

JAVASCRIPT WEB DEVELOPMENT

JS

Created by @Manz (<https://twitter.com/Manz>)<https://lenguajejs.com/>**n** Number() = 42

PROPERTIES

n.POSITIVE_INFINITY +oo equivalent
n.NEGATIVE_INFINITY -oo equivalent
n.MAX_VALUE largest positive value
n.MIN_VALUE smallest positive value
n.EPSILON diff between 1 & smallest >1
n.NaN not-a-number value

METHODS

s.toExponential(**dec**) exp. notation
s.toFixed(**dec**) fixed-point notation
s.toPrecision(**p**) change precision
b.isFinite(**n**) check if number is finite
b.isInteger(**n**) check if number is int.
b.isNaN(**n**) check if number is NaN
n.parseInt(**s**, **radix**) string to integer
n.parseFloat(**s**, **radix**) string to float

r Regexp() = /./ig

PROPERTIES

n.lastIndex index to start global regexp
s.flags active flags of current regexp
b.global flag g (search all matches)
b.ignoreCase flag i (match lower/upper)
b.multiline flag m (match multiple lines)
b.sticky flag y (search from lastIndex)
b.unicode flag u (enable unicode feat.)
s.source current regexp (w/o slashes)

METHODS

a.exec(**str**) exec search for a match
b.test(**str**) check if regexp match w/str

CLASSES

. any character \t tabulator
\d digit [0-9] \r carriage return
\D no digit [^0-9] \n line feed
\w any alphanumeric char [A-Za-z0-9_]
\W no alphanumeric char [^A-Za-z0-9_]
\s any space char (space, tab, enter...)
\S no space char (space, tab, enter...)
\xN char with code N [\b] backspace
\uN char with unicode N \0 NUL char

CHARACTER SETS OR ALTERNATION

[abc] match any character set
[^abc] match any char. set not enclosed
a|b match a or b

BOUNDARIES

^ begin of input \$ end of input
\b zero-width word boundary
\B zero-width non-word boundary

GROUPING

(x) capture group (?:(x)) no capture group
\N reference to group n captured

QUANTIFIERS

x* preceding x 0 or more times {0,}
x+ preceding x 1 or more times {1,}
x? preceding x 0 or 1 times {0,1}
x{n} n occurrences of x
x{n,m} at least n occurrences of x
x{n,m} between n & m occurrences of x

ASSERTIONS

x(?=y) x (only if x is followed by y)
x(?!y) x (only if x is not followed by y)

s String() = 'text'

PROPERTIES

n.length string size

METHODS

s.charAt(**index**) char at position [i]
n.charCodeAt(**index**) unicode at pos.
n.codePointAt(**index**) cp at position
s.fromCharCode(**n1, n2...**) code to char
s.fromCodePoint(**n1, n2...**) cp to char
s.concat(**str1, str2...**) combine text +
b.startsWith(**str, size**) check beginning
b.endsWith(**str, size**) check ending
b.includes(**str, from**) include substring?
n.indexOf(**str, from**) find substr index
n.lastIndexOf(**str, from**) find from end
n.search(**regex**) search & return index
n.localeCompare(**str, locale, options**)
a.match(**regex**) matches against string
a.matchAll(**regex**) return iterator w/all
s.normalize(**form**) unicode normalize
s.padEnd(**len, pad**) add end padding
s.padStart(**len, pad**) add start padding
s.repeat(**n**) repeat string n times
s.replace(**str|regex, newstr|func**)
s.slice(**ini, end**) str between ini/end
s.substr(**ini, len**) substr of len length
s.substring(**ini, end**) substr fragment
a.split(**sep|regex, limit**) divide string
s.toLowerCase() string to lowercase
s.toUpperCase() string to uppercase
s.trim() remove space from begin/end
s.trimEnd() remove space from end
s.trimStart() remove space from begin
s.raw`` template strings with \${vars}

d Date()

METHODS

n.UTC(**y, m, d, h, i, s, ms**) timestamp
n.now() timestamp of current time
n.parse(**str**) convert str to timestamp
n.setTime(**ts**) set UNIX timestamp
n.getTime() return UNIX timestamp

