CSE 305: Principals of Database Systems, Spring 2019: Course project

This project aims at designing a database system. The project should use a relational database system, MySQL (or similar) as the database server to store and manage the operations of online transactions. Java, JavaScript and JDBC (or similar languages or packages) will be used for connecting the user interface and the database server.

Team Size: The ***maximum team size should be three***. Please form a team and send the team information to the TA.

TA Information:
Name : Jarin Moon **Email** jarin.moon@stonybrook.edu

Note that you are free to design your system in your own way. You can pick your own choice of the relational database system, the requirement is that you should use SQL (relational database) for creating your database. For example, the following are some options available: MySQL, Oracle, MariaDB, SQLite, PostgreSQL, etc. Similarly, you can use your favorite language to write the transactions and design the final interface.

Followings are some guidelines and project topics for initial directions.

Project Guidelines:

For this project it is important to understand and identify the entities in the database system. Once the entities are identified, we can explore the domain further to get the attributes (properties) for each entity. Finally we can identify the relationships which are necessary for the proper functioning (modelling) of the system.

E-commerce system.

In this project, we will design a database management system that will support online shopping of the articles. This system should be a smaller version of an e-commerce site like Amazon.com. Please explore the operations of similar e-commerce sites.

We need to organize and collect the data for the following entities in our e-commerce data set. Note that you are free to design your system in your way. Followings are some guidelines for initial directions.

1. **Item:** the e-commerce site should sell a variety of items, for example: books, CD/DVDs, Shoes, electronic items etc. The attributes for the articles could be:
    a. Article ID

    b. Type
    c. Price
    d. Seller
2. **Customer:** information of the customer: The attributes of the customer could be:
    a. Customer ID
    b. first name
    c. last name
    d. email id
    e. phone number
    f. address
3. **Payment:** This should capture the payment information for the transaction. The attributes for this entity could be:
    a. Payment type (credit card, PayPal etc.)
    b. Card number
    c. Card expiry date
4. **Shipment/delivery**:
    a. shipment details: by USPS/FedEx/UPS
    b. type of shipment: fast delivery in two days / ordinary delivery etc.
    c. physical address for delivery
    d. shipment charge (expenses)
5. **Reviews**: of the items/ articles bought by customers
    a. Ratings
    b. Detailed review
    c. Article id
    d. Seller id
    e. Customer id
6. **Employee/admin/database admin**: the employee of the e-commerce website. These people should have the responsibility of maintaining and updating the database.
    a. Employee id
    b. Designation/role
    c. Date joined
    d. Supervisor id
7. **Shopping cart**: information about the purchase by a customer.
    a. Items bought
    b. Quantity of the items
    c. Price per item
    d. Total price
8. **Inventory**: It will have all the details of the items available for shopping at the e-commerce site
    a. Item ID

b. Item Name
c. Quantity
d. Price
e. Seller

Evaluation and Deadlines: Since it is a course long project, you will be developing it in stages, along with the lectures covered in the class. You will be notified about the deadlines through emails/ Blackboard announcements.

You are welcome to discuss the project related issues with the instructor and TA's in their office hours.