

# **EXCEL 2016 – PIVOT TABLES BASICS**

## **Participant Guide**



Professional  
Development  
& Training

## EXCEL 2016 – PIVOT TABLES BASICS

**Target Audience:** Experienced Excel users who wish to learn how to create Pivot Tables and Pivot Charts.  
**Time Allotted:** 3 hours

### Objectives:

**Overall:** At the end of this class, you will be able to create simple Pivot Tables and Pivot Charts.

**Specific:** Participant will...

- List three benefits of using Pivot Tables
- Construct basic Pivot Tables in Excel
- Customize Pivot Table data using advanced features
- Name three advantages of using Pivot Charts
- Build and tailor basic Pivot Charts using advanced Excel features

### Agenda

### Notes

- Housekeeping
- Introductions
- Quick PivotTables demonstration
- Practical Uses for PivotTables
  - When and why to use them
  - Power of PivotTables
- PivotTables
  - Preparing the data
  - Basic PivotTables
  - Customizing PivotTables
- Pivot Charts

### Introduction Activity

### Notes

*Please tell us:*

- *Your Name*
- *Your Department*
- *You experience creating or using Pivot Tables*

## Exercise #1- Quiet Reflection

## Notes

Spend 1 minute brainstorming uses for Pivot Tables in your own department.

**I will use Pivot Tables in the following ways.....**

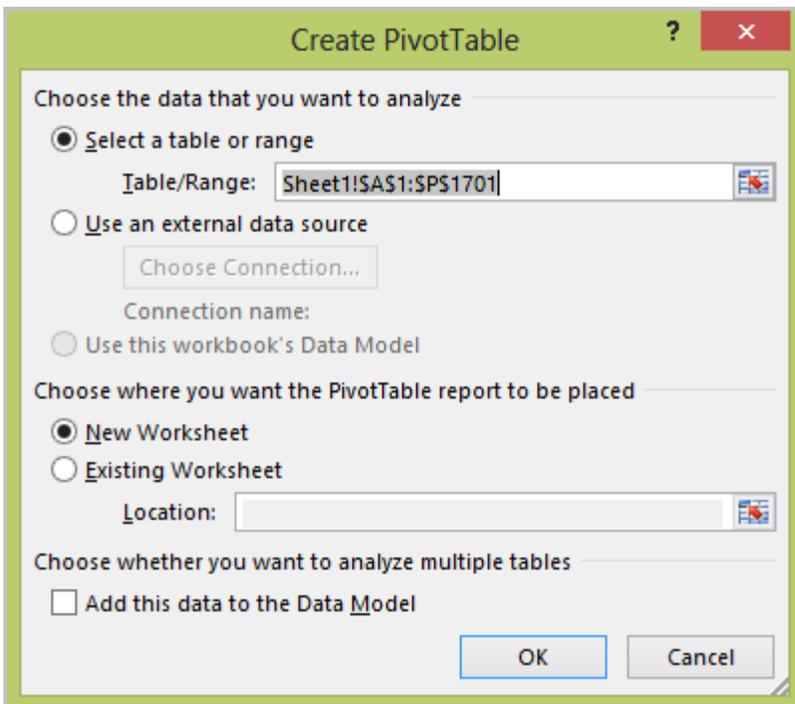
## Creating a Simple PivotTable

## Notes

1. Prepare your data.
  - Columns should have a meaningful heading as these become the data fields
  - Do not mix data types -- each column should contain either text or numbers
  - Eliminate empty columns and empty rows
2. Click anywhere in the worksheet.
3. On the **Insert** tab, click **PivotTable**.

