ICTF 0554 Web Technologies
How the Web Works

Part 1

Department of Information and Communications Technology, , IIUM

Contents

- HTML in web development
- Live Server & Code with AI?
- HTML Structure
- Basic Elements of HTML
- Basic Text Formatting

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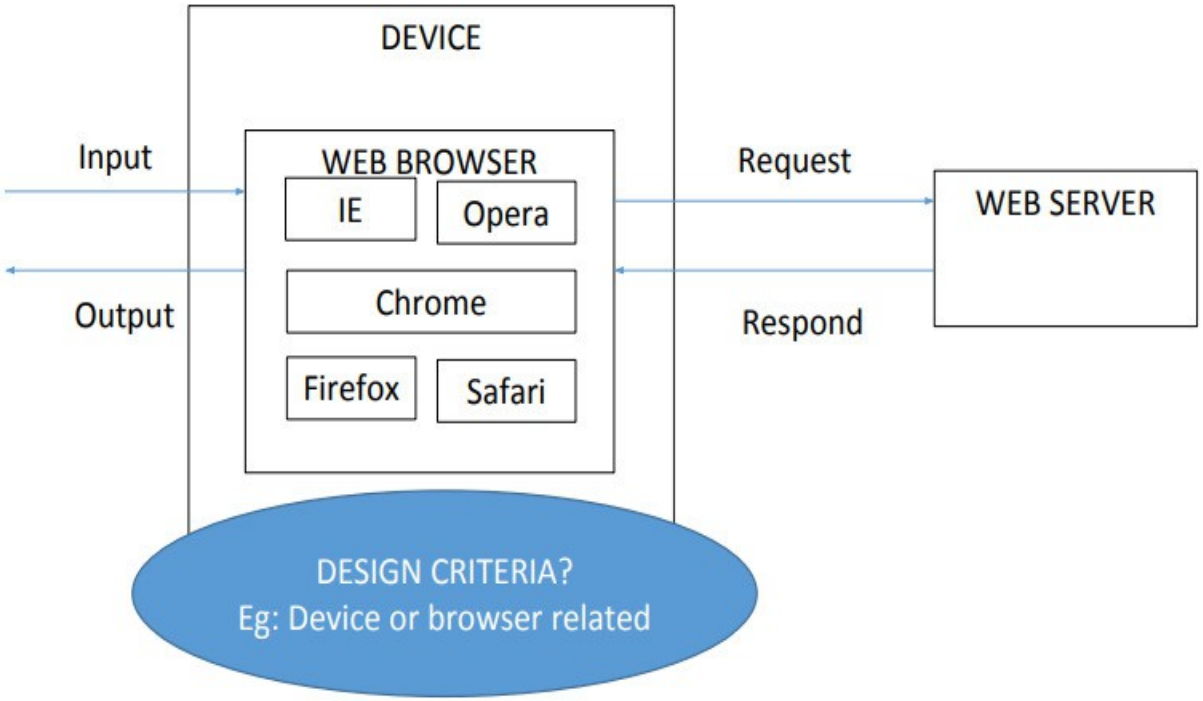
What is Website Technology?

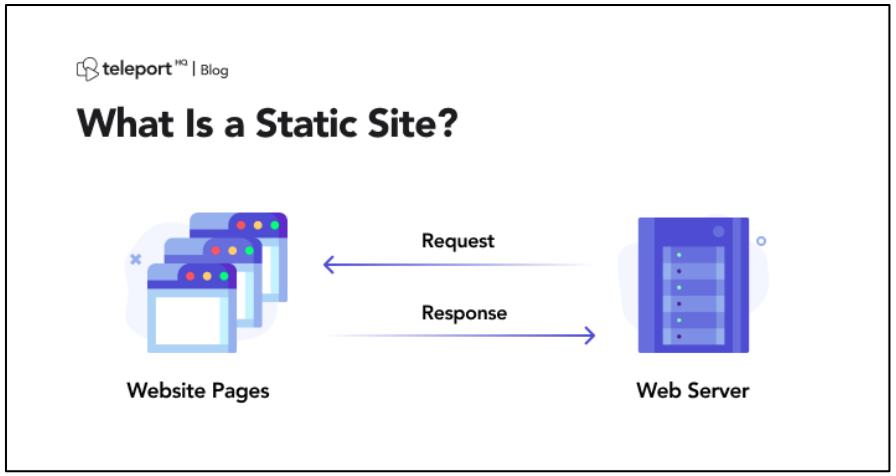
- Website technology encompasses the tools, programming languages, frameworks, and protocols used to create, manage, and maintain websites.
- It involves both the front-end (client-side) and back-end (server-side) technologies that work together to deliver a seamless web experience.

