

Create a method inside Main:

```
public class Main {
    static void myMethod() {
        // code to be executed
    }
}
```

```
public class Main {
    static void myMethod() {
        System.out.println("I just got executed!");
    }
}
```

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

// Outputs "I just got executed!"

↳ Nested loops :- when we have loop inside loop

Syntax

```
for (initiator ; condition; inc/decr) {
    [
        for (initiator ; condition; inc/decr) {
            // statement
        }
    ]
}
```

→ Fibonacci series :-

0 1 1 2 3 5 8 13 21 ...

 a b sum

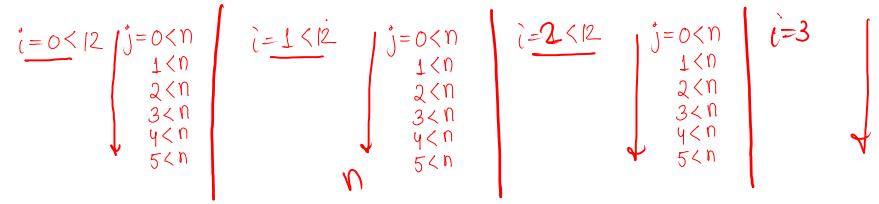
int a = 0;
int b = 1;

code [int sum = a + b; // 1, 2
 a = b;
 b = sum

Ques Print n*12 pattern

```
for (int i = 0; i < 12; i++) { // rows
    for (int j = 0; j < n; j++) { // col
        System.out.print("*");
    }
    System.out.println();
}
```

n=5



n=3



Pattern 3 - nxn star rectangle

```
public static void main(String[] args) {
    /* Enter your code here. Read input from STDIN.
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt(); // rows and col

    for (int i = 0; i < n; i++) { // rows
        for (int j = 0; j < n; j++) { // col
            System.out.print("*");
        }
        System.out.println();
    }
}
```



Pattern_5

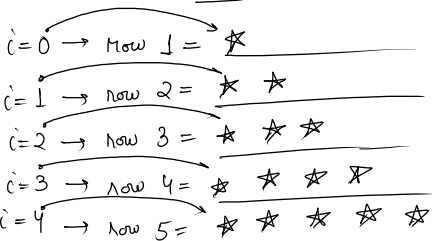


pre-requisite

```
for (int i = 0; i < n; i++) { // how many rows
    for (int j = 0; j < n - i - 1; j++) { // no of spaces = n - 1 to 0
        System.out.print(" ");
    }
    for (int j = 0; j <= i; j++) { // no of stars = 1 to n
        System.out.print("*");
    }
    System.out.println(); // next line
}
```

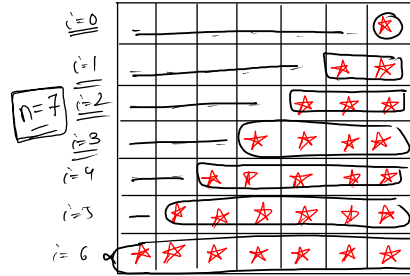
Pattern_4

$n = 5$ // rows

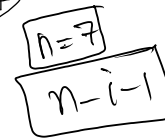
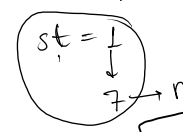
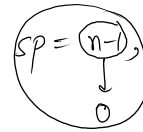


one line depends on inner loop
how many lines depends on outer loop

rowth no. == no. of stars in a line



sp	st
6	1
5	2
4	3
3	4
2	5
1	6
0	7



$$i=0, \quad \frac{n-i-1}{sp} = \frac{7-0-1}{6} = 6$$

$$i=1, \quad \frac{n-i-1}{sp} = \frac{7-1-1}{5} = 5$$

$$i=2, \quad \frac{n-i-1}{sp} = \frac{7-2-1}{4} = 4$$

$$i=3, \quad \frac{n-i-1}{sp} = \frac{7-3-1}{3} = 3$$

$$i=4, \quad \frac{n-i-1}{sp} = \frac{7-4-1}{2} = 2$$

$$i=5, \quad \frac{n-i-1}{sp} = \frac{7-5-1}{1} = 1$$

$$i=6, \quad \frac{n-i-1}{sp} = \frac{7-6-1}{0} = 0$$

nested loop

```
for (int i = 0; i < n; i++) { // run loop equal to no of rows
    // inner loop will tell how many stars will be there in 1 line
    for (int j = 0; j <= i; j++) {
        System.out.print("* ");
    }
    System.out.println();
}
```

$i=0, \quad j=0 \leq 0 \checkmark$
 $1 \leq 0 \times$

$i=1, \quad j=0 \leq 1 \checkmark$
 $j=1 \leq 1 \checkmark$
 $j=2 \leq 1 \times$

$i=2, \quad j=0 \leq 2 \checkmark$
 $j=1 \leq 2 \checkmark$
 $j=2 \leq 2 \checkmark$
 $j=3 \leq 2 \times$

$i=3, \quad j=0 \leq 3 \checkmark$
 $j=1 \leq 3 \checkmark$
 $j=2 \leq 3 \checkmark$
 $j=3 \leq 3 \checkmark$
 $j=4 \leq 3 \times$

$i=4, \quad j=0 \leq 4 \checkmark$
 $j=1 \leq 4 \checkmark$
 $j=2 \leq 4 \checkmark$
 $j=3 \leq 4 \checkmark$
 $j=4 \leq 4 \checkmark$
 $j=5 \leq 4 \times$

$i=5 \leq 5 \times$

console

