

Lab 6 - Topic - class and objects in Java

-method overloading in Java

-constructor overloading in Java

Example:-

1. Write a class file - box with three data members(length, width, height) and a method volume(). Also implement the application class Demo where an object of the box class is created with user entered dimensions and volume is printed.
2. Write a program to overload subtract method with various parameters in a class in Java
3. Write a program which will overload the area () method and display the area of a circle, triangle and square as per user choice and user entered dimensions.
4. Write a program in Java to define a class Rectangle having data member length and breadth; to calculate the area and perimeter of the rectangle. Use member functions to read, calculate and display.

Q1.

```
class box {
    int length, width, height;
    box (int l, int w, int h) {
        length = l;
        width = w;
        height = h;
    }
    int volume () {
        return (length * breadth
                * width);
    }
}
```

public class q1 {

```
public static void main (String args[]) {
    box b1 = new box(10, 15, 30);
    int vol;
    vol = b1.volume();
    System.out.println("Volume : " + vol + " cubic units");
}
}
```

Q2.

```
public class q2 {
    int sub (int a, int b) {
        return a - b;
    }
    float sub (float a, float b) {
        return a - b;
    }
    int sub (int a) {
        return a;
    }
    public static void main (String args[]) {
        q2 s = new q2();
        System.out.println(s.sub(4, 5));
        System.out.println(s.sub(4.0f, 1.5f));
        System.out.println(s.sub(4));
    }
}
```

```
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4\WT Lab\Lab 5" ; if ($?)
```

-1

2.5

4

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Q3.

```
import java.util.*;
public class q3 {
    int area (int a) {
        return a * a;
    }
    double area (double a) {
        return 3.14 * a * a;
    }
    double area (int b, int h) {
        return (0.5 * b * h);
    }
    public static void main (String args[]) {
        System.out.println("Enter your choice:");
        System.out.println(" 1 → Triangle ");
        System.out.println(" 3 → Circle ");
        System.out.println(" 4 → Square ");
        Scanner sc = new Scanner (System.in);
        int opt = sc.nextInt();
        q3 pt = new q3();
        switch (opt) {
            case 1 :
                System.out.println("Enter base & height:");
                Scanner tr = new Scanner (System.in);
                int b = tr.nextInt();
                int h = tr.nextInt();
                System.out.println ("Area : " + pt.area(b,h));
                break;
            case 3 :
                System.out.println("Enter base & height:");
                Scanner cr = new Scanner (System.in);
                double r = cr.nextInt();
                System.out.println ("Area : " + pt.area(r));
                break;
            case 4 :
                System.out.println("Enter side : ");
                Scanner sq = new Scanner (System.in);
                int a = sq.nextInt();
                System.out.println ("Area : " + pt.area(a));
                break;
        }
    }
}
```

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```

Enter your choice:

1->Triangle

3->Circle

4->Square

1

Enter base and height of triangle:

4 5

Area: 10.0

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Q4.

```
import java.util.*;
class Rect {
    int length, breadth;
    int area () {
        return length * breadth;
    }
    int peri () {
        return 2 * (length + breadth);
    }
    void read () {
        System.out.println ("Enter length & breadth:");
        Scanner sc = new Scanner (System.in);
        length = sc.nextInt();
        breadth = sc.nextInt();
    }
    void display () {
        System.out.println ("Area: " + area());
        System.out.println ("Perimeter: " + peri());
    }
}

```

public class q4 {

```
public static void main (String args[]) {
    Rect pt = new Rect();
    pt.read();
    pt.display();
}
}
```

```
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4\WT Lab\Lab 5" ; if ($?)
```

Enter length and breadth:

10 15

Area: 150

Perimeter: 50

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