

# JavaScript - For Loop

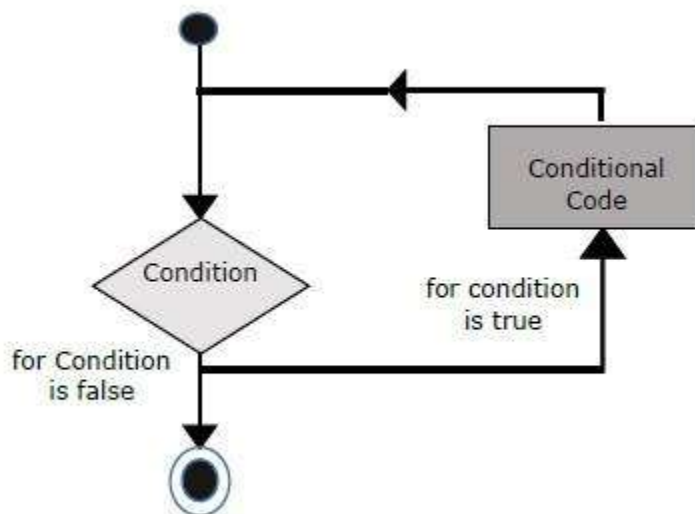
The 'for' loop is the most compact form of looping. It includes the following three important parts –

- The **loop initialization** where we initialize our counter to a starting value. The initialization statement is executed before the loop begins.
- The **test statement** which will test if a given condition is true or not. If the condition is true, then the code given inside the loop will be executed, otherwise the control will come out of the loop.
- The **iteration statement** where you can increase or decrease your counter.

You can put all the three parts in a single line separated by semicolons.

## Flow Chart

The flow chart of a **for** loop in JavaScript would be as follows –



## Syntax

The syntax of **for** loop in JavaScript is as follows –

```
for (initialization; test condition; iteration statement) {  
    Statement(s) to be executed if test condition is true  
}
```

## Example

Try the following example to learn how a **for** loop works in JavaScript.

```
<html>  
  <body>  
    <script type = "text/javascript">  
      <!--  
        var count;
```

```
document.write("Starting Loop" + "<br />");

for(count = 0; count < 10; count++) {
    document.write("Current Count : " + count );
    document.write("<br />");
}
document.write("Loop stopped!");
//-->
</script>
<p>Set the variable to different value and then try...</p>
</body>
</html>
```

### Output

```
Starting Loop
Current Count : 0
Current Count : 1
Current Count : 2
Current Count : 3
Current Count : 4
Current Count : 5
Current Count : 6
Current Count : 7
Current Count : 8
Current Count : 9
Loop stopped!
```

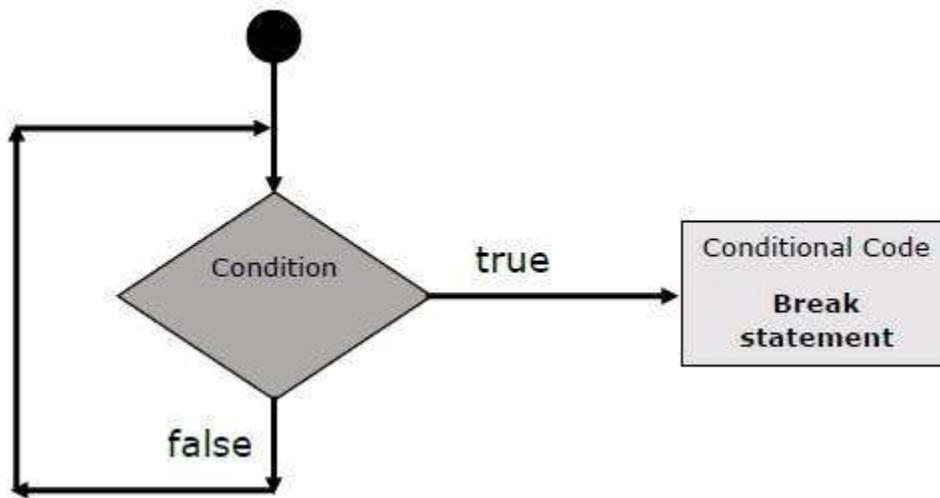
## JavaScript - Loop Control

### The break Statement

The **break** statement, which was briefly introduced with the *switch* statement, is used to exit a loop early, breaking out of the enclosing curly braces.

