CS480 – Course project

Summer 2021

Database: portfolio_manager

Description:

The topic for our project is a financial portfolio manager for users in which they will have different features. These features will include price averaging of stock bought/loss, different user profiles switching, input capability of history of trades, etc. All of these will be databases stored, thus the project will be database heavy with a front end to enable users to interact with the database.

**Database Design **

We will have the main user table with a user name, email, contact info, unique ID, etc. There will be another entity for a financial portfolio that will have a unique ID with a foreign key, connecting with the user table. Another entity will include financial stock names spread, prices, avg prices, and all the other necessary stock information from which the user will be able to select their picks. This entity will have its own categorization based on the financial sector, which will enable the user will have a drop a down menu for the category of stocks to pick from, based on different sector characteristics such as market capitalization.

Part 2 – CRUD (Create, read, update, and delete)
Deadline: July 17, 2021

List of strong entities:

1. user
2. stock_category
3. exchanges

List of weak entities:

4. stock_info
5. portfolio

We will implement the following functionality using Java and SQL with necessary GUI interfaces.

1. Insert/delete/update/read a **user** (all attributes except the member_id). The user_id should be generated by the system automatically using MySQL autoincrement.
2. Insert/delete/update/read a **portfolio** for the user. The user will add all the stocks and the prices in his/her portfolio.
3. Insert/delete/update/read a **exchange** (all attributes except the member_id). The admin will able to perform basic crud operations for the stocks in different exchanges.
4. Insert/delete/update/read a **stock_category** (all attributes except the category_id). The admin will able to add, remove and update the stocks for different categories.

Part 3 – Queries
Deadline: July 31, 2021

Based on the Demo, we will implement the following functionality using Java and SQL with necessary GUI interfaces.

Trivial Queries:

1. List all the users
2. List all the stocks
3. List all exchanges/categories

Non-trivial Queries:

1. List all the stocks for a particular user.
2. Calculate average prices for the stocks.
3. List the latest transaction for a particular user for a given stock.
4. Profit / loss depending on the current price for the stock as provided by the user.
5. List different stocks based on categories.
6. List different stocks based on exchanges.