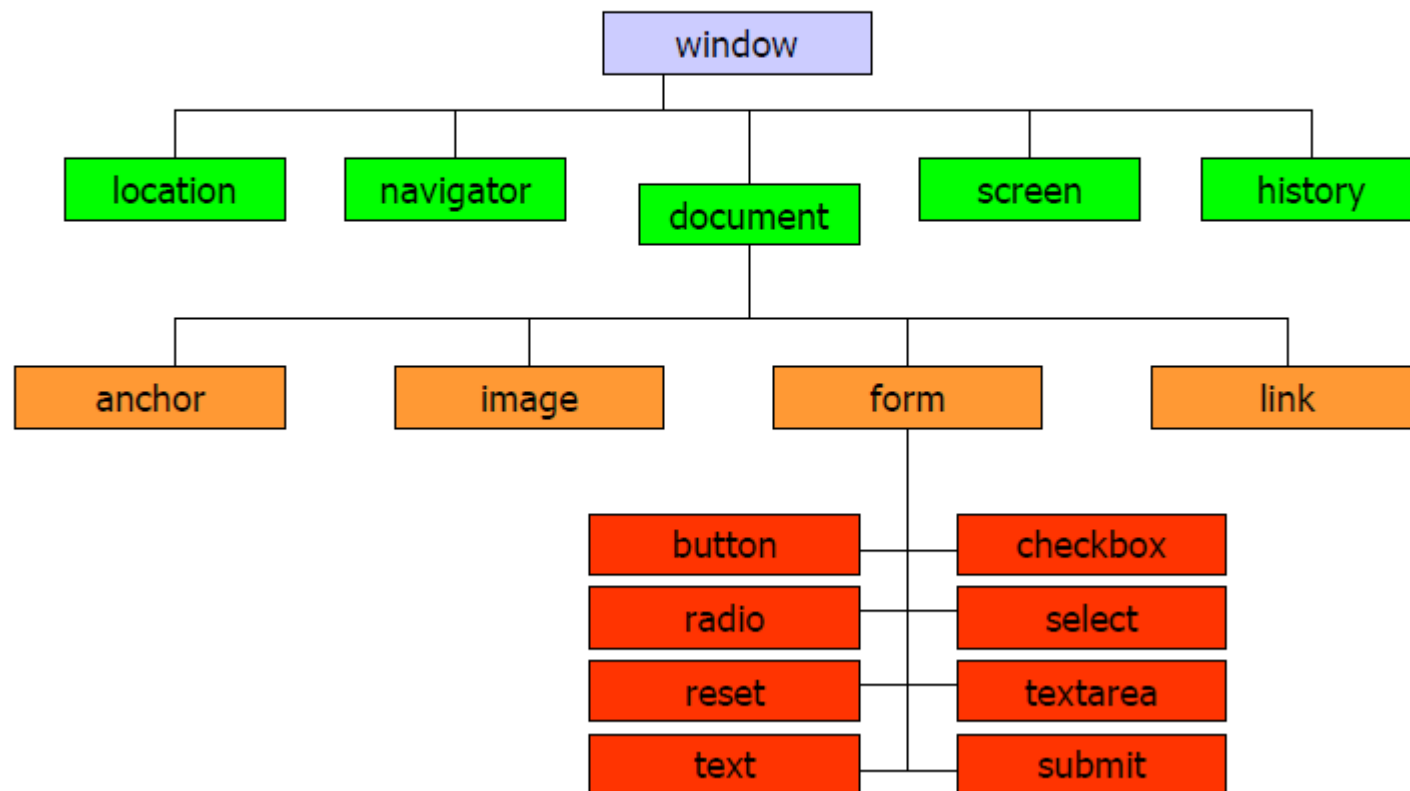# JavaScript

BOM and DOM

BOM vs DOM

BOM vs DOM?

- **BOM**
  - *Browser Object Model*
  - Access and manipulation of the browser window
  - **No standard**, *in theory* every browser can have it's own implementation of BOM
  - In practice almost all modern browsers share the same objects
- **DOM**
  - *Document Object Model*
  - Different levels (1,2,3)
  - Manipulate the html document
  - W3C Recommendation (not JS specific!)
    - http://www.w3.org/DOM/

Browser objects and their hierarchy model

The "window" Object

- It is the highest-level object in the JavaScript browser object hierarchy.

- It is the default object and is created automatically when a page is loaded.

- Since it is the default object, we may omit writing window explicitly.

  - document.write("a test message");

  - window.document.write("a test message");

- It also includes several properties and methods for us to manipulate the webpage.

