# CS7025 Programming for Digital Media

Lesson 4 – DOM Manipulation

# Debugging JavaScript
## Comments

Comments in JavaScript can be written in two ways

```
// Single line comment
/*
    Multi line comment
*/
```

The JavaScript interpreter will ignore/not execute comments

Think about comments and don't forget to remove them when they are no longer needed

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# Debugging JavaScript

## Console

You can instruct your JavaScript to write information and errors to the browser's console.

The Console API provides functionality to allow developers to perform debugging tasks, such as logging messages or the values of variables at set points in your code, or timing how long an operation takes to complete.

```
console.log(<content>);
```

```
console.error('something went wrong', error);
```

https://developer.mozilla.org/en-US/docs/Web/API/Console

https://medium.com/@anirudh.munipalli/stop-using-console-log-in-javascript-try-these-instead-72490d895a24

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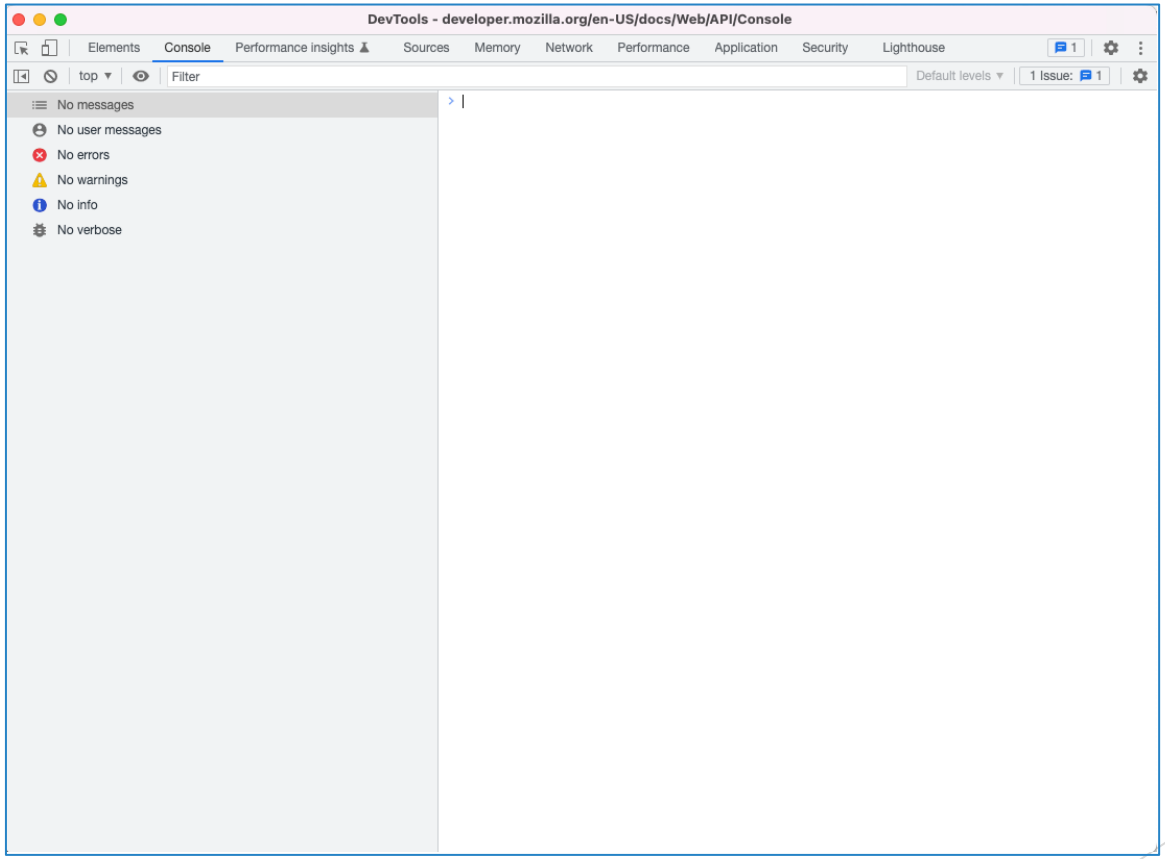
# Debugging JavaScript

