# SE101.3 – Programing in JAVA

## Lab Sheet 02

### Question 01

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;}
   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() ); }

}
```

**Question 02**

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 |

**Question 03**

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);

  }

}
```