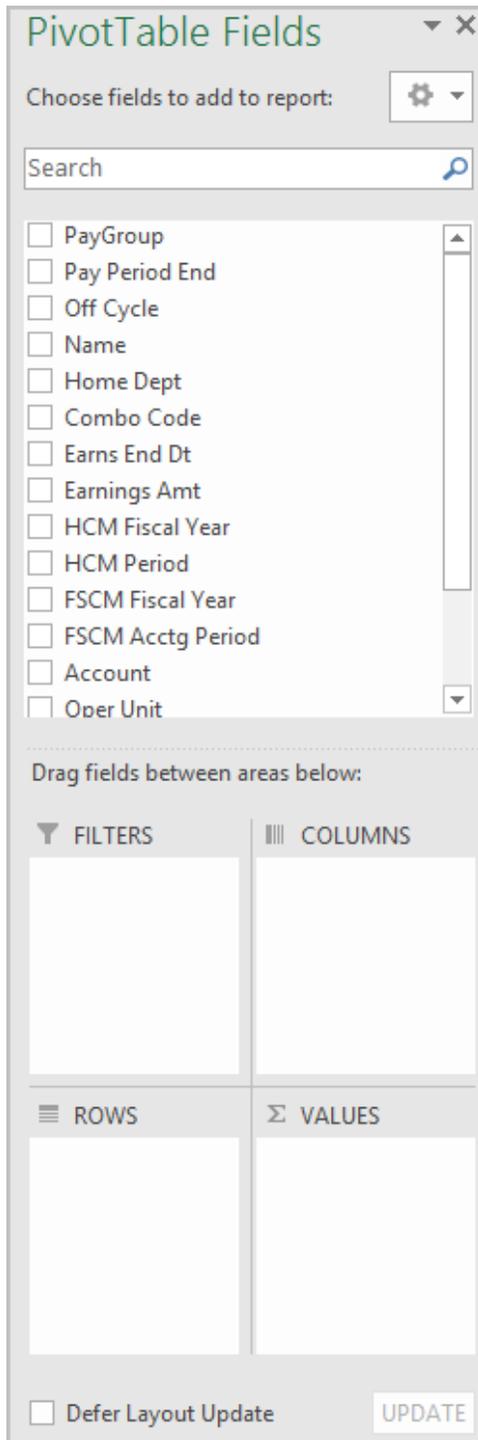


4. Choose the location for the PivotTable from the **Create PivotTable** dialogue box.



5. Click **OK**.

6. Add fields to the PivotTable by dragging them into the bottom of the field list or by clicking the box next to the field name.



**TIPS:**

- Non-numeric fields automatically default to the row labels
- Numeric fields default to columns
- Field values can be moved within the quadrants by dragging them to a new location
- Fields can be reordered easily by dragging one field above the other

## Exercise 2

## Notes

1. Open **UV\_PAY.xlsx**.
2. Examine the data.
3. Read the scenario below and construct a basic Pivot Table according to the scenario.

**Scenario:** You are a business manager and have been asked by your department head to produce a Pivot Table that she can use to understand the total amount of pay each person earns per year. Your manager has also asked that you also show the payroll dates for each person. Construct a basic Pivot Table to give your manager the data she has requested.

*Hint:*

What three fields do you need to show in your Table?

- 1.) \_\_\_\_\_
- 2.) \_\_\_\_\_
- 3.) \_\_\_\_\_

## Customizing PivotTables

## Notes

### Analyze Ribbon Groups

- **PivotTable** - Displays overall setup options for the current PivotTable
- **Active Field** - Changes the settings for the field that is currently active
- **Group** - Groups or ungroups selected fields
- **Filter** - Applies sorting and slicing to columns. Slicing can be used to filter data
- **Data** - Refreshes or replaces the data that is feeding an existing PivotTable
- **Actions** - Automatically clears, moves or selects an element of a PivotTable
- **Calculations** - Changes the way values display in the PivotTable
- **Tools** - Adds a PivotChart to an existing table
- **Show** - Toggles the Field List, Expand/Collapse Buttons, and Field Headers

## Customizing PivotTables

## Notes

### Design Ribbon Groups

- **Layout** - Changes the way Subtotals and Grand Totals display, changes the overall display layout of the PivotTable, adds or removes a blank row between each item
- **PivotTable Style Options** - Changes the appearance of the PivotTable
- **PivotTable Styles** - Applies predefined color and banding themes

**Exercise 3**

**Notes**

1. Open the spreadsheet **Mission Expedition Sales.xlsx**.
2. Re-create this Pivot Table.

Sum of REVENUE				
	Catalog	Store	Web	Grand Total
London	50310	151015	13009	\$214,334.00
New York	8712	28060	2351	\$39,123.00
Paris	32166	104083	7054	\$143,303.00
Sydney	5471	21769	2749	\$29,989.00
Tokyo	12103	42610	2003	\$56,716.00
<b>Grand Total</b>	<b>\$108,762.00</b>	<b>\$347,537.00</b>	<b>\$27,166.00</b>	<b>\$483,465.00</b>

3. Using your knowledge of Pivot Tables, answer the following questions. You will need to make a number of changes to your Pivot Table to find the answers to all of these questions.

