JS Reference

## JavaScript Reference

The references describe the properties and methods of all JavaScript objects, along with examples.

[Array](https://www.w3schools.com/jsref/jsref_obj_array.asp) [Boolean](https://www.w3schools.com/jsref/jsref_obj_boolean.asp) [Classes](https://www.w3schools.com/jsref/jsref_classes.asp) [Date](https://www.w3schools.com/jsref/jsref_obj_date.asp) [Error](https://www.w3schools.com/jsref/jsref_obj_error.asp) [Global](https://www.w3schools.com/jsref/jsref_obj_global.asp) [JSON](https://www.w3schools.com/jsref/jsref_obj_json.asp) [Math](https://www.w3schools.com/jsref/jsref_obj_math.asp) [Number](https://www.w3schools.com/jsref/jsref_obj_number.asp) [Operators](https://www.w3schools.com/jsref/jsref_operators.asp) [RegExp](https://www.w3schools.com/jsref/jsref_obj_regexp.asp) [Statements](https://www.w3schools.com/jsref/jsref_statements.asp) [String](https://www.w3schools.com/jsref/jsref_obj_string.asp)

## Array Properties

|  |  |
| --- | --- |
| Property | Description |
| [constructor](https://www.w3schools.com/jsref/jsref_constructor_array.asp) | Returns the function that created the Array object's prototype |
| [length](https://www.w3schools.com/jsref/jsref_length_array.asp) | Sets or returns the number of elements in an array |
| [prototype](https://www.w3schools.com/jsref/jsref_prototype_array.asp) | Allows you to add properties and methods to an Array object |

## Array Methods

|  |  |
| --- | --- |
| Method | Description |
| [concat()](https://www.w3schools.com/jsref/jsref_concat_array.asp) | Joins two or more arrays, and returns a copy of the joined arrays |
| [copyWithin()](https://www.w3schools.com/jsref/jsref_copywithin.asp) | Copies array elements within the array, to and from specified positions |
| [entries()](https://www.w3schools.com/jsref/jsref_entries.asp) | Returns a key/value pair Array Iteration Object |
| [every()](https://www.w3schools.com/jsref/jsref_every.asp) | Checks if every element in an array pass a test |
| [fill()](https://www.w3schools.com/jsref/jsref_fill.asp) | Fill the elements in an array with a static value |
| [filter()](https://www.w3schools.com/jsref/jsref_filter.asp) | Creates a new array with every element in an array that pass a test |
| [find()](https://www.w3schools.com/jsref/jsref_find.asp) | Returns the value of the first element in an array that pass a test |
| [findIndex()](https://www.w3schools.com/jsref/jsref_findindex.asp) | Returns the index of the first element in an array that pass a test |
| [forEach()](https://www.w3schools.com/jsref/jsref_foreach.asp) | Calls a function for each array element |
| [from()](https://www.w3schools.com/jsref/jsref_from.asp) | Creates an array from an object |
| [includes()](https://www.w3schools.com/jsref/jsref_includes_array.asp) | Check if an array contains the specified element |
| [indexOf()](https://www.w3schools.com/jsref/jsref_indexof_array.asp) | Search the array for an element and returns its position |
| [isArray()](https://www.w3schools.com/jsref/jsref_isarray.asp) | Checks whether an object is an array |
| [join()](https://www.w3schools.com/jsref/jsref_join.asp) | Joins all elements of an array into a string |
| [keys()](https://www.w3schools.com/jsref/jsref_keys.asp) | Returns a Array Iteration Object, containing the keys of the original array |
| [lastIndexOf()](https://www.w3schools.com/jsref/jsref_lastindexof_array.asp) | Search the array for an element, starting at the end, and returns its position |
| [map()](https://www.w3schools.com/jsref/jsref_map.asp) | Creates a new array with the result of calling a function for each array element |
| [pop()](https://www.w3schools.com/jsref/jsref_pop.asp) | Removes the last element of an array, and returns that element |
| [push()](https://www.w3schools.com/jsref/jsref_push.asp) | Adds new elements to the end of an array, and returns the new length |
| [reduce()](https://www.w3schools.com/jsref/jsref_reduce.asp) | Reduce the values of an array to a single value (going left-to-right) |
| [reduceRight()](https://www.w3schools.com/jsref/jsref_reduceright.asp) | Reduce the values of an array to a single value (going right-to-left) |
| [reverse()](https://www.w3schools.com/jsref/jsref_reverse.asp) | Reverses the order of the elements in an array |
| [shift()](https://www.w3schools.com/jsref/jsref_shift.asp) | Removes the first element of an array, and returns that element |
| [slice()](https://www.w3schools.com/jsref/jsref_slice_array.asp) | Selects a part of an array, and returns the new array |
| [some()](https://www.w3schools.com/jsref/jsref_some.asp) | Checks if any of the elements in an array pass a test |
| [sort()](https://www.w3schools.com/jsref/jsref_sort.asp) | Sorts the elements of an array |
| [splice()](https://www.w3schools.com/jsref/jsref_splice.asp) | Adds/Removes elements from an array |
| [toString()](https://www.w3schools.com/jsref/jsref_tostring_array.asp) | Converts an array to a string, and returns the result |
| [unshift()](https://www.w3schools.com/jsref/jsref_unshift.asp) | Adds new elements to the beginning of an array, and returns the new length |
| [valueOf()](https://www.w3schools.com/jsref/jsref_valueof_array.asp) | Returns the primitive value of an array |

## Boolean Properties

|  |  |
| --- | --- |
| Property | Description |
| [constructor](https://www.w3schools.com/jsref/jsref_constructor_boolean.asp) | Returns the function that created JavaScript's Boolean prototype |
| [prototype](https://www.w3schools.com/jsref/jsref_prototype_boolean.asp) | Allows you to add properties and methods to the Boolean prototype |

## Boolean Methods

|  |  |
| --- | --- |
| Method | Description |
| [toString()](https://www.w3schools.com/jsref/jsref_tostring_boolean.asp) | Converts a boolean value to a string, and returns the result |
| [valueOf()](https://www.w3schools.com/jsref/jsref_valueof_boolean.asp) | Returns the primitive value of a boolean |

## JavaScript Classes

A class is a type of function, but instead of using the keyword function to initiate it, we use the keyword class, and the properties are assigned inside a constructor() method

## Class Methods

|  |  |
| --- | --- |
| Method | Description |
| [constructor()](https://www.w3schools.com/jsref/jsref_constructor_class.asp) | A special method for creating and initializing objects created within a class |

## Class Keywords

|  |  |
| --- | --- |
| Keyword | Description |
| [extends](https://www.w3schools.com/jsref/jsref_class_extends.asp) | Extends a class (inherit) |
| [static](https://www.w3schools.com/jsref/jsref_class_static.asp) | Defines a static method for a class |
| [super](https://www.w3schools.com/jsref/jsref_class_super.asp) | Refers to the parent class |

## Date Object

The Date object is used to work with dates and times.

Date objects are created with new Date().

## Date Object Properties

|  |  |
| --- | --- |
| Property | Description |
| [constructor](https://www.w3schools.com/jsref/jsref_constructor_date.asp) | Returns the function that created the Date object's prototype |
| [prototype](https://www.w3schools.com/jsref/jsref_prototype_date.asp) | Allows you to add properties and methods to an object |

## Date Object Methods

|  |  |
| --- | --- |
| Method | Description |
| [getDate()](https://www.w3schools.com/jsref/jsref_getdate.asp) | Returns the day of the month (from 1-31) |
| [getDay()](https://www.w3schools.com/jsref/jsref_getday.asp) | Returns the day of the week (from 0-6) |
| [getFullYear()](https://www.w3schools.com/jsref/jsref_getfullyear.asp) | Returns the year |
| [getHours()](https://www.w3schools.com/jsref/jsref_gethours.asp) | Returns the hour (from 0-23) |
| [getMilliseconds()](https://www.w3schools.com/jsref/jsref_getmilliseconds.asp) | Returns the milliseconds (from 0-999) |
| [getMinutes()](https://www.w3schools.com/jsref/jsref_getminutes.asp) | Returns the minutes (from 0-59) |
| [getMonth()](https://www.w3schools.com/jsref/jsref_getmonth.asp) | Returns the month (from 0-11) |
| [getSeconds()](https://www.w3schools.com/jsref/jsref_getseconds.asp) | Returns the seconds (from 0-59) |
| [getTime()](https://www.w3schools.com/jsref/jsref_gettime.asp) | Returns the number of milliseconds since midnight Jan 1 1970, and a specified date |
| [getTimezoneOffset()](https://www.w3schools.com/jsref/jsref_gettimezoneoffset.asp) | Returns the time difference between UTC time and local time, in minutes |
| [getUTCDate()](https://www.w3schools.com/jsref/jsref_getutcdate.asp) | Returns the day of the month, according to universal time (from 1-31) |
| [getUTCDay()](https://www.w3schools.com/jsref/jsref_getutcday.asp) | Returns the day of the week, according to universal time (from 0-6) |
| [getUTCFullYear()](https://www.w3schools.com/jsref/jsref_getutcfullyear.asp) | Returns the year, according to universal time |
| [getUTCHours()](https://www.w3schools.com/jsref/jsref_getutchours.asp) | Returns the hour, according to universal time (from 0-23) |
| [getUTCMilliseconds()](https://www.w3schools.com/jsref/jsref_getutcmilliseconds.asp) | Returns the milliseconds, according to universal time (from 0-999) |
| [getUTCMinutes()](https://www.w3schools.com/jsref/jsref_getutcminutes.asp) | Returns the minutes, according to universal time (from 0-59) |
| [getUTCMonth()](https://www.w3schools.com/jsref/jsref_getutcmonth.asp) | Returns the month, according to universal time (from 0-11) |
| [getUTCSeconds()](https://www.w3schools.com/jsref/jsref_getutcseconds.asp) | Returns the seconds, according to universal time (from 0-59) |
| getYear() | Deprecated. Use the [getFullYear()](https://www.w3schools.com/jsref/jsref_getfullyear.asp) method instead |
| [now()](https://www.w3schools.com/jsref/jsref_now.asp) | Returns the number of milliseconds since midnight Jan 1, 1970 |
| [parse()](https://www.w3schools.com/jsref/jsref_parse.asp) | Parses a date string and returns the number of milliseconds since January 1, 1970 |
| [setDate()](https://www.w3schools.com/jsref/jsref_setdate.asp) | Sets the day of the month of a date object |
| [setFullYear()](https://www.w3schools.com/jsref/jsref_setfullyear.asp) | Sets the year of a date object |
| [setHours()](https://www.w3schools.com/jsref/jsref_sethours.asp) | Sets the hour of a date object |
| [setMilliseconds()](https://www.w3schools.com/jsref/jsref_setmilliseconds.asp) | Sets the milliseconds of a date object |
| [setMinutes()](https://www.w3schools.com/jsref/jsref_setminutes.asp) | Set the minutes of a date object |
| [setMonth()](https://www.w3schools.com/jsref/jsref_setmonth.asp) | Sets the month of a date object |
| [setSeconds()](https://www.w3schools.com/jsref/jsref_setseconds.asp) | Sets the seconds of a date object |
| [setTime()](https://www.w3schools.com/jsref/jsref_settime.asp) | Sets a date to a specified number of milliseconds after/before January 1, 1970 |
| [setUTCDate()](https://www.w3schools.com/jsref/jsref_setutcdate.asp) | Sets the day of the month of a date object, according to universal time |
| [setUTCFullYear()](https://www.w3schools.com/jsref/jsref_setutcfullyear.asp) | Sets the year of a date object, according to universal time |
| [setUTCHours()](https://www.w3schools.com/jsref/jsref_setutchours.asp) | Sets the hour of a date object, according to universal time |
| [setUTCMilliseconds()](https://www.w3schools.com/jsref/jsref_setutcmilliseconds.asp) | Sets the milliseconds of a date object, according to universal time |
| [setUTCMinutes()](https://www.w3schools.com/jsref/jsref_setutcminutes.asp) | Set the minutes of a date object, according to universal time |
| [setUTCMonth()](https://www.w3schools.com/jsref/jsref_setutcmonth.asp) | Sets the month of a date object, according to universal time |
| [setUTCSeconds()](https://www.w3schools.com/jsref/jsref_setutcseconds.asp) | Set the seconds of a date object, according to universal time |
| setYear() | Deprecated. Use the [setFullYear()](https://www.w3schools.com/jsref/jsref_setfullyear.asp) method instead |
| [toDateString()](https://www.w3schools.com/jsref/jsref_todatestring.asp) | Converts the date portion of a Date object into a readable string |
| toGMTString() | Deprecated. Use the [toUTCString()](https://www.w3schools.com/jsref/jsref_toutcstring.asp) method instead |
| [toISOString()](https://www.w3schools.com/jsref/jsref_toisostring.asp) | Returns the date as a string, using the ISO standard |
| [toJSON()](https://www.w3schools.com/jsref/jsref_tojson.asp) | Returns the date as a string, formatted as a JSON date |
| [toLocaleDateString()](https://www.w3schools.com/jsref/jsref_tolocaledatestring.asp) | Returns the date portion of a Date object as a string, using locale conventions |
| [toLocaleTimeString()](https://www.w3schools.com/jsref/jsref_tolocaletimestring.asp) | Returns the time portion of a Date object as a string, using locale conventions |
| [toLocaleString()](https://www.w3schools.com/jsref/jsref_tolocalestring.asp) | Converts a Date object to a string, using locale conventions |
| [toString()](https://www.w3schools.com/jsref/jsref_tostring_date.asp) | Converts a Date object to a string |
| [toTimeString()](https://www.w3schools.com/jsref/jsref_totimestring.asp) | Converts the time portion of a Date object to a string |
| [toUTCString()](https://www.w3schools.com/jsref/jsref_toutcstring.asp) | Converts a Date object to a string, according to universal time |
| [UTC()](https://www.w3schools.com/jsref/jsref_utc.asp) | Returns the number of milliseconds in a date since midnight of January 1, 1970, according to UTC time |
| [valueOf()](https://www.w3schools.com/jsref/jsref_valueof_date.asp) | Returns the primitive value of a Date object |

## Error Object

The Error object provides error information when an error occurs.

