NAME:M.SWAMY VIVEKANANDA

REG.NO:192110579

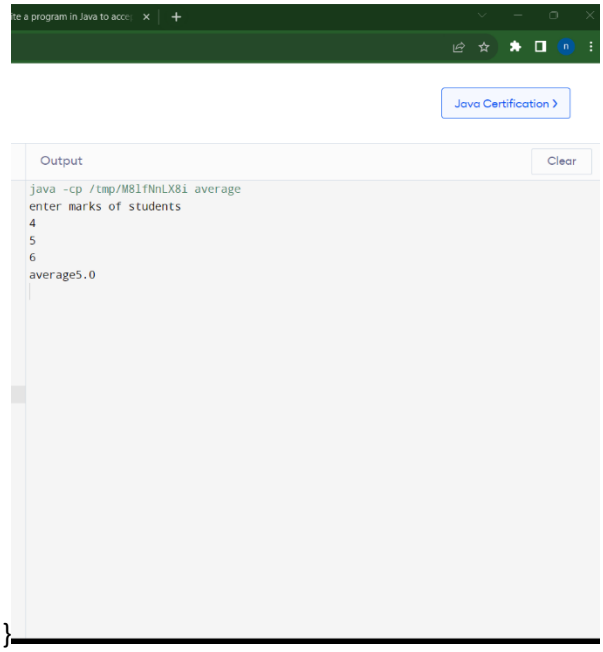
JAVA CSA0998

DAY2:PROGRAMS

Program1:find the average

```
import java.util.*;
class average{
   public static void main(String[] args){
      int a[]=new int[3];
      Scanner S=new Scanner(System.in);
      int i,sum=0;
      float average;
      System.out.println("enter marks of students");{
      for(i=0;i<3;i++)
      a[i]=S.nextInt();
      }
      for(i=0;i<a.length;i++){
         sum=sum+a[i];
      }
      average=sum/a.length;
       System.out.println("average"+average);


   }
```

Output



}

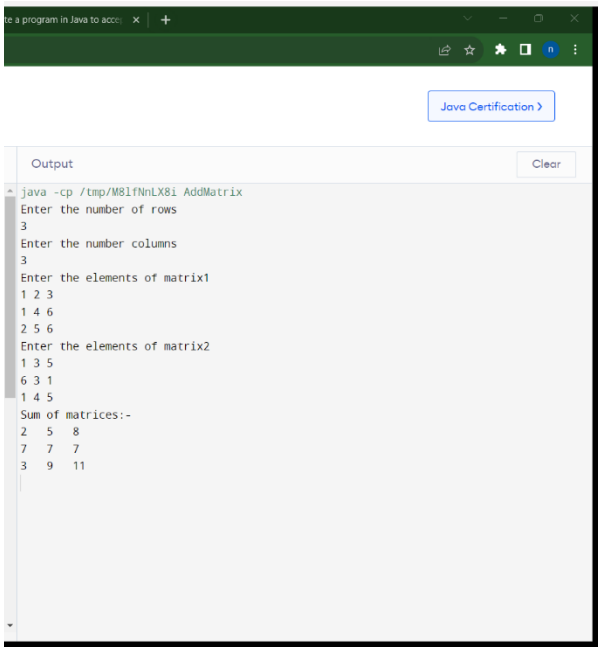
Program2:matrix addition

```
import java.util.Scanner;

class AddMatrix
{
public static void main(String args[])
{
int row, col,i,j;
Scanner in = new Scanner(System.in);

System.out.println("Enter the number of rows");
row = in.nextInt();

System.out.println("Enter the number columns");
col = in.nextInt();

int mat1[][] = new int[row][col];
int mat2[][] = new int[row][col];
int res[][] = new int[row][col];
```

```
System.out.println("Enter the elements of matrix1");

for ( i= 0 ; i < row ; i++ )
{

for ( j= 0 ; j < col ;j++ )
mat1[i][j] = in.nextInt();

System.out.println();
}
System.out.println("Enter the elements of matrix2");

for ( i= 0 ; i < row ; i++ )
{

for ( j= 0 ; j < col ;j++ )
mat2[i][j] = in.nextInt();

System.out.println();
}

for ( i= 0 ; i < row ; i++ )
for ( j= 0 ; j < col ;j++ )
res[i][j] = mat1[i][j] + mat2[i][j] ;

System.out.println("Sum of matrices:-");

for ( i= 0 ; i < row ; i++ )
{
for ( j= 0 ; j < col ;j++ )
System.out.print(res[i][j]+"\t");
```

```
System.out.println();
}
}
}
```

