

Nested loops, Break and continue, Problem-solving using Nested loops

```
import java.util.Scanner;

public class P1
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter No : ");
        int no=sc.nextInt();
        int i=1;
        for(;i<=no;i++)
        {
            System.out.print(i + " ");
        }
    }
}

-----

int i=1;
for(;i<=no;)
{
    System.out.print(i + " ");
    i++;
}

-----

int i=0;
for(;i++<no;)
{
```

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

Pattern Programs

1. Number
2. Alphabet
3. Star
4. Hollow

Rules:

1. How many rows?
2. How many cols in particular Row?
3. What to print?

Pattern 1

.....

```
import java.util.Scanner;  
  
public class P1  
{  
    public static void main(String args[])  
    {  
        Scanner sc=new Scanner(System.in);  
        System.out.print("Enter No : " );  
        int no=sc.nextInt();  
  
        for(int i=1;i<=no;i++) // out for - rows  
        {  
            for(int j=1;j<=i;j++) // inner for - cols  
            {
```

```
        System.out.print(j + " ");  
    } // j++  
    System.out.print("\n");  
} // i++  
}  
}
```

Pattern 2

.....

```
import java.util.Scanner;  
  
public class P1  
{  
    public static void main(String args[])  
    {  
        Scanner sc=new Scanner(System.in);  
        System.out.print("Enter No : " );  
        int no=sc.nextInt();  
  
        for(int i=1;i<=no;i++) // out for - rows  
        {  
            for(int j=1;j<=i;j++) // inner for - cols  
            {  
                System.out.print(i + " ");  
            } // j++  
            System.out.print("\n");  
        } // i++  
    }  
}
```

Pattern 3:

```
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
```

```
import java.util.Scanner;

public class P1
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter No : " );
        int no=sc.nextInt();
        int a=1;
        for(int i=1;i<=no;i++) // out for - rows
        {
            for(int j=1;j<=i;j++) // inner for - cols
            {
                System.out.print(a + " ");
                a++;
            } // j++
            System.out.print("\n");
        } // i++
    }
}
```

Pattern 4

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1

```
int no=sc.nextInt();
```

```
for(int i=no;i>=1;i--)
```

```
{
```

```
    for(int j=1;j<=i;j++)
```

```
    {
```

```
        System.out.print(j + " ");
```

```
    }
```

```
    System.out.print("\n");
```

```
} // i--
```

Pattern 5

```
import java.util.Scanner;
```

```
public class P1
```

```
{
```

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

```
    {
```

```
        Scanner sc=new Scanner(System.in);
```

```
        System.out.print("Enter No : " );
```

```
        int no=sc.nextInt();
```

```

for(int i=1;i<no;i++)
{
    for(int j=1;j<=i;j++) // inner for - cols
    {
        System.out.print(j + " ");
    } // j++
    System.out.print("\n");
} //i++
for(int i=no;i>=1;i--)
{
    for(int j=1;j<=i;j++)
    {
        System.out.print(j + " ");
    }
    System.out.print("\n");
} // i--

}

}

```

Enter No : 5

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Pattern 6

```
import java.util.Scanner;

public class P1

{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter No : ");
        int no=sc.nextInt();

        for(int i=no;i>=1;i--)
        {
            for(int j=1;j<=i;j++)
            {
                System.out.print(j + " ");
            }
            System.out.print("\n");
        } // i--

        for(int i=2;i<=no;i++)
        {
            for(int j=1;j<=i;j++) // inner for - cols
            {
                System.out.print(j + " ");
            } // j++
            System.out.print("\n");
        }
    }
}
```

```

    } //i++
  }
}

```

```

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

```

Pattern 7

.....

```

import java.util.Scanner;

public class P1
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter No : " );
        int no=sc.nextInt();

        for(int i=1;i<=no;i++) // out for - rows
        {
            for(int s=i;s<=no;s++)
            {

```

```

        System.out.print( " ");
    }
    for(int j=1;j<=i;j++) // inner for - cols
    {
        System.out.print(j + " ");
    } // j++
    System.out.print("\n");
} //i++
}
}

```

Enter No : 5

```

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

```

Exercise: Pattern 8

```

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

```

Exercise: Pattern 9

Enter No : 5

```

    1
  1 2

```

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

Exercise: Pattern 10

Enter No : 5

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

Pattern 11:

```
System.out.print("Enter No : " );
```

```
int no=sc.nextInt();
```

```
for(int i=1;i<=no;i++) // out for - rows
```

```
{
```

```
    for(int j=i;j<=no;j++) // inner for - cols
```

```

{
    System.out.print(j + " ");
} // j++
System.out.print("\n");
} // i++
}

```

Enter No : 5

1 2 3 4 5

2 3 4 5

3 4 5

4 5

5

Pattern 12:

```
System.out.print("Enter No : ");
```

```
int no=sc.nextInt();
```

```
for(int i=no;i>=1;i--) // out for - rows
```

```
{
```

```
    for(int j=i;j>=1;j--) // inner for - cols
```

```
    {
```

```
        System.out.print(j + " ");
```

```
    } // j++
```

```
        System.out.print("\n");
```

```
    } // i++
```

Enter No : 5

5 4 3 2 1

4 3 2 1

3 2 1

2 1

1

Pattern 13:

```
import java.util.Scanner;

public class P1
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter No : " );
        int no=sc.nextInt();

        for(int i=no;i>=1;i--) // out for - rows
        {
            for(int j=no;j>=i;j--) // inner for - cols
            {
                System.out.print(j + " ");
            } // j++
            System.out.print("\n");
        } //i++
    }
}
```

Enter No : 5

5

5 4

5 4 3

5 4 3 2

5 4 3 2 1

Exercise : 14

0

1 0

0 1 0

1 0 1 0

0 1 0 1 0

```
import java.util.Scanner;
```

```
public class P1 {
```

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

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.print("Enter No : ");
```

```
        int no = sc.nextInt();
```

```
        for (int i = 1; i <= no; i++) {
```

```
            for (int s = i; s <= no; s++) {
```

```
                System.out.print(" ");
```

```
            }
```

```
            for (int j = 1; j <= i; j++) {
```

```

        if ((i + j) % 2 == 0)
            System.out.print("0 ");
        else
            System.out.print("1 ");
    }

    System.out.println();
}
}
}

```

Pattern 15

```

for(i=no;i>=1;i--)
{
    for(j=i;j<=no;j++)
    {
        System.out.print(j+ " ");
    }
    System.out.println();
}

```

5

4 5

3 4 5

2 3 4 5

1 2 3 4 5

Pattern 16:

```

for(i=no;i>=1;i--)
{
    for(j=no;j>=i;j--)
    {
        System.out.print(i+ " ");
    }
    System.out.println();
}

```

```

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

```

Pattern 17:

```

import java.util.Scanner;

public class P1 {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter No : ");
        int no = sc.nextInt();

        for(int i=no;i>=1;i--)
        {
            for(int j=i;j>=1;j--)
            {

```

```

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

```

5 5 5 5

4 4 4 4

3 3 3

2 2

1

Exercise : 18

1 1 1 1 1

2 2 2 2

3 3 3

4 4

5

```

System.out.print("Enter No : ");

```

```

    int no = sc.nextInt();

```

```

    for(int i=1;i<=no;i++)

```

```

    {

```

```

        for(int j=no;j>=i;j--)

```

```

        {

```

```

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

```

```

        }
        System.out.println();
    }

```

Pattern 19:

Enter No : 7

1 2 3 4 5 6 7

1 2 3 4 5

1 2 3

1

```

System.out.print("Enter No : ");

```

```

    int no = sc.nextInt();

```

```

    for(int i=no;i>=1;i-=2)

```

```

    {

```

```

        for(int j=1;j<=i;j++)

```

```

        {

```

```

            System.out.print(j+ " ");

```

```

        }

```

```

        System.out.println();

```

```

    }

```

Pattern 20:

```

import java.util.Scanner;

```

```
public class P1 {  
    public static void main(String args[]) {  
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter No : ");  
        int no = sc.nextInt();  
        int k;  
        for(int i=no;i>=1;i--)  
        {  
            k = i;  
            for(int j=1;j<=no;j++)  
            {  
                if(k <= no)  
                {  
                    System.out.print(k+" ");  
                }  
                else  
                {  
                    System.out.print(no+" ");  
                }  
                k++;  
            }  
            System.out.println();  
        }  
    }  
}
```

Enter No : 7

7 7 7 7 7 7 7

6 7 7 7 7 7 7

5 6 7 7 7 7 7

4 5 6 7 7 7 7

3 4 5 6 7 7 7

2 3 4 5 6 7 7

1 2 3 4 5 6 7

Pattern 21:

```
import java.util.Scanner;

public class P1 {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter No : ");
        int no = sc.nextInt();
        for(int i=1;i<=no;i++)
        {
            for(int j=1;j<=no;j++)
            {
                if(i==1 || j==1 || i==no || j==no)
                {
                    System.out.print("* ");
                }
                else
                {
                    System.out.print(" ");
                }
            }
        }
    }
}
```

```

System.out.println();
    }
}
}

```

Enter No : 7

```

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

```

Pattern 22

```

import java.util.Scanner;

public class P1 {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter No : ");
        int no = sc.nextInt();
        for(int i=1;i<=no;i++)
        {
            for(int j=1;j<=no;j++)
            {
                if (i == 1 || i == no || j == no - i + 1)

```

```

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

```

Enter No : 7

* * * * *

*

*

*

*

*

* * * * *

Try This Patterns

XVZCHIJKLNEFOPSTYUA

B D G M Q R W

Pattern 23:

```
import java.util.Scanner;
```

```
public class P1 {
```

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

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.print("Enter no: ");
```

```
        int no = sc.nextInt();
```

```
        int mid = (no + 1) / 2;
```

```
        for (int i = 1; i <= no+1; i++)
```

```
        {
```

```
            for (int j = 1; j <= no; j++)
```

```
            {
```

```
                if ((i <= mid && Math.abs(j - mid) == i - 1) || i == mid + 1
```

```
                    || (i > mid + 1 && (j == 1 || j == no)))
```

```
                {
```

```
                    System.out.print("* ");
```

```
                } else {
```

```
                    System.out.print(" ");
```

```
                }
```

```
            }
```

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

```
        }
```

```
    }
```

```
}
```

```
import java.util.Scanner;
```

```
public class P1 {
```

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

```

Scanner sc = new Scanner(System.in);

System.out.print("Enter no: ");

int no = sc.nextInt();


        System.out.println(Math.abs(no));
System.out.println(no);


    }
}

```

Pattern 24:

```

import java.util.Scanner;


public class P1 {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter no : ");
        int no = sc.nextInt();
        int a=65;
        for (int i = 1; i <= no; i++) {
            for (int j = 1; j <=i; j++) {
                System.out.print((char)a+ " ");
                a++;
            }
            System.out.println();
        }
    }
}

```

```
}
```

Enter no : 5

A

B C

D E F

G H I J

K L M N O

Pattern 25:

```
import java.util.Scanner;
```

```
public class P1 {
```

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

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.print("Enter no : ");
```

```
        int no = sc.nextInt();
```

```
        int a=65;
```

```
        for (int i = 1; i <= no; i++) {
```

```
            for(int s=i;s<=no;s++)
```

```
                System.out.print(" ");
```

```
                for (int j = 1; j <=i; j++) {
```

```
                    System.out.print((char)a+ " ");
```

```
                }
```

```
                a++;
```

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

```
        }
```

```
}  
}
```

Enter no : 5

A

B B

C C C

D D D D

E E E E E

Pattern 26:

```
import java.util.Scanner;
```

```
public class P1 {
```

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

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.print("Enter no : ");
```

```
        int no = sc.nextInt();
```

```
        int a;
```

```
        for (int i = 1; i <= no; i++) {
```

```
            a=65;
```

```
            for(int s=i;s<=no;s++)
```

```
            {
```

```
                System.out.print(" ");
```

```
            }
```

```
            for (int j = 1; j <=i; j++)
```

```
            {
```

```
                System.out.print((char)a+ " ");
```

```

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

```

Enter no : 5

```

A
A B
A B C
A B C D
A B C D E

```

Exercise : Pattern 27:

```

E
D E
C D E
B C D E
A B C D E

```

Pattern 28:

```

import java.util.Scanner;

public class P3 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
    }
}

```

```

int no=sc.nextInt();

    for (int i = 1; i <=no; i++) {

        char s = (char) (65+no - i);


        for (char ch = s ; ch < c; ch++) {

            System.out.print(ch + " ");

        }

        System.out.println();

    }

}

```

5

E

D E

C D E

B C D E

A B C D E

Pattern 29:

```
import java.util.Scanner;
```

```

public class P1 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter no : ");

        int no = sc.nextInt();


        for (int i = no; i >= 1; i--) {

```

```

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

        for (int s = 1; s <= 2 * (no - i); s++) {
            System.out.print(" ");
        }

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

        System.out.println();
    }

}

```

Enter no : 5

1 2 3 4 5 5 4 3 2 1

1 2 3 4 4 3 2 1

1 2 3 3 2 1

1 2 2 1

1 1

Exercise : Pattern 30

1 2 3 4 5 5 4 3 2 1

```

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

```

```

import java.util.Scanner;

public class P1 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter no : ");
        int no = sc.nextInt();

        for (int i = no; i >= 1; i--) {
            for (int j = 1; j <= i; j++) {
                System.out.print(j + " ");
            }

            for (int s = 1; s <= 2 * (no - i); s++) {
                System.out.print(" ");
            }

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

```

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

    for (int i = 2; i <= no; i++) {
        for (int j = 1; j <= i; j++) {
            System.out.print(j + " ");
        }

        for (int s = 1; s <= 2 * (no - i); s++) {
            System.out.print(" ");
        }

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

        System.out.println();
    }
}

}
```
