JS

VERY VERY BASIC

Helping Material

https://www.w3schools.com/js/default.asp

Use it as a reference Guide

Where to write Js

Script Tag

```
<script>
document.getElementById("demo").innerHTML = "My First JavaScript";
</script>
```

Or Make a separate Js file and attach like below

```
<script src="/js/myScript1.js"></script>
```

Js Output

Writing into an HTML element, using innerHTML.

Writing into the HTML output using document.write().

Writing into an alert box, using window.alert().

Writing into the browser console, using console.log().

First use console.log() and alert for beginners

JS Can Chane HTML

```
document.getElementById("demo").innerHTML = "My First JavaScript";
```

JS Can Chane CSS
But Dont do it

```
document.getElementById('demo').style.fontSize='35px'
```

JS Can Chane Attributes

```
document.getElementById('myImage').src='pic_bulbon.gif'
```

Hide Un Hide Elements

```
<p id="demo" style="display:none">Hello JavaScript!</p>

<button type="button" onclick="document.getElementById('demo').style.display='block'">Click Me!</button>
```

Put it in HTML Head Section

```
<!DOCTYPE html>
<html>
<head>
<script>
function myFunction() {
  document.getElementById("demo").innerHTML = "Paragraph changed.";
}
</script>
```

Put it in HTML Head Section

```
</head>
<body>
<h2>Demo JavaScript in Head</h2>
<p id="demo">A Paragraph.</p>
<button type="button" onclick="myFunction()">Try it</button>
</body>
</html>
```

JS Can Also be placed in body sections

```
<!DOCTYPE html>
<html>
<body>
<h2>Demo JavaScript in Body</h2>
<p id="demo">A Paragraph.</p>
<button type="button" onclick="myFunction()">Try it</button>
```

JS Can Also be placed in body sections

```
<script>
function myFunction() {
  document.getElementById("demo").innerHTML = "Paragraph changed.";
}
</script>
</body>
</html>
```

Separate File (Recommended)

- <script src="myScript.js"></script>

HTML DOM

```
<a id="html">HTML Tutorial</a><br>
<a id ="css">CSS Tutorial</a><br>
<a id ="xml">XML Tutorial</a><br>
<p id="demo"></p>
<script>
document.getElementById("demo").innerHTML =
"Number of anchors are: " + document.anchors.length;
</script>
```

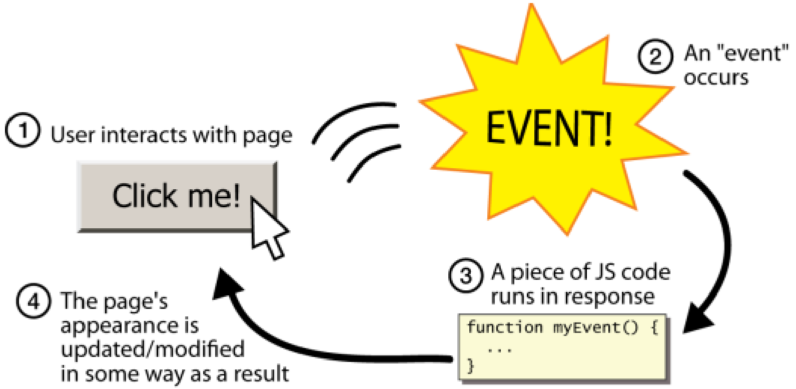
Event Driven Programming

You are used to programs start with a main method (or

implicit main like in Java)

Some programs instead wait for user actions called events

and respond to them


1 User interacts with page
Click me!
EVENT!
2 An "event" occurs
3 A piece of JS code runs in response
function myEvent() {
...
}
4 The page's appearance is updated/modified in some way as a result

