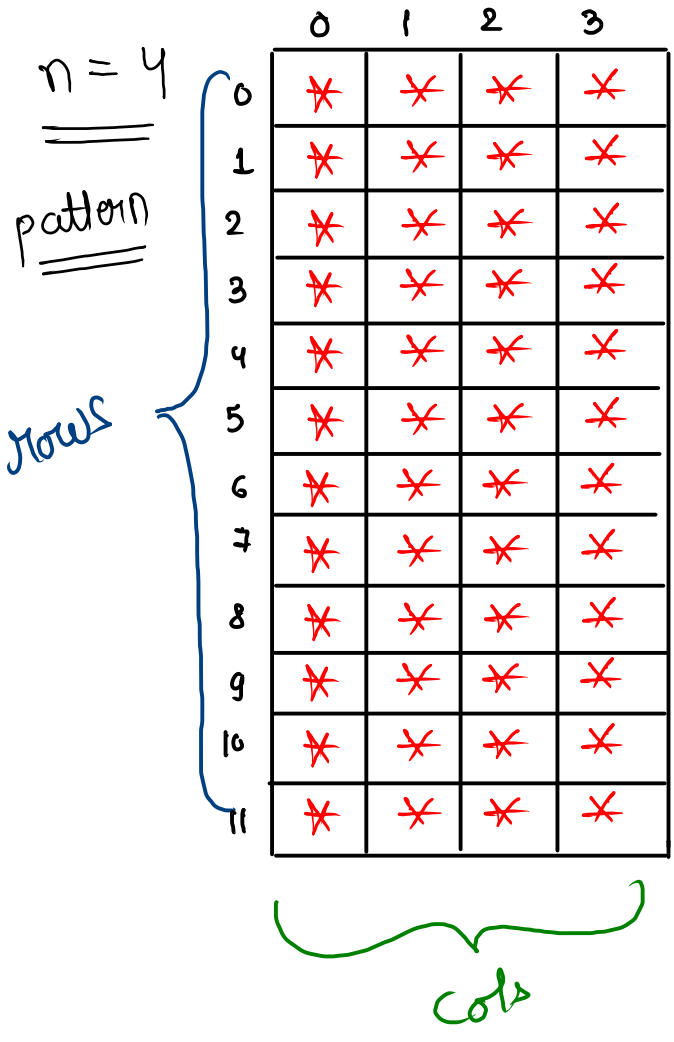
Pattern 1 - Print Stars in same line

```java
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



notes:-

we will use nested loops

outside loop:- no. of rows (12)

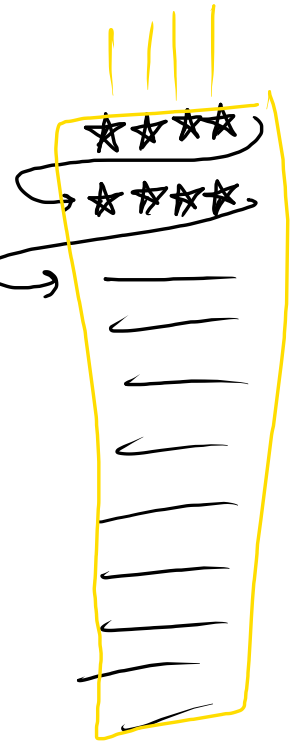
inside loop:- no. of cols (n)

nested loop

```
int n = scn.nextInt(); // 4

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

i=0, j=0
j=1
j=2
j=3
j=4
i=1, j=0
j=1
j=2
j=3
j=4



```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();
    }
}
```

