CM1040 Web Development Week 2 Lecture Note

Notebook:	Web Development		
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Cornell Notes	**Topic:** Introduction to the web continued	Course: BSc Computer Science Class: Web Development CM1040[Lecture] Date: October 14, 2020

Essential Question:

What is the DOM and what is its relation to webpages?

Questions/Cues:

- What is the function of a web browser?
- What are different kinds of browsers available and the core engines on which they are built upon?
- What are browser extensions?
- What is Developer Support in Browsers?
- What is the DOM?

Notes

Web Browser

- Ask for web pages from a server
- Present the information transported across the web to the user
  - Text, arranged to help comprehension
  - Pictures and other image files
  - Audio and video
  - Run any programmed functions such as buttons or picture slide shows
- Capture user interactions and pass them back to a server

Web Browsers

- Chrome, IE/Edge, Firefox, Safari, Opera
- All browsers built around a core engine that understands web pages and can present them, a process known as rendering
  - Safari uses the WebKit Engine
  - Chrome and Opera use Blink, which was based on WebKit
  - Edge uses EdgeHTML, based on the Trident engine used by IE
  - Firefox uses the Gecko engine
- All do their job subtly differently so, when building web pages, test
- Some understand proprietary code
  - Particularly semantic code for SEO

Browser Extensions

- The capabilities of browsers can be extended to:
  - Handle additional types of media files
  - Provide additional code in languages such as Java
  - Provide additional functionality such as copying a page to another application or in-page text translation

Developer Support

- Browsers normally show only the content as it is meant to be seen by users, not the code used to construct those pages
- Developer mode allows the underlying page structure and code to be explored as the page is being rendered

- DOM (Document Object Model) = There two principal structures within a web page. A section holding information about the page, holding metadata and a structure that has been specified to hold the content that will be presented on the page. The DOM is a list of every element or object in a page. This list is structured to record structures within structures. The DOM may be different for every page as each page may have a different structure for showing content, the browser therefore builds the DOM for every page as its loaded.

DOM

- When the page loads
  - Structure analysed
  - Every element listed
  - List is organised into a tree of dependencies
    - For example, a picture or headline being part of a story, which itself is part of a page
    - Every part of the page is now in an organised list
    - Every element can be found and its appearance changed or it can be manipulated
- To build web pages there must be structure: HTML
  - The DOM understands this structure
  - The content of the web page is placed inside the structure
- This structure can be styled
  - The DOM can enable this because it knows the whole structure
- The structure can be programmed to change or perform extra functions
  - The DOM can enable this because it knows the whole structure

Summary

In this week, we learned about the function of a web browser, the different kinds of web browsers and their respective core engine on which they are built, browser extensions/developer support and finally the DOM.