

**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**.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/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
- undefined**

only available on ECMAScript 6

- 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

- 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
- 0o**n** octal (8) number **n** to decimal
- 0x**n** 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**, **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**, **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**.onDbClick  
**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

**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