

IT214, Database Management Systems (Winter'2024)

Group Projects

How to go about it?

Remember: Your goal here is to “design and implement” the database for an identified application. And not to create the application itself.

Here you do the following:

1. Identify Database Application
2. Define Database Objectives
3. Describe the Application Usage Scenarios as advised in the following section.
May also like to refer to sample scenario descriptions of “bookworm.com”.
This is your first deliverable of the project.
4. Draw an ER Diagram from the application usage scenario
5. Create Relational Schema Diagram
6. Create DDL scripts, execute them, and create an empty database. Save DDL scripts for submissions.
7. Populate database tables with some sample data through INSERT statements.
Save INSERT scripts for submission
8. Implement Reporting Queries.
9. And more as described on the Project Description Document.

How do Identify a database application?

1. Look around various social networking and business sites and consider creating a database for one of them.
2. Look at the Google Play-store, find out what kind of application interests you.
Choose one for your project.
3. Look professionals around, like brokers, insurance agents, chartered accountants, and consultants. Conceptualize an application for one of them. Appropriate interaction with such users is highly desirable.
4. Look around business entities like Grocery Store, Pharmacy, Mandi, Society, Dispensary, Financing, etc. Conceptualize application for one of them.
Appropriate interaction with such users is again highly desirable.

Define the Objective of the database

1. Choose a “name” or title for the proposed database. Finding out the appropriate name is quite useful. This helps in figuring out a relevant set of data.
2. Here we explain the scope of the application, business activities that it covers, reports that it generates, etc.

Describe the database scenario

1. Identify application users
2. Identify Use Cases for each user.
Use cases are activities that a user does with the proposed application.
Here are some examples
 - a. "Save an Order"
 - b. Update the system when "Order is delivered"
 - c. New item added to the store
 - d. A Student Registering in a course
 - e. Instructor uploading grade for the course
3. Each use case either writes some data to the application database or reads (queries) some data from the database. **In this project, the most important part is to identify the "data" to be recorded.** The objective is to ensure that all required data are included in the proposed database schema.
4. Each Keep use case is to be described to learn more about data requirements. While describing we also attempt to capture relevant "entities/objects" that are important in that scenario. Interactions between entities are also captured and described.
5. Identify information and reports that are to be generated for decision-making.
6. List down queries that are important for implementing use cases and hence building the application.

Considerations while describing the database

1. You should be conceptualizing a real application with a real user
2. Do not oversimplify. You can reduce the scope and width if you find it to be too large.
3. You can also add more functions to the scope or drop from it as you learn more about it.

In summary:

1. We describe the use cases and queries for building the application
2. Extract entities with attributes and their interactions from use case descriptions