NAVYA NARAYAN PANICKER

WEEK 4

DAY 2: 14/10/25 [MONDAY]

TASK : Connect Flask to SQLite or MySQL; implement CRUD using raw SQL or ORM (SQLAlchemy)

QUESTIONS/REFLECTIONS:

1. What is ORM, what are its advantages & disadvantages?
    - ORM stands for object relational mapping.
    - Maps the database table to the objects so application code can work with native objects instead of raw sql.

    - Advantages:

      Faster development
      Reduced maintenance costs
      Portability
      Safer defaults

    - Disadvantages:
      Performance pitfall
      Reduced sql frequency

2. How does parameterized query prevent SQL injection?
   It separates the code and the data from thr parameter values.
   It binds and sanitized by db driver as the parameter types and escape or encode values are enforced in the backhend.
   You can reuse the query plan since sql is fixed the db can reuse the execution plans.

3. What is the flow from request → ORM / SQL → DB → return result → commit / rollback?

    - **HTTP request handling**: A request hits a web.The handler authenticates/authorizes, validates input, and orchestrates business logic.
    - **Application/service layer**: Business logic runs in services or use-case handlers. These create, read, update, or delete domain objects (entities/records) using the ORM API rather than issuing raw SQL directly.
    - **ORM session / context / unit-of-work**: The ORM provides a session (or persistence context) that tracks changes to entity objects.
    - **Execution and results**: The DB executes statements, applies constraints, and returns results/IDs. The ORM may update in-memory objects (e.g., primary keys from INSERT RETURNING).