Excel 3: Linking, PivotTables, vLookup, & Macros Class Guide

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Part 1: Name That Cell/Those Cells

1.1 Naming

You can name a cell or a group of cells in your spreadsheet which can facilitate using functions.

Class Exercise: *Open the Excel3ClassSpreadsheets workbook and use the vLOOKUP sheet…*

1. Highlight cells **A7-A42**
2. Go to the **Name box** (to the left of the Formula Bar) and type **SharePrices**
3. Press **Enter**

NOTE: Not sure what's been named on a spreadsheet? You can see on the named areas by going to the **Formulas tab** and clicking on **Name Manager**.

Part 2: vLOOKUP Function & Nesting

2.1 vLOOKUP

The "v" in vLOOKUP stands for vertical. You can use this function to look up a value in a predefined range and return a corresponding value. Here is the syntax:

=vlookup(lookup_value,table_array,col_index_num,[rangle_lookup])

From http://office.microsoft.com/en-us/excel-help/vlookup-function-HP010343011.aspx:

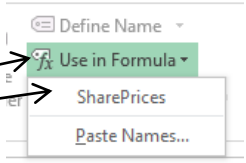
lookup_value – Required. The value to search in the first column of the table or range. The lookup_value argument can be a value or a reference. If the value you supply for the lookup_value argument is smaller than the smallest value in the first column of the table_array argument, VLOOKUP returns the #N/A error value.

table_array – Required. The range of cells that contains the data. You can use a reference to a range (for example, A2:D8), or a range name. The values in the first column of table_array are the values searched bylookup_value. These values can be text, numbers, or logical values. Uppercase and lowercase text are equivalent.

col_index_num - Required. The column number in the table_array argument from which the matching value must be returned. A col_index_num argument of 1 returns the value in the first column in table_array; acol_index_num of 2 returns the value in the second column in table_array, and so on.

range_lookup – Optional. A logical value that specifies whether you want VLOOKUP to find an exact match (FALSE) or an approximate match (TRUE):

If range_lookup is either TRUE or is omitted, an exact *or* approximate match is returned. If an exact match is not found, the next largest value that is less than lookup_value is returned. This works best if values are in ascending order.



Class Exercise: *On the vLookup worksheet…*

1. Determine the maximum Share Price: go to **B3** and type **=max(**
2. Then go to the **Formulas tab** and click on **Use in Formula**
3. From the dropdown list, choose **SharePrices** and type **)** and **Enter** to finish the formula
4. Use **Format Painter** to format cell **B3** like the other share prices if necessary
5. Go to **B4** and use the vlookup function to return the maximum share price's *date*:

=vlookup(B3,A7:B42,2,FALSE)

6. Be sure the press Enter or click the checkmark when done inputting the function
7. Format **B4** for short date if it's not already set that way

2.2 Nesting Functions

You can nest functions to make your spreadsheets neater and/or more compact. You only use "=" at the beginning.

Class Exercise: *On the vLookup worksheet…*

1. Delete **row 3** and notice that the vlookup function returns an error…that's ok!
2. Double-click on the function that is now in cell **B3**
3. Delete **#REF!** and replace it with **max(SharePrices)**
4. The new nested functions will look like this:

=VLOOKUP(MAX(SharePrices),A6:B41,2,FALSE)

5. Be sure to press Enter or click the checkmark when done inputting the function

NOTE: If your data is set-up horizontally you can use the HLOOKUP function.

Part 3: Tables Revisited

3.1 Format as Table

To make life easier you can official mark your table as a table in Excel. This will help down the road if you add in new rows, delete columns, etc…you won't have to worry as much about changing cell references.