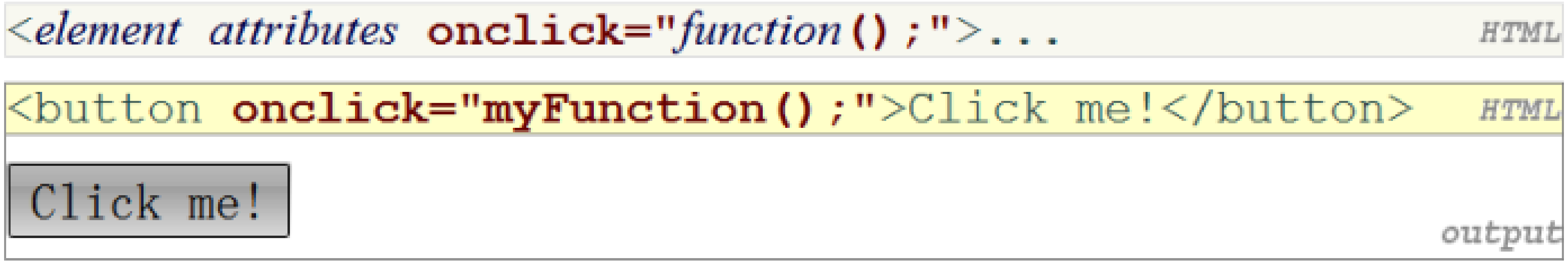
Event Handlers

JavaScript functions can be set as event handlers

- When you interact with the element, the function will execute

onclick is just one of many event HTML attributes we'll use

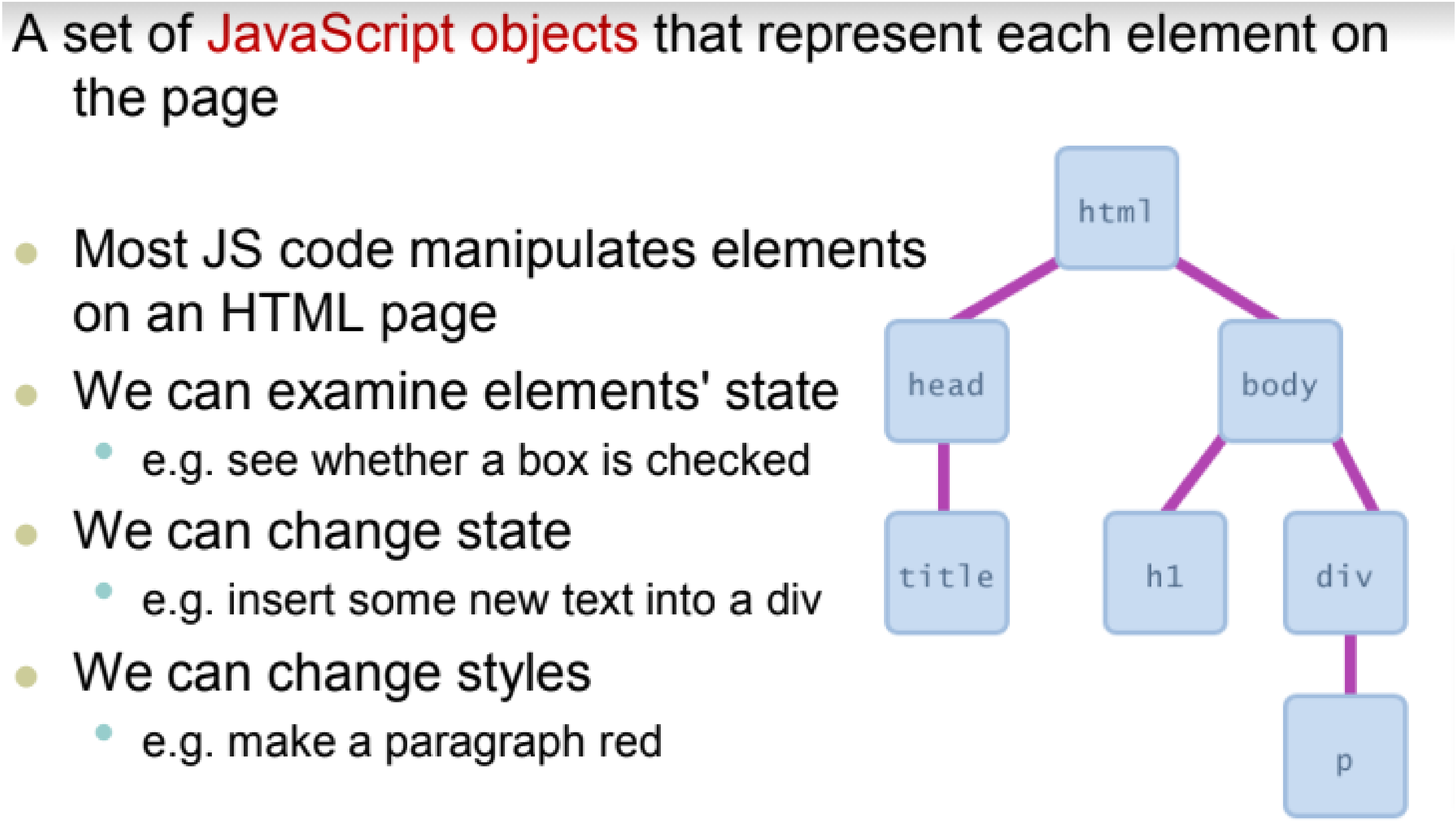
Event handlers never execute until the events they handled occur



```
<element attributes onclick="function();">...
```

```
<button onclick="myFunction();">Click me!</button>
```

