Here are conceptual examples that demonstrate different aspects of working with strings in JavaScript:

**1. Declaring Strings**

**Single and Double Quotes**

let singleQuoteString = 'Hello, World!';

let doubleQuoteString = "Hello, World!";

console.log(singleQuoteString === doubleQuoteString); // Output: true

**Template Literals**

* Use backticks (`) for multi-line strings or embedding expressions.

let name = "Alice";

let greeting = `Hello, ${name}! Welcome to JavaScript.`;

console.log(greeting); // Output: "Hello, Alice! Welcome to JavaScript."

**2. String Properties**

**Length of a String**

let message = "Hello, JavaScript!";

console.log(message.length); // Output: 18

**3. String Methods**

**Accessing Characters**

let word = "JavaScript";

console.log(word[0]); // Output: "J"

console.log(word.charAt(4)); // Output: "S"

**Changing Case**

let text = "Hello, World!";

console.log(text.toUpperCase()); // Output: "HELLO, WORLD!"

console.log(text.toLowerCase()); // Output: "hello, world!"

**Trimming Whitespaces**

let padded = " Hello, World! ";

console.log(padded.trim()); // Output: "Hello, World!"

**Searching Strings**

let sentence = "JavaScript is amazing!";

console.log(sentence.indexOf("is")); // Output: 11

console.log(sentence.includes("amazing")); // Output: true

**Extracting Substrings**

let phrase = "Learning JavaScript";

console.log(phrase.slice(0, 8)); // Output: "Learning"

console.log(phrase.substring(9)); // Output: "JavaScript"

console.log(phrase.substr(9, 4)); // Output: "Java"

**Replacing Content**

let msg = "I like Python!";

let updatedMsg = msg.replace("Python", "JavaScript");

console.log(updatedMsg); // Output: "I like JavaScript!"

**Splitting Strings**

let csv = "red,green,blue";

let colors = csv.split(",");

console.log(colors); // Output: ["red", "green", "blue"]

**4. Concatenation**

**Using + Operator**

let firstName = "Alice";

let lastName = "Doe";

console.log(firstName + " " + lastName); // Output: "Alice Doe"

**Using Template Literals**

let age = 25;

console.log(`I am ${age} years old.`); // Output: "I am 25 years old."

**5. Iterating Over Strings**

let str = "Hello";

for (let char of str) {

console.log(char); // Output: H, e, l, l, o

}

**6. String Comparisons**

let str1 = "apple";

let str2 = "banana";

console.log(str1 < str2); // Output: true (based on lexicographical order)

**7. Escape Characters**

let escapedString = 'She said, "It\'s a sunny day!"';

console.log(escapedString); // Output: She said, "It's a sunny day!"

**8. Converting Other Data Types to Strings**

**Using String()**

let num = 42;

console.log(String(num)); // Output: "42"

**Using .toString()**

let booleanValue = true;

console.log(booleanValue.toString()); // Output: "true"

**9. Template Literal Use Cases**

**Multi-line Strings**

let multiline = `This is line 1

This is line 2

This is line 3`;

console.log(multiline);

/\* Output:

This is line 1

This is line 2

This is line 3

\*/

**Embedding Expressions**

let a = 5;

let b = 10;

console.log(`The sum of ${a} and ${b} is ${a + b}.`); // Output: "The sum of 5 and 10 is 15."

**10. Advanced Examples**

**Reversing a String**

let original = "JavaScript";

let reversed = original.split("").reverse().join("");

console.log(reversed); // Output: "tpircSavaJ"

**Counting Vowels in a String**

let str = "JavaScript is fun!";

let vowels = str.match(/[aeiou]/gi);

console.log(vowels.length); // Output: 5

**Removing All Non-Alphanumeric Characters**

let messyString = "Hello, World! @2025";

let cleaned = messyString.replace(/[^a-z0-9]/gi, "");

console.log(cleaned); // Output: "HelloWorld2025"

Would you like deeper explanations, or code challenges for any of these?