Financial Investment Assistant

Interim Report

Tharidhu Angodage

CO3201 Computer Science Project

School of Computing and Mathematical Sciences, University of Leicester

# Declaration

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# Aims and Objectives

The aim of this project is to develop a user-friendly Financial Investment Assistant designed to empower novice investors in making informed decisions. By offering a seamless and intuitive interface, the platform simplifies the investment process, providing timely market insights and intelligent recommendations. The motivation is to enhance users' financial literacy and confidence, enabling them to navigate the complexities of investments with ease

The Financial Investment Assistant will pursue the following specific objectives to achieve its aims:

* Create a visually appealing and easy-to-navigate interface for seamless user experience.
* Provide up-to-date stock prices and financial information through integrated market data APIs
* Develop sophisticated algorithms for Buy, Sell, or Hold suggestions based on data analysis.
* Integrate reliable payment gateways and implement encryption protocols for secure transactions.
* Develop a robust system for monitoring investments and managing portfolios effectively.
* Implement user registration, authentication, and profile management functionalities.
* Create an efficient stock search and selection mechanism with advanced filtering options.

# Background

(link of Machine Learning), book/website about stoke trading.

# Software Requirements

## Functional Requirements

1. The system must include user registration and authentication functionalities to ensure secure access to the platform.
2. Users should be able to manage their profiles, including updating personal information and preferences.
3. The system must integrate with real-time market data sources to provide up-to-date information on stock prices and market trends.
4. Users should be able to search for specific stocks and apply various filters to refine their search results.
5. The system should generate algorithm-based recommendations for users, suggesting whether to buy, sell, or hold specific stocks.
6. The platform must support order execution for both buying and selling stocks, providing a seamless trading experience.
7. Users should be able to track and monitor their portfolios.
8. The system must integrate with payment services, offering a dedicated wallet page for users to manage their financial transactions and fund their accounts.

## Non–Functional Requirements

1. **Performance**:

The system must ensure efficient performance in the runtime of algorithms, to provide quick and accurate responses to user requests.

1. **Reliability**:

The system should be highly reliable, ensuring stability and minimal downtime and errors.

1. **Security**:
   1. User Data Protection:

The system must implement robust measures to safeguard user data, preventing unauthorized access and ensuring data confidentiality.

* 1. Encryption and Secure Authentication:

User data must be encrypted during transmission, and secure authentication methods should be in place to protect user accounts from unauthorized access.

1. **Privacy**:

The system should respect user privacy, ensuring that personal information is handled with care and not shared with third parties without user consent.

1. **Usability**:

The system's user interface should be user-friendly, and easy to navigate, enhancing the overall user experience and ensuring user satisfaction.

1. **Compliance with APIs**:

The system must adhere to specified APIs, ensuring compatibility and seamless integration with external systems or services as required.

# Design and Specification

There will be three main components in the system architecture: Frontend, Backend, and the Database. In the frontend user interface, I will employ JavaScript technologies, specifically Next.JS for ensuring a seamless and engaging user experience. For the backends’ middleware services, I have opted for Python with Django, where the project will contain all the business logic, stock data retrieval and database management. Additionally, I will utilize Python libraries such as Pandas and Scikit to construct the sophisticated algorithms. Finally, MySQL database will be utilized to read CSV files containing historical stock data, essential the algorithm creation.

# Planning and Timescales