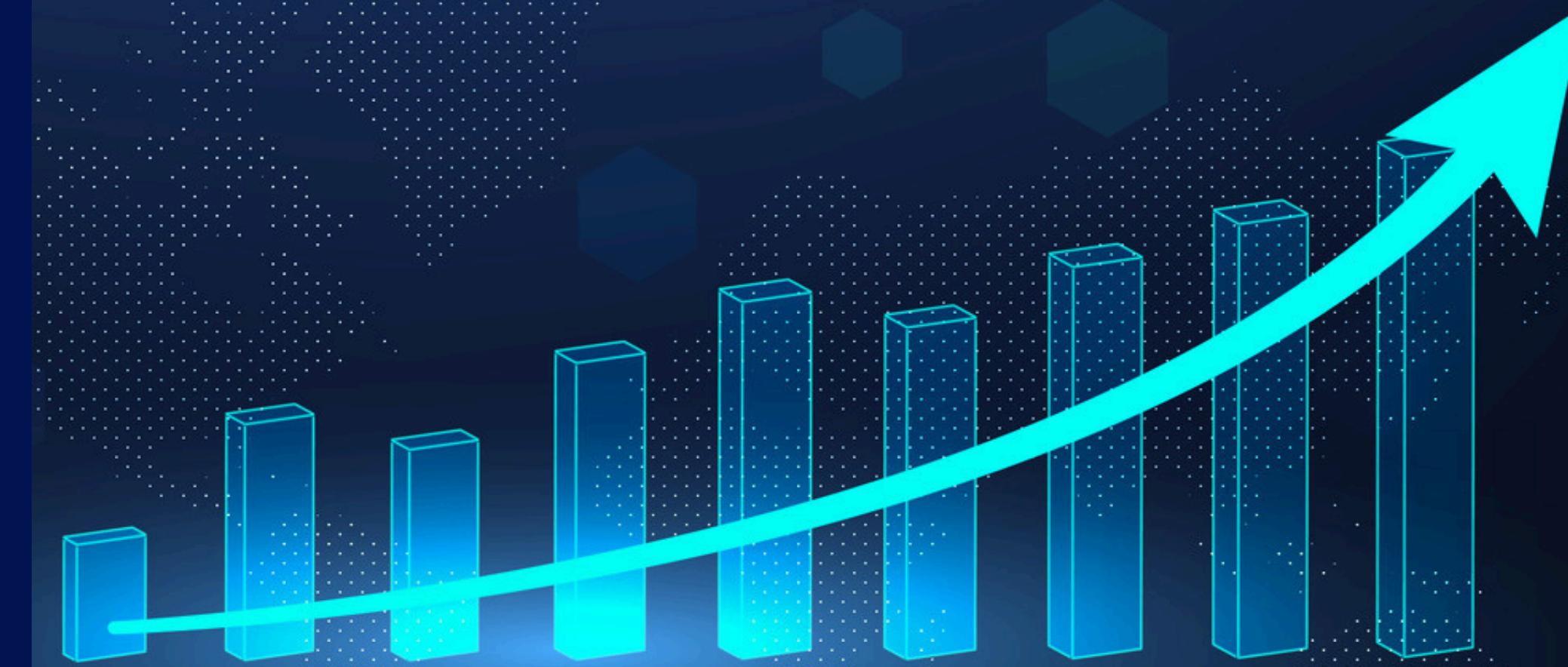


# Stock Prices Forecasting



# Meet the Team...



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# Outline

1

Business Understanding

2

Objectives

3

Data and Methods

4

Forecasting Tool

5

Conclusion

6

Recommendation

# Overview

StockTech in Kenya is revolutionizing user engagement with state-of-the-art technology. By employing cutting-edge predictive modeling techniques, StockTech is poised to deliver highly customized stock market predictions, catering to the growing appetite for personalized investment insights in the Kenyan financial landscape.

# Business Understanding



Today's finance world needs timely access to real time stock market to make well informed decisions . Timely data empowers investors and traders to craft effective strategies and manage risks more effectively. There is increasing need to leverage the available rich data to identify emerging trends and forecast stock prices. This project seeks to bridge the gap between data and strategic decision making by providing finance stakeholders with robust tools to navigate the complexities of stock market.

