Arrays I

Overview

```
/*
    - what's an array?

    - typeof []

    - Array.isArray

    - bracket access, bracket assignment

    - .length property

    - basic methods
*/

```

What is an array?

```
1   /* An array is a list-like data structure in JavaScript */
2
3   let numbers = [1, 2, 3];
4
5   let names = ['George', 'John', 'Thomas'];
6
7   let aVariable = 'a value';
8
9   let mixedBag = [30, true, 'apples', null, aVariable];
10
11  /* the values inside of an array are called elements */
12
13
14
```

What is the typeof an array?

```
let names = ['George', 'John', 'Thomas'];

console.log(typeof names);
```

Array.isArray

```
1   let names = ['George', 'John', 'Thomas'];
2
3   console.log(Array.isArray(names));
4
5   console.log(Array.isArray('i am not an array'));
6
7
8
9
10
11
12
13
14
```

```
true
false
```

Bracket access

```
George
John
Thomas
undefined
```

```
1   /* Access elements in an array the same way you'd access a character in a
2      string: using brackets and the index number corresponding to the
3      position of the element inside the array */
4
5   let names = ['George', 'John', 'Thomas'];
6
7   console.log(names[0]);
8
9   console.log(names[1]);
10
11  console.log(names[2]);
12
13  console.log(names[3]);
14
```

[Washington, Adams, Jefferson]

Bracket assignment

```
1   /* Use brackets and the assignment operator to assign new values to index
2      positions in an array */
3
4   let names = ['George', 'John', 'Thomas'];
5
6   names[0] = 'Washington';
7
8   names[1] = 'Adams';
9
10  names[2] = 'Jefferson';
11
12  console.log(names);
13
14
```

.length property

```
1   /* Arrays, like strings, have a length property */
2
3   let names = ['George', 'John', 'Thomas'];
4
5   console.log(names.length)
6
7
8
9
10
11
12
13
14
```

[George, John, Thomas, James]
4

.push method

```
1   /* .push takes one or more elements and adds them to the end of the array.
2      .push returns the new length of the array. */
3
4   let names = ['George', 'John', 'Thomas'];
5
6   let new length = names.push('James');
7
8   console.log(names);
9   console.log(newLength);
10
11
12
13
14
```

[George, John]
Thomas

.pop method

```
1   /* .pop removes one element from the end of the array. it returns the
2      removed element */
3
4   let names = ['George', 'John', 'Thomas'];
5
6   let jefferson = names.pop();
7
8   console.log(names);
9   console.log(jefferson)
10
11
12
13
14
```

[John, Thomas]
George

.shift method

```
1   /* .shift works like .pop, but it removes the first element instead */
2
3   /* it's called shift because the indices for every element in the array
4      are shifted over by one */
5
6   let names = ['George', 'John', 'Thomas'];
7
8   let washington = names.shift();
9
10  console.log(names);
11  console.log(washington);
12
13
14
```

.unshift method

```
[ King George III, George, John, Thomas ]
4
```

```
1   /* .unshift adds one or more elements to the front of the array */
2
3   let names = ['George', 'John', 'Thomas'];
4
5   let newLength = names.unshift('King George III');
6
7   console.log(names);
8   console.log(newLength);
9
10
11
12
13
14
```

.indexOf method

```
0
-1
```

```
1   /* .indexOf is also an array method, and works the same way as the string
2      method of the same name */
3
4   let names = ['George', 'John', 'Thomas'];
5
6   console.log(names.indexOf('George'));
7   console.log(names.indexOf('Alexander'));
8
9
10
11
12
13
14
```

[John]
[George, John, Thomas]

.slice method

```
1   /* .slice is also an array method, and works the same way as the string
2      method of the same name. */
3
4   let names = ['George', 'John', 'Thomas'];
5
6   let oneTermPresidents = names.slice(1, 2);
7
8   console.log(oneTermPresidents);
9   console.log(names);
10
11
12
13
14
```

[George, John, Thomas]
[George, John, Paul, Ringo]

.slice method

```
1   /* .slice is also an array method, and works the same way as the string
2      method of the same name. */
3
4   let names = ['George', 'John', 'Thomas'];
5
6   let namesCopy = names.slice();
7
8   namesCopy[2] = 'Paul';
9   namesCopy.push('Ringo');
10
11  console.log(names);
12  console.log(namesCopy);
13
14
```

true
false

.includes method

```
1   /* .includes takes a value, and returns true if the value is an element in
2      the array */
3
4   let names = ['George', 'John', 'Thomas'];
5
6   console.log(names.includes('George'));
7   console.log(names.includes('Alexander'));
8
9
10
11
12
13
14
```

[Thomas, John, George]

.reverse method

```
1   /* .reverse mutates (changes) the original array, reversing the order of
2      its elements */
3
4   let names = ['George', 'John', 'Thomas'];
5
6   names.reverse();
7
8   console.log(names);
9
10
11
12
13
14
```

Recap

```
/*
    - what's an array?

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    - Array.isArray

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    - .length property

    - basic methods
*/

```