## Error Object Properties

|  |  |
| --- | --- |
| Property | Description |
| [name](https://www.w3schools.com/jsref/prop_error_name.asp) | Sets or returns an error name |
| [message](https://www.w3schools.com/jsref/prop_error_message.asp) | Sets or returns an error message (a string) |

The JavaScript global properties and functions can be used with all the built-in JavaScript objects.

## JavaScript Global Properties

|  |  |
| --- | --- |
| Property | Description |
| [Infinity](https://www.w3schools.com/jsref/jsref_infinity.asp) | A numeric value that represents positive/negative infinity |
| [NaN](https://www.w3schools.com/jsref/jsref_nan.asp) | "Not-a-Number" value |
| [undefined](https://www.w3schools.com/jsref/jsref_undefined.asp) | Indicates that a variable has not been assigned a value |

## JavaScript Global Functions

|  |  |
| --- | --- |
| Function | Description |
| [decodeURI()](https://www.w3schools.com/jsref/jsref_decodeuri.asp) | Decodes a URI |
| [decodeURIComponent()](https://www.w3schools.com/jsref/jsref_decodeuricomponent.asp) | Decodes a URI component |
| [encodeURI()](https://www.w3schools.com/jsref/jsref_encodeuri.asp) | Encodes a URI |
| [encodeURIComponent()](https://www.w3schools.com/jsref/jsref_encodeuricomponent.asp) | Encodes a URI component |
| [escape()](https://www.w3schools.com/jsref/jsref_escape.asp) | Deprecated in version 1.5. Use [encodeURI()](https://www.w3schools.com/jsref/jsref_encodeuri.asp) or [encodeURIComponent()](https://www.w3schools.com/jsref/jsref_encodeuricomponent.asp) instead |
| [eval()](https://www.w3schools.com/jsref/jsref_eval.asp) | Evaluates a string and executes it as if it was script code |
| [isFinite()](https://www.w3schools.com/jsref/jsref_isfinite.asp) | Determines whether a value is a finite, legal number |
| [isNaN()](https://www.w3schools.com/jsref/jsref_isnan.asp) | Determines whether a value is an illegal number |
| [Number()](https://www.w3schools.com/jsref/jsref_number.asp) | Converts an object's value to a number |
| [parseFloat()](https://www.w3schools.com/jsref/jsref_parsefloat.asp) | Parses a string and returns a floating point number |
| [parseInt()](https://www.w3schools.com/jsref/jsref_parseint.asp) | Parses a string and returns an integer |
| [String()](https://www.w3schools.com/jsref/jsref_string.asp) | Converts an object's value to a string |
| [unescape()](https://www.w3schools.com/jsref/jsref_unescape.asp) | Deprecated in version 1.5. Use [decodeURI()](https://www.w3schools.com/jsref/jsref_decodeuri.asp) or [decodeURIComponent()](https://www.w3schools.com/jsref/jsref_decodeuricomponent.asp) instead |

## JSON (JavaScript Object Notation)

JSON is a format for storing and transporting data.

JSON is text, and text can be transported anywhere, and read by any programming language.

JavaScript Objects can be converted into JSON, and JSON can be converted back into JavaScript Objects.

This way we can work with the data as JavaScript objects, with no complicated parsing or translations.

## JSON Methods

|  |  |
| --- | --- |
| Method | Description |
| [parse()](https://www.w3schools.com/jsref/jsref_parse_json.asp) | Parses a JSON string and returns a JavaScript object |
| [stringify()](https://www.w3schools.com/jsref/jsref_stringify.asp) | Convert a JavaScript object to a JSON string |

## Valid Data Types

In JSON, values must be one of the following data types:

* a string
* a number
* an object (containing valid JSON values)
* an array
* a boolean
* null

JSON values cannot be one of the following data types:

* a function
* a date
* undefined

## Math Object Properties

|  |  |
| --- | --- |
| Property | Description |
| [E](https://www.w3schools.com/jsref/jsref_e.asp) | Returns Euler's number (approx. 2.718) |
| [LN2](https://www.w3schools.com/jsref/jsref_ln2.asp) | Returns the natural logarithm of 2 (approx. 0.693) |
| [LN10](https://www.w3schools.com/jsref/jsref_ln10.asp) | Returns the natural logarithm of 10 (approx. 2.302) |
| [LOG2E](https://www.w3schools.com/jsref/jsref_log2e.asp) | Returns the base-2 logarithm of E (approx. 1.442) |
| [LOG10E](https://www.w3schools.com/jsref/jsref_log10e.asp) | Returns the base-10 logarithm of E (approx. 0.434) |
| [PI](https://www.w3schools.com/jsref/jsref_pi.asp) | Returns PI (approx. 3.14) |
| [SQRT1\_2](https://www.w3schools.com/jsref/jsref_sqrt1_2.asp) | Returns the square root of 1/2 (approx. 0.707) |
| [SQRT2](https://www.w3schools.com/jsref/jsref_sqrt2.asp) | Returns the square root of 2 (approx. 1.414) |

## Math Object Methods

|  |  |
| --- | --- |
| Method | Description |
| [abs(x)](https://www.w3schools.com/jsref/jsref_abs.asp) | Returns the absolute value of x |
| [acos(x)](https://www.w3schools.com/jsref/jsref_acos.asp) | Returns the arccosine of x, in radians |
| [acosh(x)](https://www.w3schools.com/jsref/jsref_acosh.asp) | Returns the hyperbolic arccosine of x |
| [asin(x)](https://www.w3schools.com/jsref/jsref_asin.asp) | Returns the arcsine of x, in radians |
| [asinh(x)](https://www.w3schools.com/jsref/jsref_asinh.asp) | Returns the hyperbolic arcsine of x |
| [atan(x)](https://www.w3schools.com/jsref/jsref_atan.asp) | Returns the arctangent of x as a numeric value between -PI/2 and PI/2 radians |
| [atan2(y, x)](https://www.w3schools.com/jsref/jsref_atan2.asp) | Returns the arctangent of the quotient of its arguments |
| [atanh(x)](https://www.w3schools.com/jsref/jsref_atanh.asp) | Returns the hyperbolic arctangent of x |
| [cbrt(x)](https://www.w3schools.com/jsref/jsref_cbrt.asp) | Returns the cubic root of x |
| [ceil(x)](https://www.w3schools.com/jsref/jsref_ceil.asp) | Returns x, rounded upwards to the nearest integer |
| [clz32(x)](https://www.w3schools.com/jsref/jsref_clz32.asp) | Returns the number of leading zeros in a 32-bit binary representation of x |
| [cos(x)](https://www.w3schools.com/jsref/jsref_cos.asp) | Returns the cosine of x (x is in radians) |
| [cosh(x)](https://www.w3schools.com/jsref/jsref_cosh.asp) | Returns the hyperbolic cosine of x |
| [exp(x)](https://www.w3schools.com/jsref/jsref_exp.asp) | Returns the value of Ex |
| [expm1(x)](https://www.w3schools.com/jsref/jsref_expm1.asp) | Returns the value of Ex minus 1 |
| [floor(x)](https://www.w3schools.com/jsref/jsref_floor.asp) | Returns x, rounded downwards to the nearest integer |
| [fround(x)](https://www.w3schools.com/jsref/jsref_fround.asp) | Returns the nearest (32-bit single precision) float representation of a number |
| [log(x)](https://www.w3schools.com/jsref/jsref_log.asp) | Returns the natural logarithmof x |
| [log10(x)](https://www.w3schools.com/jsref/jsref_log10.asp) | Returns the base-10 logarithm of x |
| [log1p(x)](https://www.w3schools.com/jsref/jsref_log1p.asp) | Returns the natural logarithm of 1 + x |
| [log2(x)](https://www.w3schools.com/jsref/jsref_log2.asp) | Returns the base-2 logarithm of x |
| [max(x, y, z, ..., n)](https://www.w3schools.com/jsref/jsref_max.asp) | Returns the number with the highest value |
| [min(x, y, z, ..., n)](https://www.w3schools.com/jsref/jsref_min.asp) | Returns the number with the lowest value |
| [pow(x, y)](https://www.w3schools.com/jsref/jsref_pow.asp) | Returns the value of x to the power of y |
| [random()](https://www.w3schools.com/jsref/jsref_random.asp) | Returns a random number between 0 and 1 |
| [round(x)](https://www.w3schools.com/jsref/jsref_round.asp) | Rounds x to the nearest integer |
| [sign(x)](https://www.w3schools.com/jsref/jsref_sign.asp) | Returns the sign of a number (checks whether it is positive, negative or zero) |
| [sin(x)](https://www.w3schools.com/jsref/jsref_sin.asp) | Returns the sine of x (x is in radians) |
| [sinh(x)](https://www.w3schools.com/jsref/jsref_sinh.asp) | Returns the hyperbolic sine of x |
| [sqrt(x)](https://www.w3schools.com/jsref/jsref_sqrt.asp) | Returns the square root of x |
| [tan(x)](https://www.w3schools.com/jsref/jsref_tan.asp) | Returns the tangent of an angle |
| [tanh(x)](https://www.w3schools.com/jsref/jsref_tanh.asp) | Returns the hyperbolic tangent of a number |
| [trunc(x)](https://www.w3schools.com/jsref/jsref_trunc.asp) | Returns the integer part of a number (x) |

## JavaScript Numbers

JavaScript has only one type of number.

Numbers can be written with, or without, decimals

## Number Properties

|  |  |
| --- | --- |
| Property | Description |
| [constructor](https://www.w3schools.com/jsref/jsref_constructor_number.asp) | Returns the function that created JavaScript's Number prototype |
| [MAX\_VALUE](https://www.w3schools.com/jsref/jsref_max_value.asp) | Returns the largest number possible in JavaScript |
| [MIN\_VALUE](https://www.w3schools.com/jsref/jsref_min_value.asp) | Returns the smallest number possible in JavaScript |
| [NEGATIVE\_INFINITY](https://www.w3schools.com/jsref/jsref_negative_infinity.asp) | Represents negative infinity (returned on overflow) |
| [NaN](https://www.w3schools.com/jsref/jsref_number_nan.asp) | Represents a "Not-a-Number" value |
| [POSITIVE\_INFINITY](https://www.w3schools.com/jsref/jsref_positive_infinity.asp) | Represents infinity (returned on overflow) |
| [prototype](https://www.w3schools.com/jsref/jsref_prototype_num.asp) | Allows you to add properties and methods to an object |

## Number Methods

|  |  |
| --- | --- |
| Method | Description |
| [isFinite()](https://www.w3schools.com/jsref/jsref_isfinite_number.asp) | Checks whether a value is a finite number |
| [isInteger()](https://www.w3schools.com/jsref/jsref_isinteger.asp) | Checks whether a value is an integer |
| [isNaN()](https://www.w3schools.com/jsref/jsref_isnan_number.asp) | Checks whether a value is Number.NaN |
| [isSafeInteger()](https://www.w3schools.com/jsref/jsref_issafeinteger.asp) | Checks whether a value is a safe integer |
| [toExponential(x)](https://www.w3schools.com/jsref/jsref_toexponential.asp) | Converts a number into an exponential notation |
| [toFixed(x)](https://www.w3schools.com/jsref/jsref_tofixed.asp) | Formats a number with x numbers of digits after the decimal point |
| [toLocaleString()](https://www.w3schools.com/jsref/jsref_tolocalestring_number.asp) | Converts a number into a string, based on the locale settings |
| [toPrecision(x)](https://www.w3schools.com/jsref/jsref_toprecision.asp) | Formats a number to x length |
| [toString()](https://www.w3schools.com/jsref/jsref_tostring_number.asp) | Converts a number to a string |
| [valueOf()](https://www.w3schools.com/jsref/jsref_valueof_number.asp) | Returns the primitive value of a number |

## JavaScript Arithmetic Operators

Arithmetic operators are used to perform arithmetic between variables and/or values.