Output:

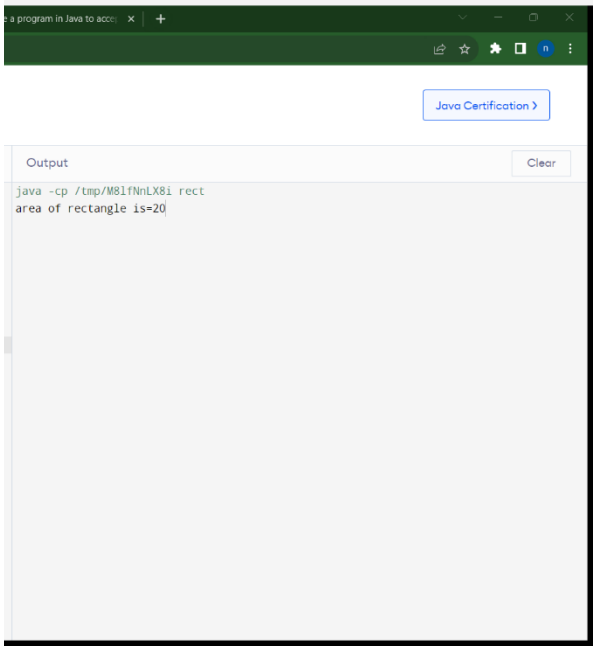


Program3:area of rectangle(method1)

```
class rectangle
{
   void area(int height,int width)
   {
      int result=height*width;
      System.out.println("area of rectangle is="+result);
   }
}
class rect
{
   public static void main(String args[])
   {
      rectangle obj=new rectangle();
      obj.area(2,10);
```

```
    }
}
```

Output:

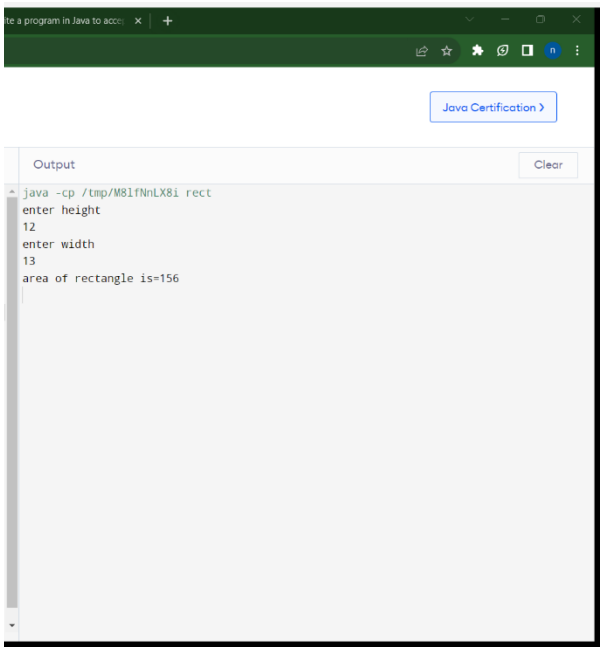


Program4:area of rectangle(method2)

```
import java.util.*;
class rectangle
{
   int height,width;
   void area()
   {
      Scanner s=new Scanner(System.in);
      System.out.println("enter height");
      height=s.nextInt();
      System.out.println("enter width");
      width=s.nextInt();
   }
   void cal()
   {
      int result=height*width;
      System.out.println("area of rectangle is="+result);
```

```
    }
}
class rect
{
    public static void main(String args[])
    {
        rectangle obj=new rectangle();
        obj.area();
        obj.cal();
    }
}
```

Output:

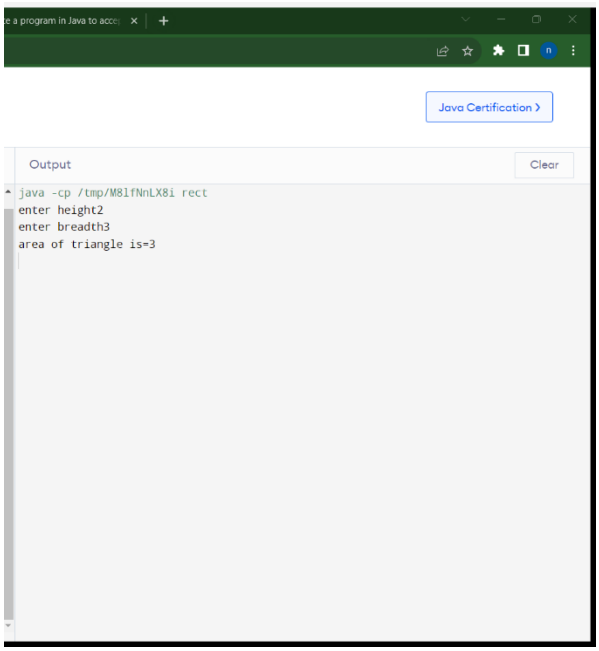


Program5:area of triangle

```
import java.util.*;
class triangle
{
    int height,breadth;
    void area()
    {
        Scanner s=new Scanner(System.in);
```

```
        System.out.println("enter height");
        height=s.nextInt();
        System.out.println("enter breadth");
        breadth=s.nextInt();
    }
    void cal()
    {
        int result=(height*breadth)/2;
        System.out.println("area of triangle is="+result);
    }
}
class rect
{
    public static void main(String args[])
    {
        triangle obj=new triangle();
        obj.area();
        obj.cal();
    }
}
```

Output:

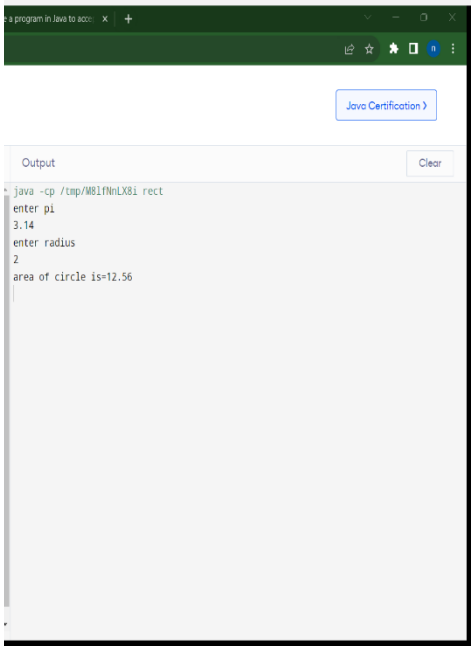


Program6:area of circle

```
import java.util.*;
class circle
{
   float pi,radius;
   void area()
   {
      Scanner s=new Scanner(System.in);
      System.out.println("enter pi");
      pi=s.nextFloat();
      System.out.println("enter radius");
      radius=s.nextFloat();
   }
   void cal()
   {
      float result=pi*radius*radius;
      System.out.println("area of circle is="+result);
   }
}
class rect
```

```
{
   public static void main(String args[])
   {
      circle obj=new circle();
      obj.area();
      obj.cal();
   }
}
```

Output:

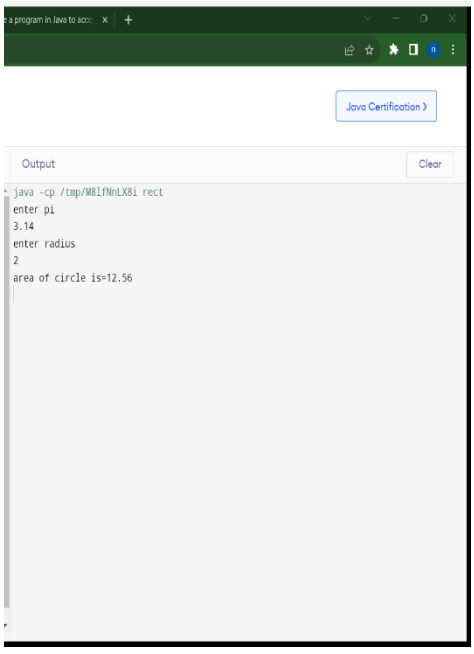


Program7:area of circle(constructor)

```
import java.util.*;
class circle
{
   float pi,radius;
   circle()
   {
      Scanner s=new Scanner(System.in);
      System.out.println("enter pi");
      pi=s.nextFloat();
      System.out.println("enter radius");
```

```
        radius=s.nextFloat();
    }
    void cal()
    {
        float result=pi*radius*radius;
        System.out.println("area of circle is="+result);
    }
}
class rect
{
    public static void main(String args[])
    {
        circle obj=new circle();
        obj.cal();
    }
}
```

