University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: 3

Date: March 13 2025

Group Number: 44

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

Project Summary:

Our project involves modeling country data and demographics to allow users to interactively explore and understand the relationships between countries and their various attributes. We model many different aspects of this domain, including countries, cities, continents, borders, languages, ethnic groups, religion and currency. Users will eventually be able to view comprehensive details about any given country, as well as being able to query on any given criteria, via an interactive user interface.

Timeline and Task Breakdown/Assignment:

1. **Setting up the Sample Project and pushing to Repo:**
   Danesh → Done by the 15th.

   Potential Challenges:

   - Ensuring all team members have proper repository access and permissions
   - Establishing a consistent development environment across team members
   - Agreeing on naming conventions and coding standards

2. **SQL Script:**
   CREATE TABLE:
   - Done from M2

   INSERT Statements:
   - 7 Each
   - 7 each following the order in M2 (Danesh first 1-7, Vansh 8-14, Hardit 15-21)

   DROP TABLE:
   - Each team member will write a DROP TABLE for the same endpoints for which they wrote the INSERT statements

   Potential Challenges:

   - Coordinating the INSERT statements (7 each) to maintain data consistency
   - Ensuring proper foreign key relationships between tables
   - Managing dependencies between tables to determine the correct DROP TABLE order

   INSERT/DROP TABLE statements completed by the 17th.

3. **Queries 1-6 (Insert, Update, Delete, Selection, Projection, Join):**

   Danesh:

   - Insert, Update

   Vansh:

   - Delete, Selection

   Hardit:

   - Projection, Join

   Potential Challenges:

   - Handling potential constraint violations during inserts
   - Ensuring updates don't break referential integrity
   - Managing cascading deletes if/when necessary
   - Determining the most appropriate join types (INNER, LEFT, etc.)
   - Handling potential NULL values in the join results

   These first 6 endpoints to be completed by the 22nd.

4. **Queries 7-10 (GROUP BY, HAVING, Nested GROUP BY, Division):**

   Danesh:

   - Aggregation with GROUP BY
   - Division

   Vansh:

   - Aggregation with HAVING

   Hardit:

   - Aggregation with nested GROUP BY

   These next 4 endpoints to be completed by the 24th

5. **GUI:**

- Working together using React

Potential Challenges:

- Setting up React environment and component structure
- Creating separation between frontend and database operations
- Implementing form validation before executing database operations
- Testing the entire application flow from UI to database and back

Basic GUI set up by 28th.

6. **Demo:**

In terms of different queries for the Demo, each team member will demonstrate the queries they worked on from 2 & 3 above.

Repository URL:

https://github.students.cs.ubc.ca/CPSC304-2024W-T2/project_e2m2w_e7r5s_w0f1n