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Introduction to Web Development & HTML Basics

Front-End Web Development Bootcamp

Overview of Web Development

What is Web Development?

- Web development is the process of creating websites and web applications.
- It involves both **frontend** and **backend** development.

Overview of Web Development

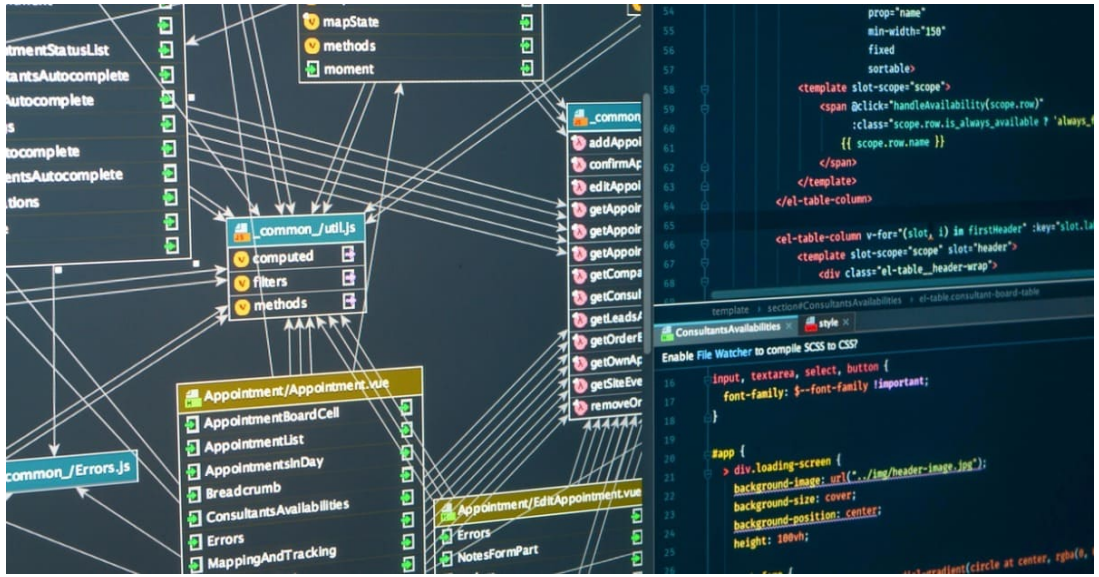
Frontend Development:

- Concerned with what users see and interact with on a website.
- Technologies: HTML, CSS, JavaScript.
- Focuses on user experience and design.

Overview of Web Development

Backend Development:

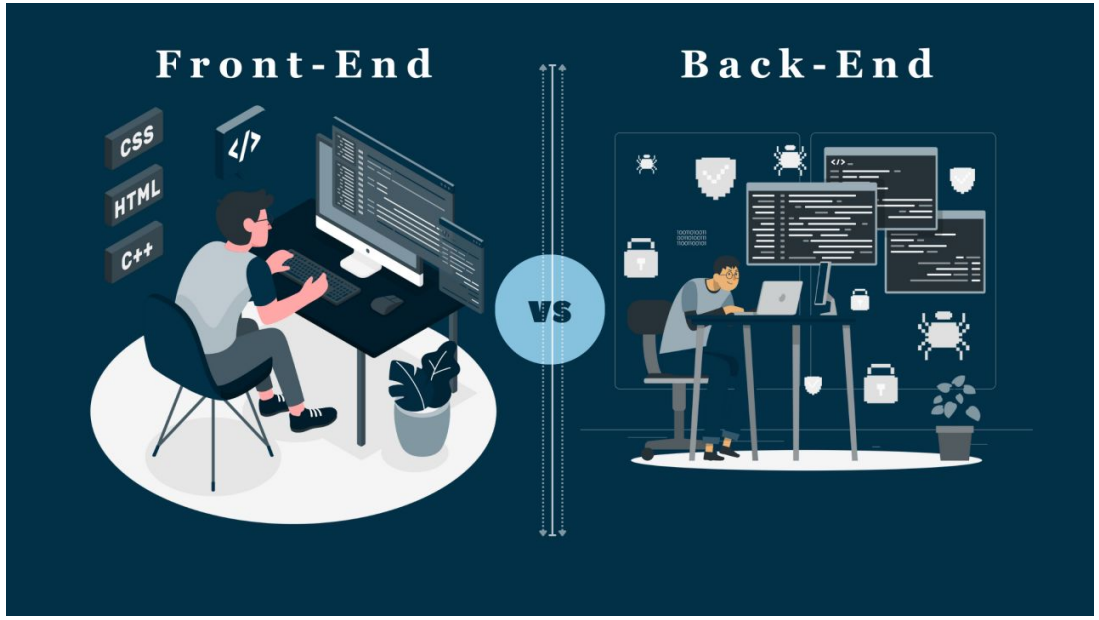
- Involves the server, database, and application logic that powers the frontend.
- Technologies: PHP, Python, Node.js, SQL.



