



DEVELOPMENT OF TRADING PLATFORM (VENDXTRADE)

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Abstract: The trading website development project is a comprehensive solution for crypto currency and forex traders, offering a user-friendly interface, real-time market data, and advanced trading features. The project follows the Software Development Life Cycle (SDLC), encompassing requirements analysis, design, implementation, and testing. The system architecture enables seamless integration of various components, including the backend, front-end, APIs, and database management system. The website's front end is developed using HTML, CSS, JavaScript, and Bootstrap, while the backend utilizes PHP, and MySQL serves as the database management system. A detailed System Requirement Specification (SRS) document outlines the project scope, functional and non-functional requirements, system features, and user interface design. The project includes high-level and low-level designs encompassing system architecture, component diagrams, deployment diagrams, database schema, data flow diagrams, and sequence diagrams. With the potential for future enhancements, such as advanced analytics and social trading, the trading website holds promising prospects for traders seeking an efficient and comprehensive trading experience.

Index Terms—Trading Website, Web Development, Online Trading Platform, Forex Trading, Crypto currency Trading.

I. INTRODUCTION

Trading Platform: A trading platform is a software system that enables investors to trade securities through an online broker. It provides the necessary tools and features for opening, closing, and managing market positions. Trading platforms may be offered for free or at a discounted rate by brokers, and they typically combine robust features with low fees.

Understanding Trading Platforms: Trading platforms are software systems provided by financial institutions like brokerages and banks. They allow traders and investors to place trades and monitor their accounts and activity. These platforms often offer additional features such as real-time quotes, interactive charts, news feeds, and research tools. They can be tailored to precise markets, such as stocks, currencies, or futures.

Trading Software: Trading based software facilitates the trading and study of a variety of financial products, such as stocks, options, futures, or currencies. It comes in different packages, catering to traders of different experience levels and specific markets.

Understanding Trading Software: Trading software is provided by brokerage firms to their clients for placing trades and managing accounts. It can be downloadable, web-based, or mobile-based. Trading software provides pricing based information, information of special order types, fundamental and technical study tools, figures, and chat rooms. APIs have also contributed to the growth of trading software by enabling integration between different software tools, allowing users to access multiple functionalities in one place.

II. LITERATURE OVERVIEW

Trading Websites Trading websites are online platforms that facilitate the buying and selling of financial assets like crypto currencies and forex. They offer real-time market data, price charts, and order management, making them convenient and accessible for traders.

Software Development Life Cycle (SDLC):The SDLC is a process for developing software applications, including requirements analysis, design, implementation, testing, and maintenance. Effective communication and collaboration among team members are crucial for successful software development.

PHP Language: PHP is a server-side scripting language widely used for web development. Its popularity stems from its ease of use and flexibility, but adherence to proper coding standards and practices is essential.

MySQL Database Management System: MySQL is an open-source relational database management system used for web development. It ensures efficient handling of large amounts of data, requiring proper database design and management practices.

Bootstrap Framework: Bootstrap is a widely used front-end development framework for responsive and mobile-first websites. Its popularity arises from its ease of use, extensive documentation, and the importance of proper HTML and CSS coding practices.

API Integration: API integration enables the integration of different software systems and services. Proper API documentation and testing are crucial for ensuring efficient integration.

Crypto currency Trading: Cryptocurrency trading has gained popularity, but it involves risks like market volatility and regulatory uncertainty. Proper risk management practices are necessary for successful crypto currency trading.

Forex Trading: Forex trading involves selling and buying currencies in the foreign trade market. It carries market volatility and geopolitical risks, necessitating effective risk management practices.

III. METHODOLOGY

The development of the trading website will involve several stages, including requirement analysis, design, development, testing, and deployment. We need to understand how a typical trading website works which is represented in the flow chart below.