How People Access the Web



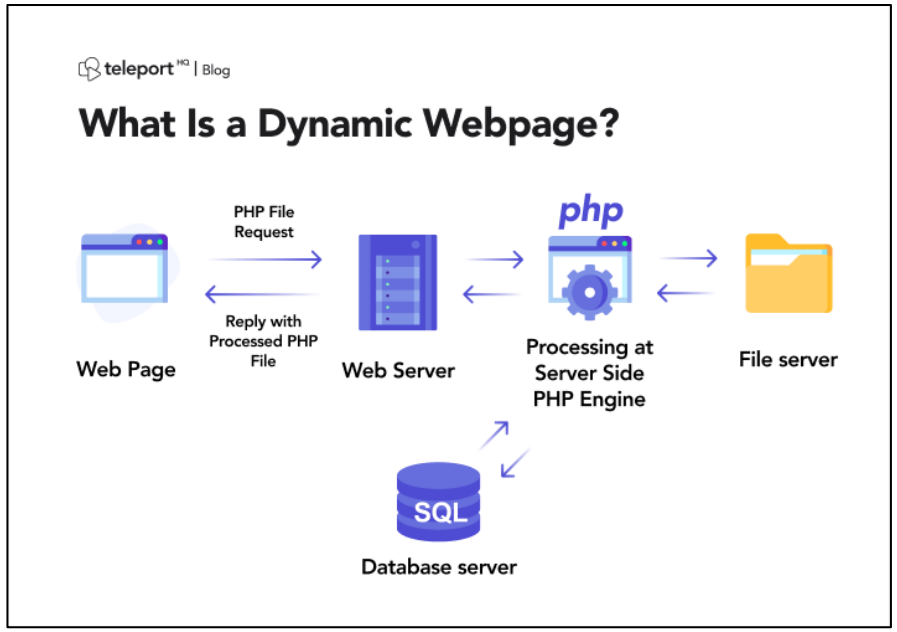
Static Website

- Static websites are built with fixed content that doesn't change unless manually updated. It never uses database.
- Personal blogs, small business websites, portfolios



Dynamic Website

- Dynamic website generate and update content in real-time based on user interactions or inputs from database (to store, retrieve information).
- Include interaction features like forms, dashboard or search function.



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How Websites are Created

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What is client-Server Model and Web Servers

The Client-Server Model

- The client-server model is a way to structure communication between the client and server.
  1. **Client:** A client is a device or application typically a web browser that requests services or resources from a server. The client sends requests to the server and displays the server's responses to the user.
  2. **Server:** A server is a powerful computer or software system that provides services, resources, or data to clients. It listens for incoming requests from clients, processes them, and sends back the appropriate responses.

The Role of Web Servers

- A web server is a specific type of server that hosts web pages and serves them to clients (web browsers) over the internet. Web servers handle HTTP requests from clients and return HTTP responses along with web page content.

How The Web Works

When a web user in England wants to view the website of the Louvre art gallery in France which is located at www.louvre.fr.:

- The browser in Cambridge contacts a DNS server in London.
- The DNS server then tells the browser the location of the web server hosting the site in Paris.

