.00	2,000.00	3,000.00	4,000.00	10,000.00
6	Allocated Facilities	100.00	200.00	300.00	400.00	1,000.00
7	Central Photocopying	100.00	200.00	300.00	400.00	1,000.00
8	Employee Benefits	100.00	200.00	300.00	400.00	1,000.00
9	Employee Wages	100.00	200.00	300.00	400.00	1,000.00
10	Payroll Taxes	100.00	200.00	300.00	400.00	1,000.00
11	Shipping	100.00	200.00	300.00	400.00	1,000.00
12	Supplies	100.00	200.00	300.00	400.00	1,000.00
13	Telecommunications	100.00	200.00	300.00	400.00	1,000.00
14	Travel	100.00	200.00	300.00	400.00	1,000.00
15	Utilities	100.00	200.00	300.00	400.00	1,000.00

	A	B	C	D	E	F
1	Prototyping & Modeling					
2	Expense Budget					
3						
4		Q1	Q2	Q3	Q4	Total
5	Allocated Central IT	100.00	200.00	300.00	400.00	1,000.00
6	Allocated Facilities	100.00	200.00	300.00	400.00	1,000.00
7	Central Photocopying	100.00	200.00	300.00	400.00	1,000.00
8	Employee Benefits	100.00	200.00	300.00	400.00	1,000.00
9	Employee Wages	100.00	200.00	300.00	400.00	1,000.00
10	Payroll Taxes	100.00	200.00	300.00	400.00	1,000.00
11	Shipping	100.00	200.00	300.00	400.00	1,000.00
12	Supplies	100.00	200.00	300.00	400.00	1,000.00
13	Telecommunications	100.00	200.00	300.00	400.00	1,000.00
14	Travel	100.00	200.00	300.00	400.00	1,000.00
15	Utilities	100.00	200.00	300.00	400.00	1,000.00

	A	B	C	D	E	F
1	Field Testing					
2	Expense Budget					
3						
4		Q1	Q2	Q3	Q4	Total
5	Allocated Central IT	100.00	200.00	300.00	400.00	1,000.00
6	Allocated Facilities	100.00	200.00	300.00	400.00	1,000.00
7	Central Photocopying	100.00	200.00	300.00	400.00	1,000.00
8	Employee Benefits	100.00	200.00	300.00	400.00	1,000.00
9	Employee Wages	100.00	200.00	300.00	400.00	1,000.00
10	Outsourced Services	5,000.00	5,000.00	5,000.00	5,000.00	20,000.00
11	Payroll Taxes	100.00	200.00	300.00	400.00	1,000.00
12	Shipping	100.00	200.00	300.00	400.00	1,000.00
13	Supplies	100.00	200.00	300.00	400.00	1,000.00
14	Telecommunications	100.00	200.00	300.00	400.00	1,000.00
15	Travel	100.00	200.00	300.00	400.00	1,000.00
16	Utilities	100.00	200.00	300.00	400.00	1,000.00

Figure 11 - Non-Identical Departmental Budgets

	A	B	C	D	E	F
1	Page1	(All) ▾				
2						
3	Sum of Value					
4		Q1	Q2	Q3	Q4	Grand Total
5	Allocated Central IT	200.00	400.00	600.00	800.00	2,000.00
6	Allocated Facilities	300.00	600.00	900.00	1,200.00	3,000.00
7	Central IT	1,000.00	2,000.00	3,000.00	4,000.00	10,000.00
8	Central Photocopying	300.00	600.00	900.00	1,200.00	3,000.00
9	Employee Benefits	300.00	600.00	900.00	1,200.00	3,000.00
10	Employee Wages	300.00	600.00	900.00	1,200.00	3,000.00
11	Outsourced Services	5,000.00	5,000.00	5,000.00	5,000.00	20,000.00
12	Payroll Taxes	300.00	600.00	900.00	1,200.00	3,000.00
13	Shipping	300.00	600.00	900.00	1,200.00	3,000.00
14	Supplies	300.00	600.00	900.00	1,200.00	3,000.00
15	Telecommunications	300.00	600.00	900.00	1,200.00	3,000.00
16	Travel	300.00	600.00	900.00	1,200.00	3,000.00
17	Utilities	300.00	600.00	900.00	1,200.00	3,000.00
18	Grand Total	9,200.00	13,400.00	17,600.00	21,800.00	62,000.00

Figure 12 - Initial PivotTable Showing All Department Accounts Combined

Note that all accounts, including the Outsourced Services account in Field Testing, were combined properly. The account name changed by the manager in Product Design, Central IT, was combined on a separate line. To force the account to combine properly, change the source data for Product Design, so that the account name reads **Allocated Central IT** and then **Refresh** the PivotTable. After performing these modifications, the PivotTable should resemble the one displayed in **Figure 19**.

	A	B	C	D	E	F
1	Page1	(All) ▾				
2						
3	Sum of Value					
4		Q1	Q2	Q3	Q4	Grand Total
5	Allocated Central IT	1,200.00	2,400.00	3,600.00	4,800.00	12,000.00
6	Allocated Facilities	300.00	600.00	900.00	1,200.00	3,000.00
7	Central Photocopying	300.00	600.00	900.00	1,200.00	3,000.00
8	Employee Benefits	300.00	600.00	900.00	1,200.00	3,000.00
9	Employee Wages	300.00	600.00	900.00	1,200.00	3,000.00
10	Outsourced Services	5,000.00	5,000.00	5,000.00	5,000.00	20,000.00
11	Payroll Taxes	300.00	600.00	900.00	1,200.00	3,000.00
12	Shipping	300.00	600.00	900.00	1,200.00	3,000.00
13	Supplies	300.00	600.00	900.00	1,200.00	3,000.00
14	Telecommunications	300.00	600.00	900.00	1,200.00	3,000.00
15	Travel	300.00	600.00	900.00	1,200.00	3,000.00
16	Utilities	300.00	600.00	900.00	1,200.00	3,000.00
17	Grand Total	9,200.00	13,400.00	17,600.00	21,800.00	62,000.00

Figure 13 - Modified PivotTable with Allocated Central IT Account Correctly Combined

Of course, since we used a PivotTable to make the combination, we have additional analytical capabilities that we would not have had if we had combined the budget data using some other method.