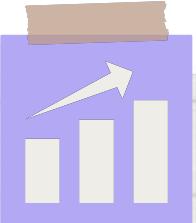


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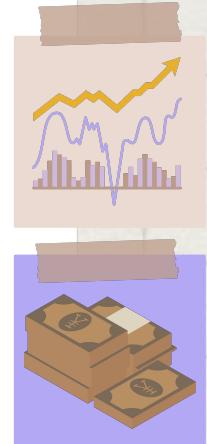
Group 3

# FINANCIAL STOCK DATA MODEL

By Abraham Ofolu, Anderson Safo, Charlotte Large, Lionnel Tembu and Siyuan Liang



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# TABLE OF CONTENTS



- ★ Introduction
- ★ Data Exploration and cleaning
- ★ Long Short Term Memory
- ★ Data Visualisation
- ★ Conclusions and Limitations

# INTRODUCTION

Stock market data can be interesting to analyse and as a further incentive, strong predictive models can have a large financial payoff. The amount of financial data on the web is seemingly endless. A large and well-structured dataset on a wide array of companies can be hard to come by.

Our project aims to analyse and make use of historical stock prices, provide an analytical interpretation of the changes and trends, and forecast how those same stock prices will behave in the future.

We will load data using python script and sklearn. We have chosen to use a LSTM model for financial stock data. Our model predictions and overall performance will be printed and saved as a csv file.

# DATA EXPLORATION AND CLEANING

The data was acquired from Yahoo Finance.

The technologies we have decided to use are:

- PYTHON
- SKLEARN
- KERAS
- TABLEAU
- GOOGLE COLAB

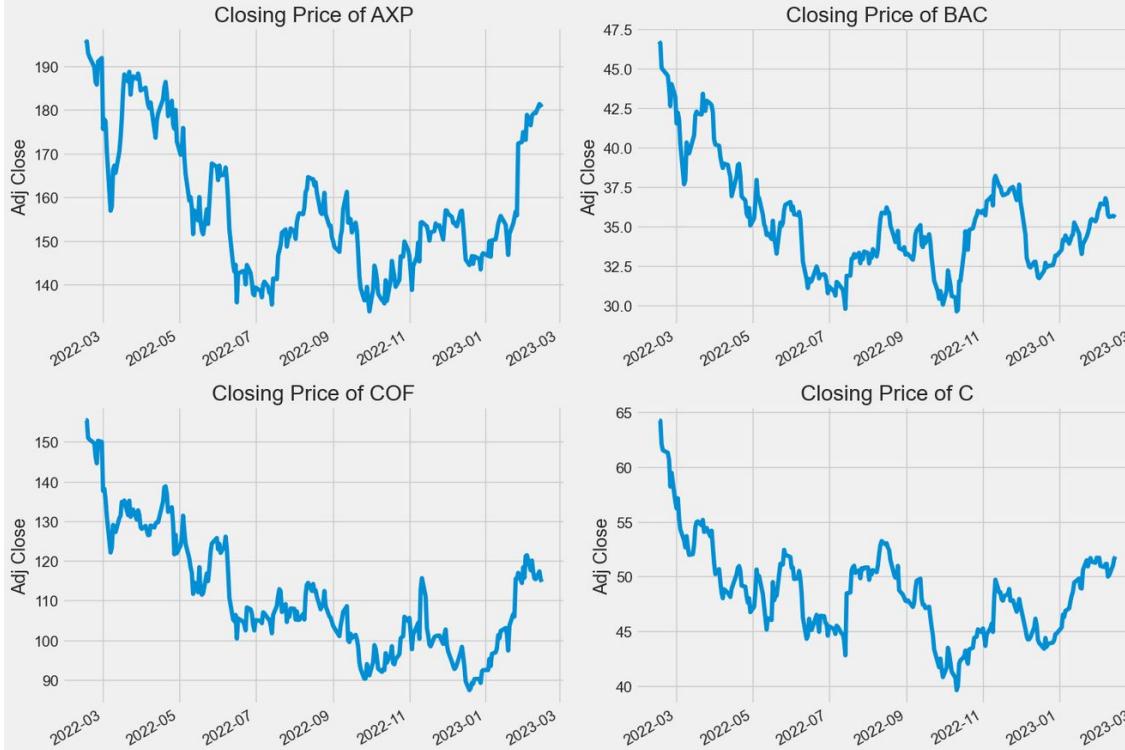
# LONG SHORT-TERM MEMORY

An LSTM was chosen for analyzing stock price data because it excels at modeling sequential data.