## Console

Right Click >
Inspect >
Console

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# Arrays

An array allows to store multiple values into a single variable

JavaScript arrays:

- Take mixed datatypes
- They are zero-indexed
- Operations create shallow copies
- They are resizable

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# Arrays
## Mixed datatypes

Example:

```
let car = ["Volvo", 1998, "98-D-11223"]
console.log("year", car[1]); // prints "year 1998" to the console
```

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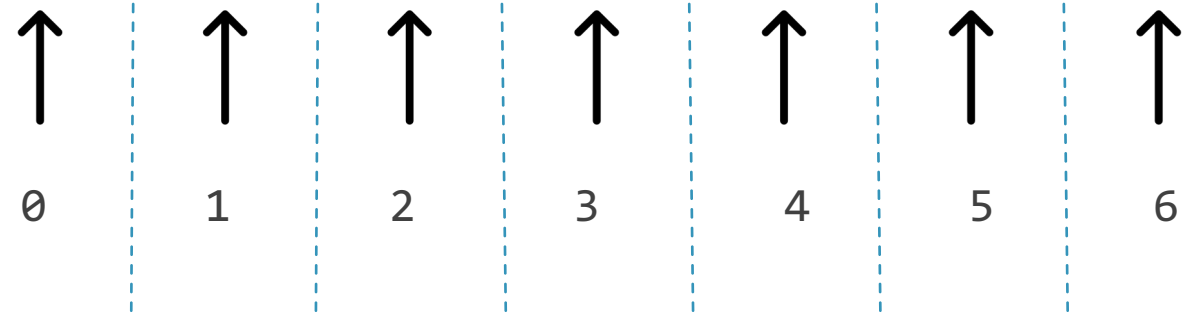
# Arrays

## Zero-indexed

Zero-indexed means that the first element in the array is accessed by the index 0

```
let week =

["Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun"];
```

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# Arrays

## Zero-indexed

```
let week = ["Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun"];

console.log( week[1] );      // prints "Tue"
```

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# Arrays
## Multi-dimensional

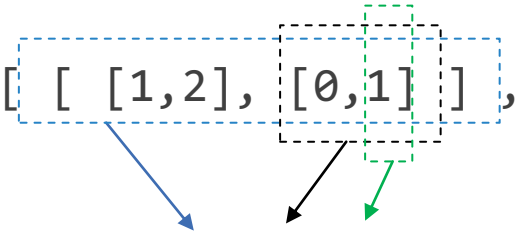
Array of arrays

```
let m = [ [0,1,2,3], [2,3,4,5], [1,2,3,4,5] ];

console.log( m[0][2] );

let q = [ [ [1,2], [0,1] ] , [ [4,5], [2,3] ] ];

console.log( q[0][1][1] );
```



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# Arrays

## Operations Create Shallow Copies

A shallow copy of an object is a copy whose properties share the same references (point to the same underlying values) as those of the source object from which the copy was made. As a result, when you change either the source or the copy, you may also cause the other object to change too.

```
let arr = [ 1, 2, 3 ]
let copy = [...arr]
arr.push(4)
// arr is [ 1, 2, 3, 4 ]
// copy is [ 1, 2, 3 ]
```

```
let arr = [ 1, 2, [3, 4] ]
let copy = [...arr]
arr[2][0] = 4
// arr is [ 1, 2, [ 4, 4 ] ]
// copy is [ 1, 2, [ 4, 4 ] ]
```

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# Arrays
## Resizable

```
let days = ["Mo", "Tu", "We", "Th", "Fr", "Sa"];
days.length // returns 6

days.push("Su");
days.length // returns 7
```

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# Arrays
## Methods

```
at()
concat()
copyWithin()
entries()
every()
fill()
filter()
find()
findIndex()
findLast()
findLastIndex()
flat()
flatMap()
forEach()
from()
group()
groupToMap()
includes()
indexOf()
isArray()
join()
keys()
lastIndexOf()
map()
of()
pop()
push()
reduce()
reduceRight()
shift()
slice()
some()
sort()
splice()
toLocaleString()
toString()
unshift()
values()
```

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array

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# Try it yourself

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# Thank You

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