Workshop 1
Java Programming
Naomi Thing
1) Volume of sphere

```java
import java.util.Scanner;
public class volumeofsphere{
    public static void main (String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the radius");
        double radius=sc.nextDouble();
        double volume=4/3*22/7*radius*radius;
        System.out.print("the volume of sphere is" +volume);
    }

}
```

Output:

```
enter the radius12
the volume of sphere is432.0
```

2) Area of 4 walls

```java
import java.util.Scanner;
public class areaof4walls{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.print("enter the radius");
        double radius=sc.nextDouble();
        double area=4/3*22/7*radius*radius;
        System.out.print("the area of 4 walls is" +area);
    }
}
```

Output:
```
enter the radius14
the area of 4 walls is588.0
```

3) Total surface area and volume of cuboid

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```java
import java.util.Scanner;
public class tsaandvolumeofcuboid{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the length");
        double length=sc.nextDouble();
        System.out.print("enter the breadth");
        double breadth=sc.nextDouble();
        System.out.print("enter the height");
        double height=sc.nextDouble();
        double area=2*(length*breadth+length*height+breadth*height);
        double volume=length*breadth*height;
        System.out.print("the total surface of area od cuboid is" +area);
        System.out.print("the volume of cuboid is" +volume);
    }
}
```

Output:

```
enter the length22
enter the breadth4
enter the height16
the total surface of area od cuboid is1008.0the volume of cuboid is1408.0
```

4) Total surface area of cube

```java
import java.util.Scanner;
public class tsaofcube{
    public static void main (String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter a side");
        double side=sc.nextDouble();
        double area=6*(side*side);
        System.out.print("the total surface area of cube is" +area);
    }
}
```

Output:

```
enter a side12
the total surface area of cube is864.0
```

5) Area of rectangle

```java
import java.util.Scanner;
public class areaofrectangle{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the length");
        double length=sc.nextDouble();
        System.out.print("enter the breadth");
        double breadth=sc.nextDouble();
        double area=length*breadth;
        System.out.print("the area of rectangle is" +area);
    }
}
```

Output:

```
enter the length10
enter the breadth8
the area of rectangle is80.0
```

6) Circumference of circle

```java
import java.util.Scanner;
public class circumofcircle{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the radius");
        double radius=sc.nextDouble();
        double circle=2*22/7*radius;
        System.out.print("the circumference of circle is" +circle);

    }
}
```

Output:

```
enter the radius16
the circumference of circle is96.0
```

7) Area of triangles with 3 sides

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```java
import java.util.Scanner;
public class areaoftriangles3sides{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the s");
        double s=sc.nextDouble();
        System.out.print("enter the a");
        double a=sc.nextDouble();
        System.out.print("enter the b");
        double b=sc.nextDouble();
        System.out.print("enter the c");
        double c=sc.nextDouble();
        double area=Math.sqrt(s*(s-a)*(s-b)*(s-c));
        System.out.print("the area of triangle with 3 sides is"+area);
    }
}
```

Output:

```
enter the s10
enter the a5
enter the b2
enter the c1
the area of triangle with 3 sides is60.0
```

8) Area and circumference of circle

```java
import java.util.Scanner;
public class areandcircumofcircle{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the radius");
        double radius=sc.nextDouble();
        double area=22/7*radius*radius;
        double circum=2*22/7*radius;
        System.out.println("the area of circle is"+area);
        System.out.println("the circumference of circle is"+circum);

    }
}
```

output:

```
enter the radius12
the area of circle is432.0
the circumference of circle is72.0
```

9) Distance in miles

```java
import java.util.Scanner;
public class distanceinmiles{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the distance in kilometer");
        double kilometer=sc.nextDouble();
        double miles=kilometer*0.621371;
        System.out.print("the distance in miles is"+miles);
    }
}
```

Output:

```
enter the distance in kilometer10
the distance in miles is6.21371
```

10) Distance in km and m

```java
import java.util.Scanner;
public class distanceinkmandm{
    public static void main (String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the number");
        double distance=sc.nextDouble();
        double kilometer=distance/100;
        double meter=distance%100;
        System.out.print("the distance in kilometer is" +kilometer);
        System.out.print("the distance in meter is" +meter);
    }
}
```

