

Pattern Programming Examples

```
Star_Vertical.java Star_Horizontal.java
1 package Star_Examples;
2
3 public class Star_Vertical
4 {
5     /*
6     /*
7     /*
8     /*
9     public static void main(String[] args)
10    {
11        for (int i=1; i<=4; i++)
12        {
13            System.out.println("*");
14        }
15    }
16
17 }
```

Console

<terminated> Star_Verti
*
*
*
*

```
Star_Vertical.java Star_Horizontal.java
1 package Star_Examples;
2
3 public class Star_Horizontal
4 {
5     /******
6     public static void main(String[] args)
7     {
8         for (int i=1; i<=4; i++)
9         {
10            System.out.print("*");
11        }
12    }
13 }
14
```

Console

<terminated> Star_Hori

```
Star_Vertical.java Star_Horizontal.java *Star_Box.java
1 package Star_Examples;
2
3 public class Star_Box
4 {
5     /****** // Rows = 3
6     /****** // Columns = 5
7     /****** // Always Start with Rows (Outer loop)
8
9     public static void main(String[] args)
10    {
11        // outer for loop for rows (Count rows) Here rows = 3
12        for (int i=1; i<=3; i++)
13        {
14            //inner loop for columns ( Count columns) Here Col = 5
15            for (int j=1; j<=5; j++)
16            {
17                System.out.print("*"); // Note : Use (Print) only
18            }
19            System.out.println(); // On next line use println
20        }
21    }
22 }
23
24
```

Console

<terminated> Star_Box


```

package StarLogic;
public class Triangle_Left_Ascending
{
    public static void main(String[] args)
    {
        // *
        // **
        // ***
        // ****
        // *****
        //Step 1: Count Rows = 05 Count Columns = 05
        //
        int star = 1; // Write No of star in first Row
        for(int i=1; i<=5; i++)    // Outer for loop used for Rows
        {
            for(int j=1; j<=star; j++)    // Inner Loop for Columns
            {
                System.out.print("*");
            }
            System.out.println(); // after printing star go on next line
            star++;               // Increment in stars
        }
    }
}

```

The screenshot shows an IDE with two tabs: `Triangle_Left_Ascending.java` and `Triangle_Left_Descending.java`. The `Triangle_Left_Ascending.java` tab is active, displaying the same code as the first block. The console window on the right shows the output of the program, which is a left-ascending triangle of stars:

```

<terminated> Triangle_Left_Asc
*
**
***
****
*****

```

```

package StarLogic;

public class Triangle_Left_Descending
{
    public static void main(String[] args)
    {
        //*****
        //*****
        //***
        //**
        //*
        //Step1 : Count Rows = 5;    Count Columns = 5
        int star = 5; // No of star present in first row
        for(int i=1; i<=5; i++)      // Outer loop for rows
        {
            for(int j=1; j<=star; j++) // inner loop for
            {
                System.out.print("*");
            }
            System.out.println();
            star--;
        }
    }
}

```

The screenshot shows an IDE with two tabs: 'Triangle_Left_Ascending.java' and '*Triangle_Left_Descending.java'. The code in the active tab is the same as the one in the first block. To the right, a 'Console' window shows the output of the program, which is a left-descending triangle of stars:

```

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

```

```

package StarLogic;
public class E6_Triangle_Right_Descending {
    public static void main(String[] args) {
        /**
         *
         *
         *
         *
         */
        int space = 0;           // On the First Row there is no space, space = 0;
        int star = 5;           // Outer Loop for the No of Rows = 5
        for (int i=1; i<=5; i++)
        {
            for (int j=1; j<=space; j++ )//1st consider inner for loop for the Space
            {
                System.out.print(" "); // Use Single Space and on Print for Inner For Loop
            }
            for (int j=1; j<=star; j++)
            {
                System.out.print("*");
            }
            System.out.println();
            space++;
            star--;
        }
    }
}

```

```

package StarLogic;
public class E7_Triangle_Right_Acending {
    public static void main(String[] args) {
        /**
         *
         *
         *
         *
         */
        int space = 4;           // Space in first row, space = 4
        int star = 1;           // star on first row, star = 1
        for(int i=1; i<=5; i++)   // Outer loop for No of Rows = 5
        {
            for(int j=1; j<= space; j++) // 1st inner loop : Space
            {
                System.out.print(" "); // Don't Use Println()
            }
            for(int j=1; j<= star; j++)
            {
                System.out.print("*");
            }
            System.out.println();
            space--;
            star++;
        }
    }
}

