

# CS 2005: DATABASE SYSTEMS

## Project Requirement Description

To be submitted on Google Classroom

Project Proposal [14th-Sep-2025 (End of 4<sup>th</sup> week)]

ER (end of 12<sup>th</sup> week)

Full Project (end of 15<sup>th</sup> week)

**Total Marks: 15 [10 marks in theory+ 5 marks in lab]**

The following are the technical requirements:

### 1) DESIGN PHASE :

#### a) **Proposal:**

- i) Introduction and brief description.
- ii) What functions should the system perform? That is, inventory control, billing, ordering, etc.
- iii) Front-End and Back-End Technologies

#### b) **Normalization**

- i) Apply the Normalization Process on the identified entity types.
- ii) Show all the functional dependencies and perform normalization up to BCNF
- iii) Show every step performed.

#### c) **Entity Relationship Design:**

- i) Describe your entities.. You must have enough entities to insure your project is not a "toy" system. GENERAL RULE: you should have about 5 entities and 7 or 8 tables.
- ii) Draw the E--R Diagram for your database.

### 2) IMPLEMENTATION PHASE:

Implement your tables in the technology mentioned in proposal. You must have tables and views defined. You must implement at least one query for each user. Your set of queries must also include queries that represent

- a) Joins
- b) Usage of advanced SQL features (i.e.All concepts we covered in Lab)
- c) Built-in functions
- d) Input from the user

You must also have

- e) insert

- f) update
- g) delete option
- h) Transaction Handling

- You must have at least one program/subprogram for each user you define.
- Submit the complete report (word file) in one single zip file (containing, all required information with screen shots of ER (prepared on software) on Google Classroom before deadline expiration.
- Maximum of 3 students are allowed in a group and minimum of two.
- ONLY group leader submits the project. Inside the report, all the member names and their numbers must be clearly mentioned.
- Your subject theory teacher will inform you about approval of projects within a week, after that you can start working on respective projects, without approval, no project will be accepted at the day of evaluation.