

Software Requirement Specification (SRS) for Apple Stock Price Prediction Project

1. Introduction:

The Stock Price Prediction System is designed to predict stock prices for a given set of stocks based on historical data and various prediction algorithms. Users can access the system through web and mobile interfaces. The system will provide real-time stock data and historical stock data to perform predictions. The Stock Price Prediction System is designed to predict stock prices for a given set of stocks based on historical data and various prediction algorithms. Users can access the system through web and mobile interfaces. The system will provide real-time stock data and historical stock data to perform predictions.

2. Scope

The Stock Price Prediction System will include prediction algorithms based on historical stock data, real-time data feeds, user interfaces, and reporting capabilities. It will not provide financial advice or make investment decisions.

3. Functional Requirements

3.1 User Use Cases

3.1.1 User Registration

Users can create accounts with unique usernames and passwords.

3.1.2 User Login

Registered users can log in to the system with their credentials.

3.1.3 Stock Selection

Users can select specific stocks for price prediction.

3.1.4 Stock Price Prediction

Users can request stock price predictions based on historical data and chosen algorithms.

3.1.5 View Predictions

Users can view predicted stock prices and related data.

3.2 Prediction Algorithm

The system will implement one or more prediction algorithms, including but not limited to:

- Linear Regression
- Time Series Analysis
- Neural Networks

3.3 Input Requirements

The system will require historical stock data for training prediction models. Real-time stock data feeds will be obtained from external APIs.

3.4 Output Requirements

Predicted stock prices will be presented to users through the user interfaces. Users can download prediction reports and visualizations.

3.5 Data Storage

Historical stock data will be stored in a relational database. Real-time stock data will be cached temporarily for real-time predictions.

3.6 Security and Access Control

User authentication will be performed using a secure protocol (e.g., OAuth). Access control will be applied to protect sensitive data and system functions.

4. Non-Functional Requirements

4.1 Performance

The system should provide predictions within seconds. It should support a high number of concurrent users.

4.2 Reliability

The system should have an uptime of at least 99.9%. It should have measures for fault tolerance and data backup.

4.3 Availability

Maintenance should be scheduled during non-peak hours.
Users should be notified of scheduled maintenance.

4.4 Usability

The user interface should be intuitive and user-friendly.
It should be accessible to individuals with disabilities.

4.5 Compatibility

The system should be compatible with major web browsers and mobile devices.

4.6 Legal and Compliance

The system should comply with financial industry regulations and data protection laws.

5. Documentation and Training

5.1 User Manual

The system shall provide a comprehensive user manual explaining how to use the application effectively.

The user manual shall include instructions for inputting text, selecting summarization options, and interpreting results.

5.2 Developer Documentation

The system shall include technical documentation outlining the architecture, algorithms, and APIs used in the application.

6. Constraints

The project shall be developed using Python programming language.

The project budget and timeline are predefined and should be adhered to.

7. References

This SRS document follows the guidelines provided by the IEEE Std 830-1998, "IEEE Recommended Practice for Software Requirements Specifications."

This Software Requirement Specification document outlines the functional and non-functional requirements for the Apple stock price prediction project. It serves as a guideline for the development team to ensure that the software meets the expectations of both users and stakeholders.