**Experiment 3a**

**Aim:**  WAP using the concept of method overloading to calculate and print the volume of different objects like Cube, Cuboid, Cylinder, Cone. Create multiple overloads for a method name which are differentiated by the number of their parameters. Input the details from the user and print the volume of the object

**Theory:** method overloading means using the same method name, but changing the data type of the parameters or the number of parameters to differentiate between the methods. Constructor overloading means same as method overloading as constructors are also essentially methods.

**Algorithm:**

**Code:**

import java.util.Scanner;

public class Volume {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("1. Cube");

System.out.println("2. Cuboid");

System.out.println("3. Cylinder");

System.out.println("4. Cone");

System.out.print("enter your choice: ");

int n = sc.nextInt();

switch(n){

case 1:

System.out.print("enter side= ");

int a=sc.nextInt();

volume v1= new volume(a);

vol(a);

break;

case 2:

System.out.print("enter length, breadth and height= ");

int l = sc.nextInt();

int b = sc.nextInt();

int h = sc.nextInt();

volume v2= new volume(l,b,h);

vol(l,b,h);

break;

case 3:

System.out.print("enter radius and height= ");

double r= sc.nextDouble();

int s=sc.nextInt();

volume v3 = new volume(r,s);

vol(r,s);

break;

case 4:

System.out.print("enter radius and height= ");

double x = sc.nextDouble();

int i = sc.nextInt();

volume v = new volume(x,i,1);

vol(x,i,1);

break;

}

}

public static void vol(int a){

int vo=a\*a\*a;

System.out.println("the volume of the cube is "+vo);

}

public static void vol(int l, int b , int h){

int vo = l\*b\*h;

System.out.println("the volume of the cuboid is "+vo);

}

public static void vol(double r, int h){

double vo = 3.14\*r\*r\*h;

System.out.println("the volume of cylinder is "+vo);

}

public static void vol(double r, int h, int c){

double vo = 0.33\*3.14\*r\*r\*h;

System.out.println("the volume of cone is "+vo);

}

}

class volume{

int l,b,h;

double r;

volume(int a){

this.l=a;

}

volume(int l , int b, int h){

this.l=l;

this.b=b;

this.h=h;

}

volume(double r, int s){

this.r=r;

this.h=s;

}

volume(double r, int s, int c){

this.r=r;

this.h=s;

}

}