

Loops: while & for

Challenge 1

Step 1

Create a variable `counter` and set it equal to the number 0.

Next, increment that counter variable from 0 to 1. You can do this a few different ways, but try using the JavaScript increment operator. If you are unfamiliar with this operator try checking these MDN docs: [Javascript Increment Operator](#) 😊.

Finally, on the next lines continue to increment the `counter` variable by 1 until it reaches 10 and then log the `counter` to your console to check your work.

Step 2

Dang, that's a lot of lines of code just to continuously increment our `counter` variable to 10. Let's see if we can use a loop to do this a little cleaner.

Let's create another variable called `anotherCounter` and set it equal to the number 0.

Next, create a while loop that increments by 1 until it reaches the number 10. Once it reaches 10, log the `anotherCounter` variable to your console. Much easier this way huh? 😊

Challenge 2

Step 1

In this challenge, let's change it up a bit. Create a variable called `bigNumber` and set it equal to the number 100.

Next, create a variable called `smallNumber` and set it equal to the number 5.

Step 2

Create a while loop that decrements `bigNumber` until it is the same as `smallNumber`. Once complete, log the value of `bigNumber` and `smallNumber` to the console. They should be the same.

Hint: try using JavaScript's built in decrement operator. If you are unfamiliar check out these MDN docs: [Javascript Decrement Operator](#) 😊.

Challenge 3

For this next challenge we are going to build out a mini program.

We are going to pretend for a second that it's the holiday season! Or maybe it really is when you are doing these challenges. Who knows? lol 🙌

Well it's time to buy gifts for your friends and family. Let's write a program that will allow us to see how many gifts you can buy with your current budget.

Step 1

Create a variable called `fundsAvailable` and set it equal to the number 100.

Next, create a variable called `giftPrice` and set it equal to the number 15.

Then, create a variable called `numberOfGiftsPurchased` and set it equal to the number 0.

Lastly, create a variable called `overBudget` and set it equal to the boolean value of false.

Step 2

Next, create a while loop that will accomplish a few things.

1. It will increase the number of presents purchased by 1 on each iteration.
2. Subtract the cost of the gift from your `fundsAvailable` variable.
3. Will change your `overBudget` variable to the boolean value of true when you no longer have enough funds to purchase another gift.
4. Your loop will stop executing when you are over your budget.

Step 3

Finally, log your `fundsAvailable` and your `numberOfGiftsPurchased` variables to the console to check your work 😊.

Challenge 4

Step 1

Create a variable called `myArray` and set it equal to an array containing the numbers 1, 7, 3, and 8.

Then, declare a variable that you will use to keep track of the indexes in the array.

Step 2

Next, create a while loop that will iterate through and log each element of the `myArray` array to the console.

The while loop should end when you get to the end of the `myArray` array.

Challenge 5

In the previous challenge we accomplished a task that engineers regularly do (iterating over an array) using a while loop. This works, but it's a bit clunky. Luckily we have another loop that lets us do this same thing in a cleaner fashion...a **for loop**. Let's practice. 😈

Step 1

Create another array variable called `anotherArray` containing the numbers 86, 75, 30, and 9.

Step 2

Create a for loop that will iterate over the `anotherArray` array and log each element to the console.

Much cleaner huh? 😊

Challenge 6

Step 1

Create variable called `randomNums` and set it equal to an array containing ten random numbers.

Create a variable called `overFive` and set it equal to 0.

Step 2

Create a for loop that iterates over the `randomNums` array and counts the number of elements that are greater than 5 and saves that number in the `overFive` variable.

Then, log the `overFive` variable to the console to check your work.

Challenge 7

Step 1

Create a variable called `favLanguage` and set it equal to the string "Javascript".

Create a variable called `aTotal` and set it equal to 0.

Step 2

Create a for loop to iterate over the `favLanguage` variable and count the number of "a"s that exist using the `aTotal` variable.

Log the `aTotal` variable to the console to check your work.

Challenge 8 (Bonus Challenge 🤖)

Step 1

Ok, let's turn up the heat a bit. For this challenge we have provided you with a variable called `messyMessage` (you just need to uncomment it).

Create another variable called `cleanMessage` and set it equal to an empty string.

Step 2

Create a for loop that iterates over the `messyMessage` array and builds a new string that doesn't include any numbers and save it in the `cleanMessage` variable.

Hint: Check out MDN's documentation on the [typeof](#) operator.

Log the `cleanMessage` variable to the console to check your work!