

JavaScript Object Constructors

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Example

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

[Try it yourself »](#)

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

Object Types (Blueprints) (Classes)

The examples from the previous chapters are limited. They only create single objects.

Sometimes we need a **"blueprint"** for creating many objects of the same "type".

The way to create an "object type", is to use an **object constructor function**.

In the example above, **function Person()** is an object constructor function.

Objects of the same type are created by calling the constructor function with the **new** keyword:

```
var myFather = new Person("John", "Doe", 50, "blue");  
var myMother = new Person("Sally", "Rally", 48, "green");
```

[Try it yourself »](#)

The **this** Keyword

In JavaScript, the thing called **this** is the object that "owns" the code.

The value of **this**, when used in an object, is the object itself.

In a constructor function **this** does not have a value. It is a substitute for the new object. The value of **this** will become the new object when a new object is created.

Note that **this** is not a variable. It is a keyword. You cannot change the value of **this**.

Adding a Property to an Object

Adding a new property to an existing object is easy:

Example

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

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The property will be added to myFather. Not to myMother. (Not to any other person objects).

Adding a Method to an Object

Adding a new method to an existing object is easy:

Example

```
myFather.name = function () {  
    return this.firstName + " " + this.lastName;  
};
```

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The method will be added to myFather. Not to myMother. (Not to any other person objects).

Adding a Property to a Constructor

You cannot add a new property to an object constructor the same way you add a new property to an existing object:

Example

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

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

Example

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

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This way object properties can have default values.

Adding a Method to a Constructor

Your constructor function can also define methods:

Example

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

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You cannot add a new method to an object constructor the same way you add a new method to an existing object.

Adding methods to an object must be done inside the constructor function:

Example

```
function Person(firstName, lastName, age, eyeColor) {
  this.firstName = firstName;
  this.lastName = lastName;
  this.age = age;
  this.eyeColor = eyeColor;
  this.changeName = function (name) {
    this.lastName = name;
  };
}
```

The changeName() function assigns the value of name to the person's lastName property.

Now You Can Try:

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

[Try it Yourself »](#)

JavaScript knows which person you are talking about by "substituting" **this** with **myMother**.

Built-in JavaScript Constructors

JavaScript has built-in constructors for native objects:

Example

```
var x1 = new Object();    // A new Object object
var x2 = new String();    // A new String object
var x3 = new Number();    // A new Number object
var x4 = new Boolean();   // A new Boolean object
var x5 = new Array();     // A new Array object
var x6 = new RegExp();    // A new RegExp object
var x7 = new Function();  // A new Function object
var x8 = new Date();      // A new Date object
```

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

Did You Know?

As you can see above, JavaScript has object versions of the primitive data types String, Number, and Boolean. But there is no reason to create complex objects. Primitive values are much faster.

ALSO:

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

Use string literals **""** instead of new String().

Use number literals **12345** instead of new Number().

Use boolean literals **true / false** instead of new Boolean().

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

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

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

Example

```
var x1 = {};              // new object
var x2 = "";              // new primitive string
var x3 = 0;               // new primitive number
var x4 = false;           // new primitive boolean
var x5 = [];              // new array object
```

```
var x6 = /()/          // new regexp object
var x7 = function({}); // new function object
```

Try it Yourself »

String Objects

Normally, strings are created as primitives: **var firstName = "John"**

But strings can also be created as objects using the **new** keyword: **var firstName = new String("John")**

Learn why strings should not be created as object in the chapter [JS Strings](#).

Number Objects

Normally, numbers are created as primitives: **var x = 123**

But numbers can also be created as objects using the **new** keyword: **var x = new Number(123)**

Learn why numbers should not be created as object in the chapter [JS Numbers](#).

Boolean Objects

Normally, booleans are created as primitives: **var x = false**

But booleans can also be created as objects using the **new** keyword: **var x = new Boolean(false)**

Learn why booleans should not be created as object in the chapter [JS Booleans](#).

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