Output:

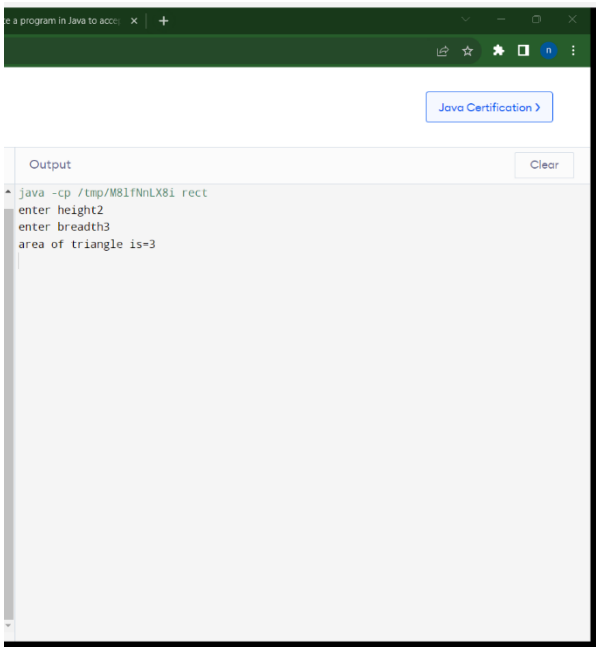


Program8:area of triangle(constructor)

```
import java.util.*;
```

```
class triangle
{
   int height,breadth;
   triangle()
   {
      Scanner s=new Scanner(System.in);
      System.out.println("enter height");
      height=s.nextInt();
      System.out.println("enter breadth");
      breadth=s.nextInt();
   }
   void cal()
   {
      int result=(height*breadth)/2;
      System.out.println("area of triangle is="+result);
   }
}
class rect
{
   public static void main(String args[])
   {
      triangle obj=new triangle();
      obj.cal();
   }
}
```

Output:

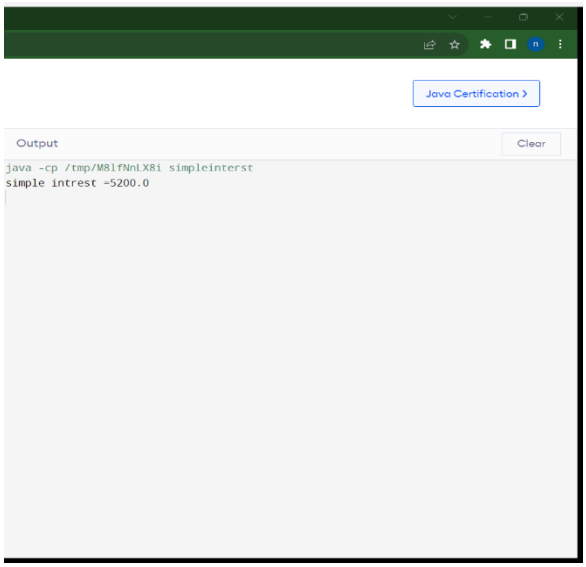


Program9:simple interest

```
import java.util.*;
class simpleinterest
{
   int p,r,t;
   void simple()
   {
      Scanner s=new Scanner(System.in);
      System.out.println("enter amount");
      p=s.nextInt();
      System.out.println("enter rate of interest");
      r=s.nextInt();100
      System.out.println("enter no of Years");
      t=s.nextInt();
   }
   void cal()
   {
      int result=(p*r*t)/100;
      System.out.println("simple interest="+result);
```

```
    }
}
class rect
{
    public static void main(String args[])
    {
        simpleinterest obj=new simpleinterest();
        obj.simple();
       obj.cal();
    }
}
```

