# JAVASCRIPT WEB PROGRAMMING

http://www.emezeta.com/

# Created by @Manz ( http://twitter.com/Manz ) n Number() = 42 PROPERTIES .POSITIVE\_INFINITY +∞ equivalent • NEGATIVE\_INFINITY -∞ equivalent .MAX\_VALUE largest positive value .MIN VALUE smallest positive value n.EPSILON diff between 1 & smallest >1 .NaN not-a-number value 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 slashs)

a .exec(str) exec search for a match

. any character

**\D** no digit [^0-9]

\xN char with code N

alb match a or b

^ begin of input

\uN char with unicode N

abc match any character set

**\b** zero-width word boundary

**\B** zero-width non-word boundary

**In** reference to group **n** captured

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,) at least n ocurrences of x

x{n} n ocurrences of x

\d digit [0-9]

b.test(str) check if regexp match w/str

\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...)

[^abc] match any char. set not enclosed

(x) capture group (?:x) no capture group

**\t** tabulator

**\n** line feed

\r carriage return

[\b] backspace

\$ end of input

**\0** NUL char

s String() = 'text' **PROPERTIES** n .length string size s.charAt(index) char at position 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 .repeat(n) repeat string n times s.replace(str|regex, newstr|func) slice(ini, end) str between ini/end s.substr(ini, len) substr of len length 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.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 NIT 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\*() metho

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)

n .getTimezoneOffset() offset in mins .toLocaleDateString(locale, options) s.toLocaleTimeString(locale, options) s .toLocaleString(locale, options) s .toUTCString() return UTC date s.toDateString() return American date a Array() = [1, 2, 3] **PROPERTIES** 

n .length number of elements

(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

.join(sep) join elements w/separator a .slice(ini, end) return array portion

a .concat(obj1, obj2...) return joined array

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

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

.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

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

[1,2,3] SHIFT POP b Boolean() = true / false

no own properties or methods

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

length return number of arguments

.name return name of function

# prototype prototype object

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) 🚺 regular expresion

string

f function

d date

b boolean (true/false) o object a array undefined

### only available on ECMAScript 6

n static (ex: Math.random())

n non-static (ex: new Date().getDate())

argument required argument optional Emezeta.com

# x{n,m} between n & m ocurrences of x

x(?=y) x (only if x is followed by y)

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

s.tolSOString() return ISO8601 date

s .toTimeString() return American time

s .toJSON() return date ready for JSON

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### Math

### PROPERTIES

- n.E Euler's constant
- LN2 natural logarithm of 2
- n.LN10 natural logarithm of 10
- .LOG2E base 2 logarithm of E
- .LOG10E base 10 logarithm of E
- n.PI ratio circumference/diameter
- .SQRT1\_2 square root of 1/2
- .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 ex
- 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

- 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

- 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
- atanh(x) hyperbolic arctangent
- n.cos(x) cosine
- n.cosh(x) hyperbolic cosine
- n.sin(x) sine
- .sinh(x) hyperbolic sine
- n.tan(x) tangent
- n.tanh(x) hyperbolic tangent

### **JSON**

- 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

constructor return ref. to object func.

- o.assign(dst, src1, src2...) copy values
- o .create(proto, prop) create obj w/prop
- defineProperties(obj, prop)
- o.defineProperty(obj, prop, desc)
- freeze(obj) avoid properties changes
- .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
- setPrototypeOf(obj, prot) change prot

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

### p Promise()

## METHODS\_

- all(obj) return promise
- p.catch(onRejected(s)) = .then(undef,s)
- then(onFulfilled(v), onRejected(s))
- .race(obi) return greedy promise (res/rei)
- nesolve(obj) return resolved promise
- reject(reason) return rejected promise

### p Proxy()

Reflect same methods (not func)

- o.apply(obj, arg, arglist) trap function call
- construct(obj, arglist) trap new oper
- o .defineProperty(obj, prop, desc)
- deleteProperty(obj, prop) trap delete
- enumerate(obj) trap for...in
- o .get(obj, prop, rec) trap get property
- 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
- setPrototypeOf(obj, proto)

