CS370 Course Project Description

This Project covers all aspects of designing a database and the SQL requests that run against that database.
The project divided into four steps numbered 1 to 4 and all steps submitted collectively at the required schedule. The deliverables should be submitted in electronic (soft copy) and/or printed (hard copy) form by the dates indicated. The due dates for the project statements and the completion of the project are listed in the table below.

Electronic submission (by email) should be as the following:

- Have just ONE submitter for each team to asalamro@imamu.edu.sa
- Include the team's name in the subject line.
- Include the team's name in the file name if you're sending the work as an attachment.
- You should receive acknowledge that notify that email received.

Hard copy submission should be as the following:

- Use A4 paper.
- Stable the pages together and put them in plastic file.
- Finally, I expect everything to be typed/word processed.

Project Phases' Schedule

Phases	Title	Due Date	Submission
1	Design of Conceptual Data Model and Relational Database Schema	21 Nov, 2021	Email
2	Implementation and Final Report	14 Dec, 2021	Email+ Hard Copy +CD

Grading Criteria

You will be graded on the following criteria:
• On time submission.
• Following the instructions
• Database designs and implementation
• Final report

Remember, your group is depending on you. Each member of the group carries the responsibility for the success or failure of the entire group. To make your project successful, you will have to meet and coordinate your activities.

- **Phase 1: Design of Conceptual Data Model and Relational Database Schema**
  - ❖ Read the below project specification, carefully, and draw a conceptual design data model to accurately represent this set of requirements. Specify any additional assumptions that you are making. You should use any tool (Data Modeling Tool) to draw the diagram.
  - ❖ Use (Phase1_Template.docx) and store in a folder a softcopy of your conceptual entity-relationship diagram.
  - ❖ Map your EER model to a relational database schema diagram. Submit this schema (with key and referential integrity constraints indicated in the usual way). Feel free to change your conceptual model if needed.
  - ❖ Use (Phase1_Template.docx) that includes both the last version of your conceptual EER model with the Relational Database RDB schema diagram.

- **Phase 2: Implementation and Final Report**

  Use the SQL Server, Oracle or MySQL as the DBMS for implementing your project. You need to perform the following steps.

  1. **Define your database:**
     - Use appropriate naming conventions for all of your relations and attributes.
     - Write SQL (DDL) statements to create database, tables and all other structures.
     - Define attributes and for each one, specify if NULL is permitted, or its value is NIQUE.
     - Primary key and foreign keys must be defined as appropriate.
     - Explain where and how referential integrity constraints have been incorporated.
  2. **Populate your database. Insert at least 6 rows into each table (unless you have cardinality constraints). The data values should be reasonable.**
  3. **Create two views and eight queries. Choose them from the list in (Phase2_Template.docx).**
  4. **Give SQL translations of them and indicate their implementation and solutions.**
     - Incorporate some (but not all!) of these features: Sqlplus formatting; forms, reports, view, triggers, and other helpful or spiffy features.
     - Use (Phase2_Template.docx) and store it by the email before midnight of the due date.

  You should submit a hard copy of your report and soft copy (CD) that contains your database and the report file. The final report to have the followed parts:

  a. The front page includes team name, members, leader, and section' number on the cover page.
  b. The goal of this project.
  c. Problem description (Copy it from here).
  d. EER diagram with all assumptions.
  e. Relational database schema.
  f. Implementation (DDL, and DML) statements, views, and SQL queries statements.
  g. Extra (if any)

Project Description

Consider a computer online auction store where clients (purchasers and suppliers) participate in the sale process for the electronic items. the requirements are summarized as follows to build the database for eHaraj:

- The online site has clients, each of whom is identified by a unique member id and is described by an e-mail, name which consist of first and last name, password, client address, and phone numbers. A client may be a purchaser or a supplier. A purchaser has a shipping address in the database. A supplier has a bank account number in the database.
- Items are placed by a supplier for sale and are identified by a unique item id assigned by the system. Items are also described by an item title, a description, starting bid price.
- The items that can buy the clients should be a hardware or operating system or both. The attributes of hardware are speed, memory, and storage. And the attributes of an operating system are Cost, Manufacturer, Is_system_software, Year of manufacturing, Version and Author.
- Clients may generate an auction to open many bids. The auctions are identified by Auction id, start price, description, expiration, increment and reserve.
- Clients make one or more bids on the items and those bids are identified by Bid id, price, and timestamp.
- Purchasers make bids for items they are interested in. Bid price and time of bid is recorded. The bidder at the end of the auction with the highest bid price is declared the winner and a transaction between purchaser and supplier may then proceed.
- The purchaser and supplier may record comment about their completed sale transactions. Comment contains a rating of the other party participating in the transaction have a range between 1 and 5 and a comment description.
- The billing of the Purchasers also stored in a database which is generated by clients for the items they win and bought, Billing is uniquely identified by billing id, order date and quantity.