DOM Document Object Model



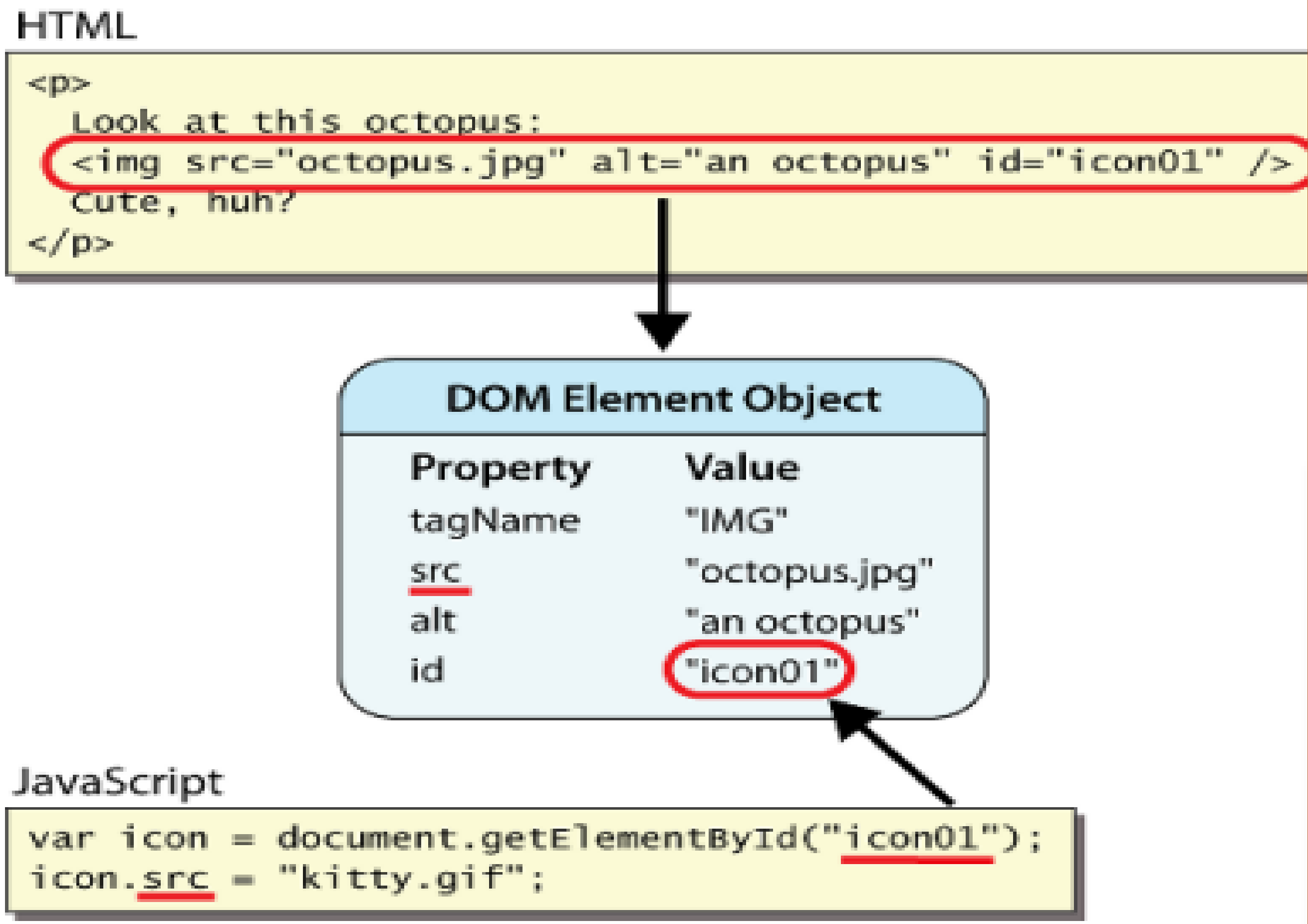
A set of JavaScript objects that represent each element on the page

