JavaScript String Methods

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String search methods are covered in the next chapter.

JavaScript String Length

The `length` property returns the length of a string:

Example

```
let text = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";
let length = text.length;
```

Try it Yourself »

Extracting String Parts

There are 3 methods for extracting a part of a string:

- `slice(start, end)`
- `substring(start, end)`
- `substr(start, length)`

JavaScript String slice()

`slice()` extracts a part of a string and returns the extracted part in a new string.

The method takes 2 parameters: start position, and end position (end not included).

Example

Slice out a portion of a string from position 7 to position 13:

```
let text = "Apple, Banana, Kiwi";
let part = text.slice(7, 13);
```

Try it Yourself »

Note

JavaScript counts positions from zero.

First position is 0.

Second position is 1.

Examples

If you omit the second parameter, the method will slice out the rest of the string:

```
let text = "Apple, Banana, Kiwi";
let part = text.slice(7);
```

Try it Yourself »

If a parameter is negative, the position is counted from the end of the string:

```
let text = "Apple, Banana, Kiwi";
let part = text.slice(-12);
```

Try it Yourself »

This example slices out a portion of a string from position -12 to position -6:

```
let text = "Apple, Banana, Kiwi";
let part = text.slice(-12, -6);
```

Try it Yourself »

JavaScript String substring()

`substring()` is similar to `slice()`.

The difference is that start and end values less than 0 are treated as 0 in `substring()`.

Example

```
let str = "Apple, Banana, Kiwi";
let part = str.substring(7, 13);
```

Try it Yourself »

If you omit the second parameter, `substring()` will slice out the rest of the string.

JavaScript String substr()

`substr()` is similar to `slice()`.

The difference is that the second parameter specifies the **length** of the extracted part.

Example

```
let str = "Apple, Banana, Kiwi";
let part = str.substr(7, 6);
```

Try it Yourself »

If you omit the second parameter, `substr()` will slice out the rest of the string.

Example

```
let str = "Apple, Banana, Kiwi";
let part = str.substr(7);
```

Try it Yourself »

If the first parameter is negative, the position counts from the end of the string.

Example

```
let str = "Apple, Banana, Kiwi";
let part = str.substr(-4);
```

Try it Yourself »

Replacing String Content

The `replace()` method replaces a specified value with another value in a string:

Example

```
let text = "Please visit Microsoft!";
let newText = text.replace("Microsoft", "W3Schools");
```

Try it Yourself »

Note

The `replace()` method does not change the string it is called on.

The `replace()` method returns a new string.

The `replace()` method replaces **only the first** match

If you want to replace all matches, use a regular expression with the /g flag set. See examples below.

By default, the `replace()` method replaces **only the first** match:

Example

```
let text = "Please visit Microsoft and Microsoft!";
let newText = text.replace("Microsoft", "W3Schools");
```

Try it Yourself »

By default, the `replace()` method is case sensitive. Writing MICROSOFT (with upper-case) will not work:

Example

```
let text = "Please visit Microsoft!";
let newText = text.replace("MICROSOFT", "W3Schools");
```

Try it Yourself »

To replace case insensitive, use a **regular expression** with an `/i` flag (insensitive):

Example

```
let text = "Please visit Microsoft!";
let newText = text.replace(/MICROSOFT/i, "W3Schools");
```

Try it Yourself »

Note

Regular expressions are written without quotes.

To replace all matches, use a **regular expression** with a `/g` flag (global match):

Example

```
let text = "Please visit Microsoft and Microsoft!";
let newText = text.replace(/Microsoft/g, "W3Schools");
```

Try it Yourself »

Note

You will learn a lot more about regular expressions in the chapter JavaScript Regular Expressions.

JavaScript String ReplaceAll()

In 2021, JavaScript introduced the string method `replaceAll()`:

Example

```
text = text.replaceAll("Cats","Dogs");
text = text.replaceAll("cats","dogs");
```

Try it Yourself »

The `replaceAll()` method allows you to specify a regular expression instead of a string to be replaced.

If the parameter is a regular expression, the global flag (g) must be set set, otherwise a TypeError is thrown.

Example

```
text = text.replaceAll(/Cats/g,"Dogs");
text = text.replaceAll(/cats/g,"dogs");
```

Try it Yourself »

Note

`replaceAll()` is an ES2021 feature.

`replaceAll()` does not work in Internet Explorer.

Converting to Upper and Lower Case

A string is converted to upper case with `toUpperCase()`:

A string is converted to lower case with `toLowerCase()`:

JavaScript String toUpperCase()

Example

```
let text1 = "Hello World!";
let text2 = text1.toUpperCase();
```

Try it Yourself »

JavaScript String toLowerCase()

Example

```
let text1 = "Hello World!";       // String
let text2 = text1.toLowerCase();  // text2 is text1 converted to lower
```

Try it Yourself »

JavaScript String concat()

`concat()` joins two or more strings:

Example

```
let text1 = "Hello";
let text2 = "World";
let text3 = text1.concat(" ", text2);
```

Try it Yourself »

The `concat()` method can be used instead of the plus operator. These two lines do the same:

Example

```
text = "Hello" + " " + "World!";
text = "Hello".concat(" ", "World!");
```

Note

All string methods return a new string. They don't modify the original string.

Formally said:

Strings are immutable: Strings cannot be changed, only replaced.

JavaScript String trim()

The `trim()` method removes whitespace from both sides of a string:

Example

```
let text1 = "      Hello World!      ";
let text2 = text1.trim();
```

Try it Yourself »

JavaScript String trimStart()

ECMAScript 2019 added the String method `trimStart()` to JavaScript.

