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 avo
    document.write(i + ", ");   // output
}
```

Do While Loop

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

Break

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

Continue

```
for (var i = 0; i < 10; i++) {
    if (i == 5) { continue; }       // skips the re
    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 loca
```

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 browse
document.write(a);          // write to the HTML
alert(a);                   // output in an alert
confirm("Really?");         // yes/no dialog, retu
prompt("Your age?","0");    // input dialog. Secon
```

Comments

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

If - Else ⇅

```
if ((age >= 14) && (age < 19)) {        // logica
    status = "Eligible.";               // execut
} else {                                // else b
    status = "Not eligible.";           // execut
}
```

Switch Statement

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

Data Types ℜ

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

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, functi
x << 2  x >> 3      // minary 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 eq
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 worki
pi.toPrecision(2)       // returns 3.1
pi.valueOf();           // returns number
Number(true);           // converts to number
Number(new Date())      // number of milliseconds s
parseInt("3 months");   // returns the first number
parseFloat("3.5 days"); // returns 3.5
Number.MAX_VALUE        // largest possible JS numb
Number.MIN_VALUE        // smallest possible JS num
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 o
Math.sqrt(49);          // = 7 - square root
Math.abs(-3.14);        // = 3.14 - absolute, posit
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;                      // boolea
var sheets = ["HTML","CSS","JS"];       // array
var a; typeof a;                        // undefi
var a = null;                           // value
```

Objects

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

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 occurance
abc.slice(3, 6);                // cuts out "def"
abc.replace("abc","123");       // find and repla
abc.toUpperCase();              // convert to uppe
abc.toLowerCase();              // convert to low
abc.concat(" ", str2);          // abc + " " + str
abc.charAt(2);                  // character at i
abc[2];                         // unsafe, abc[2]
abc.charCodeAt(2);              // character code
abc.split(",");                 // splitting a str
abc.split("");                  // splitting on cl
128.toString(16);               // number to hex(
```

Events

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

Mouse

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

Keyboard

onkeydown, onkeypress, onkeyup

Frame

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

Form

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

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

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

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

1581939723047 miliseconds 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, ondurationchang 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 in
dogs[0] = "Bull Terier";  // change the first i

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

Methods

```
dogs.toString();                          // conver
dogs.join(" * ");                         // join: 
dogs.pop();                               // remove
dogs.push("Chihuahua");                   // add ne
dogs[dogs.length] = "Chihuahua";          // the sa
dogs.shift();                             // remove
dogs.unshift("Chihuahua");                // add ne
delete dogs[0];                           // change
dogs.splice(2, 0, "Pug", "Boxer");        // add el
var animals = dogs.concat(cats,birds);    // join t
dogs.slice(1,4);                          // elemen
dogs.sort();                              // sort s
dogs.reverse();                           // sort s
x.sort(function(a, b){return a - b});     // numeri
x.sort(function(a, b){return b - a});     // numeri
highest = x[0];                           // first 
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*

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

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	*A number is "out of range"*
ReferenceError	*An illegal reference has occurred*
SyntaxError	*A syntax error has occurred*
TypeError	*A type error has occurred*
URIError	*An encodeURI() error has occurred*

Useful Links

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

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":"Chicag
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);
myPromsise.then(function (result) {
  document.write(" 10 + 5: ", result);
  return sum(null, "foo");                     // Invali
}).then(function () {                          // Won't
}).catch(function (err) {                      // The ca
  console.error(err);                          // => Ple
});
```

States

pending, fulfilled, rejected

Properties

Promise.length, Promise.prototype

Methods

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