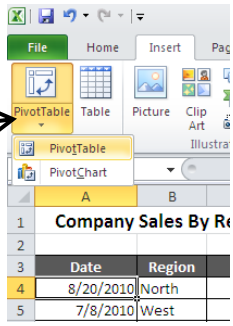
Class Exercise: *On the PivotTable Data worksheet…*

1. Click somewhere between cell A3 and D68
2. On the **Insert** tab of the Ribbon, click **Table**
3. On the Create Table window, verify that A3 to D68 are selected and click **OK**
4. On the Table Tools **Design** tab, change the Table Name to *CompanySales* on the far left

Part 4: PivotTables, Slicers, & PivotCharts

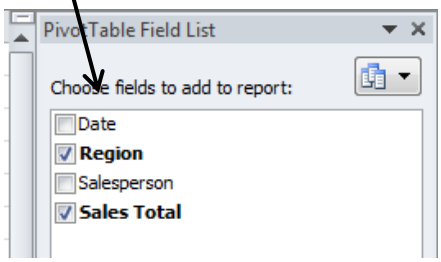
4.1 PivotTable Basics

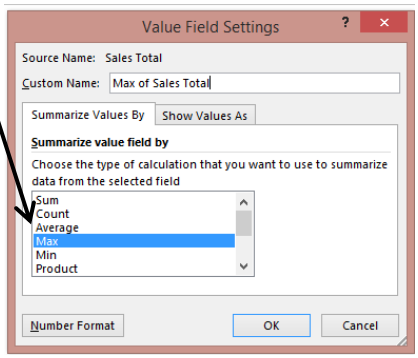
PivotTable = A feature that enables you to summarize and analyze data in lists and tables. Pivot tables are called such because you can quickly rearrange the position of pivot table fields to give you a different view of the table (from http://www.cs.rtu.lv/PharePub/Microsoft%20Access%2097%20Quick%20Reference/htm/ch09.htm).



Class Exercise: *On the PivotTableData worksheet…*

1. Place the cell pointer somewhere in the sales table
2. Click on the **Insert tab** on the Ribbon and then choose **PivotTable→PivotTable**
3. The Create PivotTable window pops up; verify that the Table/Range is set to *CompanySales* and click **OK**
4. You will be taken to a new worksheet for your PivotTable
5. The *PivotTable Field List* should appear on the right. Choose **Region** (as Rows) and **Sales Total** (as Values). Sales Totals may default to Count. Should this happen, in the Values box, left click on *Count of Sales*. Then choose **Value Field Settings**. Click on **Sum**
6. Next click on the **Show Values As** tab and then **Number Format** at the bottom of that box. Format this field as *Currency* and do **OK** twice to return
7. Take out **Region** and add in **Salesperson**. Change value to the **Max of Sales Total**
8. Go back to the *PivotTable Data* sheet and type "12000" in **D9** and type **Enter**
9. Go back to *Sheet1* and click on **Refresh** on the **PivotTable Tools→Options** tab





NOTE: If you ever click off of the PivotTable, you can always get the PivotTable Tools tabs to appear by clicking back on the table.

4.2 Slicers

Slicers are new in 2010. They are easy-to-use filtering components that contain a set of buttons that enable you to quickly filter the data in a PivotTable report, without the need to open drop-down lists to find the items that you want to filter *(from support.office.com)*.

Class Exercise: *On the Sheet1 worksheet…*

1. Make sure the active cell is in the PivotTable so you'll see the **PivotTable Tools tabs**
2. On the **Options tab** click **Insert Slicer**
3. Select **Region** in the dialog box and click **OK**
4. Click on the different Region buttons to see the Salespeople for one region at a time
5. You can select more than one by holding down the CTRL key and clicking the ones you want

NOTE: Starting with Excel 2013, you can use slicers with named tables without having to create a PivotTable first.

4.3 PivotCharts

PivotCharts are super easy to insert and change to suit what data you'd like to display.

Class Exercise: *On the Sheet1 worksheet…*

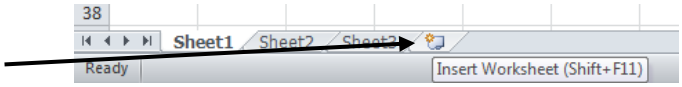
1. Make sure the active cell is in the PivotTable so you'll see the **PivotTable Tools tabs**
2. On the **Option tab**, click on **PivotChart**
3. Choose a **Column chart** and click **OK**
4. If you can't see the PivotTable and/or Slicer, left click and drag the PivotChart and Slicer to better locations on the sheet
5. Click on the different Region buttons of the Slicer to see how the PivotChart changes

