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ISYS 520

Prof. Allen

December 6th, 2012

Final Project Write-up

Executive Summary

Last summer, I was preparing for follow-up interviews with a private investment firm located in Southern California. Before flying down for the interview I was contacted by one of the previous interns at the company to discuss the company objectives and some of the former projects he worked on. The company's overall objectives were two-fold:

1) Manage, distribute and support mutual funds, investment funds and other investments for millions of individuals.
2) Manage assets for institutions around the world — corporations, governments, retirement plans and nonprofit organizations such as endowments and foundations.

As a result, Managers at the company were very interested in the daily stock market reports especially from the major indexes. One of the everyday roles I would be assigned as an intern was looking up stock price information for their various portfolios and also information for stocks in the DOW Jones Industrial Average. I talked with the previous intern who said that this task took up between 1-2 hours every morning because of the time it took to manually look up each stock ticker and write down the information he needed to report.

Using this daily task as my inspiration, my project was to develop an excel workbook that automates this process as much as possible as well as decreasing the time it takes to perform the function and making the data easily readable and presentable. My workbook first uses a web query search to find each of the company's and stock tickers in the DOW Jones Industrial Average and the S&P 500. The workbook then uses these ticker symbols to find the following quote information for each symbol: a) Current Price, b) Previous Close Price, c) Volume of Shares Traded during the day, and d) Industry Type. The program cleans up this initial data into a readable and workable way and then automatically sorts the worksheet by Industry, calculates the percentage change in price, and highlights any stock that has a 2% change (up or down) from the previous day's closing price.

Additionally, I added an option to examine a specific stock in more detail by adding a user form that allows the user to search for a specific ticker or company name in the worksheet, see the initial data already in the worksheet (this data populates the user form in order to read easier), and then be able to check for other data by checking 4 boxes on the form that will create a new

sheet specific to that stock with information about the P/E ratio, the analyst rating, and a hyperlink to a site that displays stock price history and recent market news.

The initial worksheet of 530 stock tickers and information takes about 10 minutes to run, each new stock search takes less than a minute to run, and much more information is captured in this project workbook than compared to the 1-2 hour process the previous intern spent each day looking for fewer than 100 stocks.

Implementation and Steps to Run Program

The project involves several elements and components that help the program run smoothly. These are broken down into:

1) Initial download of the S&P 500 and DOW Jones company names and stock symbols
2) Web Query Search to find
    a. Current price
    b. Previous close price
    c. Volume of shares traded
    d. Industry type
3) Automated sort procedure across both indexes by industry type
4) Automated calculation of percentage change in price and highlighting of any stocks with a plus or minus 2% change in price since the previous day
5) User form that is used to search for a specific stock within the worksheet and then pull additional information for that stock onto a new sheet using a web search (the name of that sheet will be the stock ticker symbol)
6) Ribbon Control to help the program run easily

Initial Download

After opening the excel workbook, the user will see the following display (Figure 1). The sheet labeled "Stock Information" will be open and this is where the web query will populate the company names, stock tickers, and initial data. This workbook should also have two other sheets named "Sheet2" and "Sheet3". Do not delete these sheets from the workbook as they will be used to temporarily hold data from your web queries. Up at the top of the workbook on the toolbar is a tab named **Ticker Data**. The User needs to click on this tab in order to access the buttons to run the web query and the rest of the project. After clicking on this tab, they will see 3 button options (Figure 2) that they can choose from. They should click on the button labeled **Get Stock Data.** This will run the macro to populate the sheet labeled "Stock Information" with the initial data, run the macro that will sort each index by industry, calculate the percentage change for each stock, and highlight any percentage change of plus or minus 2% (Figure 3). Additionally, everything above the bolded dark line in the percentage change column are companies on the DOW Jones index and everything below is on the S&P 500.