## globals

- 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 parseFloat(s, radix) string to float
- encodeURIComponent(URI) = to %3D
  - decodeURIComponent(URI) %3D to =

## s Set()

WeakSet only obj as items

### PROPERTIES

n .size return number of items

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

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

- m.entries() iterate elements
- m.keys() iterate only keys
- m.values() iterate only values
- .forEach(cb(e,i,a), arg) exec for each

# Symbol()

# PROPERTIES

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

# METHODS

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

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

## Others

### 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 Obn binary (2) number n to decimal

Oon 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 Emez<u>eta</u>(con

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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

- applicationCache offline resources API
- o .console console browser API
- o .crypto cryptographic API
- o .history session page history API
- location information about URL API o .localStorage storage for site domain
- sessionStorage storage until closed
- o .navigator information about browser
- o .performance data about performance
- 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
- 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
- .focus() request send window to front
- .blur() remove focus from window
- o .getSelection(id) return Selection object
- \_\_\_\_.postMessage(msg, dst, transf) send
- open(url, name, options) open popup
- stop() stop window loading
- **b** .find(str, case, back, wrap, word, fr, d)
- .print() open print document window
- n .requestAnimationFrame(cb(n))
- .cancelAnimationFrame(reqID)
- n .setTimeout(f(a...), ms, a...) delay&run
- .clearTimeout(id) remove timeout
- n.setInterval(f(a...), ms, a...) run every
- .clearInterval(id) remove interval
- scrollBy(x, y) scroll x,y pixels (relative)
- scrollTo(x, y) scroll x,y pixels (absolute)
- .moveBy(x, y) move window by x,y (rel)
- .moveTo(x, y) move window to x,y (abs)
- resizeBy(x, y) resize win by x,y (rel)
- resizeTo(w, h) resize win to WxX (abs)
- 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)
- b.lockOrientation(mode|modearray)
- b.unlockOrientation() remove locks
  - console = unofficial console browser API
- METHODS
- .assert(cond, str1|obj1...) set a assert
- .count(str) count (show number times) .dir(obj) show object (expanded debug)
- group() open new message group
- .groupCollapsed() open new group coll.
- .groupEnd() close previous group
- .table(array|obj, colnames) show table
- .trace() show code trace
- .timeStamp(str) put time on timeline
- .profile(name) start performance profile
- .time(name) start performance timer
- .timeEnd(name) stop perf. timer
- .log(str1|obj1...) output message
- ✓.info(str1|obj1...) output information
- .warn(str1|obj1...) output warning
- .error(str1|obj1...) output error

  - window = global interaction func.
- METHODS
- .alert(str) show message (ok button)
- .prompt(str, def) ask answer to user
- b.confirm(str) show message (ok, cancel)
  - history
- = page history on tab
- n length number of pages in historytab
- n.state return state top history stack
- .back() go prev page (same as .go(-1))
- .forward() go next page (same as .go(1))
- .go(n) go n page (positive or negative)
- \_\_\_\_.pushState(obj, title, url) insert state
- .replaceState(obj, title, url) repl. state

  - storage localStorage / sessionStorage
- n.length number of items in storage
- METHODS
- .key(n) return key name on position n .getItem(key) return value of item key
- .setItem(key, value) set or update key removeItem(key) delete item with key
- .clear() delete all items for current site

- performance = info about performance
- **PROPERTIES**
- navigation info about redir/type nav.
- timing info about latency-load perf.
- n.now() high precision timestamp
- = info about browser

navigator

- b.cookieEnabled browser cookies on?
- n.doNotTrack DNT privacy enabled?
- o .geolocation user-info geolocation
- .language language in browser n.maxTouchPoints max on device
- b.onLine browser work in online mode?
- s .userAgent identify browser of user
- 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
- .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
- searchParams search params object s .origin source origin of document url

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

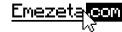
- e events (only popular events)
- e .onClick
  - e .onDblClick
- e .onMouseDown e .onMouseUp
- e .onMouseEnter e .onMouseLeave e .onMouseMove e .onMouseOver
- e .onMouseOut
- e .onKeyDown
  - e .onKeyUp .onKeyPress
  - e .onDOMContentLoaded e .onAbort
- e .onLoad e .onError e .onScroll