Frontend vs Backend Development

Frontend Development:

- Deals with the visible part of the website.
- Examples: Text, images, buttons, and layout.
- Tools/Technologies: HTML (structure), CSS (design), JavaScript (interaction).



Frontend vs Backend Development

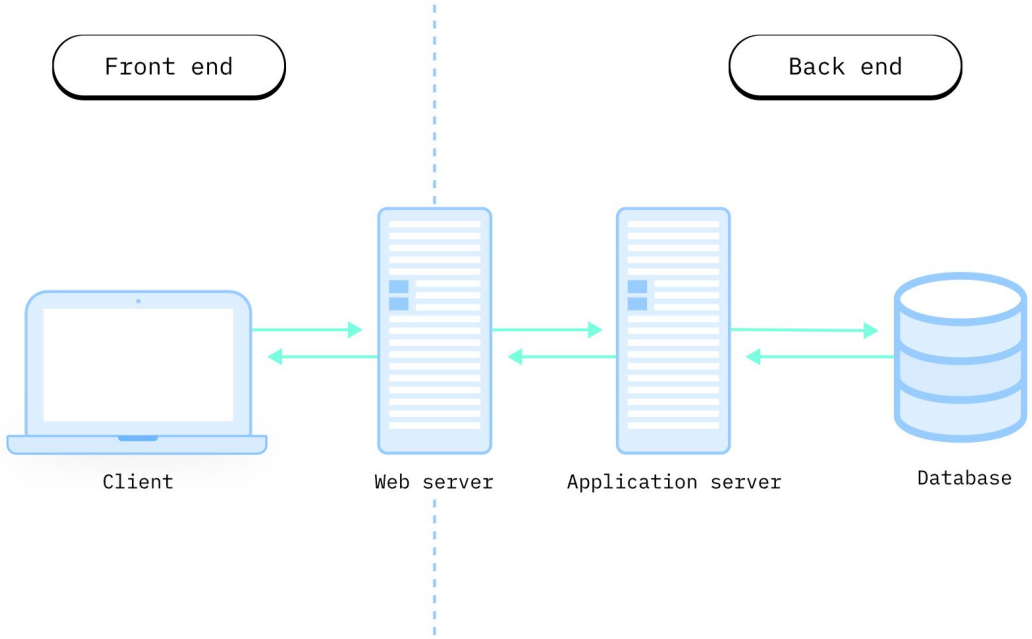
Backend Development:

- Manages the database and server-side processing.
- Examples: Authentication, database queries, and server responses.
- Tools/Technologies: Node.js, PHP, Python, SQL databases.

Frontend vs Backend Development

How They Work Together:

- The frontend sends requests to the backend for data, and the backend sends responses back to the frontend, which is then displayed to the user.



What is Hosting and How It Works

What is Web Hosting?

- **Web Hosting** is a service that allows individuals or organizations to make their website accessible on the internet.
- When you create a website, the files (HTML, CSS, JavaScript, images, etc.) need to be stored somewhere. **Web hosting** is the process of storing these files on a **server**.

What is Hosting and How It Works

How Does Hosting Work?

1. **Storing Website Files**:
    1. Website files (text, images, videos, databases) are stored on a **web server**, which is a special computer designed to host websites.
    2. This server is always on, allowing users to access your website 24/7 from anywhere in the world.

Accessing the Website:

- When someone types your website's address (URL) in their browser, their device sends a request to the **web server** where your website files are stored.
- The server then sends the requested files to the user's browser, allowing them to view your website.

What is Hosting and How It Works

Domain Names and Hosting:

- A **domain name** is the human-readable address for your website.
- The domain name is connected to the IP address of the hosting server through DNS (Domain Name System).
- When someone enters your domain name, DNS resolves it to the correct server's IP address and directs the request to the right server.

Tools for Web Development

IDE (Integrated Development Environment):

Examples: Visual Studio Code, Sublime Text, Atom.

- Features: Syntax highlighting, code auto-completion, debugging tools, etc.
- Recommended for writing HTML, CSS, and JavaScript code.