- What was the value of catalog sales for London in the first quarter?
- What percent of the total annual sales were Tokyo Web sales in the fourth quarter?
- What percent of Sydney's annual sales were Catalog sales?
- What was the value of catalog sales for London in January? Show details of the transactions?
- What was the value of Camel saddle sales for Paris in 2015 by quarter?

1 <sup>st</sup> Quarter	
2 <sup>nd</sup> Quarter	
3 <sup>rd</sup> Quarter	
4 <sup>th</sup> Quarter	

- How many Elephant polo sticks were sold in New York in each month of 2015?

	Sticks Sold		Sticks Sold
January		July	
February		August	
March		September	
April		October	
May		November	
June		December	

**Pivot Charts****Notes**

You can easily create a PivotChart that is tied to the data in the PivotTable.

1. From the **Analyze** tab, in the **Tools** group, click on **PivotChart**.
2. Select a chart appropriate for the data and click **OK**.
3. The chart will populate.
4. Click in the chart to change the format of the table.
5. Toggle filter labels off and on by selecting commands in the **Show** group on the **Analyze** tab.

**Exercise 4****Notes**

1. Open **Pivot Chart.xlsx**
2. Examine the data.
3. Read the scenario below and construct a basic Pivot Table according to the scenario.

**Scenario:** You are a business manager and have been asked by your department head to produce a Pivot Table that she can use to understand the total amount spent in a year by account. She would like the Pivot Table to display the following:

- Dates by quarter
- Expense amount
- Be filtered by Account Description

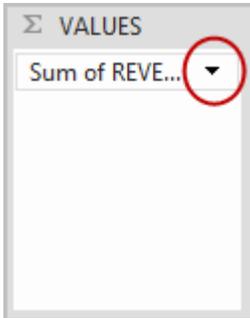
**Exercise 5****Notes**

Using the Pivot Table created in Exercise 4, create a PivotChart that will:

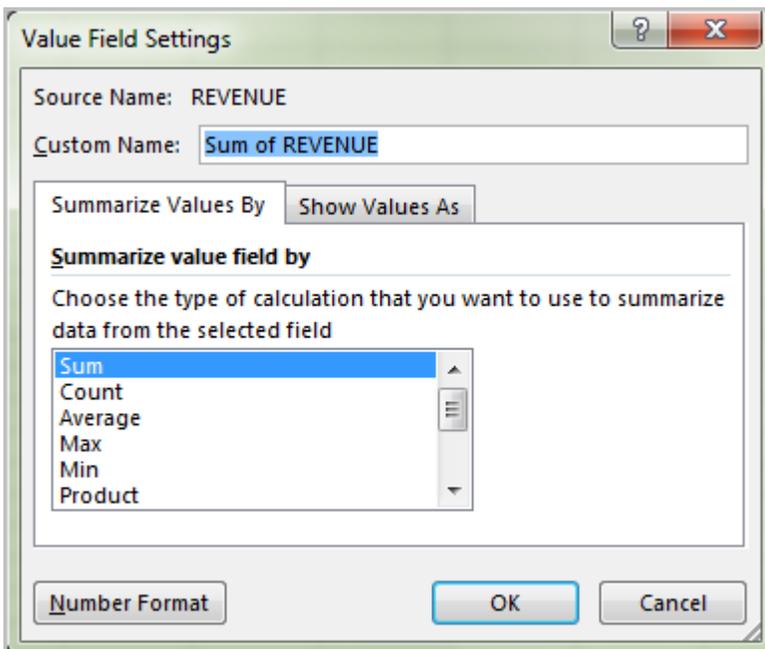
- Show a single expense by quarters
- Display the expense type as the chart title
- Show the data labels on the chart

