JS Loops

Lesson Time: 60 Minutes

Do Something. Rinse and Repeat

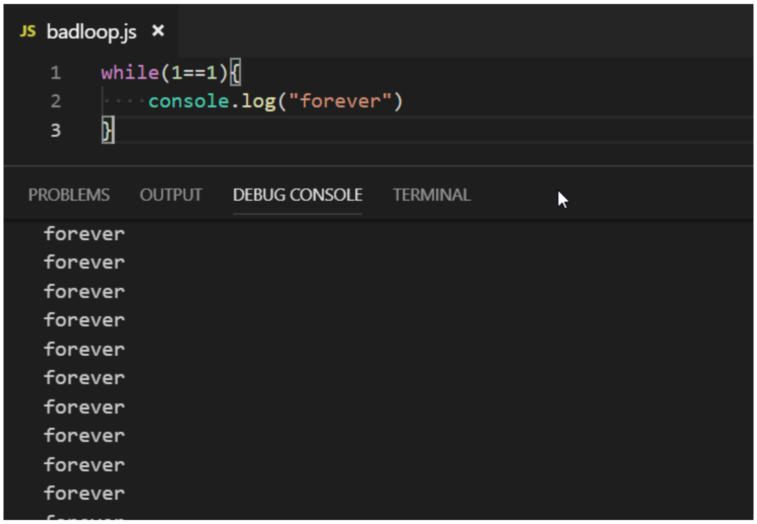
Sometimes we want the same block of code to repeat. Loops allow us to write lines of code that will immediately run again as soon as the end is reached. Code outside of the loop will not be processed until the loop is finished.

Javascript gives us two ways to perform loops, the **for loop** and the **while loop**.

The **while loop** will continue to repeat while a **condition** we provide is **true**. At the end of the loop, the condition is checked. If the condition is still true, the loop starts again. If the condition is no longer true, the loop exits. An example of a condition is “while this variable called X is less than 10”.

```
while(x < 10){}
```

Be careful when writing while loops, as it’s possible to create a condition that is always true. The script will be stuck in the loop with no way out. Eventually, the web browser might crash or stop responding. Here’s an endless loop--there is no way inside to loop make our condition no longer true.

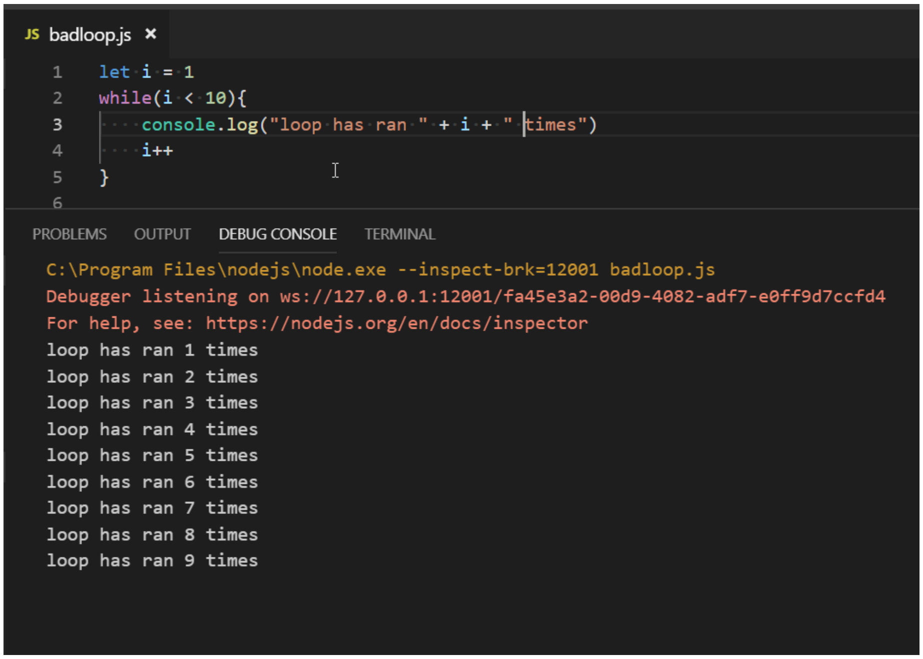


```
while(1==1){
    console.log("forever")
}
```

```
forever
forever
forever
forever
forever
forever
forever
forever
forever
forever
```

Here’s a while loop with a valid exit condition. Each time the look runs, the value of variable i is increased by 1. Eventually, it will be greater than 10 and the loop with stop.

