Stock Bot

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April 26,2024

Abstract:

This program is created to get the RSI and MA from a csv that we get from a stock market. Using that data, we make a bot that uses the RSI and MA to check whether a data at a certain point is on the rise, downhill, or staying steady. The bot will advise the user on whether they should buy, sell, or stay. After a year of data goes by and the user finishes with his last buy/sell/stay, it will calculate the net income and compare it to initial start.

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# Results:

A screenshot of a computer

Description automatically generated

# StockBot Class:

## Methods:

### stockBot(double initalBalance):

This method is incomplete, but will initialize user to have a balance depending on what is put into the method

### loadedData():

This method is incomplete, but this will load data and compare it to the trend line and RSI and call the tradeEvaluator() method

### tradeEvaluator():

This method is incomplete, but this method uses the loadedData and this will return the number of shares the user can buy or sell. Depending on what the user does it will buy or sell or do nothing

### relativeStrengthIndex():

This method calculates the RSI through the equation given from website and that value is put into an RSI ArrayList, also calls the RSIGraph method()

### averageDownAndUp():

This method uses the period and multiple variables to complete this code. Use a for loop that goes through the period and gets the price difference between two closingPrices, then that result is checked and depending on result the price gets added to either up or down. This keeps repeating until the end of the period, then divide the up and down by the period to get the average of each. After that it calls the relative strength method.

### relativeStrength ():

checks that avgD isn’t 0, and if it is not it will calculate RS by dividing the average of Up by the average of Down. This will then call the relativeStrengthIndex().

### RSIGraph ():

This method creates a file and inputs the RSIValue ArrayList and dates into a csv dedicated to RSI

### getData():

This method gets the downloaded stock market csv and depending on the data we want, it will add the data to its pertaining ArrayList, like closing prices goes to closingPrices ArrayList and weekly dates gets added to an array list for that. Once we do that, we make another ArrayList that holds the originalClosingPrices and adds all the values from the ones we put into closing prices. After that we call the smoothing method and the smoothingCSV method

### smoothingData ():

This method is just a copy paste of the smoothing method from my smoothing class, this just gets the average of the closing prices using the window value that goes left to right. We add closing prices to a variable and a count is set to add every time a closingPrice gets ad

ded to the average variable. Once we get the values we add it to the closingPrices and add all the values from the averageClosingPrice ArrayList

### smoothingCSV():

This method creates a new file that holds the original closing Prices and the average closing Prices, which is the MA. Use that to open in excel and see the graph.

# Resolution:

This program was difficult for me to wrap my head around the logic aspect of the stock bot in which it advises the user to buy, sell, or stay depending on the RSI and MA. I was able to do the RSI and moving average trend line but wasn’t able to figure out how to do the bot.

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