Part 5: Manipulating Sheets

5.1 Inserting, Renaming, and Linking

Insert a Sheet

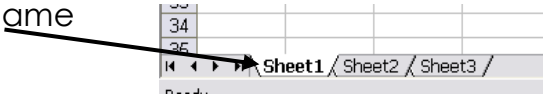
- Click on **Insert→Insert Sheet** (you can click and drag worksheets into whatever order you prefer)
- OR click on the Insert Sheet button near the tabs at the bottom



Renaming Sheets

You can change the generic sheet names "Sheet1, Sheet2, etc." to something more meaningful:

- *Right-clicking* on the current sheet name
- Select **Rename**
- Type in the new name and hit **Enter**



Moving Sheets

You can easily rearrange your sheets by clicking & dragging the sheet tab to the desired location

Link Sheets

It can be helpful to connect different sheets in order to perform calculations or compare data

- Click on the blank cell you want to link
- Type **=** and click on the worksheet that has the cell you want to copy
- Click on the cell you want to link and press **Enter**

Toggling Between Sheets

Since you can have numerous sheets it can sometimes be hard to view the tabs all at once or just to get to the next one in line. You can toggle using the keyboard shortcuts: **CTRL+Page Up** and **CTRL+Page Down**.

Copying Sheets

You can easily copy a sheet:

- Right-click on the tab you want to copy
- Click on **Move or Copy**
- In the window that pops up, checkmark the **Create a Copy** box and click **OK**

Coloring Tabs

You can color code your sheet tabs if needed:

- Right-click on the tab you want to color
- Click on **Tab Color** and choose a color
- If you can't see the color change, click on a different tab to see it

Hiding/Unhiding Sheets

You can hide sheets from view:

- Right-click on the tab you want to hide
- Click on **Hide**

To unhide, right-click on any tab and click on the sheet to unhide and click **OK**.

Class Exercise: *Open the SalesSheets workbook…*

1. Insert a new worksheet and rename it **1st Quarter Sales**
2. Reorder the worksheets so that they are in chronological order but with **1st Quarter Sales** first.
3. Create the table below on the 1st Quarter Sales sheet:

	A	B	C	D	E
1	1st Quarter Sales				
2					
3		January	February	March	Total
4	Blue				
5	Brown				
6	Green				
7	Red				
8	Total				

4. Link ALL the *sales* figures for each month into the correct cell on the 1st Quarter Sales sheet.
   For instance: Click on 1st Quarter Sales' cell **B4** and type **=**. Go to January's sheet and click on Cell **B4** and press **Enter**. Do Autofill to copy and paste the linking formula for the other colors
5. Use **AutoSum** to tally all the color totals and all the monthly totals for the quarter. When you're all finished, it should look something like this:

1st Quarter Sales

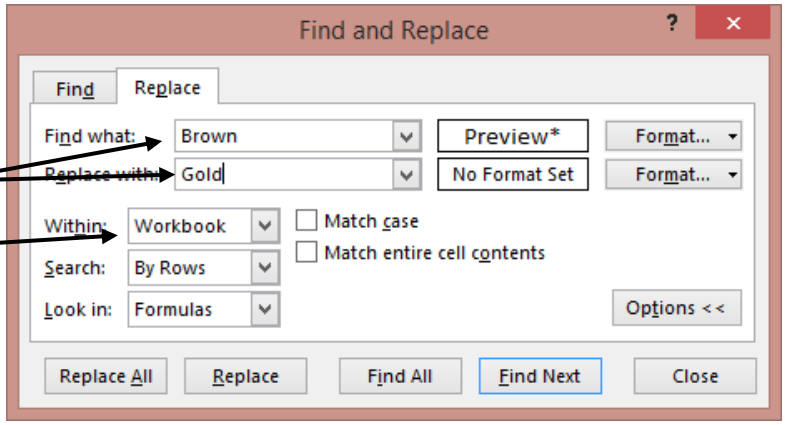
	January	February	March	Total
Blue	$ 1,999.00	$ 5,678.00	$ 5,699.00	$13,376.00
Brown	$ 567.00	$ 34.00	$ 34.00	$ 635.00
Green	$ 2,467.00	$ 5,788.00	$ 5,788.00	$14,043.00
Red	$ 67.00	$ 67.00	$ 134.00	$ 268.00
Total	$ 5,100.00	$11,567.00	$11,655.00	$28,322.00

