

S.No: 1

Exp. Name: **sample programs on operator precedence and associativity**

Date: 2023-11-17

**Aim:**

Write a java program to demonstrate operator precedence and associativity

**Source Code:**

**OperatorPrecedence.java**

```
//import java.lang.*;
import java.util.*;
public class OperatorPrecedence{
    public static void main(String[]args)
    {
        int x;
        Scanner obj=new Scanner(System.in);
        System.out.print("Enter a num: ");
        x=obj.nextInt();
        int j=(x++)+(x++)*(--x)/(x++)-(--x)+3>>1|2;
        System.out.println("The operation going is x++ + x++ * --x / x++ - --x + 3
>> 1 | 2");
        System.out.println("result = "+j);

    }
}
```

**Execution Results** - All test cases have succeeded!

**Test Case - 1**

**User Output**

Enter a num:

4

The operation going is x++ + x++ \* --x / x++ - --x + 3 >> 1 | 2

result = 3

**Test Case - 2**

**User Output**

Enter a num:

-3

The operation going is x++ + x++ \* --x / x++ - --x + 3 >> 1 | 2

result = 2

S.No: 2

Exp. Name: **Sample program on java to demonstrate Control structures**

Date: 2023-11-17

**Aim:**

write a java program that uses if-else control statement and print the result

**Source Code:**

**Control.java**

```
import java.util.*;
public class Control{
    public static void main(String args[]){
        int x,y;
        Scanner obj=new Scanner(System.in);
        System.out.print("Enter first num : ");
        x=obj.nextInt();
        System.out.print("Enter second num : ");
        y=obj.nextInt();
        if(x+y<20)
            System.out.println("x + y is less than 20");
        else
            System.out.println("x + y is greater than 20");
    }
}
```

**Execution Results - All test cases have succeeded!**

**Test Case - 1**

**User Output**

Enter first num :

13

Enter second num :

5

x + y is less than 20

**Test Case - 2**

**User Output**

Enter first num :

24

Enter second num :

10

x + y is greater than 20

S.No: 3

Exp. Name: **Sample Program to demonstrate constructor**

Date: 2023-11-17

**Aim:**

Write a program to demonstrate constructor class

**Source Code:**

**Student.java**

```
import java.util.*;
public class Student{
    String name;
    int rollno;
    public static void main(String args[])
    {
        Student s=new Student();
        System.out.print(s.rollno);
        System.out.print(" ");
        System.out.println(s.name);
        System.out.print(s.rollno);
        System.out.print(" ");
        System.out.println(s.name);
    }
}
```

**Execution Results** - All test cases have succeeded!

**Test Case - 1**

**User Output**

0 null

0 null

**Aim:**

Write a program to demonstrate destructor class

**Source Code:****DestructorExample.java**

```
import java.util.*;
public class DestructorExample {
    public void finalize() {
        System.out.println("Object is destroyed by the Garbage Collector");
        System.out.println("Inside the main() method");
        System.out.println("Object is destroyed by the Garbage Collector");
    }

    public static void main(String[] args){
        DestructorExample d= new DestructorExample();
        d = null;
        System.gc();
    }
}
```

**Execution Results - All test cases have succeeded!****Test Case - 1****User Output**

Object is destroyed by the Garbage Collector  
Inside the main() method  
Object is destroyed by the Garbage Collector

S.No: 5

Exp. Name: **A program to print Half pyramid pattern**

Date: 2023-11-17

**Aim:**

Write a Java program to print Half Pyramid pattern.

**Source Code:**

**HalfPyramid.java**

```
import java.util.Scanner;
public class HalfPyramid {
    public static void main(String args[]) {
        int i,j;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter no of rows : ");
        int n=sc.nextInt();
        for(i=0;i<n;i++){
            for(j=0;j<=i;j++){
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}
```

**Execution Results - All test cases have succeeded!**

**Test Case - 1**

**User Output**

Enter no of rows :

5

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

**Test Case - 2**

**User Output**

Enter no of rows :

3

\*

\* \*

\* \* \*

**Test Case - 3**

**User Output**

Enter no of rows :

10

\*  
\* \*  
\* \* \*  
\* \* \* \*  
\* \* \* \* \*  
\* \* \* \* \* \*  
\* \* \* \* \* \* \*  
\* \* \* \* \* \* \* \*

S.No: 6

Exp. Name: **A program to print Inverted Half pyramid pattern**

Date: 2023-11-17

**Aim:**

Write a Program to Print Inverted Half Pyramid Pattern

**Source Code:**

**HalfPyramidRev.java**

```
import java.util.Scanner;
public class HalfPyramidRev{
    public static void main(String args[]) {
        int i,j;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter no of rows : ");
        int n=sc.nextInt();
        for(i=n-1;i>=0;i--) {
            for(j=0;j<=i;j++) {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}
```

**Execution Results - All test cases have succeeded!**

**Test Case - 1**

**User Output**

Enter no of rows :

5

\* \* \* \* \*

\* \* \* \*

\* \* \*

\* \*

\*

**Test Case - 2**

**User Output**

Enter no of rows :

