National University of Sciences and Technology	
College of Electrical and Mechanical Engineering	
Department of Computer & Software Engineering	

Semester Project

Subject Code: EC-360 **Subject**: Database Engineering

Date: Monday, 20th May 2024, 11:59 PM **Max Marks**: 100

CLO 4	Design and develop a database system (using backend engines and UI tools) that satisfies relational theory and provides users with business queries, business forms, and business reports	PLO 5	C3

Project Description

- You are required to develop a web based three tier application in a technology of your own choice.
- You are required to make group of at Max 3 students
- Each group member will have distinct role: For Example
  - Backend Designer / Developer
  - Business Tier Designer / Developer
  - Front End Designer / Developer

Deliverables (*to be Uploaded on LMS on 4 Jun 2023*)**:**

1. **Project Report**: *Covering Following Main Sections / Headings*:
   - **a.** Requirement Analysis
   - **b.** BackEnd Design
     - (1) Logical Design
     - (2) Physical Design
   - **c.** Front EndDesign (Use Figma etc)
   - **d.** Implementation
     - (1) Front End Tier Implementation (*Webpages etc*.)
     - (2) Business Logic Tier Implmentation (*Classes etc in case of OOP*)
     - (3) Data Tier Implementation (*SQL Scripts etc*)
2. **Project Code**: zip file containing code base

Viva + Demo: Last Week During Self Study periods. Project-wise date will be given after submission of deliverables on **20th May 2024**.

EVALUATION RUBRICS

- **Project Report** **(60 Marks)**
  - **a. Requirement Analysis (15 marks):**
    - Thoroughly documented and analyzed project requirements (5 marks)
    - Identified potential challenges and risks (5 marks)
    - Defined clear objectives and scope (5 marks)
  - **b. Backend Design (20 marks):**
    - Logical Design (10 marks):
      - Defined the overall architecture of the backend (5 marks)
      - Identified and described the key components/modules (5 marks)
    - Physical Design (10 marks):
      - Presented a detailed diagram or description of the physical infrastructure (5 marks)
      - Explained how scalability, security, and performance were considered (5 marks)
  - **c. Business Logic – Middle Tier Design (10 marks):**
      - UML Diagrams for the Structural Design the System (5 marks)
      - UML Diagrams for the Behavoral Design the System (5 marks)
  - **d. Front End Design (15 marks):**
    - Utilized appropriate design tools (e.g., Figma) (5 marks)
    - Developed an intuitive and user-friendly interface (5 marks)
    - Applied consistent branding and visual design elements (5 marks)
- **Project Code** **(15 marks):**
  - Front End Tier Implementation (5 marks):
    - Developed responsive and well-structured webpages (2 marks)
    - Implemented appropriate interactivity and user feedback (3 marks)
  - Business Logic Tier Implementation (5 marks):
    - Implemented classes and functions according to the chosen technology (3 marks)
    - Demonstrated sound understanding of the business logic requirements (2 marks)
  - Data Tier Implementation (5 marks):
    - Created and executed SQL scripts for database operations (3 marks)
    - Ensured proper data integrity and security measures (2 marks)
- **Viva + Demo** **(25 marks):**
  - **Viva**: Demonstrated comprehensive knowledge of the project and its components *Each student will be evaluated seperately as per his role.* (20 marks)
  - **Demo**: Presented a functional and visually appealing web application (5 marks)

Project Report (60)				Code	Viva	Demo	Total
Requirement Analysis	Backend Design	Middle Tier Design	Front End Design				
15	20	10	15	15	20	5	100