**Technical indicators**

1. **Relative Strength Index (RSI):**

RSI is a momentum indicator used in technical analysis of stocks that measures the magnitude of recent price changes to evaluate overbought or oversold conditions in the price of a stock. The RSI oscillates between 0 to 100 where values above 70 indicate a stock maybe overbought and it may reverse trend and pullback in price. A value below 30 indicates the stock maybe oversold and it may reverse trend and appreciate in price.

RSI is a two-part calculation. Step 1:

The standard is to use 14 periods to calculate the initial RSI value, but the number of periods can be changed. For our project, we played with different windows (ex. 10 periods, 20 periods etc) to find which one would produce the best results. The second step of the calculation smooths the results:

1. **Money Flow Index (MFI):**

MFI is a technical oscillator that uses price and volume data for identifying overbought or oversold signals in a stock. The oscillator moves between 0 and 100. Unlike conventional oscillators such as the Relative Strength Index (RSI), the Money Flow Index incorporates both price and volume data, as opposed to just price. For this reason, MFI is also known as volume-weighted RSI. MFI can be calculated as follows:

Where:

1. **Moving Average Convergence Divergence (MACD):**

MACD is a trend-following momentum indicator that shows the relationship between two moving averages of a stock’s price. The MACD is calculated by subtracting the 26-period exponential moving average (EMA) from the 12-period EMA. The result of that calculation is the MACD line. A nine-day EMA of the MACD called the "signal line," is then plotted on top of the MACD line, which can function as a trigger for buy and sell signals. When the MACD crosses above its signal line it maybe a buy signal. Conversely, it may be a sell signal when the MACD crosses below the signal line.

1. **Bollinger Bands:**

A Bollinger Band is a technical analysis tool defined by a set of trendlines plotted two standard deviations (positively and negatively) away from a simple moving average (SMA) of a stock’s price. The closer the prices move to the upper band, the more overbought the stock, and the closer the prices move to the lower band, the more oversold the stock.

The first step in calculating Bollinger Bands is to compute the 20-period simple moving average. Next, multiply that standard deviation value by two and both add and subtract that amount from each point along the SMA. Those produce the upper and lower bands. Finally, subtract the lower band from the stock price and divide that by the difference between the upper band and lower band.

1. **William Percentage Range (WPR):**

WPR is a type of momentum indicator that moves between 0 and -100 and measures overbought and oversold levels. A reading above -20 is considered overbought and it maybe a good time to sell the stock. A reading below -80 is considered oversold and it maybe a good time to buy the stock. WPR can be calculated as follows:

Where, highest high is the highest price in the last 14 days and lowest low is the lowest price in the last 14 days.