UNIT GETTERS / SETTERS (ALSO .getUTC*()/.setUTC*())

n.get / .setFullYear(**y, m, d**) (yyyy)
n.get / .setMonth(**m, d**) (0-11)
n.get / . setDate(**d**) (1-31)
n.get / .setHours(**h, m, s, ms**) (0-23)
n.get / .setMinutes(**m, s, ms**) (0-59)
n.get / .setSeconds(**s, ms**) (0-59)
n.get / .setMilliseconds(**ms**) (0-999)
n.getDay() return day of week (0-6)

LOCALE & TIMEZONE METHODS

n.getTimezoneOffset() offset in mins
s.toLocaleDateString(**locale, options**)
s.toLocaleTimeString(**locale, options**)
s.toLocaleString(**locale, options**)
s.toUTCString() return UTC date
s.toDateString() return American date
s.toTimeString() return American time
s.toISOString() return ISO8601 date
s. toJSON() return date ready for JSON

a Array() = [1, 2, 3]

PROPERTIES

n.length number of elements

METHODS

b.isArray(**obj**) check if obj is array
b.includes(**obj, from**) include element?
n.indexOf(**obj, from**) find elem. index
n.lastIndexOf(**obj, from**) find from end
s.join(**sep**) join elements w/separators
a.slice(**ini, end**) return array portion
a.concat(**obj1, obj2...**) return joined array
a.flat(**depth**) return flat array at n depth

MODIFY SOURCE ARRAY METHODS

a.copyWithin(**pos, ini, end**) copy elems
a.fill(**obj, ini, end**) fill array with obj
a.reverse() reverse array & return it
a.sort(**cf(a,b)**) sort array (unicode sort)
a.splice(**ini, del, o1, o2...**) del&add elem

ITERATION METHODS

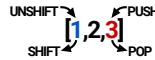
a.entries() iterate key/value pair array
a.keys() iterate only keys array
a.values() iterate only values array

CALLBACK FOR EACH METHODS

b.every(**cb(e,i,a), arg**) test until false
b.some(**cb(e,i,a), arg**) test until true
a.map(**cb(e,i,a), arg**) make array
a.filter(**cb(e,i,a), arg**) make array w/true
o.find(**cb(e,i,a), arg**) return elem w/true
n.findIndex(**cb(e,i,a), arg**) return index
a.flatMap(**cb(e,i,a), arg**) map + flat(1)
a.forEach(**cb(e,i,a), arg**) exec for each
o.reduce(**cb(p,e,i,a), arg**) accumulative
o.reduceRight(**cb(p,e,i,a), arg**) from end

ADD/REMOVE METHODS

o.pop() remove & return last element
n.push(**o1, o2...**) add elem & return length
o.shift() remove & return first element
n.unshift(**o1, o2...**) add elem & return len

**f** Function() = function(a, b) { ... }

PROPERTIES

o.length return number of arguments
s.name return name of function
o.prototype prototype object

METHODS

o.call(**newthis, arg1, arg2...**) change this
o.apply(**newthis, arg1**) with args array
o.bind(**newthis, arg1, arg2...**) bound func

n number

/NaN (not-a-number)
s string
b boolean (true/false)
a array

d date

r regular expression
f function
o object
u undefined

available on ECMAScript 2015 or higher

n static (ex: Math.random())
n non-static (ex: new Date().getDate())
argument required
argument optional

Math**PROPERTIES**

- n.E** Euler's constant
- n.LN2** natural logarithm of 2
- n.LN10** natural logarithm of 10
- n.LOG2E** base 2 logarithm of E
- n.LOG10E** base 10 logarithm of E
- n.PI** ratio circumference/diameter
- n.SQRT1_2** square root of 1/2
- n.SQRT2** square root of 2

