

Module 4 Week 8

Client Side JavaScript & jQuery

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Lecture outline

Browser Object Model (BOM)

Document Object Model (DOM)

Event Handling & Event Propagation

Manipulating The DOM With JavaScript

Manipulating The DOM With jQuery



Hands on Demos



Hands on Practice

X-Mas Todo list: DOM Manipulation & Event handling using JavaScript

CryptoWallet: Adding HTML Elements & Event handling using jQuery

SpaceX Rocket List: Creating HTML Elements using jQuery

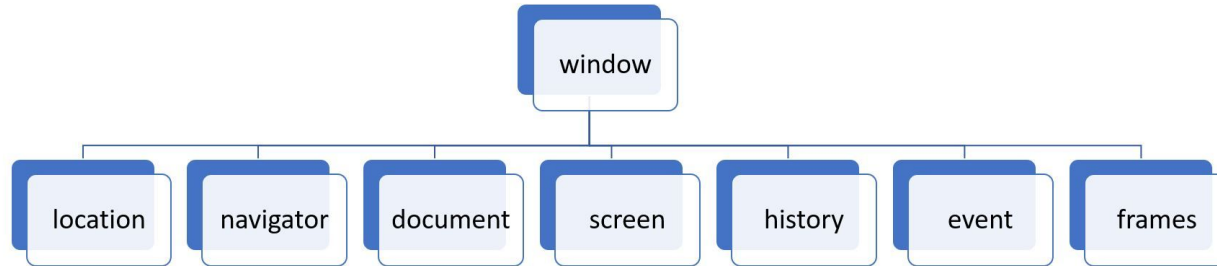
JavaScript is everywhere!

Up until now you have been using JavaScript on Terminal (aka Server side)!

- JavaScript was originally a browser based (client) language
 - ◆ Created by Brendan Eich in December 1995 @ Netscape
- NodeJS: Created by Ryan Dahl in 2009 to run server based applications
- Other places where JavaScript can run:
 - ◆ Mobile (react-native)
 - ◆ Desktop (ElectronJS)
 - ◆ DenoJS (next version of NodeJS)
- Fun Fact: JavaScript runs in the space also! HINT: SpaceX

Browser Object Model (BOM)

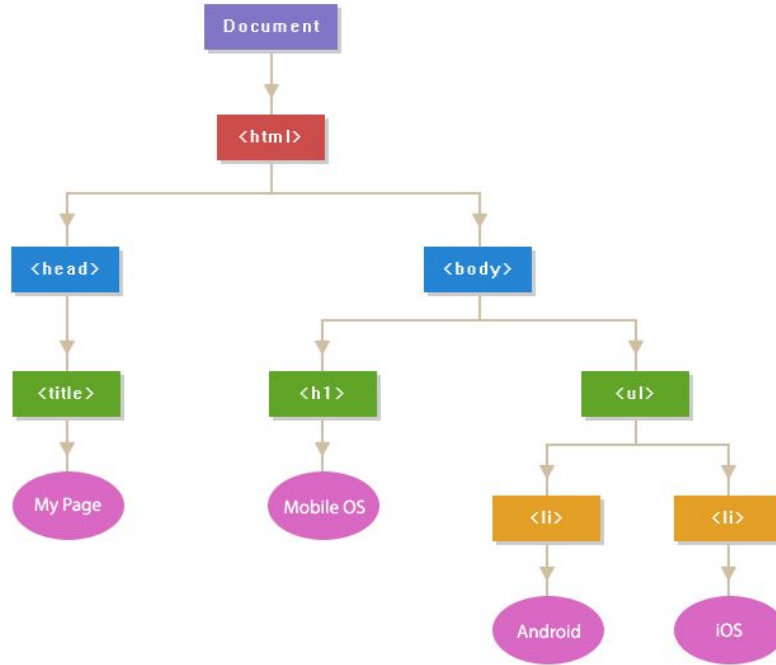
- The browser object model (BOM) is a hierarchy of browser objects that are used to manipulate methods and properties associated with the Web browser itself.



Document Object Model (DOM)

- Whenever a page is loaded into a browser, it creates a Document Object Model where each HTML element is an object with properties that can be accessed and manipulated with a programming language such as JavaScript.

