**GROUP PROJECT**

**Due Date:** Tuesday 17th December 2019, During your Class Session.

**Group Members:** Maximum of 5 Students.

**Delivery:** Group Presentation (All Members must Present) and Submission of Hard Copy Report.

**Weightage:** 20%

**Business Scenario:** **KICT Facilities Reservation System (K-FRS)**

Kulliyyah of Information and Communication Technology (KICT) top management has consulted your team to design and produce a database application to manage the use of its facilities after office hours including the weekends. By facilities we meant the lecture theaters, conference rooms, multipurpose halls, classrooms etc. These facilities can be reserved for internal use for free or external use for some fees. Internal use are events organized by other Kulliyyah and IIUM clubs. Examples of these events are international conference, seminar, workshop and competition. Conversely, external use is the public and non-IIUM institutions wanted to use KICT facilities to organize talk, wedding etc. However, the events organized for external use must be approved by the top management before they can take place in KICT.

KICT wish to build a database application that will register the organizers, events, facilities reserved and to impose control on the suitability of the events organized. A coordinator has been appointed by KICT to take the lead in developing this application. The database application system will have to fulfill the following requirements:

* Allow the organizer to register and set up their events. The maximum number of THREE events per organizer can be created per month.
* These events must be approved by the top management before allowing the organizer to use the reserved facilities in KICT.
* Allow KICT to register all the facilities that are available for reservation together with the rental prices for external use.
* Provide the ability for KICT to block any facilities on demands from being used at specific dates to give way for internal use.
* The organizer can modify their details on the registration forms. For example, change their profiles, change details on their events and delete their registration.
* Track the status of each individual event i.e., approval by the top management, payment has been made and event completed.
* At the end of each event organized, the organizer can leave feedback to KICT in term of their satisfaction with the facilities provided i.e., can be given marks in the following areas: seating arrangement, AV support, conducive temperature, lighting exposure, adequate space etc.

It is your group duty to propose, design and implement a database application that can address the above requirements as well as store the necessary information related to K-FRS. The tasks breakdown for the group project are detailed out below:

**Project Guidelines:**

Project deliverables:

|  |  |
| --- | --- |
|  | **Task** |
| 1. | Report  (ER/EER diagram and Data Dictionary) |
| 2. | SQL Script  (Tables) |
| 3. | SQL Queries  (At least 5 queries but must include the use of joins and functions) |

**Task 1**

1. Identify all the entities and attributes. You can add necessary attributes to the identified entities.
2. Specify the business rules based on your scenario, draw the ER/EER diagram and Relational Schema to show the relationships between the entities and attributes. Schema should be normalized.
3. Create the data dictionary for the above schema.

**Task 2**

Write a script to create tables and sequences based on the ER/EER diagram.

**Populate each table with not more than 15 records (practical representation of the business scenario**). The objective is to ensure that you understand how to read an ER/EER diagram and know how to create tables and also table constraints. Please ensure that your script contains these items:

* Drop table statements.
* Create table statements complete with primary key and foreign key declarations (make sure that you give a proper name to each constraint).
* Insert record statements.

**Task 3**

1. Write any five (5) SQL queries of your own but you must include the use of joins and functions.

Example of SQL queries are given below:

* 1. Show the organizers, events and facilities reserved. Show ONLY the name, event title, duration and facility.
  2. Show details of the facility that has more than (5) number of organizers in June 2019.
  3. Find the organizer with the MOST number of events organized between June and August 2019.
  4. Find the average marks received by each facility in June 2019 in descending order.