Nested Loops

Topics Covered:
- What are nested loops?
- Algorithm of nested loops.
- Purpose and advantages of nested loops.
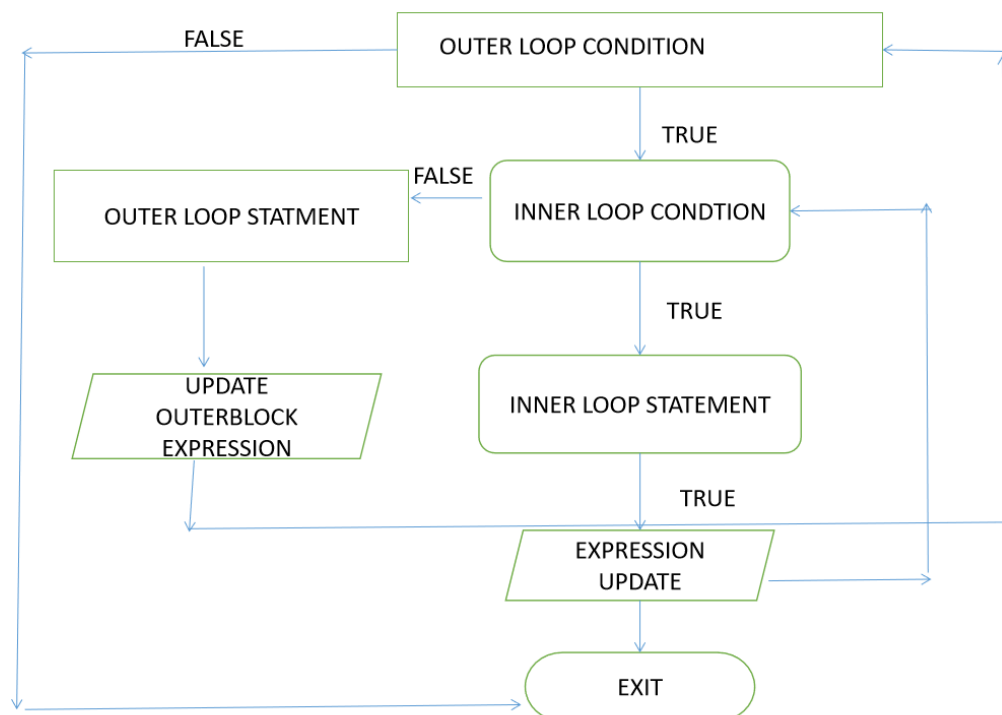- How to create a star pattern using nested loops?

Topics in Detail:

Nested Loops:
- A nested loop is when a **loop** runs inside another **loop**.
- The inner loop will run all its iterations for *each* iteration of the outer loop.

```
Outerloop{
    Innerloop{
    // statements to execute inside inner loop
    }
    // statements to execute inside outer loop
}
```

Nested Loop Algorithm:

- Firstly, check for the outer-loop condition if the condition satisfies or is true, then control goes to the inner loop.
- if the inner-loop condition is true, the inner loop statement gets executed and its expression gets updated.
- if the inner loop condition is false, control goes to the outer-loop and its expression gets updated and then the normal flow goes on from outer to inner then it exits.
- Time arises when the outer-loop condition becomes false and it gets exited from the iteration.

Purpose and advantages of Nested Loops:
- It is mainly used to print or visualize table, matrix, pattern, or multidimensional array.
- Usage of memory is less.
- Suitable when the number of iterations is more in a program.

Creating Star pattern using Nested Loops:

```javascript
let star=""
let n=5
for(i=0;i<=5;i++)
{
    for(j=0;j<i;j++){

        star+="*"
    }
    star+="\n"
}
console.log(star)
```

Code

```
*
**
***
****
*****
```

Output