Exercise 01:

1.Whether we use or not the public static final keyword to a variable in interface, the interface will declare the variable as a final variable.

2.Whether we use or not the abstract keyword to the method in interface, all the method of the interface will declare as a abstract method.

3.We cannot change the variable x value in the implemented class called InterfaceImplemented. That x variable is a final variable.

Exercise 02:

```
public interface Speaker
{
	void speak(String phase);
}
public class Politician implements Speaker
{
	@Override
	public void speak(String phase)
	{
		System.out.println("Politician: "+phase);
	 }
}
public class Priest implements Speaker
{
	@Override
	public void speak(String phase)
	{
```

```
            System.out.println("Priest: "+phase);
        }
}



public class Lecturer implements Speaker
{
        @Override
        public void speak(String phase)
        {
            System.out.println("Lecturer: "+phase);
        }
}
public class InterfaceSpeaker
{
        public static void main(String[] args)
        {
            Politician poli1=new Politician();
            poli1.speak("Vote me.");
            Priest prie1=new Priest();
            prie1.speak("Bless you!");
            Lecturer lec1=new Lecturer();
            lec1.speak("Todey we are learning about OOP concept.");
        }
```

```
}
```

Exercise 03:

Output – 100

x variable value cannot change in the class Undergraduate.

Exercise 04:

```
abstract class Shape
{
	abstract double calculateArea();
	public void display(double area)
	{
		System.out.println("Area is: "+area);
	}
}
public class Circle extends Shape
{
	private double radius;
	public Circle(double radius)
	{
		this.radius=radius;
	}
```

```
	@Override
	double calculateArea()
	{
		return Math.PI*radius*radius;
	}
}

public class Rectangle extends Shape
{
	private double width,height;
	public Rectangle(double width,double height)
	{
		this.width=width;
		this.height=height;
	}
	@Override
	double calculateArea()
	{
		return width*height;
	}
}
public class Shapeobj
{
	public static void main(String[] args)
```

```
    {
        Scanner sc1=new Scanner(System.in);
        System.out.println("Enter the radius: ");
        double radius=sc1.nextDouble();
        Circle c1=new Circle(radius);
        double areaC=c1.calculateArea();
        c1.display(areaC);

        Scanner sc2=new Scanner(System.in);
        System.out.println("Enter the width: ");
        double width=sc2.nextDouble();
        System.out.println("Enter the height: ");
        double height=sc2.nextDouble();
        Rectangle r1=new Rectangle(width,height);
        double areaR=r1.calculateArea();
        r1.display(areaR);

    }
}
```