Its unique architecture allows it to store and utilize past information to make accurate predictions, making it well-suited for analyzing stock price patterns, which often exhibit trends and dependencies over time.

By leveraging the memory cells in the LSTM, we can incorporate information about past stock prices and use this to better predict future trends.

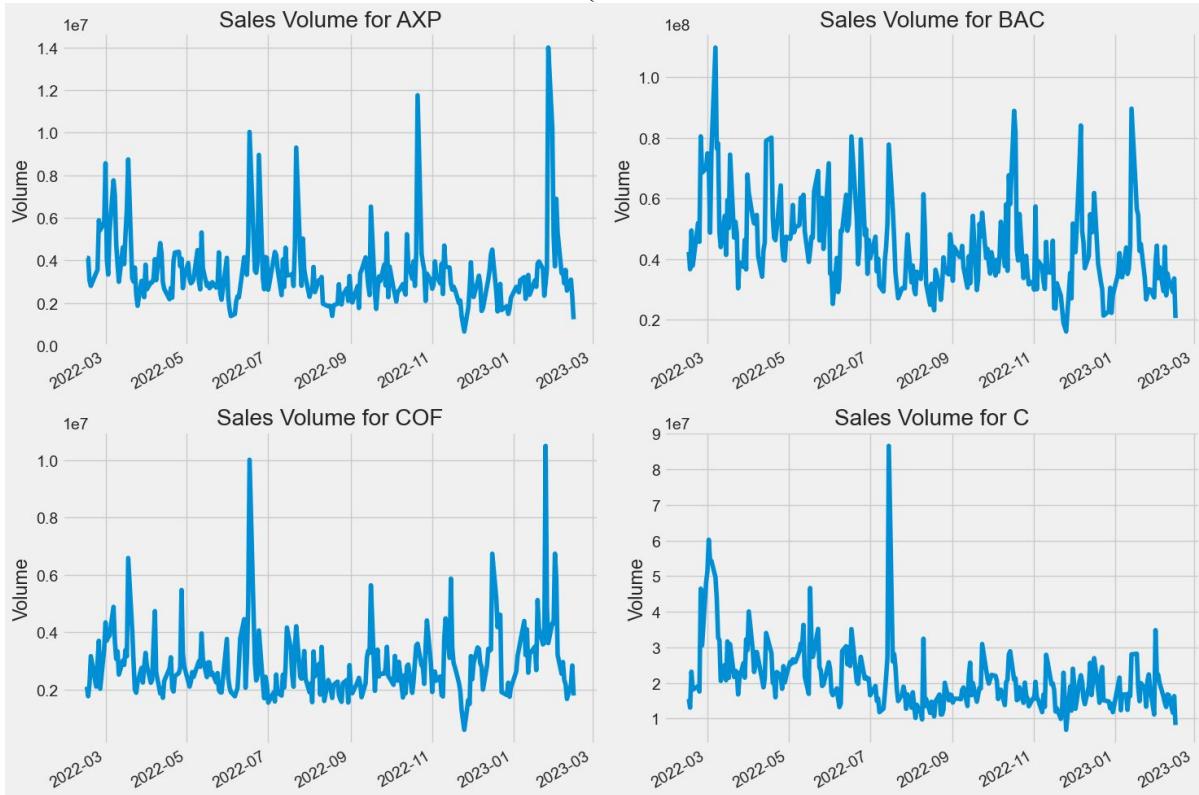
# CLOSING PRICE



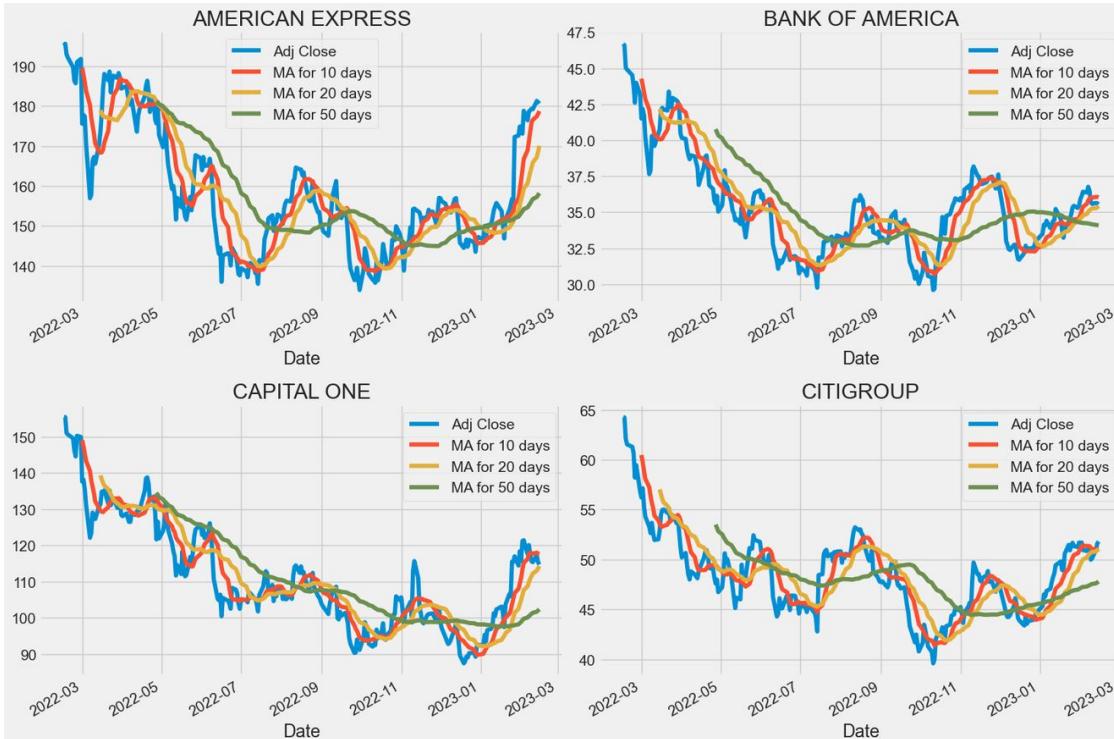
The closing price is the final price of a stock traded in a regular trading day, and it's the standard benchmark for investors to track its performance.

# VOLUME OF SALES

Volume is the quantity of a security or asset traded over a period, usually in a day. It refers to the number of shares exchanged between the open and close of trading. Technical traders rely on trading volume and its changes over time.