Note:-

- i will always represent no. of rows
- j will always represent no. of cols

Note:-

Inner loop:- will decide how each row should be printed

Outer loop:- how many rows will be there

Pattern 3 - nxn star rectangle

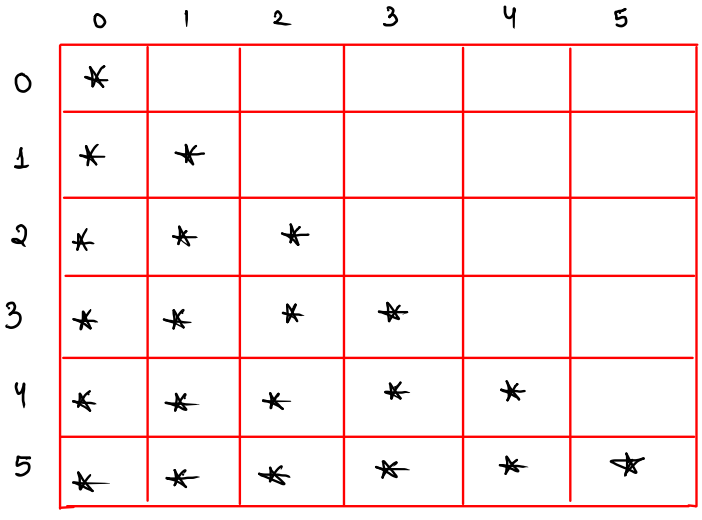
```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int n = scn.nextInt();

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

GKSTR19 Pattern_4

n = 6

incomplete template



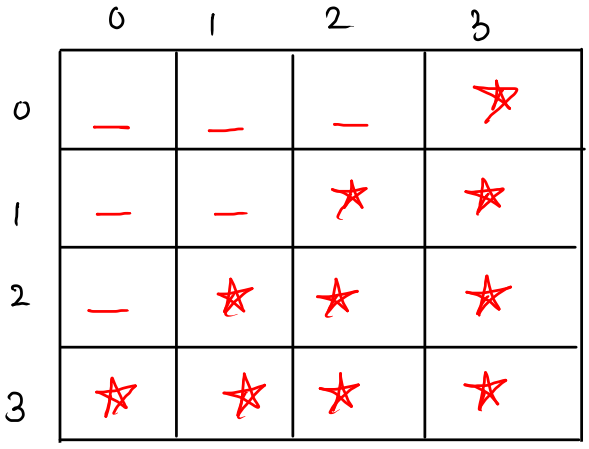

```
int st = 1;
for (int i=0; i<n; i++) {
    for (int j=0; j<st; j++){
        Syso("*");
    }
    st++;
    Sysoln();
}
```

```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++) { // no of rows
        for (int j = 0; j < st; j++) {
            System.out.print("* ");
        }
        st++;
        System.out.println();
    }
}
```

GKSTR20 Pattern_5

$n = 4$



template complete

```
int st = 1;
int sp = n-1;
for (int i=0; i<n; i++) {  // no. of rows
    for (int j=0; j<sp; j++){
        syso(" ");
    }

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

Note :-

90% of template will be completed with 1st row of pattern only

Code

```java
public static void main(String[] args) {
    Scanner scn = new Scanner(System.in);
    int rows = scn.nextInt(); // 3

    int st = 1;
    int sp = rows - 1;
    for (int i = 0; i < rows; i++) {
        for (int j = 0; j < sp; j++) {
            System.out.print(" ");
        }

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

        sp--;
        st++;

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

st = ~~1~~ ~~2~~ ~~3~~ 4
sp = ~~2~~ ~~1~~ ~~0~~ -1

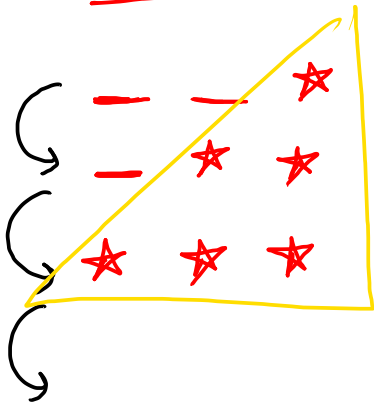
i=0, j=0 (0<2)✓
j=1 (1<2)✓
j=2 (2<2)x
j=0 (0<1)✓
j=1 (1<1)x

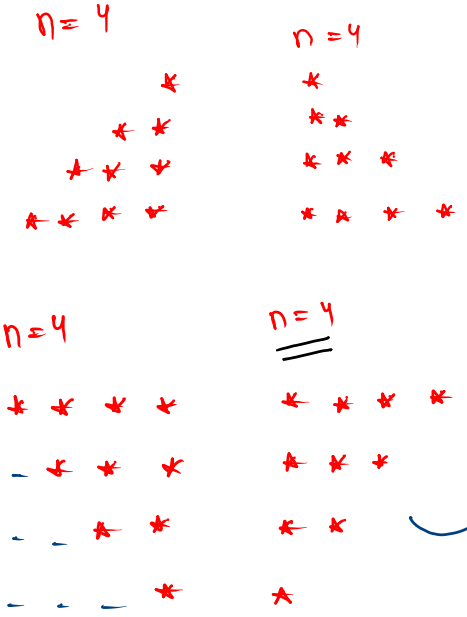
i=1, j=0, (0<1)✓
j=1, (1<1)x
j=0, (0<2)✓
j=1, (1<2)✓
j=2, (2<2)x

i=2, j=0, (0<0)x
j=0, (0<3)✓
j=1, (1<3)✓
j=2, (2<3)✓
j=3, (3<3)x

i=3, (3<3)x

console






```
int st=n;
int sp=0;
for(int i=0; i<n; i++){ // no. of rows
    for(int j=0; j<sp; j++){
        syso(" ");
    }
    for(int j=0; j<st; j++){
        syso("* ");
    }
    st--;
    Syso.ln();
}
```

```
int st=n;
int sp=0;
for(int i=0; i<n; i++){ // no. of rows
    for(int j=0; j<sp; j++){
        syso(" ");
    }
    for(int j=0; j<st; j++){
        syso("* ");
    }
    sp++;
    st--;
    Syso.ln();
}
```