Q & A

ICTF 0554 Web Technologies
HTML - Introduction to HTML

Part 2

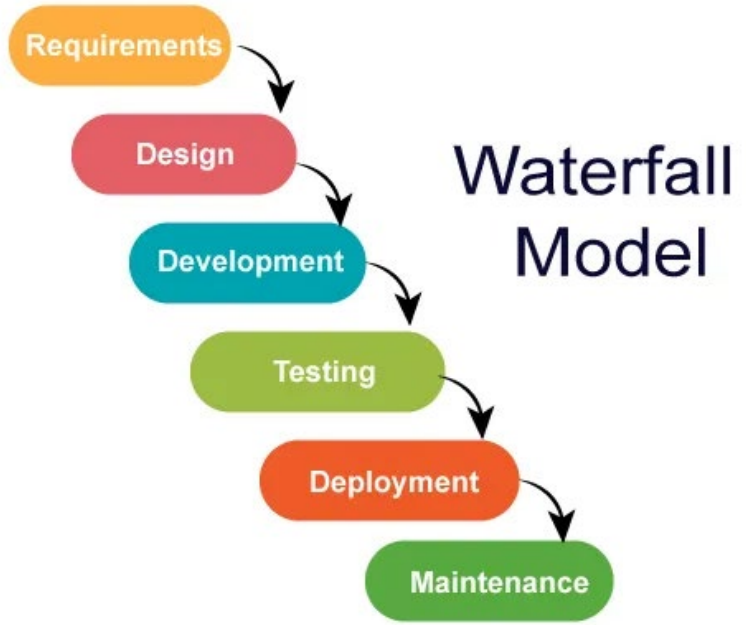
Department of Information and Communications Technology, , IIUM

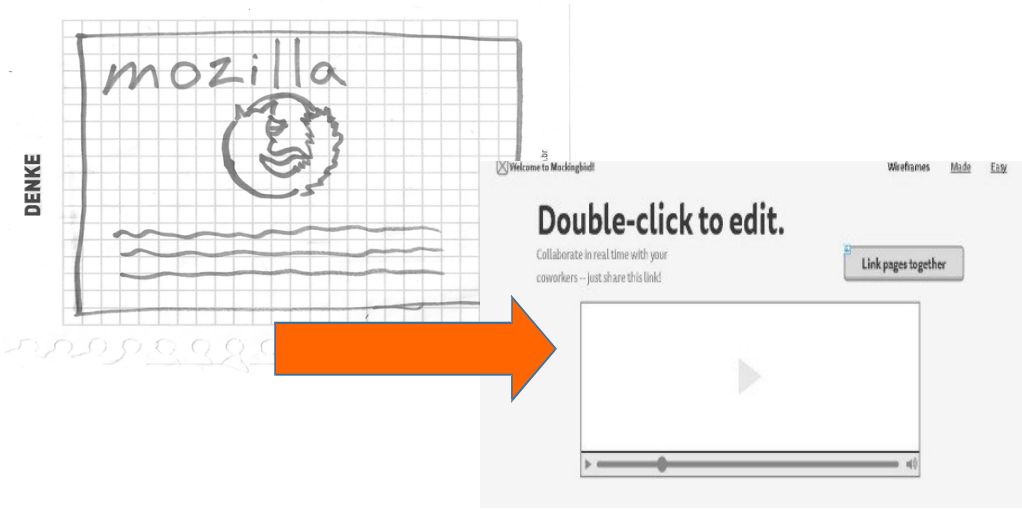
Contents

- What will your website look like
- Dealing with files
- HTML basics
- Metadata in HTML

