

**n** Number() = 42

## PROPERTIES

- n**.POSITIVE\_INFINITY +∞ equivalent
- n**.NEGATIVE\_INFINITY -∞ 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,} 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.
- s**.fromCharCode(**n1**, **n2**...) code 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
- 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(**sepl**|**regex**, **limit**) divide string
- s**.toLowerCase() string to lowercase
- s**.toUpperCase() string to uppercase
- s**.trim() remove space from begin/end
- 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 SETTERS (ALSO .setUTC\*() methods)

- n**.setFullYear(**y**, **m**, **d**) set year (yyyy)
- n**.setMonth(**m**, **d**) set month (0-11)
- n**.setDate(**d**) set day (1-31)
- n**.setHours(**h**, **m**, **s**, **ms**) set hour (0-23)
- n**.setMinutes(**m**, **s**, **ms**) set min (0-59)
- n**.setSeconds(**s**, **ms**) set sec (0-59)
- n**.setMilliseconds(**ms**) set ms (0-999)

## UNIT GETTERS (ALSO .getUTC\*() methods)

- n**.getDate() return day (1-31)
- n**.getDay() return day of week (0-6)
- n**.getMonth() return month (0-11)
- n**.getFullYear() return year (yyyy)
- n**.getHours() return hour (0-23)
- n**.getMinutes() return minutes (0-59)
- n**.getSeconds() return seconds (0-59)
- n**.getMilliseconds() return ms (0-999)

## LOCALE &amp; 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**.toString() return American date
- 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/separator
- a**.slice(**ini**, **end**) return array portion
- a**.concat(**obj1**, **obj2**...) return joined array

## 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
- o**.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 element & return length
- o**.shift() remove & return first element
- n**.unshift(**o1**, **o2**...) add element & return len

**b** Boolean() = true / false

no own properties or methods

**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

only available on ECMAScript 6

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

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## 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

- n**.acos(**x**) arccosine
- n**.acosh(**x**) hyperbolic arccosine
- n**.asin(**x**) arcsine
- n**.asinh(**x**) hyperbolic arcsine
- n**.atan(**x**) arctangent
- n**.atan2(**x**, **y**) arctangent of quotient x/y
- n**.atanh(**x**) hyperbolic arctangent
- n**.cos(**x**) cosine
- n**.cosh(**x**) hyperbolic cosine
- n**.sin(**x**) sine
- n**.sinh(**x**) hyperbolic sine
- n**.tan(**x**) tangent
- n**.tanh(**x**) hyperbolic tangent

## JSON

## METHODS

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

## Error()

## PROPERTIES

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

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

## 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

## Promise()

## METHODS

- p**.all(**obj**) return promise
- p**.catch(**onRejected**(**s**)) = .then(**undef**,**s**)
- 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 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**)

## globals

## METHODS

- o** eval(**str**) evaluate javascript code
- b** isFinite(**obj**) check if is a finite number
- b** isNaN(**obj**) check if is not a number
- n** parseInt(**s**, **radix**) string to integer
- n** parseFloat(**s**, **radix**) string to float
- s** encodeURIComponent(**URI**) = to %3D
- s** decodeURIComponent(**URI**) %3D to =

## s Set()

WeakSet only obj as items

## PROPERTIES

- n**.size return number of items

## METHODS

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

## ITERATION METHODS

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

## CALLBACK FOR EACH METHODS

- o**.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 **wm**
- o**.get(**key**) return value of key **wm**
- b**.has(**key**) check if key exist **wm**
- b**.delete(**key**) del elem. & return if ok **wm**
- o**.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

- o**.forEach(**cb**(**e**,**i**,**a**), **arg**) exec for each

## 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

## g Generator() = function\* () { ... }

## METHODS

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

## Others

## FAST TIPS

- var declare variable
- let declare block scope local variable
- const declare constant (read-only)
- func(**a**=1) default parameter value
- func(...**a**) rest argument (spread operator)
- (**a**) => { ... } function equivalent (fat arrow)
- `string \${**a**}` template with variables
- 0**n** binary (2) number **n** to decimal
- 0**o** octal (8) number **n** to decimal
- 0**x** 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



**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 WxH (abs)

## STYLESHEET METHODS

- o**.getComputedStyle(elem, pseudoelem)
- 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, str1|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))
- z**.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**.onMouseDown
- e**.onMouseEnter
- e**.onMouseMove
- e**.onMouseOut
- e**.onDbClick
- e**.onMouseUp
- e**.onMouseLeave
- e**.onMouseOver
- e**.onWheel

## KEYBOARD EVENTS

- e**.onKeyDown
- e**.onKeyPress
- e**.onKeyUp

## 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**.onChange
- e**.onInvalid
- e**.onReset
- e**.onFocus
- e**.onInput
- e**.onSelect
- e**.onSubmit

## ANIMATION/TRANSITION EVENTS

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

## ANIMATION/TRANSITION EVENTS

- e**.onAnimationStart
- e**.onAnimationEnd
- e**.onAnimationIteration
- e**.transitionEnd

**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 modific.  
**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

**r** ClientRect() = Coords of element

## PROPERTIES

**n**.top top coord of surrounding rect  
**n**.right right coord of surrounding rect  
**n**.bottom bottom coord of surrounding r.  
**n**.left left coord of surrounding rect  
**n**.width width coord of surrounding rect  
**n**.height height coord of surrounding r.

**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

**e** Event() = Event on action

## PROPERTIES

**b**.bubbles true=bubble, false=captures  
**b**.cancelable event is cancelable?  
**o**.currentTarget current element  
**b**.defaultPrevented preventDefault() call  
**n**.detail additional event info  
**n**.eventPhase current stage (0-3)  
**b**.isTrusted user action or dispatched  
**o**.target reference to dispatched object  
**n**.timeStamp time when was created  
**s**.type type of event

## METHODS

**o**.preventDefault() cancel event  
**o**.stopImmediatePropagation()  
**o**.stopPropagation() prevent being called

**t** EventTarget (use over elements)

## METHODS

**o**.addEventListener(**ev**, **cb(ev)**, **capt**)  
**o**.removeEventListener(**ev**, **cb(ev)**, **capt**)  
**b**.dispatchEvent(**ev**)

**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