WEB DESIGN AND DEVELOPMENT

Week 1

3 Core Parts of a Website

1. **HTML (Hypertext Markup Language)** → content (text, images, videos, tables, links, lists).
2. **CSS (Cascading Style Sheets)** → style (colors, fonts, layout, spacing).
3. **JavaScript** → behaviour (interactivity, responding to clicks, hover, keyboard, time, etc.).

- Most websites use **at least HTML and CSS**.
- Versions: modern sites use **HTML5** and **CSS3**.
- Telling the browser what version you use avoids pages looking different in different browsers.

How HTML Works

- HTML uses **tags** (opening <tag> and closing </tag>).
- Content placed between tags gets "tagged" as that type of element.
- Example:
- This is a paragraph
- Tags build the **DOM (Document Object Model)**: the structure of the web page.
- Each webpage is its own .html file. The homepage should always be **index.html** (servers look for that name by default).

CSS Basics

- CSS defines *how* content looks (not what the content is).
- CSS is written with:
  - **Selector** → which element(s) to style.
  - **Property** → what aspect to change.
  - **Value** → how to change it.
- Example:
  - p {
  - color: yellow;
  - font-family: Helvetica;
  - }
- Always use American spelling for color.
- Multiple properties can be applied to one selector.

JavaScript Basics

- JavaScript makes pages interactive by controlling behaviour.
- Can respond to:
    - Mouse clicks/hover
    - Keyboard presses
    - Time spent on page
- Examples of what it can do:
    - Pop-ups
    - Redirects
    - Form validation
    - Games
- Example:
    - <button onclick="go()">Click me</button>
    - <script>
    - function go() {
    - alert("Let's go!");
    - document.body.style.background = "darkgrey";
    - }
    - </script>
- **Client-side vs Server-side**:
    - Client-side → runs in the user's browser (their own copy).
    - Server-side → would change the actual original website (not safe to allow random edits).

The First 5 Essential Tags

Every webpage usually starts with these:

1. **Doctype**
    - <!DOCTYPE html>
    - Tells browser the version of HTML (HTML5).
    - Helps with cross-browser compatibility.
    - One of the few tags that's capitalized.
2. **HTML tag**
    - <html> … </html>
    - Defines where the DOM begins and ends.
    - Everything else goes inside.
    - Other tags (head, body, etc.) are **children** of this tag.
3. **Head tag**
    - <head> … </head>
    - Contains **metadata** (data about the webpage).
    - Used for SEO (search engine optimization).
    - Examples: meta keywords, meta description, title, link to CSS.
4. **Title tag**
    - <title>My Website</title>
    - Child of the head tag.
    - Defines the page title → appears in browser tabs and Google search results.
5. **Body tag**
    - <body> … </body>
    - Contains all **visible content**: text, images, links, videos, tables.
    - This is where most of the coding work happens.

Best Practices

- **Lowercase tags** (HTML won't break with uppercase, but lowercase is standard).
- **Indentation**:
  - Use tabs to show nesting clearly.
  - Example:
  - <!DOCTYPE html>
  - <html>
  - <head>
  - <title>My Page</title>
  - </head>
  - <body>
  - This is my page
  - </body>
  - </html>
- Helps maintainability and professionalism.

CSS and External Stylesheets

- Websites often look consistent across multiple pages thanks to CSS.
- Usually, one or two **external CSS files** control all styling.
- Linking CSS in the head:
- <link rel="stylesheet" href="style.css">
- This lets one CSS file cascade its rules into many pages (homepage, gallery, about, contact, etc.).