Stock Prediction Tool

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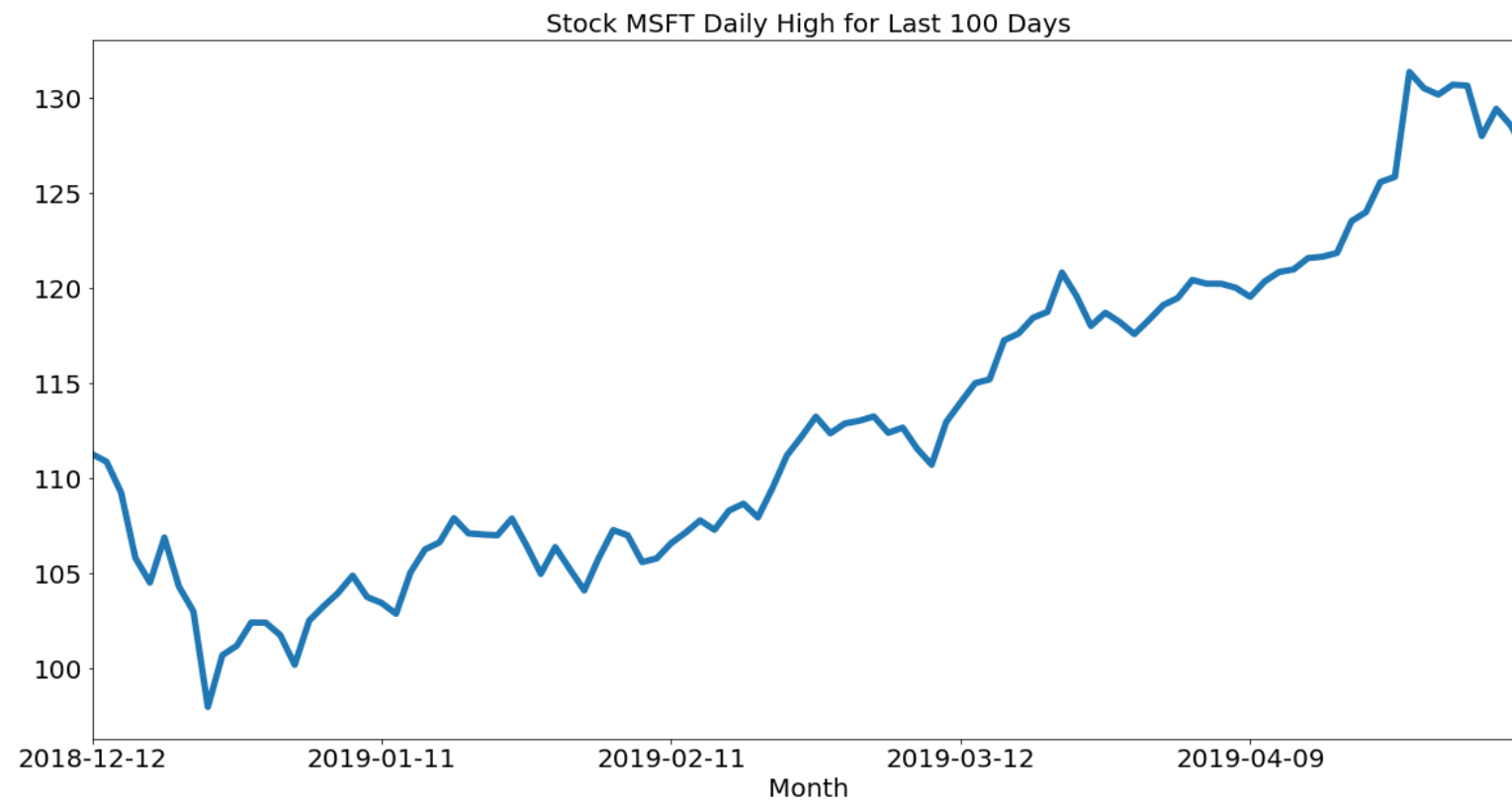
5/7/2019

Data Collection

- Data was collected from Alpha Vantage API, a replacement of Yahoo stocks API that was shut down in 2017

- Daily stock prices are returned as Json format as shown below

```
{
    "Meta Data": {
        "1. Information": "Daily Prices (open, high, low, close) and Volumes",
        "2. Symbol": "MSFT",
        "3. Last Refreshed": "2019-05-07 16:00:01",
        "4. Output Size": "Compact",
        "5. Time Zone": "US/Eastern"
    },
    "Time Series (Daily)": {
        "2019-05-07": {
            "1. open": "126.4600",
            "2. high": "127.1800",
            "3. low": "124.2200",
            "4. close": "125.5200",
            "5. volume": "29668413"
        },
        "2019-05-06": {
            "1. open": "126.3900",
            "2. high": "128.5600",
            "3. low": "126.1100",
            "4. close": "128.1500",
            "5. volume": "23006474"
```

Data Exploration

Stock MSFT Daily High for Last 100 Days

Project Proposal

- ▶ Create a tool that helps user to predict the stock price in the next 7 days

- ▶ Based on the time series data, run a ARIMA model to forecast the selected stock price in the next 7 days

- ▶ User should be able to enter the stock he/she is interested, the tool should returned a plot showing the last 100 days' stock prices plus the 7 days forecast, additionally some summary and prediction accuracy information would be shown to provide user confidence of the tool