

STOCK PORTFOLIO TRACKER

SOFTWARE REQUIREMENTS SPECIFICATION

A series of five parallel blue lines of varying lengths, slanted diagonally from the bottom-left towards the top-right, serving as a decorative element.

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1. Introduction

1.1 Purpose

A stock exchange is a centralized marketplace where financial instruments, primarily stocks or shares of publicly traded companies, are bought and sold. It serves as a platform for investors to trade securities, facilitating the flow of capital between investors and companies. Stock exchanges provide a transparent and regulated environment for trading, ensuring fair and efficient transactions. This project describes the hardware and software interface requirements using the Use Case diagram, ERdiagram and UML diagram.

1.2 Scope of Development Project

The development of this project is focused on a stock portfolio tracker involves creating a sophisticated platform tailored to meet the dynamic needs of modern investors. This includes features such as tracking of stock prices, seamless integration with financial data providers, and the automation of portfolio management processes.

To set itself apart, the project aims to introduce innovative elements such as leveraging artificial intelligence for personalized insights and risk assessments. Additionally, the platform seeks to build a sense of community among users by incorporating social features, allowing them to share strategies and market analyses. Key components like mobile accessibility, multilingual support, and robust security measures are essential to ensuring a user-friendly and globally accessible tool.

The development of a stock portfolio tracker presents a significant opportunity in the financial technology landscape. Such a platform could offer investors a comprehensive tool to monitor and manage their investment portfolios efficiently. The scope extends to providing real-time updates on stock prices, historical performance analysis, and personalized portfolio insights. Features like risk assessment, diversification analysis, and integration with financial news sources could enhance the user experience. Additionally, leveraging machine learning algorithms could enable predictive analytics, helping users make informed investment decisions. Mobile compatibility and user-friendly interfaces would further contribute to the accessibility and adoption of the tracker. As the financial markets continue to evolve, the development of a sophisticated stock portfolio tracker aligns with the growing demand for digital solutions that empower investors to navigate the complexities of the stock market with confidence and agility.

Moreover, the project's scope extends beyond being just a portfolio management tool. It envisions potential revenue streams through subscription models, premium features, and strategic partnerships. This approach positions the project not only as a robust solution for managing portfolios but also as a sustainable business venture in the continually expanding landscape of financial technology.

1.3 References

➤ Books

- A Beginner's Guide to the Stock Market: Everything You Need to Start Making by Matthew Kratter
- How to Make Profit in Share Market by Mahesh Chandra Kaushik
- The Alchemy of Finance Websites by George Soros