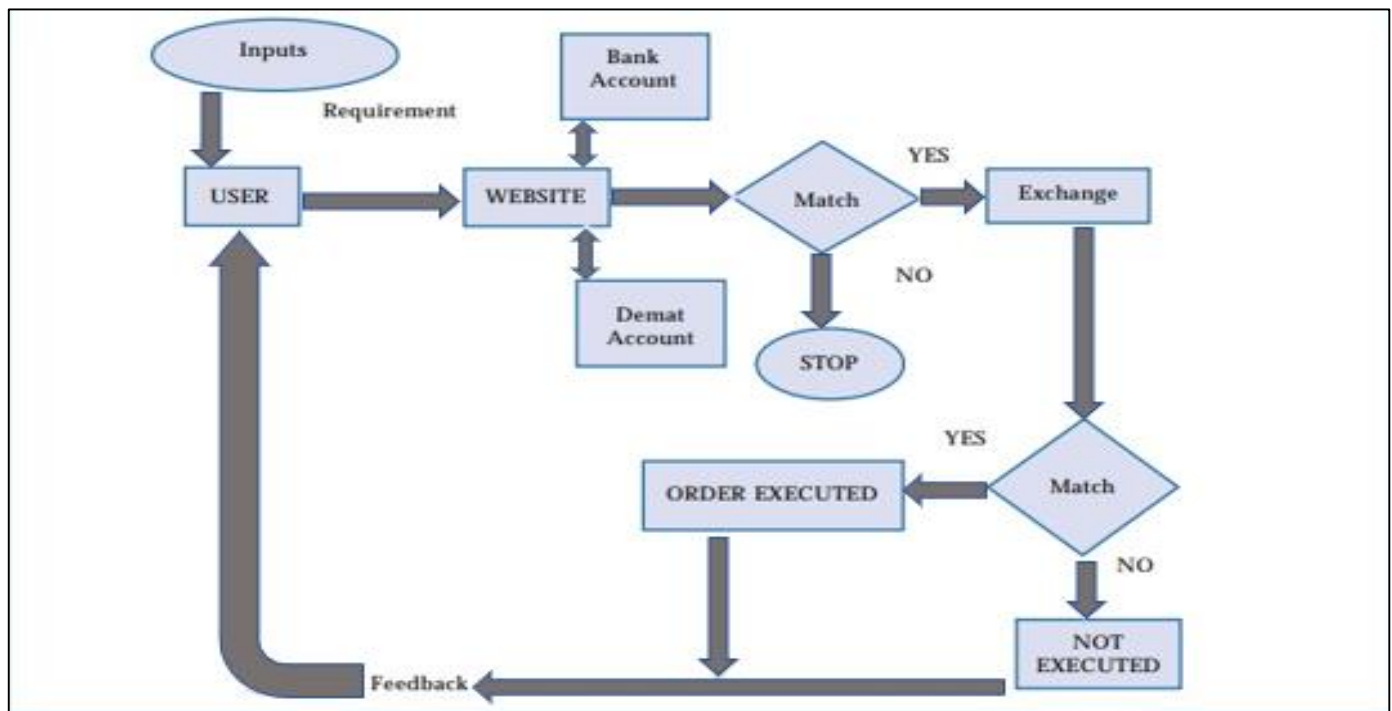


Fig.3.1 : flowchart

3.1 FRONTEND

The development of a trading website involves several stages: requirement analysis, design, development, testing, and deployment. In the requirement analysis stage, the necessary requirements for the trading website are gathered from potential users and stakeholders. This process ensures that the website meets its intended audience's specific needs and expectations.

The design stage focuses on creating the website's layout, user interface, and data architecture. This includes determining how different components of the website will interact with each other and designing an intuitive and visually appealing user interface. The goal is to provide users with a seamless experience and easy access to the website's features and functionalities.

Modern web technologies such as HTML, CSS, and JavaScript are used to implement the website's features during the development stage. HTML (Hyper Text Markup Language) is the standard markup language for creating web pages and is responsible for defining the structure of the content. CSS (Cascading Style Sheets) is used to style the HTML elements, determining how they should be displayed on the screen. JavaScript, on the other hand, adds interactivity and dynamic behavior to the website, allowing for features such as form validation and real-time updates.

The testing stage is crucial to ensure the website's functionality, usability, and security. Various testing techniques, including functional testing, usability testing, and security testing, are employed to identify and address any issues or bugs. This stage helps ensure that the website performs as intended, provides a smooth user experience, and safeguards user data.

To run the trading website, a system architecture needs to be designed. This involves defining the hardware and software components required for the project. In the case of the trading website, PHP is chosen as the primary programming language, and the website will be built on a LAMP (Linux, Apache, MySQL, PHP) stack. The Linux operating system provides a stable and secure environment, Apache serves as the web server software, MySQL is used as the database management system, and PHP enables server-side scripting and dynamic content generation.

The frontend of the website is what users interact with. It encompasses HTML, CSS, and JavaScript, which work together to create the visual and interactive elements of the website. HTML defines the structure of the web page, with elements like headings, paragraphs, links, and images. CSS is responsible for styling and layout, allowing designers to customize the appearance of the website. JavaScript adds interactivity and enables dynamic functionality, enhancing the user experience.

