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TradeMonk – The Integrated Social Trading Platform

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ABSTRACT

The project "TradeMonk – The Integrated Social Trading Platform" is designed to provide users with a unified environment for trading, learning, and community engagement in the stock market. The platform enables users to buy and sell stocks, manage their portfolios, and analyze market performance through a visual analytics dashboard that presents real-time insights. TradeMonk also features a Community Discussion Forum where users can exchange ideas and strategies, and a Learning Module offering in-depth articles and tutorials to enhance financial literacy. By integrating social interaction, educational resources, and analytical tools, TradeMonk bridges the gap between learning and practical trading, empowering users to make informed decisions.

Keywords: ***Stock Market, Trading Platform, Analytics Dashboard, Community Forum, Learning Module, Financial Education, Investment, Web Application***

I. INTRODUCTION

The stock market has always been one of the most dynamic and influential sectors of the global economy, offering immense opportunities for wealth creation but also presenting substantial risks. In the digital era, the rise of online trading platforms has transformed how individuals interact with the financial markets, enabling real-time access to data, automated trading, and global connectivity. However, despite this technological progress, many traditional trading systems remain complex for beginners, lacking effective educational resources and social support for learning and decision-making.

TradeMonk – The Integrated Social Trading Platform addresses these challenges by combining trading functionalities with educational and community-driven features in one unified system. The platform aims to simplify the investment process by allowing users not only to buy and sell stocks but also to learn trading strategies, analyze market data visually, and collaborate with other investors. This integration of learning, analytics, and community participation creates an inclusive ecosystem that supports both novice and experienced traders.

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II. METHODOLOGY

a) Hardware Requirements

- Computer or server to host the website
- Internet connectivity for cloud integration (optional)

b) Software Requirements

Technologies Used

- **Frontend:** HTML5, CSS3, JavaScript, React.js
- **Backend:** Node.js, Express.js
- **Database:** MongoDB
- **APIs:** Stock Market API (e.g., Alpha Vantage or Yahoo Finance API)
- **Data Visualization:** Chart.js / D3.js
- **Authentication:** JWT (JSON Web Token) / Firebase Authentication
- **Version Control:** Git, GitHub
- **Development Tools:** Visual Studio Code, Postman
- **Hosting / Deployment:** AWS / Render / Vercel
- **Browser Compatibility:** Google Chrome, Microsoft Edge, Mozilla Firefox

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FUNCTIONAL REQUIREMENTS / SYSTEM FLOW

Working of the Project

1. **User Registration and Authentication**
    - New users create an account using their email and password or social login.
    - The system stores user data securely in the database using encryption.
    - Returning users can log in and access personalized dashboards.
2. **Home Dashboard / Landing Page**
    - Once logged in, users are redirected to the main dashboard.

- It provides quick access to features such as Buy/Sell Stocks, Analytics, Community Forum, and Learning Module.
- Real-time market summaries and portfolio snapshots are displayed.

3. **Stock Buying and Selling Module**
   - Users can search for specific company stocks from live market data or a simulated stock API.
   - Each stock card displays details such as price, change percentage, and historical trend.
   - On selecting a stock, users can execute buy or sell transactions.
   - All transactions are recorded in the user's virtual wallet and portfolio database.
4. **Portfolio Management and Transaction History**
   - The portfolio section lists all owned stocks, purchase prices, current values, and profit/loss ratios.
   - Users can filter, compare, or visualize performance over time.
   - A transaction log maintains all buy/sell activity for future analysis.
5. **Visual Analytics Dashboard**
   - The dashboard uses Chart.js or D3.js to visualize stock performance and market trends.
   - Interactive graphs display user portfolio growth, stock performance, and comparative metrics.
   - Data is updated dynamically using APIs for a real-time experience.
6. **Community Discussion Forum**
   - A social space where users can post queries, opinions, and investment suggestions.
   - Other members can reply, upvote, or follow discussions.
   - Expert traders can share insights and guide new investors, encouraging collaborative learning.
7. **Learning Module**
   - Contains categorized educational articles, tutorials, and guides about stock markets, trading strategies, and risk management.
   - Designed for Beginner, Intermediate, and Advanced levels.
   - Includes short quizzes and examples to reinforce understanding.
8. **Notification and Feedback System**
   - Users receive notifications about major market updates, stock price changes, or replies in discussions.
   - The system gathers user feedback to improve recommendations and learning paths.
9. **Admin Panel (optional)**

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- Admin manages content for learning modules, monitors forum discussions, and updates market data APIs.
- Ensures smooth functioning and moderation of the platform.

10. **Logout and Session Handling**
    - After completing activities, users can log out securely.
    - Session tokens are cleared to protect privacy and data integrity.

