SYNOPSIS REPORT

on

BULLRUN

by

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ABSTRACT

BULLRUN is an innovative web-based platform focused on simplifying the investment experience for individuals in the stock market. The platform is designed to provide users with key information and tools to effectively monitor and manage their investments, ensuring they stay updated on relevant market opportunities and trends. BULLRUN offers a seamless way to track portfolios, giving users a clear overview of their investment performance and financial growth over time.

One of the key features of the platform is its provision of weekly investment suggestions, which helps users make informed decisions by offering insights into potential market movements and opportunities. Additionally, BULLRUN provides comprehensive information on upcoming and on-going Initial Public Offerings (IPOs), allowing investors to stay informed about new stock listings and market entrants.

Targeted at both beginners and experienced investors, BULLRUN is designed to enhance the investment experience without overwhelming users with complex analytical tools. Instead, it focuses on providing relevant, easily accessible information to help investors make sound decisions and achieve long-term financial success. By prioritizing user-friendly features such as investment tracking, IPO information, and weekly guidance, BULLRUN empowers users to navigate the stock market with confidence.

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INTRODUCTION

A Comprehensive Investment Tracking and Stock Market Platform

BULLRUN is a cutting-edge web application built using the MERN stack (MongoDB, Express.js, React, and Node.js) designed to cater to the growing demand for efficient investment management and stock market insights. It serves as an all-in-one solution for investors, offering a seamless platform to track investments, monitor IPO information, and access real-time stock market data, similar to popular platforms. BULLRUN provides users with an intuitive interface and powerful features that simplify complex financial operations, making it an essential tool for both novice and experienced investors.

At its core, BULLRUN integrates multiple investment tracking features, enabling users to manage and monitor their portfolios with ease. The application allows users to input their stock purchases, monitor gains and losses, and evaluate their overall portfolio performance in real-time. The system provides detailed analytics and reports, helping users make informed investment decisions based on historical data, trends, and stock performance.

Another key feature of BULLRUN is its IPO tracking system. Users can stay updated on upcoming, ongoing, and recently closed Initial Public Offerings (IPOs), making it easy to capitalize on new market opportunities. The platform displays detailed information about each IPO, including the company's background, financials, and expected performance, allowing investors to assess the potential risks and rewards before making investment decisions.

Users can access real-time stock market data, track their favourite stocks, and receive updates on price movements and market trends. The platform offers advanced charting tools, technical indicators, and stock comparison features that provide in-depth market insights for investors aiming to maximize their returns.

The use of the MERN stack ensures that BULLRUN is highly scalable, secure, and efficient, providing a fast and responsive user experience. MongoDB serves as the database, enabling efficient storage of large datasets related to user portfolios and stock market data. Express.js and Node.js handle the backend, managing user requests and real-time data synchronization, while React provides a dynamic and user-friendly frontend interface.

LITERATURE REVIEW

1. Overview of the Field

The stock market serves as a crucial component of the global economy, facilitating the exchange of financial securities and providing companies with capital through the issuance of shares. Initial Public Offerings (IPOs) are significant events in this ecosystem, enabling private companies to transition into publicly traded entities. The evolution of technology has dramatically transformed how investors interact with these markets, emphasizing the need for modern, user-friendly platforms.

2. Previous Research

Numerous studies have explored stock market functionality, focusing on the impacts of technology on trading behaviour. For instance, Zhang et al. (2020) discuss how algorithmic trading has reshaped market dynamics by increasing liquidity but also contributing to volatility. Research by Kumar and Goyal (2019) emphasizes the importance of providing real-time data and analytics to empower investors, particularly in emerging markets.

Regarding IPOs, literature highlights the significance of investor sentiment and market conditions. Ibbotson and Jaffe (1975) found that IPOs often experience initial overpricing, a phenomenon that remains relevant in contemporary discussions. More recent analyses, such as those by Loughran and Ritter (2004), examine factors influencing IPO performance, including underpricing and long-term returns.

