

Knight Foundation School of Computing and Information Sciences

Fall 2024 Senior Design Project

Stock Predictor

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PROBLEM

With how unpredictable stock market fluctuations occur, this poses a significant challenge for investors and analysts. The absence of personalized user experiences and ways to track stocks hinders the effectiveness of existing solutions, which is something we are addressing with this project. Thus, our project works to combine the predictive power of traditional algorithms along with a user-friendly web interface, which gives users the ability to login and track stock data easily.

TECHNOLOGIES

- C++
- Python
- Facebook Prophet
- Qt GUI Framework



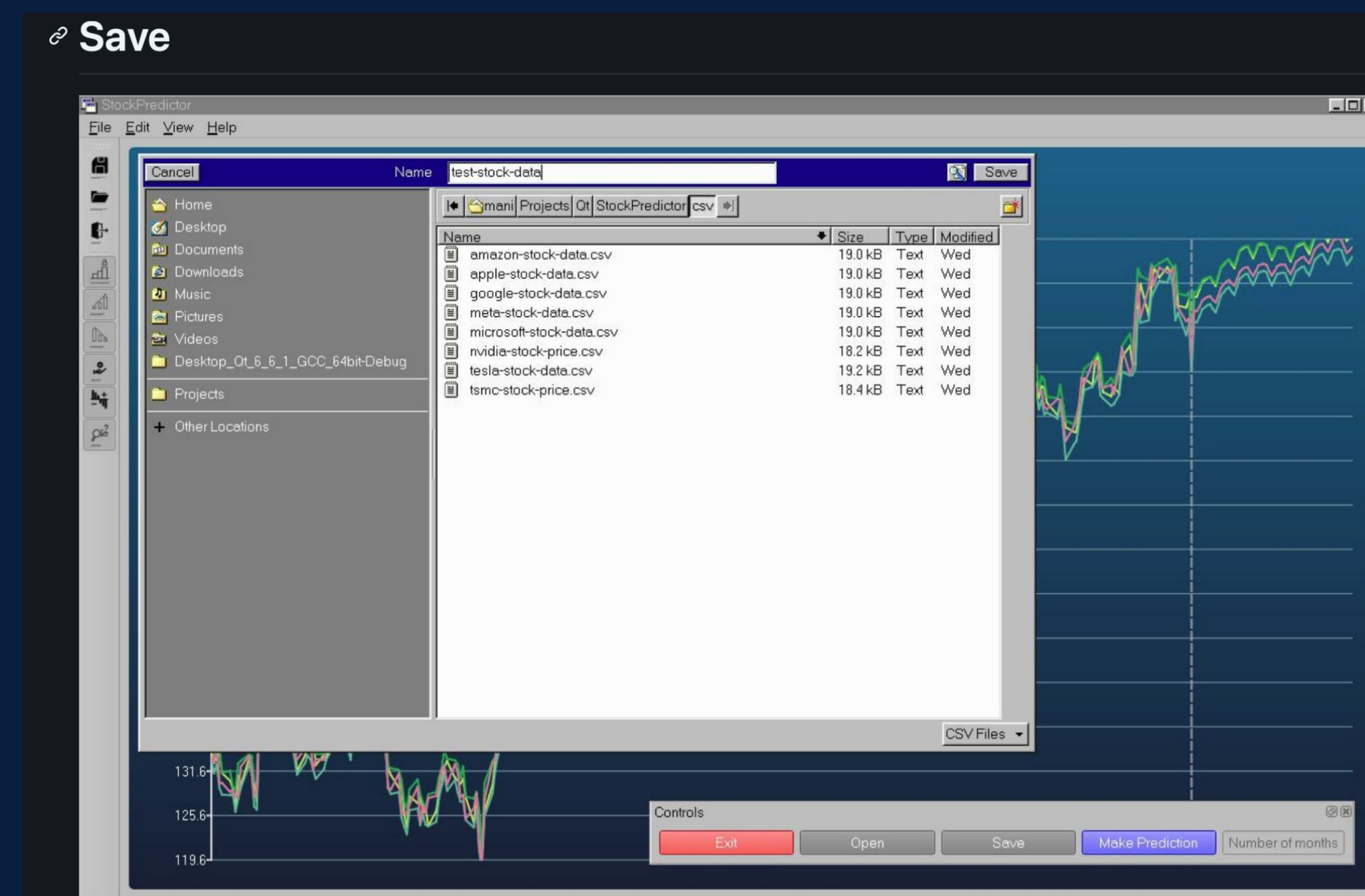
The Qt Company

ANALYZING DATA

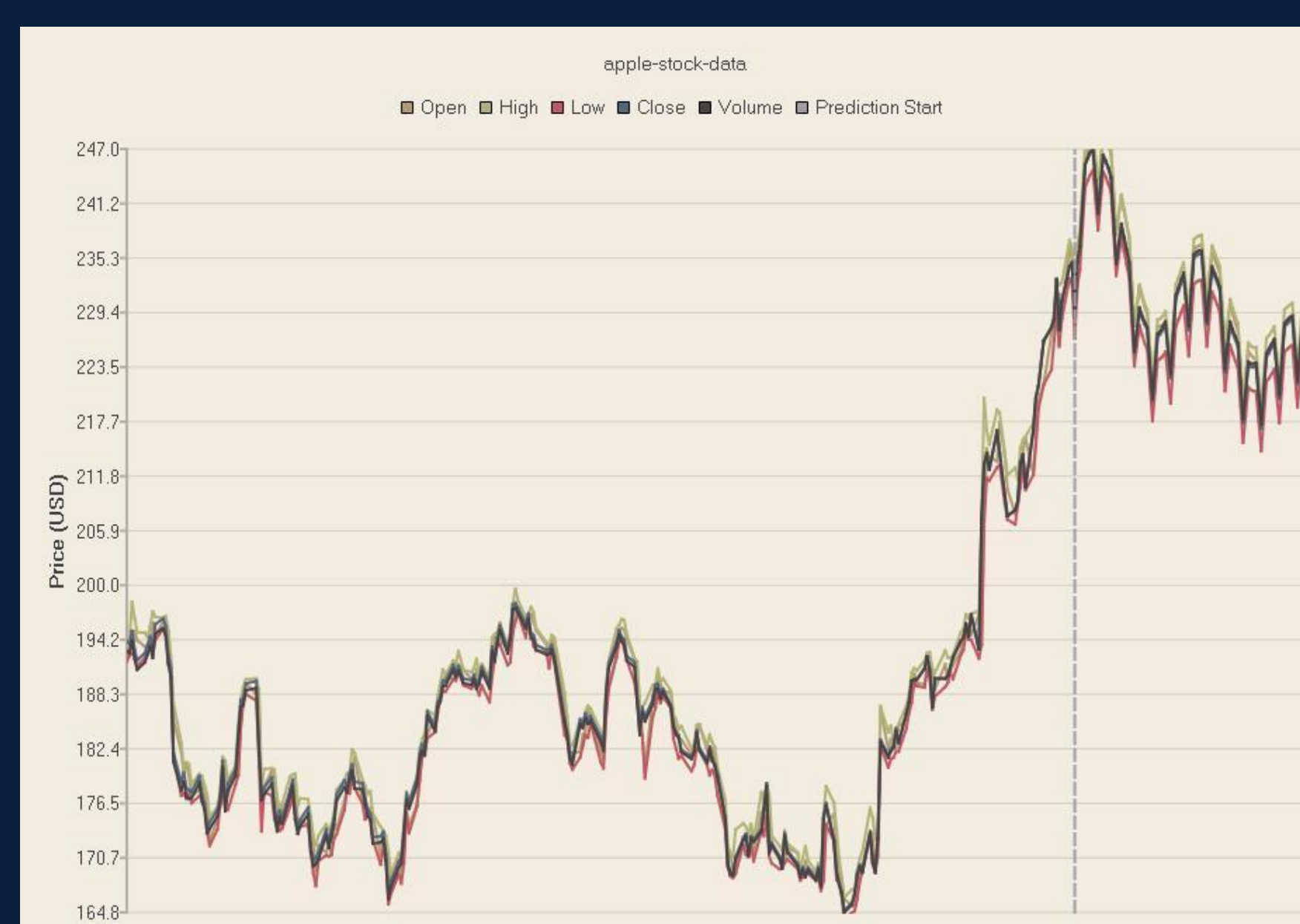
Our machine learning approach utilizes powerful tools like Matplotlib and Pandas to analyze historical stock data and generate accurate predictions for future values. Additionally, it creates a CSV file that includes the stock's current and past values, offering users a comprehensive view of historical performance.

amazon-stock-data.csv
apple-stock-data.csv
google-stock-data.csv
meta-stock-data.csv
microsoft-stock-data.csv
nvidia-stock-price.csv
tesla-stock-data.csv
test-stock-data.csv
tsmc-stock-price.csv

GATHERING DATA



The information extracted from the CSV files is invaluable for making accurate stock predictions, as it provides a structured dataset containing historical trends and key metrics. These files typically include essential data points such as stock prices, trading volumes, dates, and other financial indicators, which are critical for identifying patterns and understanding market behavior over time.



By analyzing this historical data, predictive models can detect trends, seasonality, and anomalies that influence stock performance. Furthermore, the CSV format ensures compatibility with various analytical tools and simplifies the process of cleaning and preprocessing data for further analysis.

CONCLUSION

As a team we were able to fully comprehend the actual efforts required to deploy a fully executable app into the market. Using the SCRUM development process was an eye opening experience into the professional world and the requirements needed to be met daily while working on large scale apps in teams. The development of the team's chosen application idea has lead us all to understand, we have a lot more to learn even though we have learned a lot in our journey's.

FUTURE WORK

In the future, our stock predictor app could integrate advanced machine learning models, tapping into alternative data sources like social media sentiment and satellite imagery for economic insights. Personalization would refine recommendations based on user feedback, while enhanced visualization tools offer immersive data exploration. Blockchain tech could enable decentralized prediction markets, fostering crowd-sourced insights.