Tools for Web Development

Browser:

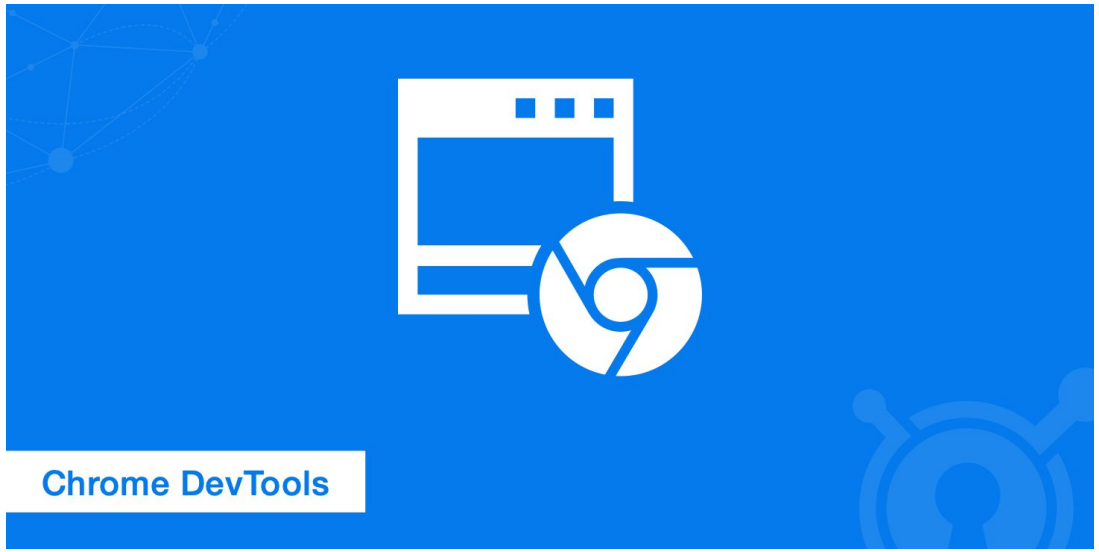
Examples: Google Chrome, Firefox, Edge.

- Browsers interpret HTML, CSS, and JavaScript and render them as web pages.

Tools for Web Development

Developer Tools:

- Found in most browsers (e.g., Chrome Developer Tools).
- Useful for inspecting HTML structure, modifying CSS on the fly, and debugging JavaScript.



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HTML Basics

Hypertext Markup Language

What is HTML?

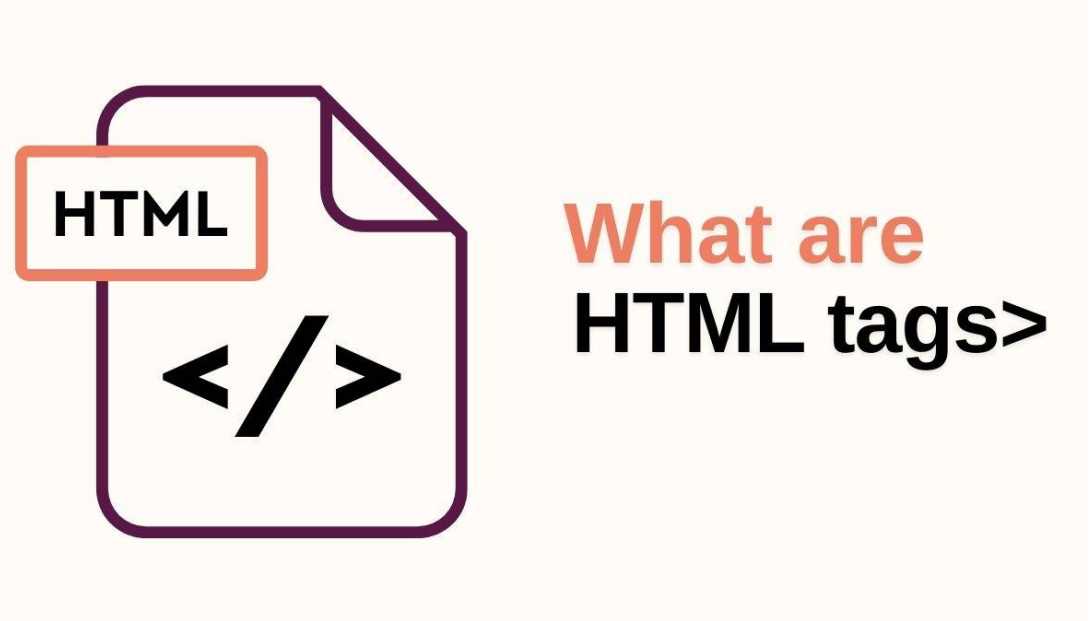
HTML Definition:

- **HTML** stands for **HyperText Markup Language**.
- It is used to create the structure of web pages.

Purpose of HTML:

- HTML defines the elements of a webpage (headings, paragraphs, images, links, etc.).
- It is the backbone of every web page.

