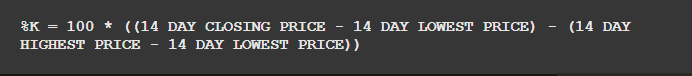
Classification Model: Research

* Firstly, there will be extra columns added on to the dataset which will contain technical indicators value. Not exactly sure how many indicators just yet. ( Will be > 3).
* For each of the indicators, there will be another column stating Buy / Sell signals derived from that indicator.
* Lastly, there will be a final c olumn name “Recommendation”, which will be used as the target variable for the classifier. This column will contain Buy/Sell signals derived for a majority vote from the other indicators.

# Stochastic Oscillator

Stochastic Oscillator is a popular technical indicator that was developed by Dr George Lane in the late 1950’s. Stochastic describes the current stock price relative to the high and low prices over a trailing number of previous trading periods.

The stochastic oscillator value ranges between 0 to 100, typically <= 20 are seen to be oversold ( buy signals ) and 80 >= is seen to be overbought ( sell signals ).

There are two main components that are used to calculate the Stochastic Oscillator value:

* %K Line: This known as the fast Stochastic indicator; the core component.
* %D Line: This is known as the slow Stochastic indicator; it is a moving average of the %K line for a specified period. The standard setting of the $D line is 3 as the number of periods.

The Stochastic Oscillator trading strategy will have a buy signal when:

* The %K line is below 20
* The %D line is below 20
* The %K line is below %D line

Likewise, sell signal when:

* The %K line is above 80
* The %D line is above 80
* The %K line is above %D line

# Relative Strength Index (RSI)

Like the Stochastic Oscillator, the Relative Strength Index (RSI) which was developed by J. Welles Winder in 1970, is also a momentum oscillator that is used by traders to identify whether the market is in an overbought or oversold state. The RSI describes the current price relative to average high and low prices over a previous trading period.

Calculating the RIS comes in the following steps:

* Exponential Moving Average (EMA)- EMA is a type of moving average where it automatically allocates greater weighting to the most recent data point and lesser weighting for past data points.
* Relative Strength (RS)- The RS is a proportional measure of average price gains and average price loses. (RS = EMA GAIN/ EMA LOSS)
* RSI- The RIS provide a standardized value from 0-100 to reflect that relationship.

Diagram

Description automatically generated with medium confidenceFormula:

# Moving Average Convergence Divergence (MACD)

# References

## Stochastic Oscillator

* <https://www.investopedia.com/articles/technical/073001.asp>
* <https://www.alpharithms.com/stochastic-oscillator-in-python-483214/>

Relative Strength Index