Given that **y = 5**, the table below explains the arithmetic operators:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Operator | Description | Example | Result in y | Result in x | Try it |
| + | Addition | x = y + 2 | y = 5 | x = 7 |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| - | Subtraction | x = y - 2 | y = 5 | x = 3 |  |
| \* | Multiplication | x = y \* 2 | y = 5 | x = 10 |  |
| / | Division | x = y / 2 | y = 5 | x = 2.5 |  |
| % | Modulus (division remainder) | x = y % 2 | y = 5 | x = 1 |  |
| ++ | Increment | x = ++y | y = 6 | x = 6 |  |
| x = y++ | y = 6 | x = 5 |  |
| -- | Decrement | x = --y | y = 4 | x = 4 |  |
| x = y-- | y = 4 | x = 5 |  |

For a tutorial about arithmetic operators, read our [JavaScript Arithmetic Tutorial](https://www.w3schools.com/js/js_arithmetic.asp).

## JavaScript Assignment Operators

Assignment operators are used to assign values to JavaScript variables.

Given that **x = 10** and **y = 5**, the table below explains the assignment operators:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Operator | Example | Same As | Result in x | Try it |
| = | x = y | x = y | x = 5 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| += | x += y | x = x + y | x = 15 |  |
| -= | x -= y | x = x - y | x = 5 |  |
| \*= | x \*= y | x = x \* y | x = 50 |  |
| /= | x /= y | x = x / y | x = 2 |  |
| %= | x %= y | x = x % y | x = 0 |  |

## RegExp Object

A regular expression is an object that describes a pattern of characters.

Regular expressions are used to perform pattern-matching and "search-and-replace" functions on text.

## Modifiers

Modifiers are used to perform case-insensitive and global searches:

|  |  |
| --- | --- |
| Modifier | Description |
| [g](https://www.w3schools.com/jsref/jsref_regexp_g.asp) | Perform a global match (find all matches rather than stopping after the first match) |
| [i](https://www.w3schools.com/jsref/jsref_regexp_i.asp) | Perform case-insensitive matching |
| [m](https://www.w3schools.com/jsref/jsref_regexp_m.asp) | Perform multiline matching |

## Brackets

Brackets are used to find a range of characters:

|  |  |
| --- | --- |
| Expression | Description |
| [[abc]](https://www.w3schools.com/jsref/jsref_regexp_charset.asp) | Find any character between the brackets |
| [[^abc]](https://www.w3schools.com/jsref/jsref_regexp_charset_not.asp) | Find any character NOT between the brackets |
| [[0-9]](https://www.w3schools.com/jsref/jsref_regexp_0-9.asp) | Find any character between the brackets (any digit) |
| [[^0-9]](https://www.w3schools.com/jsref/jsref_regexp_not_0-9.asp) | Find any character NOT between the brackets (any non-digit) |
| [(x|y)](https://www.w3schools.com/jsref/jsref_regexp_xy.asp) | Find any of the alternatives specified |

## Metacharacters

Metacharacters are characters with a special meaning:

|  |  |
| --- | --- |
| Metacharacter | Description |
| [.](https://www.w3schools.com/jsref/jsref_regexp_dot.asp) | Find a single character, except newline or line terminator |
| [\w](https://www.w3schools.com/jsref/jsref_regexp_wordchar.asp) | Find a word character |
| [\W](https://www.w3schools.com/jsref/jsref_regexp_wordchar_non.asp) | Find a non-word character |
| [\d](https://www.w3schools.com/jsref/jsref_regexp_digit.asp) | Find a digit |
| [\D](https://www.w3schools.com/jsref/jsref_regexp_digit_non.asp) | Find a non-digit character |
| [\s](https://www.w3schools.com/jsref/jsref_regexp_whitespace.asp) | Find a whitespace character |
| [\S](https://www.w3schools.com/jsref/jsref_regexp_whitespace_non.asp) | Find a non-whitespace character |
| [\b](https://www.w3schools.com/jsref/jsref_regexp_begin.asp) | Find a match at the beginning/end of a word, beginning like this: \bHI, end like this: HI\b |
| [\B](https://www.w3schools.com/jsref/jsref_regexp_begin_not.asp) | Find a match, but not at the beginning/end of a word |
| [\0](https://www.w3schools.com/jsref/jsref_regexp_nul.asp) | Find a NULL character |
| [\n](https://www.w3schools.com/jsref/jsref_regexp_newline.asp) | Find a new line character |
| [\f](https://www.w3schools.com/jsref/jsref_regexp_formfeed.asp) | Find a form feed character |
| [\r](https://www.w3schools.com/jsref/jsref_regexp_carriagereturn.asp) | Find a carriage return character |
| [\t](https://www.w3schools.com/jsref/jsref_regexp_tab.asp) | Find a tab character |
| [\v](https://www.w3schools.com/jsref/jsref_regexp_vtab.asp) | Find a vertical tab character |
| [\xxx](https://www.w3schools.com/jsref/jsref_regexp_octal.asp) | Find the character specified by an octal number xxx |
| [\xdd](https://www.w3schools.com/jsref/jsref_regexp_hex.asp) | Find the character specified by a hexadecimal number dd |
| [\udddd](https://www.w3schools.com/jsref/jsref_regexp_unicode_hex.asp) | Find the Unicode character specified by a hexadecimal number dddd |

## Quantifiers

|  |  |
| --- | --- |
| Quantifier | Description |
| [n+](https://www.w3schools.com/jsref/jsref_regexp_onemore.asp) | Matches any string that contains at least one n |
| [n\*](https://www.w3schools.com/jsref/jsref_regexp_zeromore.asp) | Matches any string that contains zero or more occurrences of n |
| [n?](https://www.w3schools.com/jsref/jsref_regexp_zeroone.asp) | Matches any string that contains zero or one occurrences of n |
| [n{X}](https://www.w3schools.com/jsref/jsref_regexp_nx.asp) | Matches any string that contains a sequence of *X* *n*'s |
| [n{X,Y}](https://www.w3schools.com/jsref/jsref_regexp_nxy.asp) | Matches any string that contains a sequence of X to Y *n*'s |
| [n{X,}](https://www.w3schools.com/jsref/jsref_regexp_nxcomma.asp) | Matches any string that contains a sequence of at least X *n*'s |
| [n$](https://www.w3schools.com/jsref/jsref_regexp_ndollar.asp) | Matches any string with n at the end of it |
| [^n](https://www.w3schools.com/jsref/jsref_regexp_ncaret.asp) | Matches any string with n at the beginning of it |
| [?=n](https://www.w3schools.com/jsref/jsref_regexp_nfollow.asp) | Matches any string that is followed by a specific string n |
| [?!n](https://www.w3schools.com/jsref/jsref_regexp_nfollow_not.asp) | Matches any string that is not followed by a specific string n |

## RegExp Object Properties

|  |  |
| --- | --- |
| Property | Description |
| [constructor](https://www.w3schools.com/jsref/jsref_regexp_constructor.asp) | Returns the function that created the RegExp object's prototype |
| [global](https://www.w3schools.com/jsref/jsref_regexp_global.asp) | Checks whether the "g" modifier is set |
| [ignoreCase](https://www.w3schools.com/jsref/jsref_regexp_ignorecase.asp) | Checks whether the "i" modifier is set |
| [lastIndex](https://www.w3schools.com/jsref/jsref_regexp_lastindex.asp) | Specifies the index at which to start the next match |
| [multiline](https://www.w3schools.com/jsref/jsref_regexp_multiline.asp) | Checks whether the "m" modifier is set |
| [source](https://www.w3schools.com/jsref/jsref_regexp_source.asp) | Returns the text of the RegExp pattern |

## RegExp Object Methods

|  |  |
| --- | --- |
| Method | Description |
| [compile()](https://www.w3schools.com/jsref/jsref_regexp_compile.asp) | Deprecated in version 1.5. Compiles a regular expression |
| [exec()](https://www.w3schools.com/jsref/jsref_regexp_exec.asp) | Tests for a match in a string. Returns the first match |
| [test()](https://www.w3schools.com/jsref/jsref_regexp_test.asp) | Tests for a match in a string. Returns true or false |
| [toString()](https://www.w3schools.com/jsref/jsref_regexp_tostring.asp) | Returns the string value of the regular expression |

## JavaScript Statements

In HTML, JavaScript statements are "instructions" to be "executed" by the web browser.

This statement tells the browser to write "Hello Dolly." inside an HTML element with id="demo"

## JavaScript Statement Identifiers

JavaScript statements often start with a statement identifier to identify the JavaScript action to be performed.

Statement identifiers are reserved words and cannot be used as variable names (or any other things).

The following table lists all JavaScript statement identifiers:

|  |  |
| --- | --- |
| Statement | Description |
| [break](https://www.w3schools.com/jsref/jsref_break.asp) | Exits a switch or a loop |
| const | Declares a variable with a constant value |
| [class](https://www.w3schools.com/jsref/jsref_class.asp) | Declares a class |
| [continue](https://www.w3schools.com/jsref/jsref_continue.asp) | Breaks one iteration (in the loop) if a specified condition occurs, and continues with the next iteration in the loop |
| [debugger](https://www.w3schools.com/jsref/jsref_debugger.asp) | Stops the execution of JavaScript, and calls (if available) the debugging function |
| [do ... while](https://www.w3schools.com/jsref/jsref_dowhile.asp) | Executes a block of statements and repeats the block while a condition is true |
| [for](https://www.w3schools.com/jsref/jsref_for.asp) | Loops through a block of code a number of times |
| [for ... in](https://www.w3schools.com/jsref/jsref_forin.asp) | Loops through the properties of an object |
| [for ... of](https://www.w3schools.com/jsref/jsref_forof.asp) | Loops through the values of an iterable object |
| [function](https://www.w3schools.com/jsref/jsref_function.asp) | Declares a function |
| [if ... else ... else if](https://www.w3schools.com/jsref/jsref_if.asp) | Marks a block of statements to be executed depending on a condition |
| let | Declares a variable inside brackets {} scope |
| [return](https://www.w3schools.com/jsref/jsref_return.asp) | Stops the execution of a function and returns a value from that function |
| [switch](https://www.w3schools.com/jsref/jsref_switch.asp) | Marks a block of statements to be executed depending on different cases |
| [throw](https://www.w3schools.com/jsref/jsref_throw.asp) | Throws (generates) an error |
| [try ... catch ... finally](https://www.w3schools.com/jsref/jsref_try_catch.asp) | Marks the block of statements to be executed when an error occurs in a try block, and implements error handling |
| [var](https://www.w3schools.com/jsref/jsref_var.asp) | Declares a variable |
| [while](https://www.w3schools.com/jsref/jsref_while.asp) | Marks a block of statements to be executed while a condition is true |

## JavaScript Strings

A JavaScript string stores a series of characters like "John Doe".

A string can be any text inside double or single quotes.String indexes are zero-based: The first character is in position 0, the second in 1, and so on.

## String Properties and Methods

Primitive values, like "John Doe", cannot have properties or methods (because they are not objects).

But with JavaScript, methods and properties are also available to primitive values, because JavaScript treats primitive values as objects when executing methods and properties.

## String Properties

|  |  |
| --- | --- |
| Property | Description |
| [constructor](https://www.w3schools.com/jsref/jsref_constructor_string.asp) | Returns the string's constructor function |
| [length](https://www.w3schools.com/jsref/jsref_length_string.asp) | Returns the length of a string |
| [prototype](https://www.w3schools.com/jsref/jsref_prototype_string.asp) | Allows you to add properties and methods to an object |

## String Methods

|  |  |
| --- | --- |
| Method | Description |
| [charAt()](https://www.w3schools.com/jsref/jsref_charat.asp) | Returns the character at the specified index (position) |
| [charCodeAt()](https://www.w3schools.com/jsref/jsref_charcodeat.asp) | Returns the Unicode of the character at the specified index |
| [concat()](https://www.w3schools.com/jsref/jsref_concat_string.asp) | Joins two or more strings, and returns a new joined strings |
| [endsWith()](https://www.w3schools.com/jsref/jsref_endswith.asp) | Checks whether a string ends with specified string/characters |
| [fromCharCode()](https://www.w3schools.com/jsref/jsref_fromcharcode.asp) | Converts Unicode values to characters |
| [includes()](https://www.w3schools.com/jsref/jsref_includes.asp) | Checks whether a string contains the specified string/characters |
| [indexOf()](https://www.w3schools.com/jsref/jsref_indexof.asp) | Returns the position of the first found occurrence of a specified value in a string |
| [lastIndexOf()](https://www.w3schools.com/jsref/jsref_lastindexof.asp) | Returns the position of the last found occurrence of a specified value in a string |
| [localeCompare()](https://www.w3schools.com/jsref/jsref_localecompare.asp) | Compares two strings in the current locale |
| [match()](https://www.w3schools.com/jsref/jsref_match.asp) | Searches a string for a match against a regular expression, and returns the matches |
| [repeat()](https://www.w3schools.com/jsref/jsref_repeat.asp) | Returns a new string with a specified number of copies of an existing string |
| [replace()](https://www.w3schools.com/jsref/jsref_replace.asp) | Searches a string for a specified value, or a regular expression, and returns a new string where the specified values are replaced |
| [search()](https://www.w3schools.com/jsref/jsref_search.asp) | Searches a string for a specified value, or regular expression, and returns the position of the match |
| [slice()](https://www.w3schools.com/jsref/jsref_slice_string.asp) | Extracts a part of a string and returns a new string |
| [split()](https://www.w3schools.com/jsref/jsref_split.asp) | Splits a string into an array of substrings |
| [startsWith()](https://www.w3schools.com/jsref/jsref_startswith.asp) | Checks whether a string begins with specified characters |
| [substr()](https://www.w3schools.com/jsref/jsref_substr.asp) | Extracts the characters from a string, beginning at a specified start position, and through the specified number of character |
| [substring()](https://www.w3schools.com/jsref/jsref_substring.asp) | Extracts the characters from a string, between two specified indices |
| [toLocaleLowerCase()](https://www.w3schools.com/jsref/jsref_tolocalelowercase.asp) | Converts a string to lowercase letters, according to the host's locale |
| [toLocaleUpperCase()](https://www.w3schools.com/jsref/jsref_tolocaleuppercase.asp) | Converts a string to uppercase letters, according to the host's locale |
| [toLowerCase()](https://www.w3schools.com/jsref/jsref_tolowercase.asp) | Converts a string to lowercase letters |
| [toString()](https://www.w3schools.com/jsref/jsref_tostring_string.asp) | Returns the value of a String object |
| [toUpperCase()](https://www.w3schools.com/jsref/jsref_touppercase.asp) | Converts a string to uppercase letters |
| [trim()](https://www.w3schools.com/jsref/jsref_trim_string.asp) | Removes whitespace from both ends of a string |
| [valueOf()](https://www.w3schools.com/jsref/jsref_valueof_string.asp) | Returns the primitive value of a String object |

## HTML DOM Reference

The references describe the properties and methods of each DOM object, along with examples.

