Special Characters
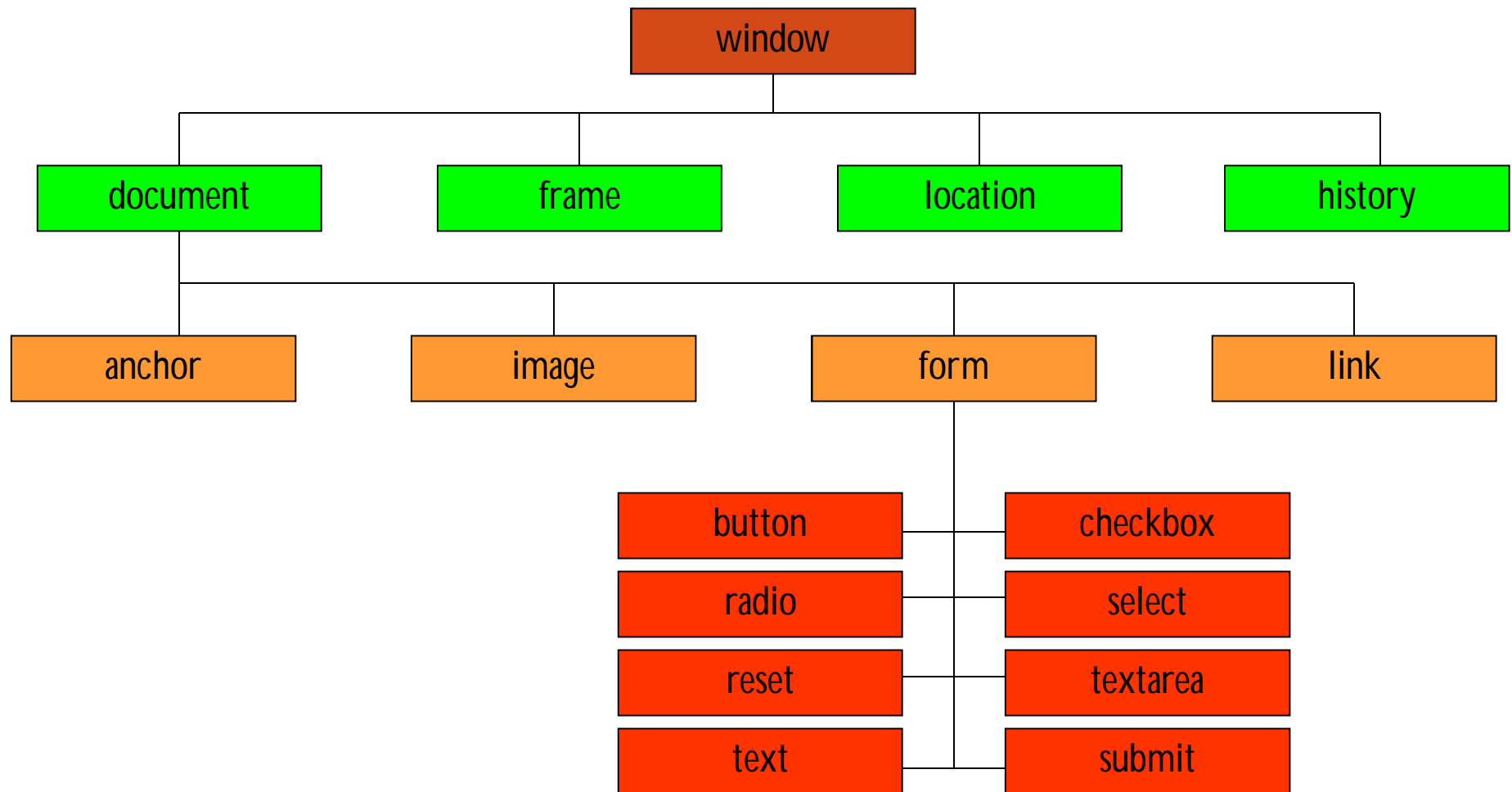
- In JavaScript you can add special characters to a text string by using the backslash sign.

- \'   → single quote

- \" → double quote

- \\ → backslash

- \n → new line

- \t → tab

Browser Hierarchy Model

```
                          window
         ┌──────────────┬──┴──────────┬──────────────┐
     document         frame        location        history
   ┌──────┼──────────┬──────────────┐
 anchor  image     form          link
                      │
           ┌──────────┼──────────┐
        button              checkbox
        radio               select
        reset               textarea
        text                submit
```

Object or collection	Description
Objects	
window	Represents the browser window and provides access to the document object contained in the window. Also contains history and location objects.
document	Represents the XHTML document rendered in a window. The document object provides access to every element in the XHTML document and allows dynamic modification of the XHTML document. Contains several collections for accessing all elements of a given type.
body	Provides access to the body element of an XHTML document.
history	Keeps track of the sites visited by the browser user. The object provides a script programmer with the ability to move forward and backward through the visited sites.
location	Contains the URL of the rendered document. When this object is set to a new URL, the browser immediately navigates to the new location.

