

Module 3 - JavaScript: Array II

YouTube upload:

 [YouTube Lecture Link](#)

Preface

- Transcript on YT?
- [Article on computational thinking](#)
- [Coderbyte challenges](#)
- Know how to debug/run node and JS programs locally?

Arrays, continued

Review:

- How to remove:
 - First element?
 - Last element?
- To remove a section: `.splice(startIndex, count)`
 - `startIndex` is the start index from which to start splicing
 - `count` is number of elements to splice

```
array = [0, 1, 2, 3, 4]
let newSplice = array.splice(2, 2)
console.log(array) // => [0, 1, 4]
console.log(newSplice) // => [2, 3]
```

- To replace elements: `.splice(startIndex, count, elements)`

```
array = [0, 1, 2, 3, 4]
let newSplice = array.splice(2, 1, 'a', 'b')
console.log(array) // => [0, 1, 'a', 'b', 3, 4]
console.log(newSplice) // => [2]
```

*You can put `0` for count, if you don't want to remove ANY elements and just want to insert new ones.

```
array = [0, 1, 2, 3, 4]
let newSplice = array.splice(2, 0, 'a', 'b')
```

```
console.log(array) // => [0, 1, 'a', 'b', 2, 3, 4]
console.log(newSplice) // => []
```

- To join the elements all together into a string: `.join()` or `.join(stringParam)`
 - `.join()` will join them with comma, no space (see this in a lot of CSV sheets)
 - `.join(stringParam)` will join with the `stringParam` you specify. E.g.:

```
let name = ['John', 'Jacob', 'Jingleheimer', 'Schmidt']

// separated by a comma (no space)
console.log(name.join());
// => John,Jacob,Jingleheimer,Schmidt

// separated by a space
console.log(name.join(' '));
// => John Jacob Jingleheimer Schmidt

// separated by nothing
console.log(name.join(''));
// => JohnJacobJingleheimerSchmidt
```

- To concatenate arrays: `.concat(secondArray)`

```
let firstArray = [0, 1]
let secondArray = [2, 3]
let newArray = firstArray.concat(secondArray);
// => [0, 1, 2, 3]
```

Nested arrays

```
array = [
  ['0,0', '0,1', '0,2'],
  ['1,0', '1,1', '1,2'],
  ['2,0', '2,1', '2,2']
]

// array[row][col]
array[0][0] // '0,0'
array[1][2] // '1,2'
array[2][2] // '2,2'

let ticTacToe = [
  ['X', '0', 'X'],
  [' ', 'X', '0'],
  ['0', ' ', ' ']
]
```

```

ticTacToe[0][0] // 'X'
ticTacToe[1][2] // 'O'
ticTacToe[2][2] // ' '

// Help player X win on the diagonal!
ticTacToe[2][2] = 'X'
/*
[
  ['X', 'O', 'X'],
  [' ', 'X', 'O'],
  ['O', ' ', 'X']
]
*/

```

What tools do we have to:

- determine if a number is even or odd?

◦ `# % 2 == 0` or `# % 2 != 0`

- check every element of an array?

```

//for (initial; condition; step)
for(let i = 0; i < array.length; i++) {
  ...
  console.log(array[i])
  ...
}

```

- keep track # of times an element shows up somewhere?
 - iterate: `for` loop
 - check if equal: conditional `if (x == y)`
 - track: increment var, `count++` or `count += 1`
 - declare var outside, reassign/increment count in loop in conditional

```

//how many times does 'a' show up in array?
let array = ['a', 'x', 'a', 'y', 'a']
let count = 0;
for(let i = 0; i < array.length; i++) {
  if (array[i] === 'a') {
    count += 1;
  }
}
console.log(count);

```

Sudoku Validator

- [Explanation video](#)