JavaScript

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JavaScript : Loops

Looping in programming languages is a feature which facilitates the execution of a set of instructions/functions repeatedly while some condition evaluates to true.

There are four types of loops in JavaScript:-
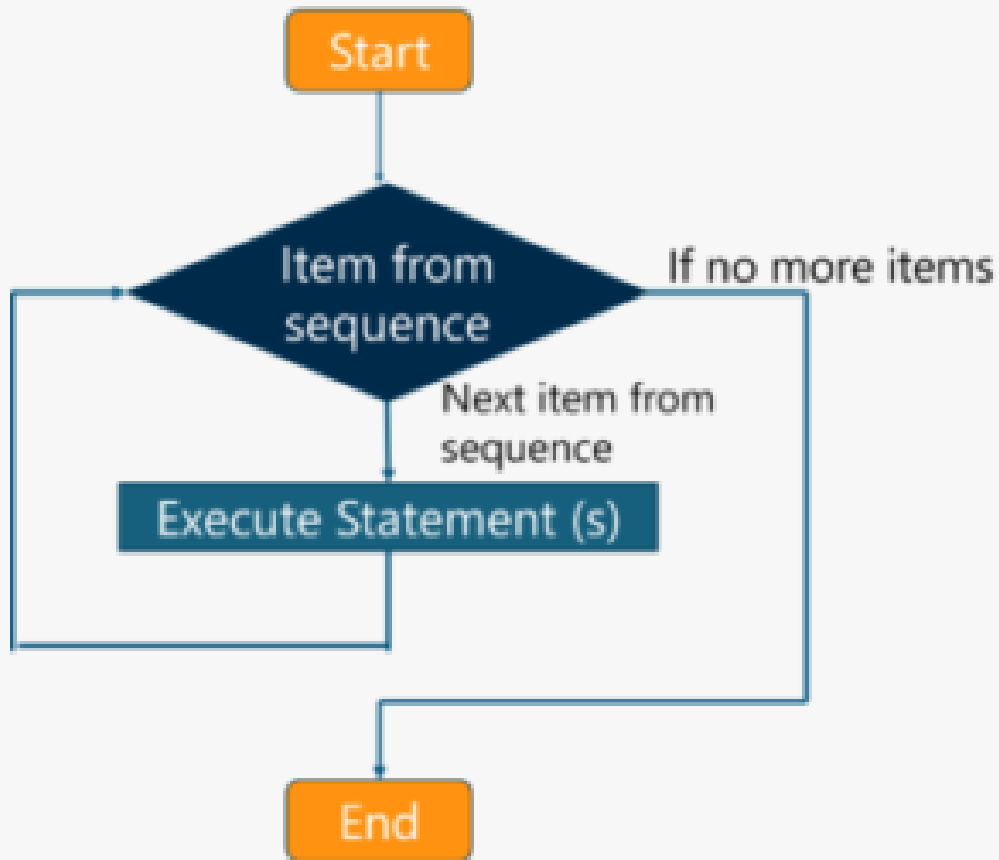
1.for loop

2.while loop

3.do-while loop

4.for-in loop

JavaScript : For Loop

This method provides a concise way of writing the loop structure. A for loop repeats until a specified condition evaluates to false.

Syntax-

```
1  for (initialization condition; testing condition; increment/decrement)
2  {
3  statement
4  }
```
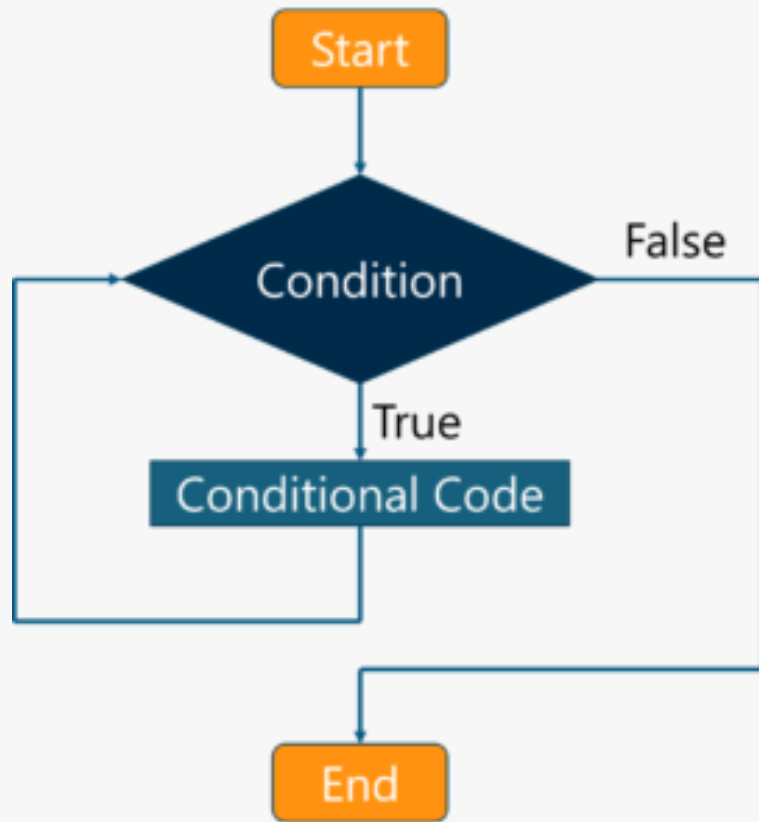
Example : (Iterate through integers from 0-8)

```javascript
for (let i = 0; i < 9; i++) {
    console.log(i);
}

// Output:
// 0
// 1
// 2
// 3
// 4
// 5
// 6
// 7
// 8
```