[Attributes](https://www.w3schools.com/jsref/dom_obj_attributes.asp) [Document](https://www.w3schools.com/jsref/dom_obj_document.asp) [Element](https://www.w3schools.com/jsref/dom_obj_all.asp) [Events](https://www.w3schools.com/jsref/dom_obj_event.asp) [Event Objects](https://www.w3schools.com/jsref/obj_events.asp) [HTMLCollection](https://www.w3schools.com/jsref/dom_obj_htmlcollection.asp) [Location](https://www.w3schools.com/jsref/obj_location.asp) [Navigator](https://www.w3schools.com/jsref/obj_navigator.asp) [Screen](https://www.w3schools.com/jsref/obj_screen.asp) [Style](https://www.w3schools.com/jsref/dom_obj_style.asp) [Window](https://www.w3schools.com/jsref/obj_window.asp)

## The Attr Object

In the HTML DOM, the Attr object represents an HTML attribute.

An HTML attribute always belongs to an HTML element.

## The NamedNodeMap Object

In the HTML DOM, the NamedNodeMap object represents an unordered collection of an elements attribute nodes.

Nodes in a NamedNodeMap can be accessed by name or by index (number).

## Properties and Methods

|  |  |
| --- | --- |
| Property / Method | Description |
| [*attr*.isId](https://www.w3schools.com/jsref/prop_attr_isid.asp) | Returns true if the attribute is of type Id, otherwise it returns false |
| [*attr*.name](https://www.w3schools.com/jsref/prop_attr_name.asp) | Returns the name of an attribute |
| [*attr*.value](https://www.w3schools.com/jsref/prop_attr_value.asp) | Sets or returns the value of the attribute |
| [*attr*.specified](https://www.w3schools.com/jsref/prop_attr_specified.asp) | Returns true if the attribute has been specified, otherwise it returns false |
|  |  |
| [*nodemap*.getNamedItem()](https://www.w3schools.com/jsref/met_namednodemap_getnameditem.asp) | Returns a specified attribute node from a NamedNodeMap |
| [*nodemap*.item()](https://www.w3schools.com/jsref/met_namednodemap_item.asp) | Returns the attribute node at a specified index in a NamedNodeMap |
| [*nodemap*.length](https://www.w3schools.com/jsref/prop_namednodemap_length.asp) | Returns the number of attribute nodes in a NamedNodeMap |
| [*nodemap*.removeNamedItem()](https://www.w3schools.com/jsref/met_namednodemap_removenameditem.asp) | Removes a specified attribute node |
| [*nodemap*.setNamedItem()](https://www.w3schools.com/jsref/met_namednodemap_setnameditem.asp) | Sets the specified attribute node (by name) |

## The Document Object

When an HTML document is loaded into a web browser, it becomes a document object.

The document object is the root node of the HTML document.

## Document Object Properties and Methods

The following properties and methods can be used on HTML documents:

|  |  |
| --- | --- |
| Property / Method | Description |
| [activeElement](https://www.w3schools.com/jsref/prop_document_activeelement.asp) | Returns the currently focused element in the document |
| [addEventListener()](https://www.w3schools.com/jsref/met_document_addeventlistener.asp) | Attaches an event handler to the document |
| [adoptNode()](https://www.w3schools.com/jsref/met_document_adoptnode.asp) | Adopts a node from another document |
| [anchors](https://www.w3schools.com/jsref/coll_doc_anchors.asp) | Returns a collection of all <a> elements in the document that have a name attribute |
| [applets](https://www.w3schools.com/jsref/coll_doc_applets.asp) | Returns a collection of all <applet> elements in the document |
| [baseURI](https://www.w3schools.com/jsref/prop_doc_baseuri.asp) | Returns the absolute base URI of a document |
| [body](https://www.w3schools.com/jsref/prop_doc_body.asp) | Sets or returns the document's body (the <body> element) |
| [close()](https://www.w3schools.com/jsref/met_doc_close.asp) | Closes the output stream previously opened with document.open() |
| [cookie](https://www.w3schools.com/jsref/prop_doc_cookie.asp) | Returns all name/value pairs of cookies in the document |
| [charset](https://www.w3schools.com/jsref/prop_document_characterset.asp) | Deprecated. Use [characterSet](https://www.w3schools.com/jsref/prop_document_characterset.asp) instead. Returns the character encoding for the document |
| [characterSet](https://www.w3schools.com/jsref/prop_document_characterset.asp) | Returns the character encoding for the document |
| [createAttribute()](https://www.w3schools.com/jsref/met_document_createattribute.asp) | Creates an attribute node |
| [createComment()](https://www.w3schools.com/jsref/met_document_createcomment.asp) | Creates a Comment node with the specified text |
| [createDocumentFragment()](https://www.w3schools.com/jsref/met_document_createdocumentfragment.asp) | Creates an empty DocumentFragment node |
| [createElement()](https://www.w3schools.com/jsref/met_document_createelement.asp) | Creates an Element node |
| [createEvent()](https://www.w3schools.com/jsref/event_createevent.asp) | Creates a new event |
| [createTextNode()](https://www.w3schools.com/jsref/met_document_createtextnode.asp) | Creates a Text node |
| [defaultView](https://www.w3schools.com/jsref/prop_document_defaultview.asp) | Returns the window object associated with a document, or null if none is available. |
| [designMode](https://www.w3schools.com/jsref/prop_document_designmode.asp) | Controls whether the entire document should be editable or not. |
| [doctype](https://www.w3schools.com/jsref/prop_document_doctype.asp) | Returns the Document Type Declaration associated with the document |
| [documentElement](https://www.w3schools.com/jsref/prop_document_documentelement.asp) | Returns the Document Element of the document (the <html> element) |
| [documentMode](https://www.w3schools.com/jsref/prop_doc_documentmode.asp) | Returns the mode used by the browser to render the document |
| [documentURI](https://www.w3schools.com/jsref/prop_document_documenturi.asp) | Sets or returns the location of the document |
| [domain](https://www.w3schools.com/jsref/prop_doc_domain.asp) | Returns the domain name of the server that loaded the document |
| domConfig | Obsolete. Returns the DOM configuration of the document |
| [embeds](https://www.w3schools.com/jsref/coll_doc_embeds.asp) | Returns a collection of all <embed> elements the document |
| [execCommand()](https://www.w3schools.com/jsref/met_document_execcommand.asp) | Invokes the specified clipboard operation on the element currently having focus. |
| [forms](https://www.w3schools.com/jsref/coll_doc_forms.asp) | Returns a collection of all <form> elements in the document |
| [fullscreenElement](https://www.w3schools.com/jsref/prop_document_fullscreenelement.asp) | Returns the current element that is displayed in fullscreen mode |
| [fullscreenEnabled()](https://www.w3schools.com/jsref/met_document_fullscreenenabled.asp) | Returns a Boolean value indicating whether the document can be viewed in fullscreen mode |
| [getElementById()](https://www.w3schools.com/jsref/met_document_getelementbyid.asp) | Returns the element that has the ID attribute with the specified value |
| [getElementsByClassName()](https://www.w3schools.com/jsref/met_document_getelementsbyclassname.asp) | Returns a HTMLCollection containing all elements with the specified class name |
| [getElementsByName()](https://www.w3schools.com/jsref/met_doc_getelementsbyname.asp) | Returns a HTMLCollection containing all elements with a specified name |
| [getElementsByTagName()](https://www.w3schools.com/jsref/met_document_getelementsbytagname.asp) | Returns a HTMLCollection containing all elements with the specified tag name |
| [hasFocus()](https://www.w3schools.com/jsref/met_document_hasfocus.asp) | Returns a Boolean value indicating whether the document has focus |
| [head](https://www.w3schools.com/jsref/prop_doc_head.asp) | Returns the <head> element of the document |
| [images](https://www.w3schools.com/jsref/coll_doc_images.asp) | Returns a collection of all <img> elements in the document |
| [implementation](https://www.w3schools.com/jsref/prop_document_implementation.asp) | Returns the DOMImplementation object that handles this document |
| [importNode()](https://www.w3schools.com/jsref/met_document_importnode.asp) | Imports a node from another document |
| [inputEncoding](https://www.w3schools.com/jsref/prop_document_inputencoding.asp) | Returns the encoding, character set, used for the document |
| [lastModified](https://www.w3schools.com/jsref/prop_doc_lastmodified.asp) | Returns the date and time the document was last modified |
| [links](https://www.w3schools.com/jsref/coll_doc_links.asp) | Returns a collection of all <a> and <area> elements in the document that have a href attribute |
| [normalize()](https://www.w3schools.com/jsref/met_document_normalize.asp) | Removes empty Text nodes, and joins adjacent nodes |
| [normalizeDocument()](https://www.w3schools.com/jsref/met_document_normalizedocument.asp) | Removes empty Text nodes, and joins adjacent nodes |
| [open()](https://www.w3schools.com/jsref/met_doc_open.asp) | Opens an HTML output stream to collect output from document.write() |
| [querySelector()](https://www.w3schools.com/jsref/met_document_queryselector.asp) | Returns the first element that matches a specified CSS selector(s) in the document |
| [querySelectorAll()](https://www.w3schools.com/jsref/met_document_queryselectorall.asp) | Returns a static NodeList containing all elements that matches a specified CSS selector(s) in the document |
| [readyState](https://www.w3schools.com/jsref/prop_doc_readystate.asp) | Returns the (loading) status of the document |
| [referrer](https://www.w3schools.com/jsref/prop_doc_referrer.asp) | Returns the URL of the document that loaded the current document |
| [removeEventListener()](https://www.w3schools.com/jsref/met_document_removeeventlistener.asp) | Removes an event handler from the document (that has been attached with the [addEventListener()](https://www.w3schools.com/jsref/met_document_addeventlistener.asp) method) |
| [renameNode()](https://www.w3schools.com/jsref/met_document_renamenode.asp) | Renames the specified node |
| [scripts](https://www.w3schools.com/jsref/coll_doc_scripts.asp) | Returns a collection of <script> elements in the document |
| [strictErrorChecking](https://www.w3schools.com/jsref/prop_document_stricterrorchecking.asp) | Sets or returns whether error-checking is enforced or not |
| [title](https://www.w3schools.com/jsref/prop_doc_title.asp) | Sets or returns the title of the document |
| [URL](https://www.w3schools.com/jsref/prop_doc_url.asp) | Returns the full URL of the HTML document |
| [write()](https://www.w3schools.com/jsref/met_doc_write.asp) | Writes HTML expressions or JavaScript code to a document |
| [writeln()](https://www.w3schools.com/jsref/met_doc_writeln.asp) | Same as write(), but adds a newline character after each statement |

## The Element Object

In the HTML DOM, the Element object represents an HTML element, like P, DIV, A, TABLE, or any other HTML element.

