

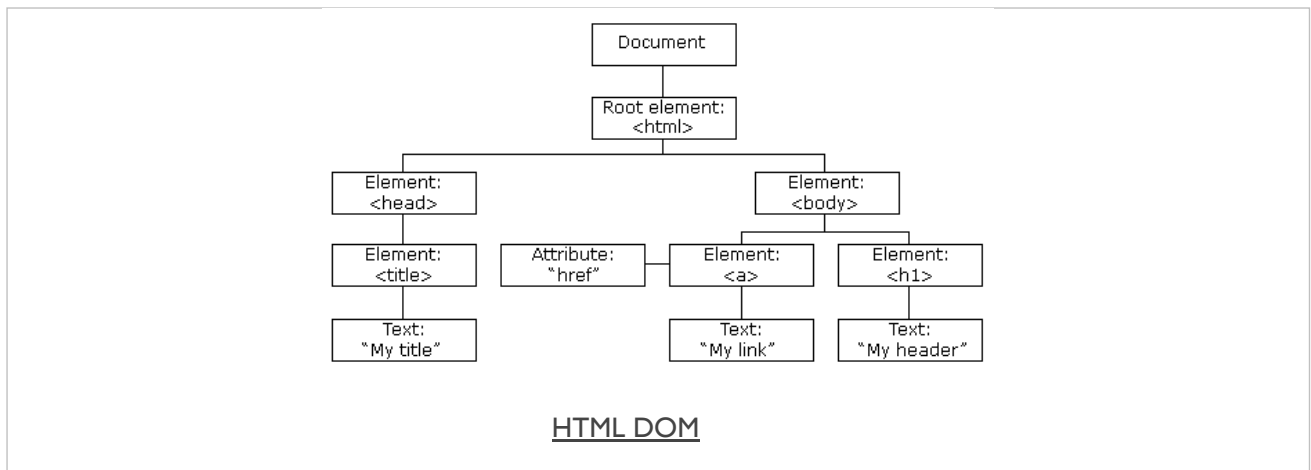
Comp 125 - Visual Information Processing

Spring Semester 2018 - week 4 - friday

Dr Nick Hayward

DOM Basics - intro

A brief introduction to the document object model (DOM)

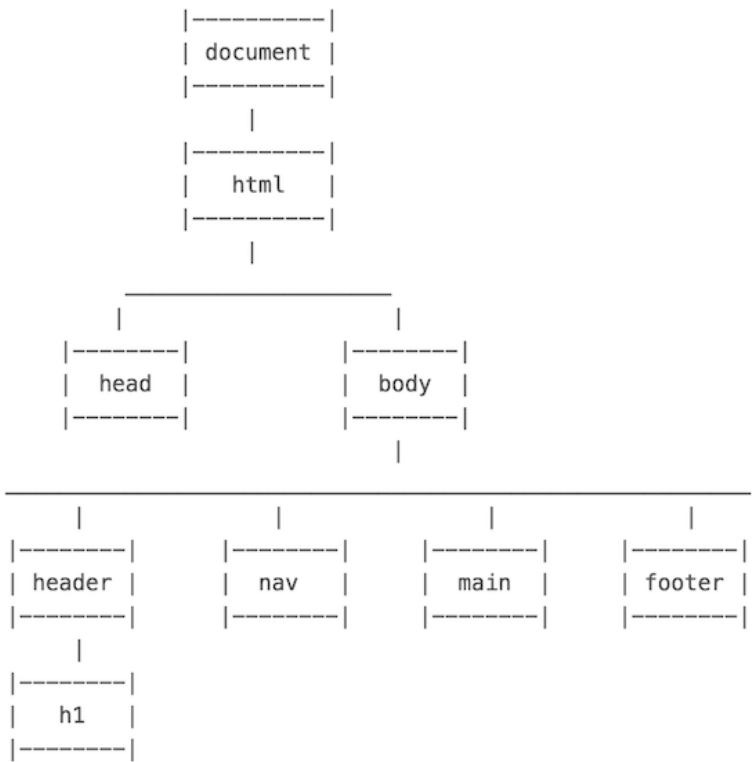


- Source - W3Schools - JS HTML DOM

DOM Basics - what is DOM?