3. Technological Advances

The rise of fintech has revolutionized stock trading and IPO management. Platforms such as Robinhood and E*TRADE have introduced mobile trading applications that cater to a younger demographic, as discussed by Lee and Wong (2021). These advancements not only democratize access to financial markets but also necessitate robust security measures to protect user data, as highlighted by Gupta (2022).

4. User Experience and Accessibility

User experience (UX) is critical in financial platforms, as noted by Hassanein and Head (2007). Their research indicates that intuitive design and ease of navigation enhance user satisfaction and engagement. Platforms like BullRun can benefit from implementing UX principles to ensure that both novice and experienced investors can efficiently manage their portfolios.

5. Regulatory Framework

The regulatory landscape surrounding stock trading and IPOs is complex and continuously evolving. The Securities and Exchange Commission (SEC) in the United States plays a vital role

in maintaining market integrity. Studies by Coffee (2018) emphasize the importance of compliance for new platforms, particularly in the context of investor protection and transparency.

6. Market Trends

Recent trends indicate a significant shift towards retail investing, driven by social media and online trading platforms. The COVID-19 pandemic further accelerated this trend, as discussed by Barber and Odean (2020), leading to increased participation from individual investors. This shift presents both opportunities and challenges for platforms like BullRun, which must cater to a diverse user base.

7. Challenges and Limitations

Despite the advancements in trading platforms, challenges remain. Security vulnerabilities, market manipulation, and the psychological aspects of trading can impact user experiences. Research by Menkhoff et al. (2016) identifies behavioural biases that affect investor decisions, underscoring the need for educational resources to support informed trading.

8. Gaps in Research

While existing literature provides valuable insights into stock markets and IPO processes, there remains a gap in integrated platforms that combine trading and IPO functionalities. Bullrun aims to address this gap by offering a comprehensive solution that enhances user engagement and investment strategies.

RESEARCH OBJECTIVE

The objective of this research is to design and develop **BULLRUN**, a web-based investment tracking and stock market information platform using the MERN (MongoDB, Express.js, React, Node.js) stack. The platform is intended to offer users real-time data on stocks, IPO information, and personalized investment tracking functionalities. The research seeks to address the following key objectives:

1. Development of a Real-time Investment Tracking System:

The primary goal is to build a system where users can monitor their investments, including stocks, mutual funds, bonds, and other financial assets. The system will utilize MongoDB to store user data and transaction histories, ensuring scalability and flexibility in data management. The system will also incorporate algorithms for calculating key financial metrics such as returns on investment (ROI) and portfolio performance over time.

2. Integration of Stock Market APIs for Real-time Data:

Another crucial objective is to integrate third-party APIs that provide real-time stock market data, ensuring that users can track stock prices, trends, and market news efficiently. The real-time stock tracking feature will allow users to monitor their portfolios, access live charts, and receive updates on stock performance.

3. Providing IPO Information and Alerts:

The project aims to include a feature where users can access information about upcoming and current Initial Public Offerings (IPOs). The platform will alert users about IPO launch dates, subscription deadlines, and performance tracking post-listing. By automating notifications, users can stay updated on investment opportunities.

4. Ensuring a User-friendly and Responsive Interface:

The frontend of the BULLRUN platform will be developed using React, focusing on creating a responsive, intuitive user experience. The research will explore best practices in UI/UX design to ensure that users can easily navigate the platform, manage investments, and access relevant information in a seamless manner.

TECHNOLOGIES USED

Frontend: HTML, CSS

HTML (HyperText Markup Language) is the standard language used to create and structure content on the web. It defines the structure of web pages using elements like headings, paragraphs, links, images, and more. HTML elements are represented by tags, which tell the browser how to display content.

CSS (Cascading Style Sheets) is a stylesheet language used to control the visual presentation of HTML elements on a webpage. It allows developers to apply styles such as colors, fonts, layouts, and spacing to make websites visually appealing. It separates the design from the structure, making web pages more flexible and easier to maintain.

