Name: **Vedant Tiwari**
Section: **CSE-A**
Roll No: **68**

Aim: **Create a class Stack and implement the functionalities of the Stack Class.**

Code:
(CLASSES)

```
package stackclassproblem;
public class Stack{
    int s;
    int top;
    int[] a;
    Stack(int s){
        this.s=s;
        this.a=new int[s];
        top=-1;
    }

    boolean isfull(int top){
        if(top==s-1)
            return true;
        else
            return false;
    }
    boolean isempty(int top){
        if(top==-1)
            return true;
        else{
            return false;
        }
    }
    void push(int d){
        if(isfull(top))
            System.out.println("Stack is full");
        else{
```

```
            top++;
            a[top]=d;
        }
    }
    void pop(){
        if(isempty(top))
            System.out.println("Stack is empty");
        else{
            int d=a[top];
            a[top]=0;
            top--;
            System.out.println(d);
        }
    }
    void peek(){
        if(isempty(top))
            System.out.println("Stack is empty");
        else{
            int d=a[top];
            System.out.println(d);
        }
    }
    void display(){
        if(isempty(top))
            System.out.println("Stack is empty");
        else{
            for(int i=0;i<=top;i++){
                System.out.println(a[i]);
            }
        }
    }
}
```

(MAIN):

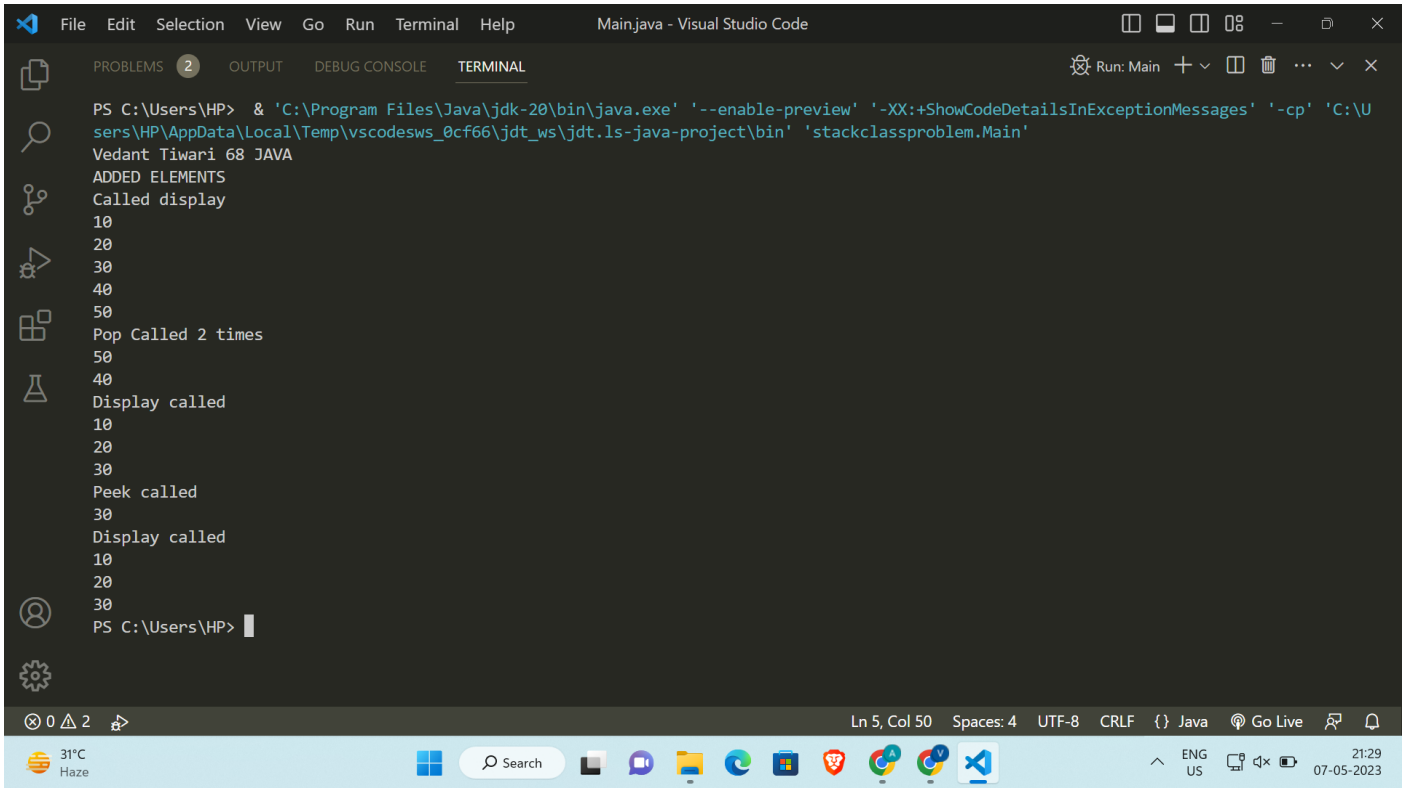
```
package stackclassproblem;
public class Main{
    public static void main(String[] args) {
        Stack s=new Stack(5);
```

```
        System.out.println("Vedant Tiwari 68 JAVA");
        System.out.println("ADDED ELEMENTS");

        s.push(10);
        s.push(20);
        s.push(30);
        s.push(40);
        s.push(50);
        System.out.println("Called display");
        s.display();
        System.out.println("Pop Called 2 times");
        s.pop();
        s.pop();
        System.out.println("Display called");

        s.display();
        System.out.println("Peek called");
        s.peek();
        System.out.println("Display called");
        s.display();
    }
}
```

