
Beginner's essential

JavaScript Cheat Sheet

The Language of the Web.

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JAVASCRIPT BASICS

Including JavaScript in an HTML Page

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

```
    //JS code goes here
```

```
</script>
```

Call an External JavaScript File

```
<script src="myscript.js"></script><code></code>
```

Including Comments

Single line comments - //

Multi-line comments - /* comment here */

VARIABLES IN JAVASCRIPT

var, const, let

var – The most common variable. Can be reassigned but only accessed within a function. Variables defined with var move to the top when code is executed.

const – Can not be reassigned and not accessible before they appear within the code.

let – Similar to const, however, let variable can be reassigned but not re-declared.

Data Types

Numbers – **var** age = 23

Variables – **var** x

Text (strings) – **var** a = "init"

Operations – **var** b = 1 + 2 + 3

True or false statements – `var c = true`

Constant numbers – `const PI = 3.14`

Objects – `var name = {firstName:"John", lastName:"Doe"}`

Objects

```
var person = {  
  firstName:"John",  
  lastName:"Doe",  
  age:20,  
  nationality:"German"  
};
```

THE NEXT LEVEL: ARRAYS

```
var fruit = ["Banana", "Apple", "Pear"];
```

Array Methods

`concat()` – Join several arrays into one

`indexOf()` – Returns the primitive value of the specified object

`join()` – Combine elements of an array into a single string and return the string

`lastIndexOf()` – Gives the last position at which a given element appears in an array

`pop()` – Removes the last element of an array

`push()` – Add a new element at the end

`reverse()` – Sort elements in descending order

`shift()` – Remove the first element of an array

`slice()` – Pulls a copy of a portion of an array into a new array

`sort()` – Sorts elements alphabetically

`splice()` – Adds elements in a specified way and position

`toString()` – Converts elements to strings

`unshift()` – Adds a new element to the beginning

`valueOf()` – Returns the first position at which a given element appears in an array

OPERATORS

Basic Operators

`+` – Addition

`-` – Subtraction

`*` – Multiplication

`/` – Division

`(...)` – Grouping operator, operations within brackets are executed earlier than those outside

`%` – Modulus (remainder)

`++` – Increment numbers

`--` – Decrement numbers

Comparison Operators

`==` – Equal to

`===` – Equal value and equal type

`!=` – Not equal

`!==` – Not equal value or not equal type

`>` – Greater than

`<` – Less than

`>=` – Greater than or equal to

`<=` – Less than or equal to

`?` – Ternary operator

Logical Operators

`&&` – Logical and

`||` – Logical or

`!` – Logical not

Bitwise Operators

`&` – AND statement

`|` – OR statement

`~` – NOT

`^` – XOR

`<<` – Left shift

`>>` – Right shift

`>>>` – Zero fill right shift

FUNCTIONS

```
function name(parameter1, parameter2, parameter3) {  
    // what the function does  
}
```

Outputting Data

`alert()` – Output data in an alert box in the browser window

`confirm()` – Opens up a yes/no dialog and returns true/false depending on user click

`console.log()` – Writes information to the browser console, good for debugging purposes

`document.write()` – Write directly to the HTML document

`prompt()` – Creates an dialogue for user input

Global Functions

`decodeURI()` – Decodes a Uniform Resource Identifier (URI) created by `encodeURIComponent` or similar

`decodeURIComponent()` – Decodes a URI component

`encodeURIComponent()` – Encodes a URI into UTF-8

`encodeURIComponent()` – Same but for URI components

`eval()` – Evaluates JavaScript code represented as a string

`isFinite()` – Determines whether a passed value is a finite number

`isNaN()` – Determines whether a value is NaN or not

`Number()` – Returns a number converted from its argument

`parseFloat()` – Parses an argument and returns a floating point number

`parseInt()` – Parses its argument and returns an integer

JAVASCRIPT LOOPS

```
for (before loop; condition for loop; execute after loop) {  
    // what to do during the loop  
}
```

for – The most common way to create a loop in JavaScript

while – Sets up conditions under which a loop executes

do while – Similar to the while loop, however, it executes at least once and performs a check at the end to see if the condition is met to execute again

break – Used to stop and exit the cycle at certain conditions

continue – Skip parts of the cycle if certain conditions are met

IF - ELSE STATEMENTS

```
if (condition) {  
    // what to do if condition is met  
} else {  
    // what to do if condition is not met  
}
```

