



JS CheatSheet



Loops ↻

For Loop

```
for (var i = 0; i < 10; i++) {
    document.write(i + ": " + i*3 + "<br />");
}
var sum = 0;
for (var i = 0; i < a.length; i++) {
    sum += a[i];
} // parsing an array
html = "";
for (var i of custOrder) {
    html += "<li>" + i + "</li>";
}
```

While Loop

```
var i = 1; // initialize
while (i < 100) { // enters the cycle
    i *= 2; // increment to avoid
    document.write(i + ", "); // output
}
```

Do While Loop

```
var i = 1; // initialize
do { // enters cycle at
    i *= 2; // increment to avoid
    document.write(i + ", "); // output
} while (i < 100) // repeats cycle if
```

Break

```
for (var i = 0; i < 10; i++) {
    if (i == 5) { break; } // stops and exits
    document.write(i + ", "); // last output
}
```

Continue

```
for (var i = 0; i < 10; i++) {
    if (i == 5) { continue; } // skips the rest
    document.write(i + ", "); // skips 5
}
```

Variables x

```
var a; // variable
var b = "init"; // string
var c = "Hi" + " " + "Joe"; // = "Hi Joe"
var d = 1 + 2 + "3"; // = "33"
var e = [2,3,5,8]; // array
var f = false; // boolean
var g = /()/; // RegEx
var h = function(){}; // function object
const PI = 3.14; // constant
var a = 1, b = 2, c = a + b; // one line
let z = 'zzz'; // block scope local
```

Strict mode

```
"use strict"; // Use strict mode to write secure
x = 1; // Throws an error because variable
```

Basics ➤

On page script

```
<script type="text/javascript"> ...
</script>
```

Include external JS file

```
<script src="filename.js"></script>
```

Delay - 1 second timeout

```
setTimeout(function () {
    // ...
}, 1000);
```

Functions

```
function addNumbers(a, b) {
    return a + b;
}
x = addNumbers(1, 2);
```

Edit DOM element

```
document.getElementById("elementID").innerHTML = '...'
```

Output

```
console.log(a); // write to the browser
document.write(a); // write to the HTML
alert(a); // output in an alert
confirm("Really?"); // yes/no dialog, returns
prompt("Your age?", "0"); // input dialog. Second
```

Comments

```
/* Multi line
   comment */
// One line
```

If - Else ↕

```
if ((age >= 14) && (age < 19)) { // logical
    status = "Eligible."; // execute
} else { // else block
    status = "Not eligible."; // execute
}
```

Switch Statement

```
switch (new Date().getDay()) { // input is current day
    case 6: // if (day == 6)
        text = "Saturday";
        break;
    case 0: // if (day == 0)
        text = "Sunday";
        break;
    default: // else...
        text = "Whatever";
}
```

Data Types ∞

```
var age = 18; // number
var name = "Jane"; // string
```

Values

```
false, true // boolean
18, 3.14, 0b10011, 0xF6, NaN // number
"flower", 'John' // string
undefined, null, Infinity // special
```

Operators

```
a = b + c - d; // addition, subtraction
a = b * (c / d); // multiplication, division
x = 100 % 48; // modulo. 100 / 48 remainder =
a++; b--; // postfix increment and decrement
```

Bitwise operators

&	AND	5 & 1 (0101 & 0001)	1 (1)
	OR	5 1 (0101 0001)	5 (101)
~	NOT	~ 5 (~0101)	10 (1010)
^	XOR	5 ^ 1 (0101 ^ 0001)	4 (100)
<<	left shift	5 << 1 (0101 << 1)	10 (1010)
>>	right shift	5 >> 1 (0101 >> 1)	2 (10)
>>>	zero fill right shift	5 >>> 1 (0101 >>> 1)	2 (10)

Arithmetic

```
a * (b + c) // grouping
person.age // member
person[age] // member
!(a == b) // logical not
a != b // not equal
typeof a // type (number, object, function)
x << 2 x >> 3 // binary shifting
a = b // assignment
a == b // equals
a != b // unequal
a === b // strict equal
a !== b // strict unequal
a < b a > b // less and greater than
a <= b a >= b // less or equal, greater or equal
a += b // a = a + b (works with - * %)
a && b // logical and
a || b // logical or
```

Numbers and Math

```
var pi = 3.141;
pi.toFixed(0); // returns 3
pi.toFixed(2); // returns 3.14 - for working
pi.toPrecision(2); // returns 3.1
pi.valueOf(); // returns number
Number(true); // converts to number
Number(new Date()) // number of milliseconds since epoch
parseInt("3 months"); // returns the first number
parseFloat("3.5 days"); // returns 3.5
Number.MAX_VALUE // largest possible JS number
Number.MIN_VALUE // smallest possible JS number
Number.NEGATIVE_INFINITY // -Infinity
Number.POSITIVE_INFINITY // Infinity
```