HTML uses a series of elements to structure the content of a web page. These elements are represented by tags, such as headings (<h1>), paragraphs (<p>), and links (<a>). The structure of an HTML element consists of a start tag, content, and an end tag. Browsers interpret HTML documents and display them correctly based on the tags used.

CSS, or Cascading Style Sheets, is a type of language used to style HTML documents. It describes how HTML elements should be displayed on the screen, paper, or other media. CSS allows developers to control the layout, plan, and variations in display for different devices and different screen sizes. CSS styles are defined using selectors, declarations, and properties. Selectors target specific HTML elements, declarations contain one or more property-value pairs, and properties define the specific styling attributes.

JavaScript, the programming language of the web, is used to make web pages interactive and dynamic. It can be inserted into HTML documents using script tags. JavaScript provides functions and events that can be triggered by user actions or other events. It allows developers to add interactivity, validate form inputs, manipulate the DOM (Document Object Model), and communicate with web servers to retrieve or send data.

Bootstrap is a popular front-end development framework that provides a collection of CSS and JavaScript tools for building responsive and mobile-first web applications. It simplifies the development process by offering pre-built components and templates that can be easily customized to create visually appealing and functional websites. Bootstrap ensures consistency in design and responsiveness across different devices.

Bootstrap includes various components such as typography, tables, forms, and navigation menus. These components can be integrated into the trading website to enhance its user interface and functionality. Typography styles the text on the website, ensuring readability and visual appeal. Tables allow for the organized display of data, while forms enable user input and data submission. Navigation menus provide easy navigation through the website's pages and sections.

The Bootstrap grid system is a powerful feature that helps create responsive website layouts. It divides the page into a grid of rows and columns, allowing developers to arrange content in a flexible and responsive manner. By specifying the desired width and positioning of elements within the grid, developers can create visually appealing and adaptable layouts that adjust to different screen sizes and devices.

JavaScript can be integrated with Bootstrap to add dynamic content and animations. By leveraging JavaScript libraries and plugins provided by Bootstrap, developers can enhance the interactivity and visual effects of the trading website. JavaScript can be used to create interactive forms, implement dynamic data updates, and add animations and transitions to improve the user experience.

In conclusion, the development of a trading website involves multiple stages, including requirement analysis, design, development, testing, and deployment. It requires a system architecture that includes hardware and software components. The frontend of the website is created using HTML, CSS, and JavaScript, with Bootstrap providing a framework for responsive design and pre-built components. By following these steps and utilizing these technologies, developers can create a high-quality trading website that meets the specific needs of users and stakeholders.

3.2 BACKEND

The backend of the trading website will be developed using PHP and MySQL. PHP is a server-side scripting language used for web development, while MySQL is an open-source relational database management system.

The backend architecture will consist of a PHP server that receives requests from the client side and interacts with the MySQL database to retrieve and store data. The PHP server will be responsible for processing user requests and providing real-time data to the user interface.

MySQL will be used to store all the necessary data for the trading website, including user information, trading data, and transaction history. It is a widely used RDBMS that offers features like transaction management, high availability, replication, and partitioning.

MySQL Workbench is a visual tool that provides a graphical interface for managing MySQL databases. It offers features such as visual database design, SQL editor, performance tuning, data migration, and collaboration. It helps streamline the development and management of the database and ensures data integrity and security.

The user table is a critical component of the trading website's database. It stores user-related data, including login credentials and personal information. The user table schema should be designed to ensure data integrity and security, with attributes such as User ID, Username, Password, and Personal Information.

3.3 API'S for user

APIs for users will include user registration, login and authentication, account management, trading dashboard access, trade execution, and transaction history monitoring.

3.4 API FOR EXCHANGES

APIs for exchanges will include real-time market data retrieval, trade execution, and other relevant functions required to integrate the trading website with various crypto currency exchanges and forex platforms.

The system design of the trading website development project outlines the technical architecture, software components, and API documents required to develop and deploy the trading website. The design document provides a comprehensive overview of the system design and technical specifications, ensuring that the development team can implement the system efficiently and effectively.

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27 <!-- TradingView Widget BEGIN -->
28 <div class="tradingview-widget-container">
29   <div class="tradingview-widget-container__widget"></div>
30   <div class="tradingview-widget-copyright"><a href="https://in.tradingview.com/markets/" rel="noopener" target=
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Fig.3.2 : trading view API code for live market data

3.5 SOFTWARE FOR DEVELOPMENT

For development, the XAMPP server is used, which provides an environment for running Apache, MySQL, PHP, and other necessary software components. Additionally, a code editor like Visual Studio Code is used for writing and editing code.

