Diploma in Information Technology
Database Management and Security
Instruction for CA3 Group Assignment
April 2023 Semester

Continuous Assessment 3 Group Assignment

100 marks (This assignment constitutes 40% of the overall grade)

Forming of Group

Students are to form groups of <u>3 to 5 students per group</u>. As this a group project, each member is expected to put in his/her fair share of the effort into the project. It is essential that groups manage their group effectively to complete this project.

Students should resolve group dynamics issue and may seek the mediation through the lecturer as early as possible. Last minute mediation will not be entertained. Students may request for peer evaluation as a final resort if all mediation fails.

Finally, the lecturer reserves the right to assign a mark to an individual student different from the rest of the group if that student is deemed not to have put in his/her fair share of effort into the project.

Introduction:

With the release of Street Fighter VI looming, you have been hired by Capcom to be the Database Administrator for the online community forum they are rolling out for the video game.

To that end, you have been tasked with developing a database that their web application programmers can build the front-end application of the forum on. Here is an example of the kind of forum Capcom is looking at building for Street Fighter VI: https://archive.supercombo.gg/

You can also learn more about Street Fighter VI on their official website here: may learn more about the video game series in their official website for Diablo IV: https://www.streetfighter.com/6/

<u>Part 1: User data setup (30%)</u>

The developers of Street Fighter previously had a simple discussion board among themselves that was used by the team for communication. They have exported the raw data in the database for you in a CSV file a a reference (see **SFVI Forum Users.csv**), and they want the data to be imported into the new database that you are creating for them.

Do note that, as the old board was created by an intern, it might not be structured correctly, so **you will need to help them make the necessary changes to the data**.

You have been tasked with the following:

Tasks:
1. Analyse the fields and data in the csv file and create an appropriate data model for storing the data in a MySQL database. You will need to ensure that the table(s) you create are all in 3NF.
2. Write an SQL script to insert the data in the CSV file into the database.

What to submit:
1. ER diagram of the database. (10 marks)
2. SQL script to create the new table(s) (10 marks)
3. SQL script to load CSV data into the database tables (10 marks)

Part 2: Migrating old post messages (40%)

After the old user accounts have been transferred over, the developers also want you to help them migrate the messages from their old discussion board over (see **SFVI Message Data.csv**).

Like before, this data should be imported into the new database that you are creating for them. Do note that **this data will need to be integrated together with the data in Part 1**, so you will need to create a database schema that accommodates both sets of data, and makes the necessary linkages between both sets of data.

Task:
1. Analysis the fields and data in the csv file and create new table(s) or new fields in the existing database to store the message data. You will need to ensure that the table(s) you create are all in 3NF.
2. Write an SQL script to insert the data in the CSV file into the database.
3. A usage report detailing the total amount of time each user spent on the game

What to submit:
1. ER diagram of the database with the new table(s) (10 marks)
2. SQL script to create the new table(s) (10 marks)
3. SQL script to load CSV data into the database tables (10 marks)
4. SQL script to generate an SQL output the number of topics each user has created, and the number of posts each user has made (10 marks)

SQL output columns for usage report:
1. User email
2. Number of topics
3. Number of posts

Part 3: New features (30%)

After the data has been migrated, the developers would also like it to have some new features. Do note that the additions here **will add onto the existing database schema that you have in Part 1 and Part 2**.

Tasks:
1. The developers would like to allow board users to subscribe to any topic that they want. A user can subscribe to as many topics as they want. Modify existing fields in the database or create new table(s) to accommodate this feature.
2. They would also like to be able to track user activity within a given time period. To test whether your database is able to do this, they want you to provide an SQL query that will show the number of posts a user has made in Q4 of 2022.

What to submit:
1. ER diagram of the database with the new field(s) / table(s) and SQL script to modify the database schema accordingly. (15 marks)
2. SQL query showing the number of posts a user has made between October 2022 to December 2022. (15 marks)

Penalty for Late Submission of Assignment

By one day: 20% to be deducted from total marks.
More than one day: submission will NOT be graded.
CA3 Individual Assignment Deadline: 15 May 2023, 11.59 am

Appendix

Part	Description	Task	Marks	Total Marks
1	User data setup	ER Diagram	10	30
		SQL script to create tables	10	
		SQL to load data into database	10	
2	Migrating old post messages	Updated ER Diagram	10	40
		SQL script to create new tables	10	
		SQL to load data into database	10	
		SQL script to generate requested data	10	
3	New features	Updated ER diagram	15	30
		SQL script to generate requested data	15	
TOTAL				100