

**CPSC 408**  
**Spring 2020**  
**Final Project**

**Overview:**

For the final project you will push your programming and database abilities to the limit by implementing a database application of your liking. The end product will be a highly polished and well thought out application that will include both a backend database and front-end UI component. In a nutshell, your application will allow an end-user to insert, delete, update, query data (CRUD) and generate reports.

Though I provide you with a general outline for the project, many of the implementation details will be up to you. It will be your responsibility to research the techniques and best practices for developing an application/database of this scope.

**Project Details:**

The UI can be developed in the framework of your choosing (i.e. web, .net, java), however the backend database **must be** MySQL.

The final project must incorporate at a minimum the following requirements:

1. Print/display records from your database/tables.
2. Query for data/results with various parameters/filters
3. Create a new record
4. Delete records (soft delete function would be ideal)
5. Update records
6. Make use of transactions (commit & rollback)
7. Generate reports that can be exported (excel or csv format)
8. One query must perform an aggregation/group-by clause
9. One query must contain a sub-query.
10. Two queries must involve joins across at least 3 tables
11. Enforce referential integrity (Constraints)
12. Include Database Views, Indexes

**Deliverables:**

**Final Report:** You will prepare a final project write-up 4-6 pages in length (12 pt. font, 1-inch margins, double spaced). Your report should introduce the problem your project is wishing to address, describe related applications/work in the area (if any), discuss the elements of your solution (i.e. framework, algorithms), and present results, schema diagrams, and/or functionality of your final project. **All source code and files must be submitted via github.**

**Presentation:**

The presentation (power point) will be between 10-15 minutes and is essentially a condensed version of your final report. Presentation will contain the following:

1. Problem/Issue you are trying to resolve,
2. Your solution to the problem,
3. Schema diagram
4. Demonstration (not an actual slide)

**Do not treat the report/slides as an afterthought.** Please give yourself ample time to do the write up and make sure you proofread and edit carefully!

**Source Code:**

All source code should be commented and designed following best practices. All files (source, code, write up, slides) should be zipped up and submitted to blackboard on the last day of the semester, 5/23/2020.