- **DOM** is a platform and language independent way
 - *to access and manipulate underlying structure of HTML document*
- structured as a representation of a tree data structure
 - *its manipulation follows this same, standard principle*
- DOM tree is constructed using a set of nodes
 - *tree is designed as a hierarchical representation of the underlying document*
- each node on our tree is an element within our HTML document
- inherent hierarchical order originates with the **root** element
 - **root** sits at the top of our **tree**
 - *descends down following lineage from node to node*
- each node is a child to its parent
 - *we can find many siblings per node as well*
- root at the top of the tree...

Image - HTML DOM



HTML DOM

DOM Basics - useful elements

element tag	usage & description
<html>	container element for a HTML document
<head>	contains metadata and document information
<body>	contains main content rendered as the HTML document
<header>	page header...
<nav>	navigation, stores and defines a set of links for internal or external navigation
<main>	defined primary content area of document
<footer>	page footer...
<section>	a section of a page or document
<article>	suitable for organising and containing independent content
<aside>	defines content aside from the content which contains this element
<figure>	logical grouping of image and caption
	image - can be local or remote using url in src attribute
<figcaption>	image caption
<h1>, <h2>...	headings from 1 to 6 (1 = largest)
<a>	anchor - link to another anchor, document, site...
<p>	paragraph
, , <dl>	unordered, ordered, definition lists
	list item, used with , ...
<dt>	definition term, used with <dl>
<dd>	definition description, used with <dl>
<table>	standard table with rows, columns...
<tr> >	table row, used with <table>
<th>	table heading, used with <table> and child to <tr>
<td>	table cell, used with <table> and child to <tr>
<div>	non-semantic container for content, similar concept to <section>
	group inline elements in a HTML document
<canvas>	HTML5 element for drawing on the HTML page
<video>	HTML5 element for embedding video playback
<audio>	HTML5 element for embedding audio playback

NB: <div> and can be used as identifiers when there is no other suitable element to define parts of a HTML5 document. e.g. if there is no defined or significant semantic meaning...

DOM Basics - sample

```
<!DOCTYPE html>
<html>
  <head>
    <base href="media/images/">
    <meta charset="UTF-8">
    <!-- week 3 - demo 1 -->
    <title>Week 3 - Demo 1</title>
  </head>
  <body>
    <header>
      <h1>Ancient Egypt</h1>
    </header>
    <nav>...</nav>
    <main>
      <section>
        <p>
          Welcome to the Ancient Egypt information site.
        </p>
        <figure>
          
          <figcaption>Ptolemaic temple at Philae, Egypt</figcaption>
        </figure>
      </section>
      <aside>
        Temple at Philae in Egypt is Ptolemaic era of Egyptian history.
      </aside>
    </main>
    <footer>
      foot of the page...
    </footer>
  </body>
</html>
```

- Demo - DOM Basics - Sample

DOM Basics - index.html page

index.html usage and structure

- basic index.html page for loading web apps
- app will start with the index.html document
 - *html pages saved as .html or .htm*
 - *.html more common...*
- index.html acts as a kickstart
 - *for loading and rendering the app*
 - *loads other app resources - CSS, JS...*
- consistent elements in the HTML DOM
 - *<html>, <head>, and <body>*
- HTML5 apps will add
 - *<header>, <main>, and <footer> (when required)*
 - *many other elements for building the app...*

HTML Basics - metadata & <head> element - part I

- part of a HTML document's metadata
- allows us to set metadata for a HTML page
- customised just for that page or replicated as a site-wide implementation
- we can add numerous additional elements to <head>
- add similar links and code for JavaScript
 - use the <script> element & attributes such as *type* and *src*
 - HTML4 requires *type* and *src*
 - HTML5 requires *src*

```
<!-- HTML4 and XHTML -->  
<script type="text/javascript" src="script.js"></script>  
<!-- HTML5 -->  
<script src="script.js"></script>
```


HTML Basics - metadata & <head> element - part 2

- add a <title> element with text added as the element content
 - *shown in the browser tab or window heading*

```
<title>Our Page Title</title>
```

- set a default base address for all relative URLs in links within our HTML

```
<base href="/media/images/" target="_blank">
```

- links now simply use the base URL or override with full URL

```
  
<a href="http://www.flickr.com">Flickr</a>
```

- <meta /> adds metadata about the HTML document

```
<meta name="description" content="The Glass Bead Game" />  
<meta name="keywords" content="novel, fiction, herman hesse, electronic edition" />
```

HTML - <head> element example

```
<head>
  <meta charset="utf-8">

  <title>Sample...</title>
  <meta name="description" content="sample metadata">
  <meta name="author" content="COMP424">

  <link href="style.css" rel="stylesheet">
  <script src="script.js"></script>

</head>
```