CSCI 335 – Database Project

**Sport Events at LIU**

The LIU at Beirut organizes a sport event inter-LIU (across all Lebanon campuses). The objectives of the application are:

* Manage the reservations of playgrounds and sport equipment for the training of the players.
* Manage the reservations of hotel rooms for the sport delegations.

You are responsible of the development of an application to manage the tasks above. Hence, you need to cooperate between the organization committee of the games and the tourism office for the application. A detailed description is given in the rest of the text.

A building is characterized by a number, a name, a type (internal or external) and an area. A building allows the practice of many games (e.g., basketball, volley-ball, handball), eventually simultaneously. In order to establish this, we must know for every building the number of sub-buildings which it contains for a given sport. For example, three tables of ping pong can be installed in a building. A sport is identified with a name. Many types of equipment could be used for a given sport (balls, racket). This equipment is divided in numbered lots. A lot of equipment is characterized by an equipment type (balls) and the number of units which is composed. For storage reasons, a lot of equipment is attached to only one building. A lot of equipment is attached to one or many sports.

The building reservations are done by a delegation chief. The first name, the last name and the phone number are registered for a delegation chief. When a delegation chief does a reservation, he indicates the date, the exact hour to start and to finish. A reservation includes a building, a sport and eventually one or many equipment.

A delegation chief is also responsible for the reservation of hotel rooms. When a room is reserved, the delegation chief indicates the first day and the last day. The name of the hotel and its address is also saved. Every room is characterized by a number, a type (simple or double) and a price.

If you see that the data in the case study is incomplete, you are expected to add necessary assumptions.

## PROJECT INSTRUCTIONS

This project is a group work consisting strictly of 3 members in each group.

## Normalization

Normalize your tables to the third normal form. Show your work in details. Is it in First, Second, or third? And explain why

## Database Creation

Your Tables should have at least the following constraints:

* Primary and foreign keys.

## Data Insertion

The data insertion scripts should have the following features:

* There should be at least five rows of data (where appropriate) inserted into each table you have created.

## Queries: write the below queries, save them in a sql file

1. List the name of delegation chiefs who had made reservation for the New Year 2012.
2. List the equipment(s) that are not yet reserved.
3. list the name(s) of the delegation chief that had reserved the building “Agassi” for playing tennis and the building “Zidane” for playing football.
4. List the name of the building that is reserved more than 100 of times for the year 2011.
5. Give the number of reservation done by the delegation chief “Rami Abbas”.
6. For each hotel, give the most expensive and the cheapest room.
7. Give the total number of rooms available on 31/12/2011.

## What you need to do

You need to design a database structure for “**Sports Events At LIU**” that meets all the above requirements. You must include the following Entity Relationship Diagram (ERD) in your design.

In this diagram, you should include: entity names, primary key attributes for each entity, foreign key attributes, other relevant attributes, relationships, relationship names and cardinality.

Project deliverable should be a Word document report, which includes the below:

1. Enterprise Architect/Draw.IO/ERDPlus ‐ All diagram for a Fully Attributed ERD
2. Resolving the Relationships between the entities.
3. Mapping of Relations to Tables.
4. Normalize the tables to the third normal form.

In addition, you are required to submit the electronic versions of the diagrams produced in Enterprise Architect/MS Visio or online ERDPLUS

1. Generate SQL scripts for all tables being created, name the file as: Tables\_Creation.sql
2. Have comment sections explaining the script.
3. Populate the tables with sample data.

Place the corresponding files into a single ZIP file and submit that on Google classroom. The name of the ZIP file should be:

**‘CSCI335\_Project\_*GroupMemberNames’***

**Grading:**

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| --- | --- |
| **Task** | **Percentage** |
| Fully Attributed ERD | 30% |
| Resolving the Relationships | 10% |
| Mapping Relation to Tables | 10% |
| Database creation | 25% |
| Data Insertion | 10% |
| Presentation | 15% |

**Important:**

1. Submitting due date: January 2023.
2. Copying and/or plagiarism (ZERO)
3. In case of late submission, (‐10%) for each day of delay, for Maximum 3 days.
4. No teamwork effort (‐20).