

APPLE STOCK PRICE PREDICTION



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OVERVIEW

Britam Asset Managers, a leading asset management firm in Kenya, is looking to enhance its investment strategies by incorporating accurate forecasts of Apple Inc.'s stock prices. By integrating these forecasts into their portfolio management processes, Britam aims to optimize asset allocation, make more informed trading decisions, and provide better financial advisory services, ultimately seeking to improve client returns and strengthen their overall investment approach.

BUSINESS UNDERSTANDING

Main Objective

- To develop a Time Series forecasting model to predict Apple stocks prices using historical data.

Specific Objectives

- To analyze stock trends to identify patterns that influence apple stock prices
- To investigate how significant events affect apple stock prices

DATA UNDERSTANDING

This project analysis uses the Historical stock price data for Apple Inc.

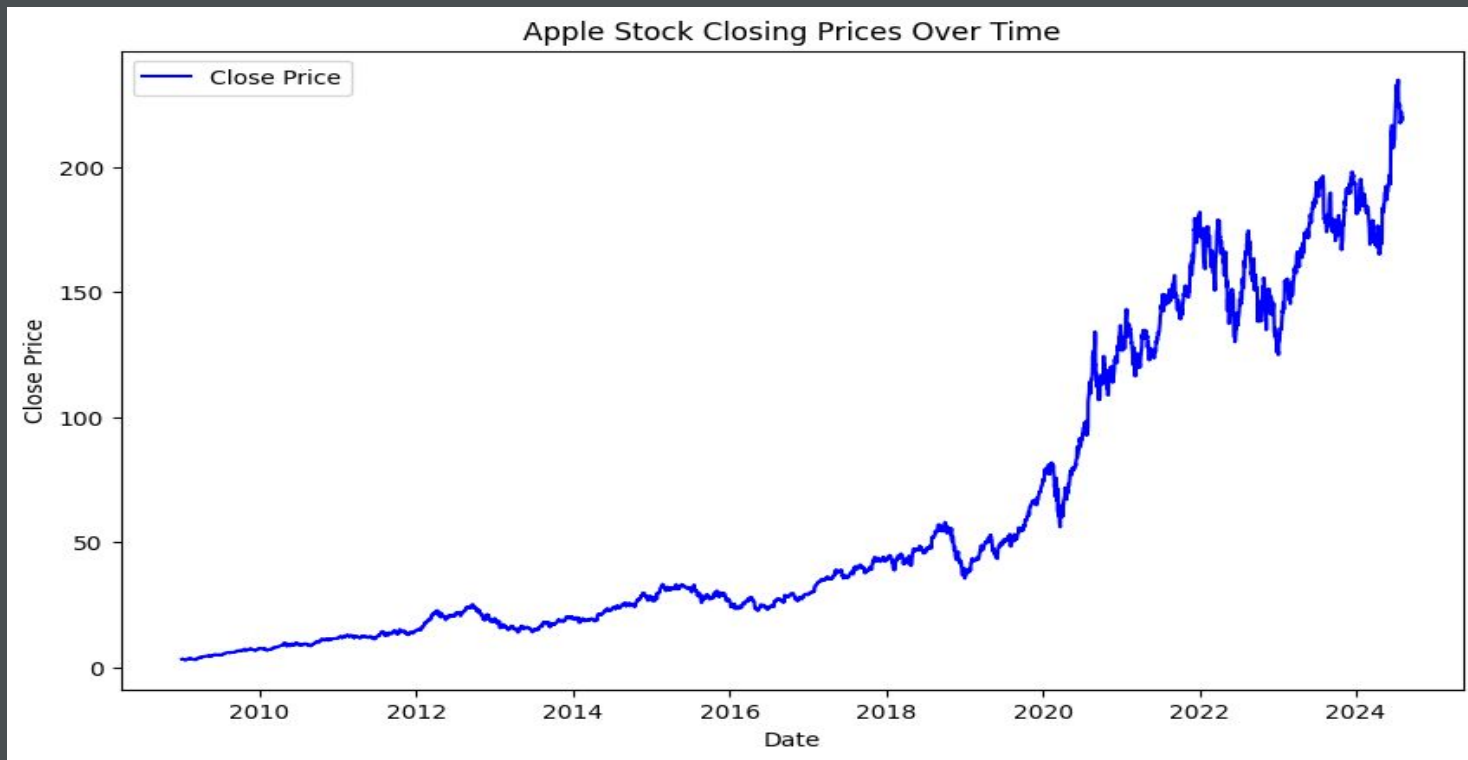
Source:

- Alpha Vantage API

Datasets:

- apple_stock_and_interest_rates.csv
- apple_products_2009_to_2024.xlsx
- competition.csv

DATA ANALYSIS



Apple Stock Closing Prices with Product Release Dates



MODELLING

- Random forest
- Random forest with Grid Search CV
- Facebook Prophet
- Facebook prophet with regressor
- LSTM Mode





EVALUATION

The best model was the LSTM model with an RMSE of 2.2216.

This comparatively low RMSE reflects that the model's predictions are quite close to the actual values.

RECOMMENDATIONS

- Enhance the model
- Implement regular updates
- Broaden scope to other stocks
- Facilitate user training

NEXT STEPS

- Explore additional features and external factors to boost predictive accuracy.
- Implement an automated system for regular model retraining and deployment to keep predictions accurate.
- Extend methodology and models to other stocks in Britam Asset Managers' portfolio.
- Conduct training sessions for financial analysts.



THANK YOU

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