Lesson 10: Web Development (HTML, CSS, PHP)

1. Frontend Development (HTML & CSS)

HTML Core Structure & Tags

- **Basic Structure:** `<!DOCTYPE html>`, `<html>`, `<head>`, `<title>`, `<body>`.
- **Comments:** `<!-- comment -->`.
- **Text Formatting:** `<h1>`-`<h6>`, `<p>`, `<br>`, `<b>`, `<i>`, `<u>`.
- **Links:** `<a href="url">Link Text</a>`.
- **Images:** `<img src="path" alt="text">`.
- **Lists:** `<ul>` (Unordered), `<ol>` (Ordered), `<li>` (List Item).
- **Tables:**
  - *Core:* `<table>`, `<tr>`, `<th>`, `<td>`.
  - *Structure:* `<thead>`, `<tbody>`, `<tfoot>`.
  - *Merging:* `colspan`, `rowspan`.
- **Multimedia:** `<audio>`, `<video>` with `src` attribute.

CSS Core Concepts

- **Syntax:** `selector { property: value; }`.
- **Selectors:** Element (p), Class (.name), ID (#name).
- **Insertion Methods:**
  - **Inline:** `style` attribute in an HTML tag.
  - **Internal:** `<style>` tag in the `<head>`.
  - **External:** `<link>` tag or `@import` directive.
- **Common Properties:** `color`, `font-size`, `font-family`, `background-color`, `margin`, `padding`, `border`.

3. Publishing & Key Concepts

- **Website Types:** Static vs. Dynamic.
- **Core Concepts:** Client-Server Model, URL Components (protocol, domain, path).
- **Publishing:** Local vs. Internet.
- **Key Terms:** ISP, Web Hosting, Domain Name.
- **Maintenance:** Importance of regular backups, security updates, and monitoring site statistics.
- **Authoring Tools:** Software like Dreamweaver can auto-generate code.

2. Backend Development (PHP & MySQL)

PHP Basics

- **Embedding:** `<?php ... ?>`.
- **Variables & Output:** `$variable = "value";`, `echo $variable;`.
- **Comments:** `//` (single-line), `/* ... */` (multi-line).
- **Control Structures:** `if...elseif...else`, `switch`, `while`, `do...while`, `for`.
- **Array Sorting:** Functions like `sort()`, `rsort()`, `asort()` (by value), `ksort()` (by key).

HTML Forms (User to Server Bridge)

- **Main Tag:** `<form action="..." method="post|get">`.
- **GET vs. POST:** GET sends data in URL; POST hides it in the request body.
- **Input Elements:** `<input type="text">`, `"password"`, `"radio"`, `"checkbox"`, `"submit"`.
- **Other Elements:** `<textarea>`, `<select>`, `<label>`, `<fieldset>`.

PHP & MySQL (Database Connection)

Typical DB Operation Flow (Procedural)

1. `$link = mysqli_connect(...);` // *Establish connection*
2. `$sql = "INSERT INTO ...";` // *Formulate SQL query*
3. `mysqli_query($link, $sql);` // *Execute query*
4. `$row = $result->fetch_assoc();` // *Process results (for SELECT)*
5. `mysqli_close($link);` // *Close connection*

- **Retrieving Form Data:** Use superglobals `$_POST['input_name']` or `$_GET['input_name']`.