```

```

package StarLogic;
public class E8_Equilateral_Downward{
    public static void main(String[] args){
        //*****
        // *****
        // ***
        // *
        int space=0;
        int star=7;
        for(int i=1; i<=4; i++)          // Outer For Loop; Rows= 4
        {
            for(int j=1; j<=space; j++)    // Inner for Loop
            {
                System.out.print(" ");
            }
            for(int j=1; j<=star; j++)      // Inner for Loop
            {
                System.out.print("*");
            }
            System.out.println();
            space++;                        // Increment of Space by 1
            star = star-2;                  // Decrement of Star by 2
        }
    }
}-----

```

```

package StarLogic;

public class E9_EquilateralTriagle_Upward
{
    public static void main(String[] args)
    {
        // *
        // ***
        // *****
        //*****

        int space=3;
        int star=1;
        for(int i=1; i<=4; i++)          // Outer For loop; Rows=4;
        {
            for(int j=1; j<=space; j++)
            {
                System.out.print(" ");
            }
            for(int j=1; j<=star; j++)    // Inner For loop; Column;
            {
                System.out.print("*");
            }
            System.out.println();
            space--;
            star=star+2;
        }
    }
}-----

```

```

package StarLogic;
public class E10_EquilateralTriangle_Upward_WithSpacing
{
    public static void main(String[] args) {
        // Equilateral Triangle Upward With Space
        // *
        // * *
        // * * *
        // * * * *
        int space=3;
        int star=1;
        for(int i=1; i<=4; i++)          // Outer for loop for the no of Rows
        {
            for(int j=1; j<=space; j++)    // Inner For Loop for Space
            {
                System.out.print(" ");
            }
            for(int j=1; j<=star; j++)      // Inner For Loop for star
            {
                System.out.print("* ");
            }
            System.out.println();
            space--;
            star++;
        }
    }
}

```

```

package StarLogic;
public class E11_EquilateralTriangle_Downward_WithSpacing
{
    public static void main(String[] args)
    {
        // Equilateral Triangle Downward With Space
        // * * * * *
        // * * * *
        // * * *
        // * *
        // *
        int space = 0;          // No of Space in First Row
        int star = 5;          // No of Starts in First Row
        for(int a=1; a<=5; a++)    // Outer For Loop
        {
            for(int b=1; b<=space; b++)    //Inner For Loop
            {
                System.out.print(" ");
            }
            for(int c=1; c<=star; c++)      //Inner For Loop
            {
                System.out.print("* ");
            }
            System.out.println();
            space++;
            star--;
        }
    }
}

```

```

package StarLogic;
public class F12_DescAsc_DecreasingIncreasing {
    public static void main(String[] args) {
        //-----
        //*****
        //****
        //***
        //**
        //*
        //**
        //***
        //****
        //*****
        //-----

        //Step .1 Count Total no of Rows = 9; Use Outer for loop for No. of Rows

        int star = 5;    //Count Total no of star in first Row
        for(int i=1; i<=9; i++)    // Outer for loop used for No. of Rows
        {
            for(int j=1; j<=star; j++)    // Inner for loop for Col
            {
                System.out.print("*");
            }
            System.out.println();
            //star--;
            if(i<5)    // OR (i<=4)    // For Descending star
            {
                star--;
            }
            else    // For Ascending star
            {
                star++;
            }
        }
    }
}