Math.

```
var pi = Math.PI; // 3.141592653589793
Math.round(4.4); // = 4 - rounded
Math.round(4.5); // = 5
Math.pow(2, 8); // = 256 - 2 to the power of 8
Math.sqrt(49); // = 7 - square root
Math.abs(-3.14); // = 3.14 - absolute, positive
Math.ceil(3.14); // = 4 - rounded up
Math.floor(3.99); // = 3 - rounded down
Math.sin(0); // = 0 - sine
```

```
var name = {first:"Jane", last:"Doe"}; // object
var truth = false; // boolean
var sheets = ["HTML", "CSS", "JS"]; // array
var a; typeof a; // undefined
var a = null; // value
```

Objects

```
var student = { // object name
  firstName:"Jane", // list of properties
  lastName:"Doe",
  age:18,
  height:170,
  fullName: function() { // object function
    return this.firstName + " " + this.lastName;
  }
};
student.age = 19; // setting value
student[age]++; // incrementing
name = student.fullName(); // call object function
```

Strings

```
var abc = "abcdefghijklmnopqrstuvwxyz";
var esc = 'I don\'t \n know'; // \n new line
var len = abc.length; // string length
abc.indexOf("lmno"); // find substring
abc.lastIndexOf("lmno"); // last occurrence
abc.slice(3, 6); // cuts out "def"
abc.replace("abc", "123"); // find and replace
abc.toUpperCase(); // convert to uppercase
abc.toLowerCase(); // convert to lowercase
abc.concat(" ", str2); // abc + " " + str2
abc.charAt(2); // character at index 2
abc[2]; // unsafe, abc[2]
abc.charCodeAt(2); // character code
abc.split(","); // splitting a string
abc.split(""); // splitting on character
128.toString(16); // number to hexadecimal
```

Events

```
<button onclick="myFunction();">
  Click here
</button>
```

Mouse

onclick, oncontextmenu, ondblclick, onmousedown, onmouseenter, onmouseleave, onmousemove, onmouseover, onmouseout, onmouseup

Keyboard

onkeydown, onkeypress, onkeyup

Form

onabort, onbeforeunload, onerror, onhashchange, onload, onpageshow, onpagehide, onresize, onscroll, onunload

Form

onblur, onchange, onfocus, onfocusin, onfocusout, oninput, oninvalid, onreset, onsearch, onselect, onsubmit

Drag

ondrag, ondragend, ondragenter, ondragleave, ondragover, ondragstart, ondrop

Clipboard

oncopy, oncut, onpaste

```
Math.cos(Math.PI); // OTHERS: tan,atan,asin,ac
Math.min(0, 3, -2, 2); // = -2 - the lowest value
Math.max(0, 3, -2, 2); // = 3 - the highest value
Math.log(1); // = 0 natural logarithm
Math.exp(1); // = 2.7182pow(E,x)
Math.random(); // random number between 0
Math.floor(Math.random() * 5) + 1; // random integ
```

Constants like Math.PI:

E, PI, SQRT2, SQRT1_2, LN2, LN10, LOG2E, Log10E

Dates 31

Mon Feb 17 2020 13:42:03 GMT+0200 (Eastern European Standard Time)

```
var d = new Date();
```

1581939723047 milliseconds passed since 1970

```
Number(d)
```

```
Date("2017-06-23"); // date declara
Date("2017"); // is set to Ja
Date("2017-06-23T12:00:00-09:45"); // date - time
Date("June 23 2017"); // long date fo
Date("Jun 23 2017 07:45:00 GMT+0100 (Tokyo Time)");
```

Get Times

```
var d = new Date();
```

```
a = d.getDay(); // getting the weekday
```

```
getDate(); // day as a number (1-31)
getDay(); // weekday as a number (0-6)
getFullYear(); // four digit year (yyyy)
getHours(); // hour (0-23)
getMilliseconds(); // milliseconds (0-999)
getMinutes(); // minutes (0-59)
getMonth(); // month (0-11)
getSeconds(); // seconds (0-59)
getTime(); // milliseconds since 1970
```

Setting part of a date

```
var d = new Date();
```

```
d.setDate(d.getDate() + 7); // adds a week to a dat
```

```
setDate(); // day as a number (1-31)
setFullYear(); // year (optionally month and d
setHours(); // hour (0-23)
setMilliseconds(); // milliseconds (0-999)
setMinutes(); // minutes (0-59)
setMonth(); // month (0-11)
setSeconds(); // seconds (0-59)
setTime(); // milliseconds since 1970)
```

Global Functions ()

```
eval(); // executes a string as
String(23); // return string from n
(23).toString(); // return string from n
Number("23"); // return number from s
decodeURI(enc); // decode URI. Result:
encodeURI(uri); // encode URI. Result:
decodeURIComponent(enc); // decode a URI compone
encodeURIComponent(uri); // encode a URI compone
isFinite(); // is variable a finite
isNaN(); // is variable an illeg
parseFloat(); // returns floating poi
parseInt(); // parses a string and
```