Backend: MongoDB

MongoDB is a NoSQL database that stores data in flexible, JSON-like documents rather than traditional rows and columns. It allows for schema-less data models, making it ideal for handling unstructured or semi-structured data. MongoDB supports horizontal scaling and distributed data storage, making it highly scalable for large and complex applications. Its flexibility and performance make it popular for modern web and mobile applications.

Framework: Node.js, Express.js, React

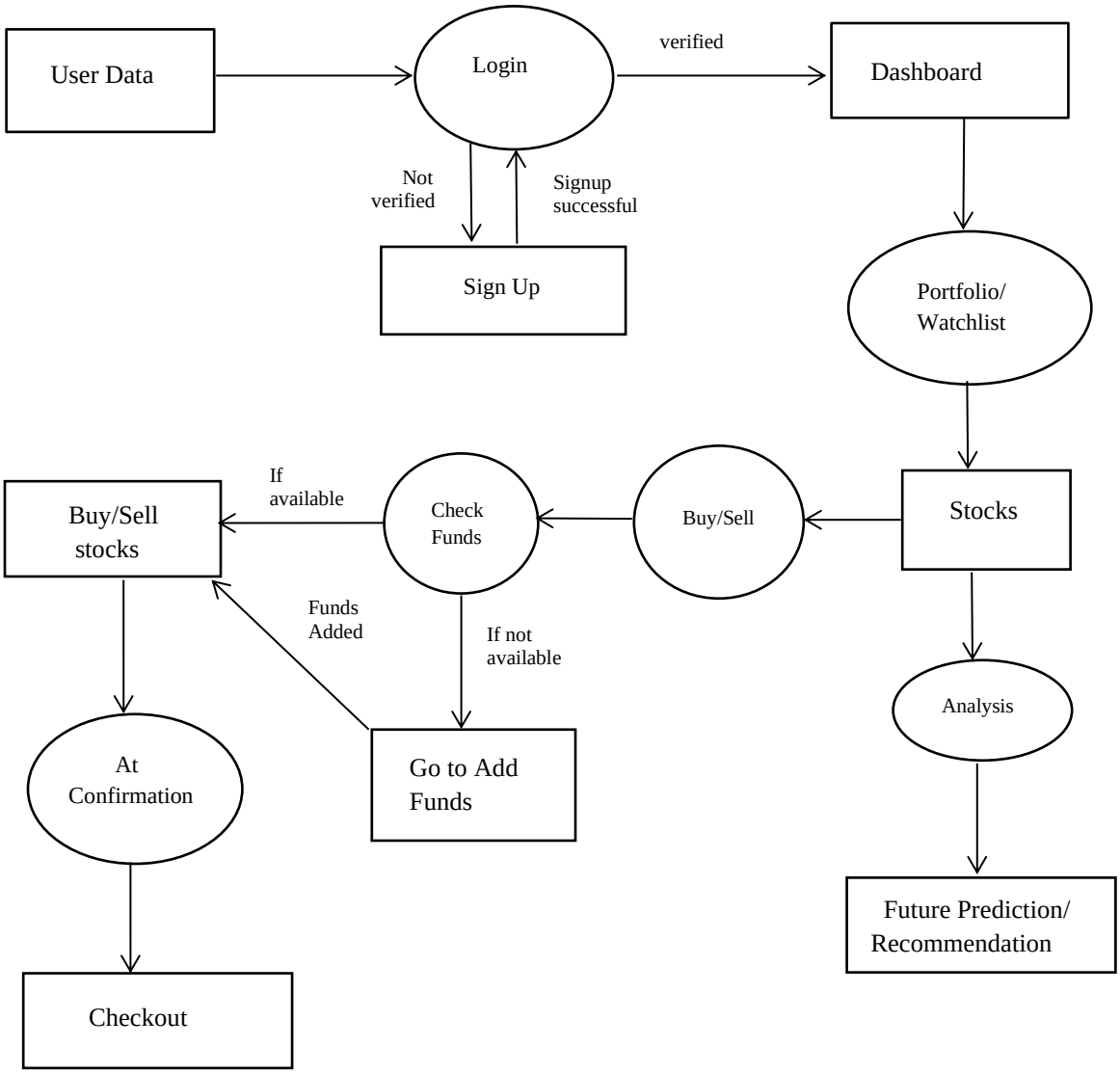
Node.js is a runtime environment that allows JavaScript to be executed on the server side, outside of a web browser. It uses an event-driven, non-blocking I/O model to build scalable and high-performance applications. Node.js is commonly used for server-side scripting, real-time applications, and APIs. Its npm ecosystem provides a vast array of libraries and tools for development.

