



جامعة المستقبل
AL MUSTAQBAL UNIVERSITY

كلية العلوم
قسم الانظمة الطبية الذكية

Lecture: (3)

Subject: Fundamentals of Web Development Using HTML, CSS, PHP, and MySQL

Level: Third stage

Lecturer: Msc najwan thaeer ali



Introduction

This lecture aims to provide students with a comprehensive understanding of the fundamental concepts of dynamic web development. It covers the creation of web pages using **HTML**, styling and layout using **CSS**, server-side processing with **PHP**, database interaction using **MySQL**, and **session management** for user authentication.

By the end of this lecture, students will be able to:

- Understand the structure of web pages.
 - Design and implement interactive web forms.
 - Handle form submissions using PHP.
 - Store and retrieve data from a MySQL database.
 - Implement a basic user authentication system using sessions.
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1. HTML (HyperText Markup Language)

1.1 Definition

HTML is the standard markup language used to create and structure content on the World Wide Web. It defines the skeleton of a web page.

1.2 Basic Structure of an HTML Page

```
<!DOCTYPE html>
<html>
<head>
  <title>Sample Web Page</title>
</head>
<body>
  <h1>Welcome to Web Development</h1>
  <p>This page demonstrates basic HTML structure.</p>
</body>
</html>
```



```
<!DOCTYPE html>
<html lang="en-US">
<head>
<title> ... </title>
</head>
<body>
<h1> ... </h1>
```

<HTML>

1.3 Common HTML Elements

- <h1> - <h6>: Headings
- <p>: Paragraphs
- <a>: Hyperlinks
- : Images
- <form>: Forms
- <input>: User input fields

```
<p>This is a paragraph</p>
```



```
<a href="https://  
uxcel.com/">Uxcel</a>
```



```

```

2. CSS (Cascading Style Sheets)

2.1 Definition

CSS is a style sheet language used to control the presentation and layout of HTML elements, including colors, fonts, spacing, and positioning.

2.2 Example of CSS Styling



```
body {  
    background-color: #f2f2f2;  
    font-family: Arial, sans-serif;  
}  
  
h1 {  
    color: navy;  
}
```

2.3 Linking CSS to HTML

```
<link rel="stylesheet" href="style.css">
```

3. Web Forms

3.1 Definition

Web forms are used to collect data from users, such as login credentials or personal information.

3.2 Login Form Example

```
<form method="POST" action="login.php">  
    <label>Username:</label>  
    <input type="text" name="username" required>  
  
    <label>Password:</label>  
    <input type="password" name="password" required>  
  
    <input type="submit" value="Login">  
</form>
```

4. PHP (Hypertext Preprocessor)

4.1 Definition

PHP is a server-side scripting language used to process user input, interact with databases, and generate dynamic web content.

4.2 Handling Form Data



```
<?php
$username = $_POST['username'];
$password = $_POST['password'];

echo "Welcome, " . $username;
?>
```

4.3 Input Validation

```
if (empty($username) || empty($password)) {
    echo "All fields are required.";
}
```

5. MySQL Database

5.1 Definition

MySQL is a relational database management system used to store and manage structured data efficiently.

5.2 Creating a Database and Table

```
CREATE DATABASE web_app;

CREATE TABLE users (
    id INT AUTO_INCREMENT PRIMARY KEY,
    username VARCHAR(50),
    password VARCHAR(255)
);
```

5.3 Connecting PHP to MySQL

```
$conn = mysqli_connect("localhost", "root", "", "web_app");

if (!$conn) {
    die("Database connection failed");
}
```

5.4 User Authentication Query

```
$sql = "SELECT * FROM users WHERE username='$username' AND
password='$password'";
$result = mysqli_query($conn, $sql);

if (mysqli_num_rows($result) > 0) {
```



```
    echo "Login successful";  
} else {  
    echo "Invalid username or password";  
}
```

6. Session Management and Authentication

6.1 Definition of Sessions

A session is a method used to store user-specific data on the server across multiple web pages.

6.2 Starting a Session

```
session_start();  
$_SESSION['username'] = $username;
```

6.3 Access Control Using Sessions

```
session_start();  
if (!isset($_SESSION['username'])) {  
    header("Location: login.html");  
}
```

6.4 Logging Out

```
session_start();  
session_destroy();
```