# MOVING AVERAGE OF THE STOCKS

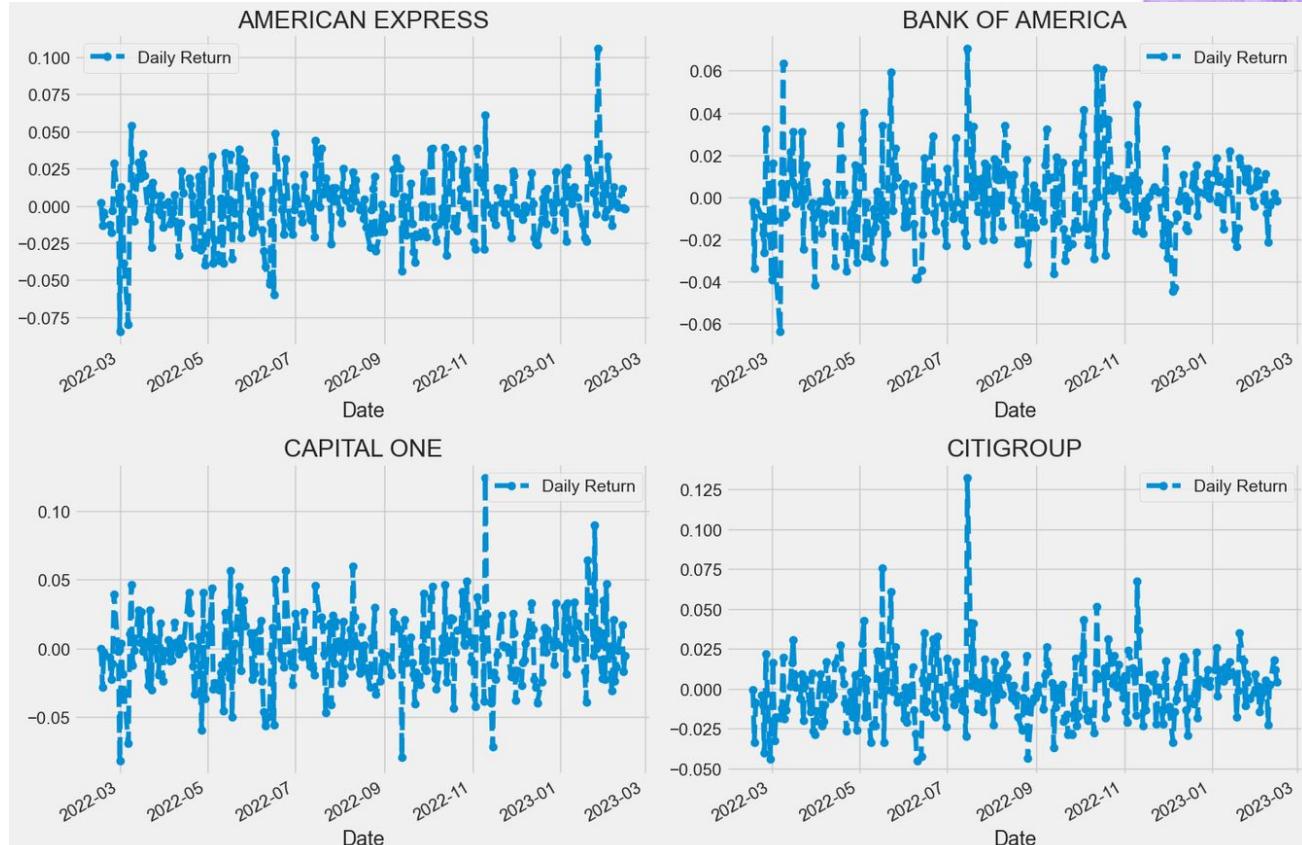


The moving average (MA) is a basic technical tool that evens out price data by generating a continuously updated average price over a particular period, such as 10 days, 20 minutes, or 30 weeks, according to the trader's preference.

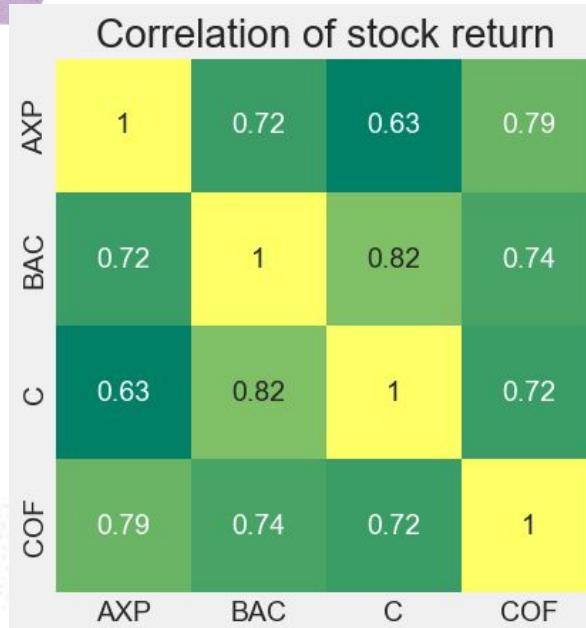
# AVERAGE STOCK RETURNS

The average return is the mathematical average of a sequence of returns that have accrued over time. In its simplest terms, the average return is the total return over a time period divided by the number of periods.