# Project Objectives



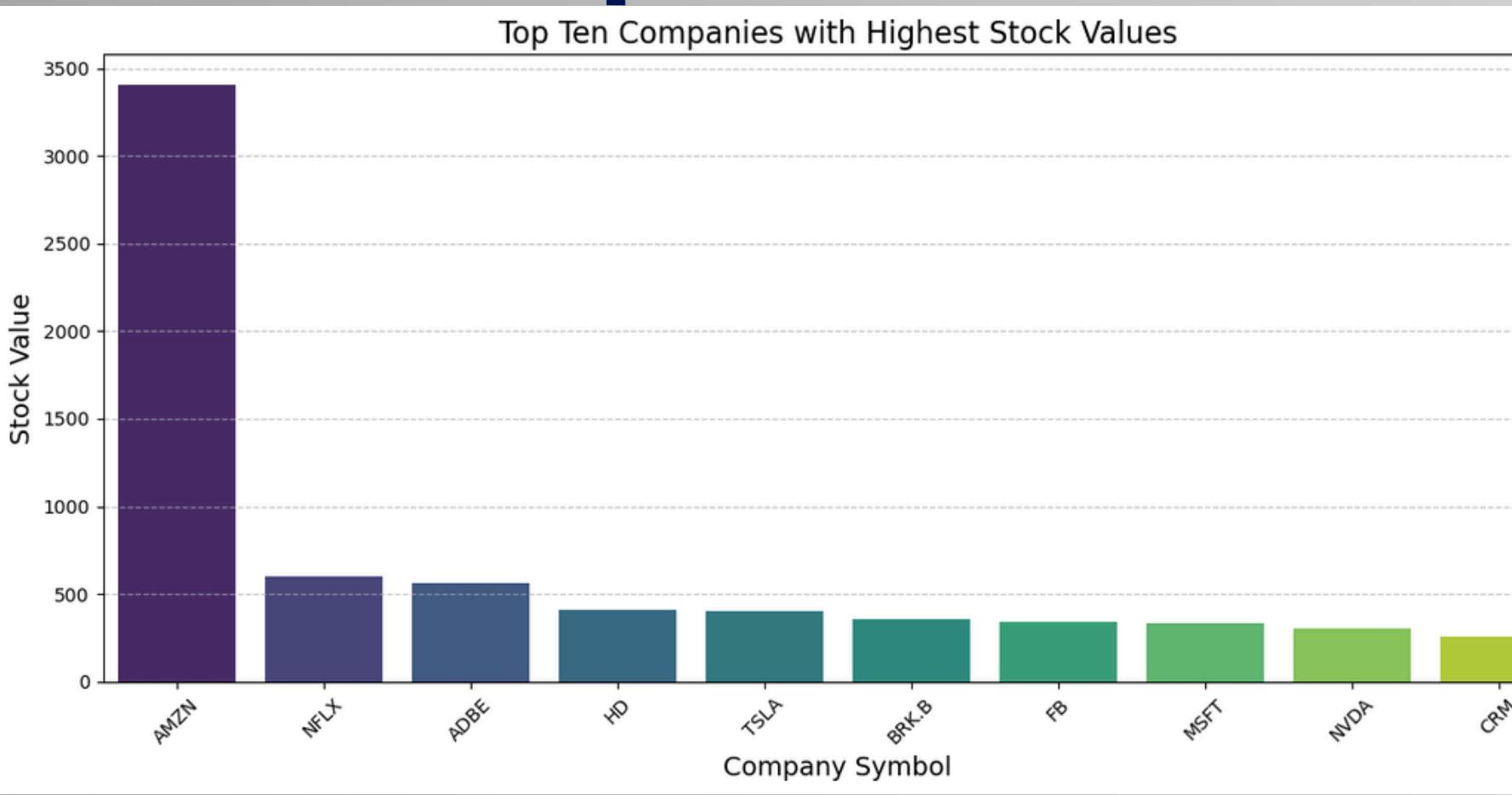
- 1).Top Objective:** Develop a forecasting tool using real-time and historical stock market data
- 2).**Bridge the gap between raw financial data and strategic decision-making
- 3).**Empower stakeholders in the financial sector to navigate stock market complexities
- 4).**Redefine the boundaries of predictive analytics in finance

