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"]

**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"]

**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)

**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"

**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?