

1. What are the different loops JavaScript provides us with?

for loop – a *for* loop iterates as long as a specified condition is true and stops when false.

for/in A *for/in* loop iterates over the properties of an object, including inherited properties of an object.

for/of – A *for/of* loop iterates over each value of an object.

while – A *while* loop first checks the condition and only iterates/executes *while* the condition is true.

do/while - A *do/while* loop does something *while* a specified condition is true. The difference between *while* and *do/while* loops is that a *do/while* will always iterate at least once, as it executes the specified action *before* checking the condition.

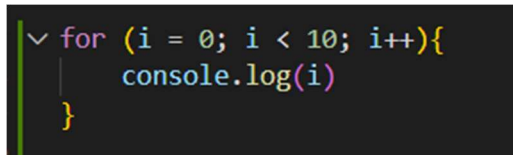
2. What is the syntax of one of the loops in your above answer? How and when should you use this loop? Give an example.

*for loop:*

```
for (initialization; condition; updateInitialization) {  
    statement;  
}
```

A *for loop* is a program that repeats and executes a set of instructions as long as a certain condition or set of conditions is met. Rather than write each iteration by hand, we can use a *for loop* to do that for us. You first give the loop information, such as a variable (initialization). Next, you establish a parameters in which the loop will run - something that the loop will evaluate (condition). Lastly, if the conditions are met, do something with the information (updateInitialization). In the body of the loop, we can put what we want to happen when the loop runs successfully (statement).

For example:



```
for (i = 0; i < 10; i++){  
    console.log(i)  
}
```

In the above example, we see that we've initialized the loop by declaring  $i = 0$ . Next, we give the loop a condition: only run as long as  $i$  is less than 10. Lastly, we update. In this case, we are incrementing  $i$  by 1. In the body, we say that every time this loop successfully runs, print the number. If you run this code, you'll see that it prints the integers 0-9. It prints 0 because its value starts at 0 and 0 is less than 10. Finally, notice that it does not print the number 10, because when it iterates the final time, 10 is not less than 10, so that returns as false, and the loop ends.

Sources:

[https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Loops\\_and\\_iteration](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Loops_and_iteration)

[https://www.w3schools.com/js/js\\_loop\\_forin.asp](https://www.w3schools.com/js/js_loop_forin.asp)

<https://www.freecodecamp.org/news/javascript-for-loops/>

<https://www.javascripttutorial.net/javascript-do-while/>

[https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Loops\\_and\\_iteration#for...of\\_statement](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Loops_and_iteration#for...of_statement)