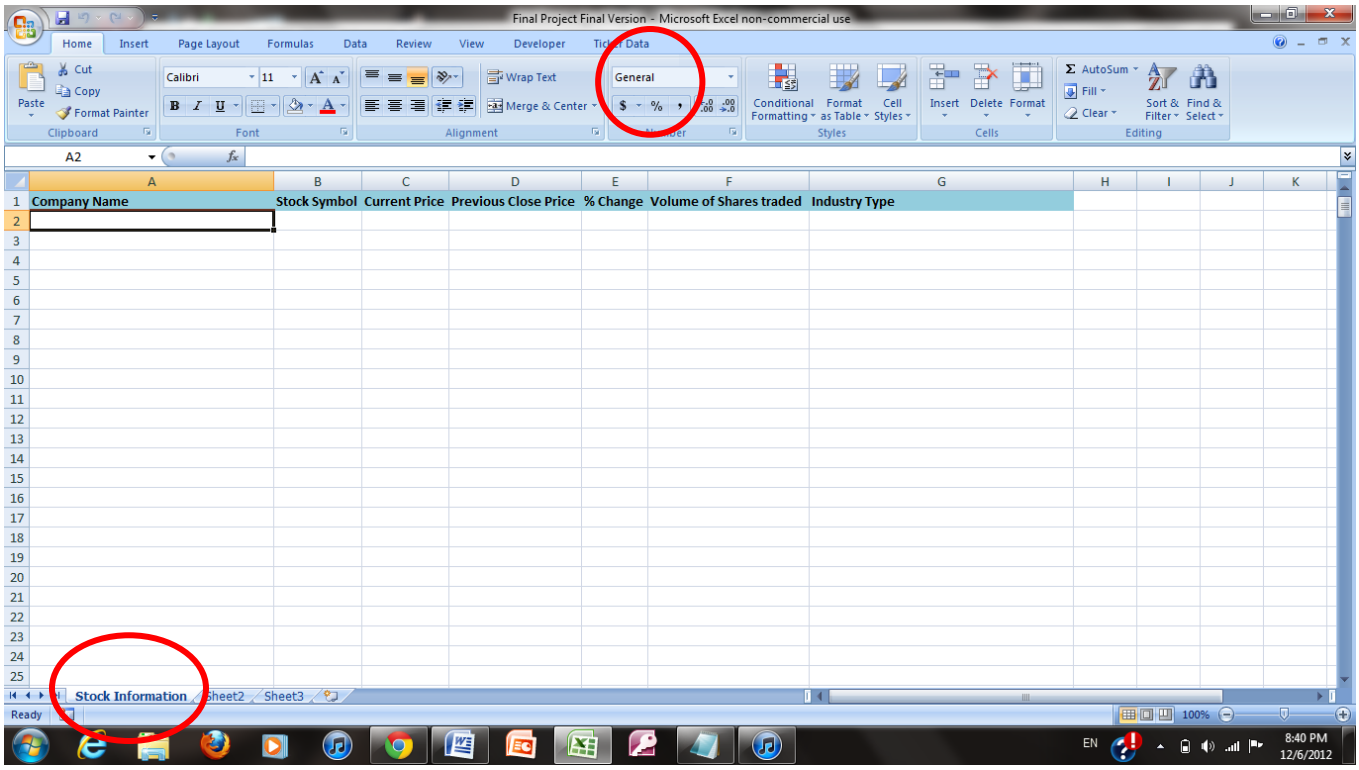

Figure 1

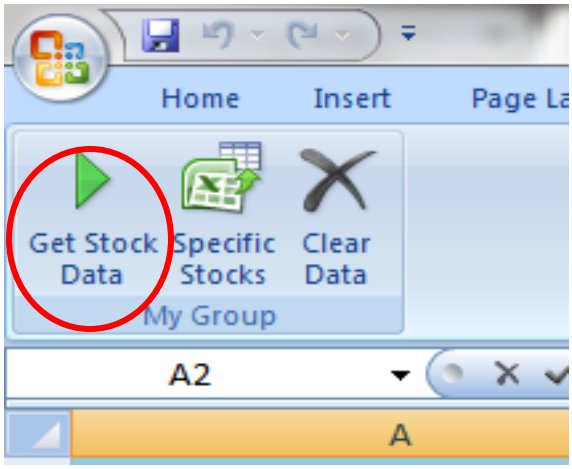

Figure 2

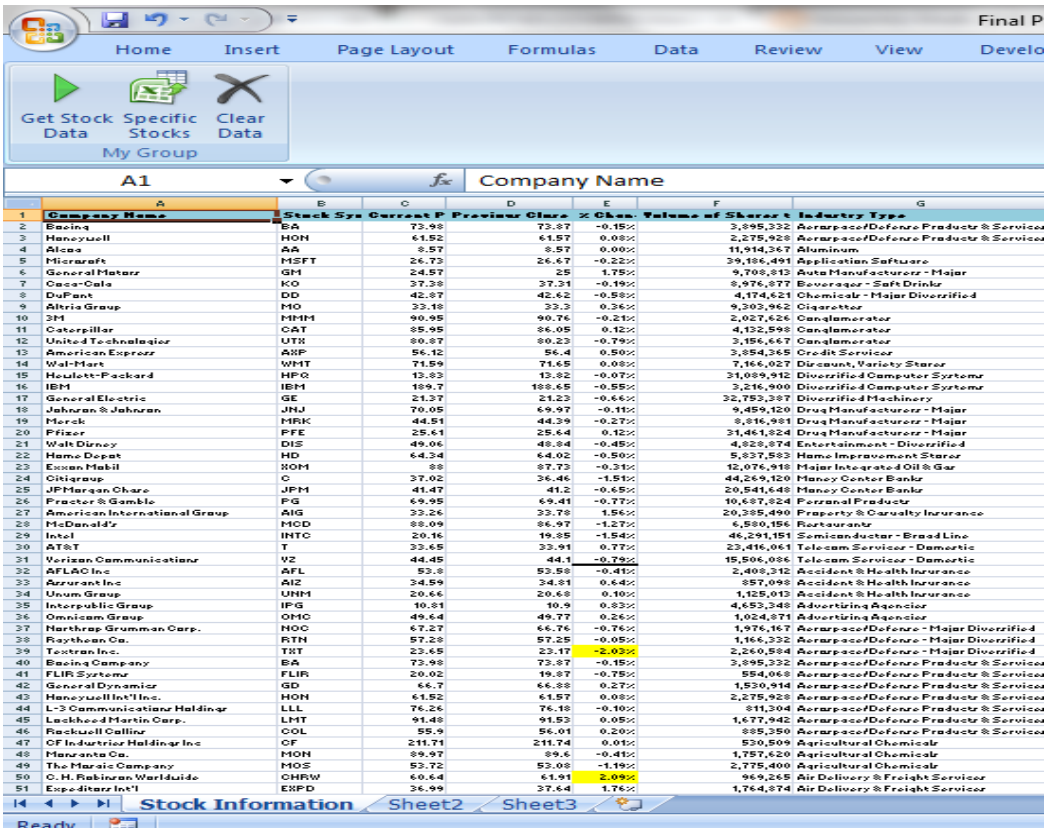

Figure 3

User Form for Specific Stocks

After the macro is finished running, the user may want to search for more information regarding a specific stock. They can do this by clicking on the button labeled "Specific Stocks" in the toolbar (Figure 4). Clicking this button will open a form that allows the user to search for a stock using 2 ways (Figure 5). They are as follows:

1) Search by Company name. The first text box in the form under the label "Company Name" allows the user to type in a full name or any part name of a company and will search for that name in the worksheet. After typing in the name, the user first clicks the **Find** button on the form to find the first instance in the worksheet. After that, they need to click the **Find Next** button in order to find another instance in the worksheet. When there are no more instances in the worksheet, the form heading will say "Stock Not Found" and the user can either start a new search by entering new information in the text box or can start the previous search again by clicking the **Find Next** Button

2) Search by Stock Ticker. The user can also search for a specific stock ticker by using the drop down box under the label "Ticker Symbol". They select a specific ticker (which has

been populated automatically from the “stock information” sheet and then follow the same direction as above to start the search within the worksheet.