## Properties and Methods

The following properties and methods can be used on all HTML elements:

|  |  |
| --- | --- |
| Property / Method | Description |
| [accessKey](https://www.w3schools.com/jsref/prop_html_accesskey.asp) | Sets or returns the accesskey attribute of an element |
| [addEventListener()](https://www.w3schools.com/jsref/met_element_addeventlistener.asp) | Attaches an event handler to the specified element |
| [appendChild()](https://www.w3schools.com/jsref/met_node_appendchild.asp) | Adds a new child node, to an element, as the last child node |
| [attributes](https://www.w3schools.com/jsref/prop_node_attributes.asp) | Returns a NamedNodeMap of an element's attributes |
| [blur()](https://www.w3schools.com/jsref/met_html_blur.asp) | Removes focus from an element |
| [childElementCount](https://www.w3schools.com/jsref/prop_element_childelementcount.asp) | Returns the number of child elements an element has |
| [childNodes](https://www.w3schools.com/jsref/prop_node_childnodes.asp) | Returns a collection of an element's child nodes (including text and comment nodes) |
| [children](https://www.w3schools.com/jsref/prop_element_children.asp) | Returns a collection of an element's child element (excluding text and comment nodes) |
| [classList](https://www.w3schools.com/jsref/prop_element_classlist.asp) | Returns the class name(s) of an element |
| [className](https://www.w3schools.com/jsref/prop_html_classname.asp) | Sets or returns the value of the class attribute of an element |
| [click()](https://www.w3schools.com/jsref/met_html_click.asp) | Simulates a mouse-click on an element |
| [clientHeight](https://www.w3schools.com/jsref/prop_element_clientheight.asp) | Returns the height of an element, including padding |
| [clientLeft](https://www.w3schools.com/jsref/prop_element_clientleft.asp) | Returns the width of the left border of an element |
| [clientTop](https://www.w3schools.com/jsref/prop_element_clienttop.asp) | Returns the width of the top border of an element |
| [clientWidth](https://www.w3schools.com/jsref/prop_element_clientwidth.asp) | Returns the width of an element, including padding |
| [cloneNode()](https://www.w3schools.com/jsref/met_node_clonenode.asp) | Clones an element |
| [closest()](https://www.w3schools.com/jsref/met_element_closest.asp) | Searches up the DOM tree for the closest element which matches a specified CSS selector |
| [compareDocumentPosition()](https://www.w3schools.com/jsref/met_node_comparedocumentposition.asp) | Compares the document position of two elements |
| [contains()](https://www.w3schools.com/jsref/met_node_contains.asp) | Returns true if a node is a descendant of a node, otherwise false |
| [contentEditable](https://www.w3schools.com/jsref/prop_html_contenteditable.asp) | Sets or returns whether the content of an element is editable or not |
| [dir](https://www.w3schools.com/jsref/prop_html_dir.asp) | Sets or returns the value of the dir attribute of an element |
| [exitFullscreen()](https://www.w3schools.com/jsref/met_element_exitfullscreen.asp) | Cancels an element in fullscreen mode |
| [firstChild](https://www.w3schools.com/jsref/prop_node_firstchild.asp) | Returns the first child node of an element |
| [firstElementChild](https://www.w3schools.com/jsref/prop_element_firstelementchild.asp) | Returns the first child element of an element |
| [focus()](https://www.w3schools.com/jsref/met_html_focus.asp) | Gives focus to an element |
| [getAttribute()](https://www.w3schools.com/jsref/met_element_getattribute.asp) | Returns the specified attribute value of an element node |
| [getAttributeNode()](https://www.w3schools.com/jsref/met_element_getattributenode.asp) | Returns the specified attribute node |
| [getBoundingClientRect()](https://www.w3schools.com/jsref/met_element_getboundingclientrect.asp) | Returns the size of an element and its position relative to the viewport |
| [getElementsByClassName()](https://www.w3schools.com/jsref/met_element_getelementsbyclassname.asp) | Returns a collection of all child elements with the specified class name |
| [getElementsByTagName()](https://www.w3schools.com/jsref/met_element_getelementsbytagname.asp) | Returns a collection of all child elements with the specified tag name |
| [hasAttribute()](https://www.w3schools.com/jsref/met_element_hasattribute.asp) | Returns true if an element has the specified attribute, otherwise false |
| [hasAttributes()](https://www.w3schools.com/jsref/met_node_hasattributes.asp) | Returns true if an element has any attributes, otherwise false |
| [hasChildNodes()](https://www.w3schools.com/jsref/met_node_haschildnodes.asp) | Returns true if an element has any child nodes, otherwise false |
| [id](https://www.w3schools.com/jsref/prop_html_id.asp) | Sets or returns the value of the id attribute of an element |
| [innerHTML](https://www.w3schools.com/jsref/prop_html_innerhtml.asp) | Sets or returns the content of an element |
| [innerText](https://www.w3schools.com/jsref/prop_node_innertext.asp) | Sets or returns the text content of a node and its descendants |
| [insertAdjacentElement()](https://www.w3schools.com/jsref/met_node_insertadjacentelement.asp) | Inserts a HTML element at the specified position relative to the current element |
| [insertAdjacentHTML()](https://www.w3schools.com/jsref/met_node_insertadjacenthtml.asp) | Inserts a HTML formatted text at the specified position relative to the current element |
| [insertAdjacentText()](https://www.w3schools.com/jsref/met_node_insertadjacenttext.asp) | Inserts text into the specified position relative to the current element |
| [insertBefore()](https://www.w3schools.com/jsref/met_node_insertbefore.asp) | Inserts a new child node before a specified, existing, child node |
| [isContentEditable](https://www.w3schools.com/jsref/prop_html_iscontenteditable.asp) | Returns true if the content of an element is editable, otherwise false |
| [isDefaultNamespace()](https://www.w3schools.com/jsref/met_node_isdefaultnamespace.asp) | Returns true if a specified namespaceURI is the default, otherwise false |
| [isEqualNode()](https://www.w3schools.com/jsref/met_node_isequalnode.asp) | Checks if two elements are equal |
| [isSameNode()](https://www.w3schools.com/jsref/met_node_issamenode.asp) | Checks if two elements are the same node |
| [isSupported()](https://www.w3schools.com/jsref/met_node_issupported.asp) | Returns true if a specified feature is supported on the element |
| [lang](https://www.w3schools.com/jsref/prop_html_lang.asp) | Sets or returns the value of the lang attribute of an element |
| [lastChild](https://www.w3schools.com/jsref/prop_node_lastchild.asp) | Returns the last child node of an element |
| [lastElementChild](https://www.w3schools.com/jsref/prop_element_lastelementchild.asp) | Returns the last child element of an element |
| [matches()](https://www.w3schools.com/jsref/met_element_matches.asp) | Returns a Boolean value indicating whether an element is matched by a specific CSS selector or not |
| [namespaceURI](https://www.w3schools.com/jsref/prop_node_namespaceuri.asp) | Returns the namespace URI of an element |
| [nextSibling](https://www.w3schools.com/jsref/prop_node_nextsibling.asp) | Returns the next node at the same node tree level |
| [nextElementSibling](https://www.w3schools.com/jsref/prop_element_nextelementsibling.asp) | Returns the next element at the same node tree level |
| [nodeName](https://www.w3schools.com/jsref/prop_node_nodename.asp) | Returns the name of a node |
| [nodeType](https://www.w3schools.com/jsref/prop_node_nodetype.asp) | Returns the node type of a node |
| [nodeValue](https://www.w3schools.com/jsref/prop_node_nodevalue.asp) | Sets or returns the value of a node |
| [normalize()](https://www.w3schools.com/jsref/met_node_normalize.asp) | Joins adjacent text nodes and removes empty text nodes in an element |
| [offsetHeight](https://www.w3schools.com/jsref/prop_element_offsetheight.asp) | Returns the height of an element, including padding, border and scrollbar |
| [offsetWidth](https://www.w3schools.com/jsref/prop_element_offsetwidth.asp) | Returns the width of an element, including padding, border and scrollbar |
| [offsetLeft](https://www.w3schools.com/jsref/prop_element_offsetleft.asp) | Returns the horizontal offset position of an element |
| [offsetParent](https://www.w3schools.com/jsref/prop_element_offsetparent.asp) | Returns the offset container of an element |
| [offsetTop](https://www.w3schools.com/jsref/prop_element_offsettop.asp) | Returns the vertical offset position of an element |
| [outerHTML](https://www.w3schools.com/jsref/prop_html_outerhtml.asp) | Sets or returns the content of an element (including the start tag and the end tag) |
| [outerText](https://www.w3schools.com/jsref/prop_node_outertext.asp) | Sets or returns the outer text content of a node and its descendants |
| [ownerDocument](https://www.w3schools.com/jsref/prop_node_ownerdocument.asp) | Returns the root element (document object) for an element |
| [parentNode](https://www.w3schools.com/jsref/prop_node_parentnode.asp) | Returns the parent node of an element |
| [parentElement](https://www.w3schools.com/jsref/prop_node_parentelement.asp) | Returns the parent element node of an element |
| [previousSibling](https://www.w3schools.com/jsref/prop_node_previoussibling.asp) | Returns the previous node at the same node tree level |
| [previousElementSibling](https://www.w3schools.com/jsref/prop_element_previouselementsibling.asp) | Returns the previous element at the same node tree level |
| [querySelector()](https://www.w3schools.com/jsref/met_element_queryselector.asp) | Returns the first child element that matches a specified CSS selector(s) of an element |
| [querySelectorAll()](https://www.w3schools.com/jsref/met_element_queryselectorall.asp) | Returns all child elements that matches a specified CSS selector(s) of an element |
| [remove()](https://www.w3schools.com/jsref/met_element_remove.asp) | Removes the element from the DOM |
| [removeAttribute()](https://www.w3schools.com/jsref/met_element_removeattribute.asp) | Removes a specified attribute from an element |
| [removeAttributeNode()](https://www.w3schools.com/jsref/met_element_removeattributenode.asp) | Removes a specified attribute node, and returns the removed node |
| [removeChild()](https://www.w3schools.com/jsref/met_node_removechild.asp) | Removes a child node from an element |
| [removeEventListener()](https://www.w3schools.com/jsref/met_element_removeeventlistener.asp) | Removes an event handler that has been attached with the addEventListener() method |
| [replaceChild()](https://www.w3schools.com/jsref/met_node_replacechild.asp) | Replaces a child node in an element |
| [requestFullscreen()](https://www.w3schools.com/jsref/met_element_requestfullscreen.asp) | Shows an element in fullscreen mode |
| [scrollHeight](https://www.w3schools.com/jsref/prop_element_scrollheight.asp) | Returns the entire height of an element, including padding |
| [scrollIntoView()](https://www.w3schools.com/jsref/met_element_scrollintoview.asp) | Scrolls the specified element into the visible area of the browser window |
| [scrollLeft](https://www.w3schools.com/jsref/prop_element_scrollleft.asp) | Sets or returns the number of pixels an element's content is scrolled horizontally |
| [scrollTop](https://www.w3schools.com/jsref/prop_element_scrolltop.asp) | Sets or returns the number of pixels an element's content is scrolled vertically |
| [scrollWidth](https://www.w3schools.com/jsref/prop_element_scrollwidth.asp) | Returns the entire width of an element, including padding |
| [setAttribute()](https://www.w3schools.com/jsref/met_element_setattribute.asp) | Sets or changes the specified attribute, to the specified value |
| [setAttributeNode()](https://www.w3schools.com/jsref/met_element_setattributenode.asp) | Sets or changes the specified attribute node |
| [style](https://www.w3schools.com/jsref/prop_html_style.asp) | Sets or returns the value of the style attribute of an element |
| [tabIndex](https://www.w3schools.com/jsref/prop_html_tabindex.asp) | Sets or returns the value of the tabindex attribute of an element |
| [tagName](https://www.w3schools.com/jsref/prop_element_tagname.asp) | Returns the tag name of an element |
| [textContent](https://www.w3schools.com/jsref/prop_node_textcontent.asp) | Sets or returns the textual content of a node and its descendants |
| [title](https://www.w3schools.com/jsref/prop_html_title.asp) | Sets or returns the value of the title attribute of an element |
| toString() | Converts an element to a string |

## HTML DOM Events

HTML DOM events allow JavaScript to register different event handlers on elements in an HTML document.

Events are normally used in combination with functions, and the function will not be executed before the event occurs (such as when a user clicks a button).

