

Javascript



Event Handling



- Onblur
- Ondblclick
- Onclick
- Onfocus
- Onkeydown
- Onkeypress
- Onload
- Onunload
- Onmouseover
- Onmouseout
- Onmousedown
- Onmouseup
- Onmousemove
- Onreset
- Onselect
- onsubmit

Event



- JavaScript's interaction with HTML is handled through events that occur when the user or the browser manipulates a page.
- For an example: When page loads, When we press any key.
- Events are part of DOM(document object model) and every html element contains a set of events which can trigger JS code.

Use of onblur and onfocus



- Onblur: When window loses its focus
- Onfocus: When window gets focus

- Example:

- `<!DOCTYPE html> <html><head></head>`
- `<body>`

Enter Value: `<input type="text" id="text" onfocus="fun()" onblur="abc()">`

- `<script>`
- `function fun(){`
- `document.getElementById("text").style.background = "pink";`
- `}`
- `function abc() {`
- `document.getElementById("text").style.background = "blue";`
- `}`
- `</script>`
- `</body>`
- `</html>`



- Onclick: When click one time.
- Ondblclick: When click two times.

onclick



- `<html>`
- `<head></head>`
- `<body>`
- Enter the value of radius:
- `<input type="text" id="text1">`
- `<input type="button" onclick="fun()">`

- `
`
- `<p id="sam"></p>`
- `<script>`
- `function fun(){`
- `var a = document.getElementById("text1").value;`
- `var area = Math.PI*a*a;`
- `document.getElementById("sam").innerHTML=area;`
- `}`

- `</script>`

- `</body>`
- `</html>`

Enter the value of radius: 7

153.93804002589985

onclick



- `<!doctype html>`
- `<head></head>`
- `<body>`
- `<p id="para" onclick="fun()"> This is paragraph</p>`
- `<script type="text/javascript">`
- `function fun()`
- `{`
- `Document.getElementById("para").innerHTML="This is the new content";`
- `}`
- `</script>`
- `</body>`
- `</html>`

Onchange event



- `<html>`
- `<head></head>`
- `<body id="p">`
- `<select id="sel" onchange="fun()">`
- `<option value="green">green</option>`
- `<option value="grey">grey</option>`
- `<option value="yellow">yellow</option>`
- `<option value="pink">pink</option>`
- `</select>`
- `<script>`
- `function fun(){`
- `var a = document.getElementById("sel").value;`
- `document.getElementById("p").style.backgroundColor=a;`
- `}`
- `</script>`

- `</body>`
- `</html>`



onkeyup



- Onkeyup: When you are releasing a key. It is different from onkeypress. Because onkeypress is used when you pressed a key. The **KeyUp** event is triggered when the user releases a Key.

- Onkeydown: when you are releasing a key. The **KeyDown** event is triggered when the user presses a Key.

- The **KeyPress** event is triggered when the user presses & releases a Key. (onKeyDown followed by onKeyUp)

- `<!DOCTYPE html>`

- `<html>`

- `<body>`

- Enter your name: `<input type="text" id="fname" onkeyup="fun()">`

- `<p>My name is: </p>`

- `<script>`

- `function fun() {`

- `var x = document.getElementById("fname").value;`

- `document.getElementById("sample").innerHTML = x;`

- `}`

- `</script></body>`

- `</html>`

Enter your name:

My name is: zs

onkeydown



- `<!DOCTYPE html>`
- `<html>`
- `<body>`



omg!!

OK

- `<input type="text" onkeydown="fun()">`
- `<script>`
- `function fun() {`
- `alert("omg!! ");`
- `}`
- `</script>`
- `</body>`
- `</html>`

onkeypress



- `<!DOCTYPE html>`
- `<html>`
- `<body>`



omg!!

