**IST-652 FINAL PROJECT PROPOSAL**

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For my final project I will be working on stock market data. The data is sourced from the alpha vantage’s API which provides near real-time stock market data in json and csv format. Documentation for the API can be found by following the link below.

<https://www.alphavantage.co/documentation/>

I have used the time series daily API that gives daily stock price and volume for the stock. This data dates back historically up to 20 years for some stocks. The data has 5 columns for each stock namely date open, high, low ,close and volume.

**Some of the goals of the project: -**

1. The first goal of the project is to collect the stock price data for top 50 companies by market cap. This can be achieved by making several calls to the alpha vantage API with the necessary parameters.
2. The second goal is the transform the JSON objects for stock data to a data frame for further analysis and do some preprocessing.
3. The third goal of the project is to write functions to calculate and plot a few technical indicators that are used by technical analysts to decide whether to buy or sell a stock. Some of the technical indicators are Simple Moving Averages, Relative strength index etc. Using these, Try to decide buy/sell calls for a few stocks.
4. Finally, try to use twitter sentiment analysis on a couple of stocks and try to correlate whether the sentiment on twitter has got something to do with the price movement of these stocks.

Here is an example of the 50 Day Moving average analysis for Apple Inc. using the price data from API , defined Simple Moving Average function and matplotlib