|  |  |  |
| --- | --- | --- |
| Event | Description | Belongs To |
| [abort](https://www.w3schools.com/jsref/event_onabort_media.asp) | The event occurs when the loading of a media is aborted | [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp), [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [afterprint](https://www.w3schools.com/jsref/event_onafterprint.asp) | The event occurs when a page has started printing, or if the print dialogue box has been closed | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [animationend](https://www.w3schools.com/jsref/event_animationend.asp) | The event occurs when a CSS animation has completed | [AnimationEvent](https://www.w3schools.com/jsref/obj_animationevent.asp) |
| [animationiteration](https://www.w3schools.com/jsref/event_animationiteration.asp) | The event occurs when a CSS animation is repeated | [AnimationEvent](https://www.w3schools.com/jsref/obj_animationevent.asp) |
| [animationstart](https://www.w3schools.com/jsref/event_animationstart.asp) | The event occurs when a CSS animation has started | [AnimationEvent](https://www.w3schools.com/jsref/obj_animationevent.asp) |
| [beforeprint](https://www.w3schools.com/jsref/event_onbeforeprint.asp) | The event occurs when a page is about to be printed | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [beforeunload](https://www.w3schools.com/jsref/event_onbeforeunload.asp) | The event occurs before the document is about to be unloaded | [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp), [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [blur](https://www.w3schools.com/jsref/event_onblur.asp) | The event occurs when an element loses focus | [FocusEvent](https://www.w3schools.com/jsref/obj_focusevent.asp) |
| [canplay](https://www.w3schools.com/jsref/event_oncanplay.asp) | The event occurs when the browser can start playing the media (when it has buffered enough to begin) | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [canplaythrough](https://www.w3schools.com/jsref/event_oncanplaythrough.asp) | The event occurs when the browser can play through the media without stopping for buffering | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [change](https://www.w3schools.com/jsref/event_onchange.asp) | The event occurs when the content of a form element, the selection, or the checked state have changed (for <input>, <select>, and <textarea>) | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [click](https://www.w3schools.com/jsref/event_onclick.asp) | The event occurs when the user clicks on an element | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [contextmenu](https://www.w3schools.com/jsref/event_oncontextmenu.asp) | The event occurs when the user right-clicks on an element to open a context menu | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [copy](https://www.w3schools.com/jsref/event_oncopy.asp) | The event occurs when the user copies the content of an element | [ClipboardEvent](https://www.w3schools.com/jsref/obj_clipboardevent.asp) |
| [cut](https://www.w3schools.com/jsref/event_oncut.asp) | The event occurs when the user cuts the content of an element | [ClipboardEvent](https://www.w3schools.com/jsref/obj_clipboardevent.asp) |
| [dblclick](https://www.w3schools.com/jsref/event_ondblclick.asp) | The event occurs when the user double-clicks on an element | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [drag](https://www.w3schools.com/jsref/event_ondrag.asp) | The event occurs when an element is being dragged | [DragEvent](https://www.w3schools.com/jsref/obj_dragevent.asp) |
| [dragend](https://www.w3schools.com/jsref/event_ondragend.asp) | The event occurs when the user has finished dragging an element | [DragEvent](https://www.w3schools.com/jsref/obj_dragevent.asp) |
| [dragenter](https://www.w3schools.com/jsref/event_ondragenter.asp) | The event occurs when the dragged element enters the drop target | [DragEvent](https://www.w3schools.com/jsref/obj_dragevent.asp) |
| [dragleave](https://www.w3schools.com/jsref/event_ondragleave.asp) | The event occurs when the dragged element leaves the drop target | [DragEvent](https://www.w3schools.com/jsref/obj_dragevent.asp) |
| [dragover](https://www.w3schools.com/jsref/event_ondragover.asp) | The event occurs when the dragged element is over the drop target | [DragEvent](https://www.w3schools.com/jsref/obj_dragevent.asp) |
| [dragstart](https://www.w3schools.com/jsref/event_ondragstart.asp) | The event occurs when the user starts to drag an element | [DragEvent](https://www.w3schools.com/jsref/obj_dragevent.asp) |
| [drop](https://www.w3schools.com/jsref/event_ondrop.asp) | The event occurs when the dragged element is dropped on the drop target | [DragEvent](https://www.w3schools.com/jsref/obj_dragevent.asp) |
| [durationchange](https://www.w3schools.com/jsref/event_ondurationchange.asp) | The event occurs when the duration of the media is changed | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [ended](https://www.w3schools.com/jsref/event_onended.asp) | The event occurs when the media has reach the end (useful for messages like "thanks for listening") | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [error](https://www.w3schools.com/jsref/event_onerror.asp) | The event occurs when an error occurs while loading an external file | [ProgressEvent](https://www.w3schools.com/jsref/obj_progressevent.asp), [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp), [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [focus](https://www.w3schools.com/jsref/event_onfocus.asp) | The event occurs when an element gets focus | [FocusEvent](https://www.w3schools.com/jsref/obj_focusevent.asp) |
| [focusin](https://www.w3schools.com/jsref/event_onfocusin.asp) | The event occurs when an element is about to get focus | [FocusEvent](https://www.w3schools.com/jsref/obj_focusevent.asp) |
| [focusout](https://www.w3schools.com/jsref/event_onfocusout.asp) | The event occurs when an element is about to lose focus | [FocusEvent](https://www.w3schools.com/jsref/obj_focusevent.asp) |
| [fullscreenchange](https://www.w3schools.com/jsref/event_fullscreenchange.asp) | The event occurs when an element is displayed in fullscreen mode | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [fullscreenerror](https://www.w3schools.com/jsref/event_fullscreenerror.asp) | The event occurs when an element can not be displayed in fullscreen mode | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [hashchange](https://www.w3schools.com/jsref/event_onhashchange.asp) | The event occurs when there has been changes to the anchor part of a URL | [HashChangeEvent](https://www.w3schools.com/jsref/obj_hashchangeevent.asp) |
| [input](https://www.w3schools.com/jsref/event_oninput.asp) | The event occurs when an element gets user input | [InputEvent](https://www.w3schools.com/jsref/obj_inputevent.asp), [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [invalid](https://www.w3schools.com/jsref/event_oninvalid.asp) | The event occurs when an element is invalid | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [keydown](https://www.w3schools.com/jsref/event_onkeydown.asp) | The event occurs when the user is pressing a key | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| [keypress](https://www.w3schools.com/jsref/event_onkeypress.asp) | The event occurs when the user presses a key | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| [keyup](https://www.w3schools.com/jsref/event_onkeyup.asp) | The event occurs when the user releases a key | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| [load](https://www.w3schools.com/jsref/event_onload.asp) | The event occurs when an object has loaded | [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp), [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [loadeddata](https://www.w3schools.com/jsref/event_onloadeddata.asp) | The event occurs when media data is loaded | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [loadedmetadata](https://www.w3schools.com/jsref/event_onloadedmetadata.asp) | The event occurs when meta data (like dimensions and duration) are loaded | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [loadstart](https://www.w3schools.com/jsref/event_onloadstart.asp) | The event occurs when the browser starts looking for the specified media | [ProgressEvent](https://www.w3schools.com/jsref/obj_progressevent.asp) |
| [message](https://www.w3schools.com/jsref/event_onmessage_sse.asp) | The event occurs when a message is received through the event source | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [mousedown](https://www.w3schools.com/jsref/event_onmousedown.asp) | The event occurs when the user presses a mouse button over an element | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [mouseenter](https://www.w3schools.com/jsref/event_onmouseenter.asp) | The event occurs when the pointer is moved onto an element | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [mouseleave](https://www.w3schools.com/jsref/event_onmouseleave.asp) | The event occurs when the pointer is moved out of an element | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [mousemove](https://www.w3schools.com/jsref/event_onmousemove.asp) | The event occurs when the pointer is moving while it is over an element | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [mouseover](https://www.w3schools.com/jsref/event_onmouseover.asp) | The event occurs when the pointer is moved onto an element, or onto one of its children | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [mouseout](https://www.w3schools.com/jsref/event_onmouseout.asp) | The event occurs when a user moves the mouse pointer out of an element, or out of one of its children | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [mouseup](https://www.w3schools.com/jsref/event_onmouseup.asp) | The event occurs when a user releases a mouse button over an element | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| mousewheel | Deprecated. Use the [wheel](https://www.w3schools.com/jsref/event_onwheel.asp) event instead | [WheelEvent](https://www.w3schools.com/jsref/obj_wheelevent.asp) |
| [offline](https://www.w3schools.com/jsref/event_onoffline.asp) | The event occurs when the browser starts to work offline | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [online](https://www.w3schools.com/jsref/event_ononline.asp) | The event occurs when the browser starts to work online | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [open](https://www.w3schools.com/jsref/event_onopen_sse.asp) | The event occurs when a connection with the event source is opened | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [pagehide](https://www.w3schools.com/jsref/event_onpagehide.asp) | The event occurs when the user navigates away from a webpage | [PageTransitionEvent](https://www.w3schools.com/jsref/obj_pagetransitionevent.asp) |
| [pageshow](https://www.w3schools.com/jsref/event_onpageshow.asp) | The event occurs when the user navigates to a webpage | [PageTransitionEvent](https://www.w3schools.com/jsref/obj_pagetransitionevent.asp) |
| [paste](https://www.w3schools.com/jsref/event_onpaste.asp) | The event occurs when the user pastes some content in an element | [ClipboardEvent](https://www.w3schools.com/jsref/obj_clipboardevent.asp) |
| [pause](https://www.w3schools.com/jsref/event_onpause.asp) | The event occurs when the media is paused either by the user or programmatically | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [play](https://www.w3schools.com/jsref/event_onplay.asp) | The event occurs when the media has been started or is no longer paused | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [playing](https://www.w3schools.com/jsref/event_onplaying.asp) | The event occurs when the media is playing after having been paused or stopped for buffering | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| popstate | The event occurs when the window's history changes | [PopStateEvent](https://www.w3schools.com/jsref/obj_popstateevent.asp) |
| [progress](https://www.w3schools.com/jsref/event_onprogress.asp) | The event occurs when the browser is in the process of getting the media data (downloading the media) | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [ratechange](https://www.w3schools.com/jsref/event_onratechange.asp) | The event occurs when the playing speed of the media is changed | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [resize](https://www.w3schools.com/jsref/event_onresize.asp) | The event occurs when the document view is resized | [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp), [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [reset](https://www.w3schools.com/jsref/event_onreset.asp) | The event occurs when a form is reset | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [scroll](https://www.w3schools.com/jsref/event_onscroll.asp) | The event occurs when an element's scrollbar is being scrolled | [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp), [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [search](https://www.w3schools.com/jsref/event_onsearch.asp) | The event occurs when the user writes something in a search field (for <input="search">) | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [seeked](https://www.w3schools.com/jsref/event_onseeked.asp) | The event occurs when the user is finished moving/skipping to a new position in the media | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [seeking](https://www.w3schools.com/jsref/event_onseeking.asp) | The event occurs when the user starts moving/skipping to a new position in the media | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [select](https://www.w3schools.com/jsref/event_onselect.asp) | The event occurs after the user selects some text (for <input> and <textarea>) | [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp), [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [show](https://www.w3schools.com/jsref/event_onshow.asp) | The event occurs when a <menu> element is shown as a context menu | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [stalled](https://www.w3schools.com/jsref/event_onstalled.asp) | The event occurs when the browser is trying to get media data, but data is not available | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| storage | The event occurs when a Web Storage area is updated | [StorageEvent](https://www.w3schools.com/jsref/obj_storageevent.asp) |
| [submit](https://www.w3schools.com/jsref/event_onsubmit.asp) | The event occurs when a form is submitted | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [suspend](https://www.w3schools.com/jsref/event_onsuspend.asp) | The event occurs when the browser is intentionally not getting media data | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [timeupdate](https://www.w3schools.com/jsref/event_ontimeupdate.asp) | The event occurs when the playing position has changed (like when the user fast forwards to a different point in the media) | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [toggle](https://www.w3schools.com/jsref/event_ontoggle.asp) | The event occurs when the user opens or closes the <details> element | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [touchcancel](https://www.w3schools.com/jsref/event_touchcancel.asp) | The event occurs when the touch is interrupted | [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [touchend](https://www.w3schools.com/jsref/event_touchend.asp) | The event occurs when a finger is removed from a touch screen | [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [touchmove](https://www.w3schools.com/jsref/event_touchmove.asp) | The event occurs when a finger is dragged across the screen | [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [touchstart](https://www.w3schools.com/jsref/event_touchstart.asp) | The event occurs when a finger is placed on a touch screen | [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [transitionend](https://www.w3schools.com/jsref/event_transitionend.asp) | The event occurs when a CSS transition has completed | [TransitionEvent](https://www.w3schools.com/jsref/obj_transitionevent.asp) |
| [unload](https://www.w3schools.com/jsref/event_onunload.asp) | The event occurs once a page has unloaded (for <body>) | [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp), [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [volumechange](https://www.w3schools.com/jsref/event_onvolumechange.asp) | The event occurs when the volume of the media has changed (includes setting the volume to "mute") | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [waiting](https://www.w3schools.com/jsref/event_onwaiting.asp) | The event occurs when the media has paused but is expected to resume (like when the media pauses to buffer more data) | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [wheel](https://www.w3schools.com/jsref/event_onwheel.asp) | The event occurs when the mouse wheel rolls up or down over an element | [WheelEvent](https://www.w3schools.com/jsref/obj_wheelevent.asp) |

