AeroAspire

SDE Intern

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Week 4 – Day1 (13th October)

Task:

Design schema for tasks: fields such as id, title, description, status, due_date; create tables

1. What is the normalized form? Why avoid data redundancy?

=Normalization is the process of organizing a database to reduce duplicate data and improve efficiency.
It means breaking large tables into smaller, related ones and connecting them using foreign keys.
We avoid data redundancy because storing the same data in multiple places can cause inconsistencies, take more storage, and make updates harder.
For example, instead of storing user details in every task, we can keep them in a separate user table and just link by user ID.

2. How would you decide types (VARCHAR, DATE, INT etc.)?

=Choosing the right data type depends on what kind of data we want to store:

- INT → for numbers like IDs or counts.
- VARCHAR → for short text fields like titles or names.
- TEXT → for longer descriptions.
- DATE / DATETIME → for due dates or timestamps.
- BOOLEAN → for true/false values like task completion. Using proper data types keeps the database fast, organized, and less prone to errors.

3. Describe schema changes you might make if tasks need tagging / user assignment.

=If we want to add tags or assign users to tasks, we can update our schema like this:

- Create a new tags table and connect it to tasks using a many-to-many relationship (since one task can have many tags).
- Create a users table and add a user_id field in the tasks table to show which user owns the task.
  These changes make the database more flexible and scalable for new features.