OK

- `<input type="text" onkeypress="fun()">`
- `<script>`
- `function fun() {`
- `alert("omg!! ");`
- `}`
- `</script>`
- `</body>`
- `</html>`

String Object



- A string is a sequence of characters.
- `Var str="Welcome to Chitkara University";`
- `Var str1="hello"`
- To find character at 6th position: `str.charAt(6)`
(NOTE: index starts from zero so here it will go from 0 to 6.)
- To convert it into lower case: `str.toLowerCase()`
- To convert it into upper case: `str.toUpperCase()`
- To find the position of character or string: `str.indexOf("character/ String")`
- To merge two string: `str.concat(str1)`

character at 6th =e

in lower case=welcome to chitkara university

in upper case=WELCOME TO CHITKARA UNIVERSITY

index of to=8

concatination of=Welcome to chitkara universityhello everyone

- <!doctype html>
- <head></head>
- <body>
- <script type="text/javascript">
- var str="Welcome to chitkara university";
- var str1= "hello everyone";
- document.write("character at 6th =" +str.charAt(6)+"
");
- document.write("in lower case=" +str.toLowerCase()+"
");
- document.write("in upper case=" +str.toUpperCase()+"
");
- document.write("index of to=" +str.indexOf("to")+"
");
- document.write("concatination of=" +str.concat(str1)+"
");
- </script>
- </body>
- </html>

Math object



- Math object is used to perform simple and complex arithmetic operations.
- Properties are:
- Math.PI,
- Math.E (holds Euler's no. value is 2.718),
- Math.LOG10E(base-10 logarithm of E = 0.434)
- Math.LOG2E(base-10 logarithm of E = 1.442)
- Math.SQRT1_2(returns square root of $\frac{1}{2}$)
- Math.SQRT2(returns square root of 2)



- `<!doctype html>`
- `<head></head>`
- `<body>`
- `<script type="text/javascript">`
- `document.write(Math.PI+"
");`
- `document.write(Math.E+"
");`
- `document.write(Math.LOG10E+"
");`
- `</script> </body>`

```
3.141592653589793
2.718281828459045
0.4342944819032518
```

Methods



| <code>abs(x)</code> | To find absolute value |
|------------------------------|--|
| <code>ceil(x)</code> | Rounds up x to nearest bigger integer |
| <code>exp(x)</code> | Returns the value of e^x |
| <code>floor(x)</code> | Rounds up x to the nearest smaller integer |
| <code>log(x)</code> | Returns natural logarithmic value of x |
| <code>min(x,,y,z,...)</code> | Find lowest number |
| <code>max(x,y,z,...)</code> | Find highest no |
| <code>pow(x,y)</code> | X to the power of y |
| <code>random()</code> | Returns random number between 0 and 1 |
| <code>round(x)</code> | Rounds up x to nearest integer |
| <code>sqrt(x)</code> | Returns square root of x |



- `<!doctype html>`
- `<head></head>`
- `<body>`
- `<script type="text/javascript">`
- `document.write("absolute value="+Math.abs(-5)+"
");`
- `document.write("ceil value="+Math.ceil(5.6)+"
");`
- `document.write("floor value="+Math.floor(5.6)+"
");`
- `document.write("log value="+Math.log(1000)+"
");`
- `document.write("min value="+Math.min(23,45,12,56)+"
");`
- `document.write("max value="+Math.max(23,45,12,56)+"
");`
- `document.write("2 raise to power 4="+Math.pow(2,4)+"
");`
- `document.write("exponential value="+Math.exp(5)+"
");`
- `document.write("round of="+Math.round(5.6)+"
");`
- `document.write("square root of="+Math.sqrt(256)+"
");`
- `document.write("random value="+Math.random()+"
");`
- `</script>`
- `</body>`

absolute value5
ceil value6
floor value5
log value6.907755278982137
min value12
max value56
2 raise to power 416
exponential value148.4131591025766
round of6
square root of16
random value0.22643660118571374

Date object



- Date object is used to display a date on a web page.
- Date object can be created with the help of constructor function.
- To create date object there are following ways:
- `Var dat = new Date();`
- `Var dat = new Date(milliseconds);`
- `Var dat = new Date(yyyy, mm, dd [, hr, min, sec, millisec])`;
;
- `Var dat = new Date("mm dd, yyy");`
- `Var dat = new Date("mm dd, yyyy hr:min:sec");`

| getDate() | Returns current day (from 1 to 31) |
|-------------------|---|
| getDay() | Returns day of week. 0=mon, 6= sun |
| getFullYear() | Returns current year |
| getHours() | 0 to 23 |
| getMilliseconds() | 0 to 999 |
| getMinutes() | 0 to 59 |
| getMonth() | 0 to 11 |
| getSeconds() | 0 to 59 |
| getTime() | Returns milliseconds since midnight jan 1, 1970 |
| setDate() | Set the day of month |
| setFullYear() | Set any year four digit |
| setMonth() | Set any month |

