



PERSONAL STOCK TRACKING TOOL



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Executive summary

This past semester I set out to learn about how to trade stock and I quickly realized two things. First, stock data is scattered all over the internet which makes it hard to manage the stock that I purchase because I have to navigate to multiple sites in order to check different numbers concerning the same stock ticker. Second, many students, even graduate students, in the business school don't know the basics of stock market trading.

The purpose of my project is to help students and employees of businesses, who don't know much about investing, to become more familiar with the stock market and to provide an easy to use tool that will save them time and effort in stock management. Instead of having to navigate to multiple websites to gather information on a single stock, they can simply type in their stock tickers, click "Get Summary", and have a majority of their portfolio's information right in front of them. This tool can be used by any individual at home or at work if their work requires them to analyze stock data.

Implementation Documentation

In this project, I created five main procedures that assist users in managing their portfolios: "Get Summary", "Get Individual", "Get All Individuals", "Clear Main Table", and "Clear Worksheets".

1 - Get Summary

"Get Summary" focuses on the overall theme of my tool, which is getting information for multiple stock tickers and putting all of the crucial information right in front of the user in an organized way. This option loops through the tickers on the "Main" worksheet then goes to Yahoo Finance and retrieves basic details concerning the stock ticker such as the stock's current price, volume, and its opening price for today. All of the information is then organized into a table as shown in Figure 1 below.

	Company Name	Ticker	Original Cost	Shares Owned	Current Price	Change in Price	Change in Points	Today's Open Price	Gains/Losses Since Original Purchase	If I Sold Right Now, How Much Would I Get	ROI
1	Murphy Oil	Mur	\$15.00	4	\$26.57	\$11.57	▲ 11.57	\$26.05	\$46.28	\$106.28	77.13%
2	American Steel	X	\$14.00	7	\$17.15	\$3.15	▲ 3.15	\$16.73	\$22.05	\$120.05	22.50%
3	Tesla	TSLA	\$230.00	4	\$258.15	\$28.15	▲ 28.15	\$251.00	\$112.60	\$1,032.60	12.24%
4					\$0.00			\$0.00			
5					\$0.00			\$0.00			
6					\$0.00			\$0.00			
7					\$0.00			\$0.00			
8					\$0.00			\$0.00			
Total			\$259.00	15		\$42.87	42.87		\$180.93	\$1,258.93	

Figure 1: "Summary" Worksheet

Also, most investors are aiming to raise a specific amount of money from their investments so I created another worksheet to help out with this. Its numbers are based off of the numbers in the "Summary" worksheet. The worksheet, "Goal", monitors the progress of their investments as seen in Figure 2 below.



Figure 3: Portfolio Worksheet

2 - Get Individual

The “Get Individual” option allows for the user to enter in a single stock ticker and retrieve ten key indicators off of Yahoo Finance. It also downloads a chart from StockCharts.com that shows volume, change of price, and other stock details. This features allows for the user to see more details pertaining to their selected ticker.

Ticker	Results
Mur	
Price Today	\$26.31
Today's Low	\$25.91
Today's High	\$26.93
Previous Close	\$25.69
Today's Open	\$26.05
52 Week High	\$50.79
52 Week Low	\$14.30
Volume	4m
Avg. Volume	5.7m



Figure 4: Individual Worksheet

3 - Get All Individuals

“Get All Individuals” is very similar to the “Get Individual” feature except that it loops through the list on the “Main” tab and creates a new worksheet for each of the tickers in the list. This feature allows for the user to be able to take a closer look at each of their stocks in order to gain a better understanding to why it may have gone up or down that day or during a period of time.

Stock Management				
	Company Name	Ticker	Original Investment	Shares Owned
1	Murphy Oil	Mur	\$15.00	4
2	American Steel	X	\$14.00	7
3	Tesla	TSLA	\$230.00	4
4				
5				
6				
7				
8				
Ticker				
Mur				

Figure 5: Main Worksheet (The range highlighted in yellow is the list of tickers that are looped through for “Get Summary” and “Get All Individuals”. The green cell is the ticker used for “Get Individual”.)

4 - Clear Main Table

“Clear Main Table” simply clears out all of the information in the table in Figure 5 above. This is useful because users don’t have to go through and clear out the range if they want to look at new stocks. They can instead go to the ribbon and click the button and the table is automatically cleared.

5 - Clear Worksheets

“Clear Worksheets” deletes all of the extra worksheets that have been created using the “Get All Individuals” button. For example, in Figure 6, “Individual-Mur”, “Individual-X”, and the third “Individual-“ at the very right of the figure.



Figure 6: All the “Individual-TickerName” worksheets are deleted when “Clear Worksheets” is clicked.

Basic Walkthrough

This section provides a brief walkthrough of how to use each part of the Personal Stock Tracking Tool.

