Python – Day 6 Notes

What is Web Development?

Web development is the process of **building websites or web applications** that work over the internet. It includes everything from:

- **Designing how it looks** (Frontend)
- **Making it functional** (Backend)
- **Storing user data** (Database)

Think of it like a restaurant:

- **Frontend** is the menu and ambience you see
- **Backend** is the kitchen and chef
- **Database** is the inventory/store room

Web Development is Divided into 3 Main Parts:

1. **Frontend (Client-Side)**
2. **Backend (Server-Side)**
3. **Database (Data Storage)**

1. Frontend (Client-Side)

This is what the **user sees and interacts** with directly in their web browser.

Role of Frontend:

- Design layout and structure
- Add colors, fonts, and animations
- Handle user input (like clicks, forms)

Tools used:

Tool	Purpose
HTML	Structure of the page
CSS	Styling (color, layout)
JavaScript	Interactivity

Note: Only HTML & CSS are used now. JavaScript will come later.

2. Backend (Server-Side)

The backend is **invisible to the user**, but it's what handles all the logic and data processing.

What Backend Does:

- Processes login/signup
- Handles file uploads or form data
- Talks to the database
- Handles user permissions/security

Common Backend Languages:

- Python (with Django or Flask)
- PHP
- Java
- Node.js

3. Database

A **database stores** all the data that your site or app needs.

What it Stores:

- Usernames & passwords
- Product details
- User comments or messages

Types of Databases:

Type	Examples
SQL-based	MySQL, PostgreSQL
NoSQL	MongoDB, Firebase

The **backend** talks to the **database** using code to store and get info.

HTML: The Building Block of Websites

What is HTML?

HTML (HyperText Markup Language) is the standard **language for creating web pages**.

What HTML Does:

- Adds **headings**, **paragraphs**, **images**
- Organizes content into sections
- Links pages together
- Builds **forms** and **buttons**

Basic Structure of an HTML Page:

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

Common HTML Tags (and What They Do)

Tag	Purpose
<html>	Root of the document
<head>	Metadata: title, styles, links, etc.
<body>	Visible content
<h1> - <h6>	Headings (h1 is largest, h6 is smallest)
<p>	Paragraphs
<a href="...">	Hyperlink
<img src="...">	Display an image
, ,	Unordered or ordered lists
	Block container to group elements
	Inline container for small parts
<input>	Input fields for user data (text, email etc.)
<button>	Clickable button
<form>	Container for inputs (used to submit data)

Examples for Practice

✅ Add a heading and paragraph

```
<h2>Hello Devuu!</h2>
<p>This is your first webpage.</p>
```

✅ Add a link to Google

```
<a href="https://www.google.com">Go to Google</a>
```

✅ Add an image

```
<img src="cat.jpg" alt="A cute cat" width="200">
```

✅ Make a form

```
<form>
  <input type="text" placeholder="Enter your name">
  <button>Submit</button>
</form>
```

Summary

Component	Tool	Role
Frontend	HTML, CSS	What user sees and interacts with
Backend	Python, Node.js	Handles logic, form submissions
Database	MySQL, MongoDB	Stores and retrieves website data