

# Fall 2023 CPSC 332-03 13725 – File Structures and Databases

## Project Instructions

Instructor: Hokseng Hun

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### Important Date:

1. Project Part A – Due on Thursday, October 19, 2023, at 5:00 pm
2. Project Part B – Due on Thursday, December 7, 2023, at 5:00 pm

Project submission should be made via Canvas. Each student should work on the project in groups and submit a final report, a demo, and a presentation. Each student in the group will be asked to submit a review of their group members, where each member will assign a percentage of contribution towards the project for their group members. Logically, an equal contribution from each member is expected. Group members will receive a lower grade than others based on their contributions. For instance, if group members participate in only 50% of their required tasks and receive a review of 50%, they will receive only 50% of the total score.

**Note:** Project submissions made through email will not be accepted. Only submissions made on Canvas shall receive grades.

Maximum Marks: 125 points

The project comprises two main parts, including extra credit options – for additional functionality or extra credit.

### Database Application Project:

You are a freelance software development team that will receive a project request from a client about an online survey application.

The client will bring you a set of business requirements that their company would like you to use to implement their desired application. The client will be strict in ensuring their requirements are met, so please take note of meeting those requirements as a priority. The project you will be commissioned for will involve the following:

- Building an ER Diagram based on the provided requirements.
- Building a Relational Model based on your ER Diagram.
- Normalize your database to 3NF.

- Building the Physical Model inside your environment.
- Populate your database with sample data.
- Create a demo application to showcase your database design in PHP and MySQL

### **Client Business Requirements:**

Your customer is Academic Event Management Company (AEM), a well-known event organizer for universities nationwide. Your team will design their online event management system, including a database and a web application. The database stores all the information on events, organizers, presenters, attendees, faculty mentors, and abstracts.

### **Business Rules:**

1. The AEM system can manage multiple events for multiple universities simultaneously. The event can be an oral presentation, poster, or online.
2. All users (organizer, reviewer, primary presenter, and attendee) must sign up with a unique email address and password. Password must have at least eight characters long, one upper case, one lower case, one number, and one special character. Password encryption is optional.
3. The registered user can log in using email and password. After successfully logging in, the user can administer the event, review the abstracts, or sign up for other events.
4. The detailed information about the user must have at least first name, last name, email address, and phone number.
5. The system must capture event information as much information as possible. The event is not available to the public until the status is set to published. Each event must include the following information:
  - Event name
  - Description
  - Start Date & Time
  - End Date & Time
  - Capacity
  - Presenter's abstract submission deadline
  - A complete list of Presenters & Mentors
  - A complete list of Faculty Mentors
  - A complete list of Keynote Speakers
  - A complete list of Sponsors
  - Venue
  - University
  - Physical address (street address, city, state, and zip)
6. The organizer can add, update, and remove the events. Each event could have several reviewers, and a reviewer can help review numerous abstracts in many different events.
7. The organizer can add or remove reviewers from an individual event. When the reviewer is removed from the list, it does not affect the abstract successfully reviewed by this reviewer.
8. The reviewer could accept or reject any abstracts and ask the presenters to update and resubmit them.

9. One reviewer could review multiple abstracts; however, one abstract must have only one reviewer.
10. Presenters must submit their abstracts for review. They can cancel, resubmit, or withdraw their abstract at any time. Presenters can save their abstracts and submit later but not after deadline. When the abstract is accepted, the presentation will be scheduled by the event organizer.
11. There are four types of abstracts Oral Talk, Poster, Performing Arts, and Visual Arts. The abstract could have up to 8 presenters and must include the following information:
  - Title
  - Abstract
  - Abstract type
  - Subject area
  - Primary presenter's first name and last name
  - Primary presenter's email address
  - Primary presenter's institution
  - A complete list of the other presenter's first name, last name, and email address if more than one presenter
  - Faculty mentor's full name
  - Faculty mentor's email address
  - Faculty mentor's Institutions
12. Each abstract must have a subject area. There are a few subject areas available:
  - Behavioral or Social Sciences
  - Biological or Agricultural Sciences
  - Business, Economics, or Public Administration
  - Chemistry
  - Communication
  - Earth or Environmental Science
  - Education
  - Engineering or Computer Science
  - Film Studies
  - Health, Nutrition, or Clinical Science
  - Humanities or Letters
  - Interdisciplinary
  - International Studies and Languages
  - Performing Art
  - Philosophy
  - Physical or Mathematical Sciences
  - Religious Studies
  - Visual Art
13. All tables must have a timestamp to know when the record is inserted.

### **Additional Submission Requirements for the Project**

1. Provide a SQL script to create a database called “AEM” in MySQL server. Ensure your script can create the database and all the tables without an issue.
2. Provide some sample data.
3. Create a VIEW with the first name, last name, email, and phone number of all users who create more than 10 events.
4. Create a VIEW showing all the events with more than 100 abstracts.
5. Create a VIEW showing all the abstracts with over 20 presenters.
6. Create a VIEW showing all the abstracts which are closed or withdrawn.

### **Extra credit:**

Provide additional functionalities and make your website look professional. You can use any free or open-source CSS templates that are available on the internet.

### **Submission 1 – Project Part A [40 points]:**

Submit your ER Diagram and your Relational Model. Make sure the following are shown:

- Tables
- Primary keys
- Foreign keys
- Relationships
- Any Constraints

**Submission 2 – Project Part B [60 points]:**

Submit your development files, presentation, and final report (one per group.) For your development files, include a SQL Script of the populated database you created in your environment.

Your final report will outline the process of taking the requirements and showing the design process of the database. The recommended outline is as follows:

**Title (Application Name, Project Team Name, Class, Date, Team Members)****Introduction****Database Design Process**

Requirements

ER Diagram

Relational Model

Physical Model

**Application Design**

Overview

SQL Queries

Final Product

**Summary****Peer Evaluation****Presentations [25 points]:**

You will not need to present your demo or presentation. However, please submit it so that your demo is in working order and your presentation demonstrates the different functions required in your application.

**Extra credit [5 points]:**

In the requirements, there will be some opportunities for extra credit. Review closely and see if you want to implement them into your product.