Project Task 2: Milestone 1(Analysis and Design phase)

Due: Friday, Nov 13th at 11:59 PM

Assignment purpose:

The purpose of this assignment is to develop a working relational database for a real-world application. In this project, you will be able to learn database design methodology for relational database and create a database which can store data efficiency and retrieve information effectively.

Skills

- Analysis and list clear assumptions to work with unclear requirements
- Experience with analysis and design of (DB) software
- Knowledge of DBMS, both in terms of use and implementation/design
- Experience with SQL
- Experience working as part of team

Introduction

You have been asked to design a database system solution for the team chosen project.

- Study the project's problem description very well before moving on to the next step

Tasks:

For this Assignment *final submission, please complete the following tasks:*

For the team chosen project idea

1. Draw an EE-R data model for your project design. ***Use MySQL Workbench E-R model to present your EE-R diagrams***. Justify the decisions you make regarding minimum and maximum cardinalities. Document any assumptions you made, and the reasons for your design choices. As part of this assignment, you should identify any missing or incomplete requirements (if there are any), and explicitly state them in your documentation, and you should also explicitly state any assumptions you made that were not part of the requirements listed above, in order to develop a complete diagram.

2. **Convert this data model to a Relations database. Specify tables, primary keys, and foreign keys.**

    a. Map out the EE-R model to the equivalent logical Relational Model and define the final schema

b. Write SQL Create Table statements for each of these tables. Consider avoiding the mistake of creating a table that already exists in the schema

c. Write foreign key constraints for the relationships in each of these tables. Make your own assumptions regarding Cascading deletions or updates and justify those assumptions (Hint you can combine the SQL for your answers to part B and C)

d. Write drop statements for all of your tables and schema at the end of the script

3. **Every team member should fill and submit their self-reflection progress report template**

What to Submit

This task includes two submissions parts

- **Part 1: Only one submission per team for the following:**
  1. Upload a document that includes
     a. A picture of the created EER model using MySQL workbench
     b. A complete SQL Script for task 2 (a-d)
     c. Include any assumptions or justifications to the decisions you made for the design
  2. Upload a ***.mwb*** file that includes the answers for Task 1 EER model
  3. Upload the ***.sql*** file that includes the answers for task 2(a-d)
- **Part 2: Individual submission under Project Task 2 self-reflection submission**
- Submit the filled self-reflection progress report template by every team member to reflect on the individual tasks and the teamwork experience during this task as a team.

Grading

To receive a full grade on your submission, you **must** submit all required files for task 1 and 2 to canvas, and the individual submission for task 3. If the individual member has no progress report refection submission, it will result in a **zero grade** for the grading criteria. Individual grading will be based of the rubric below.

Here is the Rubric I will use:

Fall20CS331-Project Milestone 1

Criteria	Ratings	Pts
EER and Relational Schema 1. Complete the EER diagram with correct identification to all relations constraints (Ratios and participation constraints) as well as identification to all the Entities Primary Keys. 2. All the design assumptions are listed clearly. 3. The relational schema is provided or the mapping is done correctly in the DDL schema	This area will be used by the assessor to leave comments related to this criterion.	35 pts
Schema script Complete and correct DDL SQL statements that match the relational schema and the design constraints.	This area will be used by the assessor to leave comments related to this criterion.	35 pts
Individual Progress Report Reflection 1. The progress report is filled and submitted by the individual team member. 2. The progress report indicates the indviduals tasks and reflects on the workload between the team members and the communication method for the team during the task period. 3.The progress report addresses the individual contribution to team communication and final tasks	This area will be used by the assessor to leave comments related to this criterion.	15 pts
Individual grade: Contribution to team communication and final tasks 1. The progress report for each individual team member shows how they communicate openly and treat one another with respect. 2. Team member time management: The team member contribution reflects that they are self-motivated to complete work assignments and share his/her work and response time gives ample space for peer discussion, follow-ups, and retorts. Member feels responsible for helping lead. 3. All tasks have been completed with high quality and submitted on time.	This area will be used by the assessor to leave comments related to this criterion.	15 pts
		Total Points: 100

Here are some guidelines for how to evaluate task 1 and task 2 as a team for this assignment.

1. **<u>EER Model covers all the listed requirements for the system</u>**
    a. Correct Entity Sets
    b. Correct identified Attributes sets for each entity
    c. Primary keys have been identified for each entity
    d. Correct cardinality constraints identified for each Relationship
    e. Correct participation constraints have been identified
    f. EER Model is designed using MySQL Workbench. This is the only acceptable option; any other tool will not be graded.

2. **SQL Script that shows**
    a. Mapping from EER to Relational Model has been accurately done
    b. Error free complete SQL Script that executed correctly and it includes:
        i. Creation for the Schema
        ii. Creation for all the tables in the correct order that doesn't violate any constraints or cause an error. Handling the case of creating an existing table issue has been considered
        iii. The SQL statements include the enforced relational constraints in the designed schema. The constraints include: Key, Entity and Referential Integrity constraints
        iv. Assumption regarding Cascading deletions or updates are enforced and justified.

Auto generated scripts are not acceptable. I want you to practice writing scripts and not use auto

Teamwork resources and recommendations:

1. Choose a team leader to be responsible with submissions and team management
2. Choose the most suitable communication method (e.g. email, chat, Teams, Discord, Canvas)
3. Choose a document sharing software such as Google drive, Canvas, GitHub etc.
4. Arrange a regular meeting time for team discussion and progress check-ups
5. Consider using some of the team management software. There are many online software tools that can be used to help teamwork. Tools are useful to allow remote team communication. Check some of them below

    a. Trello
    b. Asana
    c. Zenhub