.onWheel

- e .onResize .onBeforeUnload
  - e .onUnload
- e .onBlur e .onChange
- e .onFocus e .onInput e .onSelect
- e .onInvalid e .onReset e .onDragEnter
- e .onSubmit e .onDragLeave

e .onDragEnd

- .onDragStart e .onDragOver e .onDrag e .onDrop
- e.onAnimationStart e.onAnimationEnd
- e .onAnimationIteration e .transitionEnd



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### document

= Document object

- .characterSet document charset
- .compatMode guirks or standard mode
- .cookie return all cookies doc string
- .designMode return design mode status
- .dir return direction text: "rtl" or "ltr"
- .doctype return document type (DTD)
- .domain return document domain
- .documentURI return document URL
- .lastModified return date/time modific.
- .origin return document's origin
- .readyState return current load status
- .referrer return previous page (referrer)
- .title return document title
- .URL return HTML document URL
- o.location information about URL

- o .activeElement focused element
- o .body return body element
- o .currentScript return active script
- o .defaultView return window element
- documentElement first element (root)
- o .head return head element
- o .scrollingElement first scrollable elem.

- 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 PROPERTIE
- a .styleSheets array of style files elem
- o.preferredStyleSheetSet preferred css
- o.selectedStyleSheetSet selected css

- adoptNode(node) adopt from ext doc
- o.createAttribute(name) create Attr obj
- createDocumentFragment() createElement(tag) create Element obj
- o.createEvent(type) create Event object o.createRange() create Range object
- o.createTextNode(text) create TextNode
- o .enableStyleSheetsForSet(name) importNode(node, desc) import copy
- o .getElementById(id) find elem with id
- a .getElementsByName(name) w/ name
- getSelection(id) return Selection object
- r ClientRect() = Coords of element

# 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 .height height coord of surrounding r.

# n .width width coord of surrounding rect

e Element() = Element object

- 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

### 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

- s .innerHTML get/set HTML inside elem
- s .outerHTML get/set HTML (incl. elem)

- 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?
- .insertAdjacentHTML(posstr, html)

- b .hasAttributes() exists attributes?
- b .hasAttribute(name) exist attribute?
- .getAttribute(name) return value
- .removeAttribute(name) del attribute
- .setAttribute(name, value) set attrib.

- o .getBoundingClientRect() return pos.
- a .getClientRects() return pos/size array
- e Event() = Event on action

- b.bubbles true=bubble, false=captures
- b.cancelable event is cancelable?
- o .currentTarget current element
- 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

- .preventDefault() cancel event
- .stopImmediatePropagation()
- .stopPropagation() prevent being called

b .dispatchEvent(ev)

t EventTarget (use over elements)

# .addEventListener(ev, cb(ev), capt)

.removeEventListener(ev, cb(ev), capt)

a Attr() = Attribute object

- .name name of element attribute
- .value value of element attribute

# t DOMTokenList() = List of classes

n.length number of items

- b.contains(item) check if item exists
- .add(item) add item to list
- .item(n) return item number n
- .remove(item) del item from list
- b toggle(item) del item if exist, add else n Node() = Minor element (elem. or text)

- 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

- 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

- appendChild(node) add node to end
- o.cloneNode(child) duplicate node
- compareDocumentPosition(node)
- b.contains(node) node is descendant?
- b.hasChildNodes() node has childs?
- insertBefore(newnode, node) b.isDefaultNamespace(nsURI)
- b.isEqualNode(node) check if are equal
- s.lookupNamespaceURI() ret namesp. s.lookupPrefix() return prefix for a ns
- .normalize() normalize-form children o.removeChild(node) del node & return
- o.replaceChild(newnode, oldnode)

# c ChildNode()

- o.remove() remove specified node
- p ParentNode()

### PROPERTIES

- n.childElementCount number of children
- o.children children elements o.firstElementChild first children elem.
- .lastElementChild last children elem.

## n NonDocumentTypeChildNode()

- nextElementSibling next element
- o.previousElementSibling prev element

# E<u>mezeta (con</u>