



**University of
Sunderland**

Faculty of Business and Technology: Programme -

NAME: Upendra Khanal

STUDENT NUMBER: 240704403

MODULE CODE: CET138

MODULE TITLE: Full Stack Development

MODULE LEADER: David Grey

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ASSIGNMENT:

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- **Unauthorised use of artificial intelligence** – where you use artificial intelligence tools to generate your assignment instead of completing it yourself and/or where you have not been given permission to use artificial intelligence tools by your module leader. Please complete the following declaration around you use of artificial intelligence tools in your assignment.

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DECLARATION

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- I understand that academic misconduct is an offence and can result in formal disciplinary proceedings.
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ANY OTHER COMMENTS FROM STUDENT:

HTML (HyperText Markup Language)

What is HTML?

HTML stands for HyperText Markup Language. It is the standard language used to build the structure of a web page. Think of HTML as the skeleton of a website — it defines where things go, such as headings, paragraphs, images, forms, and links, but it does not control how they look (that's done by CSS) or how they behave (that's done by JavaScript).

HTML was invented by Tim Berners-Lee in 1991 while working at CERN. It was designed so scientists could share documents easily through the internet. Since then, HTML has evolved through several versions: HTML 2.0 (1995), HTML 3.2 (1997), HTML 4.01 (1999), and HTML5 (2014), which is the current standard.

In a full stack project, HTML is part of the front end — the part users actually see and interact with in their browser. When a user opens a website, the server sends HTML to the browser, and the browser reads it and displays it visually. The user cannot see the server's hidden code or database; they only see what the HTML delivers.

Core Features of HTML

- **Structure** — HTML provides the backbone of a webpage, organizing content into headings, paragraphs, lists, tables, and sections.
- **Semantics** — Modern HTML includes semantic tags (`<header>`, `<main>`, `<footer>`, `<article>`) that give meaning to content, improving accessibility and SEO.
- **Hyperlinks** — `<a>` tags allow linking between documents and external resources, making the web interconnected.
- **Forms** — `<form>`, `<input>`, `<button>`, and related tags support user interaction, enabling login systems, surveys, and data collection.
- **Multimedia Support** — Native embedding of images, audio, and video using ``, `<audio>`, and `<video>` without needing plugins.
- **Cross-Platform Compatibility** — Works in all modern browsers, independent of device or operating system.
- **Extensibility** — Can integrate with CSS for styling and JavaScript for interactivity, making it flexible for full stack use.

Types of HTML Elements

- **Structural Elements** — `<div>`, `<header>`, `<main>`, `<footer>`, `<section>` help organize the layout.
- **Text Elements** — `<h1>` to `<h6>` for headings, `<p>` for paragraphs, `` and `` for emphasis.
- **Form Elements** — `<form>`, `<input>`, `<label>`, `<textarea>`, `<button>` allow data entry and submission.

- **Multimedia Elements** — ``, `<video>`, `<audio>`, `<canvas>` for embedding and displaying media content.
- **Linking and Navigation** — `<a>` for hyperlinks, `<nav>` for navigation menus.
- **Metadata Elements** — `<title>`, `<meta>`, `<link>` inside `<head>` provide document info, encoding, and external resource linking.

HTML Example — Hosted on Github

Live Example Link:

<https://upendra11223.github.io/CET138-A1-ePortfolio/html-demo/html-demo.html>

This webpage has the following sections:

- A header with the main title and a short description of the page.
- A main section containing a login form with email, password, and a 'Remember me' checkbox.
- Form fields have labels for accessibility and built-in HTML5 validation (required fields, email format, minimum password length).
- A link to reset your password ('Forgot password?').
- A footer that shows a note about the demonstration.

The page uses semantic HTML tags such as `<header>`, `<main>`, `<section>`, and `<footer>`, which make it more readable for both humans and machines (including screen readers for visually impaired users).

Step-by-Step Code Explanation

`<!doctype html>` — Tells the browser this is an HTML5 document.

`<html lang="en">` — Starts the HTML document and sets the language to English.

`<head>` — Contains information about the page (title, description, mobile scaling).

`<body>` — Contains all the content the user will see in the browser.

`<header>` — The top section of the page with a heading and description.

`<main>` — The main content area, which here contains the login form.

`<section>` — Groups related content together, in this case the login area.

`<form>` — Lets the user enter information and send it to the server.

`<label>` and `<input>` — Work together so the user knows what to type in each field.

type="email" and type="password" — Special field types that help with validation.

<button> — The submit button that sends the form data.

<footer> — Bottom part of the page, here showing a small note.