Excel Macros: An Introduction

Macros: What Are They?

An Excel Macro is a feature on Microsoft Excel that allows a user to automate processes performed on a daily basis (i.e. formatting, calculations, and data manipulation). The conveniences that Macros provide are fully achieved when a user needs to perform tasks very repetitively, most often in a workplace setting. In order to create a Macro, a user simply needs to:

1. Begin ‘recording’ a Macro
2. Perform the tasks to be automated (format, calculate, or manipulate data)
3. Finish ‘recording’ the Macro

While the Macro was recording, Excel was coding all of the actions performed by the user into a workable function of the spreadsheet in the Visual Basic code language.

Detailed below is an example of how to create a Macro that would be directly applicable to a worker in the financial industry. However, Macros can have applications in almost any workplace setting, you just need to be creative and find the opportunity!

The Idea: Sectors Summary

Imagine that you work at a mutual fund in the financial industry. Every day, you and your colleagues have a meeting after the stock market closes, in which you discuss what happened that day in the markets and certain sectors. In order to begin discussions, you want to bring a detailed view of the daily market and sector performances on a clean spreadsheet with a functional graph. Every day you create this spreadsheet from scratch, copying and pasting information from www.google.com/finance, reformatting the data, and printing it; overall costing roughly 10 minutes of your work time.

One day, your colleague explains the concept of Macros to you. Realizing the time saving abilities that a Macro could provide, you decide to create a Macro that will automate your copy-and-paste/formatting process and provide you with a clean, detailed spreadsheet that updates automatically from www.google.com/finance. The steps in this packet show how to create this Macro:
Step 1: Create & Name Macro

- Open Excel > Click the View Tab > Select Macros (furthest right ribbon) > Select ‘Record Macro...’

- Name the Macro, create a shortcut, and create a description (if necessary). In our case, name the Macro Sector, with the shortcut Ctrl + Shift + S.
Step 2: Begin Data Integration

- Select the Data Tab > Select the source of data (‘From Web’ in our case) in the Get External Data Ribbon (farthest left ribbon)

- Search the New Web Query Browser for desired source of data. In our case, head to [www.google.com/finance](http://www.google.com/finance) > Scroll Down to the Sector Summary data on the bottom of the front page > Select the yellow arrow to the left of the sector data > Also select the Bonds, Currencies, and Index data tables
• With the desired data sets selected, click Import on the New Web Query Browser.

• Select the desired placement of the data on the Excel Sheet and press OK. Result is displayed below:
Step 3: Format Data

- Begin Formatting the data however you desire. Much of the formatting I perform on my copy is left out due to time constraints; however the formatting is entirely dependent on how you desire the data to look. This is the main process that will be automated, so be creative!

- For basic formatting, delete the ‘% down / up’ cell > Move the data into an attractive format > Format each data table with the ‘all borders’ style > Give each table a title > Change the titles to Heading Style 1 (displayed below):
• Conditional Data Formatting: Select any cells that contain numbers greater than or less than 0 > Select the Conditional Formatting ribbon on the Home tab > Select ‘Highlight Cells Rules’ > Select ‘Greater Than’

![Image of Excel spreadsheet showing conditional formatting]

• Format cells that are GREATER THAN ‘0’ with ‘Green Fill with Dark Green Text’ > Select OK

![Image of Excel spreadsheet showing formatted cells]
• Reselect desired data range > Reselect Conditional Formatting tab > Select Highlight Cells Rules > Select Less Than > Repeat formatting except this time format the cells that are LESS THAN ‘0’ with ‘Light Red Fill with Dark Red Text’ > Select OK (result is displayed below):

• The above formatting is a basic sample of the process to be automated. Now you’re on your own to continue formatting your data until the format is to your satisfaction. The formatted data set that I constructed is displayed below:
Step 6: Finish & Save Macro

- Once the data is formatted how you desire, it is now time to finish recording the Macro and save.
- Select the View Tab > Select the Macros Ribbon > Select Finish Recording

- Select the File Tab > Select Save As > Select the desired save location > Rename the File to desired file name (‘Sectors’ in our case) > **Save as type: Excel Macro-Enabled Workbook (VERY IMPORTANT YOU DO NOT MISS THIS STEP)** > Select Save
Step 7: ReRun the Macro on a later date

- To run the Macro, and automate this entire process on a different date, Open a new workbook (Ctrl + N) > Select the View tab > select Macros > Select View Macros

- Make sure the ‘Macros in:’ field reads All Open Workbooks > Select the Macro from the other file (Sectors.xlsm!Sectors in our case) > Select Run (NOTE: THE WORKBOOK WITH THE ORIGINAL SAVED MACRO MUST BE OPEN AS WELL)

- An error message will appear due to pulling the data from the Internet > Click Debug > Delete the highlighted line of code displayed in the picture below (‘_CommandType = 0’) > Close the DeBugger application

- Rerun the Macro following the steps provided above and watch the magic happen 😊.
Side Notes:

- If at any point an error message occurs within your Macro, open the debugger application and delete the line of code that is highlighted yellow.
- In this Macro, a ‘_command type=0’ error will always display on the first run; this is due to pulling data from the Internet. Simply delete this line of code from the debugger application (after the first run), and the problem will be solved.

Final Result:

The final result of this Macro is an automated function (Ctrl + Shift + S) that:

1. Returns the daily stock market data into an excel spreadsheet
2. Formats the data
3. Creates a graph
4. Fits the cells into a single page for printing

This Macro condenses the previous copy-and-paste method (a near 10 minute process) into a 3 second automated-process! In the future, you can implement more Macros into any automated excel processes you may have to speed things up.

An example of my final product is displayed below: