A PROJECT REPORT

ON

Stockplus

SUBMITTED TO THE SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

IN THE PARTIAL FULFILLMENT FOR THE AWARD OF THE DEGREE

OF

BACHELOR OF BUSINESS ADMINISTRATION

IN

COMPUTER APPLICATION

BY

Adsul Kamlesh Ramdas Examination Seat No. : 5902

Avachat Sarthak Kailas Examination Seat No. : 5905

UNDER THE GUIDANCE OF

Prof. Watpade A.S.

EDUCATION THROUGH SELF HELP IS OUR MOTTO

Karmaveer

Year 2025-26

Rayat Shikshan Sanstha's

S. M. JOSHI COLLEGE, PUNE
HADAPSAR, PUNE 411028
DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION

2025-26

CERTIFICATE

This is to certify that the project report entitled

Stockplus

Submitted by

Adsul Kamlesh Ramdas	Examination Seat No.: 5902
Avachat Sarthak Kailas	Examination Seat No.: 5902

is a bonafide work carried out by them under the supervision of **Prof. Watpade A.S.** and it is approved for the partial fulfillment of the requirement of Savitribai Phule Pune University for the award of the Degree of **Bachelor of Business Administration in (Computer Application).**

This project report has not been earlier submitted to any other Institute or University for the award of any degree or diploma.

Prof. Watpade A. S.	**Hon. Sangeeta Yadav**
Project Guide	HOD

Internal Examiner	**External Examiner**

ACKNOWLEDGEMENT

We feel great pleasure in expressing our deepest sense of gratitude and sincere thanks to our guide **Prof. Watpade A.S.** for their valuable guidance during the Project work, without which it would have been a difficult task. I have no words to express my sincere thanks for valuable guidance, extreme assistance and cooperation extended to all the Staff Members of our department.

This acknowledgement would be incomplete without expressing our special thanks to **Hon. Sangeeta Yadav,** Head of the Computer Application department for her support during the work.

We would also like to extend our heartfelt gratitude to our Principal, **Dr. S. T. Salunkhe** who provided a lot of valuable support, mostly being behind the veils of college bureaucracy.

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Kamlesh Ramdas Adsul 5902
Sarthak Kailas Avachat 5905

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CHAPTER 1:

ABSTRACT

ABSTRACT

StockPlus is a comprehensive and user-friendly stock trading application designed to empower individual investors and traders with real-time market insights, trading tools, and portfolio management capabilities. This application provides a secure and efficient platform for buying and selling stocks, analyzing trends, and makinginformed investment decisions.

The core features of StockPlus include real-time stock price updates, interactive charts, technical analysis indicators, trade execution, watchlists, and personalized alerts. The platform integrates advanced data visualization and predictive analytics to assist users in identifying market opportunities. In addition, it supports user authentication, transaction history tracking, and portfolio performance monitoring, ensuring both functionality and security.

CHAPTER 2:
INTRODUCTION

2.1 Motivation

Many people want to trade stocks, but most trading apps are either too hard for beginners or too basic for experienced traders. This makes it difficult for people to start trading or make smart decisions.

StockPlus is an app that solves this problem. It is easy to use for beginners while also offering powerful tools for advanced traders. Users can learn, trade, track the market, and get alerts safely and anytime. The goal is to make trading simple, smart, and reliable for everyone.

2.2 Problem Statement

Most stock trading apps are either too complicated for beginners or too basic for experienced traders. Beginners often get confused by complex features, while advanced users need tools like real-time data, charts, and portfolio tracking. There are very few platforms that combine simplicity with advanced features, and some apps may not show live stock prices properly or lack security and user-friendliness. Because of this, many students and young investors avoid trading or make poor decisions due to a lack of proper tools and information. **StockPlus** aims to solve these problems by offering an easy-to-use, secure, and feature-rich trading application that helps both beginners and experienced users manage their stock investments confidently.

2.3 Purpose/Objective and Goals

Purpose / Objective:

The main purpose of the StockPlus project is to provide a simple, secure, and user-friendly stock trading platform where beginners can learn and practice trading, and experienced users can analyze and manage their portfolios effectively. It aims to bridge the gap between apps that are either too complicated or too basic.

Goals:

- To create an easy-to-use platform for beginners to understand stock trading.
- To provide real-time stock prices and portfolio management features.

- To simulate buying and selling of stocks using virtual money for safe practice.
- To offer advanced features like charts, alerts, and trade history for active users.
- To ensure security through encrypted login and safe data handling.
- To build a foundation for future expansion into a fully functional trading system.

2.4 Literature survey

Many stock trading apps exist, like Zerodha, Upstox, Groww, and Robinhood. They let users check stock prices, buy and sell stocks, and track investments. Zerodha and Upstox have many advanced tools but are hard for beginners. Groww is easy to use but lacks advanced features. Robinhood is popular in some countries but has limited support. Studies show that users want apps that are simple, secure, show live prices, and help learn trading. No app combines simplicity and advanced tools well, so we created **StockPlus** — an app that is easy for beginners and useful for experienced traders.

2.5 Project Scope and Limitations

Project Scope:

The StockPlus app will allow users to register and log in securely, view live stock prices and charts, and simulate buying or selling stocks through an easy interface. Users will be able to create and manage their own stock portfolios, set price alerts, make watchlists, and check their past trades and portfolio performance. The app will work on both mobile and desktop platforms, and an admin panel will be available to manage users and system updates.

Project Limitations

The StockPlus app will not support real stock trading or money transactions. It will use sample data or third-party APIs for stock prices, which may have some limits in accuracy. Only basic stock indicators will be included in the first version, while advanced tools will come later. If the mobile version is not built at the start, users will only be able to use the web version. All trading in the demo will be simulated and not real.

CHAPTER 3:
SYSTEM ANALYSIS

3.1 Existing Systems

There are several stock trading platforms available today that help users invest and manage their portfolios. Zerodha is popular in India and offers advanced tools like charts and analysis, but its interface can be confusing for beginners. Upstox provides fast and low-cost trading with technical tools, yet it may also be too complex for new users. Groww is simple and easy to use, making it good for beginners, but it lacks advanced charts and analysis features. Angel One offers research and trading options, but the interface can feel crowded and may not be smooth for first-time users.

1. Zerodha
2. Upstox
3. Groww
4. Angel One

3.2 Scope and Limitations of Existing Systems

Existing stock trading applications such as Zerodha, Upstox, Groww, and Robinhood allow users to buy and sell stocks online, view live market prices, analyze trends using charts, track their portfolio performance, and manage funds and transactions. These platforms have made trading much easier and more accessible, especially with the rise of mobile and online trading. However, they also have some limitations. Apps like Zerodha and Upstox often provide too many advanced features on one screen, which can be confusing for beginners. Many apps lack proper educational support, leaving new users struggling to understand trading concepts. Customization of charts, alerts, and dashboards is limited, and most platforms are designed with experienced traders in mind rather than guiding first-time users. Security is another concern, as not all apps provide strong measures like two-factor authentication or advanced privacy features.

3.3 Project Perspective and Features

Project Perspective:

StockPlus is a standalone web-based trading app created to simulate real-time stock market trading for practice and learning purposes. It is designed to be user-friendly, secure, and efficient, providing both beginners and experienced users with the tools to understand and manage trading activities. The app will connect

to live market data through APIs to show real-time stock prices and trading details. It will have a front end where users can place trades and track their portfolios, while the backend will handle data management, user authentication, and simulated transactions.

Project Features:

StockPlus will provide secure user registration and login with password protection and session management. It will show real-time stock prices using APIs and allow users to simulate stock trading with virtual money. Users will be able to manage their portfolios by checking the stocks they own, tracking profit or loss, and viewing their overall performance. The app will be designed to give all users a fast, safe, and smooth experience while practicing stock trading.

3.4 Stakeholders

Stakeholders are the people or groups who are directly or indirectly connected to the project and influenced by its outcome. In the StockPlus project, the main stakeholders include the end users, such as beginners who want to learn trading and experienced users who want to manage virtual portfolios. The developers are responsible for building, testing, and maintaining the application, while the project manager oversees the development process and ensures that goals and timelines are met. API or data providers play an important role by supplying real-time or simulated stock market data through third-party services. In an academic setting, educational institutions can also be stakeholders if they use StockPlus to teach students about stock markets. Additionally, in case of future commercial expansion, investors or business partners may become stakeholders by supporting the app with funding, partnerships, or scaling opportunities.

3.5 Requirement Analysis

Functional Requirements:

- User Registration and Login
    - Users can create an account with email and password.
- View Real-Time Stock Prices
    - Users can view live stock market data through an integrated API.
- Buy/Sell Stocks (Virtual)
    - Users can simulate buying and selling stocks using virtual money.

- Portfolio Management
    - Users can view their current stock holdings, profit/loss, and total investment.
- Watchlist Creation
    - Users can add specific stocks to a personal watchlist for quick tracking.
- Trade History
    - Displays all previous buy/sell transactions.

Performance Requirements

- The system should load stock data within 3–5 seconds of user request.
- The platform should support multiple users simultaneously without slowing down.
- All key operations (login, trade, add watchlist, etc.) should complete in less than 2 seconds.

Security Requirements

- Secure Login System
    - Passwords must be stored using encryption (e.g., hashing).
    - Session management must be protected to prevent unauthorized access.
- Data Privacy
    - User information and portfolio data must be securely stored in the database.
    - No sensitive data should be visible to others.
- Prevent Fake Requests (API Protection)
    - The system should validate all user inputs and API calls to avoid misuse.

CHAPTER 4:
SYSTEM DESIGN

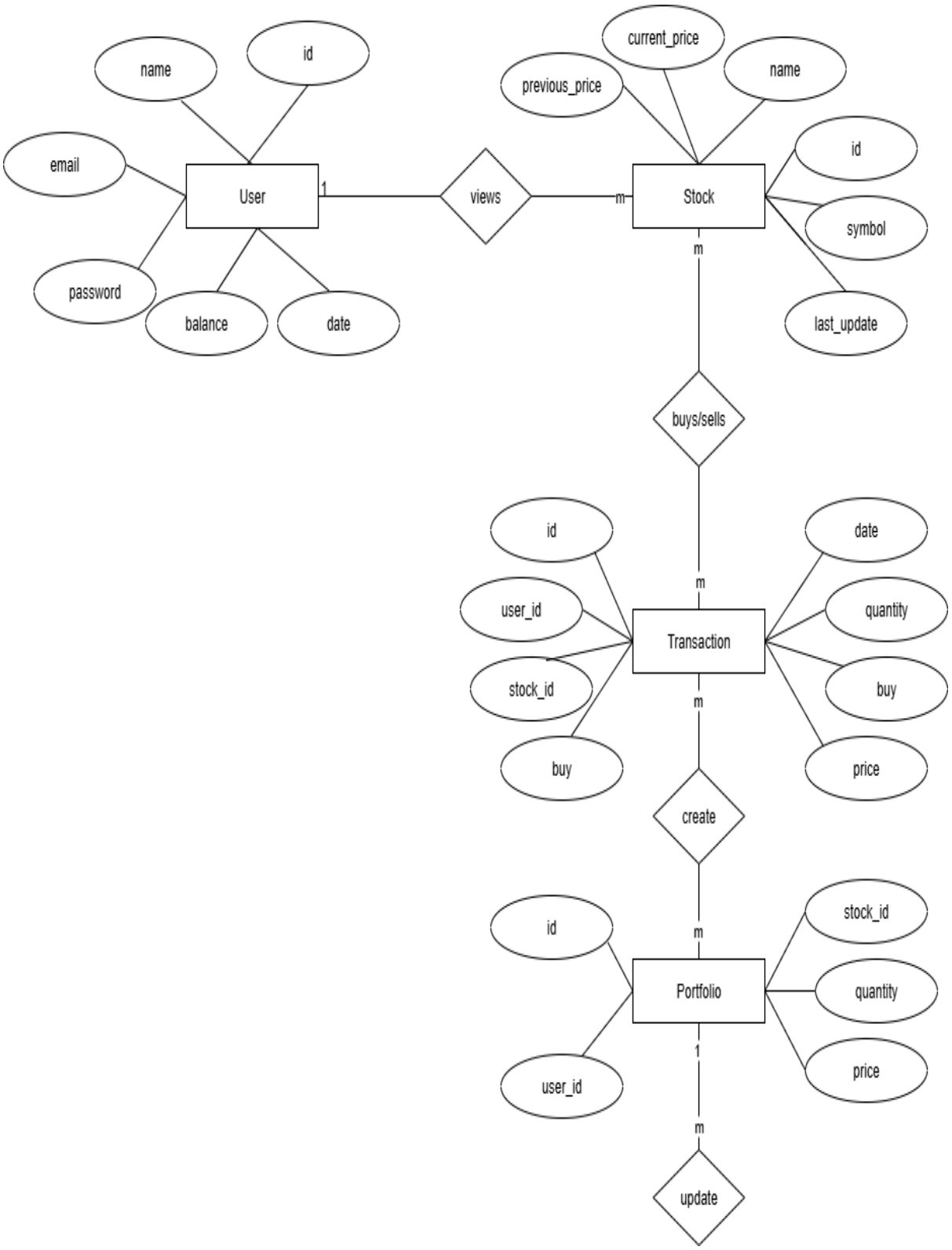
4.1 Design Constraints:

User Table:

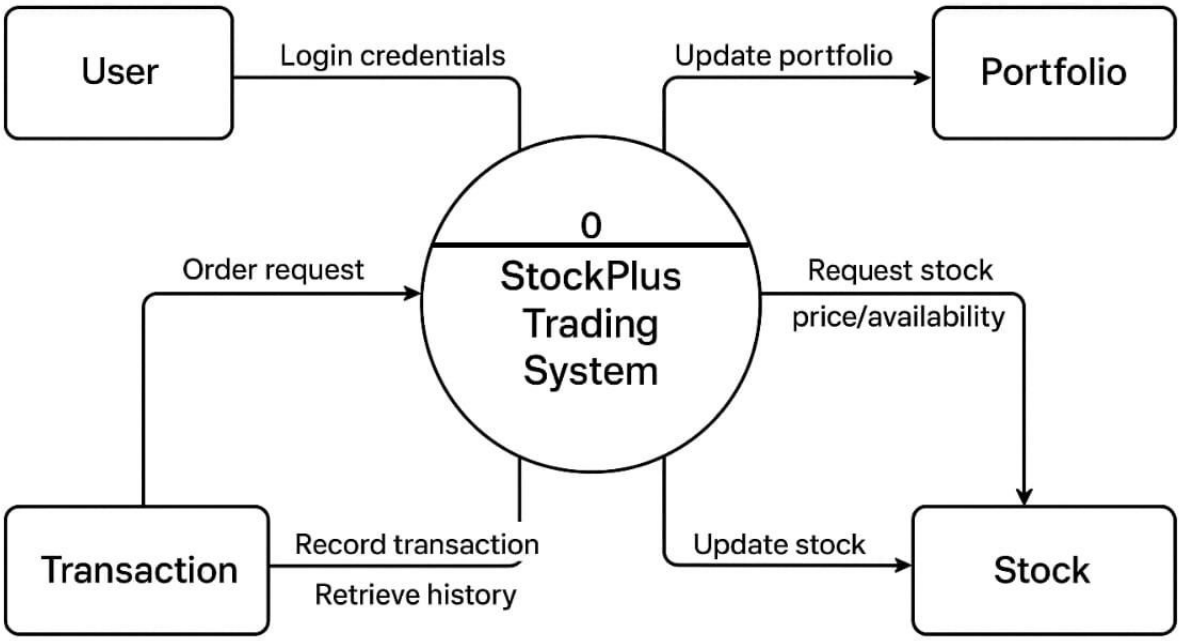
Field	Type	Null	Key	Default	Extra
id	int(10)	NO	PRI	NULL	AUTO_INCREMENT
name	varchar(50)	YES		NULL	
email	varchar(50)	NO	UNI	NULL	
password	varchar(50)	NO		NULL	
balance	decimal(10,2)	YES		0.00	
date	date	YES		NULL	

4.2 System Model :

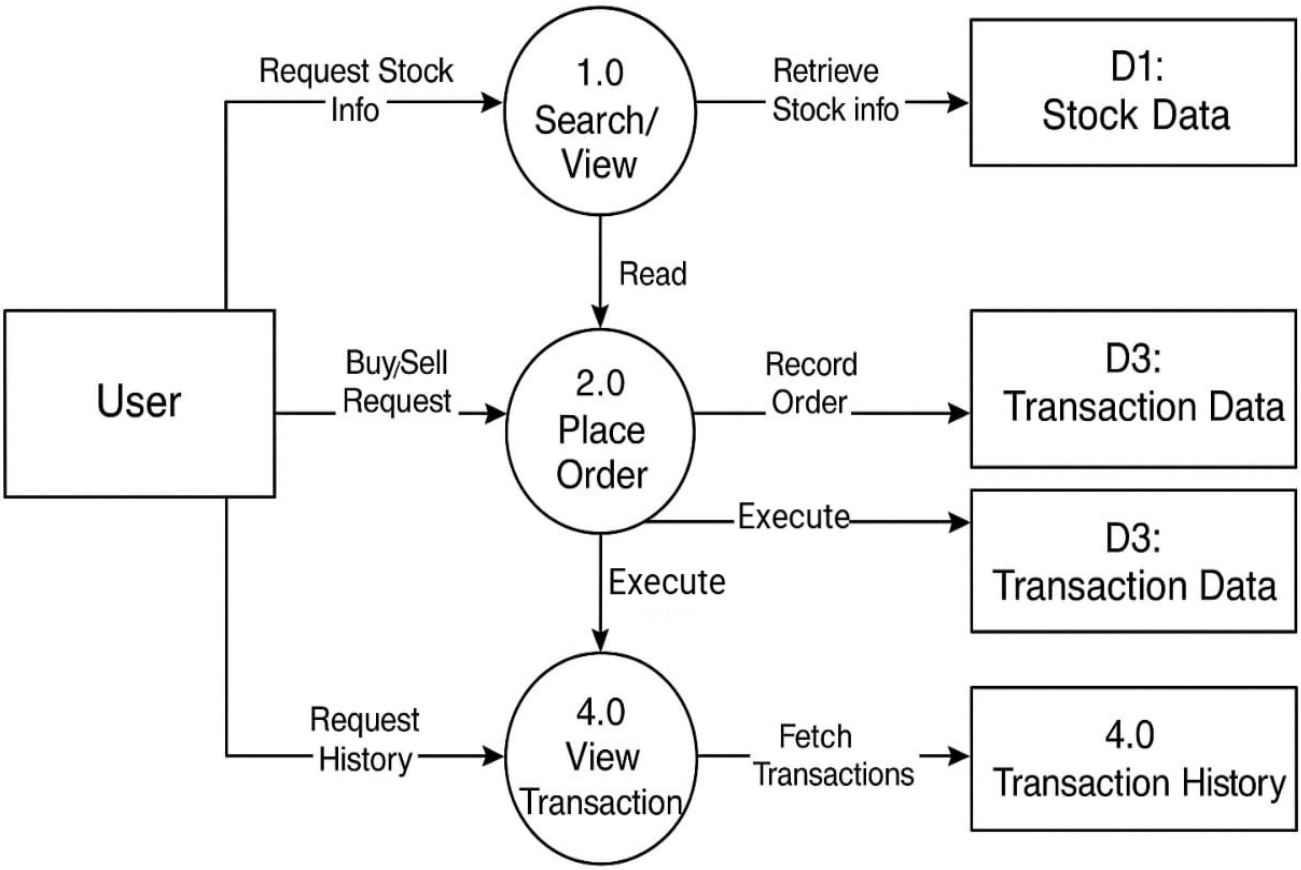
4.2.1 ER Diagram:



4.2.2 Zero level DFD:

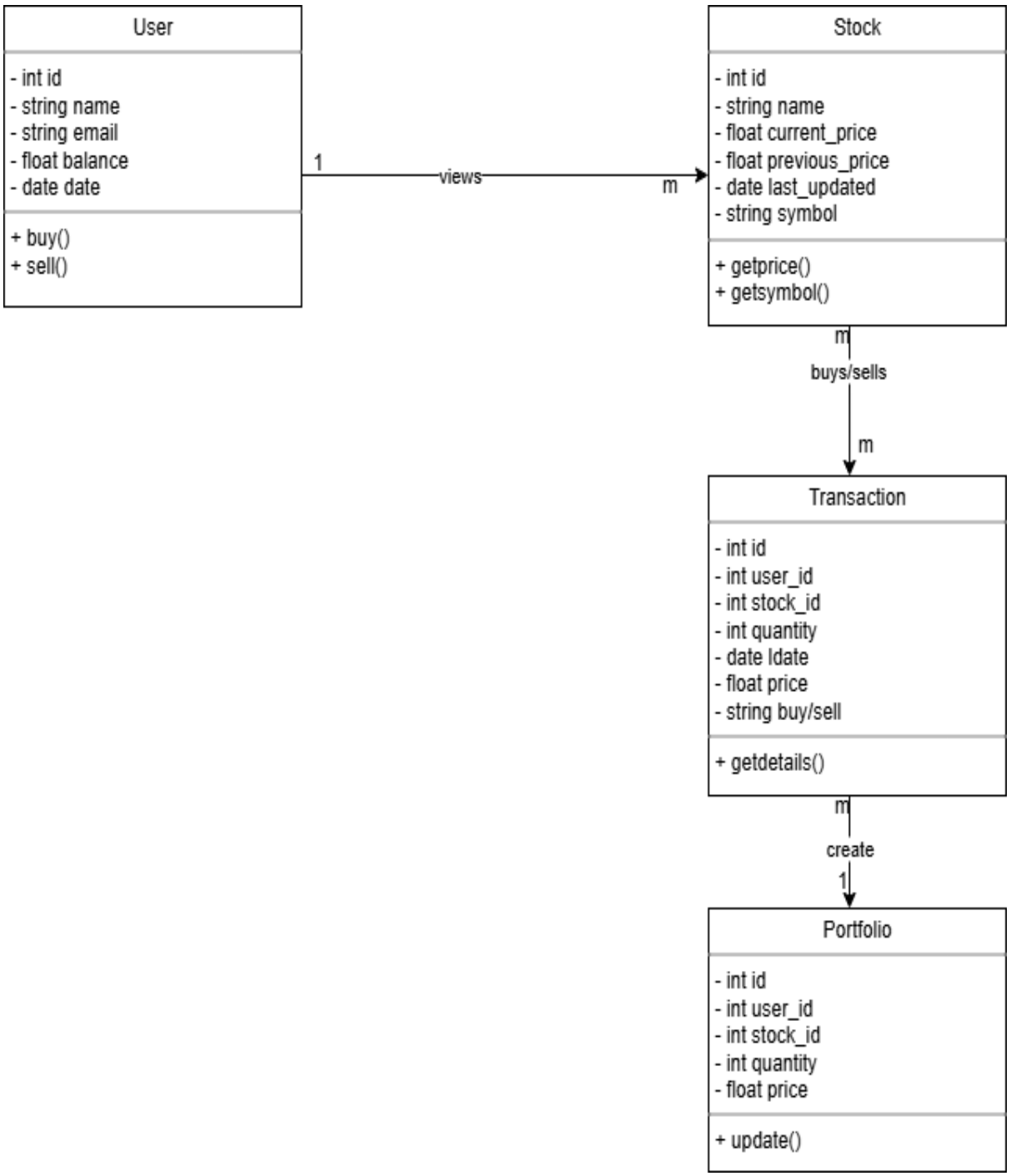


4.2.3 One level DFD:

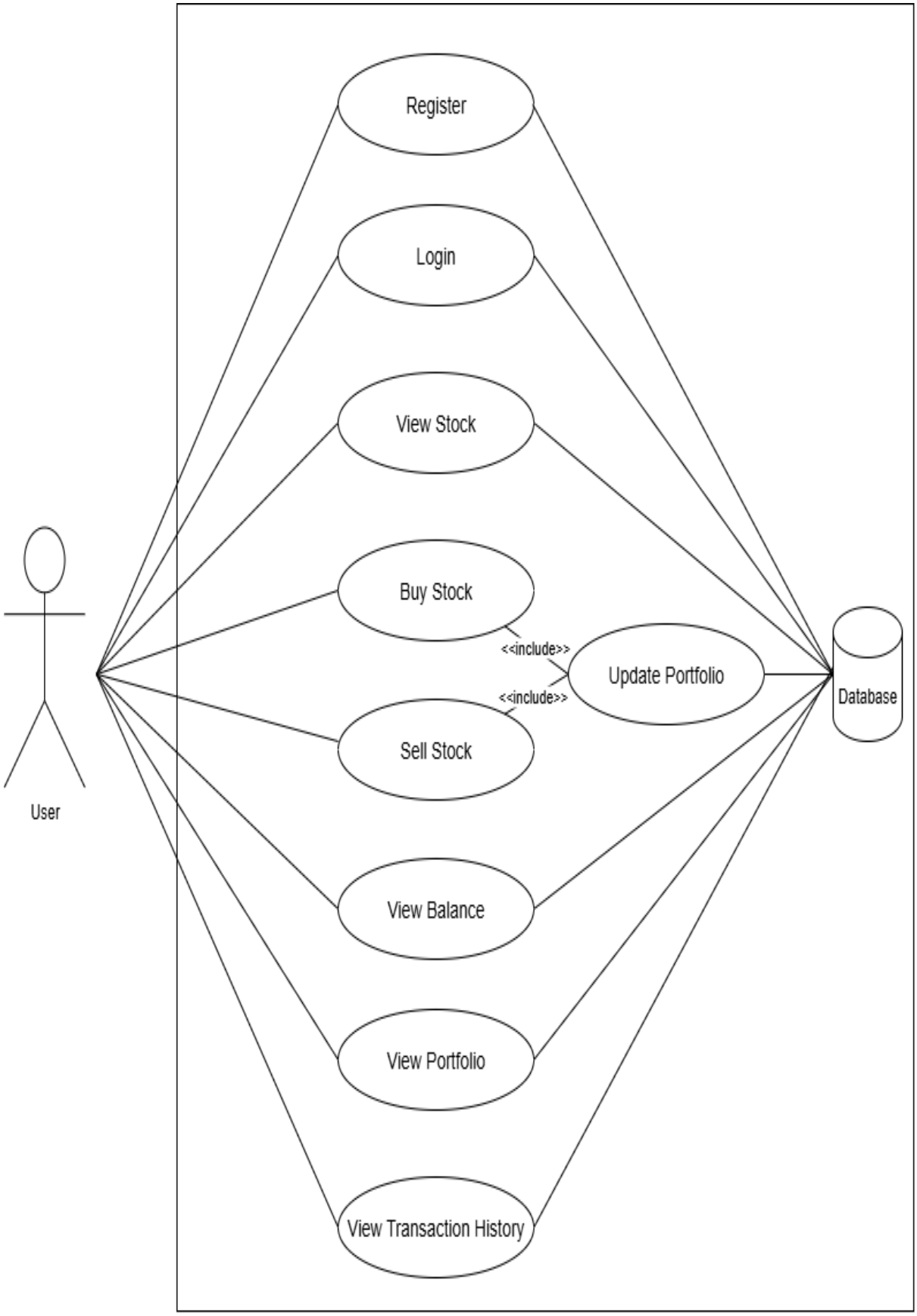


4.3 Data Model :

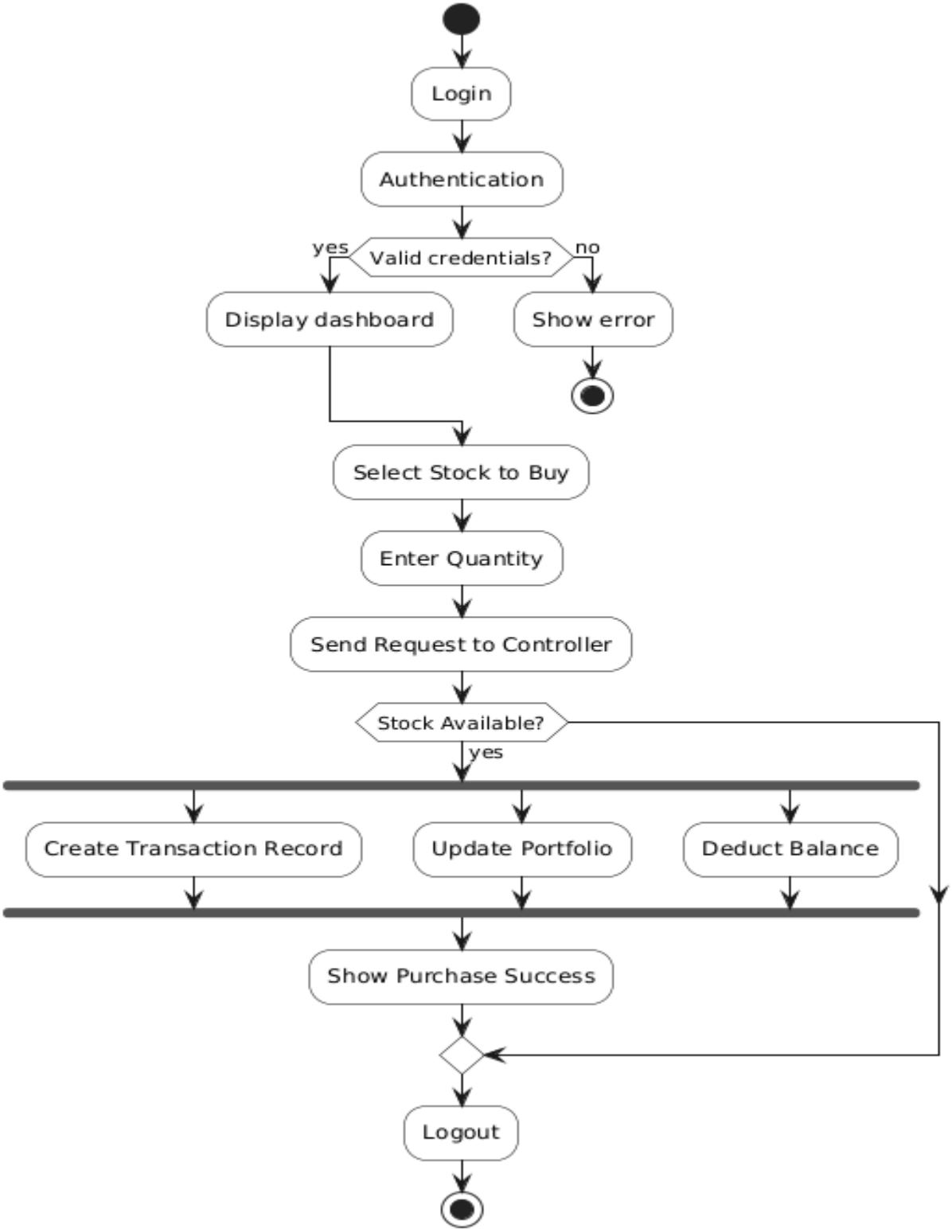
4.3.1 Class Diagram:



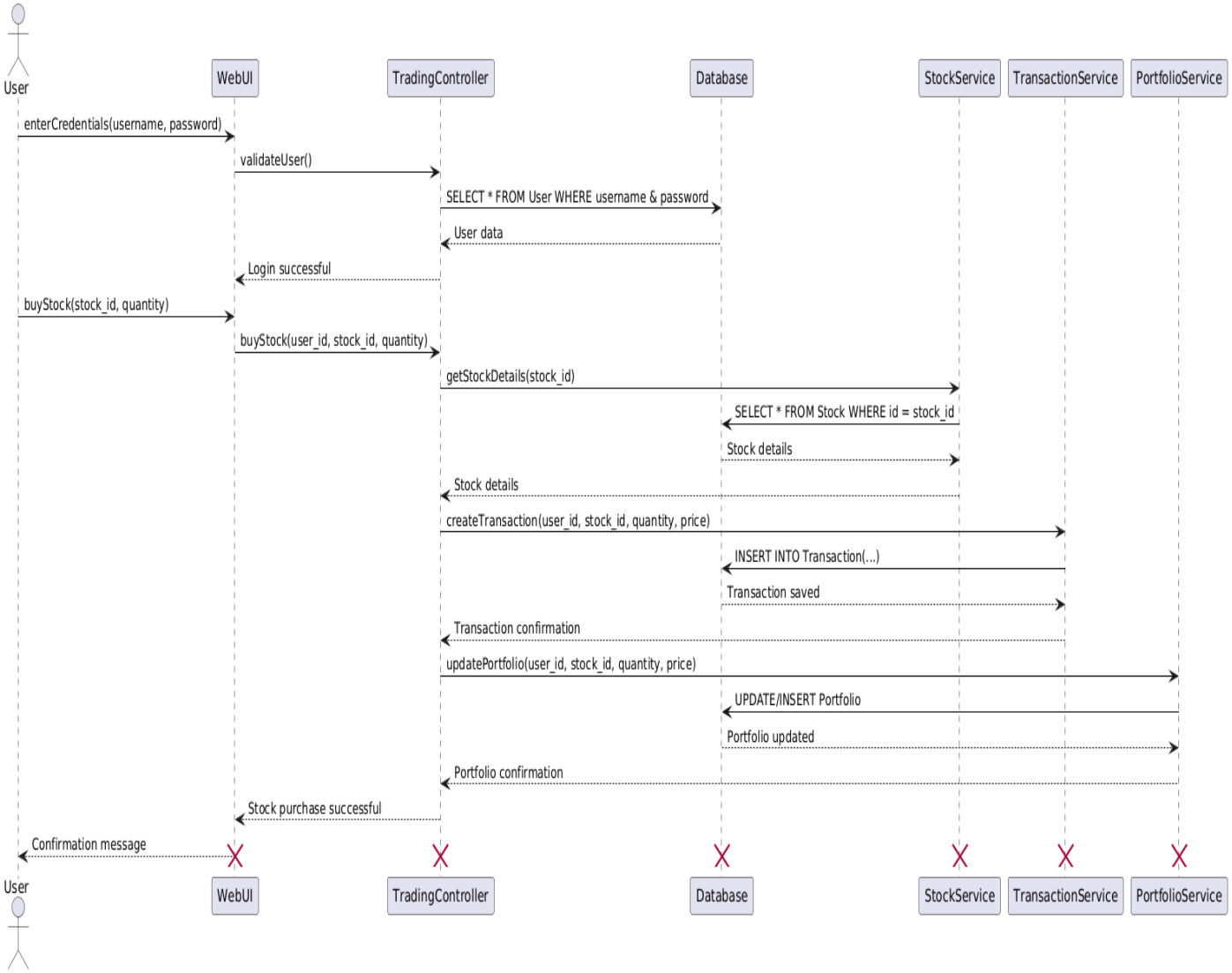
4.3.2 Use Case Diagram:



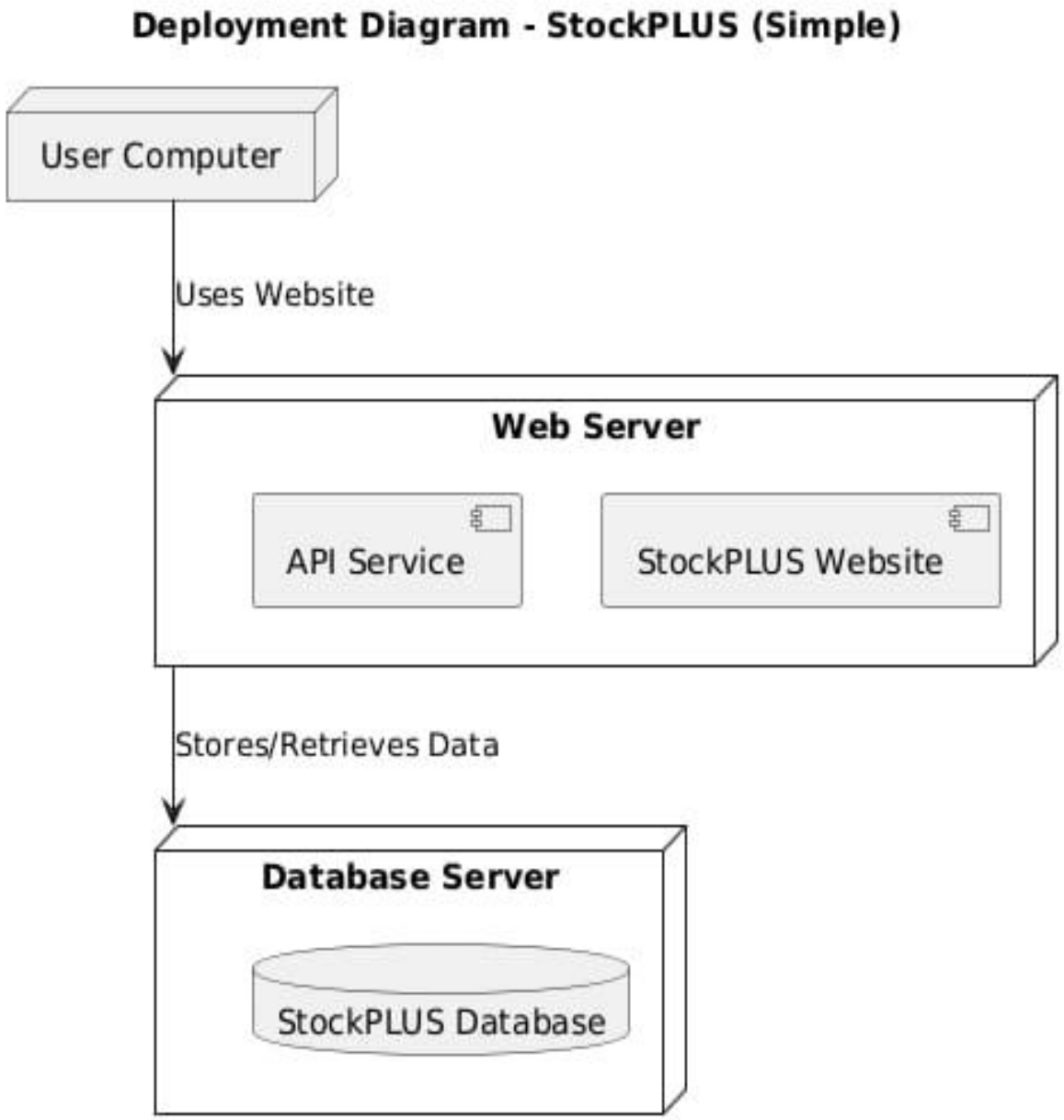
4.3.3 Activity Diagram:



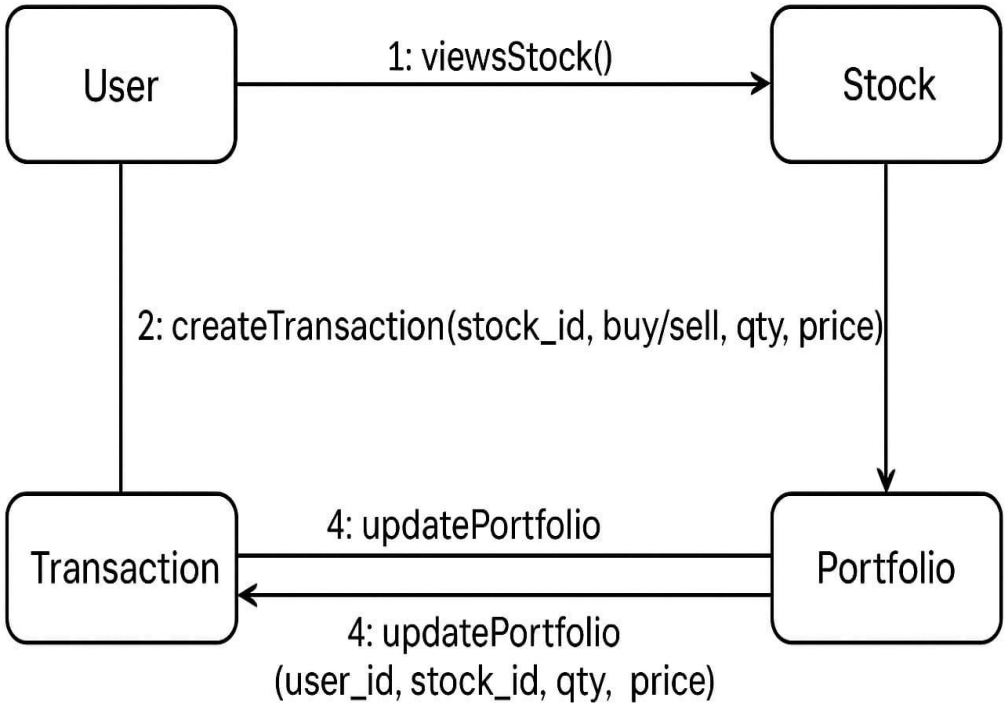
4.3.4 Sequence Diagram:



4.3.5 Deployment Diagram:

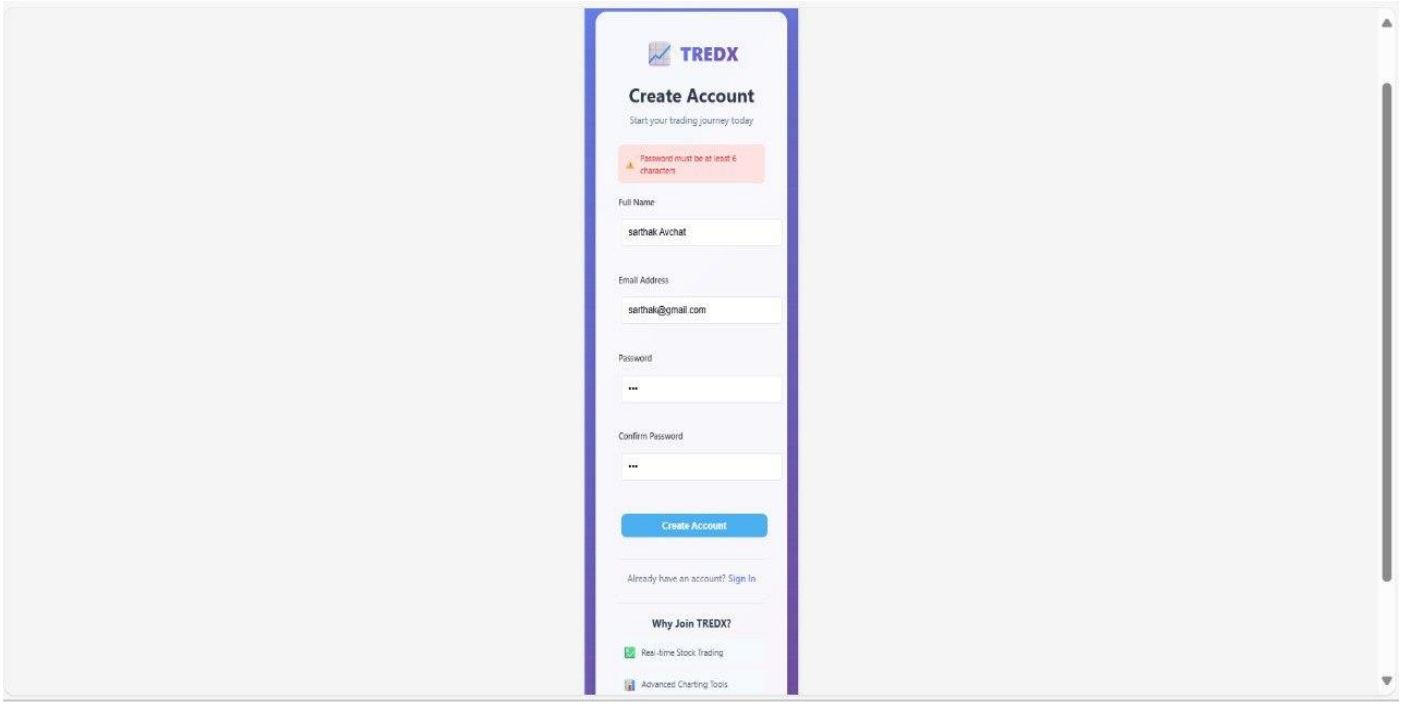


4.3.6 CollaborationDiagram:

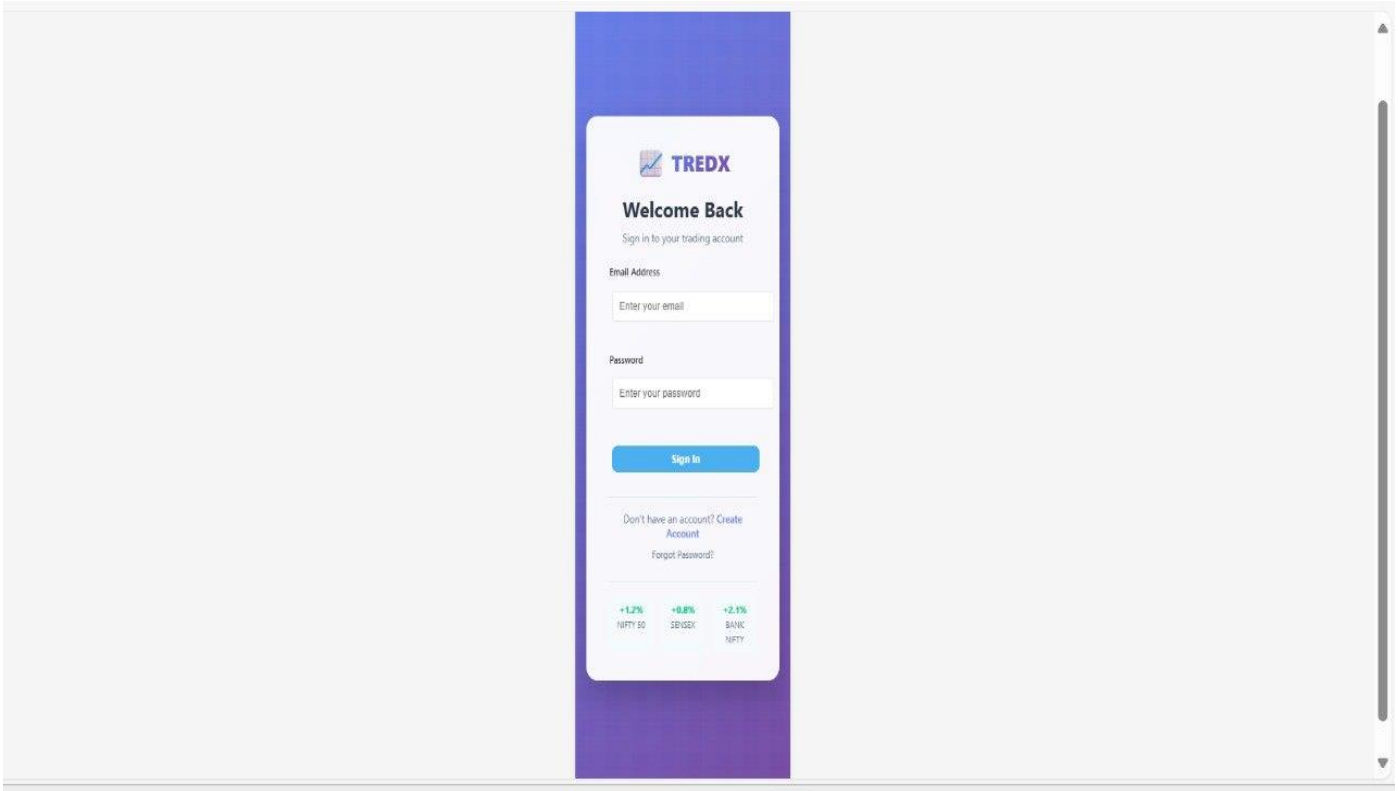


4.4 User Interfaces:

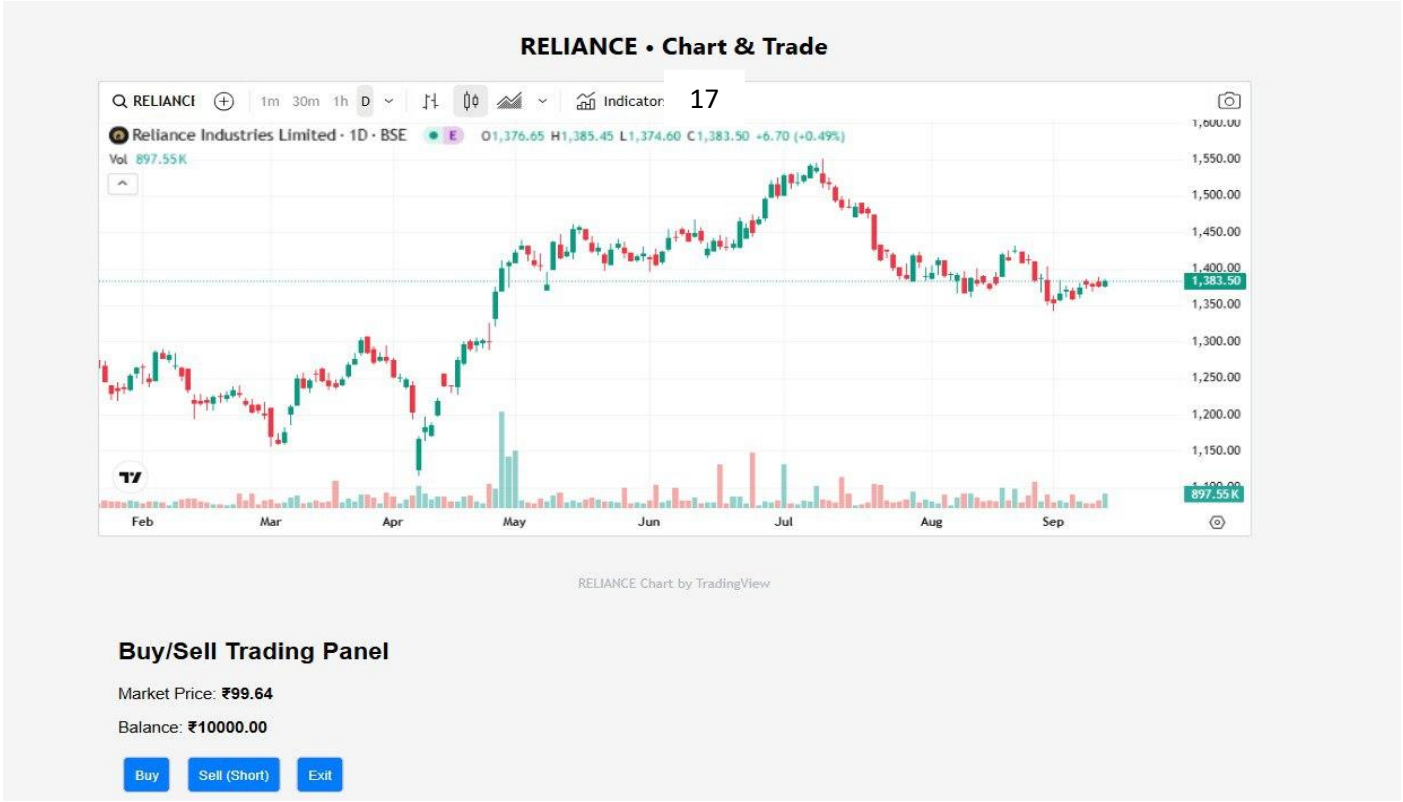
4.4.1 Create Account:



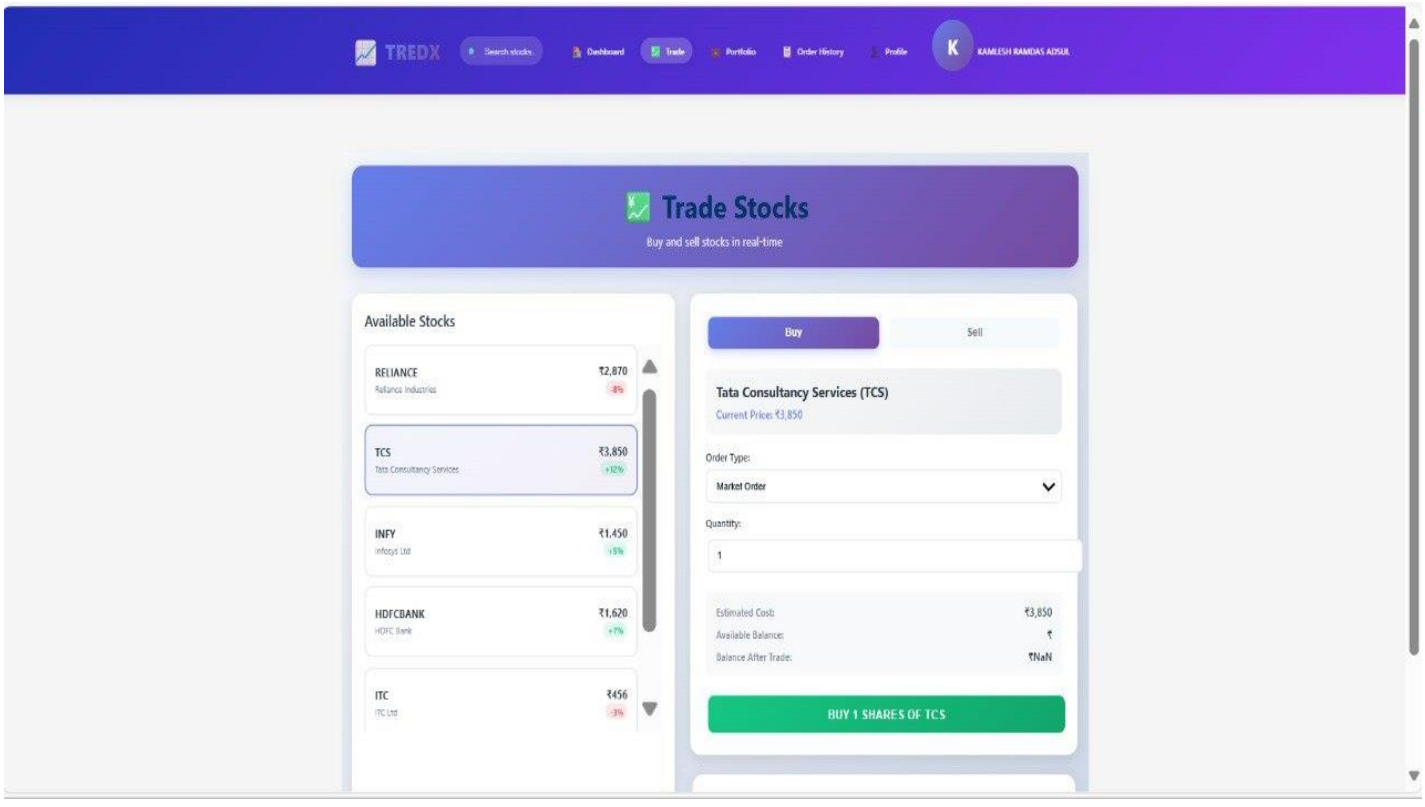
4.4.2 Login:



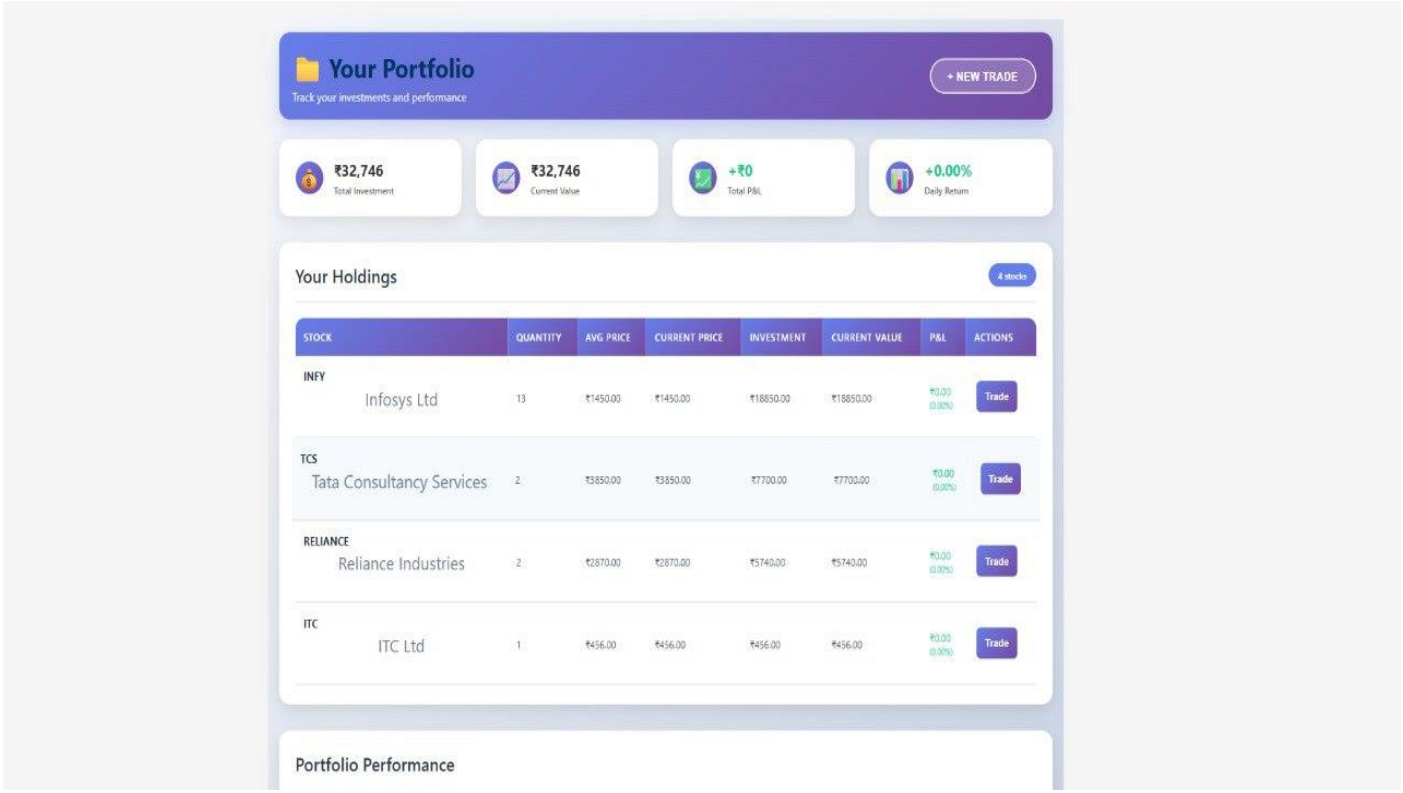
4.4.3 Chart:



4.4.4 Trade Stocks:



4.4.5 Portfolio:



CHAPTER 5:
IMPLEMENTATION DETAILS

5.1 Software Requirements;

- Operating System: Windows 10/11, Linux, or macOS
- Frontend: HTML, CSS, JavaScript (optional: React or Bootstrap)
- Backend: Node.js and Express.js
- Database: MongoDB (Atlas)
- Web Server: Node.js runtime (for Node backend)
- Code Editor: Visual Studio Code, Sublime Text, or similar
- Browser: Google Chrome, Firefox, or any modern web browser

5.2 Hardware Requirements:

- Processor: Minimum Intel i3 or equivalent (dual-core)
- RAM: Minimum 4 GB (8 GB recommended)
- Storage: At least 250 GB hard disk space
- Display: 13-inch or larger screen
- Internet: Required for API access and online testing
- Input Devices: Keyboard and Mouse

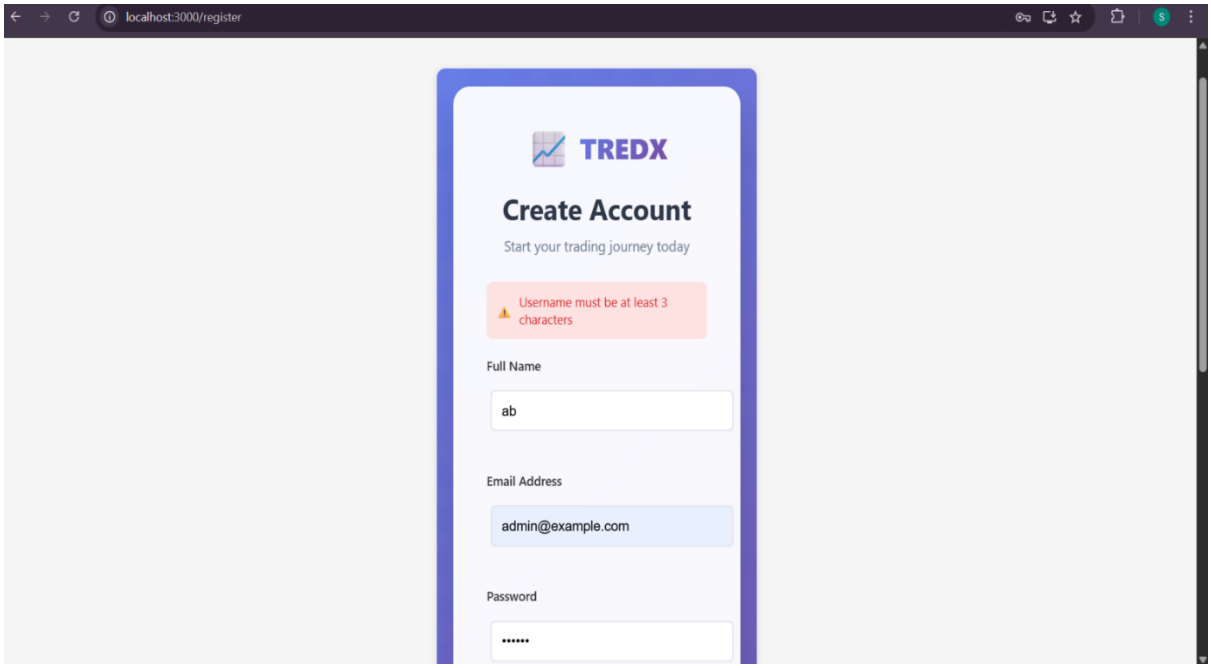
CHAPTER 6:
OUTPUTS AND REPORTS TESTING

6.1 Test Plan

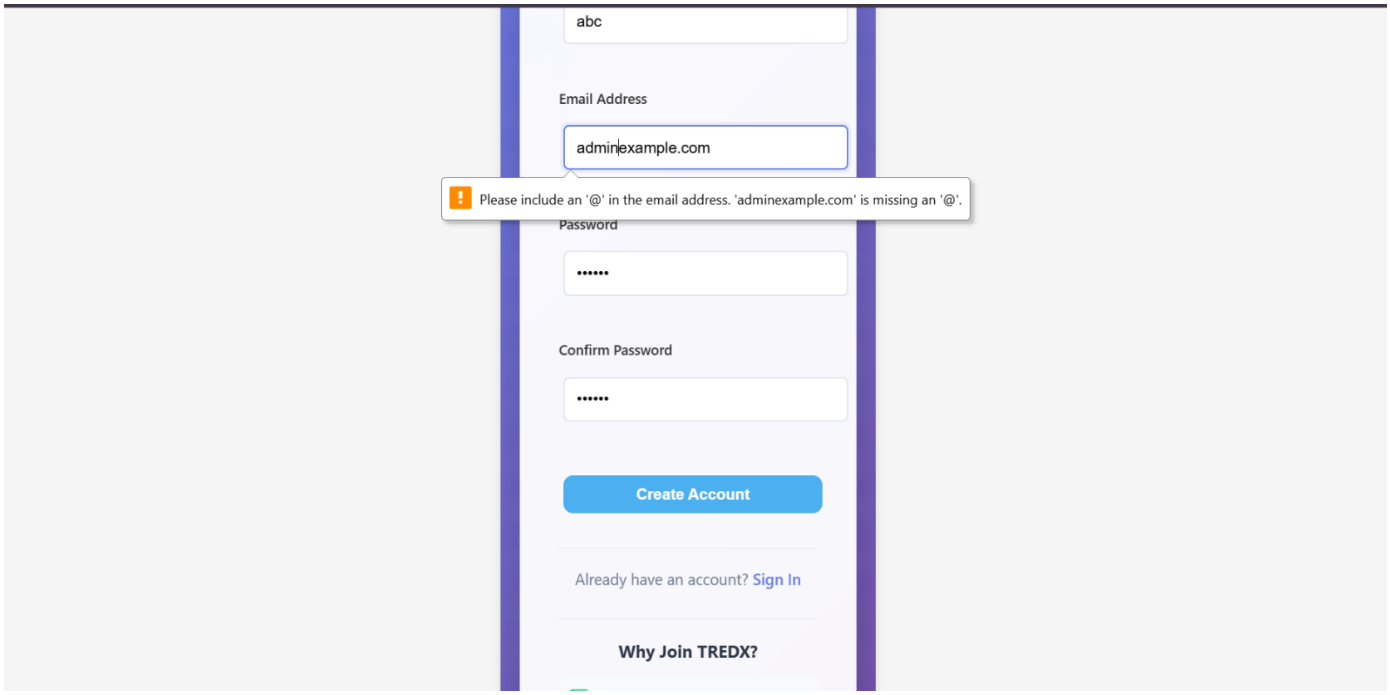
6.1.1 Black Box Testing:

Test Case ID	Test Description	Preconditions	Test Steps	Expected Results	Actual Results	Status	Remarks
BB-01	Check username length	Registration page open	Enter short username	Show username error	Error shown	Pass	OK
BB-02	Check email format	Registration page open	Enter invalid email	Show email error	Error shown	Pass	OK
BB-03	Check password length	Registration page open	Enter short password	Show password error	Error shown	Pass	OK
BB-04	Valid login	User registered	Enter valid login	Dashboard loads	Loaded	Pass	OK
BB-05	Invalid login	User registered	Enter wrong login	Show error	Error shown	Pass	OK
BB-06	Insufficient funds	User logged in	Buy stock with low balance	Show alert	Alert shown	Pass	OK

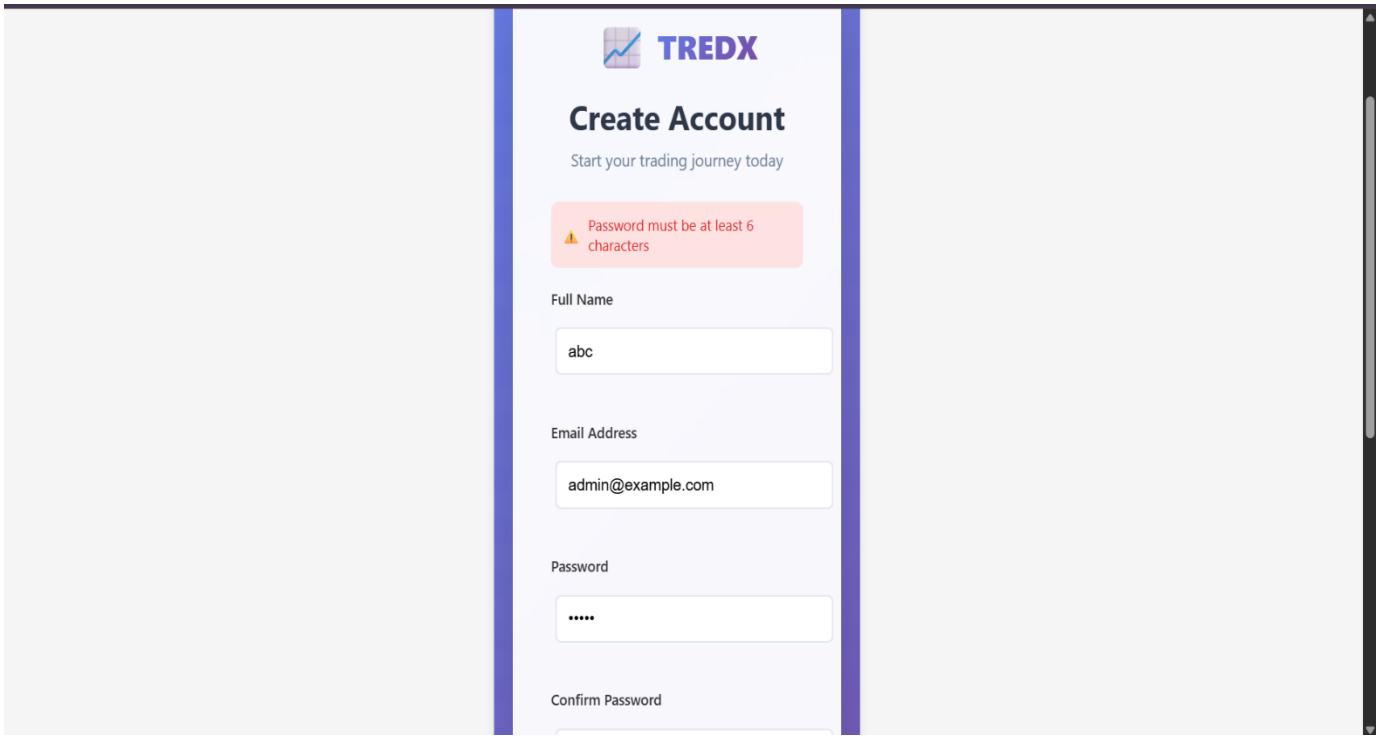
BB-1:



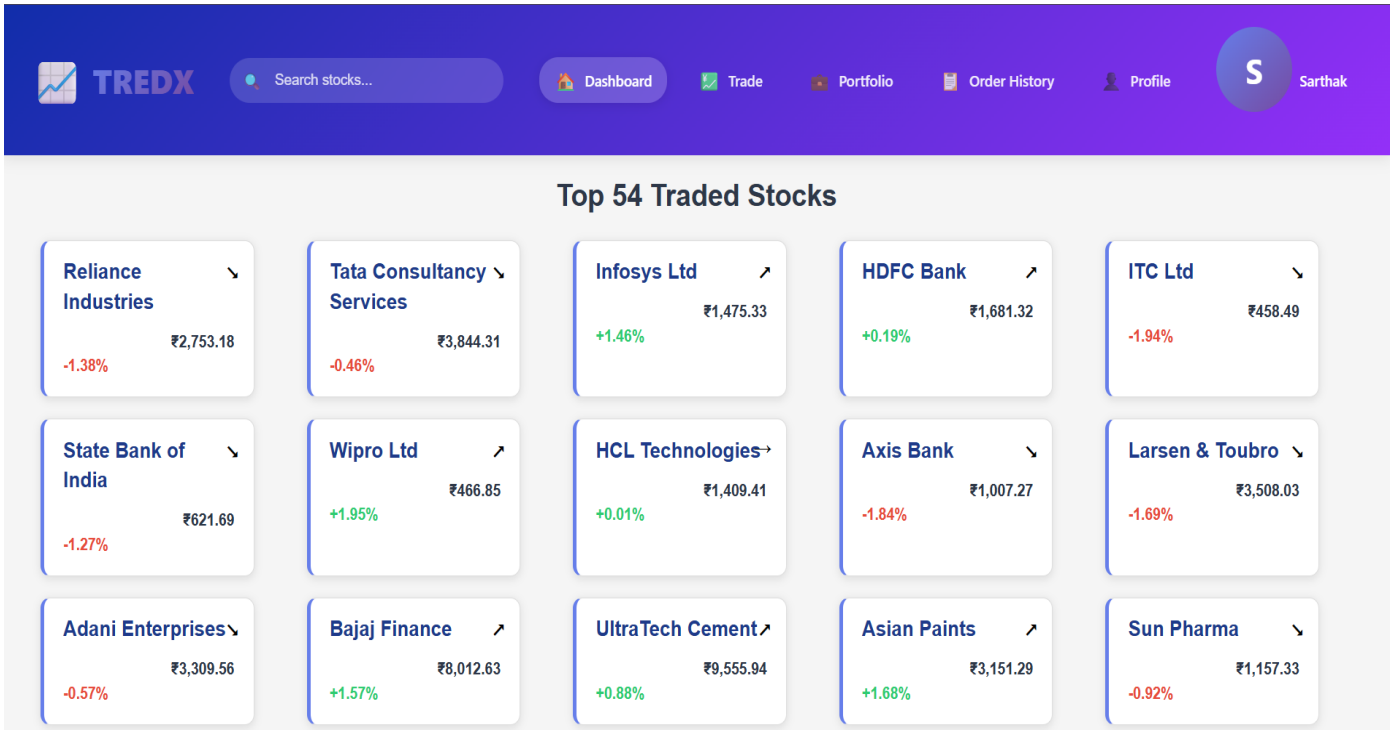
BB-02:


abc
Email Address
adminexample.com
Please include an '@' in the email address. 'adminexample.com' is missing an '@'.
Password
Confirm Password
Create Account
Already have an account? Sign In
Why Join TREDX?

BB-03:


TREDX
Create Account
Start your trading journey today
Password must be at least 6 characters
Full Name
abc
Email Address
admin@example.com
Password
Confirm Password

BB-04:


TREDX
Search stocks...
Dashboard
Trade
Portfolio
Order History
Profile
S
Sarthak
Top 54 Traded Stocks
Reliance Industries
₹2,753.18
-1.38%
Tata Consultancy Services
₹3,844.31
-0.46%
Infosys Ltd
₹1,475.33
+1.46%
HDFC Bank
₹1,681.32
+0.19%
ITC Ltd
₹458.49
-1.94%
State Bank of India
₹621.69
-1.27%
Wipro Ltd
₹466.85
+1.95%
HCL Technologies
₹1,409.41
+0.01%
Axis Bank
₹1,007.27
-1.84%
Larsen & Toubro
₹3,508.03
-1.69%
Adani Enterprises
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-0.57%
Bajaj Finance
₹8,012.63
+1.57%
UltraTech Cement
₹9,555.94
+0.88%
Asian Paints
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+1.68%
Sun Pharma
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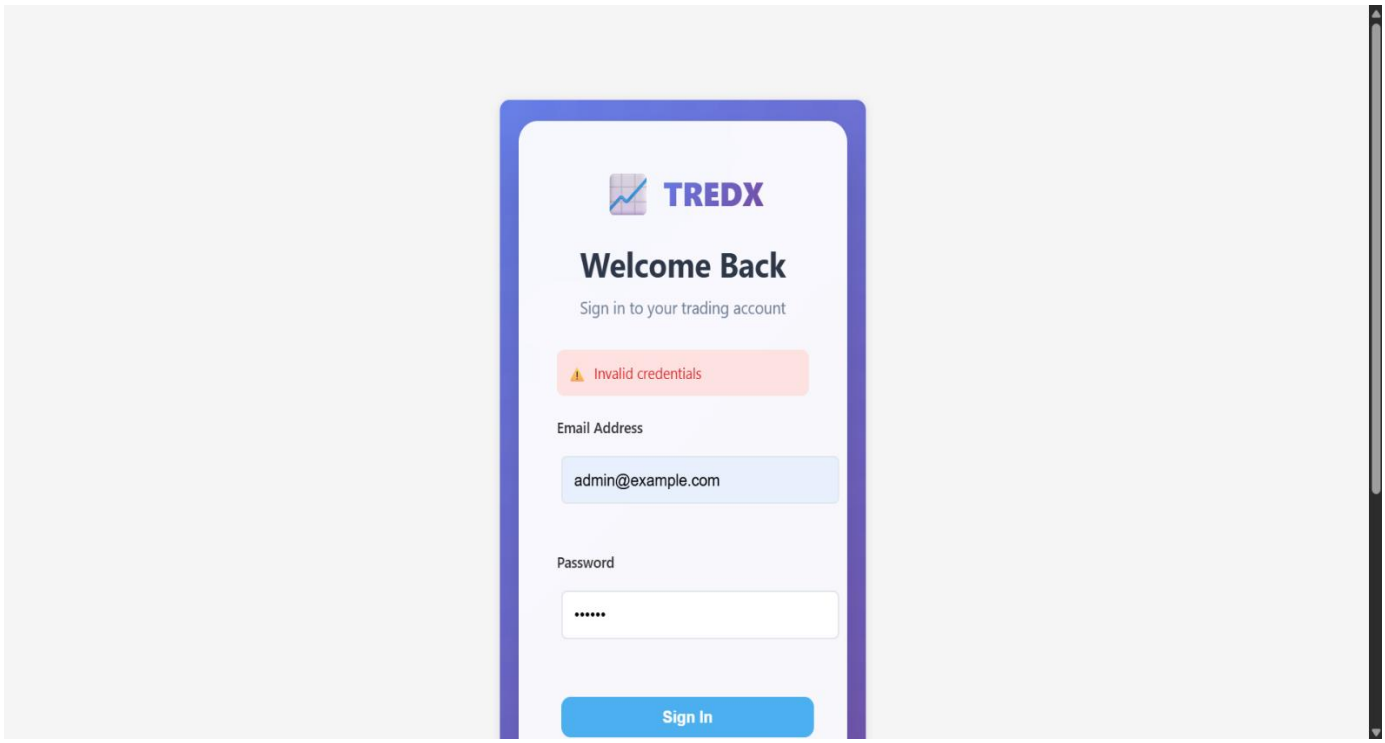
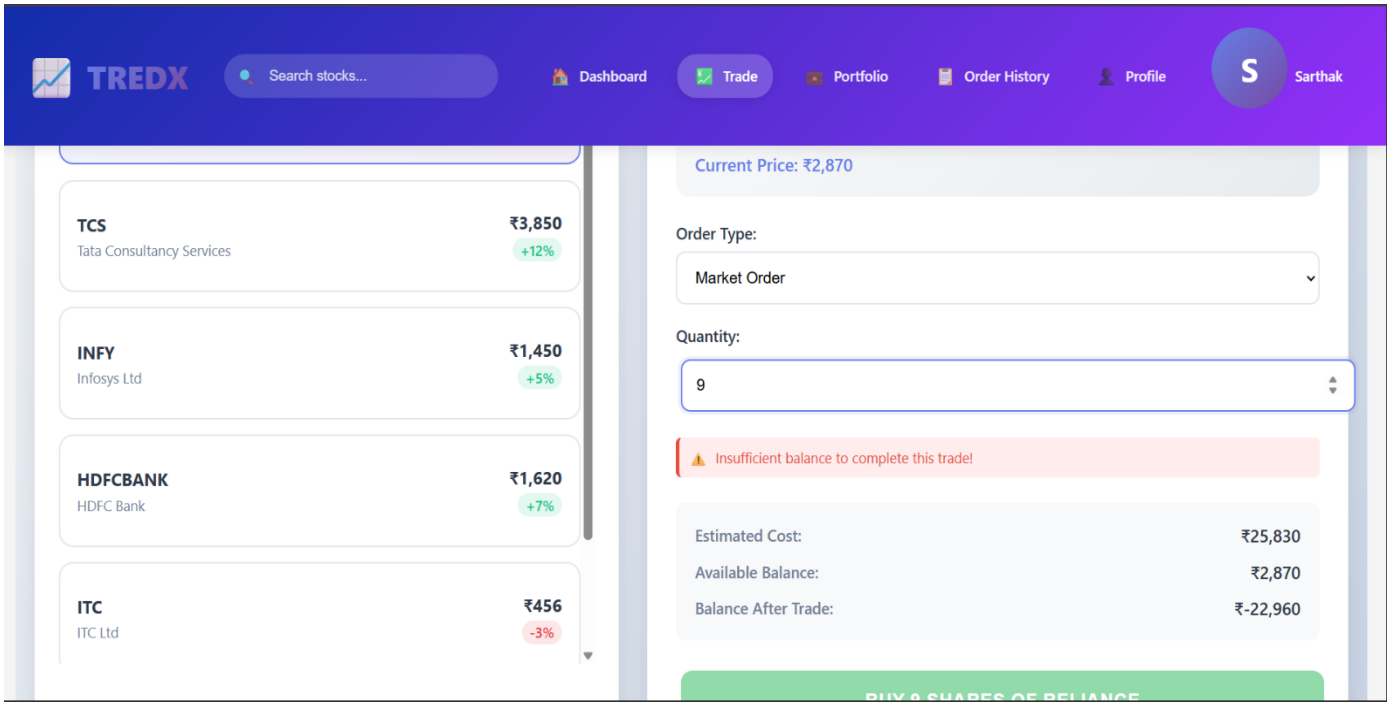
-0.92%