How to use “Get Summary”:

1. On the “Main Tab”, enter the tickers in the yellow cells and their supporting information.
2. Click the “Stock” ribbon.
3. Click “Get Summary”.
4. Wait. The tool will open Internet Explorer and go out to Yahoo Finance to retrieve the information. Depending on the number of tickers you have entered and the internet connection, it could take a minute. If it takes more than two minutes, then a better internet connection is needed.
5. Once the tool closes Internet Explorer, go to the “Summary” worksheet to see the results. You may also want to view the “Goal” or “Portfolio” worksheets.

How to use “Get Individual”:

1. On the “Main Tab”, enter the ticker in the green highlighted cell.
2. Click the “Stock” ribbon.
3. Click “Get Individual”.
4. Wait. The tool will open Internet Explorer and go out to Yahoo Finance to retrieve the information. Depending on the internet connection, it could take a minute. If it takes more than two minutes, then a better internet connection is needed.
5. Once Internet Explorer is closed, navigate to the “Individual” worksheet.

How to use “Get All Individuals”:

1. On the “Main Tab”, enter the ticker in the green highlighted cell.
2. Click the “Stock” ribbon.

3. Click “Get All Individuals”.
4. Wait. The tool will open Internet Explorer and go out to Yahoo Finance to retrieve the information. Depending the number of tickers entered and on the internet connection, it could take a minute. If it takes more than two minutes, then a better internet connection is needed.
5. Once Internet Explorer is closed, navigate to the “Individual-TickerName” worksheet.

How to use “Clear Main Table”:

1. Click “Clear Main Table” and the table on the “Main Tab” will be cleared.

How to use “Clear Worksheets”:

1. Click “Clear Worksheets” and the any worksheet named “Individual-(TickerName)” will be deleted.

Caution

A few simple but important cautions and notes must be considered when using this tool.

1. This tool relies on the internet so you must have a good internet connection to use it.
2. I chose to make Internet Explorer “visible” when the code accesses the internet because collecting the data can take a minute and I want the user to know that the code is working.

Discussion of Learning and Conceptual Difficulties Encountered

This project gave me the opportunity to create a tool for something that I am interested and because of that interest, I felt pushed to try new things which really made this project enjoyable for me.

First, I had to learn some major non VBA related concepts such as what volume and moving averages are so that I could better understand what users would want to see in a stock management tool. Although these are basic stock market concepts, this project gave me the opportunity to learn more about them.

Another difficulty that I encountered was trying scrape information from a site other than Yahoo Finance. I realized that some sites are not as friendly to web scraping. I am sure there are ways to work with some of the more difficult sites out there but I was fortunate to find websites that had the information I was after and that I was able to figure out how to scrape. StockCharts.com was the main site that I had to learn how to scrape for this project.

The biggest concept that I had to learn for this project was how to get an image from StockCharts.com on the internet and then put it into a worksheet. This part of my project took more than a couple hours. I asked Professor Allen for help and did a ton of searching on the internet. Professor Allen gave me the idea of saving the image from the internet to my computer first and then putting it into my worksheet. Doing so worked out great in the end.

Assistance

As I mentioned in the previous section, I spoke with Professor Allen once or twice about how to retrieve an image off of the internet and then put it into my workbook. He mentioned using something that was built into “Agent”, however I was not able to get it to work so I did a lot of searching the internet and found what I needed in a forum online. It ended up only being around ten lines of code that I had to customize to fit my needs from <http://www.excelforum.com/excel-programming-vba-macros/384071-download-png.html>. This was the only help that I received while doing this project. I noted in my code which parts are from the forum and also included Figure 7 to show the original code before I modified it to fit my project.

```
Private Declare Function URLDownloadToFile Lib "urlmon" _
Alias "URLDownloadToFileA" (ByVal pCaller As Long, ByVal szURL As String, _
ByVal szFileName As String, ByVal dwReserved As Long, ByVal lpfnCB As Long) As Long

Private Const ERROR_SUCCESS As Long = 0

Sub LancementProcedure()
DownloadFile "http://theWebPage/picture.png", "C:\monImage1.png"
End Sub

Public Function DownloadFile(ByVal sURL As String, ByVal sLocalFile As String) As Boolean
Dim lngRetVal As Long
DownloadFile = URLDownloadToFile(0&, sURL, sLocalFile, 0&, 0&) = ERROR_SUCCESS
End Function
```

Figure 7: The original code that I adjusted and used from an online forum.

Conclusion

I feel as though I made a strong tool that would help anyone looking to check their stocks frequently. It provides an overall summary of their investments and a closer look at each stock if desired. Completing this project taught me a lot about the possible uses for VBA in the work place and helped me gain a greater appreciation for how powerful Microsoft Excel is.