Each time an instance in found in the worksheet, some of the important data is also imported onto labels on the form for easier reading for the user (Figure 6).

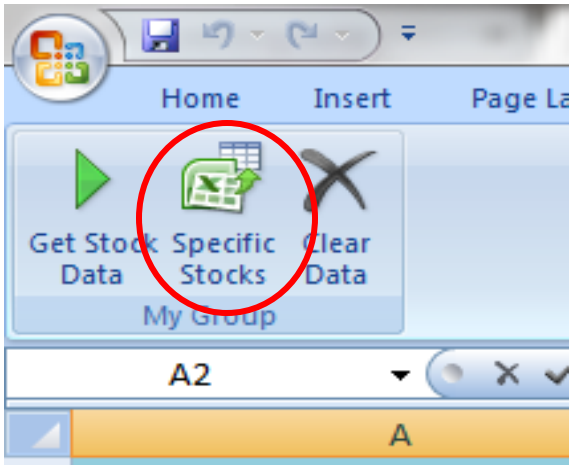

Figure 4

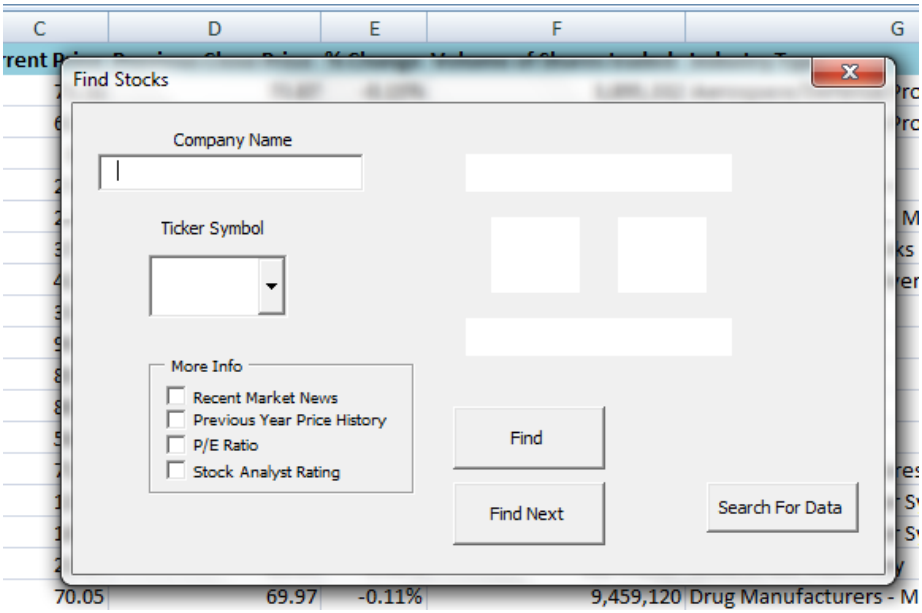

Figure 5

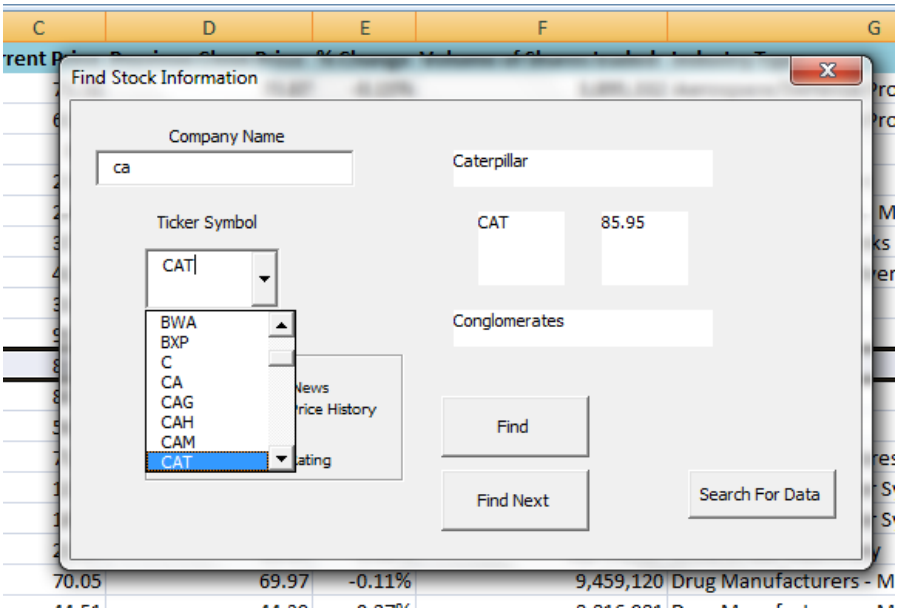

Figure 6

How to Use the Search Data Button on Form

Once the user has decided which stock they want more information for, they need to check the 4 boxes to the side labeled:

1) Recent Market News
2) Stock History
3) P/E Ratio
4) Analyst Rating

*__Important Note:__ While it is not necessary to select every box, these are the key points I was told are important to note in addition to the information on the "Stock Information" sheet. However, for this program to run smoothly, **at least the P/E Ratio Box must be checked** (Figure 7)

After checking these 4 boxes, click the "Search For Data" Button on the form (Figure 7). Clicking this button will then run separate web query's to pull that information onto a new sheet that will be named at the bottom of the workbook as the name of the stock ticker. This new sheet will contain the stock ticker, P/E ratio, analyst rating, and a hyperlink to a website that contains recent market news and the price history for that particular stock (Figure 8). The form will also close when this button is pressed. This user form process can be repeated for as many stocks as desired.

