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# JavaScript Let

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## ECMAScript 2015

ES2015 introduced two important new JavaScript keywords: let and const.

These two keywords provide **Block Scope** variables (and constants) in JavaScript.

Before ES2015, JavaScript had only two types of scope: **Global Scope** and **Function Scope**.

### Global Scope

Variables declared **Globally** (outside any function) have **Global Scope**.





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```
var carName = "Volvo";

// code here can use carName

function myFunction() {
   // code here can also use carName
}
```

Try it Yourself »

Global variables can be accessed from anywhere in a JavaScript program.

## **Function Scope**

Variables declared Locally (inside a function) have Function Scope.

```
// code here can NOT use carName
function myFunction() {
  var carName = "Volvo";
  // code here CAN use carName
}
```





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**Local** variables can only be accessed from inside the function where they are declared.

### JavaScript Block Scope

Variables declared with the var keyword can not have **Block Scope**.

Variables declared inside a block **{}** can be accessed from outside the block.

#### Example

```
var x = 2;
// x CAN be used here
```

Before ES2015 JavaScript did not have **Block Scope**.

Variables declared with the let keyword can have Block Scope.

Variables declared inside a block **{}** can not be accessed from outside the block:









```
let x = 2;
// x can NOT be used here
```

## Redeclaring Variables

Redeclaring a variable using the var keyword can impose problems.

Redeclaring a variable inside a block will also redeclare the variable outside the block:

### Example

```
var x = 10;
// Here x is 10
  var x = 2;
  // Here x is 2
// Here x is 2
```

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Redeclaring a variable inside a block will not redeclare the variable outside the block:

#### Example

```
var x = 10;
// Here x is 10
{
   let x = 2;
   // Here x is 2
}
// Here x is 10
```

Try it Yourself »

## **Browser Support**

The let keyword is not fully supported in Internet Explorer 11 or earlier.

The following table defines the first browser versions with full support for the let keyword:

Chrome 49	Edge 12	Firefox 44	Safari 11	Opera 36
Mar, 2016	Jul, 2015	Jan, 2015	Sep, 2017	Mar, 2016





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Using var in a loop:

### Example

```
var i = 5;
for (var i = 0; i < 10; i++) {
  // some statements
// Here i is 10
```

Try it Yourself »

Using let in a loop:

```
let i = 5;
for (let i = 0; i < 10; i++) {
  // some statements
// Here i is 5
```





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In the first example, using var, the variable declared in the loop redeclares the variable outside the loop.

In the second example, using let, the variable declared in the loop does not redeclare the variable outside the loop.

When let is used to declare the i variable in a loop, the i variable will only be visible within the loop.

### **Function Scope**

Variables declared with var and let are quite similar when declared inside a function.

They will both have **Function Scope**:

```
function myFunction() {
  var carName = "Volvo";
                          // Function Scope
function myFunction() {
  let carName = "Volvo";
                         // Function Scope
```





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## Global Scope

Variables declared with var and let are quite similar when declared outside a block.

They will both have **Global Scope**:

```
var x = 2; // Global scope
let x = 2;  // Global scope
```

### Global Variables in HTML

With JavaScript, the global scope is the JavaScript environment.

In HTML, the global scope is the window object.

Global variables defined with the var keyword belong to the window object:









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Global variables defined with the let keyword do not belong to the window object:

#### Example

```
let carName = "Volvo";
// code here can not use window.carName
Try it Yourself »
```

## Redeclaring

Redeclaring a JavaScript variable with var is allowed anywhere in a program:

```
var x = 2;
// Now x is 2
```





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```
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```

// Now x is 3

Redeclaring a var variable with let, in the same scope, or in the same block, is not allowed:

#### Example

```
var x = 2;  // Allowed
let x = 3;  // Not allowed

{
  var x = 4;  // Allowed
  let x = 5  // Not allowed
}
```

Redeclaring a let variable with let, in the same scope, or in the same block, is not allowed:

```
let x = 2;  // Allowed
let x = 3;  // Not allowed
```



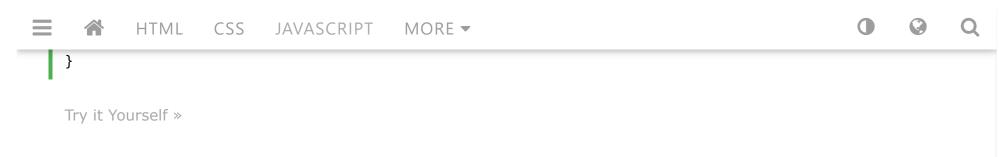
Redeclaring a let variable with var, in the same scope, or in the same block, is not allowed:

#### Example

```
let x = 2;  // Allowed
var x = 3;  // Not allowed

{
  let x = 4;  // Allowed
  var x = 5;  // Not allowed
}
```

Redeclaring a variable with let, in another scope, or in another block, is allowed:



## Hoisting

Variables defined with var are **hoisted** to the top (if you don't know what Hoisting is, read our <u>Hoisting Chapter</u>).

You can use a variable before it is declared:

#### Example

```
// you CAN use carName here
var carName;
```

Try it Yourself »

Variables defined with let are not hoisted to the top.

Using a let variable before it is declared will result in a ReferenceError.

The variable is in a "temporal dead zone" from the start of the block until it is declared:





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