My algorithm written in Python analyzes stocks found in the S&M 500 to find which have the most “momentum” going into the next week. I have tuned my program to look at three factors: relative strength index (RSI), golden cross and Bollinger bands. While these are obvious signals in the market, they have proven to be time tested methods to project growth and an increase in price in the short term. My program does not take into account trending sentiment of a company, major unforeseen events (like a global pandemic or elections) or any other news that would impact stock prices. For now, I have told the algorithm to only look at the stock prices and other indicators such as the moving average and standard deviations of price to determine which stocks are trending in the correct direction.

The first indicator I picked was the Relative Strength index. The relative strength index (RSI) has typically been used as a momentum indicator what measures the magnitude of recent prices changes to determine is a stock is overbought or oversold. Typically, RSI values of 70 and above indicate a stock is overbought and an RSI value of below 30 indicates that a stock is oversold. For the purposes of my algorithm, I have decided that an RSI value of between 60 and 66 is a sign of strength going into the next trading week. It is an established practice to use the bullish signals when identifying a bullish stock which could be a self-fulfilling prophecy but in conjunction with other financial indicators helps establish trends.

The second indicator being used is the Bollinger band. A Bollinger Band is defined by a set of trendlines plotted two standard deviations away from the simple moving average of a stock’s price. Many traders believe that when prices are near the upper band a stock is overbought and when a price is near the lower band the stock is oversold. It has been said that 90% of all market action of a stock happens within the two bands and that a breakout in not a trading signal by itself. When used in conjunction with other non-correlated indicators it can be effective to provide directional market signals.

The third indicator and most heavily weighted signal is the golden cross. The golden cross is a pattern for bullish activity where the short-term moving average moves above the long-term moving average. A breakout signal occurs when the two averages cross over (thus creating the golden cross). For now, the algorithm uses a 50-day moving average as a short-term indicator and a 200-day moving average for the long-term signals. As I develop my algorithm further, I will play with these numbers and will incorporate trading volumes to help increase the accuracy of this indicator.

As this exercise progresses, I will attempt to incorporate machine learning programs to help better predict the momentum of a stock and I will tune my parameters to better identify weekly gainers. I am aware that these methods for determining stock bearish price momentum as well known but I would rather start with simple methods and eventually develop more sophisticated algorithms as time goes on.

For this week my algorithm has picked the following five stocks

* Walgreens Boots Alliance (WBA) Price: 45.21, RSI: 71.67
* CME Group Inc. (CME) Price: 199.68, RSI: 77.26
* Lilly (Eli) & Co. (LLY) Price: 166.41, RSI: 59.68
* Valero Energy (VLO) Price: 57.71, RSI: 55.78
* Phillips 66 (PSX) Price: 70.71, RSI: 59.30