Day 9 - JS Array

Arrays

Strings are secretly collections of letters stored at sequential memory addresses.

Index	0	1	2	3	4
	H	e	l	l	o
Address	0x23451	0x23452	0x23453	0x23454	0x23455

Arrays
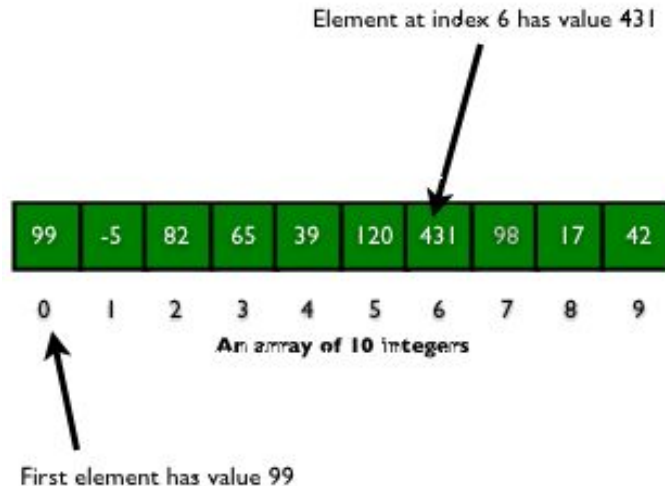
```
var word = "Hello"
word[0]
word[1]
word[5]

var index = 3
word[index]

// strings have a length property
var len = word.length
word[len]
word[len - 1]
```

Arrays

var numbers = [99, -5, 82, 65, 39 120, 431, 98, 17, 42]

Element at index 6 has value 431

99	-5	82	65	39	120	431	98	17	42
0	1	2	3	4	5	6	7	8	9

An array of 10 integers

First element has value 99

Arrays

```
var nums = [5, 10, 20, 50, 100, 250]

nums[0]
nums[1]
nums[6]

var index = 4
nums[index]

var len = nums.length
nums[len]
nums[len - 1]
```

Arrays

```
// creating a new instance of an array is called instantiation
var arr = []

// we can use bracket access in conjunction w/ the assignment operator
// to store a new value at that index
arr[0] = "0 is the new 1"
arr[1] = 45
arr[2] = null
arr[3] = true

arr[1] = "overwrite 45, just forget about that one, okay?"
```

Exercise

1. Instantiate a new array and save it to a variable recipe
2. Use bracket notation to add the steps to create your favorite meal.
3. Access the first step of your recipe using bracket notation.
4. Create variable called last_step and assign to it a number which represents the index of the last item of your array
5. Access the last step of your recipe using the last_step variable

Exercise: Bucket List

.push() ADD VALUE onto the end of your list.
.unshift() ADD VALUE onto the beginning.
.pop() off one value in the end and save it to a variable
.shift() off one value in the beginning and save it to a variable

Arrays

```
var arr = ['stuff', 'more stuff', 'even more stuff']

arr.length

arr.push("More on the end!!!")
var lastItem = words.pop()

arr.unshift("More at the beginning!!")
var firstItem = words.shift()
```

Arrays

```
var arr2 = arr
arr2.pop() // both arr and arr2 are changed!!

var arr3 = arr.slice() // clones the array
arr3.pop() // only arr3 is changed
```

Arrays

```
var friends = ['ada', 'will', 'bianca', 'abe']
var enemies = ['john', 'alice']

var frenemies = friends.concat(enemies)

console.log(frenemies)
console.log(friends, enemies) // does not change original
arrays!
```

Arrays

```
var frenemies = ['ada', 'will', 'bianca', 'abe', 'john', 'alice']
var starting_at_index = 3
var number_to_remove = 2

var removed_elements = frenemies.splice(starting_at_index,
number_to_remove);

console.log("We took out ", removed_elements)
console.log("The remaining array ", frenemies)
```

Arrays

```
var log_me = function(word){
  console.log(word)
}

words.forEach(log_me)
```

Arrays

```
Var words = ['makan bakso'];
var rand = Math.floor( Math.random() * words.length );
words[rand];
```

Exercise

- Create a Magic 8-ball that allows a user to type a question into an input field.
- When the user clicks the "ask question" button, register a click handler function that randomly selects a reply from an array of appropriately vague stock phrases.
- Display the answer inside a glowing circle or something crazy like that.
- Allow the user to click an "ask again" button which clears their previous question and output.
- Refactor your code so that the user doesn't receive the same reply twice until all the replies have been used at least once.

Exercise

- Build list skills set and put in into your profile page
- Build list of friends and put into right side