`i++ means increase variable i by 1`

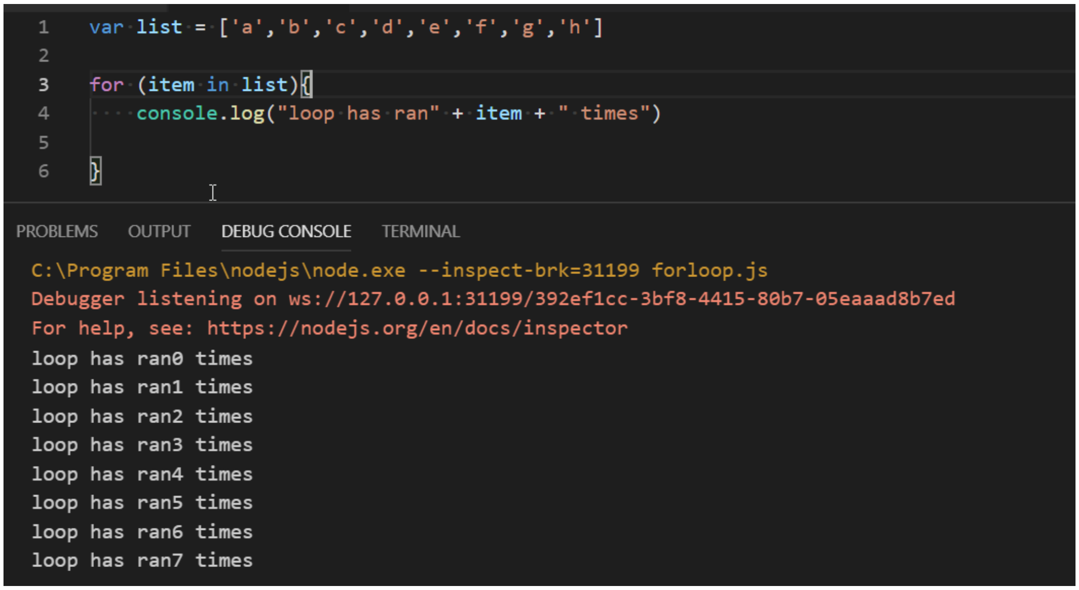


```
let i = 1
while(i < 10){
    console.log("loop has ran " + i + " times")
    i++
}
```

```
C:\Program Files\nodejs\node.exe --inspect-brk=12001 badloop.js
Debugger listening on ws://127.0.0.1:12001/fa45e3a2-00d9-4082-adf7-e0ff9d7ccfd4
For help, see: https://nodejs.org/en/docs/inspector
loop has ran 1 times
loop has ran 2 times
loop has ran 3 times
loop has ran 4 times
loop has ran 5 times
loop has ran 6 times
loop has ran 7 times
loop has ran 8 times
loop has ran 9 times
```

The For Loop

The for loop will repeat for each item in a group of items. In this example, we’ll create an array and then run a loop for each item in our array.



```
var list = ['a','b','c','d','e','f','g','h']

for (item in list){
    console.log("loop has ran" + item + " times")

}
```

```
C:\Program Files\nodejs\node.exe --inspect-brk=31199 forloop.js
Debugger listening on ws://127.0.0.1:31199/392ef1cc-3bf8-4415-80b7-05eaaad8b7ed
For help, see: https://nodejs.org/en/docs/inspector
loop has ran0 times
loop has ran1 times
loop has ran2 times
loop has ran3 times
loop has ran4 times
loop has ran5 times
loop has ran6 times
loop has ran7 times
```

Take a look at the loop tutorials on W3 schools to see more examples of loops.

Key Terms	For loop, While Loop
Lesson Files	
Additional Resources	https://www.w3schools.com/js/js_loop_for.asp https://www.w3schools.com/js/js_loop_while.asp
Further Learning	

LAB: JS Loops

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Review Loops on http://javascript.info/while-for before beginning this exercise.

Practice loops by creating the following loops.

1. Create a FOR loop that counts down from 10. For each pass of the loop, print to the console “COUNTDOWN “ and the current value of the countdown

2. Create a FOR loop that counts up to 12. For each pass of the loop, print to the console how many times the loop has been ran.

3. Create a WHILE loop that executes while the variable called loopCounter is less than 99

- The loop will increase the loopCounter by 1 each time.
- The loop will print the value of loopCounter each time it runs.