The average stock market return has been about 10% per year for nearly the last century, as measured by the S&P 500 index. In some years, the market returns more than that; in other years, it returns less. Investors can use this benchmark as a way to analyse which stocks will generate the most return on average and it is a variable crucial and also frequently used in forecasting



# CORRELATION OF CLOSING PRICES BETWEEN DIFFERENT STOCKS



# CONCLUSIONS



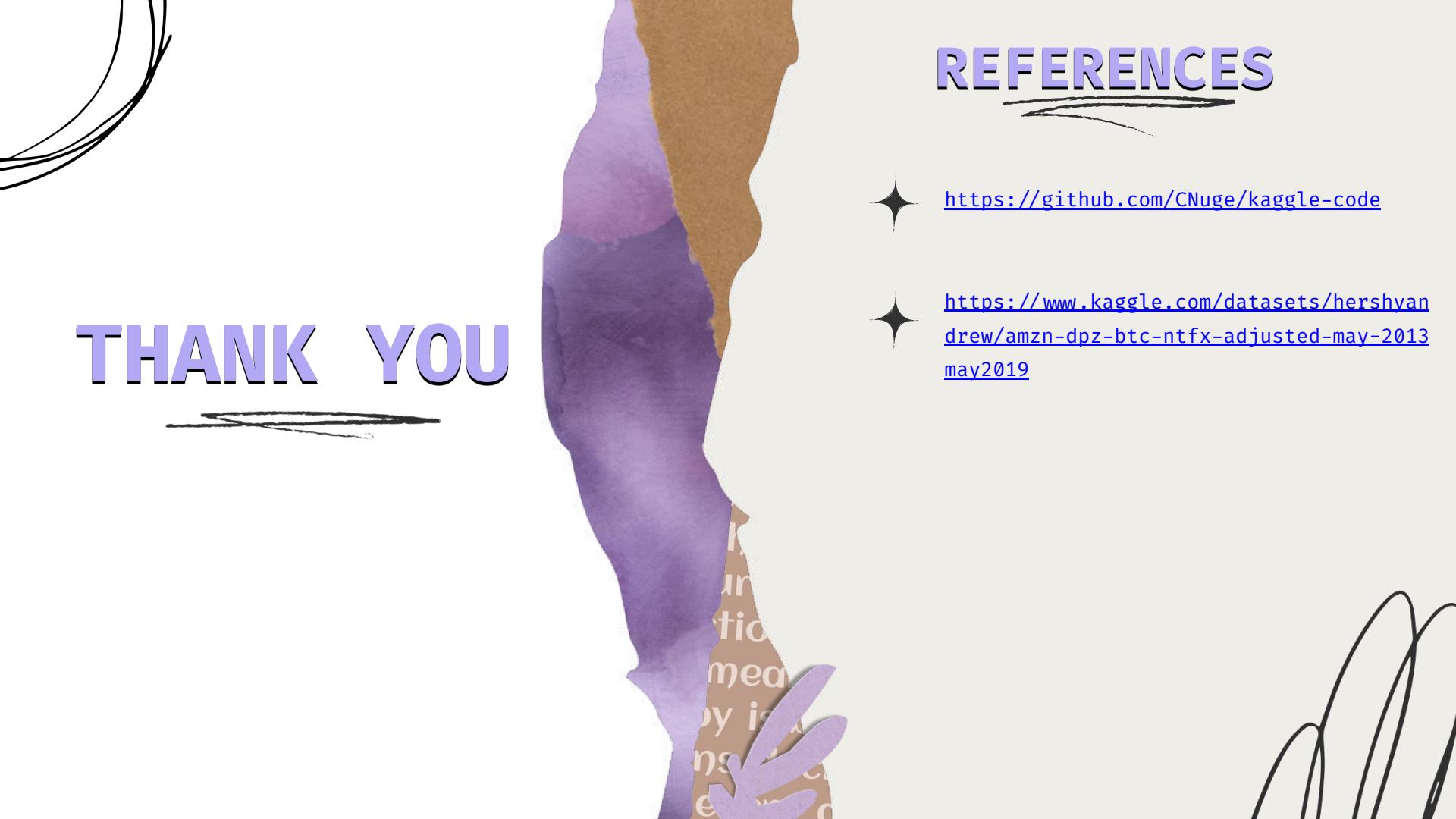


# LIMITATIONS



# QUESTIONS?





# THANK YOU



## REFERENCES

★ <https://github.com/CNuge/kaggle-code>

★ <https://www.kaggle.com/datasets/hershyan/drew/amzn-dpz-btc-ntfx-adjusted-may-2013-may2019>