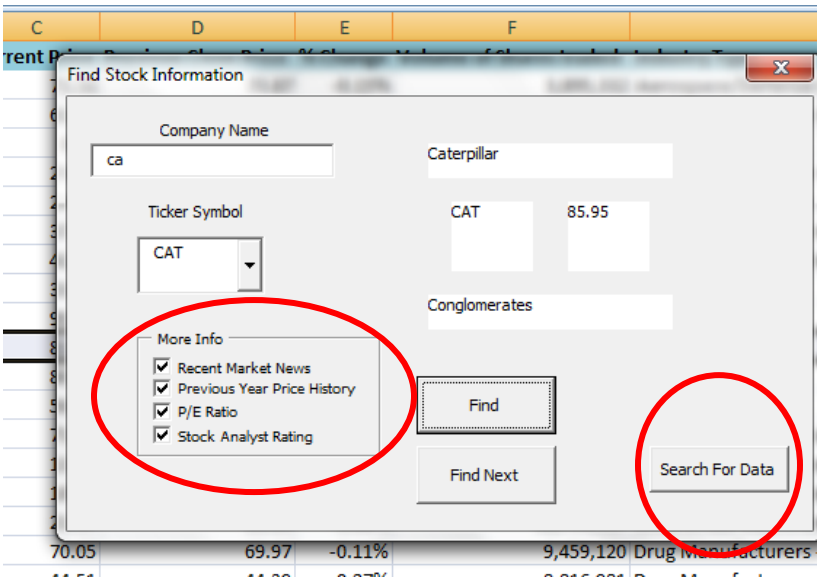

Figure 7

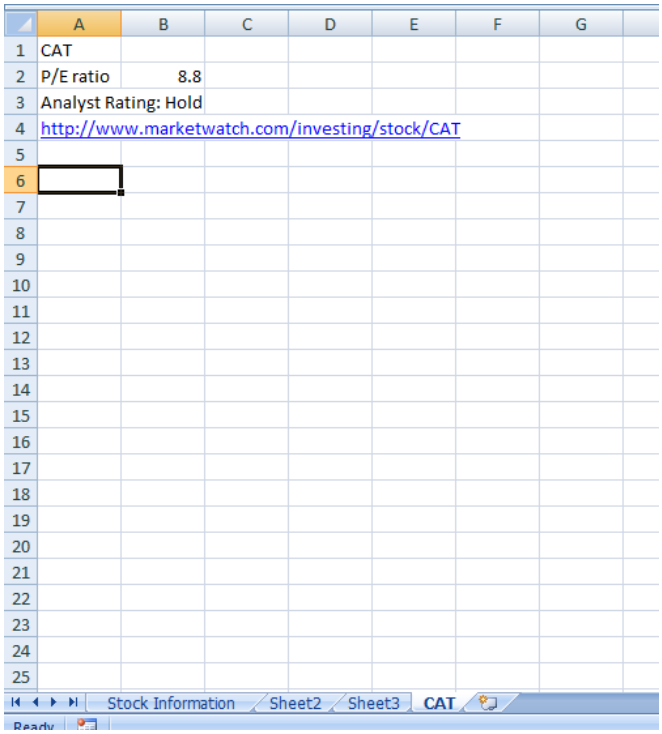

Figure 8

Clear Contents

If the user desires to clear the contents on the "Stock Information" sheet, all they need to do is click the "Clear Contents" Button under the "Ticker Data" tab on the toolbar (Figure 9).

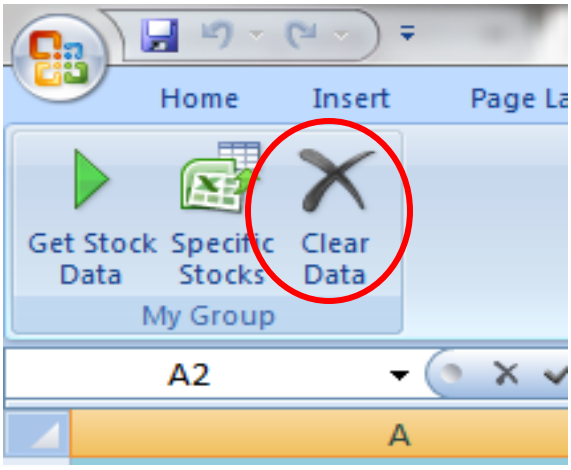

Figure 9

Learning and Difficulties

I chose this project because it was something that directly affected my area of work in Finance. However, I did encounter some of the following difficulties.

1) First, the site that I pulled the current price data from had additional information tacked on to the end of the price data that I wanted, making it impossible to run the percentage change calculations with that data. As a result, I had to come up with a VBA procedure to eliminate all of the data after the first space in the data that was in each cell. The code I came up with rectified the situation and allowed me to continue on automating the calculations.
2) I also thought it would be nice to add in my specific ticker tabs graphs showing past market history. However, after trying different options to do this, it was decided that the best way to get the information was to include a hyperlink to a website that contained that information.

An area where I feel like I learned some valuable lessons was making the user form. All of the components that went into creating the form and writing the macros to make it function correctly were challenging. Additionally, it was a challenge to set up the combo-box to automatically populate itself with the ticker symbols on the "Stock Information" sheet. It was a challenging exercise that took a while to complete. Overall, coming from absolutely no knowledge of VBA before this class to making a VBA program that can help a company with its daily tasks is an accomplishment that I am proud of.

Assistance

For this project, I did receive some help from Professor Allen regarding creating temporary sheets to hold data, creating an if statement that recognized changes of positive 2 percent or negative 2 percent, and review on how to modify the ribbon in excel to include my specific buttons.