Online Trading Platform (Desktop) Interface

Category: Homework

Due: March 14th, 2025, 11:59 PM

Mode: (pdf) on canvas

Individual Assignment

 Background

The goal of this assignment is to design and develop a mockup of a desktop-based trading application that enables users to trade virtual currencies, stocks, or commodities in a simulated market environment. The application should provide users with a seamless interface to manage their trades, monitor market trends, and analyze their portfolio performance. This assignment is designed to help students understand the principles of designing user-friendly interfaces and integrating real-time data simulations while maintaining high usability and accessibility standards.

NOTE: This system is purely for educational purposes and should not be used for real-world money trading.

Interface Requirements

Signup and Authentication (1 pts)

The application should begin with a **login screen** where users must enter their name and a unique ID. New users are required to register for an account and sign up. The **signup system** must validate the entered credentials to ensure security and provide appropriate dialog with error messages for incorrect or missing inputs (such as in **password creation**). The design of the signup screen should prioritize simplicity and efficiency, ensuring that users can create and login into their accounts quickly and securely.

Dashboard (1.5 pts)

The dashboard serves as the central hub of the application, providing an overview of the user's trading activities. It should display the user's **account summary**, including their *current balance, portfolio value, and total profit or loss*. Additionally, the dashboard should feature **real-time updates** of market prices for available tradable assets, such as currencies, stocks, or commodities. The dashboard design should be clean and organized, with clear and quick navigation options for trading actions (buying, selling, viewing portfolios).

Trading Functionality (Buy/Sell) (1.5 pts)

The interface must allow users to execute **buy and sell transactions**. Each transaction should include fields for the **asset name, trade type (buy or sell)**, **quantity, current market price**, and **total trade value**. The system should **validate transactions** to ensure that users cannot sell more than they own or exceed their available balance when buying. Users should also have the option to **add notes** to each transaction, providing additional context for their trades. For instance, they might record notes such as "Bought during a market dip" or "Sold at peak price." This feature will enhance the trading experience by offering a record of the user's decision-making process.

Portfolio Management (1 pts)

The portfolio management section will provide a detailed view of the **user's holdings**. It should display the **assets owned**, their **owned quantity**, **market value**, and the **associated profit or loss** for each item. As market prices change, the portfolio values must update dynamically, giving users real-time insights into their investments. This section should also allow users to **sort and filter** their holdings by categories such as Stocks, Commodities, or Crypto. A visually appealing layout is crucial to ensure users can easily interpret their portfolio data.

Market News and Updates Integration (1 pts)

The application must include a comprehensive **news portal** that provides real-time updates and information about the financial markets, enabling users to make informed trading decisions. It must cover various **categories** such as **company updates** (earnings reports, management changes, mergers, etc.), **market analysis**, **economic indicators**, **global financial news**, and **industry-specific news**. Interactive features should allow users to **save** articles, **share** news items, and also set **keyword** filtering. Additionally, students must implement advanced **search**

functionality for historical news with **date range filters**, or an **archive** of important market events.

Reports and Insights (1 pts)

Users should have access to detailed reports **summarizing** their trading activity and performance. The reports must include **metrics** such as total trades, profit, and loss summaries, and asset-wise spending distributions. **Visual charts** should be incorporated to display trends, such as portfolio growth over time or profit and loss distribution, to enhance the user experience. Weekly or monthly insights should be provided to help users evaluate their trading strategies and make informed decisions.

Logout and Help (0.5 pts)

The application should include a **logout feature** that securely ends the user's session and clears any sensitive data. **Help buttons** must be strategically placed throughout the application to provide tooltips or pop-up instructions for users unfamiliar with specific features. For instance, guidance on placing a trade, understanding market trends, or interpreting portfolio data should be readily available. These features will ensure that the application is accessible to users with varying levels of trading experience.

Design, Creativity & Documentation (2.5)

Design Requirements

The application should prioritize accessibility by incorporating user-friendly color schemes, intuitive navigation, and responsive layouts. The interface should cater to users of all ages and levels of tech-savviness, ensuring a smooth experience for everyone.

The design of the application must prioritize user-friendliness and accessibility. All inputs must be validated to ensure data integrity, such as restricting invalid quantities or prices during transactions. Privacy and security are paramount, and sensitive user data must be handled securely. The application should also be

adaptable to users of different skill levels, providing an intuitive experience for beginners while offering advanced options for experienced users. Performance must be optimized to handle frequent market updates without lag.

Note: **Your submission should have advanced features as compared to your submission of Homework 1 with more detailed-level features and design. Your submission will be graded accordingly.**

Innovation and Creativity

Applications that exceed the basic requirements and include additional, innovative features will be awarded bonus points. Examples include using enhanced user experience elements

Documentation & Deliverables

Students must submit a fully functional desktop application mockup with supporting documentation. This should include:

- A **detailed report** covering design choices, implementation challenges, and potential improvements.
- A **user manual** with user guide, features, and troubleshooting tips.
- A **demonstration** showcasing the application's core functionalities and user experience.