Media

onabort, oncanplay, oncanplaythrough, ondurationchange, onended, onerror, onloadeddata, onloadedmetadata, onloadstart, onpause, onplay, onplaying, onprogress, onratechange, onseeked, onseeking, onstalled, onsuspend, ontimeupdate, onvolumechange, onwaiting

Animation

animationend, animationiteration, animationstart

Miscellaneous

transitionend, onmessage, onmousewheel, ononline, onoffline, onpopstate, onshow, onstorage, ontoggle, onwheel, ontouchcancel, ontouchend, ontouchmove, ontouchstart

Arrays ≡

```
var dogs = ["Bulldog", "Beagle", "Labrador"];
var dogs = new Array("Bulldog", "Beagle", "Labrad
```

```
alert(dogs[1]); // access value at ind
dogs[0] = "Bull Terrier"; // change the first it
```

```
for (var i = 0; i < dogs.length; i++) { // pai
    console.log(dogs[i]);
}
```

Methods

```
dogs.toString(); // convert
dogs.join(" * "); // join: '
dogs.pop(); // remove
dogs.push("Chihuahua"); // add new
dogs[dogs.length] = "Chihuahua"; // the same
dogs.shift(); // remove
dogs.unshift("Chihuahua"); // add new
delete dogs[0]; // change
dogs.splice(2, 0, "Pug", "Boxer"); // add element
var animals = dogs.concat(cats,birds); // join two
dogs.slice(1,4); // element
dogs.sort(); // sort string
dogs.reverse(); // sort string
x.sort(function(a, b){return a - b}); // numeric
x.sort(function(a, b){return b - a}); // numeric
highest = x[0]; // first element
x.sort(function(a, b){return 0.5 - Math.random()});
```

concat, copyWithin, every, fill, filter, find, findIndex, forEach, indexOf, isArray, join, lastIndexOf, map, pop, push, reduce, reduceRight, reverse, shift, slice, some, sort, splice, toString, unshift, valueOf

Regular Expressions \n

```
var a = str.search(/CheatSheet/i);
```

Modifiers

i perform case-insensitive matching
g perform a global match
m perform multiline matching

Patterns

**** Escape character
\d find a digit
\s find a whitespace character
\b find match at beginning or end of a word

Errors

```
try {                                // block of code to
  undefinedFunction();
}
catch(err) {                         // block to handle
  console.log(err.message);
}
```

Throw error

```
throw "My error message";           // throw a text
```

Input validation

```
var x = document.getElementById("mynum").value; //
try {
  if(x == "") throw "empty";           //
  if(isNaN(x)) throw "not a number";
  x = Number(x);
  if(x > 10) throw "too high";
}
catch(err) {                           //
  document.write("Input is " + err);    //
  console.error(err);                  //
}
finally {
  document.write("</br />Done");        //
}
```

Error name values

RangeError	<i>A number is "out of range"</i>
ReferenceError	<i>An illegal reference has occurred</i>
SyntaxError	<i>A syntax error has occurred</i>
TypeError	<i>A type error has occurred</i>
URIError	<i>An encodeURI() error has occurred</i>

Useful Links

JS cleaner	Obfuscator
Can I use?	Node.js
jQuery	RegEx tester

n+	<i>contains at least one n</i>
n*	<i>contains zero or more occurrences of n</i>
n?	<i>contains zero or one occurrences of n</i>
^	<i>Start of string</i>

JSON

```
var str = '{"names":[" +                // cr
'{"first":"Hakuna","lastN":"Matata" },' +
'{"first":"Jane","lastN":"Doe" },' +
'{"first":"Air","last":"Jordan" }]}';
obj = JSON.parse(str);                 // pa
document.write(obj.names[1].first);    // ac
```

Send

```
var myObj = { "name":"Jane", "age":18, "city":"Ch
var myJSON = JSON.stringify(myObj);
window.location = "demo.php?x=" + myJSON;
```

Storing and retrieving

```
myObj = { "name":"Jane", "age":18, "city":"Chicago
myJSON = JSON.stringify(myObj);
localStorage.setItem("testJSON", myJSON);
text = localStorage.getItem("testJSON");
obj = JSON.parse(text);
document.write(obj.name);
```

Promises

```
function sum (a, b) {
  return Promise(function (resolve, reject) {
    setTimeout(function () {
      if (typeof a !== "number" || typeof b !== '
        return reject(new TypeError("Inputs must
      }
      resolve(a + b);
    }, 1000);
  });
}
var myPromise = sum(10, 5);
myPromise.then(function (result) {
  document.write(" 10 + 5: ", result);
  return sum(null, "foo"); // Invalid
}).then(function () {      // Won't l
}).catch(function (err) {  // The ca
  console.error(err);       // => Plea
});
```

States

pending, fulfilled, rejected

Properties

Promise.length, Promise.prototype

Methods

Promise.all(iterable), Promise.race(iterable),
Promise.reject(reason), Promise.resolve(value)