JavaScript Object Constructors

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Object Constructor Functions

Sometimes we need to create many objects of the same **type**.

To create an **object type** we use an **object constructor function**.

It is considered good practice to name constructor functions with an upper-case first letter.

Object Type Person

```
function Person(first, last, age, eye) {
  this.firstName = first;
  this.lastName = last;
  this.age = age;
  this.eyeColor = eye;
}
```

Try it yourself »

Note:

See Also:

The JavaScript **this** Tutorial

Now we can use `new Person()` to create many new Person objects:

Example

```
const myFather = new Person("John", "Doe", 50, "blue");
const myMother = new Person("Sally", "Rally", 48, "green");
const mySister = new Person("Anna", "Rally", 18, "green");

const mySelf = new Person("Johnny", "Rally", 22, "green");
```

Try it yourself »

Property Default Values

A **value** given to a property will be a **default value** for all objects created by the constructor:

Example

```
function Person(first, last, age, eyecolor) {
  this.firstName = first;
  this.lastName = last;
  this.age = age;
  this.eyeColor = eyecolor;
  this.nationality = "English";
}
```

Try it Yourself »

Adding a property to a created object is easy:

Example

```
myFather.nationality = "English";
```

Try it Yourself »

Note:

The new property will be added to **myFather**. Not to any other **Person Objects**.

Adding a Property to a Constructor

You can **NOT** add a new property to an object constructor:

Example

```
Person.nationality = "English";
```

Try it Yourself »

To add a new property, you must add it to the constructor function prototype:

Example

```
Person.prototype.nationality = "English";
```

Constructor Function Methods

A constructor function can also have **methods**:

Example

```
function Person(first, last, age, eyecolor) {
  this.firstName = first;
  this.lastName = last;
  this.age = age;
  this.eyeColor = eyecolor;
  this.fullName = function() {
    return this.firstName + " " + this.lastName;
  };
}
```

Try it Yourself »

Adding a Method to an Object

Adding a method to a created object is easy:

Example

```
myMother.changeName = function (name) {
  this.lastName = name;
}
```

Try it Yourself »

The new method will be added to **myMother**. Not to any other **Person Objects**.

Adding a Method to a Constructor

You cannot add a new method to an object constructor function.

This code will produce a TypeError:

Example

```
Person.changeName = function (name) {
  this.lastName = name;
}

myMother.changeName("Doe");
```

```
TypeError: myMother.changeName is not a function
```

Adding a new method must be done to the constructor function prototype:

Example

```
Person.prototype.changeName = function (name) {
  this.lastName = name;
}

myMother.changeName("Doe");
```

Try it Yourself »

Note:

Built-in JavaScript Constructors

JavaScript has built-in constructors for all native objects:

```
new Object()   // A new Object object
new Array()    // A new Array object
new Map()      // A new Map object
new Set()      // A new Set object
new Date()     // A new Date object
new RegExp()   // A new RegExp object
new Function() // A new Function object
```

Try it Yourself »

Note:

The `Math()` object is not in the list. `Math` is a global object. The `new` keyword cannot be used on `Math`.

Did You Know?

Use object literals `{}` instead of `new Object()`.

Use array literals `[]` instead of `new Array()`.

Use pattern literals `/()/` instead of `new RegExp()`.

Use function expressions `() {}` instead of `new Function()`.

Example

```
{};           // object object
[];           // array object
/()/          // regexp object
function(){}; // function
```

Try it Yourself »

Complete Object Reference

For a complete reference, go to our:

Complete JavaScript Object Reference.

The reference contains descriptions and examples of all Object Properties and Methods.

Exercise ?

What is a correct syntax for adding a new property to the `Person` object constructor?

○ `Person.hometown = 'Roma';`

○ `Person.prototype.hometown = 'Roma';`

○ `new Person.hometown = 'Roma';`

○ `Person['hometown'] = 'Roma';`

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