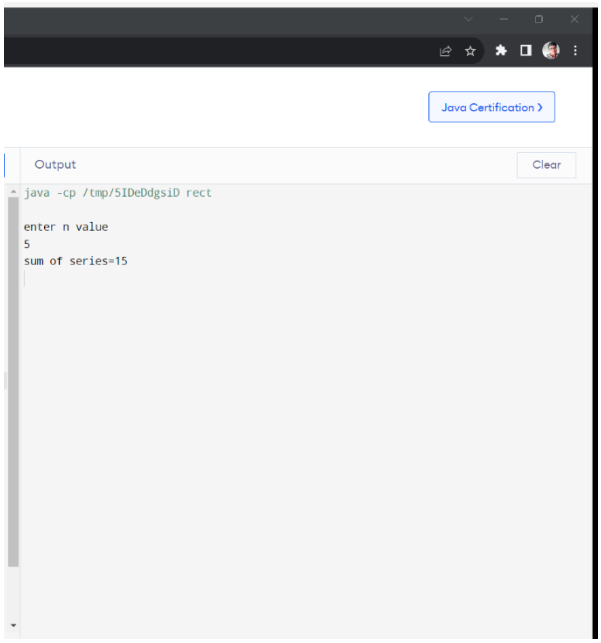
Output:



Program10:sum of series

```
import java.util.*;
class sumofseries
{
    int i,n;
    void sum()
    {
        Scanner s=new Scanner(System.in);
        System.out.println("enter n value");
        n=s.nextInt();
```

```
    }
    void cal()
    {
        int sum=0;
        for(i=1;i<=n;i++)
        {
            sum=sum+i;
        }
        System.out.println("sum of series="+sum);
    }
}
class rect
{
    public static void main(String args[])
    {
        sumofseries obj=new sumofseries();
        obj.sum();
        obj.cal();
    }
}
```



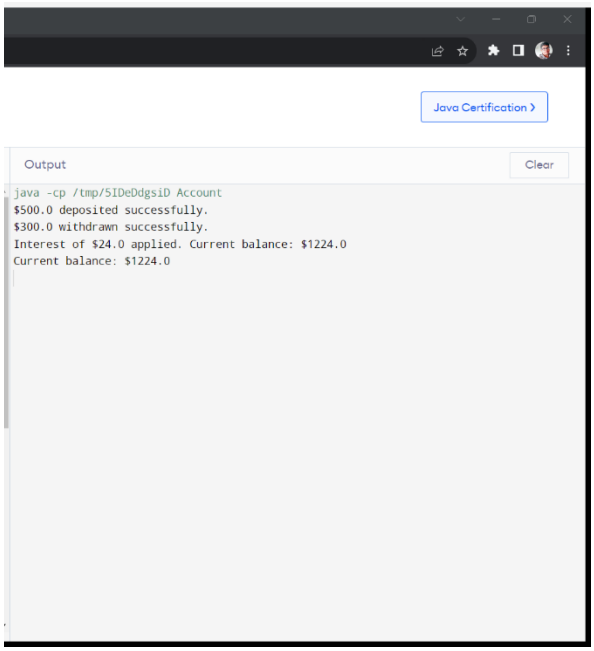
ASSIGNMENT-2

PROGRAM1:

```
public class Account {
    private double balance;
    private double interestRate;
    public Account(double initialBalance) {
        this.balance = Math.max(initialBalance, 0);
        this.interestRate = 0.02;
    }
    public void deposit(double amount) {
        if (amount > 0) {
            balance += amount;
            System.out.println("$" + amount + " deposited successfully.");
        } else {
            System.out.println("Invalid deposit amount.");
        }
    }
    public void withdraw(double amount) {
        if (amount > 0) {
            if (amount <= balance) {
```

```
            balance -= amount;
            System.out.println("$" + amount + " withdrawn successfully.");
        } else {
            System.out.println("Insufficient funds. $5 penalty charged.");
            balance -= 5; // Charge a $5 penalty
        }
    } else {
        System.out.println("Invalid withdrawal amount.");
    }
  }
  public double getBalance() {
    return balance;
  }
  public void computeInterest() {
    double interest = balance * interestRate;
    balance += interest;
    System.out.println("Interest of $" + interest + " applied. Current balance: $" + balance);
  }

  public static void main(String[] args) {
    Account myAccount = new Account(1000);

    myAccount.deposit(500);
    myAccount.withdraw(300);
    myAccount.computeInterest();
    double currentBalance = myAccount.getBalance();
    System.out.println("Current balance: $" + currentBalance);
  }
}
```