Object or collection	Description
Collections	
anchors	Collection contains all the anchor elements (a) that have a name or id attribute. The elements appear in the collection in the order in which they were defined in the XHTML document.
forms	Contains all the form elements in the XHTML document. The elements appear in the collection in the order in which they were defined in the XHTML document.
images	Contains all the img elements in the XHTML document. The elements appear in the collection in the order in which they were defined in the XHTML document.
links	Contains all the anchor elements (a) with an href property. The elements appear in the collection in the order in which they were defined in the XHTML document.

HTML DOM Objects

- Document
- Events
- Elements
- Anchor
- Area
- Base
- Body
- Button
- Form
- Frame
- Frameset

- Image
- Button
- Checkbox
- File
- Hidden
- Password
- Radio
- Reset
- Submit
- Text
- Link

- Meta
- Object
- Option
- Select
- Style
- Table
- Td / Th
- Tr
- Textarea

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The "window" object

- It is the highest-level object in the 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.

Properties and methods of the "window"

Property	Description
length	An integer value representing the number of frames in the window
name	A string value containing the name of a window
parent	A string value containing the name of the parent window
status	A string value representing status bar text

Method	Description
alert(text)	Pop up a window with "text" as the message
close()	Closes the current window
open(url)	Open a new window populated by a URL.
setTimeout(expression, time)	Executes an expression after the elapse of the interval time.

- **setInterval(expression,time)**
- confirm()
- prompt()

Document Object

- Each HTML document loaded into a browser window becomes a Document object.

- The Document object provides access to all HTML elements in a page, from within a script.

- The Document object is also part of the Window object, and can be accessed through the window.document property.

The "document" Object

- It is one of the important objects in any window or frame.

- The document object represents a web document or a page in a browser window.

- When you access multiple sites simultaneously, there would be multiple windows opened.

  - Each window would have a corresponding window object, and each window object would have its own document object.

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Properties and methods of the "document"

Property	Description
bgColor	A string value representing the background color of a document
alinkColor	A string value representing the color for active links
location	A string value representing the current URL
title	A string value representing the text specified by <title> tag

Method	Description
clear()	Clears the document window
write(content)	Writes the text of content to a document
writeln()	Writes the text and followed by a carriage return
open()	Open a document to receive data from a write() stream
close()	Closes a write() stream

- alert(),prompt(),confirm()
- setTimeout(expression/function,millisec)
- setInterval(expression/function,millisec)

Document Object Properties

- cookie → Returns all name/value pairs of cookies in the document
- documentMode → Returns the mode used by the browser to render the document
- documentElement→Returns the <html> element
- head→Returns the <head> element
- body→Returns the <body> element
- embeds→Returns the <embed> element
- scripts→Returns the <script> element
- domain → Returns the domain name of the server that loaded the document
- lastModified → Returns the date and time the document was last modified
- readyState → Returns the (loading) status of the document
- referrer → Returns the URL of the document that loaded the current document
- title → Sets or returns the title of the document
- URL → Returns the full URL of the document

Document Object Properties Collections

❖ **document.anchors** → Returns an array of all the anchors in the document

❖ **document.forms** → Returns an array of all the forms in the document

❖ **document.images** → Returns an array of all the images in the document

❖ **document.links** → Returns an array of all the links in the document

Document Object Methods

- close() → Closes the output stream previously opened with document.open()

- getElementById() → Accesses the first element with the specified id

- getElementsByName() → Accesses all elements with a specified name

- getElementsByTagName() → Accesses all elements with a specified tagname

- getElementsByClassName(*name*)→Find elements by class name

- open() → Opens an output stream to collect the output from document.write() or document.writeln()

- write() → Writes HTML expressions or JavaScript code to a document

- writeln() → Same as write(), but adds a newline character after each statement

Changing HTML elements

Method	Description
element.innerHTML = new html content	Change the inner HTML of an element
element.attribute = new value	Change the attribute value of an HTML element
element.setAttribute(attribute, value)	Change the attribute value of an HTML element
element.style.property = new style	Change the style of an HTML element

Adding and Deleting elements

Method	Description
document.createElement(*element*)	Create an HTML element
document.removeChild(*element*)	Remove an HTML element
document.appendChild(*element*)	Add an HTML element
document.replaceChild(*element*)	Replace an HTML element
document.write(*text*)	Write into the HTML output stream

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```javascript
document.write("The title of this document is: " + document.title+"<br>");
document.write(document.head+"<br>");
document.write(document.body+"<br>");
document.write(document.documentElement+"<br>");
document.write(document.images.length+"<br>");
document.write(document.anchors.length+"<br>");

var myElement = document.getElementById("intro");
document.getElementById("demo").innerHTML =
"The text from the intro paragraph is " + myElement.innerHTML;

var x = document.getElementsByTagName("p");
document.getElementById("demo").innerHTML =
"The first paragraph (index 0) is: " + x[0].innerHTML;

var x = document.getElementsByClassName("intro");
document.getElementById("demo").innerHTML =
"The first paragraph (index 0) with class=intro: "+ x[0].innerHTML;
```