



Checkpoint 6

Looping over objects

Do you remember when you began to loop over arrays? You had a chance to explore looping over arrays earlier in this program, and the concepts involved should feel familiar. But did you know that you can also loop over both the keys and the values in objects? In this checkpoint, you'll learn how to do just that in a few different ways. These techniques will help you store information in objects, and ultimately make it easier and more convenient for you to retrieve that information when you need it.

Outline

By the end of this checkpoint, you will be able to do the following:

- Access all the values and keys of an object
- Use a `for/in` loop to access every key and value in an object

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Transforming objects into arrays

One way of looping over objects is to "cheat." And in this conte.

"cheating" means that instead of looping over an object, you'll actually

transform part of the object into an array.

There are two methods that allow you to "cheat" in this way:

`Object.values()` and `Object.keys()`.

Accessing values

Often, you'll use objects to connect two pieces of information together. For example, the following object connects names with addresses.

```
const people = {  
  "Lee Finch": { address: "913 Hunts Lane", isCustomer: true },  
  "Whitney Shawna": { address: "392 Norfolk Street", isCustomer: false },  
  "Gabrielle Mayo": { address: "934 Engert Avenue", isCustomer: false },  
};
```

However, what if you just need to access the values? You can do this by using `Object.values()`, passing in the object. This method will return an array of all the values in any given object. See the example below:

```
const addresses = Object.values(people);  
//> [  
//>   { address: "913 Hunts Lane", isCustomer: true },  
//>   { address: "392 Norfolk Street", isCustomer: false },  
//>   { address: "934 Engert Avenue", isCustomer: false },  
//> ]
```

You can now loop over these values as easily as you can loop over an array. Pretty nifty!

Accessing keys

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Now, imagine you just need to access the keys of an object. This is where a similar method, `Object.keys()`, comes in handy. Take a look.

```
const names = Object.keys(people);  
//> [ "Lee Finch", "Whitney Shawna", "Gabrielle Mayo"
```

And yet again, you're set up to loop over this array however you like.

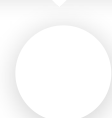
Looping over objects

Generally, the two methods described above will be sufficient for the work you'll do. They'll help you "cheat" to create an array that you can then loop over as needed. However, sometimes it'll be easier to loop through an object on its own. In those cases, you will use a `for/in` loop.

Start by watching the video below, which provides a brief introduction to this topic. Then, read through the rest of the checkpoint and complete the practice work required. This will give you a full understanding of these concepts.

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JAVASCRIPT

Looping Over Objects



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Outline

Now, take a look at the code sample below:

```
for (let name in people) {  
  const person = people[name];  
  const address = person.address;  
  console.log(`Sending mail to ${name} at ${address}.`  
}
```

In the above `for/in` loop, `people` is the entire object, and `name` will be every object key. The code will run as many times as there are keys within the `for/in` loop block. Each iteration will give you a key and value in the object.

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This same process can be performed by using `Object.keys()` in place of the `for/in` syntax. However, the `for/in` syntax is generally recommended because it takes less code and more clearly demonstrates the purpose of the code.

Do this

Use a `for/in` loop

Try running the following code directly. Can you identify the data types of `people`, `name`, `person`, and `address` here? Take a moment to consider what those data types might be and to predict what the code will do before you run it.

```
const people = {  
  "Lee Finch": { address: "913 Hunts Lane", isCustom: true },  
  "Whitney Shawna": { address: "392 Norfolk Street", isCustom: false },  
  "Gabrielle Mayo": { address: "934 Engert Avenue", isCustom: true },  
};  
  
for (let name in people) {  
  const person = people[name];  
  const address = person.address;  
  console.log(`Sending mail to ${name} at ${address}.`);  
}
```

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Checkpoint

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will see a button allowing you to submit your answers and move on to the next checkpoint.

Your work

03.25.21

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