## Experiment: 1

**Aim:** Write a Java program to perform basic Calculator operations.

**Software:** VS Code

**Code:-**

```java
// Write a Java program to perform basic Calculator operations.

import java.util.*;

public class Programm1
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);

        int num1,num2,choice;
        double ans;

        System.out.print("Enter The Choice:-\n1-Addition\n2-Substraction\n3-
Multiplication\n4-Division\n5-Modulo Operation");
        System.out.println("\n6-Square\n7-Cube\n8-Square-Root\n9-Expotential\n10-
Factorial");
        choice = sc.nextInt();

        switch (choice) {
            case 1:
            {
                System.out.print("Enter The First Number:-");
                num1 = sc.nextInt();

                System.out.print("Enter The Second Number:-");
                num2 = sc.nextInt();

                ans = num1 + num2 ;
                System.out.print("The Addition Of " + num1 + " and" + num2 +" Is
"+ ans);
```

```java
                break;
            }

            case 2:
            {
                System.out.print("Enter The First Number:-");
                num1 = sc.nextInt();

                System.out.print("Enter The Second Number:-");
                num2 = sc.nextInt();

                ans = num1 - num2 ;
                System.out.print("The Substraction Of " + num1 + " and" + num2 +"
Is "+ ans);

                break;
            }

            case 3:
            {
                System.out.print("Enter The First Number:-");
                num1 = sc.nextInt();

                System.out.print("Enter The Second Number:-");
                num2 = sc.nextInt();

                ans = num1 * num2 ;
                System.out.print("The Multiplication Of " + num1 + " and" + num2
+" Is "+ ans);

                break;
            }

            case 4:
            {
                System.out.print("Enter The First Number:-");
                num1 = sc.nextInt();

                System.out.print("Enter The Second Number:-");
                num2 = sc.nextInt();
```

```java
            ans = num1 + num2 ;
            System.out.print("The Division Of " + num1 + " and" + num2 +" Is
"+ ans);

                break;
        }

        case 5:
        {
            System.out.print("Enter The First Number:-");
            num1 = sc.nextInt();

            System.out.print("Enter The Second Number:-");
            num2 = sc.nextInt();

            ans = num1 % num2 ;
            System.out.print("The Modules-Operations Of " + num1 + " and" +
num2 +" Is "+ ans);

                break;
        }

        case 6:
        {
            System.out.print("Enter The Number:-");
            num1 = sc.nextInt();

            ans =  Math.pow(num1, 2);
            System.out.print("The Square Of " + num1 + " Is "+ ans);

            break;
        }

        case 7:
        {
            System.out.print("Enter The Number:-");
            num1 = sc.nextInt();

            ans =  Math.pow(num1, 3);
```

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```java
        System.out.print("The Cube Of " + num1 + " Is "+ ans);

        break;
    }

    case 8:
    {
        System.out.print("Enter The Number:-");
        num1 = sc.nextInt();

        ans =  Math.sqrt(num1);
        System.out.print("The Square-root Of " + num1 + " Is "+ ans);

        break;
    }

    case 9:
    {
        System.out.print("Enter The Base:-");
        num1 = sc.nextInt();

        System.out.print("Enter The Power:-");
        num2 = sc.nextInt();

        ans = Math.pow(num1, num2);
        System.out.print(num1 +" ^ " + num2 + " = "+ ans);

        break;
    }

    case 10:
    {
        System.out.print("Enter The Number:-");
        num1 = sc.nextInt();

        ans = 1;

        for(int i=1;i<=num1;i++)
        {
            ans = ans * i ;
```

```
            }

            System.out.print("The Factorial Of " + num1 + " Is " + ans);
            break;
        }

        default:
        {
            System.out.print("Enter The Valid Choice.");

            break;
        }
    }

    sc.close();
    }
}
```

**Output:-**

```
C:\Windows\System32\cmd.exe                                              —    □    ×
Microsoft Windows [Version 10.0.19045.2728]
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D:\Aryan\Semester - 2\Object Oriented Programming\Assigment\Lab Assigment - 1> javac Programm1.java

D:\Aryan\Semester - 2\Object Oriented Programming\Assigment\Lab Assigment - 1> java Programm1
Enter The Choice:-
1-Addition
2-Substraction
3-Multiplication
4-Division
5-Modulo Operation
6-Square
7-Cube
8-Square-Root
9-Expotential
10-Factorial
8
Enter The Number:-9
The Square-root  Of 9 Is 3.0
D:\Aryan\Semester - 2\Object Oriented Programming\Assigment\Lab Assigment - 1>
```

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**Experiment: 2**

**Aim:** Write a Java program to implement nested if -else.

**Software:**  VS Code

**Code:**

```java
// Write a Java program to implement nested if -else.

import java.util.*;

public class Programm2
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner (System.in) ;

        double num1,num2,num3;

        System.out.print("Enter The First Number:-");
        num1 = sc.nextDouble() ;

        System.out.print("Enter The Second Number:-");
        num2 = sc.nextDouble() ;