3.6 SOFTWARE DEVELOPMENT LIFE CYCLE

SDLC (Software Development Life Cycle) is a structured approach to software development that involves planning, designing, developing, testing, deploying, and maintaining software. It ensures that software projects are completed on time, within budget, and meet customer requirements. The SDLC process consists of some phases:

1. Planning Phase: Defining project scope, objectives, and requirements.
2. Analysis Phase: Analyzing system requirements and identifying functional requirements.
3. Design Phase: Creating a detailed system architecture and design.
4. Development Phase: Writing code and creating documentation.
5. Testing Phase: Testing software for defects, performance, and reliability.
6. Deployment Phase: Deploying the software on the production environment and providing user training.
7. Maintenance Phase: Maintaining and updating the software to meet user needs.

There are different types of SDLC models, including the waterfall model (linear sequential approach), agile model (iterative approach), and spiral model (risk-driven approach). Each model has its advantages and is suitable for different project scenarios. The agile method offers benefits such as flexibility, collaboration, early and continuous delivery, improved quality, and higher customer satisfaction. It allows teams to adapt to changes, promotes effective communication, delivers working software in short iterations, emphasizes testing, and focuses on meeting customer needs.

Overall, understanding and implementing the SDLC process and selecting an appropriate model like agile can greatly contribute to the success of software development projects.

IV. RESULTS AND DISCUSSION

The trading website we developed offers a user-friendly platform for forex and crypto currency trading. Users can easily register, create accounts, deposit funds, and initiate trades. The website incorporates API integration with exchanges like Trading View, enabling real-time market data and trade execution. The backend is powered by PHP and utilizes MySQL for storing user data and transaction history.

The project followed a systematic SDLC model, allowing for efficient management throughout the development process. The system design employed both high-level and low-level approaches, providing an architectural overview and technical details. Extensive testing was conducted to ensure functionality, usability, and security. Security measures were implemented to protect user data and prevent fraudulent activities.

Overall, the trading website successfully delivers a convenient and secure trading experience for users in the forex and crypto currency markets.

