JavaScript Array & String Methods with Examples

Array Methods in JavaScript

```javascript
let arr = [1, 2, 3, 4, 5];
```

1. push() - Add item to the end

```javascript
arr.push(6); // [1, 2, 3, 4, 5, 6]
```

2. pop() - Remove last item

```javascript
arr.pop(); // [1, 2, 3, 4, 5]
```

3. shift() - Remove first item

```javascript
arr.shift(); // [2, 3, 4, 5]
```

4. unshift() - Add item to beginning

```javascript
arr.unshift(1); // [1, 2, 3, 4, 5]
```

5. map() - Transform each item

```javascript
arr.map(x => x * 2); // [2, 4, 6, 8, 10]
```

6. filter() - Filter items based on condition

```javascript
arr.filter(x => x % 2 === 0); // [2, 4]
```

7. reduce() - Reduce array to a single value

```javascript
arr.reduce((acc, curr) => acc + curr, 0); // 15
```

8. forEach() - Loop through each item

```javascript
arr.forEach(x => console.log(x)); // prints each value
```

9. find() - Find the first matching item

```javascript
arr.find(x => x % 2 === 0); // 2
```

10. includes() - Check if array contains a value

arr.includes(3); // true

11. sort() - Sort array

[4, 2, 5, 1, 3].sort((a, b) => a - b); // [1, 2, 3, 4, 5]

12. splice() - Add/remove elements at specific index

arr.splice(2, 1); // remove 1 element at index 2

13. slice() - Extract part of the array

arr.slice(1, 4); // [2, 3, 4]

String Methods in JavaScript

```javascript
let str = " Hello World ";
```

1. length - Get string length
```javascript
str.length; // 13
```

2. toUpperCase() - Convert to uppercase
```javascript
str.toUpperCase(); // " HELLO WORLD "
```

3. toLowerCase() - Convert to lowercase
```javascript
str.toLowerCase(); // " hello world "
```

4. trim() - Remove whitespace from both ends
```javascript
str.trim(); // "Hello World"
```

5. trimStart() / trimEnd() - Trim from one side
```javascript
str.trimStart(); // "Hello World "
str.trimEnd();   // " Hello World"
```

6. charAt(index) - Get character at a position
```javascript
str.charAt(1); // "H"
```

7. indexOf(substring) - First occurrence index
```javascript
str.indexOf("World"); // 7
```

8. lastIndexOf(substring) - Last occurrence index
```javascript
"ababc".lastIndexOf("ab"); // 2
```

9. includes(substring) - Check if string contains text
```javascript
str.includes("World"); // true
```

10. startsWith() / endsWith() - Check start or end

```
str.trim().startsWith("Hello"); // true
str.trim().endsWith("World");   // true
```

11. slice(start, end) - Extract part of a string

```
str.slice(1, 6); // "Hello"
```

12. substring(start, end) - Similar to slice()

```
str.substring(1, 6); // "Hello"
```

13. replace(old, new) - Replace part of the string

```
str.replace("World", "Universe"); // " Hello Universe "
```

14. split(separator) - Split string into array

```
str.trim().split(" "); // ["Hello", "World"]
```

15. repeat(n) - Repeat the string n times

```
"Hi".repeat(3); // "HiHiHi"
```

16. concat() - Join strings

```
"Hello".concat(" ", "World"); // "Hello World"
```