**Java lab sheet-05**

1).

// Person class (superclass)

class Person {

private String name;

private int id;

// Constructor

public Person(String name, int id) {

this.name = name;

this.id = id;

}

// Common behaviors for all persons

public void setName(String name) {

this.name = name;

}

public String getName() {

return name;

}

public void setID(int id) {

this.id = id;

}

public int getID() {

return id;

}

}

// Student class (subclass of Person)

class Student extends Person {

private String course;

// Constructor

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

super(name, id);

this.course = course;

}

// Specific behavior for Students

public void setCourse(String course) {

this.course = course;

}

public String getCourse() {

return course;

}

}

// Lecturer class (subclass of Person)

class Lecturer extends Person {

private String programme;

// Constructor

public Lecturer(String name, int id, String programme) {

super(name, id);

this.programme = programme;

}

// Specific behavior for Lecturers

public void setProgramme(String programme) {

this.programme = programme;

}

public String getProgramme() {

return programme;

}

}

public class TestPerson {

public static void main(String[] args) {

// Creating a Student object

Student student = new Student("John Doe", 12345, "Computer Science");

System.out.println("Student:");

System.out.println("Name: " + student.getName());

System.out.println("ID: " + student.getID());

System.out.println("Course: " + student.getCourse());

System.out.println();

// Creating a Lecturer object

Lecturer lecturer = new Lecturer("Jane Smith", 98765, "Computer Engineering");

System.out.println("Lecturer:");

System.out.println("Name: " + lecturer.getName());

System.out.println("ID: " + lecturer.getID());

System.out.println("Programme: " + lecturer.getProgramme());

}

}

**2).**

This code execute the program without any error. ‘m instanceof Animal’, ‘d instanceof Mammal ‘and ‘d instanceof Animal’ these statmetce are true.