COLLEGE OF BUSINESS

IS380 Database Management Sec 02 Spring 2021

Project Description

For this project we are going to develop a complete database management system to satisfy some business need. The design of the database should include:

a) a **conceptual model** to satisfy the needs of the organization, allowing the insertion, modification, and deletion of data without causing data integrity problems.

b) A **logical model** that describes the conceptual model developed above in as much detail as possible. This should be in third normal form unless you specify a reason for denormalizing a part of the database. This model should include:

   a. All entities and corresponding relationships between them marked with primary keys and foreign key relationships.
   b. All the attributes that each entity should include.

c) Supporting documentation including:
   a. A **data dictionary** with the definitions of each entity and important attributes that could otherwise be misinterpreted (think of possible issues with synonyms, antonyms, etc.).
   b. Description of the need for the database and what it should be able to do to be considered successful (refer to the questions below for additional factors to consider).

d) Description of the characteristics of the **physical design** of the database such as:
   a. Whether some tables will be partitioned, or denormalized and why.
   b. Which entities (subjects or objects) will have access to some functions of the database and which would those be (insert, read, modify, delete)? Are there constrains for them to maintain security?
   c. What data type will each attribute possess? Why?
   d. How are you organizing files (Heap, Sequential order, Indexed, or Hashed) and why?
   e. Please add a brief description of our database recovery policy (are you including backups, journalizing, etc.? How will you restore the database in case of a disaster (disk mirroring, restore, Rollback, or roll forward)?

e) Description of some of **the tasks expected from the database**, and related **SQL queries** to get the answers to your question. You may also choose to include a query to generate the database itself.

To start the development of your database, consider what problem it needs to solve and who would benefit from it. You can start by considering questions such as:

- What is its purpose? Who needs it and why? And what should it do to be considered a success?

- Who are the users and why do they need it? What information should they receive from it? (for example, you could mention calculated data coming from the database, potential reports with business value that could be generated from the data in the database, etc.).

- What inputs would be available for the database? What information should it keep track of? (you can think of events that need to be recorded to facilitate this).

- What information should be stored in the database? (This will guide you to the attributes of the tables, the instances or rows within them, and their relationships).

Requirements

- Project Presentations. 10 minutes per team, could be recorded or live and will take place during the course scheduled time.

- Submission of Database File itself implemented in MySQL.

- Documentation with models and descriptions of the database as specified above.