

## Week – 4

1.

Create a Class Mobile with the attributes listed below,

```
private String manufacturer;  
private String operating_system;  
public String color;  
private int cost;
```

Define a Parameterized constructor to initialize the above instance variables.

Define getter and setter methods for the attributes above.

for example : setter method for manufacturer is

```
void setManufacturer(String manufacturer){  
    this.manufacturer= manufacturer;  
}
```

```
String getManufacturer(){  
    return manufacturer;}  

```

Display the object details by overriding the toString() method.

```
public class Mobile  
{  
    private String manufacturer;  
    private String operating_system;  
    public String color;  
    private int cost;  
    public Mobile(String manufacturer,String operating_system,String color,int cost)  
    {  
        this.manufacturer=manufacturer;  
        this.operating_system=operating_system;  
        this.color=color;  
        this.cost=cost;  
    }  
    public void setManufacturer(String manufacturer)  
    {
```

```
        this.manufacturer=manufacturer;
    }
    public void setOperating_system(String operating_system)
    {
        this.operating_system=operating_system;
    }
    public void setColor(String color)
    {
        this.color=color;
    }
    public void setCost(int cost)
    {
        this.cost=cost;
    }
    public String getManufacturer()
    {
        return manufacturer;
    }
    public String getOperating_system()
    {
        return operating_system;
    }
    public String getColor()
    {
        return color;
    }
    public int getCost()
    {
        return cost;
    }
    public String toString()
    {
```

```

        return ("manufacturer = "+manufacturer+"\n"+"operating_system = 
"+operating_system+"\n"+"color = "+color+"\n"+"cost = "+cost);
    }

    public static void main(String args[])
    {
        Mobile obj=new Mobile("Redmi","Andriod","Blue",34000);
        System.out.println(obj);
    }
}

```

	Test	Expected	Got	
✓	1	manufacturer = Redmi operating_system = Andriod color = Blue cost = 34000	manufacturer = Redmi operating_system = Andriod color = Blue cost = 34000	✓

2.

Create a class Student with two private attributes, name and roll number. Create three objects by invoking different constructors available in the class Student.

```

Student()
Student(String name)
Student(String name, int rollno)
Input:
No input
Output:
No-arg constructor is invoked
1 arg constructor is invoked
2 arg constructor is invoked
Name =null , Roll no = 0
Name =Rajalakshmi , Roll no = 0
Name =Lakshmi , Roll no = 101

```

```

public class Student
{
    private String name;
    private int rollno;
    public Student()
    {
        System.out.println("No-arg constructor is invoked");
        this.name=null;
        this.rollno=0;
    }
    public Student(String name)

```

```

{
    System.out.println("1 arg constructor is invoked");
    this.name=name;
    this.rollno=0;
}
public Student(String name,int rollno)
{
    System.out.println("2 arg constructor is invoked");
    this.name=name;
    this.rollno=rollno;
}
public String toString()
{
    return "Name =" +name+" , Roll no = "+rollno;
}
public static void main(String args[])
{
    Student obj1=new Student();
    Student obj2=new Student("Rajalakshmi");
    Student obj3=new Student("Lakshmi",101);
    System.out.println(obj1);
    System.out.println(obj2);
    System.out.println(obj3);
}
}

```

	Test	Expected	Got	
✓	1	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101	✓

3.

Create a class called "Circle" with a radius attribute. You can access and modify this attribute using getter and setter methods. Calculate the area and circumference of the circle.

Area of Circle =  $\pi r^2$

Circumference =  $2\pi r$

Input:

2

Output:

Area = 12.57

Circumference = 12.57

```
import java.util.*;
```

```
class Circle
```

```
{
```

```
    private double radius;
```

```
    public Circle(double radius){
```

```
        // set the instance variable radius
```

```
        this.radius=radius;
```

```
    }
```

```
    public void setRadius(double radius){
```

```
        // set the radius
```

```
        this.radius=radius;
```

```
    }
```

```
    public double getRadius() {
```

```
        // return the radius
```

```
        return radius;
```

```
    }
```

```
    public double calculateArea() { // complete the below statement
```

```
        return (3.14159*radius*radius);
```

```
    }
```

```
    public double calculateCircumference() {
```

```
        // complete the statement
```

```
        return (2*3.14159*radius);
```

```
    }
```

```

}

class prog{

    public static void main(String[] args) {

        int r;

        Scanner sc= new Scanner(System.in);

        r=sc.nextInt();

        Circle c= new Circle(r);

        System.out.println("Area = "+String.format("%.2f", c.calculateArea()));

        // invoke the calculateCircumference method

        System.out.println("Circumference = "+String.format("%.2f",c.calculateCircumference()));


    }

}

```

	Test	Input	Expected	Got	
✓	1	4	Area = 50.27 Circumference = 25.13	Area = 50.27 Circumference = 25.13	✓
✓	2	6	Area = 113.10 Circumference = 37.70	Area = 113.10 Circumference = 37.70	✓
✓	3	2	Area = 12.57 Circumference = 12.57	Area = 12.57 Circumference = 12.57	✓