

Database System Project

Project Description

This project provides students with practical experience in designing and implementing a relational database system. The aim is to apply key database concepts, such as data modeling, SQL, and relational schema design, to develop a working application that addresses a real-world need. Students will complete the project in teams and follow the full database development process, from requirement analysis and conceptual design to final implementation and presentation. The project encourages critical thinking, teamwork, and the ability to document and present database solutions professionally.

Project Objectives

- Analyze and define clear database requirements for a real-world problem.
- Design conceptual (ER/EER) and logical data models:

Draw an ER or EER diagram that reflects your application's data requirements:

- a. Identify Entities
- b. Identify Relationships
- c. Define Attributes
- d. Show Cardinality and Multiplicity

- Draw the transaction pathway for all data queries on a separate EER diagram.
- Map the EER to a relational schema, identifying all Primary Keys (PK) and Foreign Keys (FK).
- Create a Data Dictionary including:
 - Descriptions of all Entities
 - Details of all Relationships
 - Definitions of all Attributes

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- Implement database structures using SQL (DDL & DML):
 1. Create the database tables using SQL DDL statements from your relational schema.
 2. Insert at least two sample records into each table using DML statements.
 3. Execute at least seven (7) data queries from your transaction list to demonstrate database functionality.
 - Demonstrate understanding of relationships, constraints, and data integrity.
 - Communicate technical work effectively through reports and presentations:

At the end of the project, each team must submit a comprehensive final report and deliver a presentation summarizing their work.

Possible Project Ideas

Students may select one of the following suggested topics or propose another (with instructor approval):

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- Library Management System
 - Hotel Booking System
 - Online Store Database
 - University Course Registration System
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Project Deadline :

12/12/2025 at 11:59pm