FIGURES : SYSTEM FLOWCHARTS

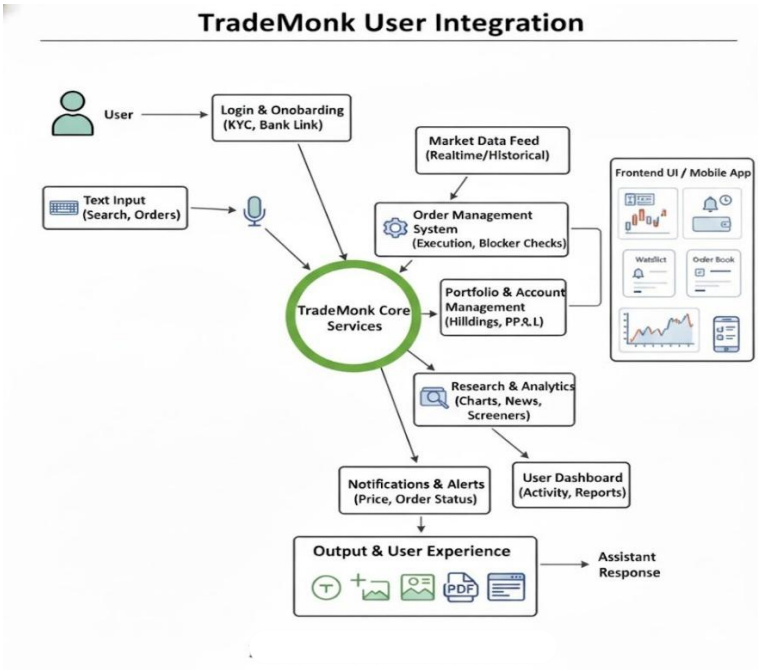

Figure 1: TradeMonk User Flow

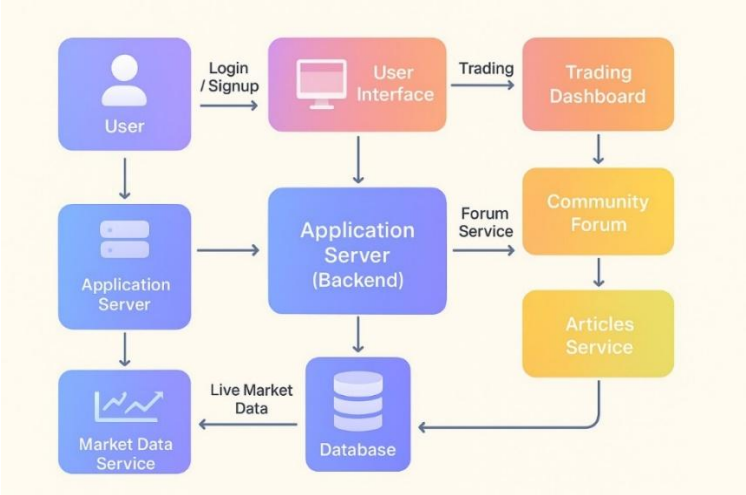

Figure 2: TradeMonk User Flow

III. MODELING AND ANALYSIS

The modelling and analysis of TradeMonk – The Integrated Social Trading Platform focus on creating a modular, scalable, and user-centric system architecture that integrates trading, analytics, and learning functionalities seamlessly. The platform is modelled using a three-tier architecture consisting of the user interface (frontend), application logic (backend), and data management (database). Data flow diagrams and system models illustrate how user inputs—such as stock trades or forum posts—are processed through the backend using Node.js and stored in MongoDB for retrieval and visualization. The analytics module utilizes APIs to fetch live market data and render real-time visualizations through Chart.js, while the learning and community modules interact dynamically with the central database to maintain engagement and personalized content. This structured modelling ensures efficient performance, data security, and smooth user interaction across all modules of the platform.

IV. RESULT AND DISCUSSION

The implementation of TradeMonk – The Integrated Social Trading Platform demonstrated successful integration of trading simulation, analytics visualization, and social interaction within a single web-based environment. The platform effectively allowed users to buy and sell stocks, analyze portfolio performance, and engage in community discussions with minimal latency and high usability. The visual analytics dashboard provided clear insights into stock movements and portfolio trends, improving users' understanding of market behaviour. Feedback from test users indicated that the inclusion of a learning module and discussion forum significantly enhanced confidence and decision-making skills, particularly for beginners. Overall, the results confirm that TradeMonk's integrated approach not only simplifies stock trading but also fosters collaborative learning and data-driven investment practices.

V. CONCLUSION

TradeMonk – The Integrated Social Trading Platform effectively combines the key aspects of trading, analytics, and learning to create a unified solution for modern investors. The platform simplifies stock trading by offering an intuitive interface, real-time data visualization, and an interactive dashboard that helps users analyze and understand market movements. Its community discussion forum enables users to connect, share insights, and seek expert advice, promoting a collaborative and knowledge-driven trading environment.

Furthermore, the inclusion of a structured learning module bridges the gap between theoretical understanding and practical application. By integrating education, social interaction, and analytical tools, TradeMonk empowers both beginners and experienced traders to make informed financial decisions. The project sets a strong foundation for future developments such as AI-based trading suggestions, predictive analytics, and personalized learning paths, contributing to a smarter and more inclusive financial ecosystem

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VII. REFERENCES

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Portions of this research paper were drafted with the assistance of Artificial Intelligence (AI) tools. These tools were used only to enhance language clarity, structure, and formatting. All technical insights, system design elements, implementation decisions, experimental results, and conclusions are original contributions of the authors. The authors have ensured the accuracy, authenticity, and originality of the presented content.