**How Do I?****Notes****Configure a PivotTable to give a count of items instead of a sum**

1. Click the drop-down arrow to the right of entry in the **Values** field.

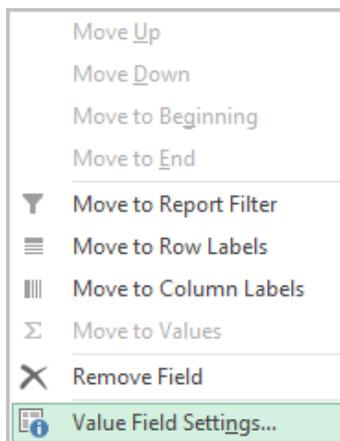


2. Select **Value Field Settings** from the menu options.
3. Select the **Summarize Values By** tab.
4. Select **Count** from the list of options.

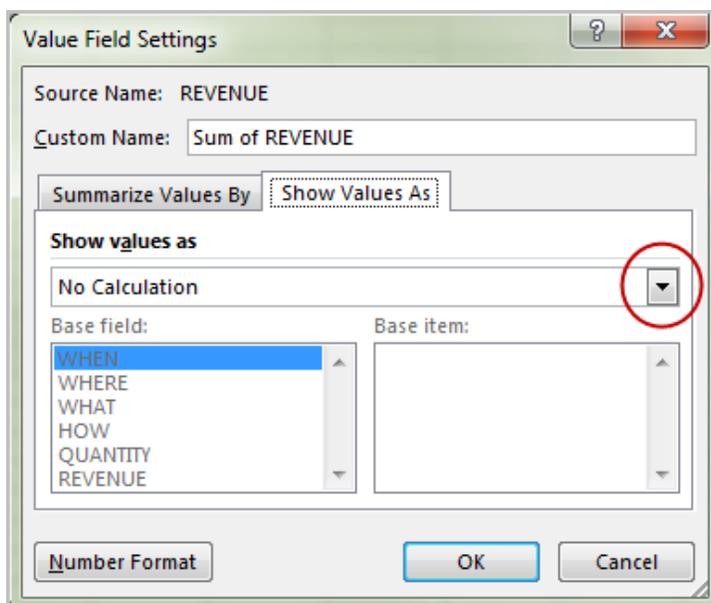


## Change the Way a Value is Calculated in an Existing Table

1. Click the drop-down arrow to the right of entry in the **Values** field.
2. Select **Value Field Settings** from the menu options.



3. Click on the **Show Values As** tab.
4. Click on the drop-down arrow in **Show Values as** and select the way the value is calculated.

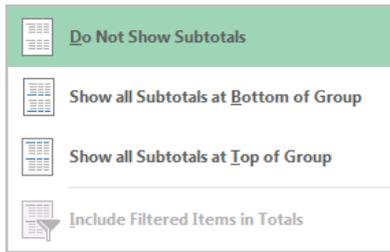


## Display Budget Account and Description on the Same Line

1. Click into the first field you want to adjust.
2. From the **Analyze** tab, click on **Field Settings** in the **Active Field** group.
3. In the **Field Settings** dialogue box, choose the **Layout & Print** tab.
4. Select **Show item labels in tabular form**.
5. Click **OK**.
6. Repeat for the next field.