Web Development

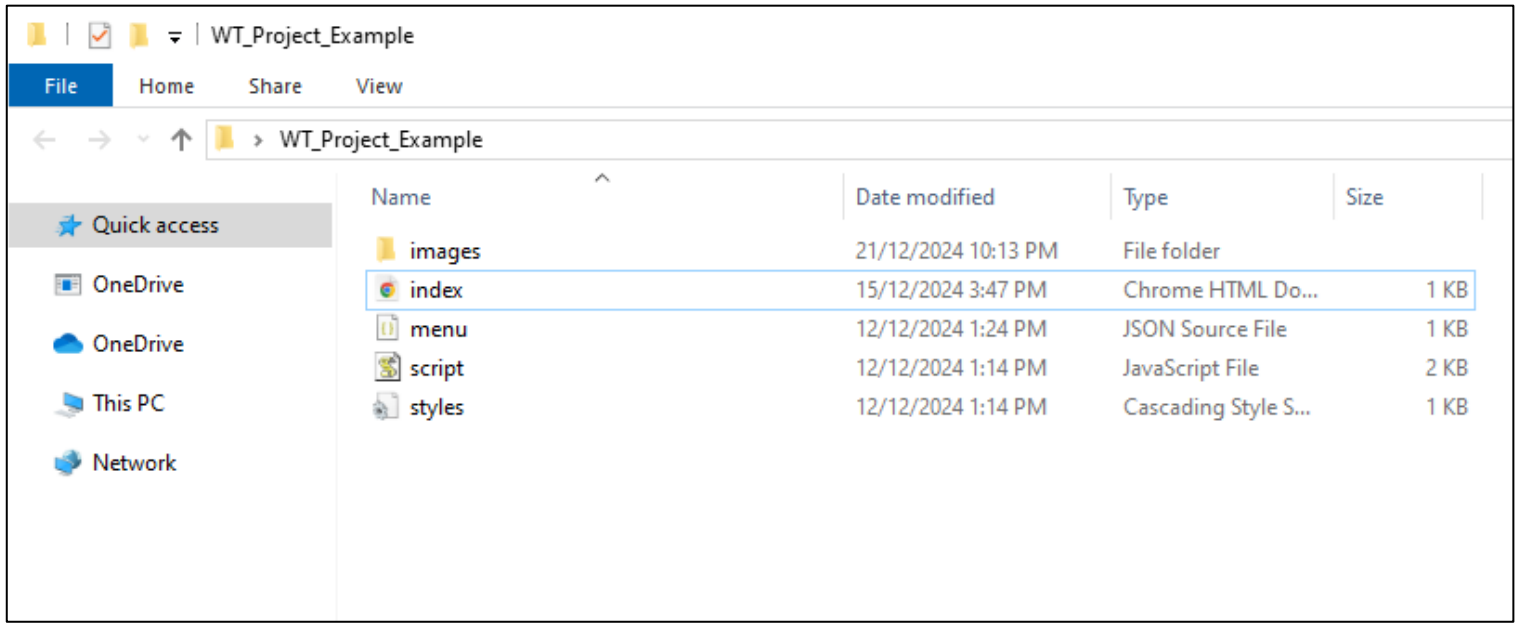
1. **Planning**
   - ➢ Software Development Life Cycle
   - ➢ What is the content of your website?
   - ➢ Who is your target audience?
2. **UI Sketch**
   - ➢ Simple hand-drawn or digital focusing on the design of user interface elements.
3. **Choose your assets and style**
   - ➢ Choose your text, color, images, fonts





Project folder & files

index.html
images folder
CSS files/folder
JavaScript files/folder



Hypertext Markup Language (HTML)

- HTML is **NOT** a programming language. It is a **markup language** used to structure and present content on the web.
- It does not have logic or conditional statements.
- HTML Character set use UTF-8, ASCII, ANSI, Windows-1252, etc.
- HTML markup includes special "elements" such as <head>, <title>, <body>, <header>, <footer>, <section>, <p>, , , <img>, <audio>, <embed>, <nav>, <video>, <ul>, <ol>, <li> and many others.