- Most JS code manipulates elements on an HTML page
- We can examine elements' state
  - e.g. see whether a box is checked
- We can change state
  - e.g. insert some new text into a div
- We can change styles
  - e.g. make a paragraph red

html
head
body
title
h1
div
p

DOM Element

- Every element on the page has a corresponding DOM object



HTML

```
<p>
  Look at this octopus:
  <img src="octopus.jpg" alt="an octopus" id="icon01" />
  Cute, huh?
</p>
```

DOM Element Object

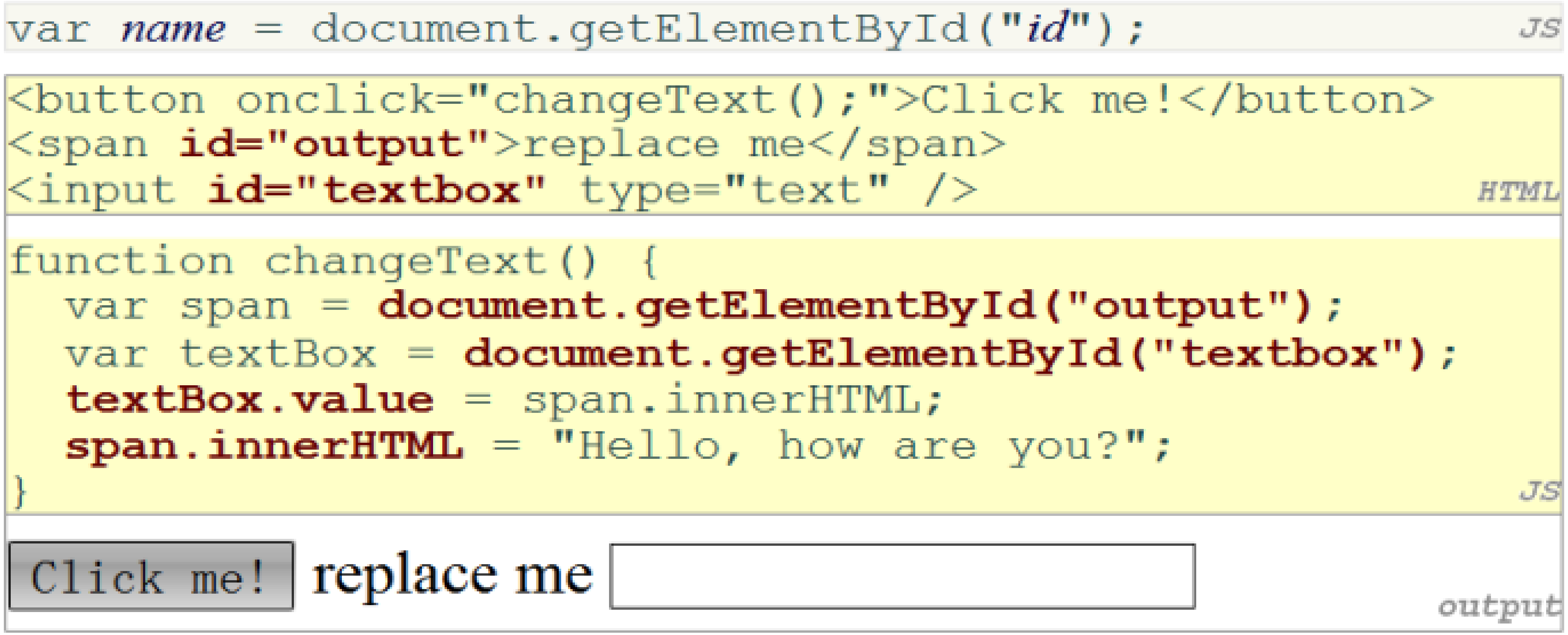
Property	Value
tagName	"IMG"
src	"octopus.jpg"
alt	"an octopus"
id	"icon01"