For e.g. <!doctype html>
<head></head>
<body>

```
<script type="text/javascript">  
var dat = new Date();  
var x = dat.getDate()  
document.write(dat + "<br>");  
document.write(x);  
</script>  
</body>  
</html>
```



Thu Oct 05 2017 22:01:41 GMT+0530 (India Standard Time)
5

```
<!doctype html>  
<head></head>  
<body>  
<script type="text/javascript">  
var dat = new Date();  
var x = dat.setDate(10);  
document.write(dat + "<br>");  
</script>  
</body>  
</html>
```

Tue Oct 10 2017 22:03:50 GMT+0530 (India Standard Time)



- `<!doctype html>`
- `<head></head>`
- `<body>`
- `<script type="text/javascript">`
- `var dat = new Date();`
- `var x = dat.toString();`
- `var y = dat.toString();`
- `var z = dat.toString();`
- `var p = dat.valueOf();`
- `document.write(x + "
");`
- `document.write(y + "
");`
- `document.write(z + "
");`
- `document.write(p + "
");`
- `</script>`
- `</body>`
- `</html>`

Thu Oct 05 2017

Thu Oct 05 2017 22:19:38 GMT+0530 (India Standard Time)

22:19:38 GMT+0530 (India Standard Time)

1507222178332

History object



- The history object contains the URLs visited by the user (within a browser window).
- The history object is part of the window object and is accessed through the window.history property.
- Length Returns the number of URLs in the history list.
- window.history.propertyname;
- Or
- history.propertyname;
- Example:



- `<!DOCTYPE html>`
- `<html>`
- `<body>`

- `<p>Number of URLs in history list:</p>`

- `<p id="demo"></p>`

- `<p>Note: This example is opened in a new frame and will be treated as a new "session".</p>`

- `<script>`
- `var x = history.length;`
- `document.getElementById("demo").innerHTML = x;`
- `</script>`

- `</body>`
- `</html>`



- Methods:
- `history.back()` Pressing back button in browser
- `history.forward()` Pressing forward button in browser.
- `History.go()`



- ```
<html>
<head>
<script>
function b() {
 window.history.back()
}
</script>
</head>
<body>

<input type="button" value="Back" onclick="b()">

</body>
</html>
```

A rectangular button with a light gray background and a thin border. The word "Back" is written in a black, sans-serif font in the center of the button.

Back



- `<html>`  
`<head>`  
`<script>`  
`function fw() {`  
`window.history.forward()`  
`}`  
`</script>`  
`</head>`  
`<body>`  
  
`<input type="button" value="Forward" onclick="fw()">`  
  
`</body>`  
`</html>`

Forward



- `<!DOCTYPE html>`
- `<html>`
- `<body>`

Go 2 pages back

- `<button onclick="goBack()">Go 2 pages back</button>`

- `<script>`
- `function goBack() {`
- `window.history.go(-2);`
- `}`
- `</script>`

- `</body>`
- `</html>`

# Location object



- The `window.location` object can be used to get the current page address (URL) and to redirect the browser to a new page.
- Properties:
- **`window.location.href`** returns the href (URL) of the current page
- **`window.location.hostname`** returns the domain name of the web host
- **`window.location.pathname`** returns the path and filename of the current page
- **`window.location.protocol`** returns the web protocol used (http: or https:)
- **`window.location.href`** Sets or returns the entire URL
- **`window.location.search`** Sets or returns the querystring part of a URL
- **`window.location.hash`** Sets or returns the anchor part (#) of a URL
- **`Window.location.port`** Sets or returns the port number of a URL
- **`host`** Sets or returns the hostname and port number of a URL

# methods



- `Window.location.assign()`: loads a new document
- `Window.location.reload()`
- `Window.location.replace()`

- <!DOCTYPE html>
- <html>
- <body>
- <h2>JavaScript</h2>
- <h3>The window.location object</h3>
- <input type="button" value="Load new
- document" onclick="newDoc()">
- <script>
- function newDoc() {
- window.location.assign("https://www.chitkara.edu.in/")
- }
- </script>
- </body>
- </html>