STRINGS

```
var person = "John Doe";
```

Escape Characters

```
\' - Single quote  
\" - Double quote  
\\ - Backslash  
\\b - Backspace  
\\f - Form feed  
\\n - New line  
\\r - Carriage return  
\\t - Horizontal tabulator  
\\v - Vertical tabulator
```

String Methods

```
charAt() - Returns a character at a specified position inside a  
string  
charCodeAt() - Gives you the unicode of character at that position  
concat() - Concatenates (joins) two or more strings into one
```


fromCharCode() – Returns a string created from the specified sequence of UTF-16 code units

indexOf() – Provides the position of the first occurrence of a specified text within a string

lastIndexOf() – Same as **indexOf()** but with the last occurrence, searching backwards

match() – Retrieves the matches of a string against a search pattern

replace() – Find and replace specified text in a string

search() – Executes a search for a matching text and returns its position

slice() – Extracts a section of a string and returns it as a new string

split() – Splits a string object into an array of strings at a specified position

substr() – Similar to **slice()** but extracts a substring depended on a specified number of characters

substring() – Also similar to **slice()** but can't accept negative indices

toLowerCase() – Convert strings to lower case

toUpperCase() – Convert strings to upper case

valueOf() – Returns the primitive value (that has no properties or methods) of a string object

REGULAR EXPRESSION SYNTAX

Pattern Modifiers

e – Evaluate replacement

i – Perform case-insensitive matching

g – Perform global matching

m – Perform multiple line matching

s – Treat strings as single line

x – Allow comments and whitespace in pattern

U – Ungreedy pattern

Brackets

[abc] – Find any of the characters between the brackets

[^abc] – Find any character not in the brackets

[0-9] – Used to find any digit from 0 to 9

[A-z] – Find any character from uppercase A to lowercase z

(a|b|c) – Find any of the alternatives separated with |

Metacharacters

. – Find a single character, except newline or line terminator

\w – Word character

\W – Non-word character

\d – A digit

\D – A non-digit character

\s – Whitespace character

\S – Non-whitespace character

\b – Find a match at the beginning/end of a word

\B – A match not at the beginning/end of a word

\0 – NUL character

\n – A new line character

\f – Form feed character

\r – Carriage return character

\t – Tab character

\v – Vertical tab character

\xxx – The character specified by an octal number xxx

`\xdd` – Character specified by a hexadecimal number `dd`

`\uxxxx` – The Unicode character specified by a hexadecimal number `xxxx`

Quantifiers

`n+` – Matches any string that contains at least one `n`

`n*` – Any string that contains zero or more occurrences of `n`

`n?` – A string that contains zero or one occurrences of `n`

`n{X}` – String that contains a sequence of `X` `n`'s

`n{X,Y}` – Strings that contains a sequence of `X` to `Y` `n`'s

`n{X,}` – Matches any string that contains a sequence of at least `X` `n`'s

`n$` – Any string with `n` at the end of it

`^n` – String with `n` at the beginning of it

`?=n` – Any string that is followed by a specific string `n`

`?!n` – String that is not followed by a specific string `n`

NUMBERS AND MATH

Number Properties

`MAX_VALUE` – The maximum numeric value representable in JavaScript

`MIN_VALUE` – Smallest positive numeric value representable in JavaScript

`NaN` – The "Not-a-Number" value

`NEGATIVE_INFINITY` – The negative Infinity value

`POSITIVE_INFINITY` – Positive Infinity value

Number Methods

`toExponential()` – Returns a string with a rounded number written as exponential notation

