

Lesson

Monday

Intermediate JavaScript (/intermediate-javascript)

/ Object-Oriented JavaScript  
(/intermediate-javascript/object-oriented-javascript)

/ Looping Through Objects and  
Prototypal Inheritance

Text

Cheat sheet

## Terminology

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- **\_\_proto\_\_**: Objects have a **\_\_proto\_\_** property which allows them to access other properties and functionality via prototypal inheritance. In the DevTools this property may be labeled as `[[Prototype]]`, but we still access this property through the property name **\_\_proto\_\_**. See the example below!
- **Prototypal Inheritance**: Inheriting functionality via object prototypes.

## Examples

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## Loop Through Properties with `Object.keys()`

```
let mathematician = {
  firstName: "Ada",
  lastName: "Lovelace",
  profession: "Mathematician",
  funFact: "Daughter of Lord Byron",
  countryOfBirth: "England",
  yearOfBirth: 1815,
  yearOfDeath: 1852
}
const adaKeys = Object.keys(mathematician);
let adaString = "";
adaKeys.forEach(function(key) {
  adaString = adaString.concat(key + ": " + mathematician[key] + "\n");
});
```

## Loop Through Properties with `for...in`

```
let mathematician = {
  firstName: "Ada",
  lastName: "Lovelace",
  profession: "Mathematician",
  funFact: "Daughter of Lord Byron",
  countryOfBirth: "England",
  yearOfBirth: 1815,
  yearOfDeath: 1852
}
for (const key in mathematician) {
  if (contact.hasOwnProperty(key)) {
    console.log(mathematician[key]);
  }
}
```

**Note:** Use `Object.prototype.hasOwnProperty()` if you only want the properties of the object itself to be iterated over.

## Accessing the Prototype of an Object

```
> function Contact(firstName, lastName, phoneNumber) {  
  this.firstName = firstName;  
  this.lastName = lastName;  
  this.phoneNumber = phoneNumber;  
}  
> Contact.prototype.fullName = function() {  
  return this.firstName + " " + this.lastName;  
};  
> let newContact = new Contact("Ada", "Lovelace", "111-111-1111");  
> newContact;  
Contact {firstName: 'Ada', lastName: 'Lovelace', phoneNumber: '111-111-1111'}  
> newContact.__proto__;  
{fullName: f, constructor: f}  
> newContact.__proto__.__proto__;  
{constructor: f, __defineGetter__: f, __defineSetter__: f, hasOwnProperty: f, __lookupGetter__: f, ...}
```

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