Project 2022 – TDT4145

The problem itself is described in another document “TDT4145 project, spring 2022». Here, the delivery will be described. You are of course allowed to answer in **Norwegian** for both deliveries.

DB1: Deadline 14. March 23:59 (11:59 pm) on Blackboard.

Delivery 1: Conceptual data model

a) An ER-model showing your complete data model. You may use all ER and EER concepts used in the course TDT4145.

b) The ER-model translated to relational schemas (tables). Describe keys and foreign keys. You should explain and argue for the normal form of all your tables.

c) A description that explains how your model satisfies the 5 usecases listed in the problem. This means that you should check that all information required in the queries are covered by the tables. For every numbered usecase in the task description, explain how your model can solve the problem and satisfy the desired functionality.

d) An SQL script that constructs the database with tables. Remember primary and foreign keys, as well as other restrictions that you find necessary. Save your answers in a PDF-document. The SQL script should also be attached as a .txt-file.

Let the document be concise and the figures be easy to understand.

Remember to write the names of all group members in your delivery (PDF + SQL) and deliver on BlackBoard.

DB2: Deadline 25. March 23:59 (11:59 pm) on Blackboard

Delivery 2: The Coffee database implemented in Python using SQLite.

The database should be implemented in Python based on the schema given in the first delivery. The 5 requirements for desired functionality must be fulfilled. The most simple solution is to create a text-based interface that may be run in a terminal window (cmd/bash). Remember that the goal of the project is to practice SQL and the database access in Python. The following should be delivered:

a) The Python source code with SQL packed in a zip-file or similar.

b) A textual description that documents your application, delivered as a PDF. The documentation must describe how each usecase is solved.

c) The database file of your project’s SQLite database.

d) Textual output from the queries in the usecases.

Let the document be concise and easy to understand. Remember to write the names of all group members in your document (PDF) and deliver on BlackBoard.

Criteria for evaluating the project

Here are the criteria which are used to evaluate the project:

DB1

1. The use of entities vs. relationships vs. attributes. “Correct” level of use of these concepts. Reasonable number of entities and relationships.

2. Use of keys. Natural vs. generated keys.

3. Constraints in the model, e.g., cardinalities. Are they used correctly?

4. Mapping to SQL tables. Correct use of SQL. Correct use attribute domains. Use of key constraints and Unique. Use of foreign keys constraints. Understanding of normal forms including 4NF.

5. A description of how the different use cases maps to the different tables. Which tables are used in the different use cases. Is all needed information contained in the tables.

6. The documents should be concise and the figures should be clear.

DB2

1. An overview on how the use cases are solved.

2. Correct use of SQL in Python.

3. Understandable and readable code

4. Concise and clear description in the document

5. It should be possible to regenerate your delivered output by the programs and database delivered.

With respect to the marks used, we rely on the general description found here:

https://i.ntnu.no/wiki/-/wiki/Norsk/Karakterbeskrivelser+for+teknologiske+fag