

Term Project

Database Design for Business Applications

Due dates:

Group List by midnight on 10/06/2021 (**no late submission**)

Progress Report by midnight on 10/20/2021 (**no late submission**)

Full Submission of the Completed Word & DB & Recording & Peer evaluation by midnight on 12/03/2021 (**late submission accepted up 24 hours after the due date with a 25% penalty**).
Submission by email is not accepted

The objective of this project is to implement the full cycle of database management including database design, implementation, querying and analysis.

A. Project requirements

For a **real-world** setup of **your choosing**, you are tasked to design and build a database based on relevant business rules. You are also tasked to prepare a SQL-based business report that helps better understand the setup you chose. See document “Online_App_I_Database In Electronic Commerce.pdf” for your reference as one example of a real-world setup. Note however that, in this pdf document, the level of details in describing the system and sub-system is beyond the scope of this project. Note that the setup up you choose can be already existing (a start-up, Quora, Amazon, ...) which you then stylize to your needs or a made-up (but realistic) setup.

Part 1- Identify the general system setup and its sub-systems.

Part 2- Provide a description of the various sub-system business rules.

Part 3- Create a fully normalized ER diagram. Ensure you include at least **nine** tables.

Part 4- Create and load the database and tables with data. Ensure you include constraints as well as primary key and foreign key definitions. Also ensure you include at least **twenty** records per table. If this applies to your setup, feel free to use publicly available data and make sure you reference it. Otherwise, the data can be made up.

Part 5- Using SQL-based queries, prepare a report that summarizes and synthesizes the business operations. Use any visualization of your choosing to present your results.

Include at least ten advanced queries and their corresponding business summary. You might want to include any number of these functionalities: COUNT, MAX, LIKE, BETWEEN, GROUP BY, HAVING, Table join, Subquery.

Part 6- Report and present your findings.

Report your findings in a document consisting of all the five parts listed above. Also, you and your group will present your findings. This will be a 12-minute pre-recorded presentation summarizing the highlights and key findings. This presentation should *briefly* introduce parts 1 through 5 identified earlier, with a bigger focus on the insights from part 5. The presentation will be evaluated based on the rubric titled “Presentation Rubric” posted on Canvas.

B. Submissions Overview

- 1- **Group List:** Form a group of 4 students. Submit the names of your group members through Canvas by the set deadline.
- 2- **Progress Report:** Prepare a progress report about your project. Submit one file per group. Include the following components in your progress report document:
 - a. Group members names
 - b. Fully developed ERD
 - c. SQL statements to CREATE all the tables
- 3- **Full Submission:** Submit a) one group term project document, b) one .sql file, and c) one recording. Also submit d) individual peer evaluation forms for every member of your group. Those are detailed as follows:
 - a. A group term project document with
 - i. Group members names
 - ii. Fully developed ERD
 - iii. Your answers to parts 1 through 5 from the previous page. For parts 4 and 5, provide the SQL statements you write, the results and snapshots of each of the result table.
 - b. A .sql file with
 - i. All the SQL statements (CREATE, INSERT, SELECT...). Ensure these statements are in a format that can be executed in MySQL.
 - c. One recording for 12 minutes presenting the highlights and key findings. This presentation should briefly introduce parts 1 through 5 identified earlier, with a bigger focus on the insights from part 5. All members must present. Feel free to use any tool to complete the recording. Here's a resource if you wanted to record from using PowerPoint (<https://support.office.com/en-us/article/video-record-presentations-2570d5f5-f81c-40bc-b404-e04e95ffab33>).
 - d. Individual submission of the peer evaluation form. Note that each group member will submit a peer evaluation form that evaluates each of the other members in their group (10% of your individual grade is based on peer evaluation). The template is available on Canvas for your reference. **You will submit your evaluation using an online form that will be available from 12/03/2021 at noon till 12/05/2021 at noon:** http://smeal.qualtrics.com/jfe/form/SV_oPVvj1ZshNHS7R4

Upload a) the report document (one per group), b) the .sql file (one per group), and c) a recording of your presentation (one per group) to the *Project* folder through *Canvas*. Also submit d) individual peer evaluation (one per member).

The assessment for the project is as shown below:

Requirement	Weight
On time submission of group list	2.5%
On time submission of progress report	2.5%
Answers to part 1	5%
Answers to part 2	15%
Answers to part 3	15%
Answers to part 4	15%
Answers to part 5	25%
Correct execution of .sql file	5%
Presentation	5%
Peer review	10%