

Introduction to Dynamic Web Content

Lab01



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Class Section: **A**

“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

A handwritten signature in black ink, reading "Mohsin Sajjad".

Student Signature: _____

Submitted to:

Engr. Summeya Salahudin

Month Day, Year (16 06, 2025)

Department of Computer Systems Engineering
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Objectives of The Lab:

1. This lab aims at the understanding of:
2. Basics of HTML
3. The relationship between HTTP and HTML and how they are used together in web
4. development
5. The benefits of using PHP, MySQL, JavaScript, CSS, and HTML in web development,
6. including their individual strengths and use cases
7. Knowledge about the Apache web server
8. The principles of Open Source software development and its importance in the web
9. development community

Task 1.1

Write answer to the following questions:

1. What four components (at the minimum) are needed to create a fully dynamic web page?

Answer:

HTML, CSS, JavaScript, and a server-side language like PHP.

2. What does HTML stand for?

Answer:

HyperText Markup Language.

3. Why does the name MySQL contain the letters SQL?

Answer:

Because SQL stands for "Structured Query Language," which is used to manage databases.

4. PHP and JavaScript are both programming languages that generate dynamic results for web pages. What is their main difference, and why would you use both of them?

Answer:

JavaScript runs in the browser (frontend), PHP runs on the server (backend). We use both to make web pages interactive and functional.

5. What does CSS stand for?

Answer:

Cascading Style Sheets.

6. List three major new elements introduced in HTML5.

Answer:

Video, audio and canvas.

7. If you encounter a bug (which is rare) in one of the open source tools, how do you think you could get it fixed?

Answer:

Report the bug to the tool's developers or check online for updates or fixes.

8. Evaluate yourself and write a note about your understanding of this lab.

Answer:

I understood the basics of how dynamic web pages are built using HTML, CSS, JavaScript, and PHP.

Task 1.2:

What is a Framework? List top three frameworks used for PHP language. How do these help developers? Write in your own words. ChatGPT answer will be awarded zero marks.

Answer:

Framework:

A framework is a readymade set of rules that helps developers build websites or web apps faster and in an organized way. It saves time by giving a solid structure to your code.

Top 3 PHP frameworks:

1. Laravel
2. CodeIgniter
3. Symfony

These frameworks help developers by:

- Reducing the amount of code, they need to write
- Making the app more secure
- Helping in easy maintenance and updates

They let us focus on our idea instead of starting from scratch.

Task 1.3:

What is the difference between Library and Framework? Write in your own words. ChatGPT answer will be awarded zero marks.

Answer:

Library: A library is a collection of ready-made functions we can call anytime in your code.

Framework: A framework gives us a full structure and controls the flow of our code we put our code into it.

Task 1.4:

What is PHP MVC Framework? Give examples. (HINT: LARAVEL, CODEIGNITER, etc). Write in your own words. ChatGPT answer will be awarded zero marks.

Answer:

A PHP MVC framework is a way to organize the code into three parts:

1. **Model:** handles data and database
2. **View:** shows data to the user e.g. frontend
3. **Controller:** connects model and view, handles logic

This makes code cleaner and easier to manage.

Examples: Laravel, CodeIgniter, Symfony.

Task 1.5:

What differences do you see in SQL and NoSQL Databases? Mention in detail. (HINT: SQL Databases include MySQL, ORACLE, SQLITE, MS ACCESS, etc; while NOSQL Databases include MongoDB, CouchDB, HBase, Cassandra, Neo4j, etc.) Write in your own words. ChatGPT answer will be awarded zero marks.

Answer:

SQL Database:

SQL databases that store and manage data differently. SQL databases like MySQL, Oracle, SQLite, and MS Access use a fixed table structure. They require a defined schema, meaning the structure of the data must be decided in advance. These databases are good for handling complex queries and structured data.

NoSQL Database:

NoSQL databases like MongoDB, CouchDB, Cassandra, and Neo4j are more flexible. They do not need a fixed schema and can store data in various formats like documents, key-value pairs, or graphs. NoSQL is better for handling large amounts of unstructured or rapidly changing data and is more scalable because it can easily spread data across many servers. In simple words use SQL when our data is well-organized and stable, and use NoSQL when we need flexibility and speed with big or changing data.

Task 1.6:

What is web hosting and domain? List some popular hosting websites. Write in your own words. ChatGPT answer will be awarded zero marks.

Answer:

Web hosting is a service that stores our website files on a server so people can visit our site online. A domain is the name of our website that people type in the browser to access it. Some popular hosting websites are Hostinger, GoDaddy, Bluehost, and Namecheap.