Here are **conceptual examples** of JavaScript array and string methods to showcase their functionality and how they can be applied:

Array Methods

1. push() and pop()

- Add or remove elements from the end of an array.

```
let fruits = ["apple", "banana"];
fruits.push("mango"); // Add "mango"
console.log(fruits); // Output: ["apple", "banana", "mango"]

fruits.pop(); // Remove the last element
console.log(fruits); // Output: ["apple", "banana"]
```

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2. unshift() and shift()

- Add or remove elements from the beginning of an array.

```
let fruits = ["banana", "mango"];
fruits.unshift("apple"); // Add "apple" at the beginning
console.log(fruits); // Output: ["apple", "banana", "mango"]

fruits.shift(); // Remove the first element
console.log(fruits); // Output: ["banana", "mango"]
```

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3. slice()

- Extract a portion of an array without modifying the original array.

```
let numbers = [1, 2, 3, 4, 5];
let sliced = numbers.slice(1, 4); // Extract elements from index 1 to 3
console.log(sliced); // Output: [2, 3, 4]
console.log(numbers); // Output: [1, 2, 3, 4, 5]
```

4. splice()

- Add, remove, or replace elements in an array.

```
let colors = ["red", "blue", "green"];
colors.splice(1, 1, "yellow"); // Replace "blue" with "yellow"
console.log(colors); // Output: ["red", "yellow", "green"]
```

5. concat()

- Combine two or more arrays.

```
let arr1 = [1, 2];
let arr2 = [3, 4];
let combined = arr1.concat(arr2);
console.log(combined); // Output: [1, 2, 3, 4]
```

6. map()

- Create a new array by transforming each element.

```
let numbers = [1, 2, 3];
let squared = numbers.map(num => num ** 2);
console.log(squared); // Output: [1, 4, 9]
```

7. filter()

- Create a new array with elements that pass a test.

```
let numbers = [1, 2, 3, 4];
let even = numbers.filter(num => num % 2 === 0);
console.log(even); // Output: [2, 4]
```

8. reduce()

- Reduce the array to a single value.

```
let numbers = [1, 2, 3, 4];
let sum = numbers.reduce((acc, curr) => acc + curr, 0);
console.log(sum); // Output: 10
```

9. find()

- Find the first element that satisfies a condition.

```
let numbers = [1, 2, 3, 4];
let firstEven = numbers.find(num => num % 2 === 0);
console.log(firstEven); // Output: 2
```

10. sort()

- Sort the elements of an array.

```
let numbers = [4, 2, 1, 3];
numbers.sort((a, b) => a - b); // Sort in ascending order
console.log(numbers); // Output: [1, 2, 3, 4]
```

11. every() and some()

- Test all or some elements against a condition.

```
let numbers = [2, 4, 6];
console.log(numbers.every(num => num % 2 === 0)); // Output: true (all even)
console.log(numbers.some(num => num > 5)); // Output: true (some > 5)
```

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12. join()

- Join array elements into a string.

```
let words = ["Hello", "World"];
console.log(words.join(" ")); // Output: "Hello World"
```

String Methods

1. charAt()

- Get the character at a specific index.

```
let str = "JavaScript";
console.log(str.charAt(4)); // Output: "S"
```

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2. indexOf()

- Find the index of the first occurrence of a substring.

```
let str = "Hello, World!";
console.log(str.indexOf("World")); // Output: 7
```

---

3. slice()

- Extract a portion of a string.

```
let str = "Hello, World!";
let sliced = str.slice(7, 12);
console.log(sliced); // Output: "World"
```

4. replace()

- Replace a substring with another.

```
let str = "I love Python!";
let updated = str.replace("Python", "JavaScript");
console.log(updated); // Output: "I love JavaScript!"
```

5. toUpperCase() and toLowerCase()

- Convert the string to uppercase or lowercase.

```
let str = "Hello!";
console.log(str.toUpperCase()); // Output: "HELLO!"
console.log(str.toLowerCase()); // Output: "hello!"
```

6. split()

- Split a string into an array.

```
let str = "red,green,blue";
let colors = str.split(",");
console.log(colors); // Output: ["red", "green", "blue"]
```

7. trim()

- Remove whitespace from both ends of a string.

```
let str = "   Hello!   ";
console.log(str.trim()); // Output: "Hello!"
```

---

8. includes()

- Check if a string contains a substring.

```
let str = "JavaScript is fun!";
console.log(str.includes("fun")); // Output: true
```

---

9. repeat()

- Repeat a string multiple times.

```
let str = "Hi! ";
console.log(str.repeat(3)); // Output: "Hi! Hi! Hi! "
```

---

10. startsWith() and endsWith()

- Check if a string starts or ends with a specific substring.

```
let str = "Hello, World!";
console.log(str.startsWith("Hello")); // Output: true
console.log(str.endsWith("World!")); // Output: true
```

Would you like more advanced examples or exercises to practice these methods?