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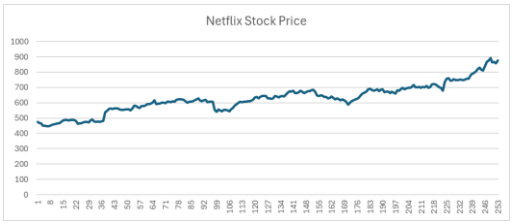
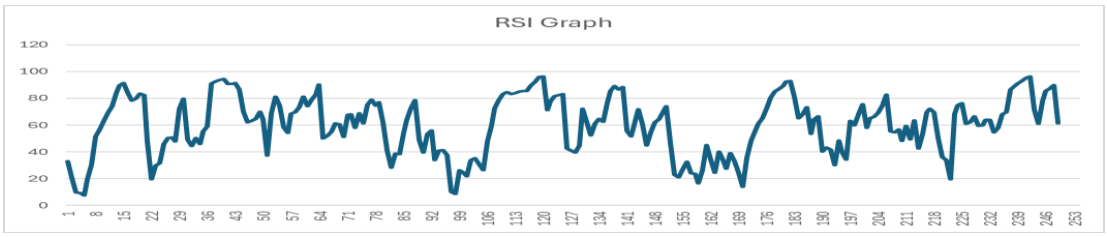
Professor Byron Hoy, Data Structures and Algorithms I

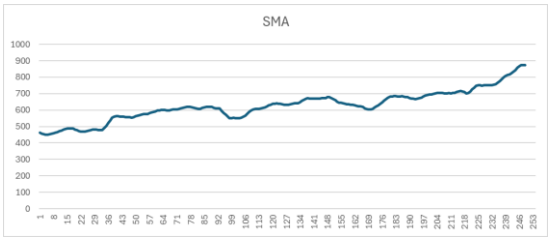
Introduction:

This report covers the program I wrote to sort stock data taken from the internet to find the RSI (Relative Strength Index) of the stock and create an SMA (Simple Moving Average). The results of these programs were used to create back testing algorithms for trading said stock (Netflix) and, in this report, I will be analyzing the findings.

Graphs:







Findings:

From these graphs we can see that the typical range of RSI for Netflix is between 20 and 90, and that there is most likely to be a reversal or uptrend depending on which part of the range has been met.

Algorithms:

There were 3 algorithms used in the back testing of this stock. The first of which was an algorithm designed to use 100% buying power of an account and hold for 1 year, with the

option to sell at any date the user wanted. If the user were to hold the stock for the entire year, they would see an 84%+ return on their investment.

The second algorithm was designed to use the RSI and SMA of the stock in order to buy and sell periodically throughout the year. If the algorithm saw fit to buy, 25% of the account would be used to purchase shares. When selling, 100% of the shares being held were liquidated. This method showed a return of 90%+ and performed better than if the user were to just buy and hold. If the purchasing power is increased to more than 25% the profit increases to margins more than 100% for the year. However, due to real world situations and risk management purposes I left it at 25%.

The third algorithm was designed to only purchase shares of the stock when earnings reports for Netflix came out. If the actual earnings were higher than the projected earnings the algorithm would purchase the stock at the immediate share price with 50% buying power and held until the end of the year. This algorithm performed worse than the previous 2 but still yielded a return of 42%+.

Conclusion:

To no surprise algorithm 2, the one based on the most data, performed the best. I would have liked to experiment with these algorithms on more than just 1 stock but unfortunately marketwatch.com would not let me download anymore csv's from their website.