

# JavaScript

# JavaScript

has nothing to do with Java

In this course:

# ES6

(aka ES2015)

In this course:

ECMAScript

**ES6**

(aka ES2015)

In this course:

ECMAScript

Official (standardized)  
name of JavaScript

ES6

(aka ES2015)

# Running Javascript

Typically run on the browser

Open the Chrome console

- Ctrl + Shift + I (Windows) or Cmd + Alt + I (Mac)
- F12
- Right Click > Inspect > Switch to console tab

# Basic (*Primitive*) Data Types

**Boolean**      `true, false`

**Numbers**      only 64-bit floats (no ints).  
`0, 1, 3.14, 6.28`

**Strings**      variable length, no separate character  
type.  
`"6170's the best"`

**No Value**      `null, undefined`

# Advanced Data Types: *Arrays*



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Grow and shrink *dynamically*.

```
a = [];  
a[0] = "hello";  
a[1] = "there";
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Special Array *methods* for manipulation

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a.push("everyone");
```

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a.pop();  
a.indexOf("hello");  
...
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Use **length** property for the size of the array.

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a.length
```

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Arrays are heterogenous: they can have elements of different types

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a = ["hello", 2, null, [1, 2], "there"];
```

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Mappings between *properties* and *values*.

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a = {hello: "there"};
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```
a.hello
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Mappings between *properties* and *values*.

Properties referenced with *dot notation*.

Properties can be added/modified on the fly.

```
a = {hello: "there"};
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```
a.hello
```

```
a.hello = "world";
```

```
a.goodbye = "for now";
```

# Advanced Data Types: *Objects*

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Values can be any of the types we've seen so far, including nested objects.

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```
b.item.price
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```


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```

```
b.country[1]
```



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*dynamically-*  
*weakly-typed*  
language

No fixed types  
associated with  
variables. Interpreter  
determines types of  
*values* at *runtime*.



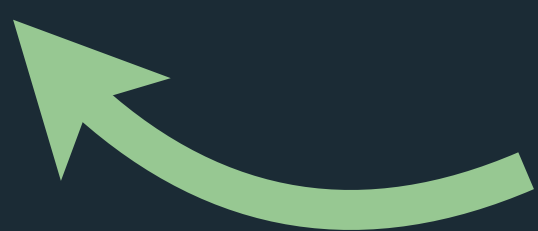
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a = a + 5;
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Performs *implicit type coercion* at runtime.

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a is "hello world5"
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Always prefer *strict equality* (`===`) over loose equality (`==`).





	true	false	1	0	-1	"true"	"false"	"1"	"0"	"-1"	""	null	undefined	Infinity	-Infinity	[]	{}	[[[]]]	[0]	[1]	NaN
true																					
false																					
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```
const COLOR = "blue";  
COLOR = "yellow"; // error  
const COLOR = "green"; // error
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```
const PERSON = {name: "arvind"};
```

```
PERSON = {name: "daniel"}; // error
```

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const PERSON = {name: "daniel"}; // error
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```
PERSON.name = "daniel"; // a-ok
```

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Pre ES6, only the *var* keyword was available to declare local variables.

Has *function* scope, and declarations are *hoisted* to the top of the function.

# Functions

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Functions are declared with a name, arguments, and a body.

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function multiply(a, b) {  
    return a * b;  
}
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function multiply() {  
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        arguments[1];  
}
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With ES6, arguments can have default values.

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    return a * b;  
}
```

```
function multiply() {  
    return arguments[0] *  
        arguments[1];  
}
```

```
function multiply(a, b = 1) {  
    return a * b;  
}
```

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## Conditional statements

```
if (a > b) {  
    return a - b;  
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for (let i = 0; i < 10; i++) {  
    console.log(i);  
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for (let i = 0; i < 10; i++) {  
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```

Iterating through objects

```
let map = {name: "Ben", work: "student"}  
for (key in map) {  
    console.log(map[key]);  
}
```

**Note:** This does not work for arrays