

## Nested Loop

## Pattern Programs

```
class A1
{
    public static void main(String[] args)
    {
        int i=1;
        while(i<=5)//outerloop-->row 1<=5t 2<=5t 3<=5t 4<=5t 5<=5t 6<=5f
        {
            int j=1;
            while(j<=i)//innerloop->col//1<=1t 2<=1f | 1<=2t 2<=2f | 1<=3t 2<=3t
            3<=3t 4<=3f
            //1<=4t 2<=4t 3<=4t 4<=4t 5<=4f | 1<=5t 2<=5t 3<=5t 4<=5t 5<=5t
            6<=5f
            {
                System.out.print(j+" ");

                j++;//1+=2 | 1+=2+=3 | 1+=2+=3+=4 | 1+=2+=3+=4+=5 | 1+=2+=3+=4+=5+=6
            }//closing of inner loop
            System.out.println();

            i++;//1+=2+=3+=4+=5+=6
        }//closing outer loop
    }
}
//1
//1 2
//1 2 3
//1 2 3 4
//1 2 3 4 5
//
```

```
class A2
{
    public static void main(String[] args)
    {
        int i=1;
        do
        {
            int j=1;
            do
            {
                System.out.print(j+" ");

                j++;//1+=2 | 1+=2+=3 | 1+=2+=3+=4 | 1+=2+=3+=4+=5 | 1+=2+=3+=4+=5+=6
            }
            i++;
        }
    }
}
```

```

        } while(j<=i); //innerloop->col //1<=1t 2<=1f | 1<=2t 2<=2t 3<=2f | 1<=3t
2<=3t 3<=3t 4<=3f
        //1<=4t 2<=4t 3<=4t 4<=4t 5<=4f | 1<=5t 2<=5t 3<=5t 4<=5t 5<=5t
6<=5f //closing of inner loop
        System.out.println();
        i++; //1++=2++=3++=4++=5++=6
    } while(i<=5); //outerloop-->row 2<=5t 3<=5t 4<=5t 5<=5t 6<=5f //closing outer loop
    }
}
//1
//1 2
//1 2 3
//1 2 3 4
//1 2 3 4 5
//

```

```

class A3
{
    public static void main(String[] args)
    {
        int i=5;
        do
        {
            int j=5;
            do
            {
                System.out.print(j+" "); //5
                //5
                j--; //5--=4
            }
            while (j>=i); //4>=4f
            System.out.println();
            i--; //4
        }
        while (i>=1);
    }
}

```

o/p  
5  
5 4  
5 4 3  
5 4 3 2  
5 4 3 2 1

```

class A4
{
    public static void main(String[] args)
    {
        for(int i=5;i>=1;i--)
        {
            for(int j=5;j>=i;j--)
            {
                System.out.print(j+" ");
            }
            System.out.println();
        }
    }
}

```

o/p

```

5
5 4
5 4 3
5 4 3 2
5 4 3 2 1

```

```

class A5
{
    public static void main(String[] args)
    {
        for(int i=1;i<=5;i++)//1<=5t 2<=5t 3<=5
        {
            for(int j=i;j>=1;j--)//1>=1t 0>=1f | 2>=1t 1>=1t 0>=1f | 3>=1t 2>=1t 1>=1t
            0>=1f
            {
                System.out.print(j+" ");
            }
            System.out.println();
        }
    }
}

```

o/p

```

1
2 1
3 2 1
4 3 2 1
5 4 3 2 1

```

```

class A6
{
    public static void main(String[] args)

```

```

        {
            for(int i=5;i>=1;i--)
            {
                for(int j=i;j>=1;j--)
                {
                    System.out.print(j+" ");
                }
                System.out.println();
            }
        }
    }
}

```

o/p

```

5 4 3 2 1
4 3 2 1
3 2 1
2 1
1

```

```

class A7
{
    public static void main(String[] args)
    {
        for(int i=1;i<=5;i++)
        {
            for(int j=5;j>=1;j--)
            {
                System.out.print(j+" ");
            }
            System.out.println();
        }
    }
}

```

o/p

```

5 4 3 2 1
5 4 3 2 1
5 4 3 2 1
5 4 3 2 1
5 4 3 2 1

```

```

class A8
{
    public static void main(String[] args)
    {
        for(int i=5;i>=1;i--)
        {
            for(int j=i;j<=5;j++)
            {

```

```

        System.out.print(i+" ");
    }
    System.out.println();
}
}

o/p
//1 1 1 1 1
//2 2 2 2
//3 3 3
//4 4
//5

class A9
{
    public static void main(String[] args)
    {
        for(int i = 1; i<=5; i++)//1 2 3 4 5
        {
            for(int j = i; j<=5; j++)
            {
                System.out.print(i+" ");
            }
            System.out.println();
        }
    }
}

```

o/p

```

1 1 1 1 1
2 2 2 2
3 3 3
4 4
5

```

```

class A10
{
    public static void main(String[] args)
    {
        for(int i=1; i<=5; i++)//1 2 3
        {
            for(int j=5; j>=i; j--) //3>=3
            {
                System.out.print(i+" ");
            }
            System.out.println();
        }
    }
}

```

```

}
//1 2 3 4 5
//2 3 4 5
//3 4 5
//4 5
//5

```

```

class A11
{
    public static void main(String[] args)
    {
        for(int i = 1; i<=5; i++)//1 2 3 4 5
        {
            for(int j = i; j<=5; j++)//1-5 2-5 3-5 4-5 5-5
            {
                System.out.print(j+ " ");
            }
            System.out.println();
        }
    }
}
o/p
//1
//0 1
//1 0 1
//0 1 0 1
//1 0 1 0 1

```

```

class A12
{
    public static void main(String[] args)
    {
        for(int i=1; i<=5; i++)//1 2
        {
            for(int j=1; j<=i; j++)//1 2
            {
                if((i+j)%2==0)//2+2=4%2==0
                {
                    System.out.print("1 ");
                }
                else
                {
                    System.out.print("0 ");
                }
            }
            System.out.println();
        }
    }
}

```

```

        }
    }
}

```

o/p  
//1 0 1 0 1  
//0 1 0 1 0  
//1 0 1 0 1  
//0 1 0 1 0  
//1 0 1 0 1

```

class A13
{
    public static void main(String[] args)
    {
        for(int i=5;i>=1;i--)
        {
            for(int j=i;j<=5;j++)
            {
                if(j%2!=0)
                    System.out.print("1 ");
                else
                    System.out.print("0 ");
            }
            System.out.println();
        }
    }
}

```

o/p  
1  
0 1  
1 0 1  
0 1 0 1  
1 0 1 0 1

```

class A14
{
    public static void main(String[] args)
    {
        for(int i=1;i<=5;i++)
        {
            for(int j=1;j<=5;j++)
            {
                if((i+j)%2==0)
                    System.out.print("1 ");
                else

```

```

        System.out.print("0 ");
    }
    System.out.println();
}
}
}

```

o/p

```

1 0 1 0 1
0 1 0 1 0
1 0 1 0 1
0 1 0 1 0
1 0 1 0 1

```

class A15

```

{
    public static void main(String[] args)
    {
        for(int i=1;i<=5;i++)
        {
            for(int j=1;j<=5;j++)
            {
                System.out.print("*");
            }
            System.out.println();
        }
    }
}

```

o/p

```

//*****
//*****
//*****
//*****
//*****

```

class A16

```

{
    public static void main(String[] args)
    {
        for(int i=1;i<=5;i++)
        {
            for(int j=1;j<=5;j++)
            {
                if(i==1 || i==5 || j==1 || j==5)
                    System.out.print("*");
                else
                    System.out.print(" ");
            }
        }
    }
}

```



```

        System.out.println();
    }
}

o/p
//*****
//*  *
//*  *
//*  *
//*****

class A17
{
    public static void main(String[] args)
    {
        for (int i=1;i<=5 ;i++ )//1 2 3 4 5
        {
            for (int j=1;j<=i ;j++) //1-1 1-2 1-3 1-4 1-5
            {
                System.out.print("*");
            }
            System.out.println(" ");
        }
    }
}

```

```

o/p
*
**
***
****
*****

```

```

class A18
{
    public static void main(String[] args)
    {
        for(int i=5; i>=1; i--)
        {
            for(int j = 1; j<=5; j++)
            {
                if(j>=i)
                {
                    System.out.print("*");
                }
                else
                {
                    System.out.print(" ");
                }
            }
        }
    }
}

```

```

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

```

o/p

```

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

```

class A19

```

{
    public static void main(String[] args)
    {
        for(int i=1; i<=5; i++)
        {
            for(int j = 5; j>=1; j--)
            {
                if(i>=j)
                {
                    System.out.print("*");
                }
                else
                {
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}

```

o/p

```

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

```

class A20

```

{
    public static void main(String[] args)
    {

```

```

for(int i=1;i<=5;i++) //1 2 3 4 5
{
    for(int j=5;j>=i;j--) //5-1 5-2 5-3 5-4 5-5
    {
        System.out.print("*");
    }
    System.out.println();
}
}
}

```

o/p

```

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

```

class A21

```

{
    public static void main(String[] args)
    {
        for(int i=1; i<=5; i++)//1 2 3 4 5
        {
            for(int j = 1; j<=5; j++)//1-5
            {
                if(j>=i)
                {
                    System.out.print("*");
                }
                else
                {
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}

```

o/p

```

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

```

```

class A22
{
    public static void main(String[] args)
    {
        for(int i=1;i<=5;i++)
        {
            for(int j=1;j<=5;j++)
            {
                if(i==j || j==1 || i==5)
                    System.out.print("*");
                else
                    System.out.print(" ");
            }
            System.out.println();
        }
    }
}

```

o/p

```

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

```

```

class A23
{
    public static void main(String[] args)
    {
        for(int i=1;i<=5;i++)
        {
            for(int j=5;j>=1;j--)
            {
                if(i==j || j==1 || i==5)
                    System.out.print("*");
                else
                    System.out.print(" ");
            }
            System.out.println();
        }
    }
}

```

o/p

```
  *
 **
* *
* *
*****
```

class A24

```
{
    public static void main(String[] args)
    {
        for(int i=5;i>=1;i--)//5>=1t 4>=1t 3>=1 2>=1 1>=1
        {
            for(int j=1;j<=5;j++)//1-5 1234 123 12 1
            {
                if(i==j || j==1 || i==5)
                    System.out.print("*");
                else
                    System.out.print(" ");
            }
            System.out.println();
        }
    }
}
```

o/p

```
//*****
//* *
//* *
//**
//*
```

class A25

```
{
    public static void main(String[] args)
    {
        for(int i=1;i<=5;i++)
        {
            for(int j=1;j<=5;j++)
            {
                if(i==j)
                    System.out.print("*");
                else
                    System.out.print(" ");
            }
        }
    }
}
```

```

        }
        System.out.println();
    }
}

```

o/p[diagonal]

```

// *
// *
// *
// *
// *

```

class A26

```

{
    public static void main(String[] args)
    {
        for (int i=1;i<=5;i++ )
        {
            for (int j=5;j>=i;j-- )
            {
                if (j==i)

                    System.out.print("*");

                else
                    System.out.print(" ");
            }
            System.out.println();
        }
    }
}

```

o/p[diagonal]

```

// *
// *
// *
// *
// *

```