6. Change all four tabs to different colors.

Part 6: Find & Replace Almost Anything

6.1 Find and Replace

You can pull up the Find and Replace window in Excel by typing **CTRL+F**. Can't remember where you typed something? Do a Find for it within a worksheet or the entire workbook. Need to replace some information? Do a Find and Replace (again within the worksheet or the entire workbook).



Class Exercise: *In SalesSheets…*

1. Type **CTRL+F** and click on the **Replace** tab and then **Options**
2. Find all the instances of the word *Brown* and Replace them with the word *Gold* within the Workbook
3. Click **Replace All**
4. Click **OK** and then **Close**
5. Close and save the file

NOTE: You can also access Find and Replace from **Find & Select** on the right side of the Home tab.

Part 7: Split Screen

7.1 Splitting screens

You can easily split a worksheet into two panes so you can compare data from two different parts of your worksheet that are far away. You can edit either pane and changes will update in the worksheet.

Class Exercise: *On the PivotTable Data worksheet of the Excel3ClassSpreadsheets workbook…*

1. Place the cell pointer in **A10**
2. On the **View tab** click **Split**
3. The worksheet is now split; scroll through the top and bottom panes
4. Turn off the Split setting simply by clicking on the **Split** button again.

Part 8: Macros

8.1 Creating a Macro

A macro is a recording of tasks…a way to automate repetitive tasks in your workbook. Excel macros are written in Excel VBA (Visual Basic for Applications). For simple macros you don't actually need to know Excel VBA.

Since macros involve coding, a file with macros needs to be saved as "Excel Macro-Enabled Workbook" for the macros to work later on.

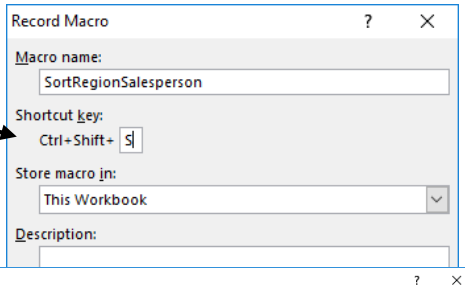
And, also since macros involve coding, they can be used to spread malicious codes so only run macros from people you trust.

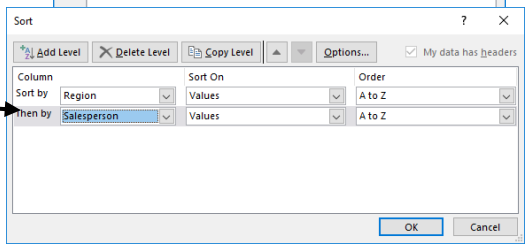
You can record a macro from **View tab**. However, if you want to see more macro options easily, you want the **Developer tab** to be accessible. If you don't have a Developer tab in the Ribbon, click on **File → Options → Customize Ribbon →** check **Developer** on the right. Click **OK**.

