**DataBase Manipulation with JDBC**

**1. E-Commerce Order Management System (JDBC, SQL Queries, ResultSet Handling)**

**Problem Statement:**

* Develop an **E-Commerce Order Management System** with the following operations:
  + **Add new orders** (INSERT INTO orders).
  + **Retrieve order details** based on order ID (SELECT \* FROM orders WHERE id=?).
  + **Update order status** (e.g., UPDATE orders SET status='Shipped' WHERE id=?).
  + **Delete canceled orders** (DELETE FROM orders WHERE status='Canceled').
* Use **ResultSet** to iterate over fetched data and process orders.

**2. Secure Employee Database Access (PreparedStatement, Parameterized Queries)**

**Problem Statement:**

* Build an **Employee Management System** that prevents **SQL Injection** using **PreparedStatement**.
* Implement functionalities:
  + **Add employee records** securely using INSERT INTO employees (name, email, salary) VALUES (?, ?, ?).
  + **Search employees** based on **name or email**.
  + **Update salary** of an employee using UPDATE employees SET salary=? WHERE id=?.
* Ensure that user inputs are **validated** before executing queries.

**3. Batch Processing for Bulk Data Insertion (JDBC, PreparedStatement, Batch Updates)**

**Problem Statement:**

* Develop a **CSV-to-Database Importer** that:
  + Reads **large CSV files** (containing millions of records).
  + Uses **PreparedStatement with batch updates** to insert records efficiently.
  + Commits transactions after every **1000 inserts** to optimize performance.
  + Handles **failures** by rolling back the transaction if an error occurs.
* Measure **execution time** and optimize insertion speed.