Practical 05

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01.

MyFirstInterface

interface MyFirstInterface {

   int x = 10;

   void display();

}

InterfaceImplemented

class InterfaceImplemented implements MyFirstInterface {

   public void display() {

     System.out.println("Value of x: " + x);

   }

}

02.

interface Speaker {

void speak();

}

```java
class Politician implements Speaker {
public void speak() {
System.out.println("I am a politician, and I
am speaking!");

  }
}


class Priest implements Speaker {
public void speak() {

    System.out.println("I am a priest, and I am speaking!");
  }
}


class Lecturer implements Speaker {
  public void speak() {
    System.out.println("I am a lecturer, and I am speaking!");
  }
}


public class Main {   public static void
main(String[] args) {

    Speaker politician = new Politician();
    Speaker priest = new Priest();
```

```
    Speaker lecturer = new Lecturer();


    politician.speak();

priest.speak();    lecturer.speak();


  }

}
```

03.

The marks of the students are:100

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The first output is from the Student class, and the second output is from the Undergraduate class. The Undergraduate class is able to call the display() method, but it cannot override the method. This is because the display() method is declared as final in the Student class.

04.

```
abstract class Shape {

abstract void calculateArea();

void display() {


  System.out.println("This is a shape.");

  }

}
```

```java
class Circle extends Shape {

double radius;



  Circle(double radius) {

this.radius = radius;

 }

  void calculateArea() {    double area =

Math.PI * radius * radius;


    System.out.println("The area of the circle is: " + area);

 }

}


class Rectangle extends Shape {

double width, height;
```

```java
    Rectangle(double width, double height) {

this.width = width;    this.height = height;



    }

    void calculateArea() {    double

area = width * height;



    System.out.println("The area of the rectangle is: " + area);


    }
}



public class Main {   public static void

main(String[] args) {    Circle circle =

new Circle(5);    circle.calculateArea();




    Rectangle rectangle = new Rectangle(10, 5);

rectangle.calculateArea();
```

```
  }

}
```