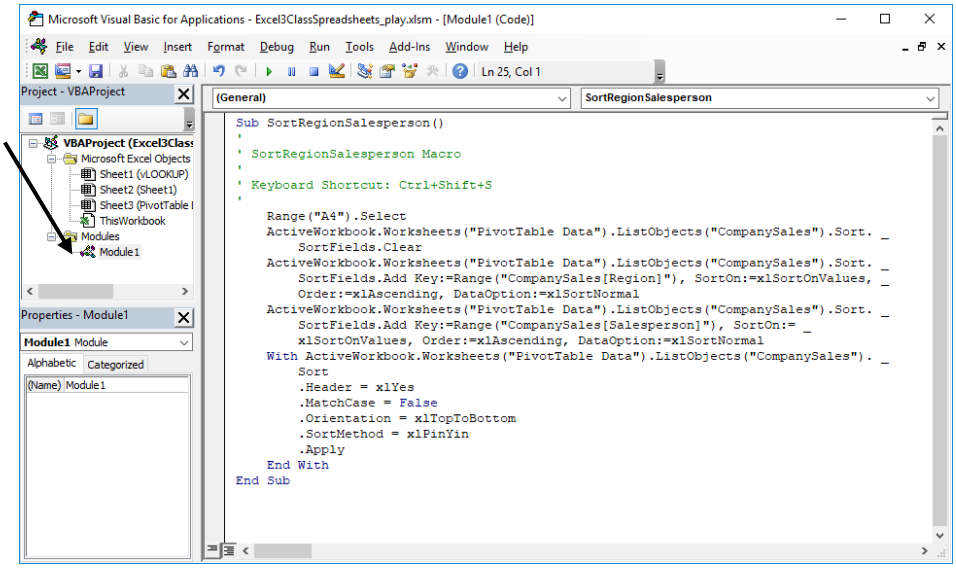
NOTE: Once a macro runs, you cannot use the Undo command to, well, undo the macro's actions.

Class Exercise: *On the PivotTable Data worksheet…*
We are going to create a macro to automatically sort our table for us.

1. Click the **Developer** tab
2. Click **Record Macro**. On the Record Macro window, type in the name **SortRegionSalesperson**
3. Make "**Ctrl+Shift+S**" the shortcut key (you are not required to insert a shortcut)
4. Click **OK**
5. Click on **A4**
6. Go to the **Home tab** if not there already and click on **Sort & Filter→Custom Sort**
7. Sort by *Region* and then *Salesperson* and click **OK**
8. Click on the **Developer tab** and click **Stop Recording**
9. Test the macro by sorting the table by *Date* and then typing **CTRL+SHIFT+S**
10. Resort again by *Date*
11. Insert a Rounded Rectangle shape (from the **Insert tab**) to create a button to the top right of the table
12. Type "Sort by Region & Salesperson" in the rectangle
13. Right-click on the rectangle and choose **Assign Macro**
14. Choose the macro you've just made and click **OK**
15. Click the button and watch the macro run!
16. Type **ALT+F11** to open the VBA editor
17. Open the *Modules* folder to get to *Module 1* to take a look at the macro's code
18. When done, click the top **x** in the VBA window to exit
19. Back in Excel do **Save As** and save this file as an **Excel Macro-Enabled Workbook** so the macro will work in the future
20. Close the file







Part 9: Help!

9.1 MS Office Help

Excel has a help feature that can aid you in refreshing your memory on certain tasks or by even learning new tasks. Help can be reached by clicking the Question mark in the upper right hand corner. You will most likely be directed to Office.com's online help, but there is an offline version if needed.

9.2 Additional Help

Below are some websites that might be of help to you:

www.greenwoodlibrary.us/computer-class - Lists all of the library's computer classes and includes the Excel guides and class spreadsheets.

Lynda.com (via www.greenwoodlibrary.us/online-databases - *scroll down to lynda.com to create a free account using your GPL Evergreen Indiana library card*) - Learn from over 3,000 courses on a variety of topics including business, web development, multimedia skills, Microsoft Office Excel, and coding to name a few. The courses are on demand and delivered by expert instructors.

www.gcflearnfree.org - A great collection of tutorials on a wide array of subjects including Microsoft Excel 2000-2016.

www.free-training-tutorial.com – Free tutorial videos on Excel tasks (just be wary of clicking on the ads)

http://spreadsheets.about.com/

www.customguide.com/cheat-sheets/ - Free cheat sheets for most Office programs

www.google.com/work/apps/business/products/sheets/ - You can use Google Sheets for free (after creating a Google account) to practice many of the Excel features we've used today.

You can also find help by searching for the function you want to use or the problem you're having using your favorite search engine.

Thank you for coming!

Please fill out a program survey before leaving.

http://www.greenwoodlibrary.us/programming-survey

or go to www.greenwoodlibrary.us →Services & Programs → Adult Programming Survey

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Program Attended: Excel 3