The `trimStart()` method works like `trim()`, but removes whitespace only from the start of a string.

Example

```
let text1 = "     Hello World!     ";
let text2 = text1.trimStart();
```

Try it Yourself »

JavaScript String `trimStart()` is supported in all browsers since January 2020:

Chrome 66	Edge 79	Firefox 61	Safari 12	Opera 50

Apr 2018	Jan 2020	Jun 2018	Sep 2018	May 2018

JavaScript String trimEnd()

ECMAScript 2019 added the String method `trimEnd()` to JavaScript.

The `trimEnd()` method works like `trim()`, but removes whitespace only from the end of a string.

Example

```
let text1 = "     Hello World!     ";
let text2 = text1.trimEnd();
```

Try it Yourself »

JavaScript String `trimEnd()` is supported in all browsers since January 2020:

Chrome 66	Edge 79	Firefox 61	Safari 12	Opera 50
Apr 2018	Jan 2020	Jun 2018	Sep 2018	May 2018

JavaScript String Padding

ECMAScript 2017 added two String methods: `padStart()` and `padEnd()` to support padding at the beginning and at the end of a string.

JavaScript String padStart()

The `padStart()` method pads a string with another string:

Example

```
let text = "5";
let padded = text.padStart(4,"x");
```

Try it Yourself »

Example

```
let text = "5";
let padded = text.padStart(4,"0");
```

Try it Yourself »

Note

The `padStart()` method is a string method.

To pad a number, convert the number to a string first.

See the example below.

Example

```
let numb = 5;
let text = numb.toString();
let padded = text.padStart(4,"0");
```

Try it Yourself »

Browser Support

`padStart()` is an ECMAScript 2017 feature.

It is supported in all modern browsers:

Chrome	Edge	Firefox	Safari	Opera
Yes	Yes	Yes	Yes	Yes

`padStart()` is not supported in Internet Explorer.

JavaScript String padEnd()

The `padEnd()` method pads a string with another string:

Example

```
let text = "5";
let padded = text.padEnd(4,"x");
```

Try it Yourself »

Example

```
let text = "5";
let padded = text.padEnd(4,"0");
```

Try it Yourself »

Note

The `padEnd()` method is a string method.

To pad a number, convert the number to a string first.

See the example below.

Example

```
let numb = 5;
let text = numb.toString();
let padded = text.padEnd(4,"0");
```

Try it Yourself »

Browser Support

`padEnd()` is an ECMAScript 2017 feature.

It is supported in all modern browsers:

Chrome	Edge	Firefox	Safari	Opera
Yes	Yes	Yes	Yes	Yes

`padEnd()` is not supported in Internet Explorer.

Extracting String Characters

There are 3 methods for extracting string characters:

- `charAt(position)`
- `charCodeAt(position)`
- Property access [ ]

JavaScript String charAt()

The `charAt()` method returns the character at a specified index (position) in a string:

Example

```
let text = "HELLO WORLD";
let char = text.charAt(0);
```

Try it Yourself »

JavaScript String charCodeAt()

The `charCodeAt()` method returns the unicode of the character at a specified index in a string:

The method returns a UTF-16 code (an integer between 0 and 65535).

Example

```
let text = "HELLO WORLD";
let char = text.charCodeAt(0);
```

Try it Yourself »

Property Access

ECMAScript 5 (2009) allows property access [ ] on strings:

Example

```
let text = "HELLO WORLD";
let char = text[0];
```

Try it Yourself »

Note

Property access might be a little **unpredictable:**

- It makes strings look like arrays (but they are not)
- If no character is found, [ ] returns undefined, while charAt() returns an empty string.
- It is read only. str[0] = "A" gives no error (but does not work!)

Example

```
let text = "HELLO WORLD";
text[0] = "A";    // Gives no error, but does not work
```

Try it Yourself »

Converting a String to an Array

If you want to work with a string as an array, you can convert it to an array.

JavaScript String split()

A string can be converted to an array with the `split()` method:

Example

```
text.split(",")    // Split on commas
text.split(" ")    // Split on spaces
text.split("|")    // Split on pipe
```

Try it Yourself »

If the separator is omitted, the returned array will contain the whole string in index [0].

If the separator is "", the returned array will be an array of single characters:

Example

```
text.split("")
```

Try it Yourself »

Complete String Reference

For a complete String reference, go to our:

Complete JavaScript String Reference.

The reference contains descriptions and examples of all string properties and methods.

Test Yourself With Exercises

Exercise:

Convert the text into an UPPERCASE text:

```
let txt = "Hello World!";
txt = txt.              ;
```

Submit Answer »

Start the Exercise

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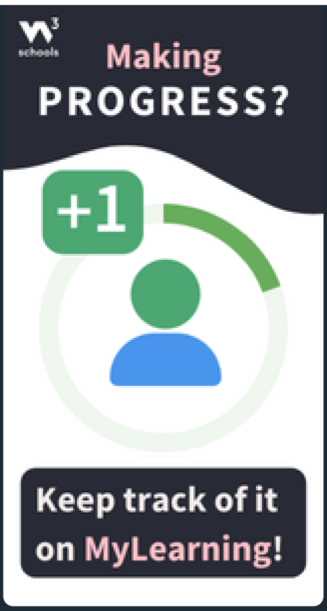

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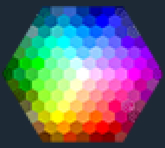

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