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Reference vs Value in JavaScript

1 message

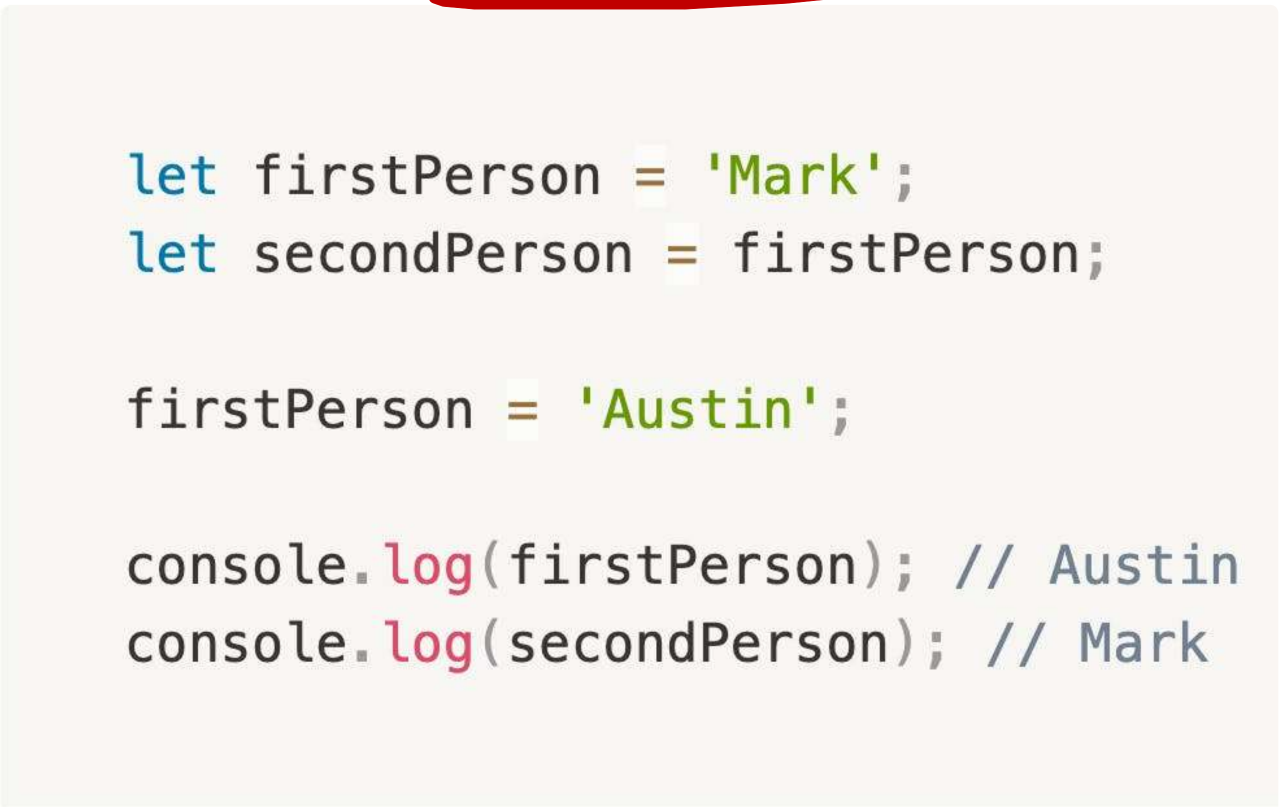
Adrian From JavaScript Mastery <contact@thejavascriptmastery.com> 21 November 2020 at 03:57
To: Teen <python3shah@gmail.com>

Hello Teen,

today I have prepared for you some advanced JavaScript content!

In this simple e-mail, you're going to learn the concept of **Reference vs Value** in JavaScript.

Let's start of with how we copy primitive values:

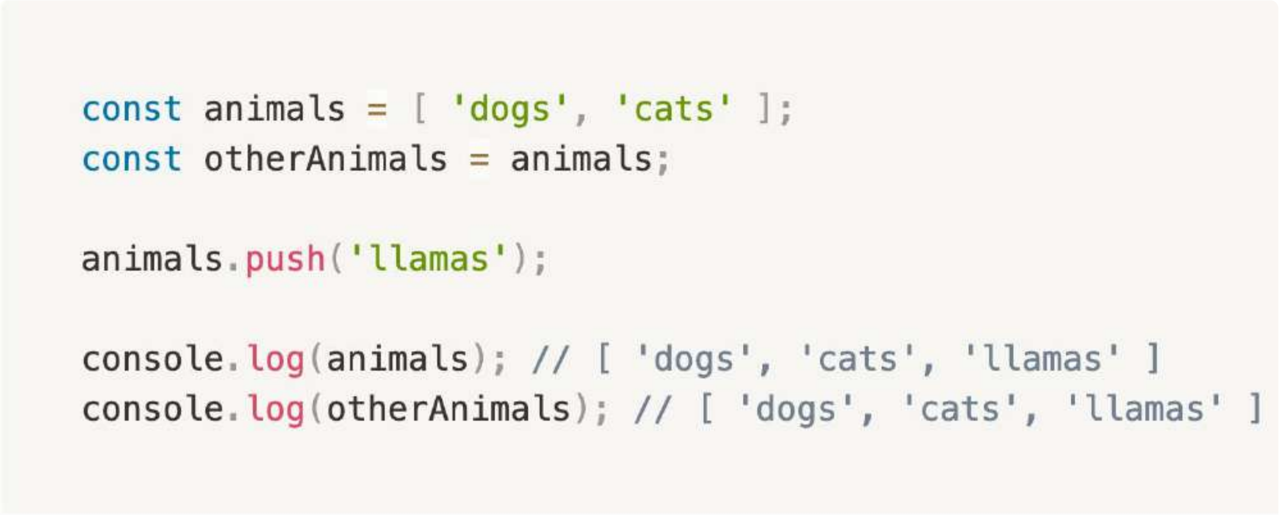


```
let firstPerson = 'Mark';
let secondPerson = firstPerson;

firstPerson = 'Austin';

console.log(firstPerson); // Austin
console.log(secondPerson); // Mark
```

Primitive Values are copied by *value* ⭐

As you can see, the output makes sense, only firstPerson changed.

Now, let's take a look at how we copy complex values:



```
const animals = [ 'dogs', 'cats' ];
const otherAnimals = animals;

animals.push('llamas');

console.log(animals); // [ 'dogs', 'cats', 'llamas' ]
console.log(otherAnimals); // [ 'dogs', 'cats', 'llamas' ]
```

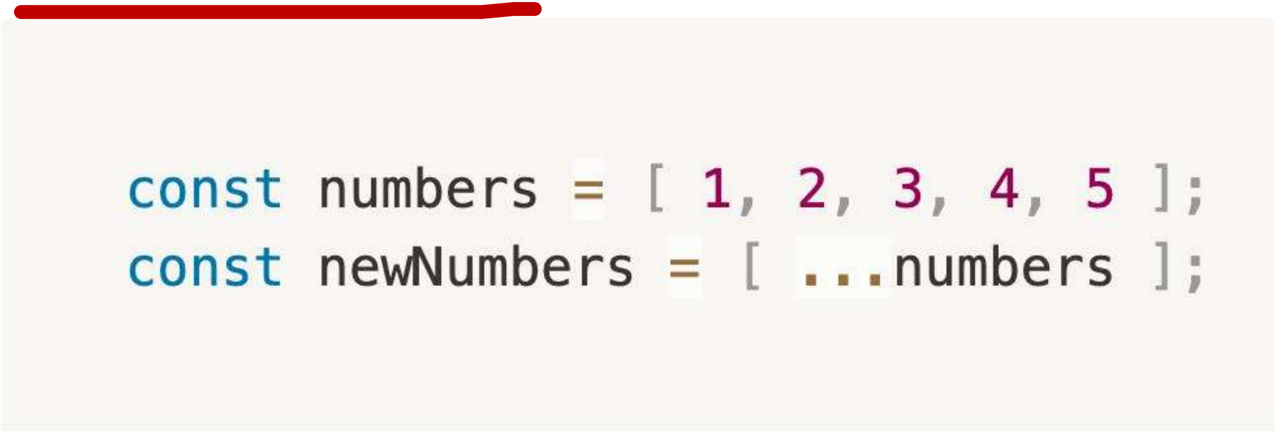
Complex Values are copied by *reference* ⭐

Why are both arrays the same if we only pushed the value to the first array? What happened here?

When a variable is assigned a primitive value, it just copies that value. We saw that with number and strings examples. On the other hand, when a variable is assigned a non-primitive value (such as an object or an array), it is given a reference to that object's location in memory. In our example, that means that we're never actually making a copy of a animals array. We're just make a variable that points to the same location in the memory.

So now do we make a "normal" copy?

To clone an array or an object without making a reference to the original, use the *spread operator*:



```
const numbers = [ 1, 2, 3, 4, 5 ];
const newNumbers = [ ...numbers ];
```

To clone an array, use the *spread operator* ⭐

~~Aaand, that was it for today's email! The content for this lesson was taken from the **Complete Path to JavaScript Mastery Course**. You can expect some insane discounts for next week's Black Friday, stay tuned!~~

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