The "window" Object

- Represents the browser

- The default object (the object is always "there")
  - Writing

```
document.write("a test message");
alert("Hello");
foo = "bar";
```

has the same meaning as writing

```
window.document.write("a test message");
window.alert("Hello");
window.foo = bar;
```

Window Object

- **Methods :-** alter(), blur(), clearInterval(), clearTimeout(), close(), conform(), focus(), moveBy(), moveTo(), open(), prompt(), resizeTo(), scroll(), scrollTo(), scrollBy(), setInterval(), setTimeout().

- **Properties:-** closed, defaultStatus, document, frames array, history property, location, name, navigator, opener, parent, screen , status, top.
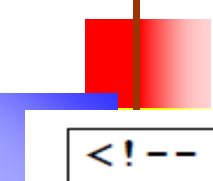
OPEN URL

```
<script type="text/javascript">
function msg(){
open("http://www.w3school.com");
}
</script>
<input type="button" value="w3" onclick="msg()"/>
```

Example: Opening a Window

- var winObj = window.open(url, window_name, attributes)
- attributes is a string for specifying the following attributes

Attribute	Description
toolbar	Creates the standard toolbar
location	Creates the location entry field
directories	Creates standard directory buttons
status	Creates the status bar
menubar	Creates the menu bar at the top of a window
scrollbars	Creates scrollbars when the document exceeds the window size
resizable	Enables the user to resize the window
width	Specifies the width of the window
height	Specifies the height of the window

```html
<!-- Opening a window with specified characteristics -->
<html><head><script type="text/javascript">
var myWin;
function open_close_win() {
  if (!myWin)   // if not yet opened, open a new window
    myWin = window.open(
      "http://www.w3schools.com",       // Document URL
      "my_new_window",                  // Window Name
      "toolbar=yes,location=yes,directories=no," +
      "status=no,menubar=yes,scrollbars=yes," +
      "resizable=no,copyhistory=yes,width=400,height=400"
    );
  else { // Otherwise close the opened window
    myWin.close();
    myWin = null;
  }
}
</script></head><body><form>
<input type="button" value="Open/close Window"
       onclick="open_close_win()">
</form></body></html>
```

setTimeout/clearTimeout

- setTimeout(*function, milliseconds*) -Executes a function, after waiting a specified number of milliseconds.

- setInterval(*function, milliseconds*) - Same as setTimeout(), but repeats the execution of the function continuously.

<input type="button" value="click" onclick="var t = setTimeout(function(){alert("Welcome msg after 2s") },2000)">

<input type="button" value="stop" onclick = "clearTimeout(t)">

Window object

Properties in the "window" object

- location
  - Represents the URL loaded into the window
- navigator
  - Contains info about the browser (Its version, OS, etc.)
- document
  - Holds the real content of the page
- screen
  - Contains info about the client's display screen
- history
  - Contains the visited URLs in the browser window

Location

- location.assign("http://www.w3schools.com");
- location.replace("http://www.w3schools.com");
- location.reload();

Method	Description
assign()	Loads a new document
reload()	Reloads the current document
replace()	Replaces the current document with a new one

History

- history.back();//for previous page

- history.forward();//for next page

- history.go(2);//for next 2nd page

- history.go(-2);//for previous 2nd page

<button onclick="goBack()">Go Back 2 Pages</button>
<script>
function goBack() {
    window.history.go(-2);
}
</script>

Navigator

\<script\>

document.writeln("**\<br/\>**navigator.appCodeName: "+navigator.appCodeName);

document.writeln("**\<br/\>**navigator.appName: "+navigator.appName);

document.writeln("**\<br/\>**navigator.appVersion: "+navigator.appVersion);

document.writeln("**\<br/\>**navigator.cookieEnabled: "+navigator.cookieEnabled);

document.writeln("**\<br/\>**navigator.language: "+navigator.language);

document.writeln("**\<br/\>**navigator.userAgent: "+navigator.userAgent);

document.writeln("**\<br/\>**navigator.platform: "+navigator.platform);

document.writeln("**\<br/\>**navigator.onLine: "+navigator.onLine);

\</script\>

Screen

Property	Description
availHeight	Returns the height of the screen (excluding the Windows Taskbar)
availWidth	Returns the width of the screen (excluding the Windows Taskbar)
colorDepth	Returns the bit depth of the color palette for displaying images
height	Returns the total height of the screen
pixelDepth	Returns the color resolution (in bits per pixel) of the screen
width	Returns the total width of the screen

```html
<html>
<body>
<h3>Your Screen:</h3>
<div id="demo"></div>
<script>
var txt = "";
txt += "<p>Total width/height: " + screen.width + "*" + screen.height + "</p>";
txt += "<p>Available width/height: " + screen.availWidth + "*" + screen.availHeight + "</p>";
txt += "<p>Color depth: " + screen.colorDepth + "</p>";
txt += "<p>Color resolution: " + screen.pixelDepth + "</p>";
document.getElementById("demo").innerHTML = txt;
</script>
</body>
</html>
```