# Methodology

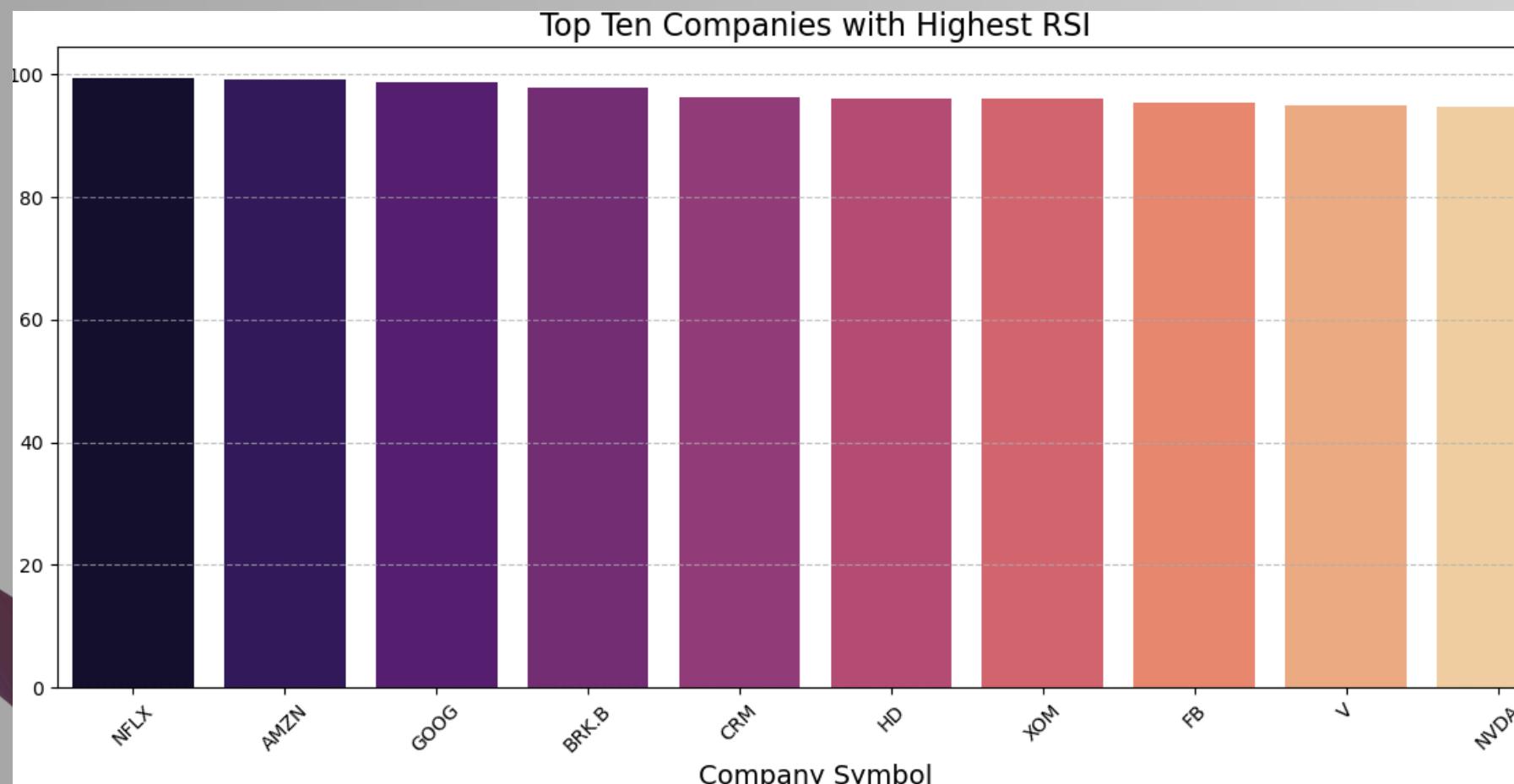
- Data Cleaning
- Analyzing data to explore trends and patterns
- Extracting relevant features from the data
- Testing and evaluating models to identify best performing one
- Retuning the selected model to enhance performance
- Deploying the model