toFixed() – Returns the string of a number with a specified number of decimals

toPrecision() – String of a number written with a specified length

toString() – Returns a number as a string

valueOf() – Returns a number as a number

Math Properties

E – Euler's number

LN2 – The natural logarithm of 2

LN10 – Natural logarithm of 10

LOG2E – Base 2 logarithm of E

LOG10E – Base 10 logarithm of E

PI – The number PI

SQRT1_2 – Square root of 1/2

SQRT2 – The square root of 2

Math Methods

abs(x) – Returns the absolute (positive) value of x

acos(x) – The arccosine of x, in radians

asin(x) – Arcsine of x, in radians

atan(x) – The arctangent of x as a numeric value

atan2(y,x) – Arctangent of the quotient of its arguments

ceil(x) – Value of x rounded up to its nearest integer

cos(x) – The cosine of x (x is in radians)

exp(x) – Value of E^x

floor(x) – The value of x rounded down to its nearest integer

log(x) – The natural logarithm (base E) of x

`max(x,y,z,...,n)` – Returns the number with the highest value

`min(x,y,z,...,n)` – Same for the number with the lowest value

`pow(x,y)` – X to the power of y

`random()` – Returns a random number between 0 and 1

`round(x)` – The value of x rounded to its nearest integer

`sin(x)` – The sine of x (x is in radians)

`sqrt(x)` – Square root of x

`tan(x)` – The tangent of an angle

DEALING WITH DATES IN JAVASCRIPT

Setting Dates

`Date()` – Creates a new date object with the current date and time

`Date(2017, 5, 21, 3, 23, 10, 0)` – Create a custom date object. The numbers represent year, month, day, hour, minutes, seconds, milliseconds. You can omit anything you want except for year and month.

`Date("2017-06-23")` – Date declaration as a string

Pulling Date and Time Values

`getDate()` – Get the day of the month as a number (1-31)

`getDay()` – The weekday as a number (0-6)

`getFullYear()` – Year as a four digit number (yyyy)

`getHours()` – Get the hour (0-23)

`getMilliseconds()` – The millisecond (0-999)

`getMinutes()` – Get the minute (0-59)

`getMonth()` – Month as a number (0-11)

`getSeconds()` – Get the second (0-59)

`getTime()` – Get the milliseconds since January 1, 1970

getUTCDate() – The day (date) of the month in the specified date according to universal time (also available for day, month, fullyear, hours, minutes etc.)

parse – Parses a string representation of a date, and returns the number of milliseconds since January 1, 1970

Set Part of a Date

setDate() – Set the day as a number (1-31)

setFullYear() – Sets the year (optionally month and day)

setHours() – Set the hour (0-23)

setMilliseconds() – Set milliseconds (0-999)

setMinutes() – Sets the minutes (0-59)

setMonth() – Set the month (0-11)

setSeconds() – Sets the seconds (0-59)

setTime() – Set the time (milliseconds since January 1, 1970)

setUTCDate() – Sets the day of the month for a specified date according to universal time (also available for day, month, fullyear, hours, minutes etc.)

DOM MODE

Node Properties

attributes – Returns a live collection of all attributes registered to and element

baseURI – Provides the absolute base URL of an HTML element

childNodes – Gives a collection of an element's child nodes

firstChild – Returns the first child node of an element

lastChild – The last child node of an element

nextSibling – Gives you the next node at the same node tree level

nodeName – Returns the name of a node

nodeType – Returns the type of a node

nodeValue – Sets or returns the value of a node

ownerDocument – The top-level document object for this node

parentNode – Returns the parent node of an element

previousSibling – Returns the node immediately preceding the current one

textContent – Sets or returns the textual content of a node and its descendants

Node Methods

appendChild() – Adds a new child node to an element as the last child node

cloneNode() – Clones an HTML element

compareDocumentPosition() – Compares the document position of two elements

getFeature() – Returns an object which implements the APIs of a specified feature

hasAttributes() – Returns true if an element has any attributes, otherwise false

hasChildNodes() – Returns true if an element has any child nodes, otherwise false

insertBefore() – Inserts a new child node before a specified, existing child node

isDefaultNamespace() – Returns true if a specified namespaceURI is the default, otherwise false

isEqualNode() – Checks if two elements are equal

isSameNode() – Checks if two elements are the same node

isSupported() – Returns true if a specified feature is supported on the element

lookupNamespaceURI() – Returns the namespaceURI associated with a given node

lookupPrefix() – Returns a DOMString containing the prefix for a given namespaceURI, if present

