

Web Development



Click Start

Session 1

Session Overview

- 10:00-12:30 Lecture
- 12:30-13:15 Tasks and lunch
- 13:15-13:30 Session wrap up



Lesson Objectives

- To understand how the Internet works in simple terms
- To understand the basics of HTML syntax
- To understand the structure of a web page

Keywords

Keyword	Description
Hypertext	Text displayed on the screen of a computer or other electronic device with clickable links (hyperlinks) to other texts that the reader can immediately access.
Protocol	A system of rules that allows devices in a communications system to transmit information to one another.
Server	A computer system that provides resources and information to a client system, such as a computer or smart phone.
Browser Engine	A browser engine transforms HTML code and other resources into a visual representation.
Syntax	The rules that govern the combinations of symbols and words that are considered to be correctly structured statements or expressions in that programming language. This is like the rules of grammar in a natural language, such as English.

Course Overview

- **Session 1: Introduction to Web Development**

- How the Internet works
- Anatomy of an HTML file
- HTML tags

- **Session 2: HTML**

- Basic text formatting
- Images/links/lists/tables

- **Session 3: Divisions & Styles**

- Divisions
- Style attribute
- Using colours
- Semantic tags

- **Session 4: CSS**

- Introduction to CSS
- CSS in HTML file and in separate CSS files
- CSS selectors
- Fonts

- **Session 5: Bootstrap**

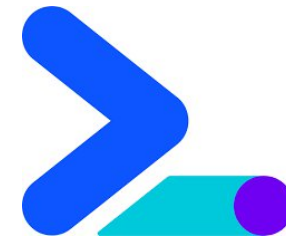
- Introduction to Bootstrap

- **Session 6: Project**

- An individual project on HTML & CSS

Useful websites

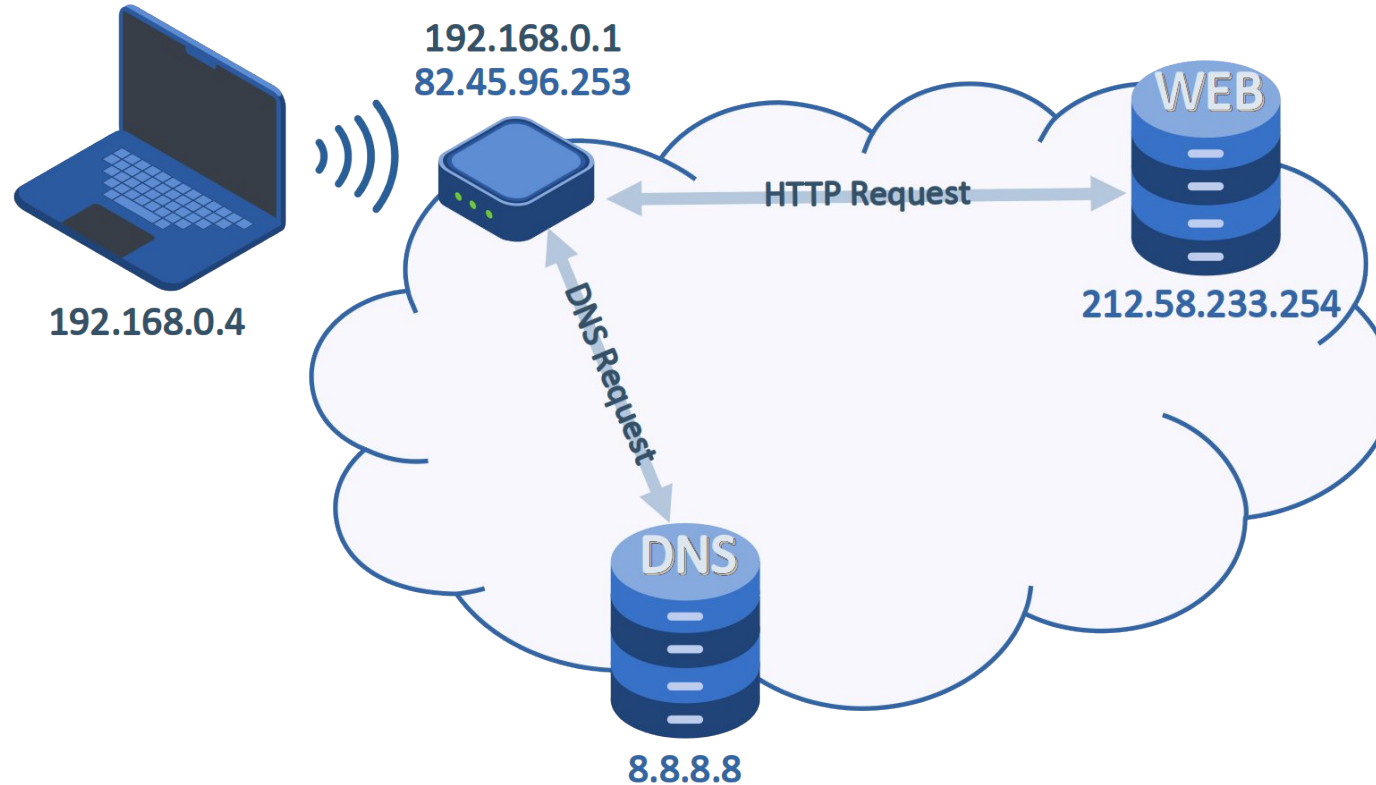
- [W3Schools - https://www.w3schools.com/](https://www.w3schools.com/)
- [Learn HTML - https://www.learn-html.org](https://www.learn-html.org)
- [Web.dev - https://web.dev/learn/](https://web.dev/learn/)
- [Stack Overflow - https://stackoverflow.com/](https://stackoverflow.com/)
- [Examples - https://kevingrieves.github.io/Web2/](https://kevingrieves.github.io/Web2/)



