21. JavaScript String Object

The String object is used for storing and manipulating text.

21.1. JavaScript Strings

A string simply stores a series of characters like "John Doe".

A string can be any text inside quotes. You can use simple or double quotes:

Example

```
var carname="Volvo XC60";
var carname='Volvo XC60';
```

You can access each character in a string with its position (index):

Example

```
var character=carname[7];
```

String indexes are zero-based, which means the first character is [0], the second is [1], and so on.

You can use quotes inside a string, as long as they don't match the quotes surrounding the string:

Example

```
var answer="It's alright";
var answer="He is called 'Johnny'";
var answer='He is called "Johnny"';
```

Or you can put quotes inside a string by using the \ escape character:

Example

```
var answer='It\'s alright';
var answer="He is called \"Johnny\"";
```

a) String Length

The length of a string (a string object) is found in the built in property **length**:

Example

```
var txt="Hello World!";
document.write(txt.length);

var txt="ABCDEFGHIJKLMNOPQRSTUVWXYZ";
document.write(txt.length);
```

b) Finding a String in a String

The **indexOf()** method returns the position (as a number) of the first found occurrence of a specified text inside a string:

Example

```
var str="Hello world, welcome to the universe.";
var n=str.indexOf("welcome");
```

The method returns -1 if the specified text is not found.

The lastIndexOf() method starts searching at the end of the string instead of at the beginning.

c) Matching Content

The **match()** method can be used to search for a matching content in a string:

Example

```
var str="Hello world!";
document.write(str.match("world") + "<br>");
document.write(str.match("World") + "<br>");
document.write(str.match("world!"));
```

d) Replacing Content

The **replace()** method replaces a specified value with another value in a string.

Example

```
str="Please visit Microsoft!"
var n=str.replace("Microsoft","Ubuntu");
```

e) Upper Case and Lower Case

A string is converted to upper/lower case with the methods **toUpperCase()** / **toLowerCase()**:

Example

```
var txt="Hello World!";        // String
var txt1=txt.toUpperCase();   // txt1 is txt
converted to upper
var txt2=txt.toLowerCase();   // txt2 is txt
converted to lower
```

f) Convert a String to an Array

A string is converted to an array with the built in method string.**split()**:

Example

```
txt="a,b,c,d,e"    // String
txt.split(",");   // Split on commas
txt.split(" ");   // Split on spaces
txt.split("|");   // Split on pipe
```

g) Special Characters

The backslash (\) can be used to insert apostrophes, new lines, quotes, and other special characters into a string.

Look at the following JavaScript code:

```
var txt="We are the so-called "Vikings" from the north.";
document.write(txt);
```

In JavaScript, a string is started and stopped with either single or double quotes. This means that the string above will be chopped to: We are the so-called

To solve this problem, you must place a backslash (\) before each double quote in "Viking". This turns each double quote into a string literal:

```
var txt="We are the so-called \"Vikings\" from the north.";
document.write(txt);
```

JavaScript will now output the proper text string: We are the so-called "Vikings" from the north.

The table below lists other special characters that can be added to a text string with the backslash sign:

Code	Outputs
\'	single quote
\"	double quote
\\	backslash
\n	new line
\r	carriage return
\t	tab
\b	backspace
\f	form feed

21.2. String Properties and Methods

Properties:

- length
- prototype
- constructor

Methods:

- charAt()
- charCodeAt()
- concat()
- fromCharCode()
- indexOf()
- lastIndexOf()
- match()
- replace()
- search()
- slice()
- split()
- substr()
- substring()

- toLowerCase()
- toUpperCase()
- valueOf()

21.3. Complete String Object Reference

For a complete reference of all the properties and methods that can be used with the String object, go to our Complete String Object Reference.

The reference contains both descriptions and examples, for each property and method.

The String object is used to manipulate a stored piece of text.
String objects are created with new String().

Syntax

```
var txt = new String("string");
or more simply:
var txt = "string";
```

String Object Properties

Property	Description
constructor	Returns the function that created the String object's prototype
length	Returns the length of a string
prototype	Allows you to add properties and methods to an object

String Object Methods

Method	Description
charAt()	Returns the character at the specified index
charCodeAt()	Returns the Unicode of the character at the specified index
concat()	Joins two or more strings, and returns a copy of the joined strings
fromCharCode()	Converts Unicode values to characters
indexOf()	Returns the position of the first found occurrence of a specified value in a string

lastIndexOf()	Returns the position of the last found occurrence of a specified value in a string
match()	Searches for a match between a regular expression and a string, and returns the matches
replace()	Searches for a match between a substring (or regular expression) and a string, and replaces the matched substring with a new substring
search()	Searches for a match between a regular expression and a string, and returns the position of the match
slice()	Extracts a part of a string and returns a new string
split()	Splits a string into an array of substrings
substr()	Extracts the characters from a string, beginning at a specified start position, and through the specified number of character
substring()	Extracts the characters from a string, between two specified indices
toLowerCase()	Converts a string to lowercase letters
toUpperCase()	Converts a string to uppercase letters
trim()	Removes whitespace from both ends of a string
valueOf()	Returns the primitive value of a String object

String HTML Wrapper Methods

The HTML wrapper methods return the string wrapped inside the appropriate HTML tag.

Method	Description
anchor()	Creates an anchor
big()	Displays a string using a big font
blink()	Displays a blinking string
bold()	Displays a string in bold
fixed()	Displays a string using a fixed-pitch font
fontcolor()	Displays a string using a specified color
fontsize()	Displays a string using a specified size
italics()	Displays a string in italic

link()	Displays a string as a hyperlink
small()	Displays a string using a small font
strike()	Displays a string with a strikethrough
sub()	Displays a string as subscript text
sup()	Displays a string as superscript text