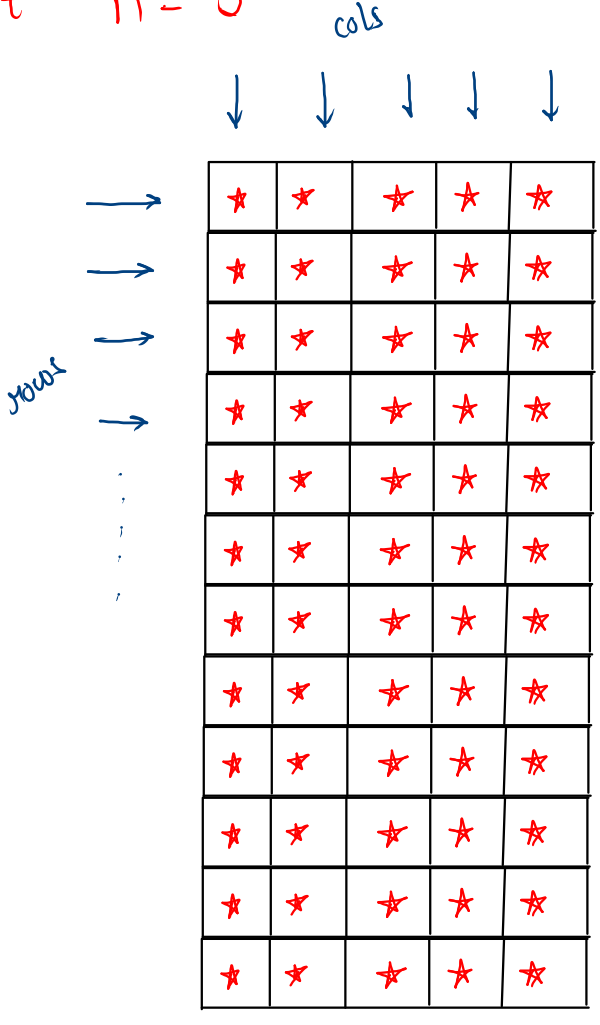
Pattern 1 - Print Stars in same line

```
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();

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

Pattern 2 - Print n x 12 star rectangle

int n = 5



rows x cols

12 x n

use nested loops,

Note:- outer loop will be for no. of rows and inner loop will be for no. of cols.

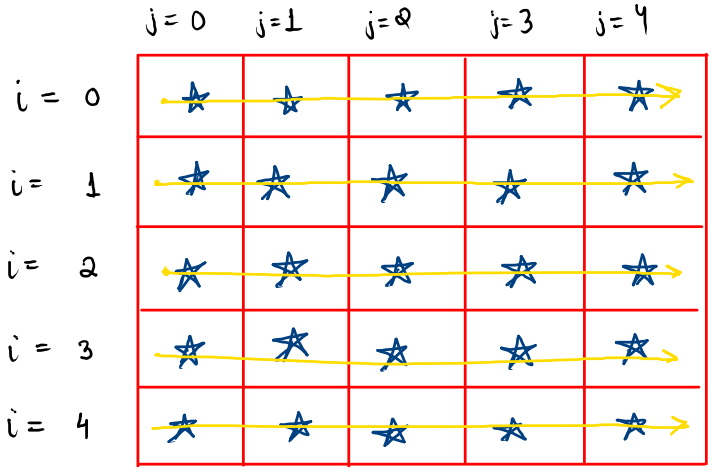
psudo code

```
for ( int i=0 ; i<12 ; i++ ) {
    for ( int j=0; j<n ; j++ ){
        Syso("*");
    }
    SysoLn();
}
```

Note:- 'i' will always represent current row

'j' will always represent current column

Exo-



5 * 5

Code

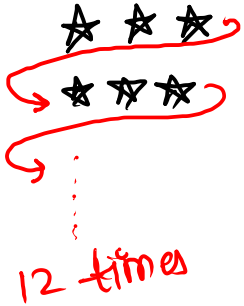
```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();

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

n = 3

i = 0, j = 0
i = 0, j = 1
i = 0, j = 2
j = 3 x

i = 1, j = 0
j = 1
j = 2
j = 3 x



Note :-

Inner loop :- how each row should be printed

Outer loop :- how many rows should be there.

Pattern 3 - nxn star rectangle

n x n :-

no. of rows = n // outer loop

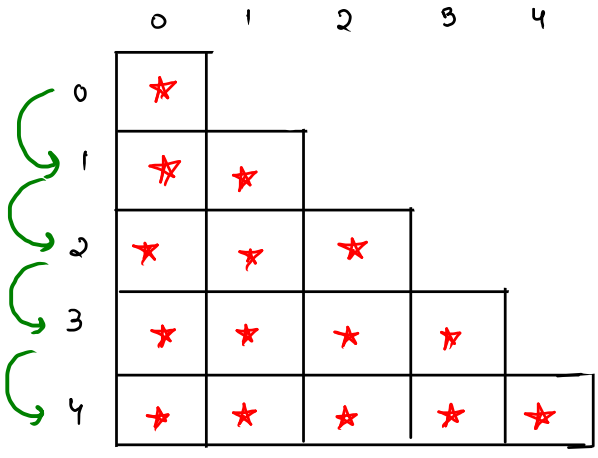
no. of cols = n // inner loop

```
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();

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

GKSTR19 Pattern_4

int n = 5



template