Output:



Aim: **Write a program to demonstrate method overloading. Create a class 3DShape and overload a method named volume() to calculate volume of different geometric shapes like sphere, cube, cuboid and cylinder. Create a main() to implement all the methods.**

CODE:

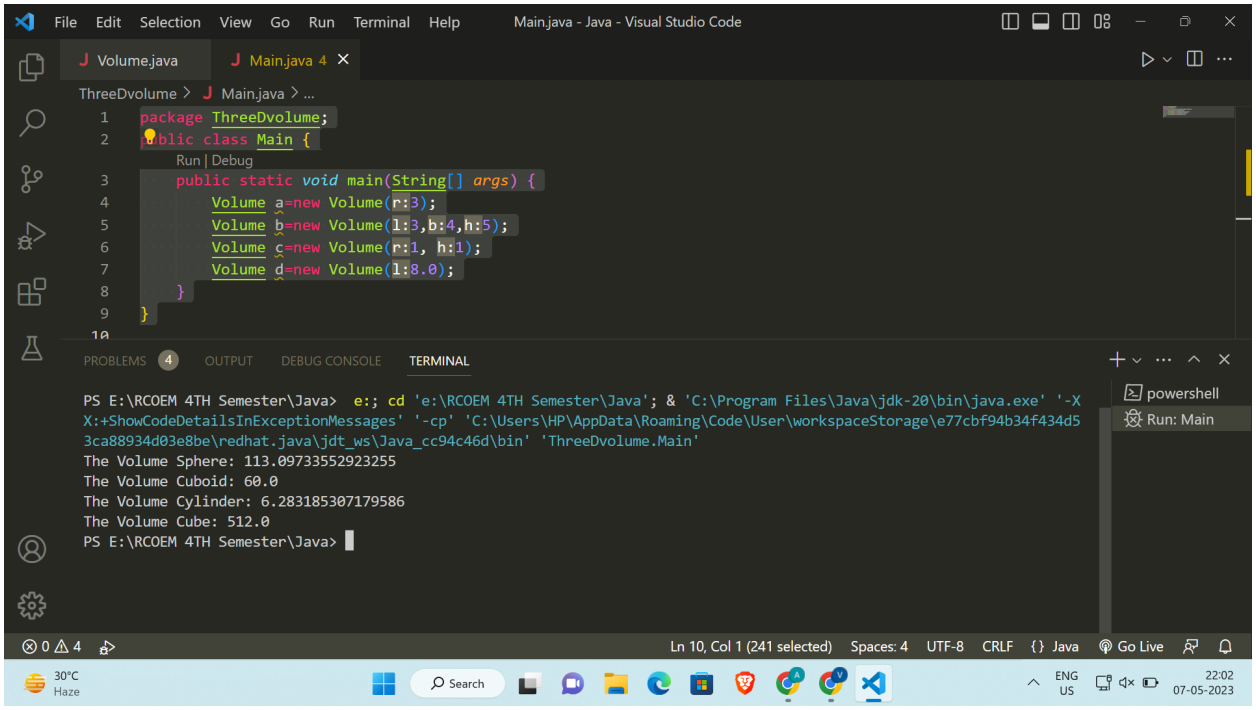
```
package ThreeDvolume;
import java.lang.Math;
public class Volume {
    Volume(int r){
        double x=4*(Math.PI)*r*r*r;
        System.out.println("The Volume Sphere: "+x/3);
    }
    Volume(Double l){
        double y=l*l*l;
        System.out.println("The Volume Cube: "+y);
```

```
    }
    Volume(int l,int b,int h){
        double y=l*b*h;
        System.out.println("The Volume Cuboid: "+y);
    }
    Volume(int r,int h){
        double z=2*Math.PI*h*r;
        System.out.println("The Volume Cylinder: "+z);
    }
}
```

MAIN:

```
package ThreeDvolume;
public class Main {
    public static void main(String[] args) {
        Volume a=new Volume(3);
        Volume b=new Volume(3,4,5);
        Volume c=new Volume(1, 1);
        Volume d=new Volume(8.0);
    }
}
```

OUTPUT:



Result:

Program executed.