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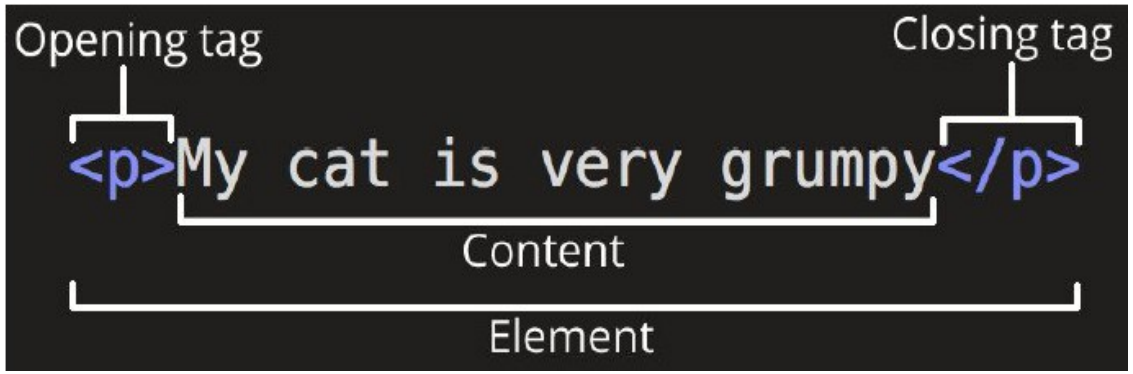
HTML Elements

- HTML elements is everything from **start tags**, **content**, and an **end tag** which consist of the element name surrounded by < and >

```
<tagname>Content goes here...</tagname>
```



Source: https://www.w3schools.com/html/html_elements.asp

HTML Structure

```
<!DOCTYPE html>   ← Tells the document type
<html>            ← The Root Element
    <head>        ← Contains the header information
        <title>Title of the Page</title>   ← Defines Title of the Page
    </head>
    <body>        ← Holds the Content of the Page
    Tags related to layout and formatting
    </body>
</html>
```

```
<html>
  <head>
    <title>Page title</title>
  </head>
  <body>
    <h1>This is a heading</h1>
    <p>This is a paragraph.</p>
    <p>This is another paragraph.</p>
  </body>
</html>
```

You can use the short form in creating the structure of HTML in VS Code by pressing exclamation mark (**!**) + ENTER

Attributes, Nesting and Empty Elements

Elements with attributes

Nesting elements

```
1 | <p>My cat is <strong>very</strong> grumpy.</p>
```

Images (Empty elements)

```
1 | <img src="images/firefox-icon.png" alt="My test image">
```

Example HTML Attributes

- All HTML element can have attributes. Example like src, href, width, height, alt, style etc.

```
<a href="https://www.w3schools.com">Visit W3Schools</a>

<p style="color:red;">This is a red paragraph.</p>

<img src="img_girl.jpg" width="500" height="600" alt="Girl with a jacket">
```

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Heading

Heading use to display titles or subtitles on webpages.
<h1> defines the most important heading, <h6> defines the least important

```
1    <h1>Heading 1</h1>
2    <h2>Heading 2</h2>
3    <h3>Heading 3</h3>
4    <h4>Heading 4</h4>
5    <h5>Heading 5</h5>
6    <h6>Heading 6</h6>
```

