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| A picture of a winding road and trees  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:
* <p>This is a paragraph</p>
* 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>
  + <p>This is my page</p>
  + </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.).