

CSE 111 – DATABASE SYSTEMS

Project Requirements

Design and implement a tiered data management application consisting of an interface for interacting with the user and a back-end database for storing and retrieving the data. The user should have the capability to visualize the data in the database, add new data, delete, and update existing data. Extracting statistics and reports from the database is a feature that you should also consider.

You have freedom in designing and implementing the user-interface and in choosing the back-end database. This is a team project. Each team consists of two members. You can choose your team.

This is a semester-long project. There will be four checkpoints, spread over the entire semester, as follows:

1. **Week 2 September 11: Team and topic** – Determine the teams and choose the project topic. You have to provide a brief description of what you plan to develop. If you have problems finding a topic, you will be assigned one by the instructor.
2. **Week 8 October 23: Checkpoint 1** – Determine the project requirements and write the specification. Design the database layer. You are required to provide the use case specification as UML diagrams, the database design as E/R diagrams, the conversion from the E/R diagrams to relations, and the database SQL schema.
3. **Week 11 November 9: Checkpoint 2** – Implement the database layer. By this time you should be done with writing queries/updates/views in SQL. Design the user interface and provide a prototype of the entire system.
4. **Week 15 December 11: Final project** – The system is completely implemented, optimized, and tested. You are required to give a presentation/demo of your work and to hand-in a report of the project containing the design documents.

You will be evaluated for each part of the project separately. The importance of each part in the overall project score is as follows: 25% (75 points) for Checkpoint 1, 25% (75 points) for Checkpoint 2, and 50% (150 points) for the final project.

Project examples

- Bus schedule
- CD/DVD collection
- Library book management
- Exploration game
- Astronomical database
- Car dealership
- Basketball stats
- Social network
- Warehouse management
- Work issue tracking

GitHub Every team is required to create a repository for the project on GitHub (<https://github.com/>) where to store and share all the related materials. The link to this repository has to be provided to the course instructor and TAs before or during Checkpoint 1.