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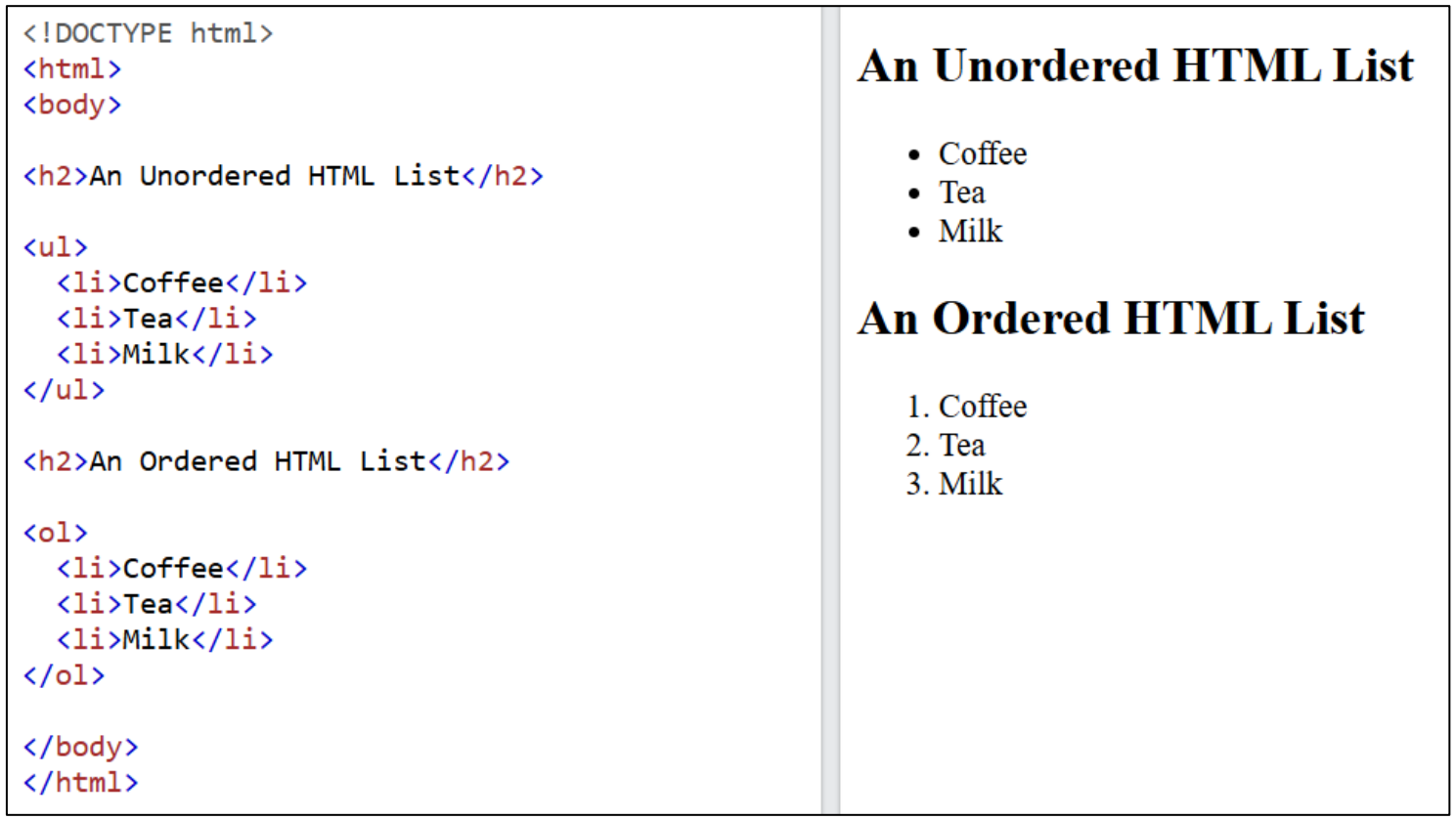
HTML List

- HTML List
  - **Unordered Lists:** represent an unordered list in bulleted.
  - **Ordered Lists:** an ordered list in numerical or alphabetical.

```
<!DOCTYPE html>
<html>
<body>

<h2>An Unordered HTML List</h2>

<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>

<h2>An Ordered HTML List</h2>

<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>

</body>
</html>
```



Comments in HTML

https://www.w3schools.com/html/html_comments.asp

- In HTML, comments are used to leave noted or explanations in the code. Comments are not displayed in the browser:

```
<!-- comments  -->
```

- Comments can be used to hide parts in the middle of the HTML code.

```
<p>This <!-- great text --> is a paragraph.</p>
```

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Metadata

```
<head>
  <meta charset="utf-8">
  <title>My test page</title>
</head>
```

- Metadata use to provide information about the webpage that's is not displayed directly on the page itself.
- Use of Metadata:
  - Specifying character encoding `<meta charset="UTF-8">`
  - webpage is responsive to different screen size `<meta name="viewport">`
  - Defining content ownership `<meta name="author">`

Lab Practical

Class Activity 1

Try to write the code based on the picture above by using the right elements.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>My First Web Page!</title>
</head>
<body>
    <h1>My First Heading</h1>
    <p>My first paragraph.</p>
</body>
</html>
```

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Class Activity 2

- Visit W3Schools HTML Links Tutorial page and write and test the markup language for elements below:
- HTML Attributes
- HTML Links
- HTML List (Unordered Lists & Ordered Lists)

Thank you!