**Simple Moving Average Analysis:**

**Identify Trading Strategy**

Momentum Strategy: Once a stock trend is established, it is more likely to continue in that direction than move against the trend in the short-term. A trader takes a long position in an asset that has shown an upward trending price, or the trader short-sells a security that has been in a downtrend. The most important tool in momentum strategy is trend line. If the line constantly going up, which means the stock trend is going up, then investors take this a buy signal. On the contrary, if the line is sloping down, the investors will see this as a sell signal.

**Purpose**

Use python to create two separate moving averages, 50 days and 200 days respectively, of a time series from 2010.1.1 to 2017.10.24. If the short moving average exceed the long moving average then it’s a signal to go long or buy in the stock, because this signals marks a stock price will constantly go up. If the long moving average exceeds the short moving average then it’s a signal to go short or exit the market.

**Method**

* Plotted Disney’s historical stock price (2016.1.1-2017.10.24) from Yahoo Finance
* Defined two lookback periods: a 50-day short window and a 100-day long window
* Created two moving average filters with two lookback periods to calculate the mean stock price for each filter by using pandas rolling\_mean() function and mean() function on the Disney’s Ajusted Closing Price. Plotted the moving average trend lines.
* Create a new dataframe called “signal”, setting the index as stock price date and created columns including “signal”short\_window” and “long\_window”, initializing the all rows of “signal” column equals to 0.
* Used numpy.where function to find out the signal position when short moving average exceeds the long moving average within the period greater than the shortest moving average window. If it’s true, then overwrite the original signal value with 1; if it’s not true, keeps original signal value with 0.
* Plotted all the signals

**Result:**

**Conclusion:**

**Discussion:**