Exercise 01:

Create a class called “Employee” which has 3 private variables (empID, empName, empDesignation) and create getters and setters for each field. Please note that this has no main method since this is just a blueprint not a application. Now crate a test class to invoke the Employee class. Create two objects for Mr.Bogdan and Ms.Bird and set required values using setters and print them back on the console using getters.

Answers:

package com.mycompany.testclass;

public class Employee

{

private int empID;

private String empName,empDesignation;

public void setId(int eID)

{

empID=eID;

}

public void setName(String en)

{

empName=en;

}

public void setDes(String edes)

{

empDesignation=edes;

}

public int getId()

{

return empID;

}

public String getName()

{

return empName;

}

public String getDes()

{

return empDesignation;

}

}

package com.mycompany.testclass;

public class Testclass

{

public static void main(String[] args)

{

Employee e1= new Employee();

e1.setId(1111);

e1.setName("Mr.Bogdan");

e1.setDes("VC");

Employee e2=new Employee();

e2.setId(1112);

e2.setName("Mrs.Bird");

e2.setDes("DVC");

System.out.println("\*\*\*\*\*\*\*\*\*\*Employee 01\*\*\*\*\*\*\*\*\*\*");

System.out.println("Employee ID:"+e1.getId());

System.out.println("Employee Name :"+e1.getName());

System.out.println("Employee Designation:"+e1.getDes());

System.out.println("");

System.out.println("\*\*\*\*\*\*\*\*\*\*Employee 02\*\*\*\*\*\*\*\*\*\*");

System.out.println("Employee ID:"+e2.getId());

System.out.println("Employee Name :"+e2.getName());

System.out.println("Employee Designation:"+e2.getDes());

}

}

Exercise 02:

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

class SuperB {

int x;

void setIt (int n) { x=n;}

void increase () { x=x+1;}b

void triple () {x=x\*3;};

int returnIt () {return x;}

}

class SubC extends SuperB {

void triple () {x=x+3;} // override existing method

void quadruple () {x=x\*4;} // new method

}

public class TestInheritance {

public static void main(String[] args) {

SuperB b = new SuperB();

b.setIt(2);

b.increase();

b.triple();

System.out.println( b.returnIt() );

SubC c = new SubC();

c.setIt(2);

c.increase();

c.triple();

System.out.println( c.returnIt() ); }

}

Answer:

9

6

Exercise 03:

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 |

Answer:

package com.mycompany.testclass;

public class Person

{

private String name;

private int id;

public void setName(String name)

{

this.name=name;

}

public void setID(int id)

{

this.id=id;

}

public String getName()

{

return name;

}

public int getID()

{

return id;

}

}

package com.mycompany.testclass;

public class Student extends Person

{

private String course;

public void setCourse(String course)

{

this.course=course;

}

public String getCourse()

{

return course;

}

}

package com.mycompany.testclass;

public class Lecturer extends Person

{

private String programme;

public void setProg(String programme)

{

this.programme=programme;

}

public String getProg()

{

return programme;

}

}

package com.mycompany.testclass;

public class TestClass

{

public static void main(String[] args)

{

Student s1=new Student();

s1.setName("Thilina");

s1.setID(111);

s1.setCourse("SE");

System.out.println(">>>>Student<<<<<");

System.out.println("Student name:"+s1.getName());

System.out.println("Srudent id:"+s1.getID());

System.out.println("Course:"+s1.getCourse());

System.out.println("");

Lecturer l1=new Lecturer();

l1.setName("Sunil");

l1.setID(999);

l1.setProg("Language C");

System.out.println(">>>>Lectuer<<<<<");

System.out.println("Lectuer name:"+l1.getName());

System.out.println("Lectuer id:"+l1.getID());

System.out.println("Prograemme:"+l1.getProg());

}

}

Exercise 04

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);

}

}

Answer:

true

true

true