```
int st = 1;
for(int i=0; i<n; i++){
    for(int j=0; j<st; j++){
        Syso("*");
    }
    st++;
    Sysoln();
}
```

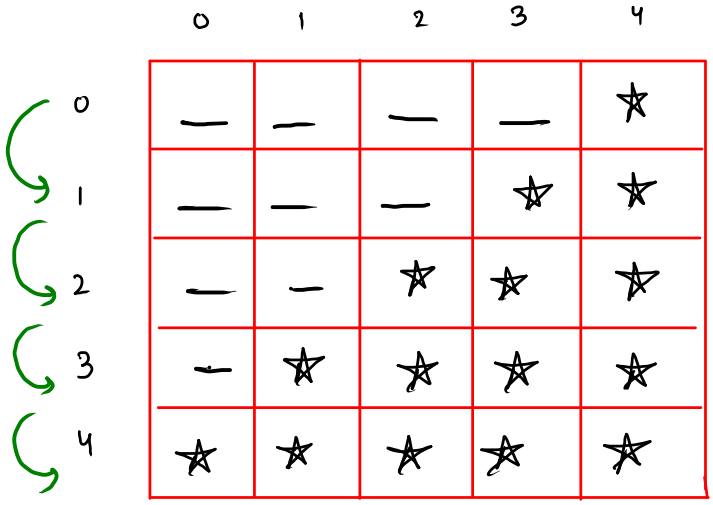
Code

```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();

    int st = 1;
    for (int i = 0; i < n; i++) {
        for (int j = 0; j < st; j++) {
            System.out.print("* ");
        }
        st++;
        System.out.println();
    }
}
```

GKSTR20 Pattern_5

n = 5



template

```
int st = 1;
int sp = n-1;
for(int i=0; i<n; i++){
    for(int j=0; j<sp; j++){
        Syso(" ");
    }
    for(int j=0; j<st; j++){
        Syso("*");
    }
    st++;
    sp--;
    Sysoln();
}
```

Code

```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();

    int st = 1;
    int sp = n - 1;
    for (int i = 0; i < n; i++) {

        for (int j = 0; j < sp; j++) {
            System.out.print(" ");
        }
        for (int j = 0; j < st; j++) {
            System.out.print("*");
        }
        st++;
        sp--;
        System.out.println();
    }
}
```

int n = 4

st = ~~1~~ ~~2~~ ~~3~~ ~~4~~ 5

sp = ~~3~~ ~~2~~ ~~1~~ ~~0~~ -1

i=0, j=0 ✓
j=1 ✓
j=2 ✓
j=3 ✗

j=0 ✓
j=1 ✗

---

i=1, j=0 ✓
j=1 ✓
j=2 ✗

j=0 ✓
j=1 ✓
j=2 ✗

---

i=2, j=0 ✓
j=1 ✗

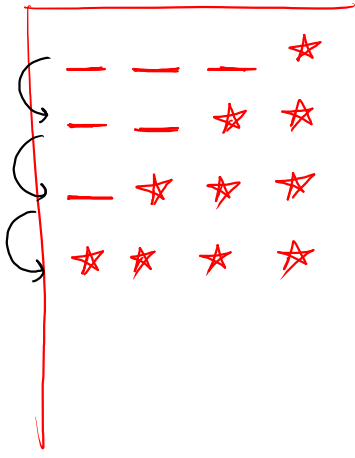
j=0
j=1
j=2

---

i=3, j=0 ✗

j=0 (0<4) ✓
j=1 (1<4) ✓
j=2, (2<4) ✓
j=3, (3<4) ✓
j=4, (4<4) ✗

o/p



Practice

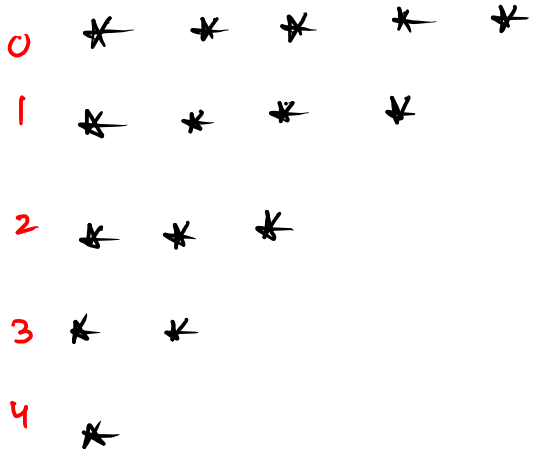
1) n = 5

template

```
int st = n;
int sp = 0;
for(int i=0; i<n; i++){
    for(int j=0; j<sp; j++){
        Syso(" ");
    }
    for(int j=0; j<st; j++){
        Syso("*");
    }
    st--;
    sp++;
    Sysoln();
}
```

Practice

n = 5



template

```
int st = n;
int sp = 0;
for(int i=0; i<n; i++){
    for(int j=0; j<sp; j++){
        Syso(" ");
    }
    for(int j=0; j<st; j++){
        Syso("*");
    }
    st--;

    sysoln();
}
```