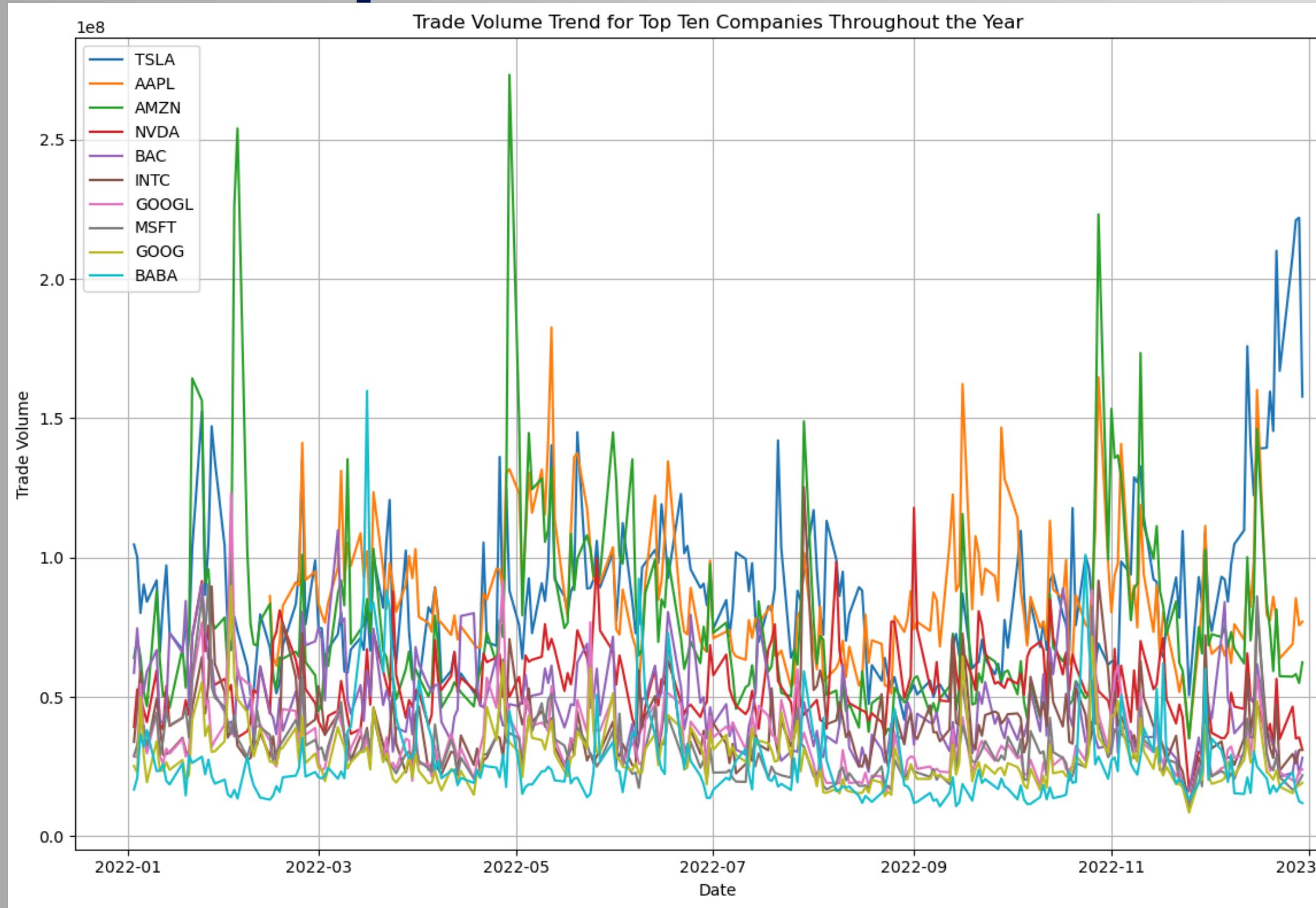
# Data Exploration



- 2022 stock price data for 27 companies
- Amazon maintained the highest stock price throughout 2022
- Most company stock prices range below \$500
- 8 of the companies with high RSI are among those with high stock prices.
- These companies have high relative strength indices of over 90
- The high indices suggest that the stock may be overbought



# Data Exploration: Trade Volume Trend



- Top traders: Tesla, Apple Inc, Amazon, NVIDIA Corporation, and Bank of America Coorperation
- High trade volume indicates a high level of investor interest

# Modeling

To determine which model is the best fit, we looked at the criteria of the Akaike information criterion (AIC) or the Bayesian Information Criterion (BIC).

- Moving Averages - 3246.632 3254.410
- Autoregressive Model - 3248.458 3260.124
- Autoregressive Moving Averages -3250.417 3265.972
- Autoregressive Integrated Moving Averages - 3242.061 3253.719
- Seasonal AutoRegressive Moving Average Model - 3102.358 3105.831

When the SARIMA model is compared to the Prophet model The Prophet model captures the underlying patterns and dynamics of the stock market data more effectively than the SARIMA model. This is because of Prophet's ability to handle complex seasonal patterns and trend changes in the data more intuitively.

Therefore prophet model is performing better in terms of predictive accuracy for the given dataset and forecasting horizon thus the best model.

# Conclusion

- Bridging financial data with strategic decision-making enables actionable insights for stakeholders.
- Empowering financial stakeholders with predictive tools enhances stock market navigation.
- Pioneering innovative methodologies in predictive analytics redefines finance, driving tangible value and sustainable growth.



# Recommendations

- Optimize Portfolio Management:
- Monitor Market Drivers:
- Continuous Learning and Adaptation:

**...THANK YOU**