Output:

```
enter the number12
the distance in kilometer is0.12the distance in meter is12.0
```

11) Potential of body

```java
import java.util.Scanner;
class potentialofbody{
    public static void main(String[] args){
        Scanner sc=new Scanner (System.in);
        System.out.println("enter the mass of body");
        double mass=sc.nextDouble();
        System.out.println("enter the height of the body");
        double height = sc.nextDouble();
        double potential = mass*9.8*height;
        System.out.println("the potential energy of body is"+potential);
    }
}
```

Output:

```
enter the mass of body
45
enter the height of the body
168
the potential energy of body is74088.00000000001
```

12) Perimeter of rectangle

```java
import java.util.Scanner;
class perimeterofrectangle{
    public static void main(String[] args){
        Scanner sc= new Scanner (System.in);
        System.out.println("enter lenght");
        double length = sc.nextDouble();
        System.out.println ("enter breadth");
        double breadth = sc.nextDouble();
        double perimeter = 2*(length+breadth);
        System.out.println("the perimeter of rectangle is"+perimeter);
    }
}
```

Output:

```
enter lenght
11
enter breadth
21
the perimeter of rectangle is64.0
```

13) Simple interest and total amount

```java
import java.util.Scanner;
class simpleinterestandta{
    public static void main(String[] args){
        Scanner sc= new Scanner (System.in);
        System.out.println("enter the principal");
        double principal = sc.nextDouble();
        System.out.println("enter the rate");
        double rate = sc.nextDouble();
        System.out.println("enter the time");
        double time = sc.nextDouble();
        double simpleinterest = (principal*time*rate)/100;
        double totalamount = simpleinterest+principal;
        System.out.println("the simple interest is"+simpleinterest);
        System.out.println("the total amount is"+totalamount);
    }
}
```

Output:

```
enter the principal
800
enter the rate
4
enter the time
7
the simple interest is224.0
the total amount is1024.0
```

14) Kilogram into gram

```java
import java.util.Scanner;
class kilogramintogram{
    public static void main(String[] args){
        Scanner sc= new Scanner (System.in);
        System.out.println("enter the weight in kilogram");
        double kilogram = sc.nextDouble();
        double gram = kilogram*1000;
        System.out.println("the weight in gram is"+gram);
    }
}
```

Output:

```
enter the weight in kilogram
47
the weight in gram is47000.0
```

15) Total surface area of sphere

```java
import java.util.Scanner;
class tsaofsphere{
    public static void main(String[] args){
        Scanner sc=new Scanner (System.in);
        System.out.println("enter the radius");
        double radius=sc.nextDouble();
        double area=4*Math.PI*(radius*radius);
        double volume=(4.0/3.0)*Math.PI*Math.pow(radius,3);
        System.out.println("the total surface area of sphere is"+radius);
        System.out.println("the volume of sphere is"+volume);
    }
}
```

Output:

```
enter the radius
20
the total surface area of sphere is20.0
the volume of sphere is33510.32163829113
```

16) Days

```java
import java.util.Scanner;
class day{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.println("enter the day");
        int day=sc.nextInt();
        if(day==6){
            System.out.println("day is saturday");
        }else{
            System.out.println("day is not saturday");

        }
    }
}
```

Output:

```
enter the day
5
day is not saturday
```

17) Pen

```java
import java.util.Scanner;
class pen{
    public static void main(String[] args){
        Scanner sc= new Scanner(System.in);
        System.out.println("enter the quantity of pen");
        int pen=sc.nextInt();
        System.out.println("enter the price of pen");
        int penprice=sc.nextInt();
        System.out.println("enter the quatity of copy");
        int copy=sc.nextInt();
        System.out.println ("enter the price of copy");
        int copyprice=sc.nextInt();
        System.out.println("enter the quantity of pencil");
        int pencil=sc.nextInt();
        System.out.println("enter the price of pencil");
        int pencilprice=sc.nextInt();
        int totalamount=(pen*pencilprice)+(copy*copyprice)+(pencil*pencilprice);
        System.out.println("the total amount is"+totalamount);
    }
}
```

Output:

```
enter the quantity of pen
12
enter the price of pen
5
enter the quatity of copy
12
enter the price of copy
40
enter the quantity of pencil
12
enter the price of pencil
10
the total amount is720
```

