SAP Id: 500091584
Roll No: R2142210822
Name: Ujjwal Kumar Gupta

Course: CSE DevOps (Hons.)
Program & Sem: B.tech & 3rd
Session : 2021-25

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S.No.	Experiment No.	Title	Date of Performance	Date of Submission	Remarks (By Faculty)

Note: 1. Submit your original work otherwise you will lose marks.

2. Submit all your experiments into a single file

3. The submission must be properly compiled and in provided format only

Experiment No. _5___

Date of performance: 21/09/2022

Date of Submission: 21/09/2022

SAP Id: 500091584

Roll No.: R2142210822

Name of the Student: Ujjwal Kumar Gupta

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1. **Title:** Interface

2. **Objective:** Interface

3. **List of lab activities:**

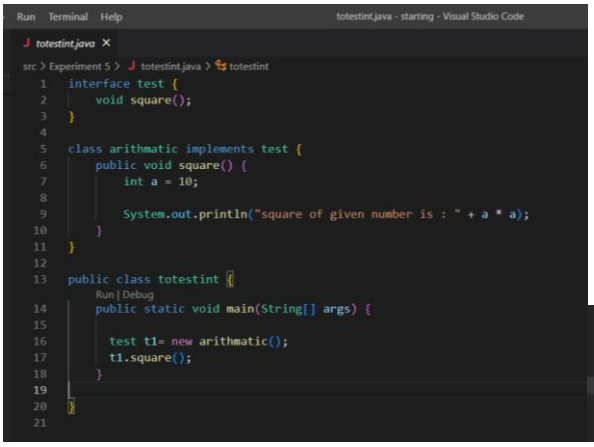
   1) Write a program to create interface named test. In this interface the member function is square.Implement this interface in arithmetic class. Create one new class called ToTestInt. In this class usethe object of arithmetic class.

   2) Write a program to create interface A, in this interface we have two method meth1 and meth2.Implements this interface in another class named MyClass.

   3) Write a program in Java to show the usefulness of Interfaces as a place to keep constant value of the program

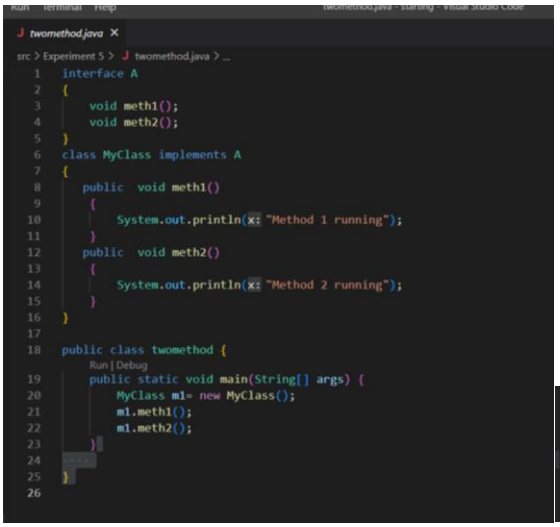
   4) Write a program to create an Interface having two methods division and modules. Create a class,which overrides these methods.

4. **Algorithm/Flowchart and Code followed by Output screenshot (2samples for each program):**



```java
interface test {
    void square();
}

class arithmatic implements test {
    public void square() {
        int a = 10;

        System.out.println("square of given number is : " + a * a);
    }
}

public class totestint {
    Run | Debug
    public static void main(String[] args) {

      test t1= new arithmatic();
      t1.square();
    }

}
```

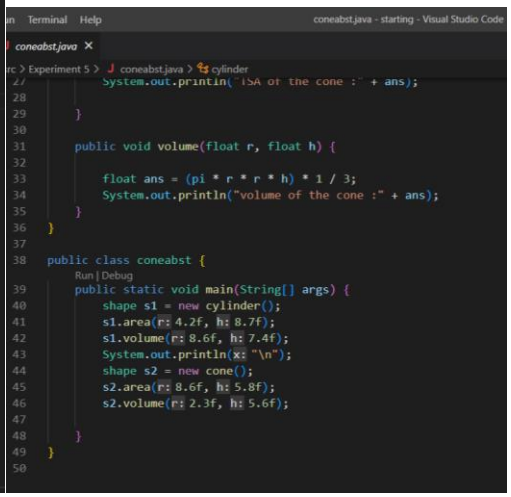
```
PS C:\Users\Ujjwal\Documents\starting\src\Experiment 4> cd "c:\Users\Uj
int }
square of given number is : 100
PS C:\Users\Ujjwal\Documents\starting\src\Experiment 5>
```



```java
interface A
{
    void meth1();
    void meth2();
}
class MyClass implements A
{
   public  void meth1()
    {
        System.out.println(x: "Method 1 running");
    }
   public  void meth2()
    {
        System.out.println(x: "Method 2 running");
    }
}

public class twomethod {
    Run | Debug
    public static void main(String[] args) {
        MyClass m1= new MyClass();
        m1.meth1();
        m1.meth2();
    }

}
```

