**Project Specifications: LeftBracket**

**Introduction:**

Our project aims to create a web application that functions as a personal stock wallet, allowing users to keep track of their stock purchases and view real-time data on the market. We will be using the polygon.io API to pull real-time stock data and display it to the user. Our website will have a user registration and login system, allowing users to access their own personalized portfolio pages where they can add, view, delete and modify their bought stock information.

**Website flow:**

Home page:

* Introduction of the website and its services
* Display of a random selection of stocks from our database
* Navbar with links to register or sign in

Registration page:

* Form for user registration
* Upon successful registration, redirect to login page

Login page:

* Form for user login using email and password
* Upon successful login, redirect to user's portfolio page

Portfolio page:

* Display of user's current stocks with details such as stock name, ticker, initial price, and buying date
* Option to add, delete, and modify the user's bought stock information
* Real-time data on market prices of stocks and the comparison with the user's bought price
* Use of charts and graphs to support the visual representation of data

Logout:

* Ability to logout from the website

Diagram

Description automatically generated

**Registration system features:**

* Validation: The system will validate the user input to ensure that it is in the correct format and does not contain any malicious code.
* Validation Details:

The system will validate user input using the following rules:

Username:

* Must be between 5 and 20 characters long
* Must only contain letters, numbers, and underscores
* Must start with a letter

Password:

* Must be at least 8 characters long
* Must contain at least one uppercase letter, one lowercase letter, and one number
* Must not contain any spaces or special characters

Email:

* Must be a valid email address format
* Must not already exist in the system

Address:

* Must not be empty
* Must contain at least one space

First Name and Last Name:

* Must not be empty
* Must only contain letters
* If any of the user input fails to meet these validation rules, the system will display an error message to the user indicating which fields need to be corrected.
* Password Hashing: Passwords will be securely hashed and stored in the database to ensure that they cannot be easily compromised in case of a data breach.
* Session Management: The system will use sessions to manage user logins and logouts.
* Error Handling: The system will handle errors gracefully and display error messages to the user if there are any issues with their input or with the system.

**User portfolio add stock features:**

This feature allows users to add information about the stocks they own to their portfolio. When a user adds a stock, they will need to provide information such as the stock ticker, stock name, the date they bought the stock, and the quantity of shares they purchased.

Validation Details:

* All fields are required and cannot be empty.
* Users can only choose from the stocks we offer. They cannot add stocks that are not in our database.
* Stock name will be automatically selected once the user chooses the stock ticker to ensure the ticker and name match.
* The date the user bought the stock cannot be a future date.
* The date the user bought the stock cannot be more than 100 years ago.

**Database Tables:**

**Diagram

Description automatically generated**

User\_info table:

* User\_id: Unique identifier for each user
* Username: Username for user login
* Password: Encrypted password for user login
* Email: Email address of user
* Address: Address of user
* First\_name: First name of user
* Last\_name: Last name of user

Stock\_info table:

* Stock\_info\_id: Unique identifier for each stock
* Stock\_name: Name of the stock
* Stock\_ticker: Ticker symbol of the stock
* Stock\_owner: Name of the company who owns the stock
* Stock\_description: Description of the stock
* Country\_of\_company: Country where the company who owns the stock is based

User\_financial\_info table:

* User\_stock\_id: Unique identifier for each bought stock by the user
* User\_id: Foreign key referencing the user\_info table
* Stock\_ticker: Foreign key referencing the stock\_info table
* Stock\_name: Foreign key referencing the stock\_info table
* Stock\_initial\_price: Initial price of the stock at the time of purchase
* Buying\_date: Date when the stock was bought
* Quantity: Number of the stock chosen bought on the chosen date

**Technologies:**

Front-end: HTML, CSS, JavaScript , Bootstrap

Back-end: PHP, MySQL

API: polygon.io, Chart.js

**Conclusion:**

Our web application will provide users with a personalized and efficient way of tracking their stocks and keeping up to date with real-time market data. By providing users with the ability to add, delete, and modify their bought stock information, we aim to make the experience user-friendly and efficient. The use of charts and graphs will also provide a visually appealing way of presenting data. With the implementation of user registration and login systems, we can ensure that user data is secure and accessible only to the user.