IND5003

**Project Idea:**

Sentiment Analysis

**Main Aim:**

Predict market trend based on what was posted on Stocktwit about Apple

**Process:**

1. Extract Data from Stocktwit using APIs - (date, body)
2. Pre-processing of Data
3. Sentiment Analysis
   1. Generate a sentiment score for the posts that comes out each day
4. Plot over time and compare against stock trends
5. (optional): Use sentiment score time series to predict market trend with machine learning

**Sentiment Analysis Model**

Naïve Bayes

Unsupervised classification into positive or negative classes

Or use pre-trained model – TextBlob: Naïve Bayes and pattern analyser

Deep learning

Gives a score from 0 to 1 (need to train with labelled data – could manually score data upon 5)

Could find pre-trained models

VADER

Pre-trained

Gives a score from -1 to 1, manually check and edit the labels and use data + edited sentiment scores as training data for deep learning

Deep Recursive Trees

Pre-trained RNN

Google API

Aylien API – document level sentiment analysis

Indico API

Compare models based on accuracy (manually label tweets and compare with results given by models)

**Predicting stock price**

Deep learning

Feature include sentiment score time series and stock price time series in windows