METHODS

- n.abs(x)** absolute value
- n.cbrt(x)** cube root
- n.clz32(x)** return leading zero bits (32)
- n.exp(x)** return e^x
- n.expm1(x)** return $e^x - 1$
- n.hypot(x1, x2...)** length of hypotenuse
- n.imul(a, b)** signed multiply
- n.log(x)** natural logarithm (base e)
- n.log1p(x)** natural logarithm (1+x)
- n.log10(x)** base 10 logarithm
- n.log2(x)** base 2 logarithm
- n.max(x1, x2...)** return max number
- n.min(x1, x2...)** return min number
- n.pow(base, exp)** return $base^{exp}$ **
- n.random()** float random number [0,1)
- n.sign(x)** return sign of number
- n.sqrt(x)** square root of number

ROUND METHODS

- n.ceil(x)** superior round (smallest)
- n.floor(x)** inferior round (largest)
- n.fround(x)** nearest single precision
- n.round(x)** round (nearest integer)
- n.trunc(x)** remove fractional digits

TRIGONOMETRIC METHODS

<ul style="list-style-type: none"> n.acos(x) arccosine n.asin(x) arcsine n.atan(x) arctangent n.cos(x) cosine n.sin(x) sine n.tan(x) tangent n.atan2(x, y) arctangent of quotient x/y 	<ul style="list-style-type: none"> n.acosh(x) n.asinh(x) n.atanh(x) n.cosh(x) n.sinh(x) n.tanh(x)
---	---

BigInt() = 9007199254740992n**ES Modules** modules**METHODS**

```
import {m1, m2 as name} from "./file.js"
import obj from "./file.js" default import
export {m1, m2} export objs as modules
p import("./file.js") dynamic import
```

JSON json file manipulation**METHODS**

- n.parse(str, tf(k,v))** parse string to object
- n.stringify(obj, repf|wl, sp)** convert to str

e Error()**PROPERTIES**

- s.name** return name of error
- s.message** return description of error

EvalError(), InternalError(), RangeError(), URIError(), ReferenceError(), SyntaxError(), TypeError()

o Object() = {key: value, key2: value2}**PROPERTIES**

- o.constructor** return ref. to object func.
- METHODS**
- o.assign(dst, src1, src2...)** copy values
- o.create(proto, prop)** create obj w/prop
- o.defineProperties(obj, prop)**
- o.defineProperty(obj, prop, desc)**
- o.freeze(obj)** avoid properties changes
- o.getOwnPropertyDescriptor(obj, prop)**
- a.getOwnPropertyNames(obj)**
- a.getOwnPropertySymbols(obj)**
- o.getPrototypeOf(obj)** return prototype
- b.is(val1, val2)** check if are same value
- b.isExtensible(obj)** check if can add prop
- b.isFrozen(obj)** check if obj is frozen
- b.isSealed(obj)** check if obj is sealed
- a.keys(obj)** return only keys of object
- o.preventExtensions(obj)** avoid extend
- o.seal(obj)** prop are non-configurable
- o.setPrototypeOf(obj, prot)** change prot

INSTANCE METHODS

- b.hasOwnProperty(prop)** check if exist
- b.isPrototypeOf(obj)** test in another obj
- b.propertyIsEnumerable(prop)**
- s.toString()** return equivalent string
- s.toLocaleString()** return locale version
- o.valueOf()** return primitive value

p Promise() async / await async functions**METHODS**

- p.all(obj)** return promise
- p.catch(onRejected(s))** = .then(undefined, s)
- p.finally(onFinish())** exec callback always
- p.then(onFulfilled(v), onRejected(s))**
- p.race(obj)** return greedy promise (res/rej)
- p.resolve(obj)** return resolved promise
- p.reject(reason)** return rejected promise
- p.allSettled(obj)** return all fullfill/reject

p Proxy() Reflect same methods (not func)**METHODS**

- o.apply(obj, arg, arglist)** trap function call
- o.construct(obj, arglist)** trap new oper
- o.defineProperty(obj, prop, desc)**
- o.deleteProperty(obj, prop)** trap delete
- o.enumerate(obj)** trap for...in
- o.get(obj, prop, rec)** trap get property
- o.getOwnPropertyDescriptor(obj, prop)**
- o.getPrototypeOf(obj)**
- o.has(obj, prop)** trap in operator
- o.ownKeys(obj)**
- o.preventExtensions(obj)**
- o.set(obj, prop, value)** trap set property
- o.setPrototypeOf(obj, proto)**

