

Requirement

For the Term Project (Database Application with Web Access) a two-page proposal giving a detailed description of the application you propose to develop must be submitted before Spring Break. The proposal must indicate Web Framework (e.g., SpringBoot, or Play 2), DBMS Access via JDBC, Ebeans, or Hibernate, and Database (MySQL or PostgreSQL, unless permission). The proposal requires an initial UML Class Diagram for your proposed database (should have 5 to 9 tables).

Note: The proposal must be submitted before the Spring Break.

The Term Project includes database design (UML Class Diagram, 3NF/BCNF Normalization), population, and Web-based application development. The Term Project including a demo will be presented during the last week of class. Worth twice the points of regular programming projects.

Rubric for Final Presentations:

- Design Schema 1 using a UML Class Diagram
- Translate UML to Relational Model
- Design Schema 2 using the Boyce-Codd Normal Form (BCNF) Decomposition Algorithm
- Design Schema 3 using the Third Normal Form (3NF) Synthesis Algorithm
- Compare the three designs
- Show final schema in SQL and explain constraints
- Discuss Software Architecture and Components
- Demo Secure Logins (password handling and SQL injection prevention)
- Demo Database Queries
- Demo Database Updates and Transactions

Submission instruction

Put **report.txt** and all the requirements in a directory **TermProject_LastNameofTheManager** and zip this directory and submit the **.zip** file on ELC. Submission should be made **Only** by the group's manager.

Grading

- Proposal submission on ELC (20 points)
- All the codes with efficient implementation (40 points)
- Final presentation and demo (20 points)
- Creation of **report.txt** and balanced programming effort. (10 points)
- All classes and methods must be fully documented. (10 points)