BB-05:


TREDX
Welcome Back
Sign in to your trading account
Invalid credentials
Email Address
admin@example.com
Password
Sign In

BB-06:



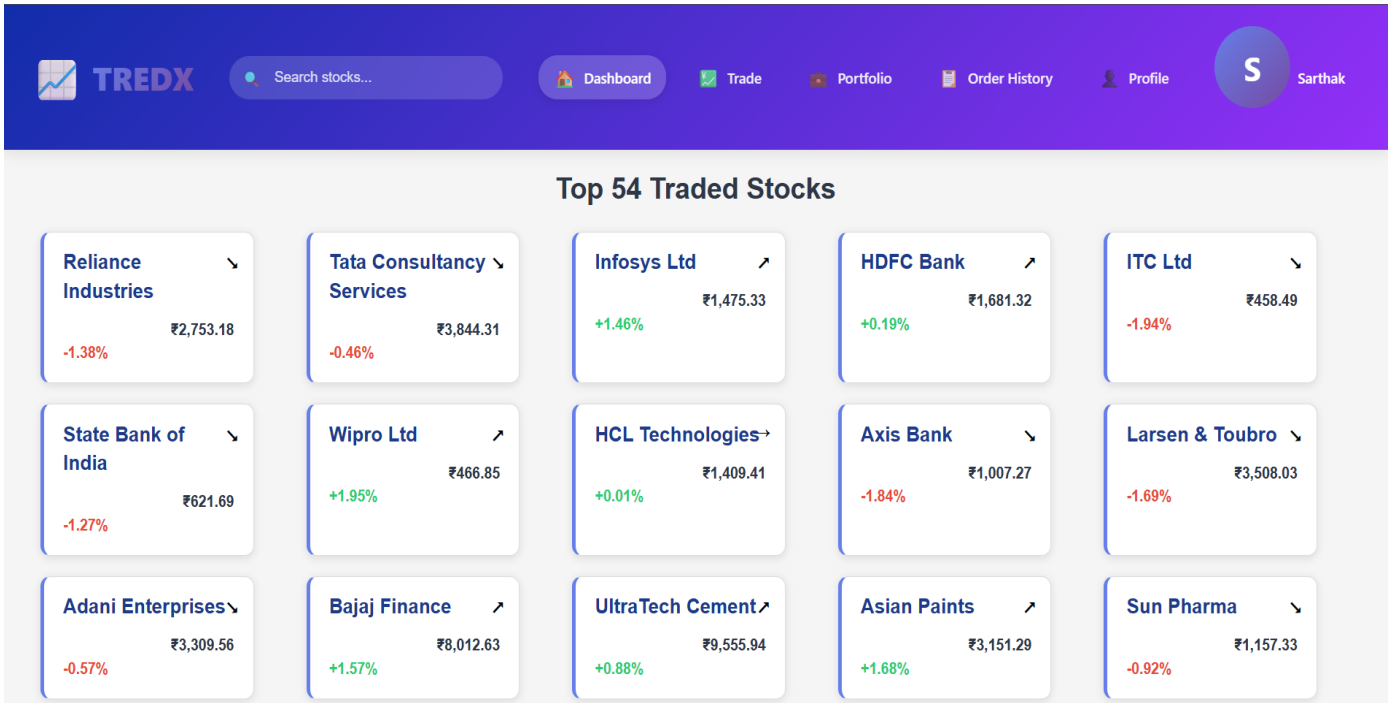
Issues and Bug Reports:

Issue ID	Description	Severity	Priority	Status	Remarks
BB-I01	Email not validated properly	Medium	High	Fixed	Validation updated
BB-I02	Password accepted spaces	Low	Medium	Fixed	Trim added
BB-I03	Dashboard load delay	Medium	Medium	Resolved	Improved speed

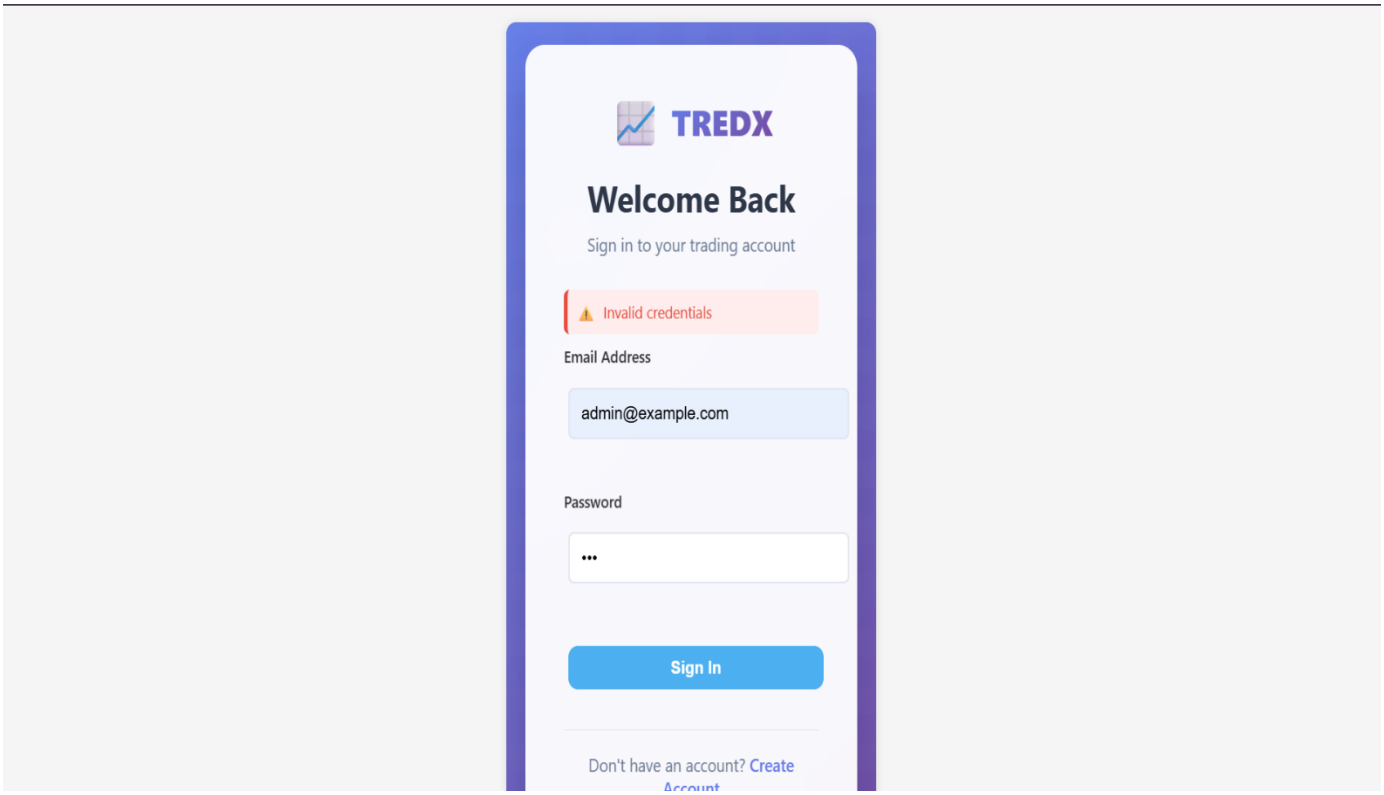
6.1.2 White Box Testing:

Test Case ID	Test Description	Preconditions	Test Steps	Expected Results	Actual Results	Status	Remarks
WB-01	Successful login	User exists	Enter valid data	Dashboard loads	Loaded	Pass	OK
WB-02	Failed login	Invalid data	Enter wrong password	Show error	Error shown	Pass	OK
WB-03	Profit display	Portfolio ready	View portf 30	Profit in green	Shown	Pass	OK
WB-04	Loss display	Portfolio ready	View portfolio	Loss in red	Shown	Pass	OK
WB-05	Buy stock	Logged-in user	Click buy	Stock added	Added	Pass	OK
WB-06	Sell stock	Owns stock	Click sell	Stock removed	Removed	Pass	OK

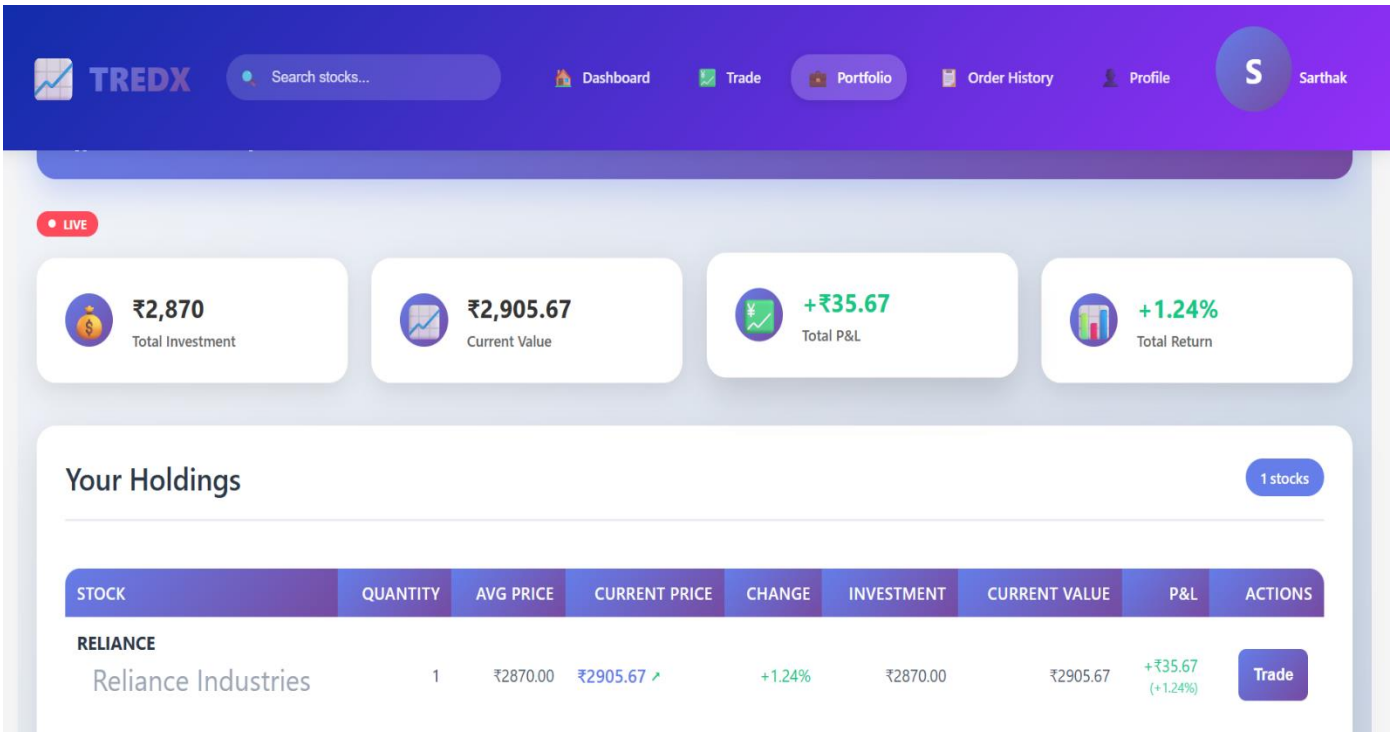
WB-01:



WB-02:


TREDX
Welcome Back
Sign in to your trading account
Invalid credentials
Email Address
admin@example.com
Password
Sign In
Don't have an account? Create

WB-03:


TREDX
Search stocks...
Dashboard
Trade
Portfolio
Order History
Profile
S
Sarthak
LIVE
₹2,870
Total Investment
₹2,905.67
Current Value
+₹35.67
Total P&L
+1.24%
Total Return
Your Holdings
1 stocks
STOCK
QUANTITY
AVG PRICE
CURRENT PRICE
CHANGE
INVESTMENT
CURRENT VALUE
P&L
ACTIONS
RELIANCE
Reliance Industries
1
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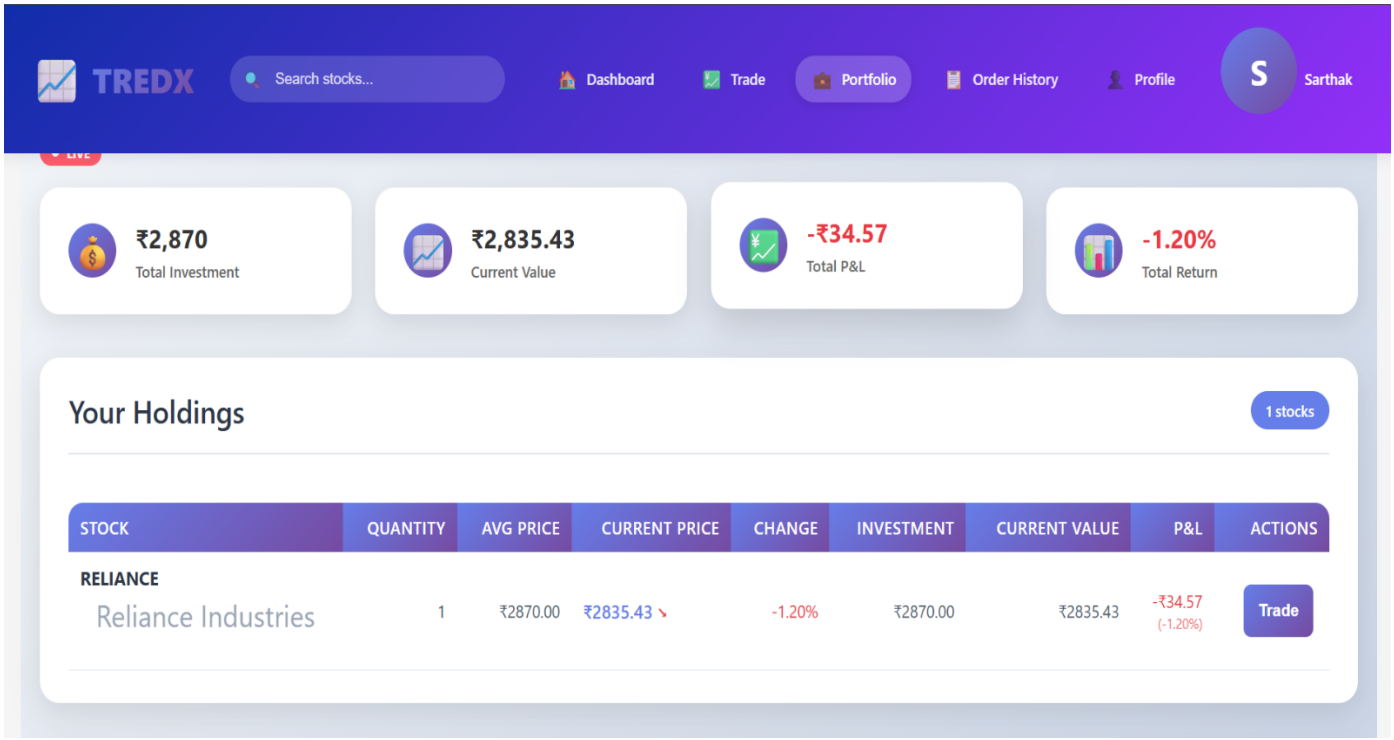
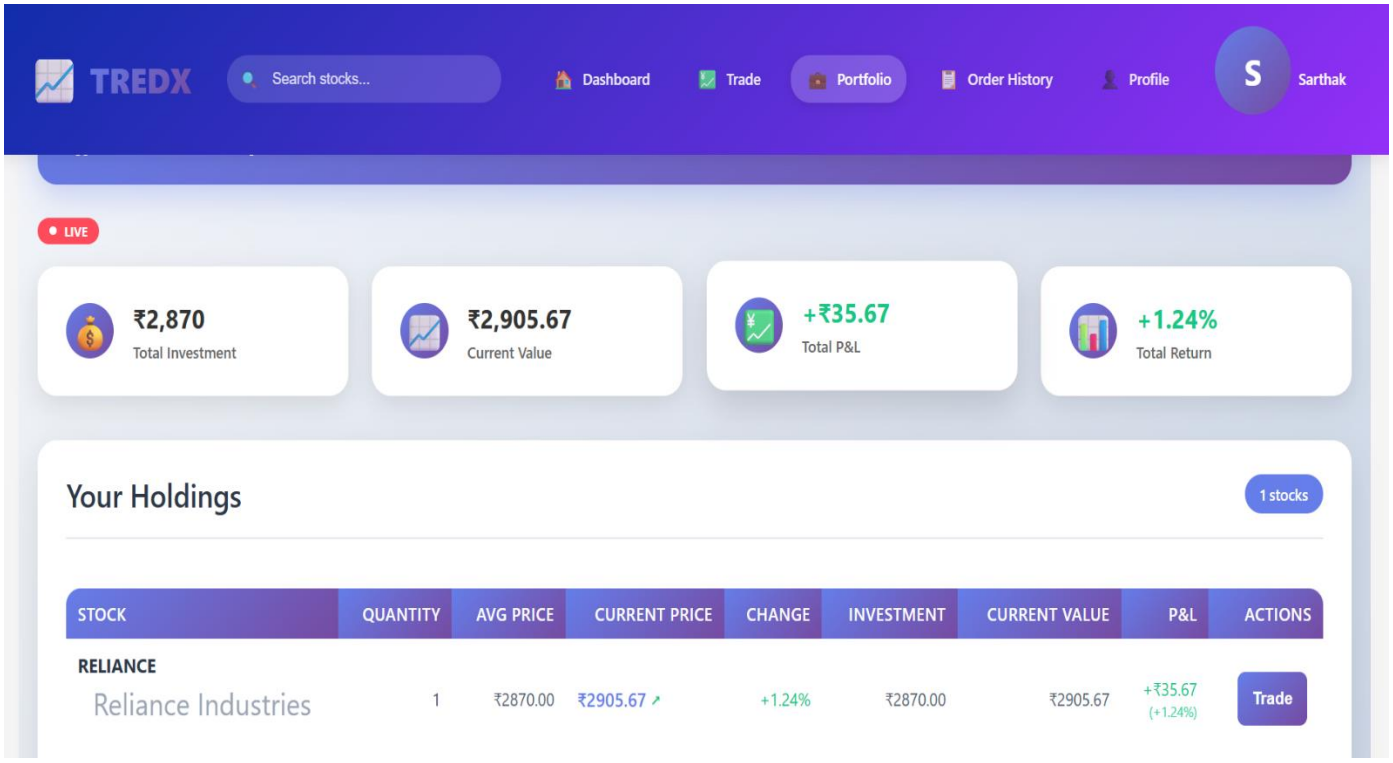
₹2905.67
+1.24%
₹2870.00
₹2905.67
+₹35.67
(+1.24%)
Trade

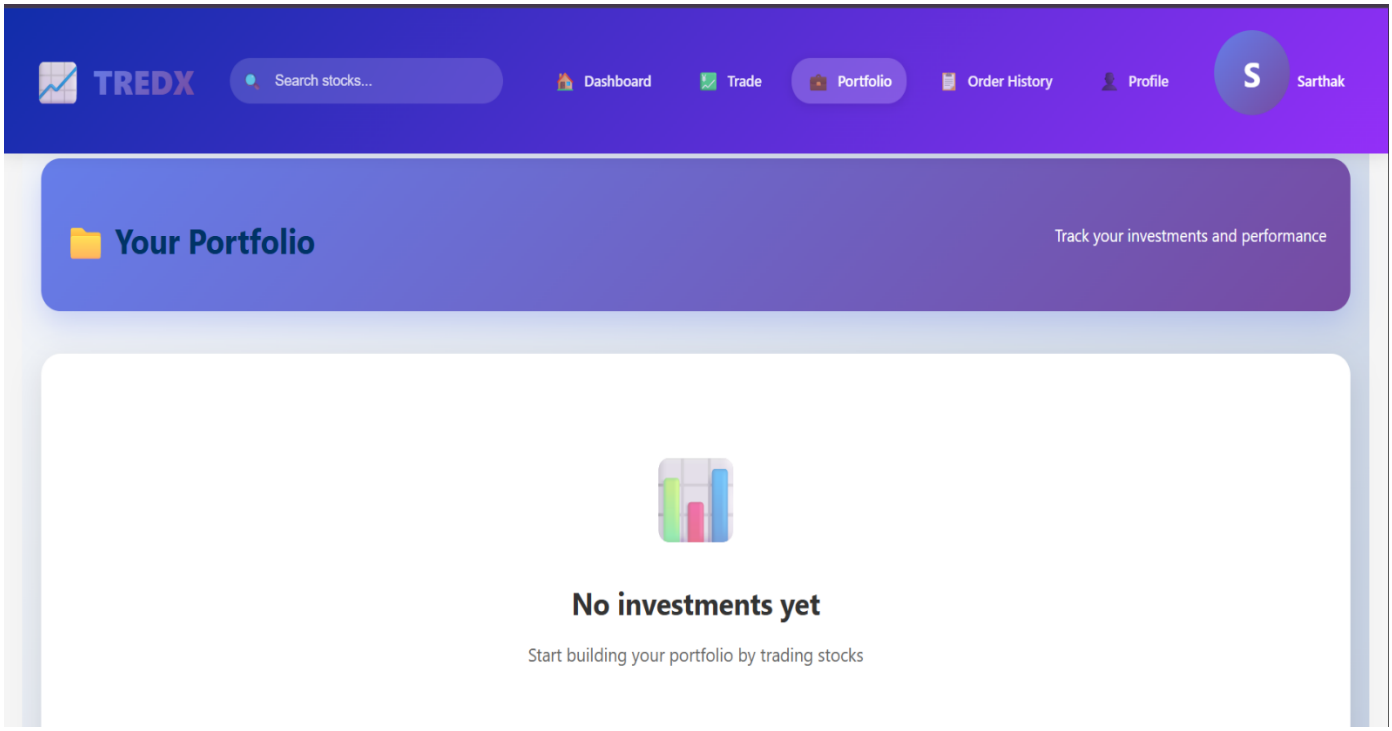
WB-04:


TREDX
Search stocks...
Dashboard
Trade
Portfolio
Order History
Profile
S
Sarthak
₹2,870
Total Investment
₹2,835.43
Current Value
-₹34.57
Total P&L
-1.20%
Total Return
Your Holdings
1 stocks
STOCK
QUANTITY
AVG PRICE
CURRENT PRICE
CHANGE
INVESTMENT
CURRENT VALUE
P&L
ACTIONS
RELIANCE
Reliance Industries
1
₹2870.00
₹2835.43
-1.20%
₹2870.00
₹2835.43
-₹34.57
(-1.20%)
Trade

WB-05:


TREDX
Search stocks...
Dashboard
Trade
Portfolio
Order History
Profile
S
Sarthak
LIVE
₹2,870
Total Investment
₹2,905.67
Current Value
+₹35.67
Total P&L
+1.24%
Total Return
Your Holdings
1 stocks
STOCK
QUANTITY
AVG PRICE
CURRENT PRICE
CHANGE
INVESTMENT
CURRENT VALUE
P&L
ACTIONS
RELIANCE
Reliance Industries
1
₹2870.00
₹2905.67
+1.24%
₹2870.00
₹2905.67
+₹35.67
(+1.24%)
Trade

WB-06:



Issues and Bug Reports:

Issue ID	Description	Severity	Priority	Status	Remarks
WB-I01	Portfolio color not updating	Low	Low	Fixed	Added refresh
WB-I02	Stock not removed after sell	High	High	Fixed	Backend logic corrected
WB-I03	Login delay	Medium	Medium	Resolved	Optimized API

CHAPTER 7:
CONCLUSION
AND
RECOMMENDATIONS

7.1 Conclusion

StockPlus is a simple, secure, and user-friendly trading application that helps both beginners and experienced users simulate stock trading. It provides real-time data, portfolio management, and trading features to make learning and practice easier. While this version does not support real-money trading, it creates a strong base for future development into a full trading platform.

7.2 Recommendations

In future versions, StockPlus can be improved by adding real trading features through integration with stock brokers and financial APIs. A mobile app version can provide better access and notifications. Security can be strengthened with two-factor authentication and data encryption. More technical indicators and analysis tools should be included for advanced users, while built-in tutorials can help beginners. AI and machine learning can also be used for smart predictions and portfolio suggestions.

CHAPTER 8:
FUTURE SCOPE

8.1 Future Scope:

The **S**tockPlus application is designed with flexibility in mind, allowing it to be improved and expanded in future versions. Below are some possible future enhancements:

- Real-Time Trading Integration:
  In the future, StockPlus can be connected with actual stock brokerage APIs to allow real-money trading, not just simulation.
- Mobile Application Development:
  A dedicated Android and iOS mobile app can be developed to improve accessibility and provide real-time alerts and notifications.
- AI-Based Recommendations:
  Artificial Intelligence and Machine Learning can be used to provide personalized stock suggestions and risk analysis based on user activity.
- News and Market Sentiment Analysis:
  Integration with financial news and sentiment tracking tools can help users make informed decisions based on real-world events.
- Multi-Currency and International Market Support:
  Future versions can support international stock exchanges and allow users to trade in multiple currencies.
- Educational Resources:
  Built-in tutorials, beginner courses, quizzes, and simulations can be added to help users learn how the stock market works.
- Two-Factor Authentication (2FA):
  Adding extra security features like 2FA will make the platform safer for users.

CHAPTER 9: BIBLIOGRAPHY AND REFERENCES

9.1 References

- https://www.zerodha.com – For understanding Zerodha's features and trading system
- https://www.upstox.com – For studying Upstox’s user interface and tools
- https://www.groww.in – For learning about beginner-friendly trading apps