Symbol()**PROPERTIES**

- s.iterator** specifies default iterator
- s.match** specifies match of regexp
- s.species** specifies constructor function

METHODS

- s.for(key)** search existing symbols
- s.keyFor(sym)** return key from global reg

s Set()

WeakSet only obj as items

PROPERTIES**n.size** return number of items**METHODS**

- s.add(item)** add item to set
- b.has(item)** check if item exists
- b.delete(item)** del item & return if del
- /clear()** remove all items from set

ITERATION METHODS

- s.entries()** iterate items
- s.values()** iterate only value of items

CALLBACK FOR EACH METHODS**/forEach(cb(e,i,a), arg)** exec for each**m Map()**

WeakMap only obj as keys

PROPERTIES**n.size** return number of elements**METHODS**

- m.set(key, value)** add pair key=value
- o.get(key)** return value of key
- b.has(key)** check if key exist
- b.delete(key)** del elem. & return if ok
- /clear()** remove all elements from map

ITERATION METHODS

- m.entries()** iterate elements
- m.keys()** iterate only keys
- m.values()** iterate only values

CALLBACK FOR EACH METHODS**/forEach(cb(e,i,a), arg)** exec for each**g Generator()** = function* () { ... }**METHODS**

- o.next(value)** return obj w/{value,done}
- o.return(value)** return value & true done
- /throw(except)** throw an error

globals includes isFinite, isNaN, parseInt & parseFloat**METHODS**

- o.eval(str)** evaluate javascript code
- s.encodeURIComponent(URI)** = to %3D
- s.decodeURIComponent(URI)** %3D to =

Others**VARIABLE / CONSTANT DECLARATIONS**

- var** deprecated variable let block scope
- const** declare constant (read-only)

OPERATORS

- ??** nullish coalescing operator
- .?** optional chaining

FAST TIPS

- func(a=1)** default parameter value
- func(...a)** rest argument (spread operator)
- (a) => { ... }** function fat arrow (w/o this)
- `string \${a}`** template with variables
- 0bn** binary (2) number n to decimal
- 0on** octal (8) number n to decimal
- 0xn** hexadecimal (16) number n to decimal
- for (i in array) { ... }** iterate array, i = index
- for (e of array) { ... }** iterate array, e = value
- class B extends A () {}** class sugar syntax

JAVASCRIPT WEB DEVELOPMENT

JS

Created by @Manz (<https://twitter.com/Manz>)<https://lenguajejs.com/>**window** = Browser global object**PROPERTIES**

- b**.closed check if window is closed
- n**.devicePixelRatio ratio vertical size pix
- b**.fullScreen check if window is fullscreen
- n**.innerWidth width size (incl. scrollbar)
- n**.innerHeight height size (incl. scrollbar)
- n**.outerWidth width size (incl. browser)
- n**.outerHeight height size (incl. browser)
- n**.length number of frames
- s**.name inner name of window
- s**.status bottom statusbar text

API/OBJECTS PROPERTIES

- o**.applicationCache offline resources API
- o**.console console browser API
- o**.crypto cryptographic API
- o**.history session page history API
- o**.location information about URL API
- o**.localStorage storage for site domain
- o**.sessionStorage storage until closed
- o**.navigator information about browser
- o**.performance data about performance

SCREEN PROPERTIES

- o**.screen information about screen
- n**.screenX horizontal pos browser/screen
- n**.screenY vertical pos browser/screen
- n**.pageXOffset horizontal pixels scrolled
- n**.pageYOffset vertical pixels scrolled

WINDOW PROPERTIES

- o**.opener window that opened this window
- o**.parent parent of current window/frame
- o**.self this window (equal to .window)
- o**.top top window of current win/frame

METHODS

- s**.btoa(**str**) encode string to base64
- s**.atob(**str**) decode base64 string to text
- z**.focus() request send window to front
- z**.blur() remove focus from window
- o**.getSelection(**id**) return Selection object
- z**.postMessage(**msg**, **dst**, **transf**) send
- o**.open(**url**, **name**, **options**) open popup
- z**.stop() stop window loading
- b**.find(**str**, **case**, **back**, **wrap**, **word**, **fr**, **d**)
- z**.print() open print document window

ANIMATION METHODS

- n**.requestAnimationFrame(**cb(n)**)
- z**.cancelAnimationFrame(**reqID**)

TIMER METHODS

- n**.setTimeout(**f(a...)**, **ms**, **a...**) delay&run
- z**.clearTimeout(**id**) remove timeout
- n**.setInterval(**f(a...)**, **ms**, **a...**) run every
- z**.clearInterval(**id**) remove interval

SCREEN METHODS

- z**.scrollBy(**x**, **y**) scroll x,y pixels (relative)
- z**.scrollTo(**x**, **y**) scroll x,y pixels (absolute)
- z**.moveBy(**x**, **y**) move window by x,y (rel)
- z**.moveTo(**x**, **y**) move window to x,y (abs)
- z**.resizeBy(**x**, **y**) resize win by x,y (rel)
- z**.resizeTo(**w**, **h**) resize win to WxX (abs)

STYLESHEET METHODS

- o**.getComputedStyle(**elem**, **pseudelem**)
- a**.matchMedia(**mediaq**) match CSSMQ

screen = info about screen / resolution**PROPERTIES**

- n**.availTop top-from space available
- n**.availLeft left-from space available
- n**.availWidth width space available
- n**.availHeight height space available
- n**.width screen width resolution
- n**.height screen height resolution
- n**.colorDepth screen color depth (bits)
- n**.pixelDepth screen pixel depth (bits)

METHODS

- b**.lockOrientation(**mode|modearray**)
- b**.unlockOrientation() remove locks

console = unofficial console browser API**METHODS**

- z**.assert(**cond**, **str|obj1...**) set a assert
- z**.count(**str**) count (show number times)
- z**.dir(**obj**) show object (expanded debug)
- z**.group() open new message group
- z**.groupCollapsed() open new group coll.
- z**.groupEnd() close previous group
- z**.table(**array|obj**, **colnames**) show table
- z**.trace() show code trace
- z**.timeStamp(**str**) put time on timeline

PERFORMANCE METHODS

- z**.profile(**name**) start performance profile
- z**.profileEnd(**name**) stop perf. profile
- z**.time(**name**) start performance timer
- z**.timeEnd(**name**) stop perf. timer

LOG LEVEL METHODS

- z**.log(**str1|obj1...**) output message
- z**.info(**str1|obj1...**) output information
- z**.warn(**str1|obj1...**) output warning
- z**.error(**str1|obj1...**) output error

window = global interaction func.**METHODS****USER INTERACTION METHODS**

- z**.alert(**str**) show message (ok button)
- s**.prompt(**str**, **def**) ask answer to user
- b**.confirm(**str**) show message (ok, cancel)

history = page history on tab**PROPERTIES**

- n**.length number of pages in historytab
- n**.state return state top history stack

METHODS

- z**.back() go prev page (same as .go(-1))
- z**.forward() go next page (same as .go(1))
- n**.go(**n**) go **n** page (positive or negative)
- z**.pushState(**obj**, **title**, **url**) insert state
- z**.replaceState(**obj**, **title**, **url**) repl. state

storage localStorage / sessionStorage**PROPERTIES**

- n**.length number of items in storage

METHODS

- s**.key(**n**) return key name on position **n**
- s**.getItem(**key**) return value of item key
- z**.setItem(**key**, **value**) set or update key
- z**.removeItem(**key**) delete item with key
- z**.clear() delete all items for current site

performance = info about performance**PROPERTIES**

- o**.navigation info about redir/type nav.
- o**.timing info about latency-load perf.

METHODS

- n**.now() high precision timestamp

navigator = info about browser**PROPERTIES**

- b**.cookieEnabled browser cookies on?
- n**.doNotTrack DNT privacy enabled?
- o**.geolocation user-info geolocation
- s**.language language in browser
- n**.maxTouchPoints max on device
- b**.onLine browser work in online mode?
- s**.userAgent identify browser of user

METHODS

- n**.vibrate(**n|pattern**) use device vibration

location = info about current URL**PROPERTIES**

- s**.href full document url
- s**.protocol <https://www.emezeta.com/>
- s**.username <https://user:pass@www>
- s**.password <https://user:pass@www>
- s**.host <https://emezeta.com:81/>
- s**.hostname <https://emezeta.com:81/>
- s**.port <https://emezeta.com:81/>
- s**.pathname <http://emezeta.com/42/>
- s**.hash <http://emezeta.com/#contacto>
- s**.search <http://google.com/?q=emezeta>
- o**.searchParams search params object
- s**.origin source origin of document url

onClick="..." (HTML) .onclick = (JS func) 'click' (Listener)

e events (only popular events)**MOUSE EVENTS**

- | | |
|------------------------|-------------------------|
| e .onClick | e .onDoubleClick |
| e .onMouseDown | e .onMouseUp |
| e .onMouseEnter | e .onMouseLeave |
| e .onMouseMove | e .onMouseOver |
| e .onMouseOut | e .onWheel |

KEYBOARD EVENTS

- | | |
|----------------------|-------------------|
| e .onKeyDown | e .onKeyUp |
| e .onKeyPress | |

LOAD/OBJECT EVENTS

- | | |
|------------------------------|--------------------|
| e .onDOMContentLoaded | e .onLoad |
| e .onAbort | e .onError |
| e .onResize | e .onScroll |
| e .onBeforeUnload | e .onUnload |

FORM/FIELDS EVENTS

- | | |
|---------------------|--------------------|
| e .onBlur | e .onFocus |
| e .onChange | e .onInput |
| e .onInvalid | e .onSelect |
| e .onReset | e .onSubmit |

ANIMATION/TRANSITION EVENTS

- | | |
|-----------------------|-----------------------------------|
| e .onDragEnter | e .onDragLeave |
| e .onDragStart | e .onDragEnd |
| e .onDragOver | e .onDrag e .onDrop |

ANIMATION/TRANSITION EVENTS

- | | |
|--------------------------------|--------------------------|
| e .onAnimationStart | e .onAnimationEnd |
| e .onAnimationIteration | e .transitionEnd |

JAVASCRIPT WEB DEVELOPMENT

JS

Created by @Manz (<https://twitter.com/Manz>)<https://lenguajejs.com/>

document	= Document object
PROPERTIES	
s .characterSet document charset	
s .compatMode quirks or standard mode	
s .cookie return all cookies doc string	
s .designMode return design mode status	
s .dir return direction text: "rtl" or "ltr"	
s .doctype return document type (DTD)	
s .domain return document domain	
s .documentURI return document URL	
s .lastModified return date/time modifc.	
s .origin return document's origin	
s .readyState return current load status	
s .referrer return previous page (referrer)	
s .title return document title	
s .URL return HTML document URL	
o .location information about URL	
ELEMENTS PROPERTIES	
o .activeElement focused element	
o .body return body element	
o .currentScript return active script	
o .defaultView return window element	
o .documentElement first element (root)	
o .head return head element	
o .scrollingElement first scrollable elem.	
DOCUMENT ARRAY PROPERTIES	
a .anchors array of images elements	
a .applets array of applets elements	
a .embeds array of embeds elements	
a .forms array of forms elements	
a .images array of images elements	
a .links array of links elements	
a .plugins array of plugins elements	
a .scripts array of scripts elements	
STYLESHEET PROPERTIES	
a .styleSheets array of style files elem	
o .preferredStyleSheetSet preferred css	
o .selectedStyleSheetSet selected css	
METHODS	
o .adoptNode(node) adopt from ext doc	
o .createAttribute(name) create Attr obj	
o .createDocumentFragment()	
o .createElement(tag) create Element obj	
o .createEvent(type) create Event object	
o .createRange() create Range object	
o .createTextNode(text) create TextNode	
o .enableStyleSheetsForSet(name)	
o .importNode(node, desc) import copy	
o .getElementById(id) find elem with id	
a .getElementsByName(name) w/ name	
o .getSelection(id) return Selection object	