Acronyms aplenty

Acronym	Details
TCP/IP	Transmission Control Protocol/Internet Protocol A set of standardised rules that allow computers to communicate with one another.
HTTP	Hypertext Transfer Protocol A set of standardised rules that allow for a client to fetch web pages from a server .
URL	Uniform Resource Locator A reference to a resource on the World Wide Web, commonly called a web address.
DNS	Domain Name System A hierarchical and distributed naming system for computers, services, and other resources on the Internet.

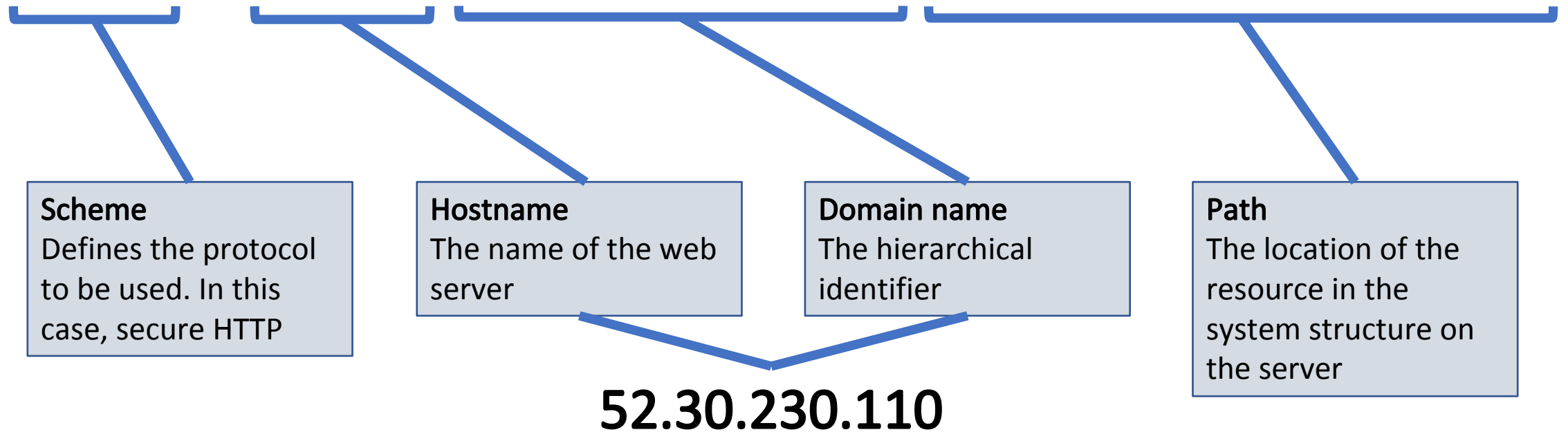
How the Internet works



Every device on the Internet has an **IP address** (phone number)
DNS servers will provide an **IP address** for a **URL** (phone book)
This **IP Address** is used to request files from a web server using **HTTP**

Anatomy of a web address

https://www.bathspa.ac.uk/courses/click-start/



Static and dynamic web pages

Static	Dynamic
<ul style="list-style-type: none">• HTML code stored in a file on the server• Content is always the same• The HTML code is created manually• Quicker to load• Easier to write	<ul style="list-style-type: none">• HTML code is generated 'on the fly' by the server• Content is tailored to the user• The HTML code is made by a program that takes information from a database• Slower to load• Harder to write

Quick quiz

- Who invented the World Wide Web?
- When did they invent it?
- Name a popular web server system?
- Name a popular scripting language for dynamic web pages?
- What is the IP address for your device?



What is HTML?