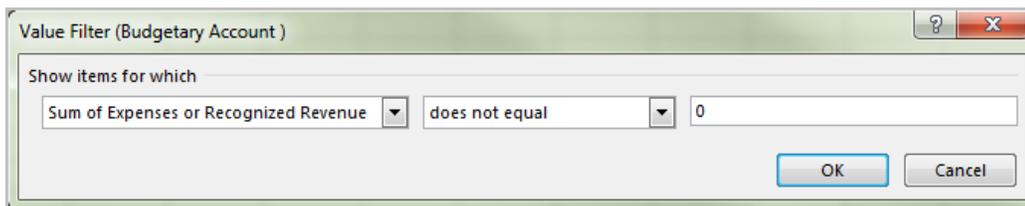
## Remove Totals or Subtotals

1. From the **Design** tab, click on **Subtotals** in the **Layout** group.
2. Choose **Do Not Show Subtotals**.



## Hide Zero Values in a PivotTable Report

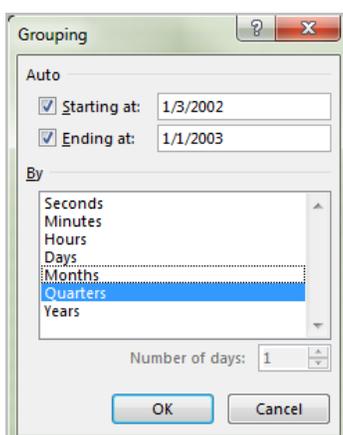
1. Right click on the field you wish to filter
2. Click **Filter** and then click **Value Filters**
3. Set up your filter. To hide zero values, set up the filter as displayed in this screenshot.



4. Click **OK**.

## Group Data by Quarter

1. In the PivotTable report, click any date.
2. On the **Analyze** tab, in the **Group** group, click the **Group Field** button.
3. The **Grouping** window opens.
4. In the **Starting at** box, enter the first date.
5. In the **Ending at** box, enter the last date.
6. In the **By** box, click on **Month** to unselect it, then click on **Quarters** to select it.
7. Click **OK**.



## ANSWER KEY

### Exercise 2

### Notes

Read the scenario below and construct a basic Pivot Table according to the scenario.

**Scenario:** You are a business manager and have been asked by your department head to produce a Pivot Table that she can use to understand the total amount of pay each person earns per year. Your manager has also asked that you also show the payroll dates for each person. Construct a basic Pivot Table to give your manager the data she has requested.

**Setup:**

Drag fields between areas below:

<p>▼ FILTERS</p>	<p>    COLUMNS</p>
<p>☰ ROWS</p> <p>Name ▼</p> <p>Years ▼</p> <p>Quarters ▼</p> <p>Earns End Dt ▼</p>	<p>Σ VALUES</p> <p>Sum of Earnin... ▼</p>

**Exercise 3 Mission Expedition Exercise**

**Notes**

**Q1: Re-create this Pivot Table**

Sum of REVENUE				
	Catalog	Store	Web	Grand Total
London	50310	151015	13009	\$214,334.00
New York	8712	28060	2351	\$39,123.00
Paris	32166	104083	7054	\$143,303.00
Sydney	5471	21769	2749	\$29,989.00
Tokyo	12103	42610	2003	\$56,716.00
<b>Grand Total</b>	<b>\$108,762.00</b>	<b>\$347,537.00</b>	<b>\$27,166.00</b>	<b>\$483,465.00</b>

**Setup:**

Drag fields between areas below:

**FILTERS**

**COLUMNS**

HOW ▼

**ROWS**

WHERE ▼

**VALUES**

Sum of REVE... ▼

**Formatting:**

- Add dollar signs as you would format sheet normally.
- Turn field headers off. **Analyze Tab > Show > Field Headers**

**Q2: What was the value of catalog sales for London in the first quarter?**

**Answer: \$7810.00**

WHERE	London			
<b>Sum of REVENUE</b>				
	<b>Catalog</b>	<b>Store</b>	<b>Web</b>	<b>Grand Total</b>
Qtr1	7810	46399	773	\$ 54,982.00
Qtr2	11939	22447	3233	\$ 37,619.00
Qtr3	13740	38745	5820	\$ 58,305.00
Qtr4	16821	43424	3183	\$ 63,428.00
<b>Grand Total</b>	<b>\$ 50,310.00</b>	<b>\$ 151,015.00</b>	<b>\$ 13,009.00</b>	<b>\$ 214,334.00</b>

**Setup:**

Drag fields between areas below:

FILTERS	COLUMNS
WHERE	HOW
ROWS	VALUES
WHEN	Sum of REVE...