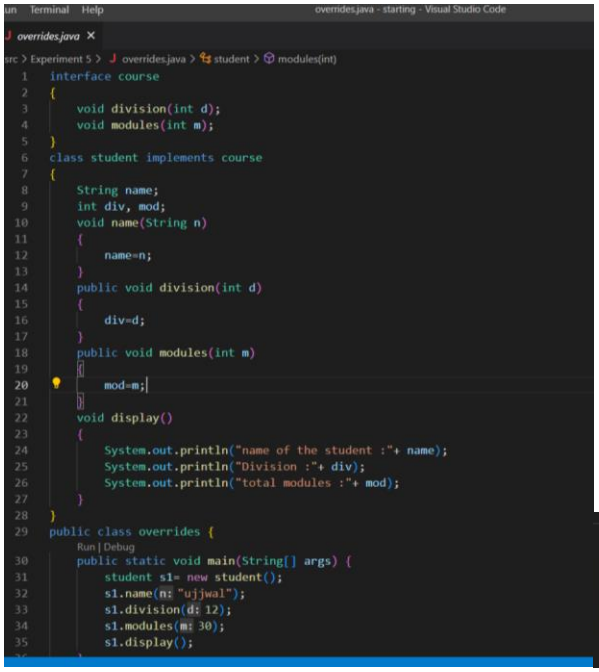
```
PS C:\Users\Ujjwal\Documents\starting\src\Experiment 5> cd
PS C:\Users\Ujjwal\Documents\starting\src\Experiment 5> cd "c:\Users\Ujjwal\Documents\star
hod }
Method 1 running
Method 2 running
PS C:\Users\Ujjwal\Documents\starting\src\Experiment 5>
```

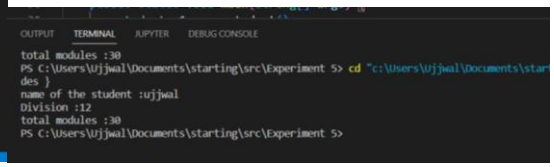
```java
interface shape {
    static final float pi = 3.14f;

    void area(float r, float h);

    void volume(float r, float h);
}
class cylinder implements shape {
    public void area(float r, float h) {
        float ans = 2 * pi * r * (h + r);
        System.out.println("TSA of cylinder : " + ans);
    }

    public void volume(float r, float h) {

        float ans = pi * r * r * h;
        System.out.println("volume of cylinder : " + ans);

    }
}

class cone implements shape {
    public void area(float r, float l) {

        float ans = pi * r * (l + r);
        System.out.println("TSA of the cone :" + ans);

    }

    public void volume(float r, float h) {
```



```java
        System.out.println("TSA of the cone :" + ans);

    }

    public void volume(float r, float h) {

        float ans = (pi * r * r * h) * 1 / 3;
        System.out.println("volume of the cone :" + ans);
    }
}

public class coneabst {
    Run | Debug
    public static void main(String[] args) {
        shape s1 = new cylinder();
        s1.area(r: 4.2f, h: 8.7f);
        s1.volume(r: 8.6f, h: 7.4f);
        System.out.println(x: "\n");
        shape s2 = new cone();
        s2.area(r: 8.6f, h: 5.8f);
        s2.volume(r: 2.3f, h: 5.6f);

    }
}
```

```
t }
TSA of cylinder : 340.2504
volume of cylinder : 1718.5348


TSA of the cone :388.85764
volume of the cone :31.006453
PS C:\Users\Ujjwal\Documents\starting\src\Experiment 5>
```





5. Brief notes about all the concepts related to the lab experiment

An interface in Java is a blueprint of a class. It has static constants and abstract methods.

The interface in Java is *a mechanism to achieve* ***abstraction***.

interface <interface_name>{

// declare constant fields
// declare methods that abstract
// by default.
}