3

\* \* \*

\* \*

\*

S.No: 7

Exp. Name: **A program to print Hollow Inverted Half Pyramid Pattern**

Date: 2023-11-17

**Aim:**

Write a Program to Print Hollow Inverted half Pyramid Pattern

**Source Code:**

HollowHalfPyramidRev.java

```
import java.util.Scanner;
public class HollowHalfPyramidRev{
    public static void main(String args[]) {
        int i,j;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter no of rows : ");
        int n=sc.nextInt();
        for(i=0;i<n;i++){
            int k=2*(n-i-1);
            for(j=0;j<=k;j=j+2){
                if((i==0)|| (j==0)|| (j==k))
                    System.out.print("* ");
                else
                    System.out.print("  ");
            }
            System.out.println();
        }
    }
}
```

**Execution Results - All test cases have succeeded!**

**Test Case - 1**

**User Output**

Enter no of rows :

5

\* \* \* \* \*

\* \* \*

\* \*

\* \*

\*

**Test Case - 2**

**User Output**

Enter no of rows :

3

\* \* \*

\* \*

\*

**Aim:**

Write a Program to Print Pyramid Pattern

**Source Code:****Pyramid.java**

```
import java.util.Scanner;
public class Pyramid {
    public static void main(String args[]) {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter no of rows : ");
        int n=sc.nextInt();
        for(int i=0;i<n;i++) {
            for(int j=1;j<n-i;j++) {
                System.out.print(" ");
            }
            for(int k=0;k<=i;k++) {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}
```

**Execution Results - All test cases have succeeded!****Test Case - 1****User Output**

Enter no of rows :

5

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

**Test Case - 2****User Output**

Enter no of rows :

6

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

\* \* \* \* \* \*

S.No: 9

Exp. Name: **A program to print Inverted Pyramid Pattern**

Date: 2023-11-17

**Aim:**

Write a Program to Print inverted Pyramid Pattern

**Source Code:**

PyramidRev.java

```
import java.util.Scanner;
public class PyramidRev {
    public static void main(String args[]) {
        int i,j;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter no of rows : ");
        int n=sc.nextInt();
        for(i=0;i<n;i++) {
            for(j=0;j<i;j++) {
                System.out.print(" ");
            }
            for(int k=i;k<n;k++) {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}
```

**Execution Results - All test cases have succeeded!**

**Test Case - 1**

**User Output**

Enter no of rows :

5

\* \* \* \* \*

\* \* \* \*

\* \* \*

\* \*

\*

**Test Case - 2**

**User Output**

Enter no of rows :

6

\* \* \* \* \* \*

\* \* \* \* \*

\* \* \* \*

\* \* \*

\* \*  
\*

**Aim:**

Write a Program to print the Hollow pyramid pattern

**Source Code:****PyramidGap.java**

```
import java.util.Scanner;
public class PyramidGap {
    public static void main(String args[]) {
        int i,j;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter no of rows : ");
        int n=sc.nextInt();
        for(i=1;i<=n;i++) {
            for(j=i;j<n;j++) {
                System.out.print(" ");
            }
            for(j=1;j<2*i;j++) {
                if(j==1||j==(2*i-1)|| (i==n)&&(j%2==1))
                    System.out.print("*");
                else
                    System.out.print(" ");
            }
            System.out.print(" ");
            System.out.println();
        }
    }
}
```

**Execution Results - All test cases have succeeded!****Test Case - 1****User Output**

Enter no of rows :

5

\*

\* \*

\* \*

\* \*

\* \* \* \* \*

**Test Case - 2****User Output**

Enter no of rows :

6

*
* *
* * *
* *
* * *
* * * * *

**Aim:**

Write Java program on use of Inheritance.

Create a class Vehicle

- contains the data members **color** of String type and **speed** and **size** of integer data type.
- write a method **setVehicleAttributes()** to initialize the data members

Create another class Car which is derived from the class Vehicle

- contains the data members **cc** and **gears** of integer data type
- write a method **setCarAttributes()** to initialize the data members
- write a method **displayCarAttributes()** which will display all the attributes.

Write another class InheritanceDemo with **main()** it receives five arguments **color**, **speed**, **size**, **cc** and **gears**.

**Source Code:****InheritanceDemo.java**

```

import java.util.*;
class Vehicle {
    String color;
    int speed, size;
    void setVehicleAttributes(String c, String sp, String s) {
        color=c;
        size=Integer.parseInt(s);
        speed=Integer.parseInt(sp);
    }
}
class Car extends Vehicle {
    int cc, gears;
    void setCarAttributes(String c, String sp, String s, String cce, String gear){
        setVehicleAttributes(c, sp, s);
        cc=Integer.parseInt(cce);
        gears=Integer.parseInt(gear);
    }
    void displayCarAttributes(){
        System.out.println("Color of Car : "+color);
        System.out.println("Speed of Car : "+speed);
        System.out.println("Size of Car : "+size);
        System.out.println("CC of Car : "+cc);
        System.out.println("No of gears of Car : "+gears);
    }
}
class InheritanceDemo {
    public static void main(String args[]){
        Car s=new Car();
        s.setCarAttributes(args[0], args[1], args[2], args[3], args[4]);
        s.displayCarAttributes();
    }
}

```

## Execution Results - All test cases have succeeded!

Test Case - 1
<b>User Output</b>
Color of Car : Blue
Speed of Car : 100
Size of Car : 20
CC of Car : 1000
No of gears of Car : 5

Test Case - 2
<b>User Output</b>
Color of Car : Orange
Speed of Car : 120
Size of Car : 25
CC of Car : 900
No of gears of Car : 5