normalize() – Joins adjacent text nodes and removes empty text nodes in an element

removeChild() – Removes a child node from an element

replaceChild() – Replaces a child node in an element

Element Methods

getAttribute() – Returns the specified attribute value of an element node

getAttributeNS() – Returns string value of the attribute with the specified namespace and name

getAttributeNode() – Gets the specified attribute node

getAttributeNodeNS() – Returns the attribute node for the attribute with the given namespace and name

getElementsByTagName() – Provides a collection of all child elements with the specified tag name

getElementsByTagNameNS() – Returns a live HTMLCollection of elements with a certain tag name belonging to the given namespace

hasAttribute() – Returns true if an element has any attributes, otherwise false

hasAttributeNS() – Provides a true/false value indicating whether the current element in a given namespace has the specified attribute

removeAttribute() – Removes a specified attribute from an element

removeAttributeNS() – Removes the specified attribute from an element within a certain namespace

removeAttributeNode() – Takes away a specified attribute node and returns the removed node

setAttribute() – Sets or changes the specified attribute to a specified value

setAttributeNS() – Adds a new attribute or changes the value of an attribute with the given namespace and name

setAttributeNode() – Sets or changes the specified attribute node

`setAttributeNodeNS()` – Adds a new namespaced attribute node to an element

WORKING WITH THE USER BROWSER

Window Properties

`closed` – Checks whether a window has been closed or not and returns true or false

`defaultStatus` – Sets or returns the default text in the statusbar of a window

`document` – Returns the document object for the window

`frames` – Returns all <iframe> elements in the current window

`history` – Provides the History object for the window

`innerHeight` – The inner height of a window's content area

`innerWidth` – The inner width of the content area

`length` – Find out the number of <iframe> elements in the window

`location` – Returns the location object for the window

`name` – Sets or returns the name of a window

`navigator` – Returns the Navigator object for the window

`opener` – Returns a reference to the window that created the window

`outerHeight` – The outer height of a window, including toolbars/scrollbars

`outerWidth` – The outer width of a window, including toolbars/scrollbars

`pageXOffset` – Number of pixels the current document has been scrolled horizontally

`pageYOffset` – Number of pixels the document has been scrolled vertically

`parent` – The parent window of the current window

`screen` – Returns the Screen object for the window

screenLeft – The horizontal coordinate of the window (relative to screen)

screenTop – The vertical coordinate of the window

screenX – Same as screenLeft but needed for some browsers

screenY – Same as screenTop but needed for some browsers

self – Returns the current window

status – Sets or returns the text in the statusbar of a window

top – Returns the topmost browser window

Window Methods

alert() – Displays an alert box with a message and an OK button

blur() – Removes focus from the current window

clearInterval() – Clears a timer set with setInterval()

clearTimeout() – Clears a timer set with setTimeout()

close() – Closes the current window

confirm() – Displays a dialogue box with a message and an OK and Cancelbutton

focus() – Sets focus to the current window

moveBy() – Moves a window relative to its current position

moveTo() – Moves a window to a specified position

open() – Opens a new browser window

print() – Prints the content of the current window

prompt() – Displays a dialogue box that prompts the visitor for input

resizeBy() – Resizes the window by the specified number of pixels

resizeTo() – Resizes the window to a specified width and height

scrollBy() – Scrolls the document by a specified number of pixels

scrollTo() – Scrolls the document to specified coordinates

setInterval() – Calls a function or evaluates an expression at specified intervals

setTimeout() – Calls a function or evaluates an expression after a specified interval

stop() – Stops the window from loading

Screen Properties

availHeight – Returns the height of the screen (excluding the Windows Taskbar)

availWidth – Returns the width of the screen (excluding the Windows Taskbar)