A while loop is a control flow statement which allows the code to be executed repeatedly based on a particular Boolean condition. This loop is similar to that of a repeating if statement.

Syntax-

```
1    while (boolean condition)
2    {
3    loop statements
4    }
```

Example:
(While a variable is less than 10, log it to the console and increment it by 1)

```
let i = 1;

while (i < 10) {
  console.log(i);
  i++;
}

// Output:
// 1
// 2
// 3
// 4
// 5
// 6
// 7
// 8
// 9
```
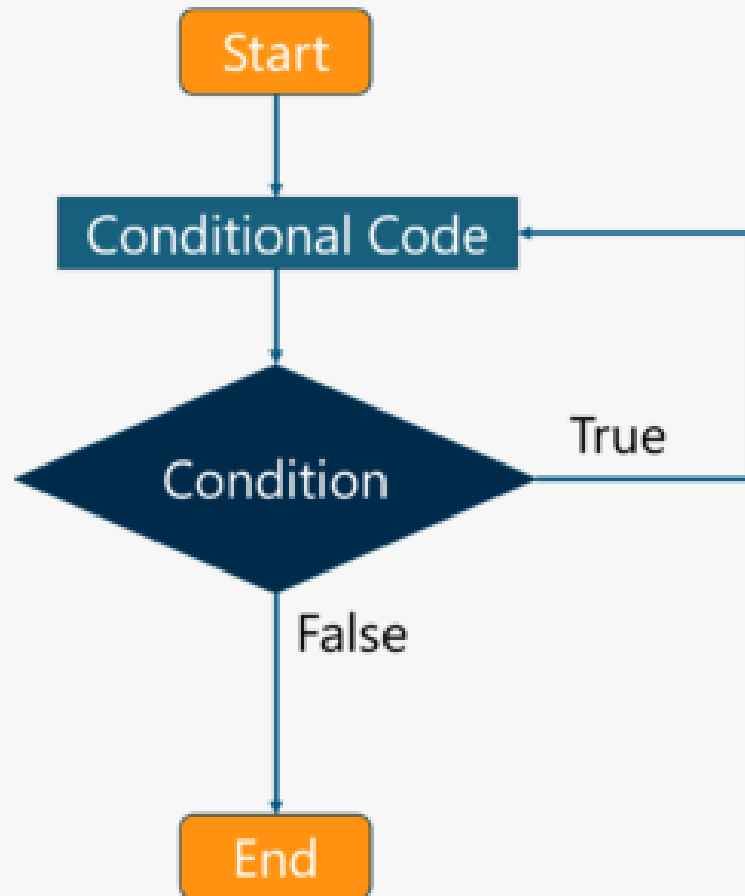
JavaScript : Do-while

This loop is similar to while loop but the only difference is that it checks for condition after executing the statements. Thus, it is an example of Exit Controlled Loop.

Syntax-

```
1   do
2   {
3   statements
4   }
5   while (condition);
```

Example:
(While a variable is less than 10, log it to the console and increment it by 1)

```javascript
let i = 1;

do {
  console.log(i);
  i++;
} while (i < 10);

// Output:
// 1
// 2
// 3
// 4
// 5
// 6
// 7
// 8
// 9
```

for...in Loop

- The for...in loop iterates over the properties of an object. For each property, the code in the code block is executed.

Syntax

```
for (property in object) {
  // code
}
```

Example

(Iterate over the properties of an object and log its name and value to the console)

```javascript
const capitals = {
  a: "Athens",
  b: "Belgrade",
  c: "Cairo"
};

for (let key in capitals) {
  console.log(key + ": " + capitals[key]);
}

// Output:
// a: Athens
// b: Belgrade
// c: Cair
```

Thank you