JavaScript

```
var icon = document.getElementById("icon01");
icon.src = "kitty.gif";
```

- Access / modify the attributes of the DOM object with *objectName.attributeName*

- In fact, browsers evaluate a Web page into corresponding DOM objects at runtime



```
var name = document.getElementById("id");
```

```
<button onclick="changeText();">Click me!</button>
<span id="output">replace me</span>
<input id="textbox" type="text" />
```

```
function changeText() {
  var span = document.getElementById("output");
  var textBox = document.getElementById("textbox");
  textBox.value = span.innerHTML;
  span.innerHTML = "Hello, how are you?";
}
```

What will Happen Here

Query Selection

```
// Select the first element with the class 'my-class' let
element = document.querySelector('.my-class’);


// Select all elements with the class 'my-class’
let elements = document.querySelectorAll('.my-class');
```

Sort List Example

```
<button onclick="sortList()">Sort List</button>

  <ul id="myList">
    <li>Banana</li>
    <li>Apple</li>
    <li>Orange</li>
    <li>Grape</li>
    <li>Peach</li>
  </ul>
```

Sort List Example JS Code

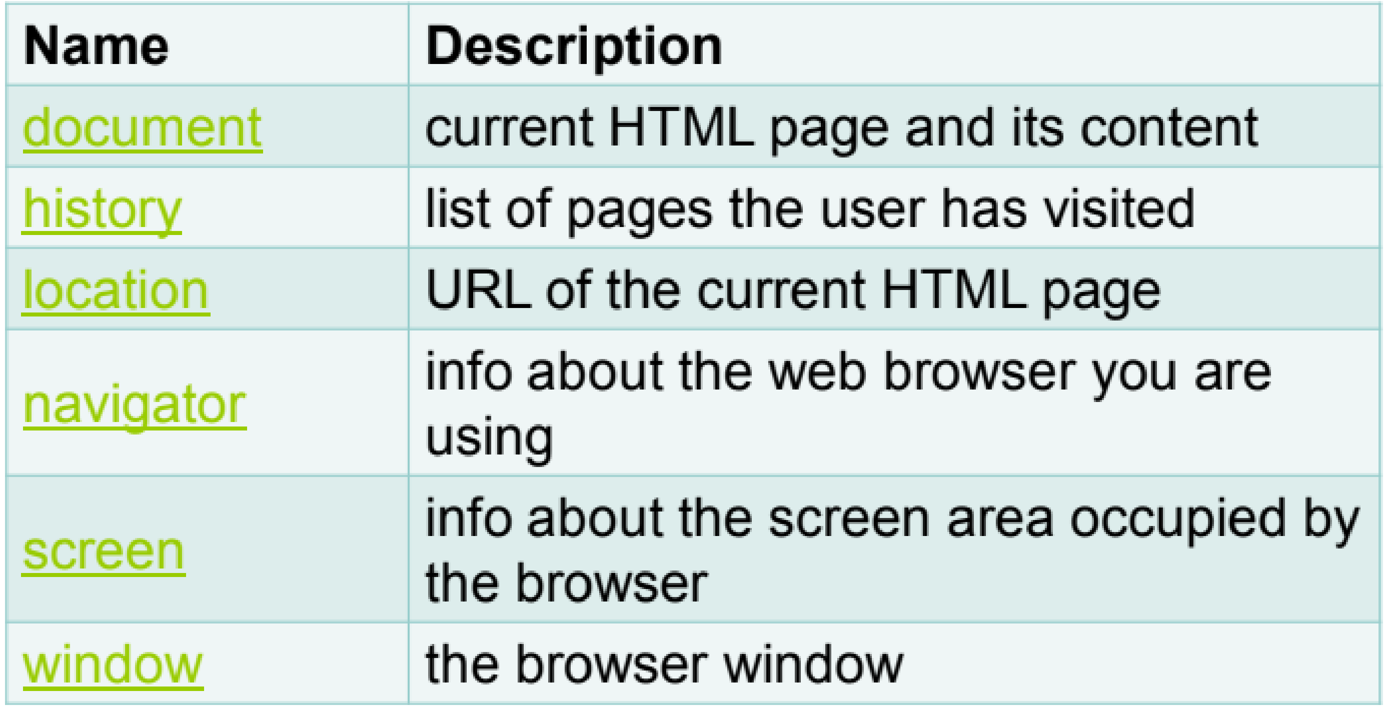
```
<script>
  function sortList() {
    const list = document.querySelector('#myList’); // Get the unordered list
    const items = list.querySelectorAll('li’); // get the lis
    const itemArray = []; // Create an array of text content
    for (let i = 0; i < items.length; i++) {
     itemArray.push(items[i].textContent);
    }
```

Sort List Example JS Code

```
        itemArray.sort(); // Sort the array alphabetically
        list.innerHTML = ‘’; // Clear the list by setting innerHTML