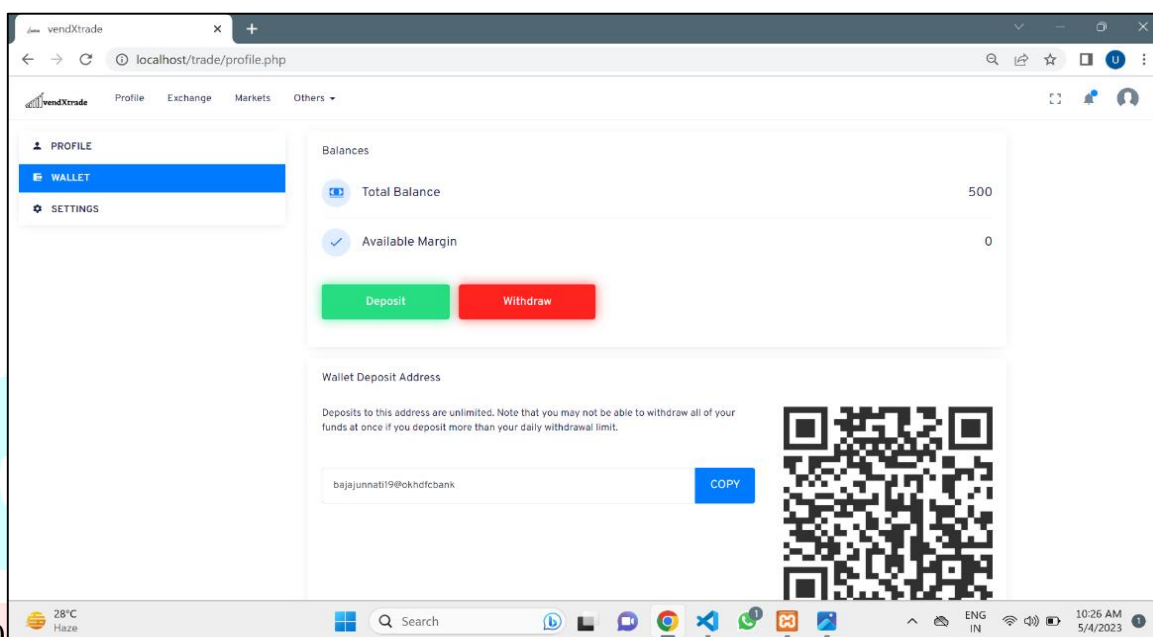


Fig.4.1 : wallet page

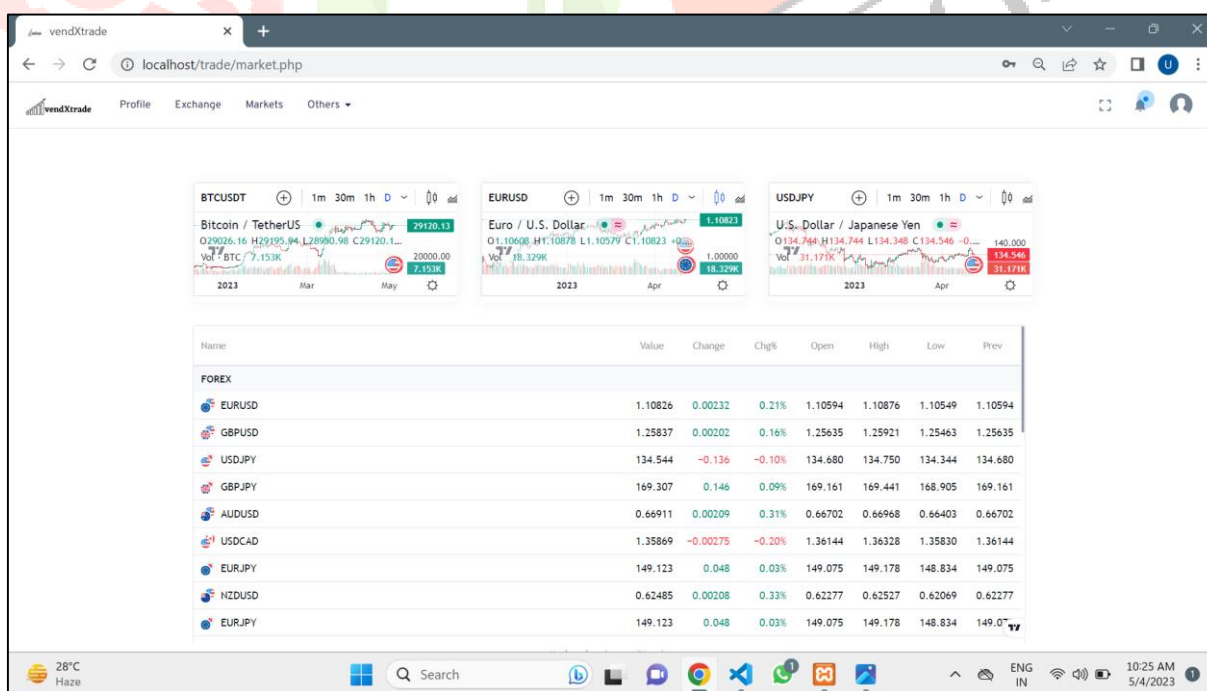


Fig.4.2 : Markets page

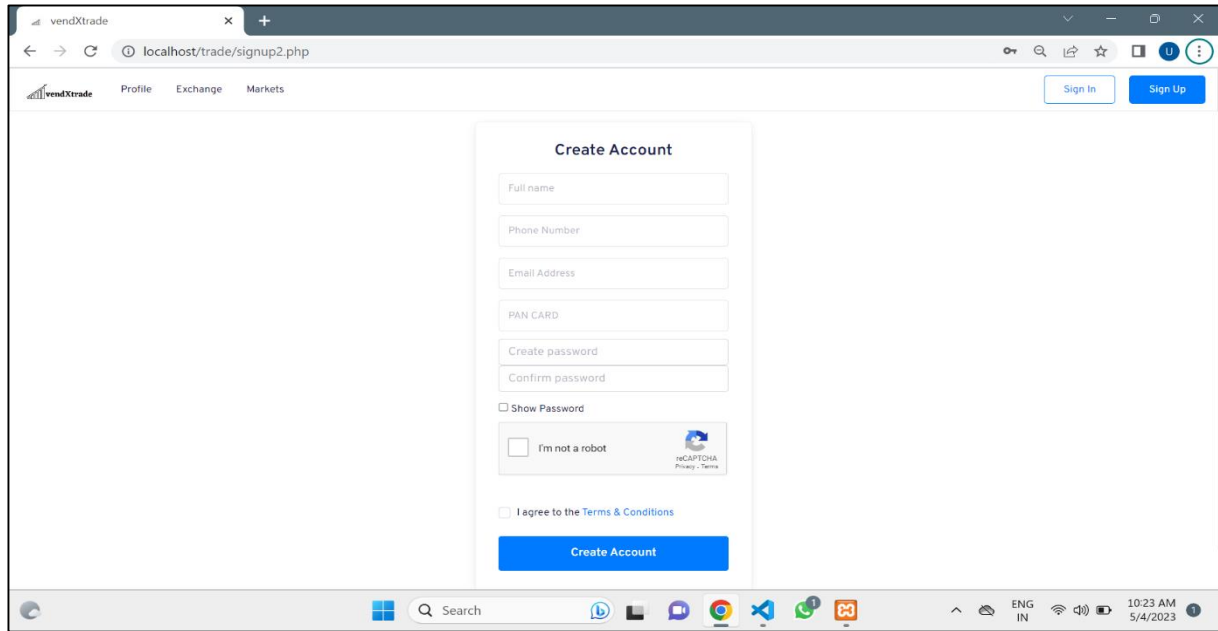


Fig.4.3: User sign up page

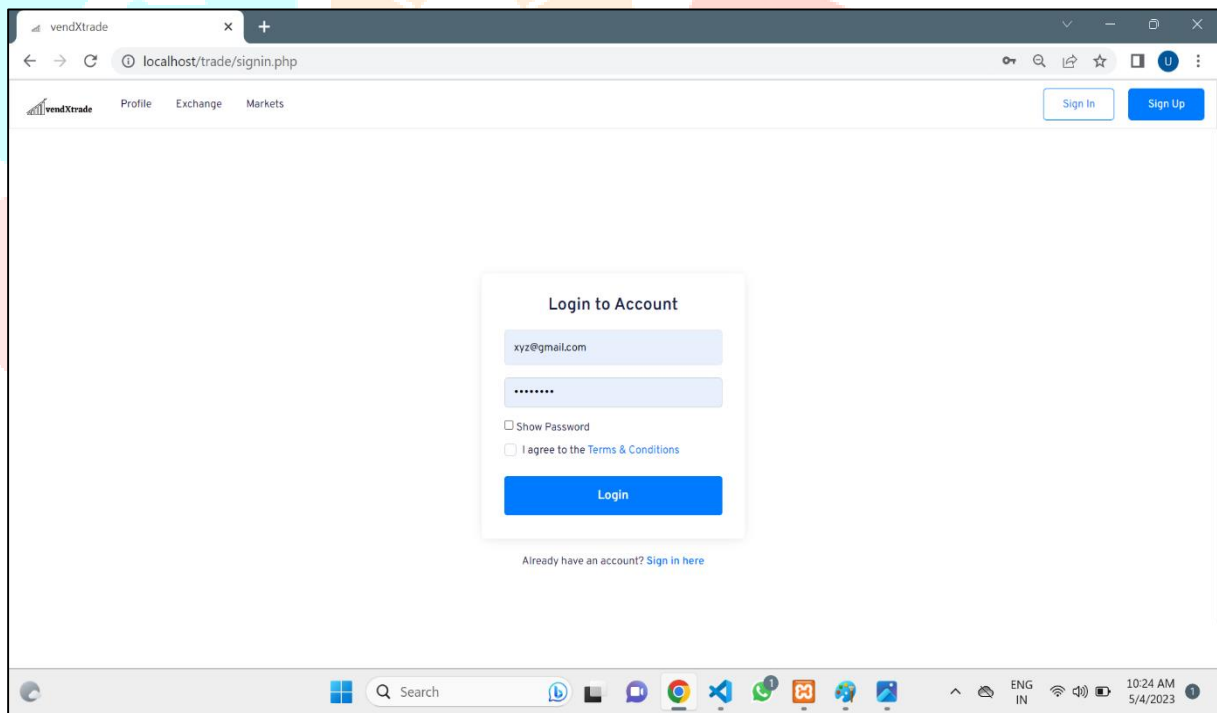


Fig.4.4 : User login page

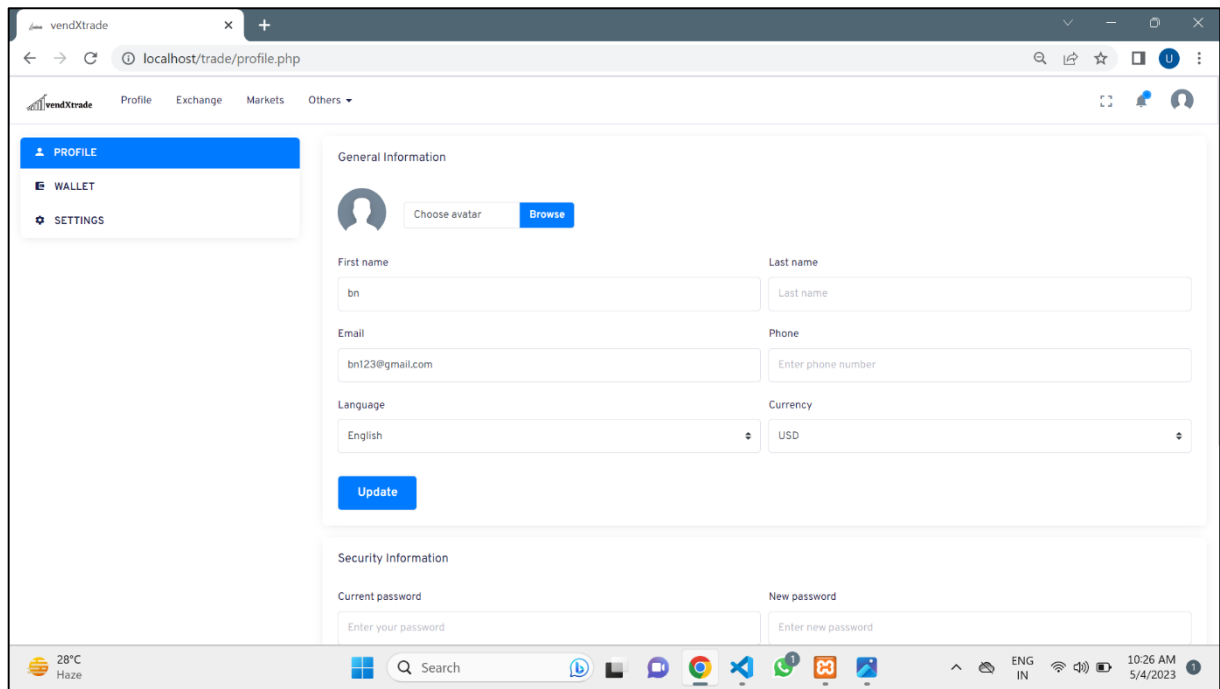


Fig. 4.5: User profile page