Load new document





- `<!DOCTYPE html>`
- `<html>`
- `<body>`
  
- `<h2>JavaScript</h2>`
  
- `<h3>The window.location object</h3>`
  
- `<input type="button" value="Load new`
- `document" onclick="newDoc()">`
  
- `<script>`
- `function newDoc() {`
- 
- `window.location.reload();`
- `}`
- `</script>`
  
- `</body>`
- `</html>`



- `<!DOCTYPE html>`
- `<html>`
- `<body>`
  
- `<button onclick="myFunction()">Replace document</button>`
  
- `<script>`
- `function myFunction() {`
- `location.replace("https://www.w3schools.com")`
- `}`
- `</script>`
  
- `</body>`
- `</html>`





- `<!DOCTYPE html>`
- `<html>`
- `<body>`
- `<button onclick="myFunction()">Replace document</button>`
- `<script>`
- `function myFunction() {`
- `location.replace("https://www.w3schools.com")`
- `}`
- `</script>`
- `</body>`
- `</html>`

# Window object



- [closed](#) Returns a Boolean value indicating whether a window has been closed or not.
- [innerHeight](#) Returns the inner height of a window's content area
- [innerWidth](#) Returns the inner width of a window's content area
- [length](#) Returns the number of <iframe> elements in the current window
- Location:
- Navigator:
- Document:
- History:
- [outerHeight](#) Returns the outer height of a window, including toolbars/scrollbars
- [outerWidth](#) Returns the outer width of a window, including toolbars/scrollbars
- Parent Returns the parent window of the current window
- Self Returns the current window
- Status Sets or returns the text in the statusbar of a window

# Navigator object



- The navigator object contains information about the browser.
- **appVersion** property returns the version information of the browser.
- **appName** Returns the name of the browser
- **appCodeName** Returns the code name of the browser.
- **cookieEnabled** Determines whether cookies are enabled in the browser
- **userAgent** Returns the user-agent header sent by the browser to the server

- `<!DOCTYPE html>`

- `<html> <body>`

- `<button onclick="fun()">Try it</button>`

- `<p id="demo"></p>`

- `<p id="demo1"></p>`

- `<p id="demo2"></p>`

- `<p id="demo3"></p>`

- `<p id="demo4"></p>`

- `<script>`

- `function fun() {`

- `var x = "Browser CodeName: " + navigator.appCodeName;`

- `document.getElementById("demo").innerHTML = x+"<br>";`

- `var y = "Browser Name: " + navigator.appName;`

- `document.getElementById("demo1").innerHTML = y+"<br>";`

- `var z = "Version info: " + navigator.appVersion;`

- `document.getElementById("demo2").innerHTML = z;`

- `var p = "cookie enabled: " + navigator.cookieEnabled;`

- `document.getElementById("demo3").innerHTML = p;`

- `var r = "user agent: " + navigator.userAgent;`

- `document.getElementById("demo4").innerHTML = r;`

- `}`

- `</script></body></html>`

Try it

Browser CodeName: Mozilla

Browser Name: Netscape

Version info: 5.0 (Windows)

cookie enabled: true

user agent: Mozilla/5.0 (Windows NT 6.3; WOW64; rv:52.0) Gecko/20100101 Firefox/52.0

# Methods



- javaEnabled() Specifies whether or not the browser has Java enabled.
- A Boolean, indicating whether the browser has Java enabled.

Returns true if enabled, false if not .

- taintEnabled() Removed in JavaScript version 1.2. Specifies whether the browser has data tainting enabled. The taintEnabled() method returns a Boolean value that specifies whether the browser has data tainting enabled.



- `<!DOCTYPE html>`
- `<html>`
- `<body>`
  
- `<p>Click the button to find out if your browser has Java enabled.</p>`
  
- `<button onclick="myFunction()">Try it</button>`
  
- `<p id="demo"></p>`
  
- `<script>`
- `function myFunction() {`
- `var x = "Java Enabled: " + navigator.javaEnabled();`
- `document.getElementById("demo").innerHTML = x;`
- `}`
- `</script>`
  
- `</body>`
- `</html>`



- `<!DOCTYPE html>`
- `<html>`
- `<body>`
  
- `<script>`
- `document.write("Data tainting enabled: " + navigator.taintEnabled());`
- `</script>`
  
- `</body>`
- `</html>`