**Formatting:**

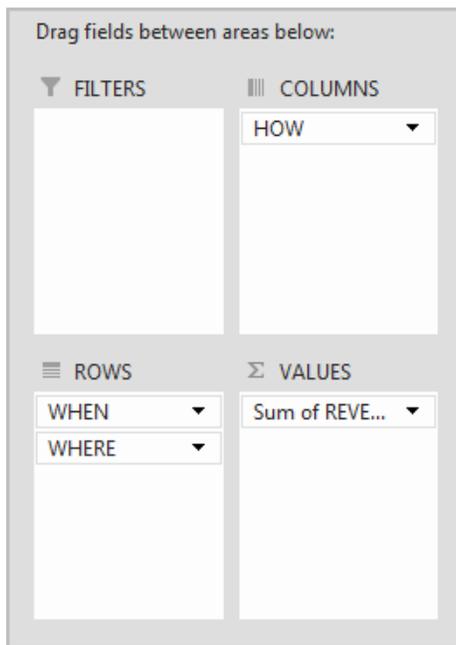
- Group **WHEN** by **Quarters**
  1. In the PivotTable report, click any date.
  2. On the **Analyze** tab, in the **Group** group, click the **Group Field** button.
  3. The **Grouping** window opens.
  4. In the **Starting at** box, enter the first date.
  5. In the **Ending at** box, enter the last date.
  6. In the **By** box, click on **Month** to unselect it, then click on **Quarters** to select it.
  7. Click **OK**.

**Q3: What percent of the total annual sales were Tokyo Web sales in the fourth quarter?**

**Answer:** .01%

Sum of REVENUE				
	Catalog	Store	Web	Grand Total
Qtr1	4.09%	19.45%	0.67%	24.21%
Qtr2	5.78%	15.90%	2.26%	23.95%
Qtr3	7.05%	18.42%	1.92%	27.40%
Qtr4	5.57%	18.11%	0.76%	24.45%
London	3.48%	8.98%	0.66%	13.12%
New York	0.31%	1.39%	0.07%	1.78%
Paris	0.95%	3.58%	0.03%	4.56%
Sydney	0.22%	1.57%	0.00%	1.79%
Tokyo	0.60%	2.59%	0.01%	3.21%
<b>Grand Total</b>	<b>22.50%</b>	<b>71.88%</b>	<b>5.62%</b>	<b>100.00%</b>

**Setup:**



Drag fields between areas below:

**FILTERS** (empty)

**COLUMNS**: HOW

**ROWS**: WHEN, WHERE

**VALUES**: Sum of REVE...

**Formatting:**

- Change Revenue to display % of Grand Total.
  1. Click on the drop-down arrow next to **Sum of Revenue** in the **Values** section of **PivotTable Fields**.
  2. Select **Value Field Settings**.
  3. Click on the **Show Values As** tab.
  4. Click on the **Show values as** drop-down arrow.
  5. Select **% of Grand Total**.
  6. Click **OK**.

**Q4: What percent of Sydney's annual sales were Catalog sales?**

**Answer: 18.24%**

WHERE	Sydney			
Sum of REVENUE				
	Catalog	Store	Web	Grand Total
Qtr1	3.30%	11.33%	0.00%	14.63%
Qtr2	7.91%	17.77%	8.82%	34.49%
Qtr3	3.44%	18.20%	0.35%	21.98%
Qtr4	3.60%	25.30%	0.00%	28.90%
<b>Grand Total</b>	<b>18.24%</b>	<b>72.59%</b>	<b>9.17%</b>	<b>100.00%</b>

**Setup:**

Drag fields between areas below:

<b>▼ FILTERS</b>	<b>    COLUMNS</b>
WHERE ▼	HOW ▼
<b>≡ ROWS</b>	<b>Σ VALUES</b>
WHEN ▼	Sum of REVE... ▼

**Formatting:**

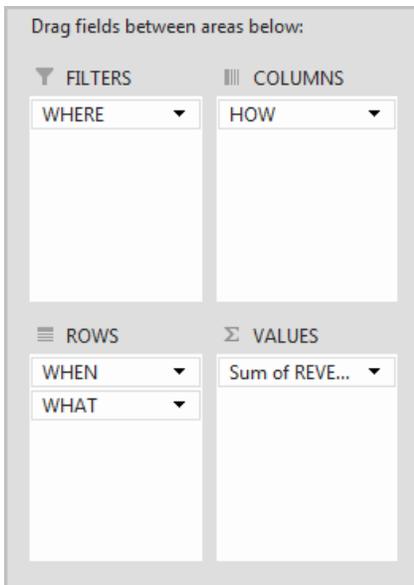
- **Sum of Revenue** formatted to show as **% of Grand Total**
- Filter **WHERE** to **Sydney**