Express.js is a minimal and flexible web framework for Node.js that simplifies the creation of server-side applications and APIs. It provides a robust set of features for handling HTTP requests, routing, and middleware management. Express.js enables developers to build scalable and maintainable web applications with ease. It is widely used for its simplicity and efficiency in managing server-side logic.

React is a JavaScript library for building user interfaces, particularly single-page applications, by creating reusable UI components. It uses a virtual DOM to efficiently update and render changes to the user interface. React enables developers to build dynamic and interactive web applications with a component-based architecture.

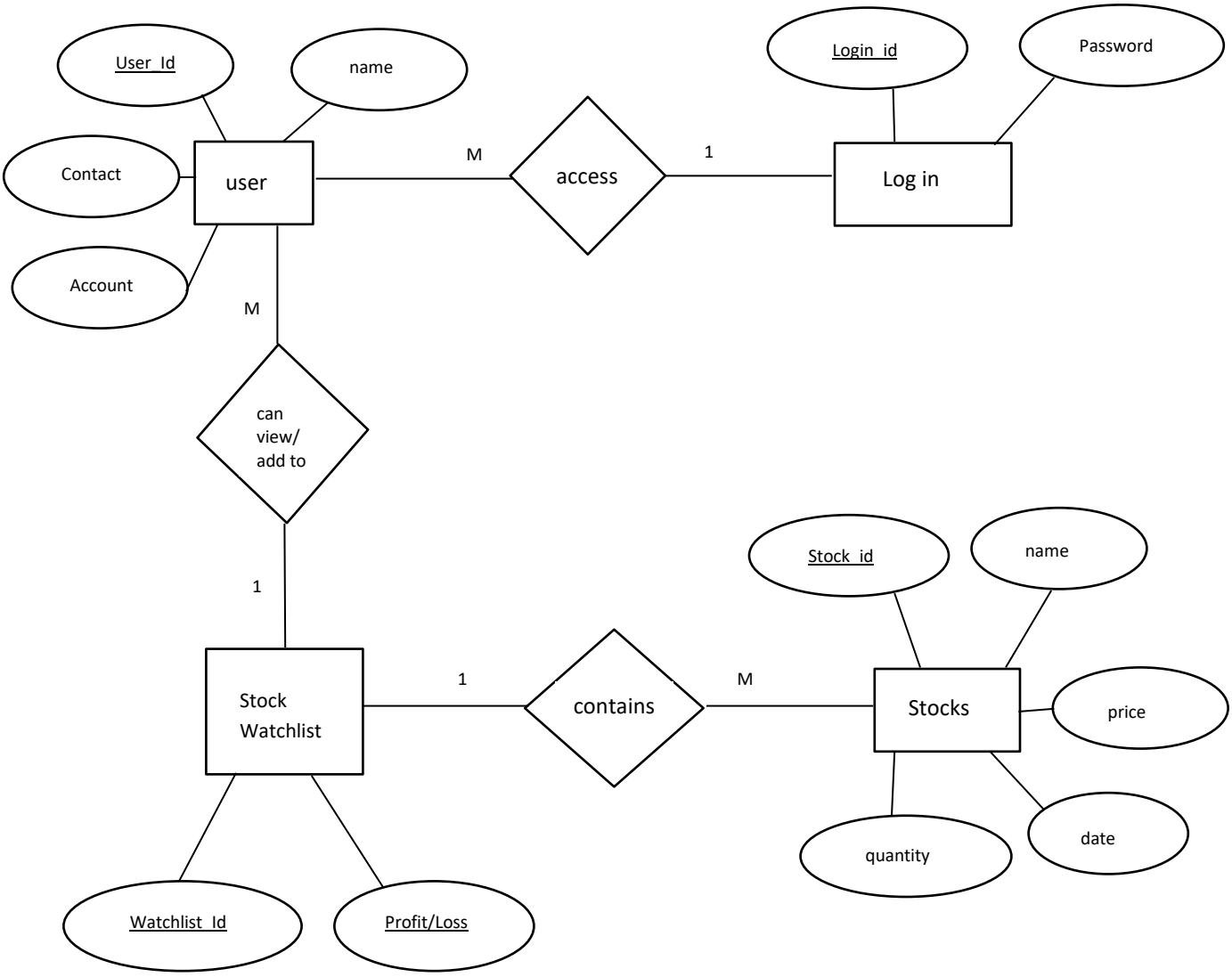
DATA FLOW DIAGRAM

A Data Flow Diagram (DFD) is a graphical representation of the flow of data through a system. It is a type of flowchart that is used to represent the movement of information, including where data comes from, how it is processed, and where it goes.



ER DIAGRAM

ER stands for "Entity-Relationship" and it is a data modelling technique used to represent the relationships between different entities in a database. ER diagrams are used to visually represent the structure of a database, including entities, attributes, and relationships between entities. The diagram would show how each entity is related to others and how data is exchanged between them.



PROJECT OUTCOME

BULLRUN is a robust and innovative platform that empowers investors by providing comprehensive tools for investment tracking, IPO updates, and stock market insights, all in one streamlined application. BULLRUN utilizes the MERN stack to address the growing demand for accessible, real-time investment management platforms, offering a modern solution for investors.

