

PROGRAMMING CHALLENGES

Try out these challenges to practice working with conditionals and loops.

#1: AWESOME ANIMALS

Write a for loop that modifies an array of animals, making them awesome! For example, if your starting array is . . .

```
var animals = ["Cat", "Fish", "Lemur", "Komodo Dragon"];
```

then after you run your loop, it should look like this:

```
["Awesome Cat", "Awesome Fish", "Awesome Lemur", "Awesome Komodo Dragon"]
```

Hint: You'll need to *reassign* values to the array at each index. This just means assigning a new value at an existing position in the array. For example, to make the first animal awesome, you could say:

```
animals[0] = "Awesome " + animals[0];
```

#2: RANDOM STRING GENERATOR

Make a random string generator. You'll need to start with a string containing all the letters in the alphabet:

```
var alphabet = "abcdefghijklmnopqrstuvwxyz";
```

To pick a random letter from this string, you can update the code we used for the random insult generator in Chapter 3: `Math.floor(Math.random() * alphabet.length)`. This will create a random index into the string. You can then use square brackets to get the character at that index.

(continued)



To create the random string, start with an empty string (`var randomString = ""`). Then, create a while loop that will continually add new random letters to this string, as long as the string length is less than 6 (or any length you choose). You could use the `+=` operator to add a new letter to the end of the string. After the loop has finished, log it to the console to see your creation!

#3: H4CK3R SP34K

Turn text into h4ck3r sp34k! A lot of people on the Internet like to replace certain letters with numbers that look like those letters. Some numbers that look like letters are 4 for A, 3 for E, 1 for I, and 0 for O. Even though the numbers look more like capital letters, we'll be replacing the lowercase versions of those letters. To change normal text to h4ck3r sp34k, we'll need an input string and a new empty string:

```
var input = "javascript is awesome";  
var output = "";
```

You'll then need to use a for loop to go through all the letters of the input string. If the letter is "a", add a "4" to the output string. If it's "e", add a "3". If it's "i", add a "1", and if it's "o", add a "0". Otherwise, just add the original letter to the new string. As before, you can use `+=` to add each new letter to the output string.

After the loop, log the output string to the console. If it works correctly, you should see it log "j4v4scr1pt 1s 4w3s0m3".