18) Four walls

```java
import java.util.Scanner;
class fourwalls{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.println("enter the length of wall");
        double length=sc.nextDouble();
        System.out.println("enter the breadth of wall");
        double breadth=sc.nextDouble();
        System.out.println("enter the height of wall");
        double height=sc.nextDouble();
        double cost=(length*breadth*height)/600;
        System.out.println("the cost of painting the four walls of a room is"+cost);

    }
}
```

Output:

```
enter the length of wall
44
enter the breadth of wall
24
enter the height of wall
77
the cost of painting the four walls of a room is135.52
```

19) Paisa into rupees

```java
import java.util.Scanner;
class paiseintorupees{
    public static void main(String[] args){
        Scanner sc=new Scanner (System.in);
        System.out.println("enter the amount in paise");
        double paise=sc.nextDouble();
        double rupees=paise/100;
        System.out.println("the amount in rupeees is"+rupees);

    }
}
```

Output:

```
enter the amount in paise
100
the amount in rupeees is1.0
```

20) Area of parallelogram

```java
import java.util.Scanner;
class areaofparallelogram{
    public static void main(String[] args){
        Scanner sc=new Scanner (System.in);
        System.out.println("enter the base of parallelogram");
        double base=sc.nextDouble();
        System.out.println("enter the height of parallelogram");
        double height=sc.nextDouble();
        double area=base*height;
        System.out.println("the area of parallelogram is"+area);
    }
}
```

Output:

```
enter the base of parallelogram
24
enter the height of parallelogram
42
the area of parallelogram is1008.0
```

21) Meter into inch

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```java
import java.util.Scanner;
class meterintoinch{
    public static void main (String[] args){
        Scanner sc=new Scanner (System.in);
        System.out.println("enter the value in meter");
        double meter=sc.nextDouble();
        double inch=meter*39.37;
        System.out.println("the value in inch is"+inch);
    }
}
```

Output:

```
enter the value in meter
4200
the value in inch is165354.0
```

22) Profit and loss

```java
import java.util.Scanner;
class profitandloss{
    public static void main(String[] args){
        double sp,cp,p,l;
        Scanner sc=new Scanner (System.in);
        System.out.println("enter the selling price");
        sp=sc.nextDouble();
        System.out.println("enter the cost price");
        cp=sc.nextDouble();
        if(sp>cp){
            p=(sp-cp)/cp*100;
            System.out.println("the value of profit percentage is"+p+"%");

        }
        else{
            l=(cp-sp)/cp*100;
            System.out.println("the value of loss percentage is"+l+"%");
        }
    }
}
```

Output:

```
enter the selling price
680
enter the cost price
657
the value of profit percentage is3.50076103500761%
```

23) Total surface area of cylinder

```java
import java.util.Scanner;
class tsaofcylinder{
    public static void main(String[] args){
        Scanner in = new Scanner (System.in);
    System.out.println("enter the radius of cylinder");
    double radius = in.nextDouble();
    System.out.println("enter teh height of cylinder");
    double height = in.nextDouble();
    double area=2*Math.PI*radius*height;
    System.out.println("the total surface area of cylinder is"+area);
    }
}
```

Output:

```
enter the radius of cylinder
24
enter teh height of cylinder
6
the total surface area of cylinder is904.7786842338604
```

24) Total surface area of cuboid

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```java
import java.util.Scanner;
class tsaofcuboid{
    public static void main(String[] args){
        Scanner sc=new Scanner (System.in);
        System.out.println("enter the length");
        double length=sc.nextDouble();
        System.out.println("enter the breadth");
        double breadth=sc.nextDouble();
        System.out.println("enter the height");
        double height=sc.nextDouble();
        double area=2*(length*breadth+height*breadth+length*height);
        System.out.println("the total surface area of cuboid is"+area);

    }
}
```

Output:

```
enter the length
55
enter the breadth
46
enter the height
38
the total surface area of cuboid is12736.0
```

25) Distance

```java
import java.util.Scanner;
public class distance{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the value of U");
        double U=sc.nextDouble();
        System.out.print("enter the value of T");
        double T=sc.nextDouble();
        System.out.print("enter the value of A");
        double A=sc.nextDouble();
        double s=U*T+1/2*(A*T*T);
        System.out.print("the distance travelled is" +s);

    }
}
```