```

The screenshot shows an IDE with a Java file named `F12_DescAsc_DecreasingIncreasing.java`. The code is identical to the one shown in the previous block. The console on the right displays the output of the program, which is a 9x5 grid of asterisks. The first 4 rows have 5 stars each, and the last row has 5 stars. The output is as follows:

```

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

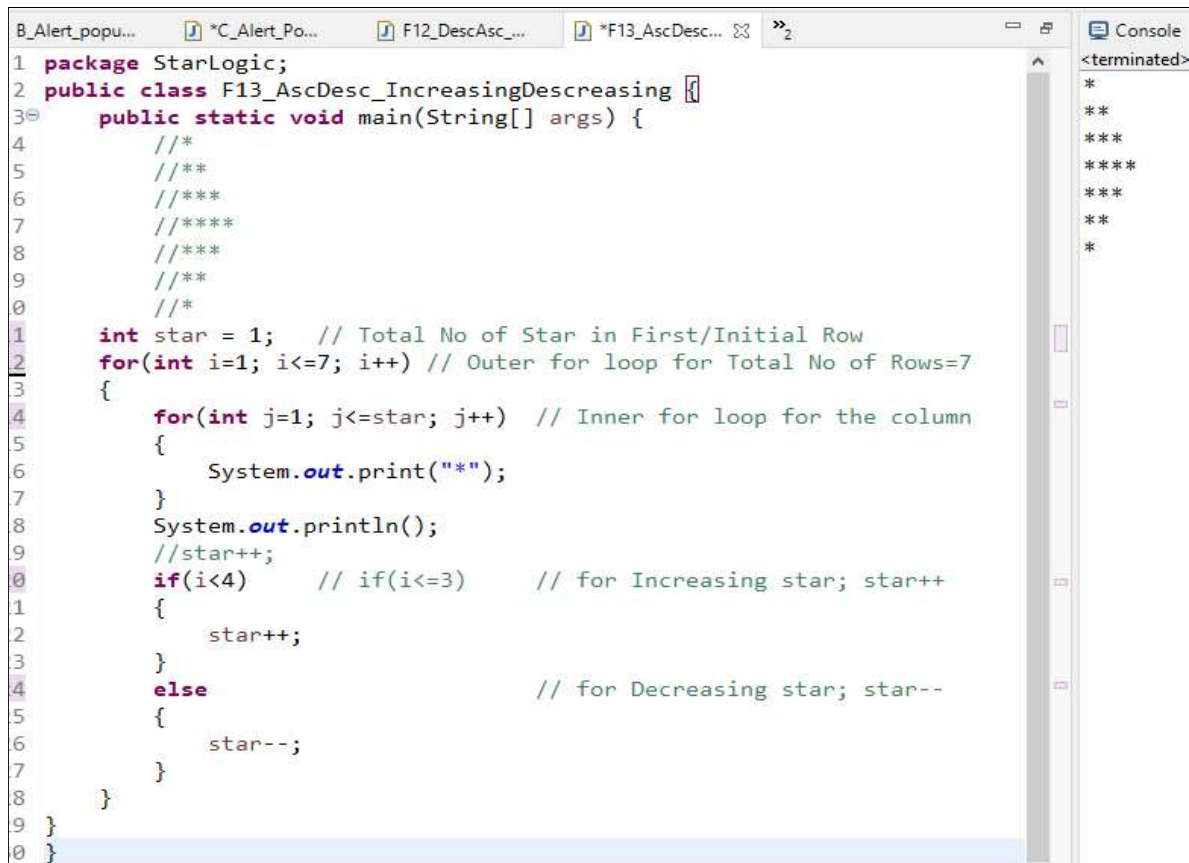
```



```

package StarLogic;
public class F13_AscDesc_IncreasingDecreasing {
    public static void main(String[] args) {
        /*
        /**
        /****
        /*****
        /******
        /*****
        /****
        /***
        int star = 1;    // Total No of Star in First/Initial Row
        for(int i=1; i<=7; i++)    // Outer for loop for Total No of Rows=7
        {
            for(int j=1; j<=star; j++) // Inner for loop for the column
            {
                System.out.print("*");
            }
            System.out.println();
            //star++;
            if(i<4)           // if(i<=3)           // for Increasing star; star++
            {
                star++;
            }
            else               // for Decreasing star; star--
            {
                star--;
            }
        }
    }
}

```



The screenshot shows an IDE with the following components:

- Editor Tabs:** B_Alert_popu..., *C_Alert_Po..., F12_DescAsc..., *F13_AscDesc..., »2.
- Code Editor:** Displays the Java code from the previous block. Line numbers 1 through 10 are visible on the left margin.
- Console:** Located on the right side, it shows the output of the program:


```

<terminated>
*
**
***
****
***
**
*

```

```

package StarLogic;
public class F14_ButterFly {
    public static void main(String[] args) {
        /*          *
        /**         **
        /****       ***
        /*****      ****
        /******     *****
        /*******   *****
        /******     ****
        /****       ***
        /**         **
        /**          * ( Remember : Star Space Space Star)

        int star = 1;    // Star on the first Row Left
        int space = 5;   // Space on the first Row Left
        int star2 = 1;   // Star on the first Row Right
        int space2 = 4;  // Space on the first Row Right

        for(int i=1; i<=9; i++)    //Outer for loop used for No. of Rows = 9
        {
            for(int j=1; j<=star; j++) // Inner For loop for Star(Left)
            {
                System.out.print("*");
            }
            for(int k=1;k<=space; k++) // Inner For loop for space(Left)
            {
                System.out.print(" ");
            }
            for(int m=1; m<=space2; m++)
            {
                System.out.print(" ");
            }
            for(int l=1; l<=star2;l++)
            {
                System.out.print("*");    // Inner For loop for Star(Right)
            }

            if(i<5)
            {
                star++;
                space--;
                star2++;
                space2--;
            }
            else
            {
                star--;
                space++;
                star2--;
                space2++;
            }
            System.out.println();
        }
    }
}-----

```