colorDepth – Returns the bit depth of the color palette for displaying images

height – The total height of the screen

pixelDepth – The color resolution of the screen in bits per pixel

width – The total width of the screen

JAVASCRIPT EVENTS

Mouse

onclick – The event occurs when the user clicks on an element

oncontextmenu – User right-clicks on an element to open a context menu

ondblclick – The user double-clicks on an element

onmousedown – User presses a mouse button over an element

onmouseenter – The pointer moves onto an element

onmouseleave – Pointer moves out of an element

onmousemove – The pointer is moving while it is over an element

onmouseover – When the pointer is moved onto an element or one of its children

onmouseout – User moves the mouse pointer out of an element or one of its children

onmouseup – The user releases a mouse button while over an element

Keyboard

onkeydown – When the user is pressing a key down

onkeypress – The moment the user starts pressing a key

onkeyup – The user releases a key

Frame

onabort – The loading of a media is aborted

onbeforeunload – Event occurs before the document is about to be unloaded

onerror – An error occurs while loading an external file

onhashchange – There have been changes to the anchor part of a URL

onload – When an object has loaded

onpagehide – The user navigates away from a webpage

onpageshow – When the user navigates to a webpage

onresize – The document view is resized

onscroll – An element's scrollbar is being scrolled

onunload – Event occurs when a page has unloaded

Form

onblur – When an element loses focus

onchange – The content of a form element changes (for <input>, <select>and <textarea>)

onfocus – An element gets focus

onfocusin – When an element is about to get focus

onfocusout – The element is about to lose focus

oninput – User input on an element

oninvalid – An element is invalid

onreset – A form is reset

onsearch – The user writes something in a search field
(for `<input="search">`)

onselect – The user selects some text (for `<input>` and `<textarea>`)

onsubmit – A form is submitted

Drag

ondrag – An element is dragged

ondragend – The user has finished dragging the element

ondragenter – The dragged element enters a drop target

ondragleave – A dragged element leaves the drop target

ondragover – The dragged element is on top of the drop target

ondragstart – User starts to drag an element

ondrop – Dragged element is dropped on the drop target

Clipboard

oncopy – User copies the content of an element

oncut – The user cuts an element's content

onpaste – A user pastes content in an element

Media

onabort – Media loading is aborted

oncanplay – The browser can start playing media (e.g. a file has buffered enough)

oncanplaythrough – When browser can play through media without stopping

ondurationchange – The duration of the media changes

onended – The media has reach its end

onerror – Happens when an error occurs while loading an external file

onloadeddata – Media data is loaded

onloadedmetadata – Meta data (like dimensions and duration) are loaded

onloadstart – Browser starts looking for specified media

onpause – Media is paused either by the user or automatically

onplay – The media has been started or is no longer paused

onplaying – Media is playing after having been paused or stopped for buffering

onprogress – Browser is in the process of downloading the media

onratechange – The playing speed of the media changes

onseeked – User is finished moving/skipping to a new position in the media

onseeking – The user starts moving/skipping

onstalled – The browser is trying to load the media but it is not available

onsuspend – Browser is intentionally not loading media

ontimeupdate – The playing position has changed (e.g. because of fast forward)

onvolumechange – Media volume has changed (including mute)

onwaiting – Media paused but expected to resume (for example, buffering)

Animation

animationend – A CSS animation is complete

animationiteration – CSS animation is repeated

animationstart – CSS animation has started

Other

transitionend – Fired when a CSS transition has completed

onmessage – A message is received through the event source

onoffline – Browser starts to work offline

ononline – The browser starts to work online

onpopstate – When the window's history changes

onshow – A <menu> element is shown as a context menu

onstorage – A Web Storage area is updated

ontoggle – The user opens or closes the <details> element

onwheel – Mouse wheel rolls up or down over an element

ontouchcancel – Screen touch is interrupted

ontouchend – User finger is removed from a touch screen

ontouchmove – A finger is dragged across the screen

ontouchstart – Finger is placed on touch screen

Errors

try – Lets you define a block of code to test for errors

catch – Set up a block of code to execute in case of an error

throw – Create custom error messages instead of the standard JavaScript errors

finally – Lets you execute code, after try and catch, regardless of the result

Error Name Values

name – Sets or returns the error name

message – Sets or returns an error message in string form

EvalError – An error has occurred in the eval() function

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

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