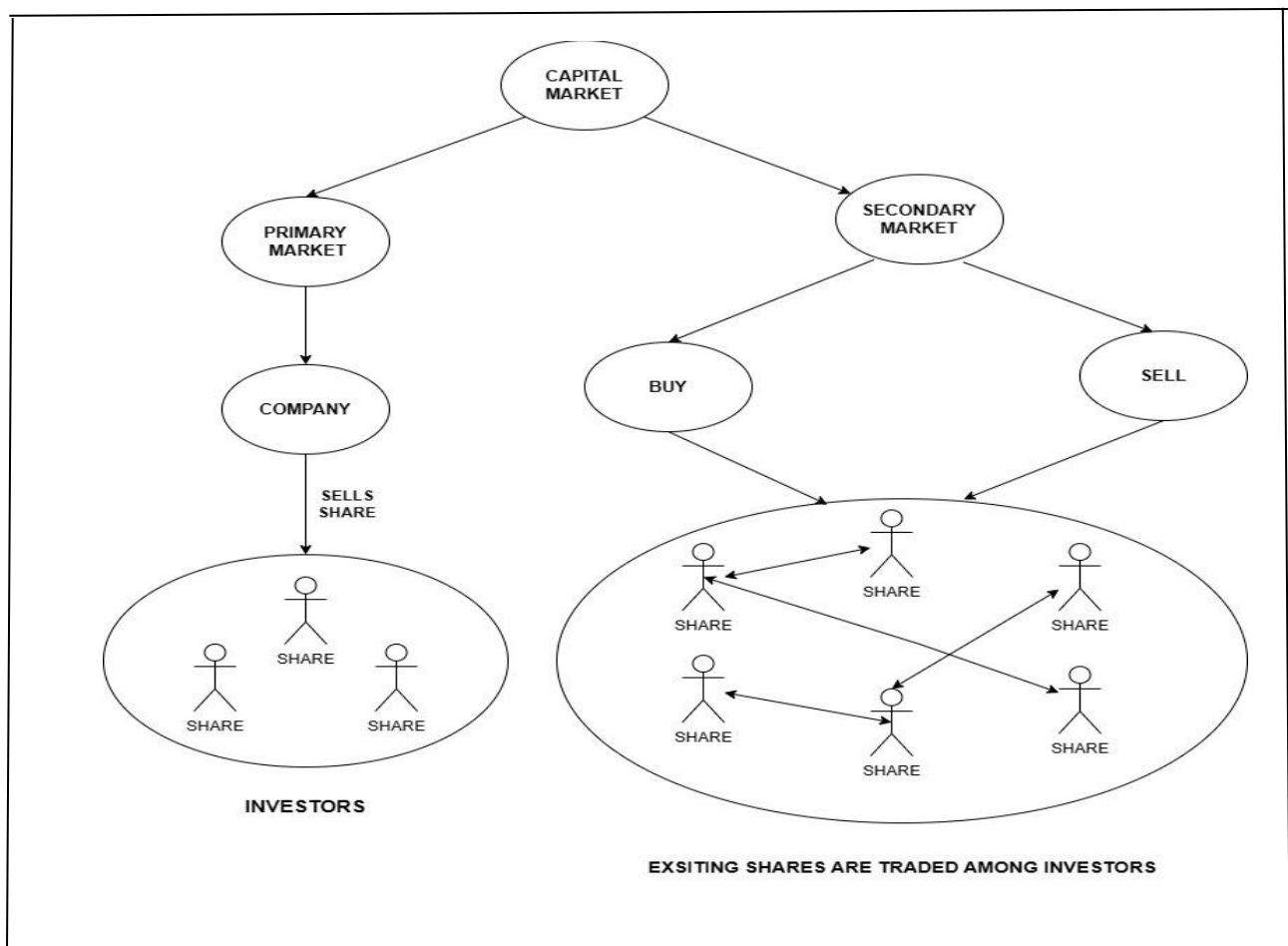
➤ Websites

- <https://www.investopedia.com/articles/investing/082614/how-stock-market-works.asp>
- <https://www.indiaonline.com/knowledge-center/share-market/what-is-share-market>