**Q5: What was the value of catalog sales for London in January? Give details of the transactions?**

**Answer: \$411.00**

Sum of REVENUE				
	Catalog	Store	Web	Grand Total
Jan	411	13164	115	13690
Boots - snakeproof		475		475
Camel saddle		2392		2392
Compass		32		32
Elephant polo stick		8448		8448
Exploring in 10 Easy Lessons		160	100	260
Geo positioning system		1180		1180
Hammock	275	165		440
Hat - polar explorer	136	170		306
How to Win Foreign Friends		52		52
Map case		90	15	105
Feb	5304	17807	60	23171
Mar	2095	15428	598	18121
Apr	2466	7113	104	9683
May	5987	7905	3129	17021
Jun	3486	7429		10915
Jul	2403	19222	2994	24619
Aug	7107	11111	1238	19456
Sep	4230	8412	1588	14230
Oct	11362	13097		24459
Nov	3036	15565	1576	20177
Dec	2423	14762	1607	18792
Grand Total	50310	151015	13009	214334

**Setup:**



**Formatting:**

- Group **WHEN** by **Months**
- Add **WHAT** to PivotTable Fields
- Change **WHERE** to **London**
- **Sum of Revenue** formatted to show as **No Calculation**

**Q6: What was the value of Camel Saddle sales for Paris in 2012 by quarter?**

**Answer:**

WHERE	Paris				
WHAT	Camel saddle				
<b>Sum of REVENUE</b>					
	<b>Catalog</b>	<b>Store</b>	<b>Web</b>	<b>Grand Total</b>	
Qtr1	4186	7176	1794	13156	
Qtr2	1794	10764	2392	14950	
Qtr3	8372	16146		24518	
Qtr4	1794	6578		8372	
<b>Grand Total</b>	<b>16146</b>	<b>40664</b>	<b>4186</b>	<b>60996</b>	

**Setup:**

Drag fields between areas below:

**FILTERS**

WHERE

WHAT

**COLUMNS**

HOW

**ROWS**

WHEN

**VALUES**

Sum of REVE...

**Formatting:**

- Change **WHERE** to **Paris**
- Change **WHAT** to **Camel Saddle**
- Group **WHEN** by **Quarters**

**Q7: How many Elephant polo sticks were sold in New York in each month of 2012?**

**Answer:**

WHERE	New York	↕
WHAT	Elephant polo stick	↕
Row Labels	Sum of QUANTITY	
Mar	5	
Apr	7	
May	2	
Jul	1	
Aug	5	
Sep	2	
Dec	7	
<b>Grand Total</b>	<b>29</b>	

**Setup:**

Drag fields between areas below:

<p><b>▼ FILTERS</b></p> <p>WHERE ▼</p> <p>WHAT ▼</p>	<p><b>    COLUMNS</b></p>
<p><b>≡ ROWS</b></p> <p>WHEN ▼</p>	<p><b>Σ VALUES</b></p> <p>Sum of QUANTITY ▼</p>

**Formatting:**

- Change **WHERE** to **New York**
- Change **WHAT** to **Elephant polo stick**
- Group **WHEN** by **Months**

**Exercise 4**

**Notes**

Read the scenario below and construct a basic Pivot Table according to the scenario.

**Scenario:** You are a business manager and have been asked by your department head to produce a Pivot Table that she can use to understand the total amount spent in a year by account. She would like the Pivot Table to display the following:

- Dates by quarter
- Expense Amount
- Be filtered by Account Description

Account Descr (All)	
Row Labels	Sum of Expenses or Recognized Revenue
Qtr1	\$377,181.89
Qtr2	\$160,740.18
Qtr3	\$375,987.06
Qtr4	\$475,450.71
<b>Grand Total</b>	<b>\$1,389,359.84</b>

**Setup:**

Drag fields between areas below:

<p><b>FILTERS</b></p> <p>Account Des... ▼</p>	<p><b>COLUMNS</b></p>
<p><b>ROWS</b></p> <p>Acctg Date ▼</p>	<p><b>VALUES</b></p> <p>Sum of Expen... ▼</p>