HTML Tags



- Tags are the basic building blocks of HTML (e.g., <h1>, <p>, <a>).
- Tags are enclosed in angle brackets and usually come in pairs: an opening and a closing tag.

HTML Tags - Opening and Closing Tags

```
<h1>This is a heading</h1>
<p>This is a paragraph</p>
<div>THis is a division</div>
```

Opening Tags:

Most HTML tags come in pairs: an opening tag and a closing tag.

- The opening tag is written as <tagname>.
- The closing tag is written as </tagname>.

HTML Tags - Opening and Closing Tags

Self-Closing Tags:

- Some HTML tags do not require a closing tag. These are called **self-closing** tags.
- These tags **only need an opening tag** and typically end with a **slash** (/) before the closing angle bracket (>).

Examples of Self-Closing Tags:

- Image Tag (`<img>`):
  - The `<img>` tag is used to display images and does not require a closing tag.
  - Example: `<img src="image.jpg" alt="Description">`
- Line Break Tag (`<br>`):
  - The `<br>` tag is used to insert a line break in the text and does not have a closing tag.
  - Example: `<br>`
- Input Tag (`<input>`):
  - The `<input>` tag is used in forms to create interactive controls like text fields and checkboxes.
  - Example: `<input type="text" name="username">`

Basic HTML Document Structure

Basic Structure of an HTML Document:

- A typical HTML document includes:
  - <!DOCTYPE html>: Declares the document type.
  - <html>: The root element that contains all other elements.
  - <head>: Contains meta information (e.g., title, links to CSS files).
  - <body>: Contains the content displayed on the webpage.

```
<!DOCTYPE html>
<html>
  <head>
    <title>My First Web Page</title>
  </head>
  <body>
    <h1>Welcome to My Web Page</h1>
    <p>This is a paragraph of text.</p>
  </body>
</html>
```

Common HTML Tags

Headings (<h1>, <h2>, ... , <h6>):

- Used for titles or headings.
- <h1> is the largest, <h6> is the smallest.

Paragraphs (<p>):

- Defines a block of text.
- Automatically adds space before and after the paragraph.

Activity 1: Hands-on HTML Document Setup

Objective: To practice creating a basic HTML document.

Instructions:

- Open your text editor (VS Code)
  1. Create a new file and save it as index.html.
  2. Set up the basic HTML structure using <!DOCTYPE html>, <html>, <head>, and <body>.
  3. Add a title to the page in the <title> tag and display a heading using <h1>.
  4. Add a simple paragraph using <p>.

Common HTML Tags

Links (<a>):

- The anchor tag (Link) is used to create hyperlinks.
- href attribute specifies the URL.

Common HTML Tags

Images (<img>):

- Embeds an image on a webpage.
- Example: <img src="image.jpg" alt="Description">.

HTML Lists - Creating Ordered and Unordered Lists

What are HTML Lists?

- Lists in HTML are used to group related items together.
- They help organize content into a readable, structured format, making it easier for users to navigate.

HTML Lists - Creating Ordered and Unordered Lists

Types of Lists in HTML

1. **Ordered List (<ol>) :**
   - An ordered list displays items in a numbered or lettered sequence.
   - Commonly used when the order of the items matters (e.g., instructions, steps, rankings).

```
<ol>
    <li>First item</li>
    <li>Second item</li>
    <li>Third item</li>
</ol>
```

HTML Lists - Creating Ordered and Unordered Lists

2. Unordered List (<ul>):

- An unordered list displays items in no particular order, typically with bullet points.
- Used when the order of the items does not matter (e.g., features, categories).

```
<ul>
    <li>Item 1</li>
    <li>Item 2</li>
    <li>Item 3</li>
</ul>
```

HTML Lists - Creating Ordered and Unordered Lists

List Items (<li>):

- The <li> tag is used to define individual items in both ordered and unordered lists.
- Each item within a list is wrapped in a <li> tag.

```
<ul>
    <li>Apple</li>
    <li>Banana</li>
    <li>Cherry</li>
</ul>
```

HTML Lists - Creating Ordered and Unordered Lists

Nested Lists

- Lists can also be nested inside one another. This is useful when you need to create a list of items within an item.

```
<ol>
    <li>First step
      <ul>
        <li>Sub-step 1</li>
        <li>Sub-step 2</li>
      </ul>
    </li>
    <li>Second step</li>
    <li>Third step</li>
  </ol>
```

Activity 2: Creating a Simple Webpage

Objective:

To practice adding common HTML elements to a webpage.

- Instructions:
  1. Add a heading <h1> to your index.html file.
  2. Add a paragraph <p> with some text.
  3. Insert an image with the <img> tag (you can use a sample image or an online image).
  4. Add a link Click here.