## HTML DOM Event Properties and Methods

|  |  |  |  |
| --- | --- | --- | --- |
| Property/Method | Description | | Belongs To |
| [altKey](https://www.w3schools.com/jsref/event_altkey.asp) | Returns whether the "ALT" key was pressed when the mouse event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [altKey](https://www.w3schools.com/jsref/event_key_altkey.asp) | Returns whether the "ALT" key was pressed when the key event was triggered | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp), [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [animationName](https://www.w3schools.com/jsref/event_animation_animationName.asp) | Returns the name of the animation | | [AnimationEvent](https://www.w3schools.com/jsref/obj_animationevent.asp) |
| [bubbles](https://www.w3schools.com/jsref/event_bubbles.asp) | Returns whether or not a specific event is a bubbling event | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [button](https://www.w3schools.com/jsref/event_button.asp) | Returns which mouse button was pressed when the mouse event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [buttons](https://www.w3schools.com/jsref/event_buttons.asp) | Returns which mouse buttons were pressed when the mouse event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [cancelable](https://www.w3schools.com/jsref/event_cancelable.asp) | Returns whether or not an event can have its default action prevented | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [charCode](https://www.w3schools.com/jsref/event_key_charcode.asp) | Returns the Unicode character code of the key that triggered the onkeypress event | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| changeTouches | Returns a list of all the touch objects whose state changed between the previous touch and this touch | | [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [clientX](https://www.w3schools.com/jsref/event_clientx.asp) | Returns the horizontal coordinate of the mouse pointer, relative to the current window, when the mouse event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp), [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [clientY](https://www.w3schools.com/jsref/event_clienty.asp) | Returns the vertical coordinate of the mouse pointer, relative to the current window, when the mouse event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp), [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| clipboardData | Returns an object containing the data affected by the clipboard operation | | [ClipboardData](https://www.w3schools.com/jsref/obj_clipboardevent.asp) |
| [code](https://www.w3schools.com/jsref/event_key_code.asp) | Returns the code of the key that triggered the event | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| composed | Returns whether the event is composed or not | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [createEvent()](https://www.w3schools.com/jsref/event_createevent.asp) | Creates a new event | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [ctrlKey](https://www.w3schools.com/jsref/event_ctrlkey.asp) | Returns whether the "CTRL" key was pressed when the mouse event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [ctrlKey](https://www.w3schools.com/jsref/event_key_ctrlkey.asp) | Returns whether the "CTRL" key was pressed when the key event was triggered | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp), [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [currentTarget](https://www.w3schools.com/jsref/event_currenttarget.asp) | Returns the element whose event listeners triggered the event | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [data](https://www.w3schools.com/jsref/event_inputevent_data.asp) | Returns the inserted characters | | [InputEvent](https://www.w3schools.com/jsref/obj_inputevent.asp) |
| dataTransfer | Returns an object containing the data being dragged/dropped, or inserted/deleted | | [DragEvent](https://www.w3schools.com/jsref/obj_dragevent.asp), [InputEvent](https://www.w3schools.com/jsref/obj_inputevent.asp) |
| [defaultPrevented](https://www.w3schools.com/jsref/event_defaultprevented.asp) | Returns whether or not the preventDefault() method was called for the event | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [deltaX](https://www.w3schools.com/jsref/event_wheel_deltax.asp) | Returns the horizontal scroll amount of a mouse wheel (x-axis) | | [WheelEvent](https://www.w3schools.com/jsref/obj_wheelevent.asp) |
| [deltaY](https://www.w3schools.com/jsref/event_wheel_deltay.asp) | Returns the vertical scroll amount of a mouse wheel (y-axis) | | [WheelEvent](https://www.w3schools.com/jsref/obj_wheelevent.asp) |
| [deltaZ](https://www.w3schools.com/jsref/event_wheel_deltaz.asp) | Returns the scroll amount of a mouse wheel for the z-axis | | [WheelEvent](https://www.w3schools.com/jsref/obj_wheelevent.asp) |
| [deltaMode](https://www.w3schools.com/jsref/event_wheel_deltamode.asp) | Returns a number that represents the unit of measurements for delta values (pixels, lines or pages) | | [WheelEvent](https://www.w3schools.com/jsref/obj_wheelevent.asp) |
| [detail](https://www.w3schools.com/jsref/event_detail.asp) | Returns a number that indicates how many times the mouse was clicked | | [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp) |
| [elapsedTime](https://www.w3schools.com/jsref/event_animation_elapsedtime.asp) | Returns the number of seconds an animation has been running | | [AnimationEvent](https://www.w3schools.com/jsref/obj_animationevent.asp) |
| [elapsedTime](https://www.w3schools.com/jsref/event_transition_elapsedtime.asp) | Returns the number of seconds a transition has been running | |  |
| [eventPhase](https://www.w3schools.com/jsref/event_eventphase.asp) | Returns which phase of the event flow is currently being evaluated | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| getTargetRanges() | Returns an array containing target ranges that will be affected by the insertion/deletion | | [InputEvent](https://www.w3schools.com/jsref/obj_inputevent.asp) |
| [getModifierState()](https://www.w3schools.com/jsref/event_mouse_getmodifierstate.asp) | Returns an array containing target ranges that will be affected by the insertion/deletion | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [inputType](https://www.w3schools.com/jsref/event_inputevent_inputtype.asp) | Returns the type of the change (i.e "inserting" or "deleting") | | [InputEvent](https://www.w3schools.com/jsref/obj_inputevent.asp) |
| isComposing | Returns whether the state of the event is composing or not | | [InputEvent](https://www.w3schools.com/jsref/obj_inputevent.asp), [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| [isTrusted](https://www.w3schools.com/jsref/event_istrusted.asp) | Returns whether or not an event is trusted | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [key](https://www.w3schools.com/jsref/event_key_key.asp) | Returns the key value of the key represented by the event | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| key | Returns the key of the changed storage item | | [StorageEvent](https://www.w3schools.com/jsref/obj_storageevent.asp) |
| [keyCode](https://www.w3schools.com/jsref/event_key_keycode.asp) | Returns the Unicode character code of the key that triggered the onkeypress event, or the Unicode key code of the key that triggered the onkeydown or onkeyup event | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| [location](https://www.w3schools.com/jsref/event_key_location.asp) | Returns the location of a key on the keyboard or device | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| lengthComputable | Returns whether the length of the progress can be computable or not | | [ProgressEvent](https://www.w3schools.com/jsref/obj_progressevent.asp) |
| loaded | Returns how much work has been loaded | | [ProgressEvent](https://www.w3schools.com/jsref/obj_progressevent.asp) |
| [metaKey](https://www.w3schools.com/jsref/event_metakey.asp) | Returns whether the "META" key was pressed when an event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [metaKey](https://www.w3schools.com/jsref/event_key_metakey.asp) | Returns whether the "meta" key was pressed when the key event was triggered | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp), [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| MovementX | Returns the horizontal coordinate of the mouse pointer relative to the position of the last mousemove event | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| MovementY | Returns the vertical coordinate of the mouse pointer relative to the position of the last mousemove event | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| newValue | Returns the new value of the changed storage item | | [StorageEvent](https://www.w3schools.com/jsref/obj_storageevent.asp) |
| [newURL](https://www.w3schools.com/jsref/event_hashchange_newurl.asp) | Returns the URL of the document, after the hash has been changed | | [HasChangeEvent](https://www.w3schools.com/jsref/obj_hashchangeevent.asp) |
| offsetX | Returns the horizontal coordinate of the mouse pointer relative to the position of the edge of the target element | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| offsetY | Returns the vertical coordinate of the mouse pointer relative to the position of the edge of the target element | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| oldValue | Returns the old value of the changed storage item | | [StorageEvent](https://www.w3schools.com/jsref/obj_storageevent.asp) |
| [oldURL](https://www.w3schools.com/jsref/event_hashchange_oldurl.asp) | Returns the URL of the document, before the hash was changed | | [HasChangeEvent](https://www.w3schools.com/jsref/obj_hashchangeevent.asp) |
| onemptied | The event occurs when something bad happens and the media file is suddenly unavailable (like unexpectedly disconnects) | |  |
| [pageX](https://www.w3schools.com/jsref/event_pagex.asp) | Returns the horizontal coordinate of the mouse pointer, relative to the document, when the mouse event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [pageY](https://www.w3schools.com/jsref/event_pagey.asp) | Returns the vertical coordinate of the mouse pointer, relative to the document, when the mouse event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [persisted](https://www.w3schools.com/jsref/event_pagetransition_persisted.asp) | Returns whether the webpage was cached by the browser | | [PageTransitionEvent](https://www.w3schools.com/jsref/obj_pagetransitionevent.asp) |
| [preventDefault()](https://www.w3schools.com/jsref/event_preventdefault.asp) | Cancels the event if it is cancelable, meaning that the default action that belongs to the event will not occur | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [propertyName](https://www.w3schools.com/jsref/event_transition_propertyName.asp) | Returns the name of the CSS property associated with the animation or transition | | [AnimationEvent](https://www.w3schools.com/jsref/obj_animationevent.asp), [TransitionEvent](https://www.w3schools.com/jsref/obj_transitionevent.asp) |
| pseudoElement | Returns the name of the pseudo-element of the animation or transition | | [AnimationEvent](https://www.w3schools.com/jsref/obj_animationevent.asp), [TransitionEvent](https://www.w3schools.com/jsref/obj_transitionevent.asp) |
| region |  | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [relatedTarget](https://www.w3schools.com/jsref/event_relatedtarget.asp) | Returns the element related to the element that triggered the mouse event | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [relatedTarget](https://www.w3schools.com/jsref/event_focus_relatedtarget.asp) | Returns the element related to the element that triggered the event | | [FocusEvent](https://www.w3schools.com/jsref/obj_focusevent.asp) |
| repeat | Returns whether a key is being hold down repeatedly, or not | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| [screenX](https://www.w3schools.com/jsref/event_screenx.asp) | Returns the horizontal coordinate of the mouse pointer, relative to the screen, when an event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [screenY](https://www.w3schools.com/jsref/event_screeny.asp) | Returns the vertical coordinate of the mouse pointer, relative to the screen, when an event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [shiftKey](https://www.w3schools.com/jsref/event_shiftkey.asp) | Returns whether the "SHIFT" key was pressed when an event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [shiftKey](https://www.w3schools.com/jsref/event_key_shiftkey.asp) | Returns whether the "SHIFT" key was pressed when the key event was triggered | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp), [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| state | Returns an object containing a copy of the history entries | | [PopStateEvent](https://www.w3schools.com/jsref/obj_popstateevent.asp) |
| [stopImmediatePropagation()](https://www.w3schools.com/jsref/event_stopimmediatepropagation.asp) | | Prevents other listeners of the same event from being called | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [stopPropagation()](https://www.w3schools.com/jsref/event_stoppropagation.asp) | Prevents further propagation of an event during event flow | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| storageArea | Returns an object representing the affected storage object | | [StorageEvent](https://www.w3schools.com/jsref/obj_storageevent.asp) |
| [target](https://www.w3schools.com/jsref/event_target.asp) | Returns the element that triggered the event | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| [targetTouches](https://www.w3schools.com/jsref/event_touch_targettouches.asp) | Returns a list of all the touch objects that are in contact with the surface and where the touchstart event occured on the same target element as the current target element | | [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [timeStamp](https://www.w3schools.com/jsref/event_timestamp.asp) | Returns the time (in milliseconds relative to the epoch) at which the event was created | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| total | Returns the total amount of work that will be loaded | | [ProgressEvent](https://www.w3schools.com/jsref/obj_progressevent.asp) |
| [touches](https://www.w3schools.com/jsref/event_touch_touches.asp) | Returns a list of all the touch objects that are currently in contact with the surface | | [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) |
| [transitionend](https://www.w3schools.com/jsref/event_transitionend.asp) | The event occurs when a CSS transition has completed | | [TransitionEvent](https://www.w3schools.com/jsref/obj_transitionevent.asp) |
| [type](https://www.w3schools.com/jsref/event_type.asp) | Returns the name of the event | | [Event](https://www.w3schools.com/jsref/obj_event.asp) |
| url | Returns the URL of the changed item's document | | [StorageEvent](https://www.w3schools.com/jsref/obj_storageevent.asp) |
| [which](https://www.w3schools.com/jsref/event_which.asp) | Returns which mouse button was pressed when the mouse event was triggered | | [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) |
| [which](https://www.w3schools.com/jsref/event_key_which.asp) | Returns the Unicode character code of the key that triggered the onkeypress event, or the Unicode key code of the key that triggered the onkeydown or onkeyup event | | [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) |
| [view](https://www.w3schools.com/jsref/event_view.asp) | Returns a reference to the Window object where the event occurred | | [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp) |

## Event Objects

When an event occurs in HTML, the event belongs to a certain event object, like a mouse click event belongs to the MouseEvent object.The Event Object

All event objects are based on the Event Object, and inherit all of their properties and methods

|  |  |
| --- | --- |
| Event Object | Description |
| [Event](https://www.w3schools.com/jsref/obj_event.asp) | The parent of all event objects |

## Other Event Objects

These are the most common event objects:

|  |  |
| --- | --- |
| Event Object | Description |
| [AnimationEvent](https://www.w3schools.com/jsref/obj_animationevent.asp) | For CSS animations |
| [ClipboardEvent](https://www.w3schools.com/jsref/obj_clipboardevent.asp) | For modification of the clipboard |
| [DragEvent](https://www.w3schools.com/jsref/obj_dragevent.asp) | For drag and drop interaction |
| [FocusEvent](https://www.w3schools.com/jsref/obj_focusevent.asp) | For focus-related events |
| [HashChangeEvent](https://www.w3schools.com/jsref/obj_hashchangeevent.asp) | For changes in the anchor part of the URL |
| [InputEvent](https://www.w3schools.com/jsref/obj_inputevent.asp) | For user input |
| [KeyboardEvent](https://www.w3schools.com/jsref/obj_keyboardevent.asp) | For keyboard interaction |
| [MouseEvent](https://www.w3schools.com/jsref/obj_mouseevent.asp) | For mouse interaction |
| [PageTransitionEvent](https://www.w3schools.com/jsref/obj_pagetransitionevent.asp) | For navigating to, and away from, web pages |
| [PopStateEvent](https://www.w3schools.com/jsref/obj_popstateevent.asp) | For changes in the history entry |
| [ProgressEvent](https://www.w3schools.com/jsref/obj_progressevent.asp) | For the progress of loading external resources |
| [StorageEvent](https://www.w3schools.com/jsref/obj_storageevent.asp) | For changes in the window's storage area. |
| [TouchEvent](https://www.w3schools.com/jsref/obj_touchevent.asp) | For touch interaction |
| [TransitionEvent](https://www.w3schools.com/jsref/obj_transitionevent.asp) | For CSS transitions |
| [UiEvent](https://www.w3schools.com/jsref/obj_uievent.asp) | For user interface interaction |
| [WheelEvent](https://www.w3schools.com/jsref/obj_wheelevent.asp) | For mousewheel interaction |

## The HTMLCollection Object

An HTMLCollection object is an array-like list of HTML elements.