### Flow Chart

The flow chart of a break statement would look as follows –



### Example

The following example illustrates the use of a **break** statement with a while loop. Notice how the loop breaks out early once **x** reaches 5 and reaches to **document.write (..)** statement just below to the closing curly brace –

```

<html>
  <body>
    <script type = "text/javascript">
      <!--
      var x = 1;
      document.write("Entering the loop<br /> ");

      while (x < 20) {
        if (x == 5) {
          break;    // breaks out of loop completely
        }
        x = x + 1;
        document.write( x + "<br />");
      }
      document.write("Exiting the loop!<br /> ");
      //-->
    </script>

    <p>Set the variable to different value and then try...</p>
  </body>
</html>

```

### Output

Entering the loop

2  
3  
4  
5

Exiting the loop!

Set the variable to different value and then try...

We already have seen the usage of **break** statement inside a **switch** statement.

## The continue Statement

The **continue** statement tells the interpreter to immediately start the next iteration of the loop and skip the remaining code block. When a **continue** statement is encountered, the program flow moves to the loop check expression immediately and if the condition remains true, then it starts the next iteration, otherwise the control comes out of the loop.

### Example

This example illustrates the use of a **continue** statement with a while loop. Notice how the **continue** statement is used to skip printing when the index held in variable **x** reaches 5 –

```
<html>
  <body>
    <script type = "text/javascript">
      <!--
        var x = 1;
        document.write("Entering the loop<br /> ");

        while (x < 10) {
          x = x + 1;

          if (x == 5) {
            continue;    // skip rest of the loop body
          }
          document.write( x + "<br />");
        }
        document.write("Exiting the loop!<br /> ");
      //-->
    </script>
    <p>Set the variable to different value and then try...</p>
  </body>
</html>
```

### Output

Entering the loop

2

3

4

6

7

8

9

10

Exiting the loop!

## Using Labels to Control the Flow

Starting from JavaScript 1.2, a label can be used with **break** and **continue** to control the flow more precisely. A **label** is simply an identifier followed by a colon (:) that is applied to a statement or a block of code. We will see two different examples to understand how to use labels with break and continue.

**Note** – Line breaks are not allowed between the ‘**continue**’ or ‘**break**’ statement and its label name. Also, there should not be any other statement in between a label name and associated loop.

Try the following two examples for a better understanding of Labels.

### Example 1

The following example shows how to implement Label with a break statement.

```
<html>
  <body>
    <script type = "text/javascript">
      <!--
        document.write("Entering the loop!<br /> ");
        outerloop:      // This is the label name
        for (var i = 0; i < 5; i++) {
          document.write("Outerloop: " + i + "<br />");
          innerloop:
            for (var j = 0; j < 5; j++) {
              if (j > 3 ) break ;           // Quit the
innermost loop
              if (i == 2) break innerloop; // Do the same
thing
              if (i == 4) break outerloop; // Quit the outer
loop
              document.write("Innerloop: " + j + " <br />");
            }
          }
        document.write("Exiting the loop!<br /> ");
      <!-->
    </script>
  </body>
</html>
```

### Output

```
Entering the loop!
Outerloop: 0
Innerloop: 0
Innerloop: 1
Innerloop: 2
Innerloop: 3
Outerloop: 1
Innerloop: 0
```

```
Innerloop: 1
Innerloop: 2
Innerloop: 3
Outerloop: 2
Outerloop: 3
Innerloop: 0
Innerloop: 1
Innerloop: 2
Innerloop: 3
Outerloop: 4
```

```
<html>
  <body>

    <script type = "text/javascript">
      <!--
      document.write("Entering the loop!<br /> ");
      outerloop:      // This is the label name

      for (var i = 0; i < 3; i++) {
        document.write("Outerloop: " + i + "<br />");
        for (var j = 0; j < 5; j++) {
          if (j == 3) {
            continue outerloop;
          }
          document.write("Innerloop: " + j + "<br />");
        }
      }

      document.write("Exiting the loop!<br /> ");
      //-->
    </script>

  </body>
</html>
```

## Output

```
Entering the loop!
Outerloop: 0
Innerloop: 0
Innerloop: 1
Innerloop: 2
Outerloop: 1
Innerloop: 0
Innerloop: 1
Innerloop: 2
Outerloop: 2
Innerloop: 0
Innerloop: 1
```

Innerloop: 2  
Exiting the loop!