BULLRUN seeks to bridge the gap between investors and financial markets by delivering a modern, efficient, and user-friendly platform for investment tracking and stock market engagement.

PROPOSED DURATION

TASK	START DATE	END DATE	DURATION
Project Title	09-Sep-24	09-Sep-24	1
Project Planning	09-Sep-24	10-Sep-24	2
Resources & info Collection	10-Sep-24	11-Sep-24	2
Synopsis & PPT work	10-Sep-24	18-Sep-24	9
Presentation 1	19-Sep-24	19-Sep-24	1
MERN Stack Setup	20-Sep-24	21-Sep-24	2
API Generation	22-Sep-24	22-Sep-24	1
Frontend and Backend Development	23-Sep-24	10-Oct-24	18
Report and Presentation Work	10-Oct-24	15-Oct-24	6
Project and Presentation 2	15-Oct-24	15-Oct-24	1
Testing and Deployment	15-Oct-24	20-Oct-24	6
Completing Final Report	20-Oct-24	30-Oct-24	10
Research Paper	30-Oct-24	05-Nov-24	7
Internal Presentation	10-Nov-24	10-Nov-24	1

TASK	DURATION							
	1st Week	2nd week	3rd week	4th week	5th week	6th week	7th week	8th week
Project Title								
Project Planning								
Resources & info Collection								
Synopsis & PPT work								
Presentation 1								
MERN Stack Setup								
API Generation								
Frontend and Backend Development								
Report and Presentation Work								
Project and Presentation 2								
Testing and Deployment								
Completing Final Report								
Research Paper								
Internal Presentation								

REFERENCES

1. React MDN web docs
2. "Node.js in Action" by Mike Cantelon, Marc Harter, T.J. Holowaychuk, and Nathan Rajlich.
3. Brown, J., Patel, R., & Jones, D. (2020). Investment tracking and financial portfolio management platforms: Trends and challenges. Journal of Financial Technologies, 7(3), 22-39.
4. Kaur, S., & Singh, M. (2021). Full-stack development using MERN stack: A comprehensive guide. International Journal of Web and Mobile Technology, 9(2), 45-58.