2. Overall Descriptions

2.1 Product Perspective

Use Case Diagram of Stock Portfolio Tracker

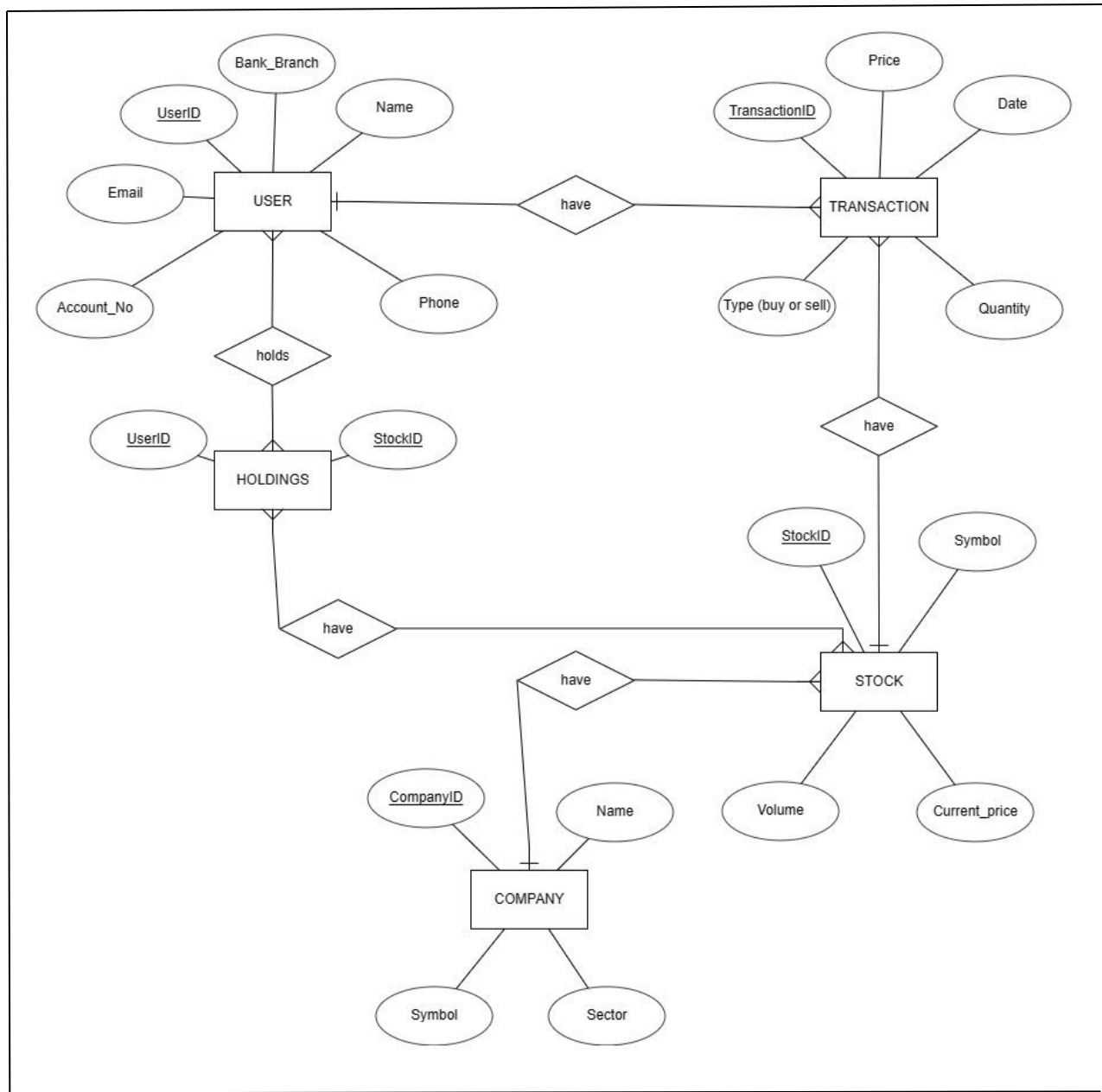


This is a broad level diagram of the project showing a basic overview. The users can be either buyers or sellers. This use case diagram will be based on various categories viz. stock market. The company divides itself into several shares and sells some of those shares to the public at a price per share. To facilitate this process, a company needs a marketplace where these shares can

be sold and this is achieved by stock market.

2.2 Product Function

Entity Relationship Diagram of Stock Portfolio Tracker



2.3 Users and Characteristics

Both sellers (sellers /traders) and buyers (investors/traders) in the secondary market have access to a variety of features that facilitate their participation in trading securities. Here are common features available to both sellers and buyers:

1. Market Orders:

Buyers and Sellers: The ability to place market orders, where securities are bought or sold at the current market price.

2. Limit Orders:

Buyers and Sellers: The option to place limit orders, specifying the maximum price a buyer is willing to pay or the minimum price a seller is willing to accept.

3. Stop Orders:

Buyers and Sellers: The ability to place stop orders, converting to market orders when a specific price is reached. This is used for managing losses or protecting gains.

4. Real-Time Market Data:

Buyers and Sellers: Access to real-time stock quotes, price charts, and other market data to make informed decisions.

5. Online Trading Platforms:

Buyers and Sellers: Utilization of online trading platforms for executing trades, monitoring portfolios, and accessing various tools for analysis.

6. Securities Research:

Buyers and Sellers: Availability of research tools, financial news, and analyst reports to aid in making investment decisions.

7. Portfolio Management:

Buyers and Sellers: Features for tracking and managing investment portfolios, assessing performance, and adjusting holdings.

8. Dividend Information:

Buyers and Sellers: Access to information about dividends, including ex-dividend dates and dividend history.

9. After-Hours Trading:

Buyers and Sellers: Some markets offer after-hours trading, allowing transactions to occur outside regular trading hours.

10. Options Trading:

- Buyers and Sellers: The ability to trade options, providing additional strategies for hedging and speculation.

11. Short Selling:

- Buyers and Sellers: The option for short selling, allowing investors to sell securities they don't own with the expectation of buying them back at a lower price.

12. Historical Trading Data:

- Buyers and Sellers: Access to historical trading data for analysis of past market trends and performance.

13. Alerts and Notifications:

- Buyers and Sellers: Setting up alerts and notifications for price changes, news, or specific events affecting securities.

14. Tax Reporting Tools:

- Buyers and Sellers: Tools for tracking and reporting capital gains or losses for tax purposes.

15. Regulatory Protections:

- Buyers and Sellers: Both parties benefit from regulatory oversight, ensuring fair and transparent market practices.

16. Security Measures:

- Buyers and Sellers: Stringent security measures on trading platforms to protect personal and financial information.

17. Trade Confirmations:

- Buyers and Sellers: Receipt of trade confirmations to verify executed transactions.

2.4 Requirement**Software Configuration:-**

This software package is developed using java as front end which is supported by sun micro system. Microsoft SQL Server as the back end to store the database.

Operating System: Windows NT, windows 98, Windows XP

Language: Java Runtime Environment, Net beans 7.0.1 (front end)

Database: MS SQL Server (back end)

Hardware Configuration:-

Processor: Pentium(R)Dual-core CPU

Hard Disk: 40GB

RAM: 256 MB or more

2.5 Data Requirement

The inputs consist of the query to the database and the output consists of the solutions for the query. The output also includes the user receiving the details of their accounts. In this project the inputs will be the queries as fired by the users like create an account, selecting books and putting into account. Now the output will be visible when the user requests the server to get details of their account in the form of time, date and which books are currently in the account.

