Difference between Document and Window Object

**Document**

The document object represent a web page that is loaded in the browser. By accessing the document object, we can access the element in the HTML page. With the help of document objects, we can add dynamic content to our web page. The document object can be accessed with a window.documentor just document**.**

**Window Object:**

The window object is the topmost object of the DOM hierarchy. It represents a browser window or frame that displays the contents of the webpage. Whenever a window appears on the screen to display the contents of the document, the window object is created.

**Screen Object:**

The window object also has a screen object with properties describing the physical display:

* screen properties width and height are the full screen
* screen properties availWidth and availHeight omit the toolbar

The portion of a screen displaying the rendered document is the **viewport** in JavaScript.

Regarding the screen, browser client is a software (a code) that runs and executes another software (source code) for the purpose of finally displaying that (second) code on the hardware device (monitor / screen) through several layers. For this purpose, browser software has also actually its own separate programming routines able to interact with the operating system in order to detect the screen resolution, size, color depths, some settings and more, therefore it acts as a bridge between the operating system and the files meant to be displayed on its rendering area.

Using console.log(window.screen) will return to us the details collected from the OS by the browser about the device monitor (and stored in its memory) such as {availWidth: 1920, availHeight: 1040, width: 1920, height: 1080, colorDepth: 24, …}

**Differences**

Going further with the main concepts, there is even more to understand. In saying that window is the top level object in browser one should understand that it is a certain representation in the memory of the browser (software called client) from where the browser will render the visible page.

As such, we can access the document in console - to see its structure - simply using window.document where we can see everything in it by clicking on #document. Again, we will see there a representation of the document, not the document itself. That representation seen in console is the **DOM**, being a Model of the original file, and is created by taking also improving in a certain way, where needed, the data parsed from source code of the original document by the JavaScript engine of the browser. The source code is immutable (the browser doesn't change the html file received from internet), while the DOM is mutable (and the mutations are made by JavaScript code ran into the browser either before or after the page is rendered on the device hardware). What we see in console is DOM, what we see in browser is the rendering and what we see in source code is the original file.