

### Create an Array

#### By literal way

```
[element0, element1, ..., elementN]
new Array(element0, element1[, ...[, elementN]])
new Array(arrayLength)
```

#### By using the result of a math

an array is returned by

- RegExp.exec
- String.match
- String.replace

#### By using Methods

```
Array.from(arrayLike[, mapFn[, thisArg]])
```

an array-like object (object with a `length` property and indexed elements, such as `arguments`) or iterable object (object where you can get its elements, such as `Map` and `Set`).

```
Array.of(element0[, element1[, ...[, elementN]])
```

Every argument is considered as an element in the array.

`Array.from` and `Array.of` work like `Array` constructor to create a new array.

### Array instance mutator methods

```
copyWithin(target, start[, end = this.length])
```

**target** Target start index

**start** Source start index, if it is negative, treated as `length + start`

```
fill(value[, start = 0[, end = this.length]])
```

**value** Value to fill an array

```
sort([compareFunction])
```

### Array instance mutator methods (cont)

```
function compare(a, b) {
  if (a less than b, or a should be in front of
  b) {return -1;}
  if (a is greater than b or be behind of b)
  {return 1;}
  return 0; // a must be equal to b
}
```

```
splice(start, deleteCount[, item1[, item2[,
...]])
```

**start** Index at which to start changing the array. If greater than the length, will set to length; if negative, will begin from the end.

**deleteCount** If 0, will not delete any element. If Omitted, will be equal to `length - start`

**item1, item2** The elements to add to the array

returns an array containing the deleted elements

---

These methods modify the array

---

### Array instance Accessor methods

```
concat var new_array = old_array.concat(value1[, value2[, ... valueN]])
```

```
slice var shallow_copy = arr.slice([begin[, end]])
```

**begin** Zero-based. If negative, indicate an offset from the end

```
join str = arr.join([separator = ','])
```

```
indexOf index = arr.indexOf(searchElement[, fromIndex = 0])
```

```
lastIndexOf index = arr.lastIndexOf(searchElement[, fromIndex = arr.length - 1])
```

### Array instance Iteration methods

```
forEach
```

```
map return new array
```

```
filter return new array
```

```
every return true if every element satisfies testing function
```

```
some return true if at least one element satisfies testing function
```

```
find return the found value or undefined
```

```
findIndex return the found Index or -1
callback[, thisArg]
```



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### Array instance Iteration methods (cont)

callback	currentValue
	index
	array
reduce	accumulate
reduce-Right	accumulate from end
	<i>callback[, initialValue]</i>
callback	previousValue
	currentValue
	currentIndex
	array
entries	key/value pairs
keys	keys
values	values
	return an new <code>Array</code> Iterator object

Some of them can also use for array-like objects by `Array.prototype.fun.call(array-like object, args)`

### All the Array instance methods

copyWithin	fill	pop	push
reverse	shift	sort	splice
unshift	concat	join	slice
toString	toLocaleString	indexOf	lastIndexOf
forEach	entries	every	some
filter	find	findIndex	keys
map	reduce	reduce-Right	values

### Create a string

#### String literals

'string text'

"string text"

String(*text*)

``string text ${variable}`` template strings

#### Create by Char codes

String.fromCharCode(*num1[, ...[, numN]]*)

### String instance methods unrelated to HTML

concat `str.concat(string2, string3[, ..., stringN])`

repeat `str.repeat(count)`  
count will convert to integer  
'abc'.repeat(2) -> 'abcabc'

includes `str.funcName(searchString[, position])`

endsWith

startsWith

**searchString** A string to be searched for within this string

**position** search from, optional

case-sensitivity, return `true` or `false`

### String instance methods related with RegExp

search `str.search(regex)`

return the index of first match or -1

match `str.match(regex)`

same as `regexObj.exec(str)`

return an array containing the entire match result or `null`

result: input, index, 0, 1-n

replace `str.replace(regex|substr, newSubStr|function)`

**regex** pattern

**substr**

**newSubStr** replacement

**function**

**newSubStr** can include some special replacement patterns

`$$` inserts a '\$'

`$&` inserts the matched substring

`$`` inserts the portion of the string that precedes the matched string

`$'` inserts the portion of the string that follows the matched substring



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### String instance methods related with RegExp (cont)

`$n` or `$nn` `n` and `nn` are decimal digits, inserts the `n`th parenthesized submatch string

**function's** result will be used as the replacement, and the arguments is:

match like `$&`

`p1,`  
`p2, ...` like `$n`

offset The offset of the matched substring within the whole string

string the whole string

### String instance methods related HTML

anchor `str.anchor(name)`  
create and display an anchor (name property) in a document  
e.g. `<a name="name">str</a>`

link `str.link(url)`  
create an HTML snippet for a hypertext link  
e.g. `<a href="url">str</a>`

### All the String instance methods

<code>charAt</code>	<code>charCodeAt</code>	<code>concat</code>	<code>includes</code>
<code>endsWith</code>	<code>indexOf</code>	<code>lastIndexOf</code>	<code>localeCompare</code>
<code>match</code>	<code>repeat</code>	<code>replace</code>	<code>search</code>
<code>slice</code>	<code>split</code>	<code>startsWith</code>	<code>substr</code>
<code>substring</code>	<code>toLocaleLowerCase</code>	<code>toLocaleUpperCase</code>	<code>toLowerCase</code>

### All the String instance methods (cont)

`toString` `toUpperCase` `trim` `valueOf`  
`anchor` `link`

### Escape notation

<code>\0</code>	the NULL character
<code>'</code>	single quote
<code>"</code>	double quote
<code>\\</code>	backslash
<code>\n</code>	new line
<code>\r</code>	carriage return
<code>\v</code>	vertical tab
<code>\t</code>	tab
<code>\b</code>	backspace
<code>\f</code>	form feed
<code>\uXXXX</code>	unicode codepoint
<code>\xxx</code>	the Latin-1 character

### Create a RegExp

#### literal notation

`/pattern/flags`

#### constructor

`new RegExp(pattern[, flags])`

**pattern** The text

#### flags

**g** global match

**i** ignore case

**m** multiline

use `test` to test for a match in its string parameter.

### Static property you may use

#### RegExp.lastIndex

The index at which to start the next match

### RegExp Quick Reference

#### Character classes

<code>.</code>	any character except newline
<code>\w \d \s</code>	word, digit, whitespace
<code>\W \D \S</code>	not word, digit, whitespace
<code>[abc]</code>	any of a, b, or c
<code>[^abc]</code>	not a, b, or c
<code>[a-g]</code>	character between a & g

#### Anchors

<code>^abc\$</code>	start / end of the string
<code>\b \B</code>	word, not-word boundary

#### Escaped characters

<code>\ * \</code>	escaped special characters
<code>\t \n \r</code>	tab, linefeed, carriage return

#### Groups & Lookaround

<code>(abc)</code>	capture group
<code>\1</code>	backreference to group #1
<code>(?:abc)</code>	non-capturing group
<code>(?=abc)</code>	positive lookahead
<code>(?!abc)</code>	negative lookahead

#### Quantifiers & Alternation

<code>a* a+ a?</code>	0 or more, 1 or more, 0 or 1
<code>a{5} a{2,}</code>	exactly five, two or more
<code>a{1, 3}</code>	between one & three
<code>a+?</code>	match as few as possible
<code>a{2,}?</code>	
<code>ab cd</code>	match ab or cd

Reference from [regexp.com](https://www.regexp.com)