3. External Interface Requirement**3.1 GUI**

The software provides good graphical interface for the company, buyers and sellers and can operate on the system, performing the required task such as buying, selling and viewing the details of the share.

❖ Dashboard Overview: -

- Display a summary of the user's portfolio with key metrics such as total portfolio value, overall gain/loss, and performance charts.
- Include a section for recent transactions, showing the most recent buys and sells.

❖ Portfolio Management: -

- Provide a section for users to view and manage their current holdings. Each stock position should display details like stock symbol, quantity held, current market price, and total value.
- Allow users to add new stocks to their portfolio or sell existing holdings. Include options for setting buy/sell quantities and limit/stop orders.

❖ Market Data: -

- Integrate real-time stock market data to display live prices, historical charts, and relevant financial information for selected stocks.

❖ **Transaction History:** -

- Maintain a transaction history log that users can review to track their buying and selling activities.
- Include filters and search functionality for users to easily find specific transactions.

❖ **Buyers and Sellers Interaction:** -

- Implement a trading section where users can place buy or sell orders. Include fields for specifying stock symbol, quantity, order type (market, limit, stop), and price.
- Display a real-time order book showing the current buy and sell orders in the market.

❖ **Alerts and Notifications:** -

- Allow users to set up alerts for price changes, news updates, or when certain conditions are met in the market.
- Send notifications to users for executed trades and important account updates.

4. System Features

The users of the system should be provided the surety that their account is secure. This is possible by providing:-

- User authentication and validation of members using their unique member ID
- Proper monitoring by the administrator which includes updating account status, showing a popup if the member attempts to issue number of books that exceed the limit provided by the library policy, assigning fine to members who skip the date of return
- Proper accountability which includes not allowing a member to see other member's account. Only administrator will see and manage all member accounts

5. Other Non-functional Requirements

5.1 Performance Requirement

The proposed system that we are going to develop will be used as the Chief performance system within the different campuses of the university which interacts with the university staff and students. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the university.

- The performance of the system should be fast and accurate
- Library Management System shall handle expected and non-expected errors in ways that prevent loss in information and long downtime period. Thus, it should have inbuilt error testing to identify invalid username/password
- The system should be able to handle large amount of data. Thus, it should accommodate high number of books and users without any fault

5.2 Safety Requirement

The database may get crashed at any certain time due to virus or operating system failure.

Therefore, it is required to take the database backup so that the database is not lost. Proper UPS /Inverter facility should be there in case of power supply failure

5.3 Security Requirement

- System will use secured database
- Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
- System will have different types of users and every user has access constraints
- Proper user authentication should be provided
- No one should be able to hack users' password
- There should be separate accounts for admin and members such that no member can access the database and only admin has the rights to update the database.

5.4 User Requirement

The Users engaging in the stock market typically need a few key elements to navigate the complexities of financial markets successfully. A primary requirement is the establishment of a trading account with a reputable brokerage, providing a gateway to buy and sell stocks. Alongside this, users should possess a foundational understanding of financial concepts to assess the health of companies and interpret market trends. Clearly defined investment goals, a thorough risk tolerance assessment, and adherence to regulatory compliance are crucial for shaping effective investment strategies. Access to reliable market research tools and user-friendly trading platforms enables informed decision-making, while ongoing education in financial markets ensures users stay attuned to dynamic market conditions. Monitoring tools for portfolio performance, a diversified investment approach, and a separate emergency fund contribute to a robust financial strategy. Additionally, users should be mindful of tax implications related to their stock market activities. These user requirements collectively form a comprehensive framework for navigating the stock market with prudence and efficacy.

- Backup and Recovery
- Forgot Password
- Data migration i.e. whenever user registers for the first time then the data is stored in the server
- Data replication i.e. if the data is lost in one branch, it is still stored with the server Auto Recovery i.e. frequently auto saving the information
- Maintaining files i.e. File Organization
- The server must be maintained regularly and it has to be updated from time to time

5.5 Class Diagram

A class diagram is a type of UML (Unified Modeling Language) diagram that illustrates the structure and relationships within a system or software application. It visually represents the classes, their attributes, methods and the associations between them

A stock portfolio tracker is a financial management tool designed to monitor and analyze an individual's investment holdings. This software typically allows users to input details about their stock investments, such as stock symbols, quantities, and purchase prices. The system then retrieves real-time market data to provide users with up-to-date information on stock prices and portfolio values. A well-designed stock portfolio tracker often includes features such as performance analysis, historical data tracking, and the ability to generate reports. Users can assess the overall health of their investment portfolio, track gains or losses, and make informed decisions about buying or selling stocks based on comprehensive data.

