Graphical user interface, application, Word

Description automatically generated

Text

Description automatically generated

**Section 1:**

The program I made took the stocks ABC, ANTM, CAH, CI, CNC, CVS, JNJ, MCK, UNH, WBA which were the biggest 10 stocks in the healthcare sector and plotted the closing price of the 10 stocks over the last 180 days. It also performed calculations for the 10 stocks to produce their total change and 30 day period. The best performing stock was ANTM with a 35.05% increase and the stock with the best 30 day period was a 18.38% increase by ANTM. I first made a class called stocks and in the class I defined \_\_init\_\_, calculate\_by\_month, calculate\_total, calculate\_best\_month. The \_\_init\_\_ portion of the code was used so I could call back on the ticker, prices, total, month and dataset. In the def(calculate\_by\_month) I had to use (73, 253) because it represents the last 180 trading days of the data frame. I also used the (0,5) because I it adds 5 thirty day trading periods to the prices list. The “\*30” was used so it goes into each day in the month and I the “\*100” was used to change the number to a percent. The def(calculate\_total) was used to calculate the total change the stocks had in each month. The \*100 was again used to convert it into a percentage number and the total\_change.round(2) was used to round the number. The def(calculate\_best\_month) calculates which 30 day period of the stock was the best. It found which one had the biggest increase in the month. For the compare\_stock function it compared the stocks and calculated which stock had the best month and total change. Lines 46-49 sets the stock if it has a higher total or the best month. The big chunk of code after that was used to assign names to the graphs and label the x and y axis. From line 70-90 was used to plot the points on the graph and set the titles. Line 97-103 was used to calculate the total change to produce the total change and 30 day change. Line 106 is used to determine which stock performed the best.

**Section 2:**

A user for my program would be someone who is interested in investing into a healthcare stock. This program will help them see what type of trends the 10 biggest healthcare stocks had in the past 180 days. They can use the graphs to see the trends.

**Section 3:**

I used various techniques. I defined functions to help produce trends you see with the 10 stocks I imported. I imported Matplotlib. I got the stock data from Investopedia.com. I used the init function with the self. I used for loops, strings and if statements.

**Section 4:**

Some challenges I had was making sure I had all my coding properly spaced and indented. I also had some trouble with the math calculation portion of it because it kept coming out as the wrong number, but I figured out that I forgot to set month = 0 and I did “\*10” instead of “\*100”. I did have some few minor problems but when I did, I just reviewed my notes and previous codes we did before in class.

**Section 5:**

Some possible extensions I might want to add the average of each stock during the 180 day period. I could ask the user to enter a stock they want to look more into and the code can produce a graph with the average price, and the increase the stock had in the past 30 days. I think it would be cool if the user could see a stocks increase percentage on the graph when you move the mouse on the line.