e Element()	= Element object
PROPERTIES	
s .accessKey if exist, shortcut key	
o .attributes array of Attr objects	
o .classList DOMTokenList of classes	
s .className classes list to string	
s .id id string of element	
s .name name string of element	
s .tagName HTML tag of element	
POSITION, SIZE AND SCROLL PROPERTIES	
n .clientTop top border width element	
n .clientLeft left border width element	
n .clientWidth inner width element	
n .clientHeight inner height element	
n .scrollTop top-position in document	
n .scrollLeft left-position in document	
n .scrollWidth width of element	
n .scrollHeight height of element	
GET/SET HTML CODE PROPERTIES	
s .innerHTML get/set HTML inside elem	
s .outerHTML get/set HTML (incl. elem)	
METHODS	
o .closest(selec) closest ancestor	
a .getElementsByClassName(class)	
a .getElementsByTagName(tag)	
o .querySelector(selec) return first elem	
a .querySelectorAll(selec) return elems	
b .matches(selec) match with this elem?	
o .insertAdjacentHTML(posstr, html)	
ATTRIBUTE METHODS	
b .hasAttributes() exists attributes?	
b .hasAttribute(name) exist attribute?	
s .getAttribute(name) return value	
o .removeAttribute(name) del attribute	
o .setAttribute(name, value) set attrib.	
CLIENTRECT (POSITION AND SIZES) METHODS	
o .getBoundingClientRect() return pos.	
a .getClientRects() return pos/size array	

a Attr()	= Attribute object
PROPERTIES	
s .name name of element attribute	
s .value value of element attribute	
t DOMTokenList() = List of classes	
PROPERTIES	
n .length number of items	
METHODS	
b .contains(item) check if item exists	
o .add(item) add item to list	
s .item(n) return item number n	
o .remove(item) del item from list	
b .toggle(item) del item if exist, add else	
n Node()	= Minor element (elem. or text)
PROPERTIES	
s .baseURI absolute base URL of node	
s .namespaceURI namespace of node	
s .nodeName name of node	
s .nodeType 1=element, 2=text, 9=doc	
s .nodeValue value of node	
s .prefix namespace prefix of node	
s .textContent text of node and children	
NAVIGATION PROPERTIES	
o .childNodes children nodes collection	
o .firstChild first children (include text)	
o .lastChild last children (include text)	
o .nextSibling immediate next node	
o .previousSibling immediate prev node	
o .parentElement immediate parent elem	
o .parentNode immediate parent node	
o .ownerDocument return document	
METHODS	
o .appendChild(node) add node to end	
o .cloneNode(child) duplicate node	
o .compareDocumentPosition(node)	
b .contains(node) node is descendant?	
b .hasChildNodes() node has childs?	
o .insertBefore(newnode, node)	
b .isDefaultNamespace(nsURI)	
b .isEqualNode(node) check if are equal	
s .lookupNamespaceURI() ret namesp.	
s .lookupPrefix() return prefix for a ns	
o .normalize() normalize-form children	
o .removeChild(node) del node & return	
o .replaceChild(newnode, oldnode)	
c ChildNode()	
METHODS	
o .remove() remove specified node	
p ParentNode()	
PROPERTIES	
n .childElementCount number of children	
o .children children elements	
o .firstElementChild first children elem.	
o .lastElementChild last children elem.	
n NonDocumentTypeChildNode()	
PROPERTIES	
o .nextElementSibling next element	
o .previousElementSibling prev element	
t EventTarget	(use over elements)
METHODS	
o .addEventListener(ev, cb(ev), capt)	
o .removeEventListener(ev, cb(ev), capt)	
b .dispatchEvent(ev)	