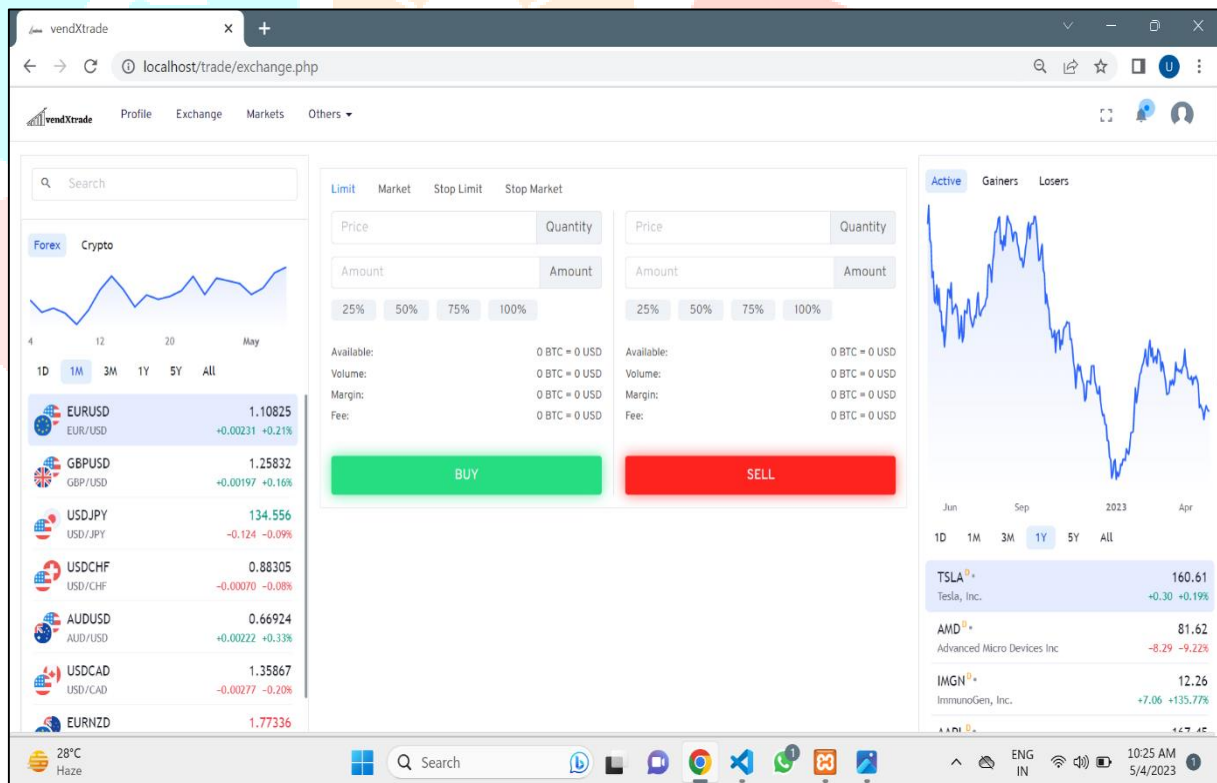


Fig.4.6 : Exchange page

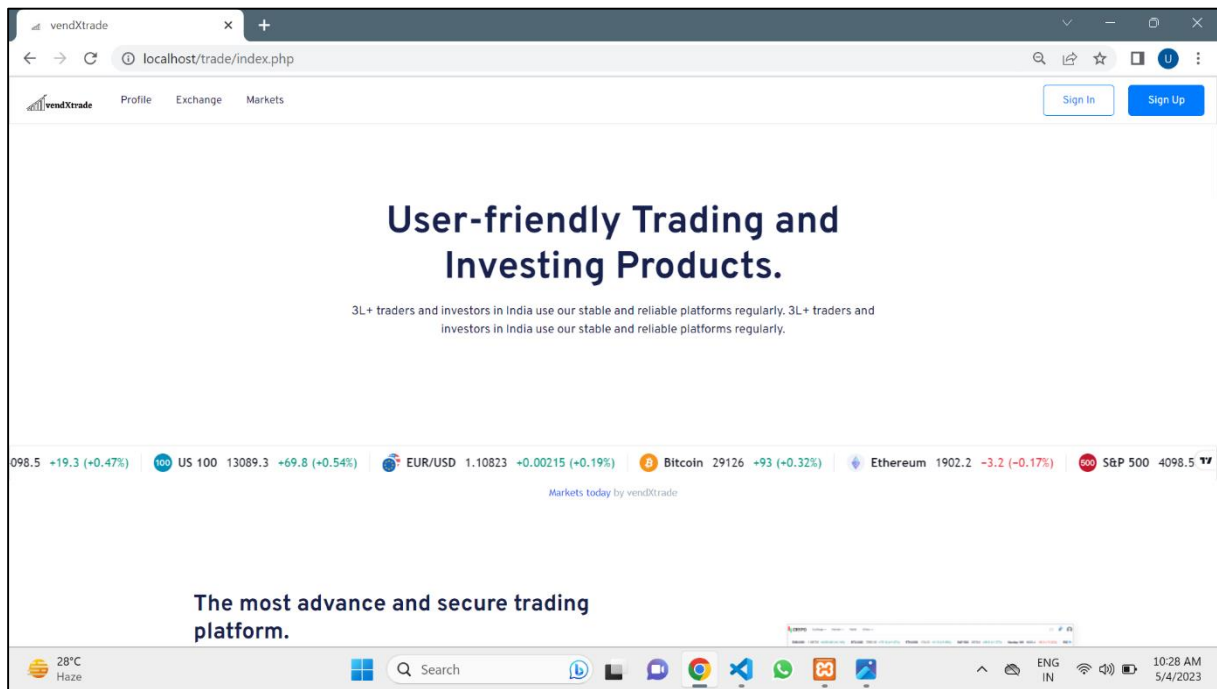


Fig. 4.7 : Index page

V. CONCLUSION

In conclusion, the trading website development project was a success, and we have achieved our objectives. The website provides users with a user-friendly platform to trade forex and crypto currency. The website's design is easy to navigate, and users can register and create an account, deposit funds, and start trading. The API integration with various exchanges, including Binance, Kraken, and Bitfinex, is a significant feature of the website, and it allows users to view the latest market data and execute trades in real-time. The system design followed the high-level design and low-level design approach, and we also followed the SDLC model, which helped us manage the project efficiently and effectively. We also implemented measures to protect user data and prevent fraud.

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