- HyperText Markup Language
- A series of instructions that tells the web browser what to display
- These instructions are called **elements**
- An element is made up of **tags** and **data**

```
18 <body>
19 <div class="wrapper">
20 <div class="top">
21
22 <div class="dropDown">
23 <b><a href="index.html">Digital Bath Project</a>: Lodging and Boarding Houses</b>&nbsp;
24 </div>
25
26 <div class="topmenu">
27
28 <div class="dropDown">
29 <button class="dropBtn">Maps</button>
30 <div class="dropDown-content">
31 <!--
32 <a href="dbpstreets.html">Street Finder (1818)</a-->
33 <a href="#">Street Finder (1818)</a>
34 <a href="dbplodging.html">Lodging Houses</a>
35 <a href="dbpnews.html">Newspaper Distribution</a>
36 </div>
37 </div>
38
39 <div class="dropDown">
40 <button class="dropBtn">Search</button>
41 <div class="dropDown-content">
42 <a href="#">Search the database</a>
43 <a href="#">Search something else</a>
44 </div>
45 </div>
46
47 <div class="dropDown">
48 <button class="dropBtn">About</button>
49 <div class="dropDown-content">
50 <a href="#">About the DBP</a>
51 <a href="#">Contact</a>
52 </div>
53 </div>
54 </div>
55 </div>
```

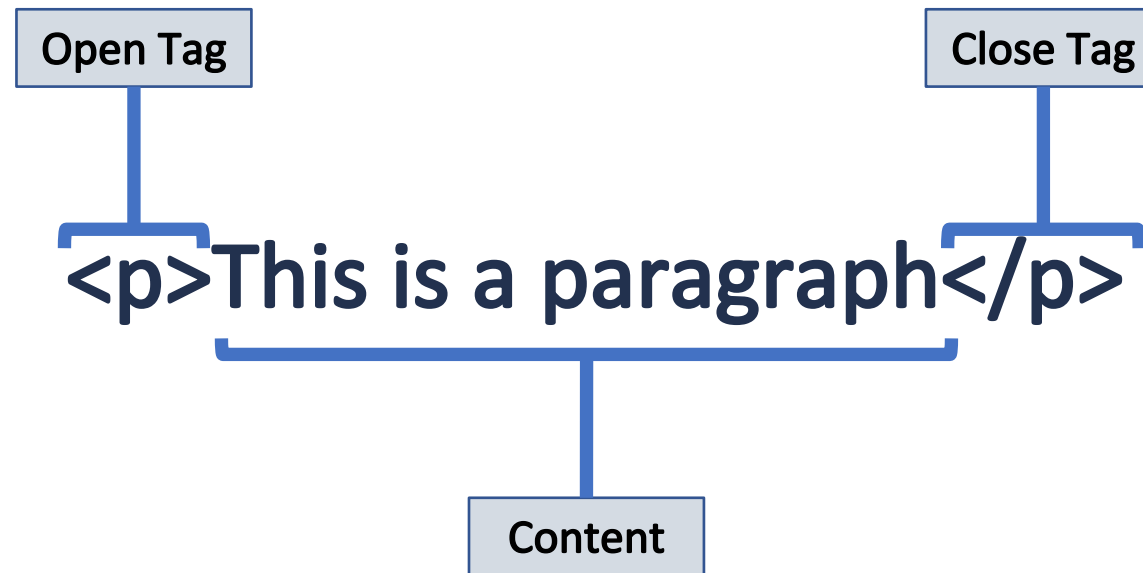
Browser Engine

A browser engine transforms (or renders) HTML code and other resources into a visual representation. This representation of your code may vary slightly between engines.

- **WebKit:** Safari
- **Blink** (based on WebKit): Chrome, Edge, Brave, Opera
- **Gecko:** Firefox