Output:

```
enter the value of U21
enter the value of T22
enter the value of A10
the distance travelled is462.0
```

26) Area of square

```java
import java.util.Scanner;
public class areaofsquare{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the length");
        double length=sc.nextDouble();
        double area=length*length;
        System.out.println("the area of square is" +area);
    }
}
```

Output:

```
enter the length45
the area of square is2025.0
```

27) Sum of natural numbers:

```java
import java.util.Scanner;
public class sumofnaturalnum{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the n");
        double n=sc.nextDouble();
        double square=6*n*n+1*2*n+1;
        System.out.println("the sum square of forst natural number is" +square);
    }
}
```

Output:

```
enter the n4
the sum square of forst natural number is105.0
```

28) Total surface area of hemisphere

```java
import java.util.Scanner;
public class tsaofhemisphere{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter a radius");
        double radius=sc.nextDouble();
        double total=3*22/7*radius*radius;
        System.out.print("the total surface area of hemisphere is" +total);      }


}
```

Output:

```
enter a radius12
the total surface area of hemisphere is1296.0
```

29) Find out if passed or failed

```java
import java.util.Scanner;
public class passorfail{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the marks of 1st subject");
        int sub1=sc.nextInt();
        System.out.print("enter the marks of 2nd subject");
        int sub2=sc.nextInt();
        System.out.print("enter the marks of 3rd subject");
        int sub3=sc.nextInt();
        System.out.print("enter the marks of 4th subject");
        int sub4=sc.nextInt();
        int sum=sub1+sub2+sub3+sub4;
        System.out.print("the total marks is" +sum);
        double avg=sum/4;
        System.out.println("the average marks is"+avg);
        if(avg>=40&&sub1>=32&&sub2>=33&&sub3>=35&&sub4>=30){
            System.out.println("pass");
        }
        else{
                System.out.println("fail");
        }
    }
```

Output:

```
enter the marks of 1st subject66
enter the marks of 2nd subject56
enter the marks of 3rd subject78
enter the marks of 4th subject99
the total marks is299the average marks is74.0
pass
```

30) Volume of cylinder

```java
import java.util.Scanner;
public class volofcylinder{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the radius of cylinder");
        int radius=sc.nextInt();
        System.out.print("enter the height");
        int height=sc.nextInt();
        double volume=22/7*radius*radius*height;
        System.out.println("the volume of cylinder is" +volume);
    }
}
```

Output:

```
enter the radius of cylinder66
enter the height45
the volume of cylinder is588060.0
```

31) Volume of hemisphere

```java
import java.util.Scanner;
public class volofhemisphere{
    public static void main (String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.println("enter a radius");
        double radius=sc.nextDouble();
        final double pi= 22/7;
        double volume=(2*pi*radius*radius)/3;
        System.out.println("the volume of hemisphere is" +volume);
    }
}
```

Output:

```
enter a radius
44
the volume of hemisphere is3872.0
```

32) Total surface area of cube

```java
import java.util.Scanner;
public class tsandvolofcube{
    public static void main(String[] args){
    Scanner sc=new Scanner(System.in);
    System.out.print("enter the length");
    double length=sc.nextDouble();
    System.out.print("enter edge");
    double edge=sc.nextDouble();
    double area=6*(length*length);
    double volume=edge*edge*edge;
    System.out.print("the total surface area of cube is" +area);
    System.out.print("the volume of cube is" +volume);
    }
}
```

Output:

```
enter the length55
enter edge12
the total surface area of cube is18150.0the volume of cube is1728.0
```

33) Area of triangle

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```java
import java.util.Scanner;
public class areaoftriangle{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the base");
        double base=sc.nextDouble();
        System.out.print("Enter the height");
        double height=sc.nextDouble();
        double area=(base*height)/2;
        System.out.println("the area of triangle is" +area);
    }
}
```

Output:

```
enter the base12
Enter the height15
the area of triangle is90.0
```

34) Perimeter of square

```java
import java.util.Scanner;
public class perimeterofsquare{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter the length");
        int length=sc.nextInt();
        double perimeter=4*length;
        System.out.println("the perimeter of square is" +perimeter);
    }
}
```

Output:

```
enter the length33
the perimeter of square is132.0
```