DOM Tree



JavaScript Events

Adding dynamic content & reactivity to web pages

- **Browser is event-driven:** We can execute code due to user action or browser action
- **Event:** A notification that something has occurred - either by browser or user
- **Event handler:** a piece of code executive in response to Event
- **Registration:** the process of connecting Event Handler to Event.
- Example events:
 - ◆ onClick (buttons, div, navigation etc)
 - ◆ onSubmit (forms etc)
- Events are part of DOM and every HTML element contains a set of events which can trigger code

Adding Events to HTML Elements

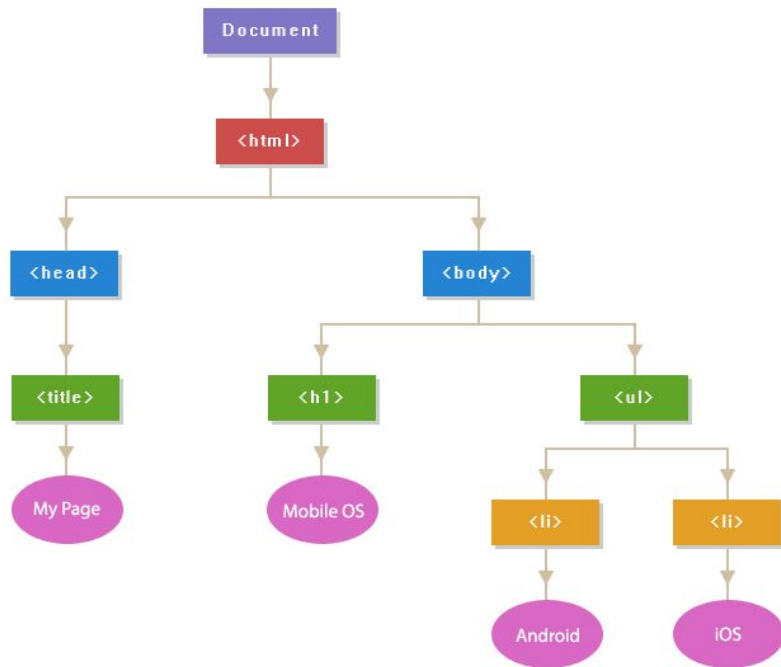
- Inline: Add it to inline as attribute on the HTML element

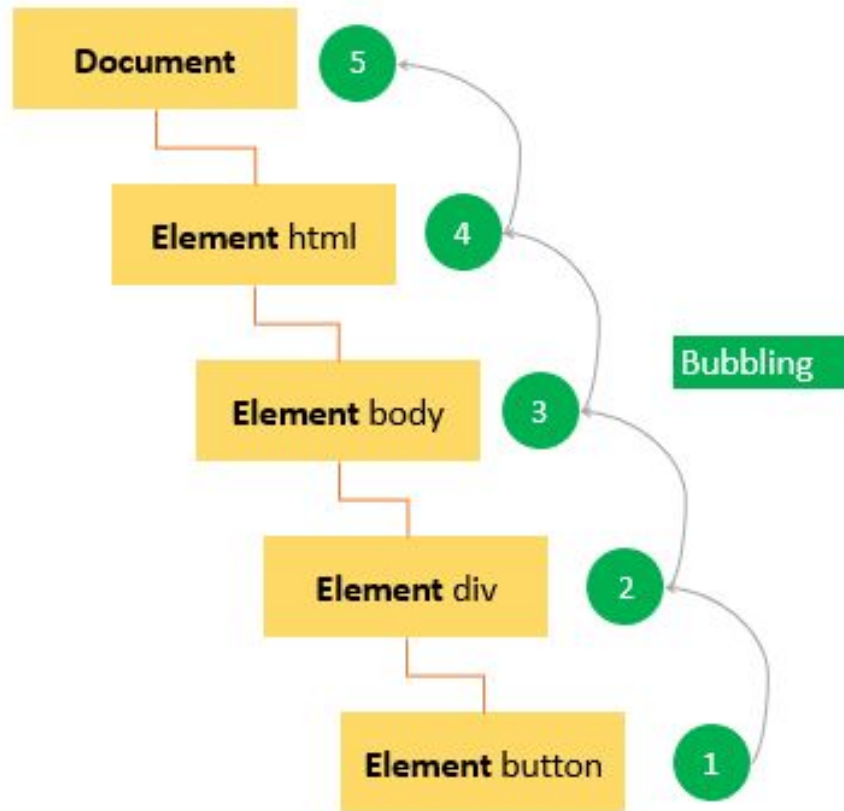
```
<button onClick="alert('you clicked a button')">Click me</button>
```

- addEventListener:



```
document.getElementById("btn").addEventListener("click",function(){  
    alert("you clicked a button")  
})
```

What is Event Propagation & Event Bubbling?





Manipulating The DOM With JavaScript

- `document.getElementById(idSelector);`
- `document.getElementsByTagName(tagName);`
- `document.getElementsByName(name);`
- `document.getElementsByClassName(classSelector);`
- `document.querySelector("#buttonId");` 
- `document.querySelectorAll(selector);` 

Intro to jQuery

jQuery is a fast, small, and feature-rich JavaScript library.

- Why does it exist?
- How much additional behavior does it add to the browser?
- Library or framework? Why?
- Why is it important to learn / use jQuery ?
- Event handling with jQuery
- Element creation with jQuery

jQuery features

- HTML document traversal and manipulation
- Event handling
- Animation
- Ajax much simpler
- Works across a multitude of browsers



Questions?

PS: my office hours are 3 to 5 pm EST