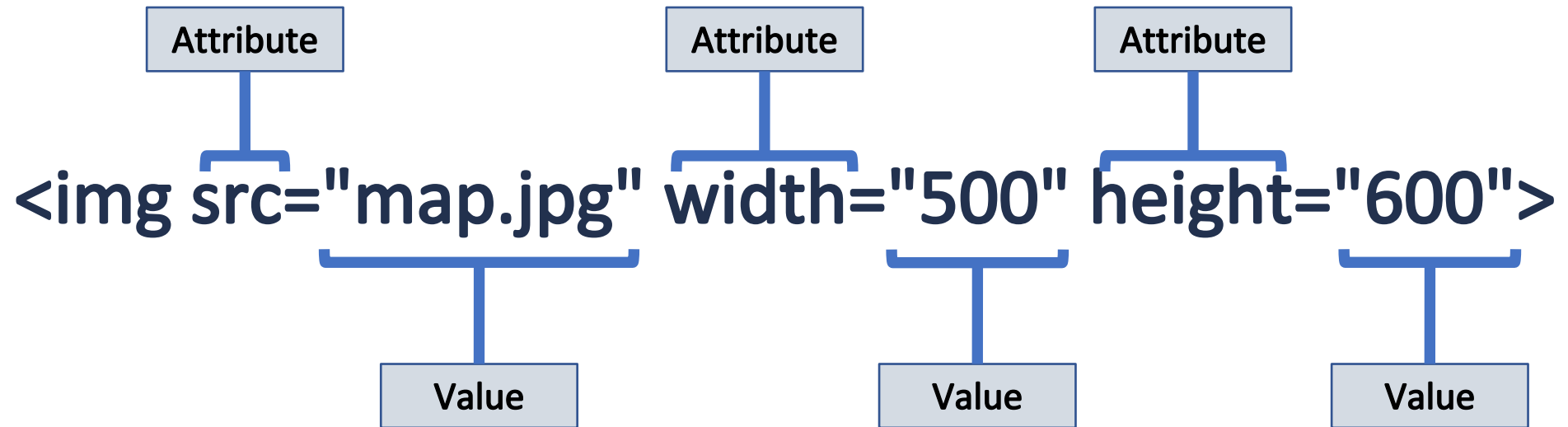
Anatomy of an HTML element



Anatomy of an HTML element



Anatomy of an HTML element



Anatomy of an HTML file

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Title of the document</title>
  </head>
  <body>
    <h1>This is a heading</h1>
    <p><b>This is a paragraph in bold type</b></p>
  </body>
</html>
```

Note:

Each web page has its own HTML file.
HTML files only contain **one** head and **one** body.

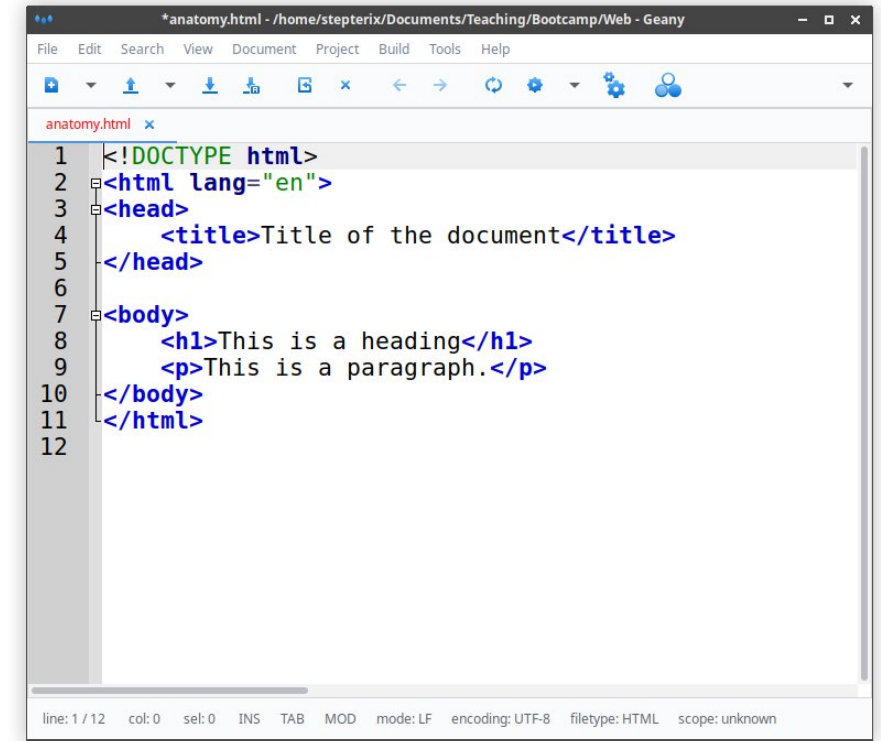
Software suggestions

Free Code Editors

- [Geany: https://www.geany.org/](https://www.geany.org/)
- [Brackets: https://brackets.io/](https://brackets.io/)
- [Visual Studio Code: https://code.visualstudio.com/](https://code.visualstudio.com/)
- Many other options

Text editors

- Windows: Notepad
- Mac: TextEdit



```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <title>Title of the document</title>
5 </head>
6
7 <body>
8   <h1>This is a heading</h1>
9   <p>This is a paragraph.</p>
10 </body>
11 </html>
12
```

Tasks

- Set up a **Github** account at <https://github.com/>
- Create a repository
- Install **GitHub Desktop** (optional):
<https://desktop.github.com/>
- **VS Code** integrates with **GitHub**
- <https://youtu.be/l-yT2Err6PE>



Session Wrap up