         for (let i = 0; i < itemArray.length; i++) {
          list.innerHTML += `<li>${itemArray[i]}</li>`;
        }
</script>
```

Global DOM Objects



Name	Description
document	current HTML page and its content
history	list of pages the user has visited
location	URL of the current HTML page
navigator	info about the web browser you are using
screen	info about the screen area occupied by the browser
window	the browser window

The window Object

The entire browser window; the top-level object in DOM hierarchy

Technically, all global code and variables become part of the window object

Properties:

- document, history, location, name

Methods:

- alert, confirm, prompt (popup boxes)
- setInterval, setTimeout clearInterval, clearTimeout (timers)
- open, close (popping up new browser windows)
- blur, focus, moveBy, moveTo, print, resizeBy, resizeTo, scrollBy,

The document Object

The current web page and the elements inside it

Properties:

- anchors, body, cookie, domain, forms, images, links, referrer, title, URL

Methods:

- getElementById
- getElementsByName
- getElementsByTagName
- close, open, write, writeln

The location Object

The URL of the current web page

Properties:

- host, hostname, href, pathname, port, protocol, search

Methods:

- assign, reload, replace

The navigator Object

Information about the web browser application

Properties:

- appName, appVersion, browserLanguage, cookieEnabled, platform, userAgent

The screen Object

Information about the client's display screen

⍰ Properties:

• availHeight, availWidth, colorDepth, height, pixelDepth, width

The history Object

The list of sites the browser has visited in this window

Properties:

- length

Methods:

- back, forward, go