Methods like the getElementsByTagName() returns an HTMLCollection.

## Properties and Methods

The following properties and methods can be used on a HTMLCollection object:

|  |  |
| --- | --- |
| Property / Method | Description |
| [item()](https://www.w3schools.com/jsref/met_htmlcollection_item.asp) | Returns the element at the specified index in an HTMLCollection |
| [length](https://www.w3schools.com/jsref/prop_htmlcollection_length.asp) | Returns the number of elements in an HTMLCollection |
| [namedItem()](https://www.w3schools.com/jsref/met_htmlcollection_nameditem.asp) | Returns the element with the specified ID, or name, in an HTMLCollection |

## Location Object

The location object contains information about the current URL.

The location object is part of the window object and is accessed through the window.location property.

## Location Object Properties

|  |  |
| --- | --- |
| Property | Description |
| [hash](https://www.w3schools.com/jsref/prop_loc_hash.asp) | Sets or returns the anchor part (#) of a URL |
| [host](https://www.w3schools.com/jsref/prop_loc_host.asp) | Sets or returns the hostname and port number of a URL |
| [hostname](https://www.w3schools.com/jsref/prop_loc_hostname.asp) | Sets or returns the hostname of a URL |
| [href](https://www.w3schools.com/jsref/prop_loc_href.asp) | Sets or returns the entire URL |
| [origin](https://www.w3schools.com/jsref/prop_loc_origin.asp) | Returns the protocol, hostname and port number of a URL |
| [pathname](https://www.w3schools.com/jsref/prop_loc_pathname.asp) | Sets or returns the path name of a URL |
| [port](https://www.w3schools.com/jsref/prop_loc_port.asp) | Sets or returns the port number of a URL |
| [protocol](https://www.w3schools.com/jsref/prop_loc_protocol.asp) | Sets or returns the protocol of a URL |
| [search](https://www.w3schools.com/jsref/prop_loc_search.asp) | Sets or returns the querystring part of a URL |

## Location Object Methods

|  |  |
| --- | --- |
| Method | Description |
| [assign()](https://www.w3schools.com/jsref/met_loc_assign.asp) | Loads a new document |
| [reload()](https://www.w3schools.com/jsref/met_loc_reload.asp) | Reloads the current document |
| [replace()](https://www.w3schools.com/jsref/met_loc_replace.asp) | Replaces the current document with a new one |

## Navigator Object

The navigator object contains information about the browser.

## Navigator Object Properties

|  |  |
| --- | --- |
| Property | Description |
| [appCodeName](https://www.w3schools.com/jsref/prop_nav_appcodename.asp) | Returns the code name of the browser |
| [appName](https://www.w3schools.com/jsref/prop_nav_appname.asp) | Returns the name of the browser |
| [appVersion](https://www.w3schools.com/jsref/prop_nav_appversion.asp) | Returns the version information of the browser |
| [cookieEnabled](https://www.w3schools.com/jsref/prop_nav_cookieenabled.asp) | Determines whether cookies are enabled in the browser |
| [geolocation](https://www.w3schools.com/jsref/prop_nav_geolocation.asp) | Returns a Geolocation object that can be used to locate the user's position |
| [language](https://www.w3schools.com/jsref/prop_nav_language.asp) | Returns the language of the browser |
| [onLine](https://www.w3schools.com/jsref/prop_nav_online.asp) | Determines whether the browser is online |
| [platform](https://www.w3schools.com/jsref/prop_nav_platform.asp) | Returns for which platform the browser is compiled |
| [product](https://www.w3schools.com/jsref/prop_nav_product.asp) | Returns the engine name of the browser |
| [userAgent](https://www.w3schools.com/jsref/prop_nav_useragent.asp) | Returns the user-agent header sent by the browser to the server |

## Navigator Object Methods

|  |  |
| --- | --- |
| Method | Description |
| [javaEnabled()](https://www.w3schools.com/jsref/met_nav_javaenabled.asp) | Specifies whether or not the browser has Java enabled |
| [taintEnabled()](https://www.w3schools.com/jsref/met_nav_taintenabled.asp) | Removed in JavaScript version 1.2. Specifies whether the browser has data tainting enabled |

## Screen Object

The screen object contains information about the visitor's screen.

## Screen Object Properties

|  |  |
| --- | --- |
| Property | Description |
| [availHeight](https://www.w3schools.com/jsref/prop_screen_availheight.asp) | Returns the height of the screen (excluding the Windows Taskbar) |
| [availWidth](https://www.w3schools.com/jsref/prop_screen_availwidth.asp) | Returns the width of the screen (excluding the Windows Taskbar) |
| [colorDepth](https://www.w3schools.com/jsref/prop_screen_colordepth.asp) | Returns the bit depth of the color palette for displaying images |
| [height](https://www.w3schools.com/jsref/prop_screen_height.asp) | Returns the total height of the screen |
| [pixelDepth](https://www.w3schools.com/jsref/prop_screen_pixeldepth.asp) | Returns the color resolution (in bits per pixel) of the screen |
| [width](https://www.w3schools.com/jsref/prop_screen_width.asp) | Returns the total width of the screen |

## Window Object

The window object represents an open window in a browser.

If a document contain frames (<iframe> tags), the browser creates one window object for the HTML document, and one additional window object for each frame.

## Window Object Properties

|  |  |
| --- | --- |
| Property | Description |
| [closed](https://www.w3schools.com/jsref/prop_win_closed.asp) | Returns a Boolean value indicating whether a window has been closed or not |
| [console](https://www.w3schools.com/jsref/obj_console.asp) | Returns a reference to the Console object, which provides methods for logging information to the browser's console ([See Console object](https://www.w3schools.com/jsref/obj_console.asp)) |
| [defaultStatus](https://www.w3schools.com/jsref/prop_win_defaultstatus.asp) | Sets or returns the default text in the statusbar of a window |
| [document](https://www.w3schools.com/jsref/dom_obj_document.asp) | Returns the Document object for the window ([See Document object](https://www.w3schools.com/jsref/dom_obj_document.asp)) |
| [frameElement](https://www.w3schools.com/jsref/prop_win_frameElement.asp) | Returns the <iframe> element in which the current window is inserted |
| [frames](https://www.w3schools.com/jsref/prop_win_frames.asp) | Returns all <iframe> elements in the current window |
| [history](https://www.w3schools.com/jsref/obj_history.asp) | Returns the History object for the window ([See History object](https://www.w3schools.com/jsref/obj_history.asp)) |
| [innerHeight](https://www.w3schools.com/jsref/prop_win_innerheight.asp) | Returns the height of the window's content area (viewport) including scrollbars |
| [innerWidth](https://www.w3schools.com/jsref/prop_win_innerheight.asp) | Returns the width of a window's content area (viewport) including scrollbars |
| [length](https://www.w3schools.com/jsref/prop_win_length.asp) | Returns the number of <iframe> elements in the current window |
| [localStorage](https://www.w3schools.com/jsref/prop_win_localstorage.asp) | Allows to save key/value pairs in a web browser. Stores the data with no expiration date |
| [location](https://www.w3schools.com/jsref/obj_location.asp) | Returns the Location object for the window ([See Location object](https://www.w3schools.com/jsref/obj_location.asp)) |
| [name](https://www.w3schools.com/jsref/prop_win_name.asp) | Sets or returns the name of a window |
| [navigator](https://www.w3schools.com/jsref/obj_navigator.asp) | Returns the Navigator object for the window ([See Navigator object](https://www.w3schools.com/jsref/obj_navigator.asp)) |
| [opener](https://www.w3schools.com/jsref/prop_win_opener.asp) | Returns a reference to the window that created the window |
| [outerHeight](https://www.w3schools.com/jsref/prop_win_outerheight.asp) | Returns the height of the browser window, including toolbars/scrollbars |
| [outerWidth](https://www.w3schools.com/jsref/prop_win_outerheight.asp) | Returns the width of the browser window, including toolbars/scrollbars |
| [pageXOffset](https://www.w3schools.com/jsref/prop_win_pagexoffset.asp) | Returns the pixels the current document has been scrolled (horizontally) from the upper left corner of the window |
| [pageYOffset](https://www.w3schools.com/jsref/prop_win_pagexoffset.asp) | Returns the pixels the current document has been scrolled (vertically) from the upper left corner of the window |
| [parent](https://www.w3schools.com/jsref/prop_win_parent.asp) | Returns the parent window of the current window |
| [screen](https://www.w3schools.com/jsref/obj_screen.asp) | Returns the Screen object for the window [(See Screen object)](https://www.w3schools.com/jsref/obj_screen.asp) |
| [screenLeft](https://www.w3schools.com/jsref/prop_win_screenleft.asp) | Returns the horizontal coordinate of the window relative to the screen |
| [screenTop](https://www.w3schools.com/jsref/prop_win_screenleft.asp) | Returns the vertical coordinate of the window relative to the screen |
| [screenX](https://www.w3schools.com/jsref/prop_win_screenx.asp) | Returns the horizontal coordinate of the window relative to the screen |
| [screenY](https://www.w3schools.com/jsref/prop_win_screenx.asp) | Returns the vertical coordinate of the window relative to the screen |
| [sessionStorage](https://www.w3schools.com/jsref/prop_win_sessionstorage.asp) | Allows to save key/value pairs in a web browser. Stores the data for one session |
| scrollX | An alias of [pageXOffset](https://www.w3schools.com/jsref/prop_win_pagexoffset.asp) |
| scrollY | An alias of [pageYOffset](https://www.w3schools.com/jsref/prop_win_pagexoffset.asp) |
| [self](https://www.w3schools.com/jsref/prop_win_self.asp) | Returns the current window |
| [status](https://www.w3schools.com/jsref/prop_win_status.asp) | Sets or returns the text in the statusbar of a window |
| [top](https://www.w3schools.com/jsref/prop_win_top.asp) | Returns the topmost browser window |

## Window Object Methods

|  |  |
| --- | --- |
| Method | Description |
| [alert()](https://www.w3schools.com/jsref/met_win_alert.asp) | Displays an alert box with a message and an OK button |
| [atob()](https://www.w3schools.com/jsref/met_win_atob.asp) | Decodes a base-64 encoded string |
| [blur()](https://www.w3schools.com/jsref/met_win_blur.asp) | Removes focus from the current window |
| [btoa()](https://www.w3schools.com/jsref/met_win_btoa.asp) | Encodes a string in base-64 |
| [clearInterval()](https://www.w3schools.com/jsref/met_win_clearinterval.asp) | Clears a timer set with setInterval() |
| [clearTimeout()](https://www.w3schools.com/jsref/met_win_cleartimeout.asp) | Clears a timer set with setTimeout() |
| [close()](https://www.w3schools.com/jsref/met_win_close.asp) | Closes the current window |
| [confirm()](https://www.w3schools.com/jsref/met_win_confirm.asp) | Displays a dialog box with a message and an OK and a Cancel button |
| [focus()](https://www.w3schools.com/jsref/met_win_focus.asp) | Sets focus to the current window |
| [getComputedStyle()](https://www.w3schools.com/jsref/jsref_getcomputedstyle.asp) | Gets the current computed CSS styles applied to an element |
| getSelection() | Returns a Selection object representing the range of text selected by the user |
| [matchMedia()](https://www.w3schools.com/jsref/met_win_matchmedia.asp) | Returns a MediaQueryList object representing the specified CSS media query string |
| [moveBy()](https://www.w3schools.com/jsref/met_win_moveby.asp) | Moves a window relative to its current position |
| [moveTo()](https://www.w3schools.com/jsref/met_win_moveto.asp) | Moves a window to the specified position |
| [open()](https://www.w3schools.com/jsref/met_win_open.asp) | Opens a new browser window |
| [print()](https://www.w3schools.com/jsref/met_win_print.asp) | Prints the content of the current window |
| [prompt()](https://www.w3schools.com/jsref/met_win_prompt.asp) | Displays a dialog box that prompts the visitor for input |
| requestAnimationFrame() | Requests the browser to call a function to update an animation before the next repaint |
| [resizeBy()](https://www.w3schools.com/jsref/met_win_resizeby.asp) | Resizes the window by the specified pixels |
| [resizeTo()](https://www.w3schools.com/jsref/met_win_resizeto.asp) | Resizes the window to the specified width and height |
| scroll() | Deprecated. This method has been replaced by the [scrollTo()](https://www.w3schools.com/jsref/met_win_scrollto.asp) method. |
| [scrollBy()](https://www.w3schools.com/jsref/met_win_scrollby.asp) | Scrolls the document by the specified number of pixels |
| [scrollTo()](https://www.w3schools.com/jsref/met_win_scrollto.asp) | Scrolls the document to the specified coordinates |
| [setInterval()](https://www.w3schools.com/jsref/met_win_setinterval.asp) | Calls a function or evaluates an expression at specified intervals (in milliseconds) |
| [setTimeout()](https://www.w3schools.com/jsref/met_win_settimeout.asp) | Calls a function or evaluates an expression after a specified number of milliseconds |
| [stop()](https://www.w3schools.com/jsref/met_win_stop.asp) | Stops the window from loading |