Programming Assignment 2

Contact person: Ilir Jusufi - ilir.jusufi@lnu.se

For this assignment you will need to use Python (version 3.6 or above) and MySQL.

All answers should be your own. You are allowed to work in groups of two. Make sure you include your names in the report when you submit.

NOTE: Follow the submission and implementation guidelines carefully. If your implementation does not adhere to the requirements presented in this document you will **get 0 points!**

Tasks

1.Idea

Come up with an idea for your project. Think about what problem it solves, who the main user(s) will be, and why your idea is a good fit for them and the problem. Describe the main features that your application must have to be complete.

2. Design schema

Design a data model for your project and present it as an E/R diagram. Make sure to include important attributes and relationships. E/R diagrams do not need to be on your written report. Translate your design to collections in SQL. Discuss and motivate your design. Your design should have at least 3 different tables.

3. SQL queries

Create at least five queries to your SQL design that are needed to implement the functionality of your application. You will probably need to create more than five queries to make your application functional, however we require some specific cases to be implemented and described in the assignment report. Focus on the more important queries and features of your application (i.e., there is no need to show how you insert documents in your various collections). Explain and motivate each query.

General guidelines for queries:

1. At least 3 queries should query data from more than one table, i.e., you should use at least two multirelation queries
2. You should make use of SQL JOIN
3. You should make use of Aggregation and Grouping
4. Create and use a View

4. Implementation

Write a program that implements your Idea in Task 1 with the design and queries from Task 2-3. You are of course allowed to introduce more queries. For this assignment you are free to use any GUI library you want. If you are using frameworks such as Django or Flask, you need to “hard code” your queries and provide enough details for us to be able to check your implementation. Do not use the “models” features of such frameworks.

5. Supplemental video

Make a video (at most 7 minutes) demonstrating how your implementation works. It should show how it runs your queries and the results they produce (focus on guideline queries from Task 3). You should upload the video somewhere (ex. youtube or vimeo), where it is accessible to us and reference it in the project report. IMPORTANT: the video is a demo of your software.

Submission

Your submission should include solutions to all assignments above. Submit a report in PDF format on Moodle. Host your source code in github or related repository and reference it in your report. If you need data in your database, please submit a database dump and write an installation script. If you work together with someone, submit the assignment from only one of your accounts and make sure to put both names in the report! The report should have at least 4 pages and should not be longer than 8 pages including Tables and Figures.

HINTS:

1. Avoid usage of weak entities if possible.
2. Do not overcomplicate the DB schema. Do not include more tables than necessary.
3. Do not have less than three tables.
4. Try to choose an idea that might be interesting to you.