**Group Project**

**Objective**: Your team has been approached by a company that wants to create a website exactly similar to faceboook/linkedIn/Digg [you can pick any other interesting website or platform that is database driven].

Your task is to create a database that will support the business processes and functionalities of the website. I do not expect you to develop a database to capture all the functionality of the real life website. Therefore, it is important that you clearly highlight the features that you will focus on and then ensure that the database that you develop is sufficient to implement these features.

If you have an idea for an innovative application/idea then you can create a website for such an application too. However, you need to ensure that you clearly convey what that application does, what information does it need to store and process (in a database) to make that application work.

**Group Project Deliverable:** A written project report

**Section 1:**

* **Overview** of the business scenario
  + Use bullet points to briefly describe the scenario and define the scope of the project, i.e., the goals that the business organization will achieve with the database system, who will be the users, the major business rules, and so on).
  + You should also provide screenshots of the pages, forms, etc., of the website that shows the business functionalities that you intend to include in the scope of your database.
* **Mission** Statement and Objective [refer to sample provided on class slides]
* **ERD:** Draw the ER diagram based on the requirement specifications of your group project. Follow the notation taught in the class. Specify the entities, their attributes, and relationships among entities.  Among the attributes of each entity, specify the primary keys.  Name the relationships.  Reflect your business rules by identifying the cardinality for each relationship.  (try to fit it on one page).
  + Also provide any alternatives ERD models considered (before selecting the one that you present) or any iterations made to the ERD before arriving at the final ERD as you got more clarity about the requirements (for e.g., while trying to answer queries)
* **Data Dictionary**
  + Description of Entities

**Partial Sample**

Table

Description automatically generated

* + Description of Attributes

**Partial Sample**

Table

Description automatically generated

* **Relational Schema**
  + **Partial Sample**

Graphical user interface, text, application

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**Section 2:**

* OBJECTIVE: Create physical tables for your database and write SQL queries for your business
  + NOTE: To be able to complete this task, you would need to write SQL script for creating tables and inserting data. However, do not include CREATE and INSERT statements in the report. **Instead attach a text file with all the DDL and DML statements (i.e, create, insert, select etc) with your submission so that we may recreate your database at our end.**
  + Step 1: Create tables based on your relational schema, using DDL. Link related tables together with foreign key constraints.
  + Step 2: Make up data for your database.  Use DML to insert data values into these tables.  For each table, there should be at least 5 records (or as many as needed to test your queries).  Make sure that you have enough variety in the data so that you can perform queries on it based on various search conditions. Make sure that all tables are created and linked appropriately and the data makes sense.
  + Step 3: Prepare at least 20 queries (e.g., you may have a mix of simple and complex queries, queries involving derived value, aggregate functions, etc.).  I will focus on the quality (interestingness, usefulness, and complexity) of the queries while grading
* In the report, include the Set of SQL statements to answer your queries -- State the objective of each query, followed by the query and the screenshot (partial) of the outcome of executing the query.
  + **Partial Sample**

Graphical user interface, text, application, email

Description automatically generated

**Section 3:**

* Pick 1-2 of your most complex and/or interesting queries. Explain the logic behind these queries,
* Document few insights Gained --
  + Challenges faced,
  + Overall learnings etc.,

Group grade will be given based on the performance on this deliverable.

Peer Evaluation may be used to adjust the grades of the individuals in a group (to avoid free riding by few group members).

Just to remind, the grading will be relative so best group/s would get A, next best group/s A- and so on. To be able to get the overall grade for each group, I will create a weighted average based on my own assessment, peer assessment, and grader assessment on the following dimensions --  **quality of work (scope, complexity, correctness of ERD/Queries, etc.,),  creativity (interestingness, usefulness, novelty of the requirements, queries etc.,), depth/richness of the insights provided.**