2023 Software Engineering Project

Due date: June 10 (Saturday)

A Coin Marketplace

For this semester's project, you are assigned to build a web site for coin trading marketplace. Your goal is to make a web-based software that users can buy and sell coins.

For the project, your implementation must satisfy functional and nonfunctional requirements described below.

Functional Requirements

1. A user can sign up, sign in and sign out via web browser.
2. Any signed or non-signed user can see current coin price and the price trend.
3. When a user creates his/her account, the money amount is 0 won and the number of coins is 0.
4. The marketplace initially has 100 coins, and the coin price is 100 won.
5. Any user can buy/sell coins.
   A. If the site has available coins, the user can buy them for 100 won/coin. When users buy coins from the site, then site should update the number of unsold remaining coins.
   B. To sell coins, users post the number of coins and their selling price.
   C. When a user buys coins from a seller, buyer and seller coin information should be updated. (for example, user A buys 10 coins from user B. Then A's number of coins decreases by 10 and B's number of coins increases by 10.) In addition, buyer and seller account money should be updated.
   D. The selling price will be posted as the current coin price.
   E. When a user buys coins from a seller, user must buy all the coins the seller posts. Users cannot buy small portion of coins from sellers.
   F. Users cannot sell coins to the marketplace.
6. Any user can add/withdraw money to/from his/her account.
   A. The unit of money is won.
   B. Users can add any amount of money without any certification and bank transfer. (note: you are implementing a fake site.)
   C. Users can withdraw any amount of money from the site unless the amount of money is more than the amount the user has in the site.
7. The marketplace site should post current coin price and available coins which can be sold from the marketplace.
8. The marketplace site should post users coin selling posts. Each selling post includes the number

of coins and selling price/coin.

9. If there are several transactions for coin trading and coin price changes, then the site have to show the price change history through a graph or a table.

Non-functional Requirements

1. Work with 2-person team. (team will be assigned randomly)
2. Your implementation should be written with Flask with HTML/JavaScript.
3. Your implementation should be run on your PC. That is, you assume that you run the server and client browser in the same PC together.
4. You have to submit user manual, as the user manual is considered as a part of software. You should make user manual with Youtube video. Your manual must include how to run the software and which functionalities are provided.
    A. You should provide Youtube link to the e-class submission section.
5. Your codes should be uploaded in the Github
    A. you should provide the Github address to the e-class submission section.
6. No bonus point for additional functionalities rather than the functional requirements.
7. All submission has due on June 10.

The grading policy is as follows.

Total: 200 pts
10 pts: functional requirement 1
15 pts: functional requirements 2, 3, and 4
30 pts: functional requirements 5 and 6
15 pts: functional requirements 7, 8 and 9
20 pts: The beauty of the user interface
10 pts: The completeness of the user manual
50 pts: project homework #1
50 pts: project homework #2

% Note: you will have deduction for final grade when you implement non-necessary additional functionality.

Good luck!!