OUTPUT:

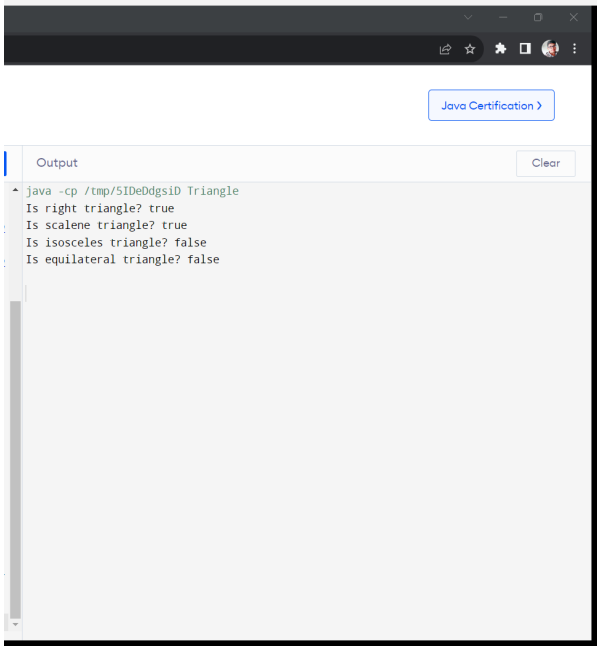


PROGRAM2:

```
public class Triangle {
    private double side1;
    private double side2;
    private double side3;
    public Triangle(double side1, double side2, double side3) {
        this.side1 = side1;
        this.side2 = side2;
        this.side3 = side3;
    }
    public boolean isRight() {
        return (Math.pow(side1, 2) + Math.pow(side2, 2) == Math.pow(side3, 2)
                || Math.pow(side1, 2) + Math.pow(side3, 2) == Math.pow(side2, 2)
                || Math.pow(side2, 2) + Math.pow(side3, 2) == Math.pow(side1, 2));
    }
    public boolean isScalene() {
        return !isIsosceles();
    }
```

```
    public boolean isIsosceles() {
        return (side1 == side2 || side1 == side3 || side2 == side3);
    }
    public boolean isEquilateral() {
        return (side1 == side2 && side1 == side3);
    }

    public static void main(String[] args) {
        Triangle triangle = new Triangle(3, 4, 5);
        System.out.println("Is right triangle? " + triangle.isRight());
        System.out.println("Is scalene triangle? " + triangle.isScalene());
        System.out.println("Is isosceles triangle? " + triangle.isIsosceles());
        System.out.println("Is equilateral triangle? " + triangle.isEquilateral());
    }
}
```

OUTPUT:



PROGRAM 3

```
public class MatrixMultiplication {
```

```
    public static void main(String[] args) {
        int[][] mat1 = {
            {1, 2},
            {5, 3}
        };

        int[][] mat2 = {
            {2, 3},
            {4, 1}
        };

        int[][] result = multiplyMatrices(mat1, mat2);
        System.out.println("Mat Sum = ");
        for (int i = 0; i < result.length; i++) {
            for (int j = 0; j < result[0].length; j++) {
                System.out.print(result[i][j] + " ");
            }
            System.out.println();
        }
    }

    public static int[][] multiplyMatrices(int[][] mat1, int[][] mat2) {
        int rows1 = mat1.length;
        int cols1 = mat1[0].length;
        int rows2 = mat2.length;
        int cols2 = mat2[0].length;

        if (cols1 != rows2) {
            throw new IllegalArgumentException("Matrix dimensions are not compatible
for multiplication");
```

```
        }

        int[][] result = new int[rows1][cols2];

        for (int i = 0; i < rows1; i++) {
            for (int j = 0; j < cols2; j++) {
                int sum = 0;
                for (int k = 0; k < cols1; k++) {
                    sum += mat1[i][k] * mat2[k][j];
                }
                result[i][j] = sum;
            }
        }

        return result;
    }
```

OUTPUT: