

```

    ①      ②      ④
for (int i = 1; i <= 10; i++) {
    ③ { System.out.println(i + " - Hello World!");
    }

```

1 → 2 → 3 → 4 → 2 → 3 →
4 → 2 → 3 → 4.

Dry Run :-

10 <= 10 →

11 <= 10 - false

↓
stop.

i = 0; i <= 10

0 <= 10 → true

Syso (Hello world)

i++ → 0 → 1

1 <= 10 → true

Sout ("Hello World")

10 → { 0-9=10
1-10=10
2-12=10 }

```
int sum = 0;
int n = 10;
```

```
// for loop
for (int i = n; i >= 1; --i) {
    // body inside for loop
    sum += i; // sum = sum + i
}
```

```
System.out.println("Sum = " + sum);
```

for(int i = 1; i <= 10; i++)

sum = sum + i;

cout << sum;

2 3
i++ Sum = 3

0+1=1
1+2=3
3+3=6

1-10 → Number
1, 2, 3, 4, 5, 6, 7, 8, 9, 10
10, 9, 8, 7, 6, 5, 4, 3, 2, 1

(sum)

100 99 98 ... 1
1, 2 ... 100 i++

Prime Number :-

1, itself

7 → 1, 7

13
23

3 → 1, 3

Num i
7 1 2

7 1 3

7 1 4

7 1 6

7 1 6

7
1 2 → 6 7
X X

i = 2; i < Num; i++
if (number % i == 0)

~~stop~~ stop

3
2 7 6
1
2
3 7 6
1
6 7 6
1
4
5 7 4
3
5 7 3
2

1. (2) == 0

Num: 8

2 - 7
2, 3, 4, 5, 6, 7

Red Flag → Not Reached → false
Green Flag → Reached

train

Red Flag = false
true | Green

$$\leftarrow 8 \cdot 1 \cdot 2 = 0$$
$$\left[8 \cdot 1 \cdot 3 = 0 \right]$$

Flags → Red
Person → Green
Reached
Not Reached

$$\frac{13}{2} \quad \underline{6}$$

$$2 \rightarrow 12$$

$$2 \sqrt{13} \begin{array}{r} 6 \\ 12 \\ \hline 1 \end{array}$$

$$3 \sqrt{13} \begin{array}{r} 4 \\ 12 \\ \hline 1 \end{array}$$

$$6 \sqrt{13} \begin{array}{r} 2 \\ 12 \\ \hline 1 \end{array}$$

$$7 \sqrt{13} \begin{array}{r} 1 \\ 7 \\ \hline 6 \end{array}$$

$$8 \sqrt{13} \begin{array}{r} 1 \\ 8 \\ \hline 5 \end{array}$$

$$10 \sqrt{13} \begin{array}{r} 1 \\ 10 \\ \hline 3 \end{array}$$

$$9 \sqrt{13} \begin{array}{r} 1 \\ 9 \\ \hline 4 \end{array}$$

$$11 \sqrt{13} \begin{array}{r} 1 \\ 11 \\ \hline 2 \end{array}$$

$$12 \sqrt{13} \begin{array}{r} 1 \\ 12 \\ \hline 1 \end{array}$$

i/j → C

	1	2	3	4	5
<i>R</i>	1	*	*	*	*
	2	*	*	*	*
	3	*	*	*	*
	4	*	*	*	*
	5	*	*	*	*

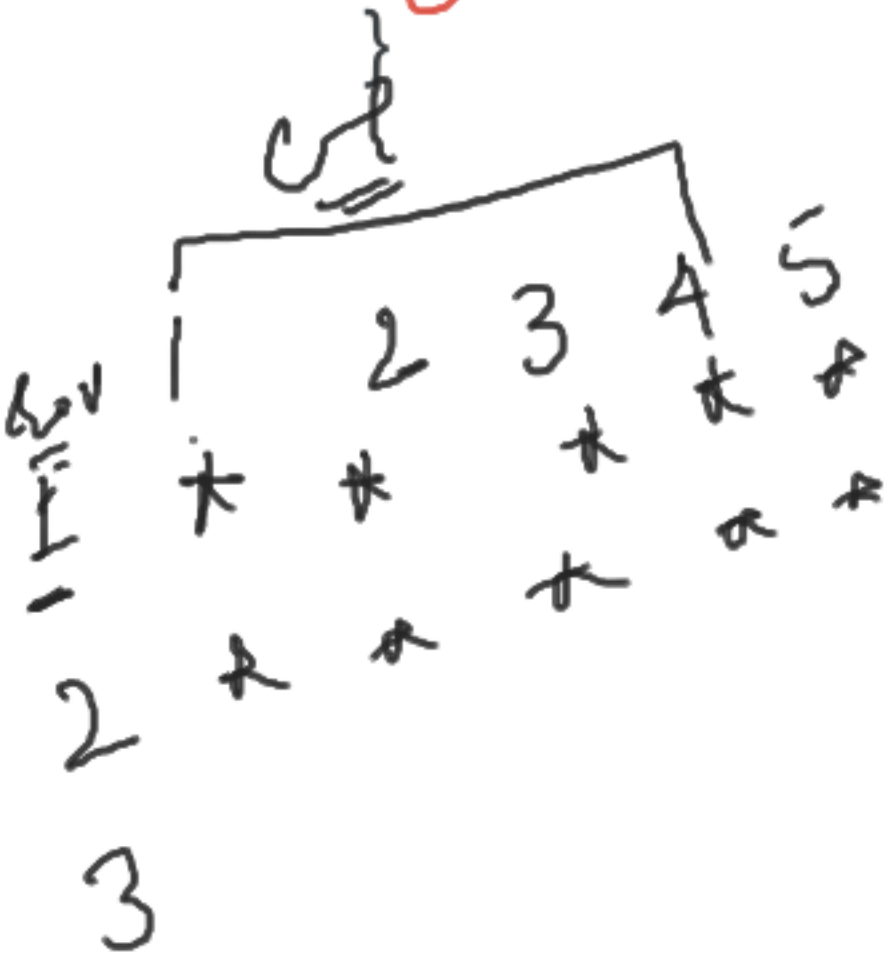
Syntax
 enter loop → for rows
 ← for (init; cond; inc(dec))
 {

Row → 1
 inner-loop also
 for Cols
 inner loops → for (init; cond; inc(dec)) {
 3.1 3.2 3.4
 3.3
 // Starts 3.3
 3
 true/false
 3.3 → 3.3 true/false
 3.3
 4 → 2 → 3 → 3.1 → 3.2 → 3.3 → 3.4 → 3.1 → 3.3

```

int count = scn.nextInt(); // 5
for(int row=1; row<=count; row++){
    for(int col=1; col<=count; col++){
        System.out.print("* ");
    }
    System.out.println(); // Next Line
}

```



Step 1. row=1; row<=5; row++

row → 1, 1<=5 → true

col=1; col<=5; col++

col=1; 1<=5 → true

col++ → 1 → 2

2<=5 → true

3<=5 → true

4<=5 → true

5<=5 → true

6<=5 → false

Next line

row++ → 1 → 2

2<=5 → true

Program 2:

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

Row 1 || Row 5 || Col 1 || Col 5

else space

Row Col
 1 → 1, 2, 3, 4, 5
 2 → 1, 5
 3 → 1, 5
 4 → 2, 5
 5 → 1, 2, 3, 4, 5

1 ≤ 5
Row

1

2

3

4

5

Col → 1, 5

5

2

2

2

5

Row → 1, 5

how is; $K=5$

$$\text{col} = 1; \quad k = 5 \rightarrow \text{true}$$

$\text{how} = 26 \quad || \text{how} = 54 \quad \text{ol} = 11$
 $\text{ed} = 28$

$1 = 2$ || $1 = 5$ || $1 = 3$ ||
 (yellow bracket under $1 = 2$) (red bracket under $1 = 5$) (yellow bracket under $1 = 3$)
 true (red X) (red X)
 (red arrow pointing to $1 = 3$) OK

$$\text{col} = 2, 2 \leq 5 \rightarrow \text{true}$$

$1 == 1$ || $1 == 5$ || $2 == 1$ |
 false || false || false
 false

$$\text{rot} = 3, 3 < -5$$
$$1 \equiv 1 \mid 1 \equiv 5 \mid 3 \equiv 1 \mid 3 \equiv 5$$

```

5
for(int row=1;row<=rowCount;row++){
    for(int col=1;col<=colCount;col++){
        if(row==1 ||row==rowCount || col==1 || col==rowCount) {
            System.out.print("* ");
        }else{
            System.out.print(" ");
        }
    }
    System.out.println(); //Next Line
}

```

	1	2	3	4	5
1	*	*	*	*	*