Milestone 3

March 3, 2025

Project Group Number on Canvas: 'Group 41"

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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

CPSC 304 Introduction to Relational Databases
The University of British Columbia

1 Repository Link

Our Prison Database Management System can be found at:
`https://github.students.cs.ubc.ca/CPSC304-2024W-T2/project_h6v1y_k9y0h_v8c0o`

2 Project Summary

A brief summary about our project (2-3 sentences)

We are developing a prison database management system from the ground up using Next.js and Oracle. This system will store and manage essential information about a prison and its inmates while capturing and modeling the facility's internal logistics.

3 Timeline and Task Breakdown/Assignment

Division of Labour

Name	Role
Ahmed	Front-End
Vincent	Back-end
Zain	End-to-End

Timeline

For our project, we currently plan to do the following:

- Initial Setup & Planning
- Core Functionality Implementation
- Testing & Refinements
- Deployment & Final Touches

This will include initially setting up the front-end GUI/framework and applying our ideas using Next.js and Oracle. Some ideas that we have for the **front-end** include:

1. Front-End GUI planning/framework
2. Implementing UI for new inserts, removals, logs
3. Viewing information about a specific worker/prisoner
4. Creating new tables, importing/exporting our tables and storage information

Some ideas that we have for the **back-end** include:

1. Use user-implemented queries and allow it to be stored in our own personal database
2. Design and create the necessary database tables
3. Establish a connection between front-end/database and ensure database operations run smoothly
4. Implement API functionality for INSERT, UPDATE, DELETE, RETRIEVE.

For our **end-to-end** portion, we expect our full-stack developer to:

1. Ensure overall project structure is organized
2. Help integrate front-end and back-end
3. Set up version control and deployment environment
4. Optimize overall database and queries
5. Prepare for deployment

4 Projected Timeline

Due Dates

1. March 14, 2025: Milestone 3
2. April 2, 2025: Milestone 4
3. April 7, 2025: Milestone 5

Proposed Timelines For Projects

1. Week 0 & Week 1:
   (a) Develop a front-end GUI that can take in very introductory user inputs, this will include stuff as prison ID login, Viewing, Inserts, Removals, Updates → Ahmed
   (b) Define clear expectations for how the front-end will communicate with the backend and establish a connection from front-end to back end → Vincent & Zain
   (c) Generate at least 10 queries for each table in our database and ensure all proper/required queries are added → Vincent
   (d) Plan for possible error handling, this includes inserting NULL cases in NOT NULL tables, duplicate unique keys, and invalid inputs → Group
   (e) Discuss security measures for our database, this includes handling injections and rainbow attacks → Group
   (f) Set up a version control workflow, should be started before meeting → Group
2. Week 2:
   (a) Develop a more advanced UI model, which allows for the viewing information, possible notification popups → Ahmed
   (b) Fully implement a UI system which allows for the INSERT, UPDATE, DELETE, and RETRIEVE for our database which can establish a connection with our backend → Ahmed & Zain
   (c) Ensure that the overall backend structure of the project remained intact and that the relationships in our database were maintained → Vincent
   (d) Begin to implement our security measures and error handling discussed in Week 1 → Vincent & Zain
   (e) Conduct internal testing by performing unit tests for the back-end and UI, document test cases → Group
3. Week 3:
   (a) Prepare for deployment, ensure all loose-ends are tied → Zain & Vincent
   (b) Finalize touches on UI → Ahmed
   (c) Ensure demo projects runs locally without error → Zain
   (d) Conduct security and penetration testing, this includes vulnerabilities like SQL injections, and rainbow attacks → Vincent
   (e) Prepare the READ.ME Documentation → Vincent & Ahmed

In the case where a group member gets extra busy or an emergency happens. We have agreed to communicate our issues with one another and take on more/less work based on our availability; this is to ensure a proper completion of the project. Overall, we expect each member to contribute a total of $\frac{1}{3}$ each.