        System.out.print("Enter The Third Number:-");
        num3 = sc.nextDouble() ;

        if(num1 > num2)
        {
            if(num1 > num3)
            {
                System.out.print("The Biggest Number Amongst " + num1 + "," +
num2 + " And " + num3 + " Is " + num1);
            }

            else
            {
```

```java
                System.out.print("The Biggest Number Amongst " + num1 + "," +
num2 + " And " + num3 + " Is " + num3);
            }
        }

        else
        {
            if(num2 > num3)
            {
                System.out.print("The Biggest Number Amongst " + num1 + "," +
num2 + " And " + num3 + " Is " + num2);
            }

            else
            {
                System.out.print("The Biggest Number Amongst " + num1 + "," +
num2 + " And " + num3 + " Is " + num3);
            }
        }

        sc.close();
    }
}
```

**Output: -**

```
C:\Windows\System32\cmd.exe                                          —    □    ×
Microsoft Windows [Version 10.0.19045.2728]
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D:\Aryan\Semester - 2\Object Orianted Programming\Assigment\Lab Assigment - 1> javac Programm2.java

D:\Aryan\Semester - 2\Object Orianted Programming\Assigment\Lab Assigment - 1> java Programm2
Enter The First Number:-567
Enter The Second Number:-890
Enter The Third Number:-432
The Biggest Number Amongst 567.0,890.0 And 432.0 Is 890.0
D:\Aryan\Semester - 2\Object Orianted Programming\Assigment\Lab Assigment - 1>
```

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**Experiment: 3**

**Aim:** Write a Java program to implement Switch Case.

**Software:** VS Code

**Code:-**

```java
// Write a Java program to implement Switch Case.

import java.util.*;

public class Programm3
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in) ;
        int day;

        System.out.print("Enter The Number Of Day:-");
        day = sc.nextInt();

        switch (day)
        {
            case 1:
            {

                System.out.print("The 1st Day Of The Week Is Monday");
                break;
            }

            case 2:
            {
                System.out.print("The 2nd Day Of The Week Is Tuesday");
                break;
            }

            case 3:
            {
                System.out.print("The 3rd Day Of The Week Is Wednesday");
```

```java
                break;
            }

            case 4:
            {

                System.out.print("The 4th Day Of The Week Is Thursday");
                break;
            }

            case 5:
            {
                System.out.print("The 5th Day Of The Week Is Friday");
                break;
            }

            case 6:
            {
                System.out.print("The 6th Day Of The Week Is Saturday");
                break;
            }

            case 7:
            {
                System.out.print("The 7th Day Of The Week Is Sunday");
                break;
            }

            default:
            {
                System.out.println("Enter The Valid Choice");
                break;
            }
        }

        sc.close();

    }
}
```
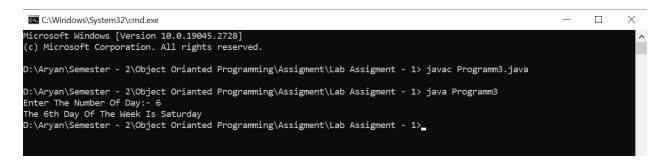
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**Output:**

**Experiment: 4**

**Aim:** Write a Java program to print Right Triangle Star Pattern.

**Software:** VS Code

**Code:-**

```java
// Write a Java program to print Right Triangle Star Pattern.

import java.util.*;

public class Programm4
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);

        int num;

        System.out.print("Enter The Number Of Rows:-");
        num = sc.nextInt();

        for(int i=1;i<=num;i++)
        {
            for(int j=1;j<=i;j++)
            {
                System.out.print("* ");
            }

            System.out.println();

        }

        sc.close();

    }
}
```

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**Output:**

```
C:\Windows\System32\cmd.exe                                              —   □   ×

Microsoft Windows [Version 10.0.19045.2728]
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D:\Aryan\Semester - 2\Object Orianted Programming\Assigment\Lab Assigment - 1> javac Programm4.java

D:\Aryan\Semester - 2\Object Orianted Programming\Assigment\Lab Assigment - 1> java Programm4
Enter The Number Of Rows:-4
*
* *
* * *
* * * *

D:\Aryan\Semester - 2\Object Orianted Programming\Assigment\Lab Assigment - 1>
```

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**Experiment: 5**

**Aim:** Write a Java Program to Print Downward Triangle Star Pattern.

**Software:**  VS Code

**Code:**

```java
// Write a Java Program to Print Downward Triangle Star Pattern.

import java.util.*;

public class Programm5
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);

        int num;

        System.out.print("Enter The Number Of Rows:-");
        num = sc.nextInt();

        for(int i=num;i>=1;i--)
        {
            for(int j=i;j>=1;j--)
            {
                System.out.print("* ");
            }

            System.out.println();

        }

        sc.close();

    }
}
```

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**Output:-**

```
C:\Windows\System32\cmd.exe                                        —    □    ×

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D:\Aryan\Semester - 2\Object Orianted Programming\Assigment\Lab Assigment - 1> javac Programm5.java

D:\Aryan\Semester - 2\Object Orianted Programming\Assigment\Lab Assigment - 1> java Programm5
Enter The Number Of Rows:-5
* * * * *
* * * *
* * *
* *
*

D:\Aryan\Semester - 2\Object Orianted Programming\Assigment\Lab Assigment - 1>
```

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