

## 1. Abstract

- The Portfolio module provides essential tools for managing and analyzing stock investments. It is a core part of the AutoProphet project and serves as a foundation for building more advanced financial analytics capabilities. This document outlines the current implementation and provides a roadmap for future enhancements.

## 2. Features Implemented

- **Stock Search:** Utilize the Alpha Vantage API to search for stocks by keywords, enabling users to explore a wide range of investment opportunities.
- **Stock Overviews and Price History:** Access detailed information on stock performance, including daily open, high, low, and close prices, alongside historical data for trend analysis.
- **Watchlist Management:** Allows users to track their favorite stocks by adding them to a personalized watchlist.
- **Portfolio Management:** Facilitates the buying and holding of stocks, with a detailed view of portfolio holdings, including quantity, average cost, and profit or loss.
- **Data Export:** Offers functionality to export watchlist and portfolio data into CSV files for offline analysis or record-keeping.

## 3. Code Highlights

- **Primary Component:** The Portfolio.jsx file encapsulates the core functionality, including API integration and state management.
- **CSS Integration:** Utilizes CSS for responsive and aesthetically pleasing user interfaces, ensuring a seamless user experience across devices.

## 4. Challenges and issues

- **API Limitations:** Dealing with the Alpha Vantage API request limits and delayed responses can impact user experience.
- **Data Accuracy:** Ensuring the accuracy and timeliness of the stock data retrieved from external sources is critical for reliable financial analysis.
- **Environment Variable Integration:** Configuring and securely managing API keys using environment variables posed specific challenges, such as:
  - **Secure Storage:** Ensuring the API key remains secure and is not exposed in the codebase or version control.
  - **Deployment Complexity:** Managing environment variables across different development and production environments can be tricky, requiring careful setup to ensure consistency.

## 5. Solutions and Fixes

- **Secure Key Management:** Using `.env` files to store sensitive information like API keys, combined with adding `.env` to `.gitignore` to prevent it from being committed

to version control. Additionally, ensuring that the project setup documents clearly instruct on setting up and using environment variables correctly.

#### 6. Future Work and suggestions

- **Interactive Charts:** Integrate interactive charts and graphs for dynamic data visualization, enhancing user engagement and understanding of stock trends.
- **Advanced Analytics Tools:** Develop more complex financial analytics tools, such as predictive modeling and risk assessment, to cater to more experienced investors.
- **Mobile Responsiveness:** Enhance the module's responsiveness for mobile platforms, allowing users to manage their investments on-the-go.

#### 7. Repository and Documentation Links

- [GitHub Repository](#)
- [API Documentation](#)