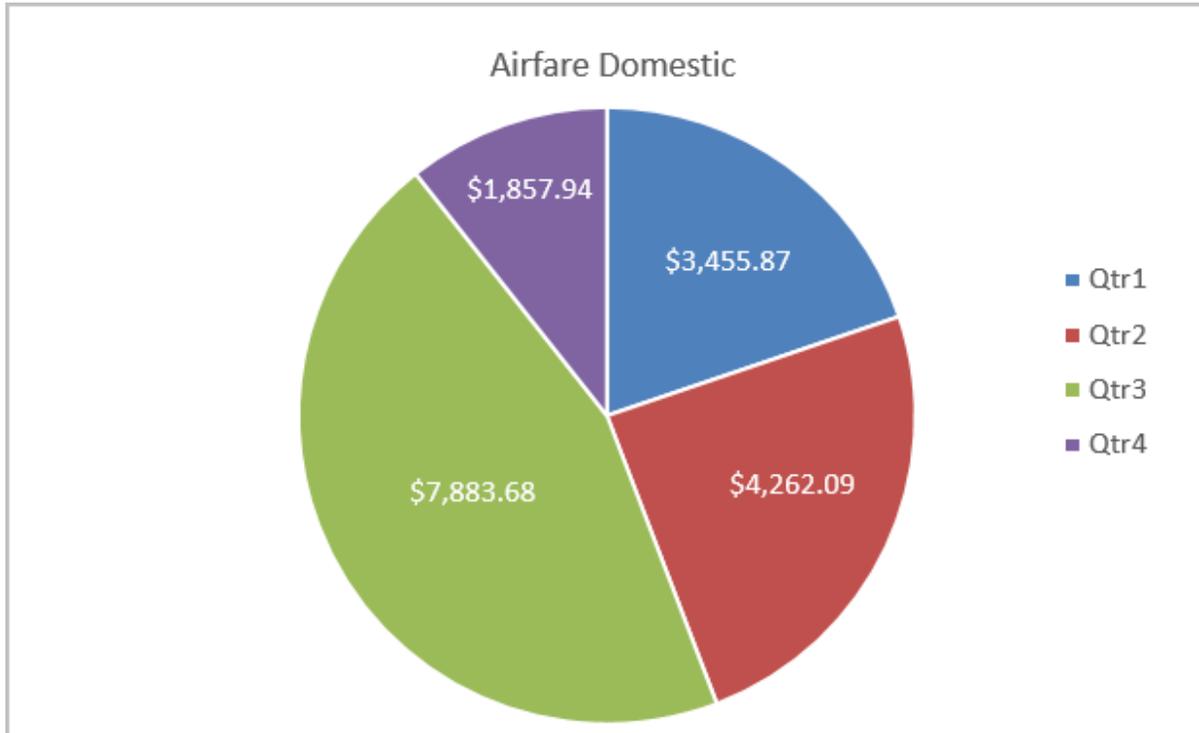
**Formatting:**

- Group **Acctg Date** by **Quarters**

**Exercise 5****Notes**

Using the Pivot Table created in Exercise 4, create a PivotChart that will:

- Show a single expense by quarters
- Display the expense type as the chart title
- Show the data labels on the chart itself

**Formatting:**

- Turn off chart filters on the **Field Buttons** in the **Show/Hide** group in the **Analyze** tab.
- To display the account description as the title, click on the title in the chart to activate it. Next, click into the top of the spreadsheet (where you would type a formula) and type = then click on the cell containing the account description. In this example, it should be **B1**. Press the **Enter** key.

## Additional Resources

## Notes

### **To contact me directly:**

Brett Neal – Professional Development & Training  
[brett.neal@uvm.edu](mailto:brett.neal@uvm.edu)

**NOTE:** If you are having problems with a spreadsheet, sending me a copy will make it easier for me to help you!

### **Additional Resources:**

To view all classes offered by Professional Development & Training, go to our website <http://www.uvm.edu/develop>. Here you can view the class schedule by date, read class descriptions, learn about the certificate programs we offer, and find PeopleSoft Mini Manuals.