Exercise 01:

Recall the following scenario discussed during the class. Develop a code base to represent the scenario. Add a test class to invoke Lecturer and Student class by creating atleast one object from each.

Note: All the common attributes and behavior stored in the super class and only the specific fields and behavior stored in subclasses.

|  |
| --- |
| Student |
| * name |
| * id |
| * course |
| + setName()/getName() |
| + setID()/getID() |
| + setCourse()/getCourse() |

|  |
| --- |
| Lecturer |
| * name |
| * id |
| * programme |
| + setName()/getName() |
| + setID()/getID() |
| + setProg()/getProg() |

|  |
| --- |
| Person |
| Identify field and attributes to be stored in this class |

public class Person {  
 private String name;  
 private int id;  
  
 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;  
 }  
}

public class Student extends Person {  
 private String course;  
  
 public void setCourse(String course) {  
 this.course = course;  
 }  
  
 public String getCourse() {  
 return course;  
 }  
}

public class Lecturer extends Person{  
 private String programme;  
  
 public void setProg(String programme) {  
 this.programme = programme;  
 }  
  
 public String getProg() {  
 return programme;  
 }  
}

public class InstituteTest {  
 public static void main(String[] args) {  
 Student student1 = new Student();  
 student1.setName("NAKDissanayake");  
 student1.setID(123);  
 student1.setCourse("Computer Science");  
  
 Lecturer lecturer1 = new Lecturer();  
 lecturer1.setName("Mohamed Sarfraz");  
 lecturer1.setID(456);  
 lecturer1.setProg("OOP with JAVA");  
  
 System.*out*.println("Student: " + student1.getName());  
 System.*out*.println("ID: " + student1.getID());  
 System.*out*.println("Course: "+ student1.getCourse());  
  
 System.*out*.println("Lecturer: " + lecturer1.getName());  
 System.*out*.println("ID: " + lecturer1.getID());  
 System.*out*.println("Programme: " + lecturer1.getProg());  
 }  
}

Exercise 02

Develop the following class execute and discuss the answer: Please note that each public class stored in separate files. Write down the answer.

public class Animal{}

public class Mammal extends Animal{}

public class Reptile extends Animal{}

public class Dog extends Mammal{

public static void main(String args[]){

Animal a = new Animal();

Mammal m = new Mammal();

Dog d = new Dog();

System.out.println(m instanceof Animal);

System.out.println(d instanceof Mammal);

System.out.println(d instanceof Animal);

}

}

//output

true

true

true