##### Task 1 Create 3 Real-World OOP Classes

##### Create Java classes for any 3 objects:

##### Student | Employee | BankAccount | Product | Course

##### Each class must include:

##### ✔ private attributes (4–6 fields) → Encapsulation ✔ constructor ✔ 3–5 methods ✔ getters & setters ✔ toString()

##### Example Structure

##### public class Student {

##### private int id;

##### private String name;

##### private int age;

##### private String course;

##### public Student(int id, String name, int age, String course) {

##### this.id = id;

##### this.name = name;

##### this.age = age;

##### this.course = course;

##### }

##### public void study() { System.out.println(name + " is studying"); }

##### public void displayInfo() { System.out.println(this.toString()); }

##### // Getters & Setters

##### }

##### PART B - OOP 4 Pillars Mini Tasks

##### Write short code examples demonstrating:

|  |  |
| --- | --- |
| OOP Pillar | Mini Task |
| Encapsulation | Make attributes private + use getter & setter |
| Inheritance | Create Person -> Student / Employee |
| Polymorphism | Override method: work() in Student vs Employee |
| Abstraction | Interface e.g. Printable with printDetails() |

##### JDBC CRUD Task

##### Inside your existing JDBC Java project (with connection already working):

##### Create a table in PostgreSQL

##### CREATE TABLE students(

##### id SERIAL PRIMARY KEY,

##### name VARCHAR(50),

##### age INT

##### );

##### JDBC Coding Tasks

##### Task 1 — INSERT a student

##### Create a method:

##### insertStudent(String name, int age);

##### Task 2 — SELECT all students

##### getAllStudents();

##### Task 3 — UPDATE student

##### updateStudent(int id, String newName);

##### Task 4 — DELETE student

##### deleteStudent(int id);

##### Method Template Example

##### public void insertStudent(String name, int age) throws Exception {

##### String query = "INSERT INTO students(name, age) VALUES(?, ?)";

##### PreparedStatement ps = con.prepareStatement(query);

##### ps.setString(1, name);

##### ps.setInt(2, age);

##### ps.executeUpdate();

##### System.out.println("Inserted Successfully");

##### }