

Requirements Documentation for the Stock Market Simulator

1 Introduction

1.1 Purpose of the Document

This document aims to provide a detailed presentation of the requirements and specifications for the stock market simulator. It is intended for project teams, developers, and stakeholders to ensure a uniform understanding of the scope and functionality of the application.

1.2 Scope of the Project

The project involves creating a comprehensive stock market simulator, which will enable users to simulate trading on the stock exchange, analyze market data, test investment strategies, and manage a virtual investment portfolio.

2 General Description of the Application

2.1 Purpose of the Application

The application is intended for investors, market analysts, and stock market enthusiasts who wish to develop their skills in a safe, simulated environment.

2.2 Key Functions

- Simulation of various market scenarios.
- Analysis and processing of market data.
- Generation of interactive charts.
- Testing and evaluation of investment strategies.
- Management of a virtual investment portfolio.

3 Functional Requirements

3.1 Data Import Module

3.1.1 Functions:

- Import of data from CSV files, Excel, and APIs.
- Validation and normalization of imported data.
- Real-time data updates.

3.2 Data Analysis Module

3.2.1 Functions:

- Processing of market data.
- Generation of technical indicators.
- Analysis of market trends.

3.3 Chart Module

3.3.1 Functions:

- Creation of line and candlestick charts.
- Chart customization capabilities.
- Export of charts to various formats.

3.4 Transaction Simulation Module

3.4.1 Functions:

- Simulation of various types of orders.
- Visualization of the impact of transactions on the market.
- Management of transaction history.

3.5 Portfolio Management Module

3.5.1 Functions:

- Creation and management of a virtual portfolio.
- Analysis of return and risk.
- Tracking portfolio diversification.

3.6 Strategy Testing Module

3.6.1 Functions:

- Backtesting of investment strategies.
- Analysis of strategy outcomes.
- Comparison and optimization of strategies.

3.7 User Interface / Dashboard

3.7.1 Functions:

- Intuitive and responsive user interface.
- Access to all application functions.
- User interface customization.

4 Non-Functional Requirements

4.1 Security and Privacy

- Protection of user data.
- Encryption of communication and transactions.

4.2 Performance

- Optimization of processing large data sets.
- Application response speed.

4.3 Scalability and Integration

- The ability to expand the application.
- Integration with external systems and APIs.

4.4 Support and Documentation

- Technical and user documentation.
- Technical support for users.

5 Limitations and Assumptions

5.1 Limitations

- The application is a simulator and does not predict actual market events.

5.2 Assumptions

- Users have basic knowledge of how stock markets operate.