

**Tasks 1.1**

**Q1: What four components (at the minimum) are needed to create a fully dynamic web page?**

**A:** The four dynamic components of a web page are following:

1. PHP (Hypertext Processor)
2. SQL (Structured Query Language)
3. JavaScript
4. CSS (Cascade Style Sheet)

**Q2: What does HTML stand for?**

**A:** HTML stands from **H**yper**T**ext **M**arkup **L**anguage.

**Q3: Why does the name MySQL contain the letters SQL?**

**A:** MySQLhas **SQL** in its name because it uses the Structured Query Language (SQL) for interacting with database.

**Q4: 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?**

**A:** PHP is used on the server side mostly. It usually interacts with a database on a server’s hard drive using SQL. While JavaScript a client side language that is used to create logic in a static HTML or make it more dynamic.

**Q4: What does CSS stand for?**

**A:** CSS stands for **C**ascade **S**tyle **S**heet.

**Q5: List three major new elements introduced in HTML5.**

**A:** The three major new elements of HTML5 are:

1. **Semantic Elements** (header, footer, nav, aside, article, main, section).

These elements have meaning in their name like <nav> is used in navigation bar, <aside> for side content on web page etc.

1. **Audio Element** (<audio></audio>)

It allows us to use audio on webpage.

1. **Canvas Element** (<canvas></canvas>)

Canvas element is used to draw on a web page.

**Q7: If you encounter a bug (which is rare) in one of the open source tools, how do you think you could get it fixed?**

**A:** If I encountered a bug in an open source software, first if I could understand the code base of the software, I would make a pull request. And I could not understand the code base I would create an issue on GitHub.

**Q8: Evaluate yourself and write a note about your understanding of this lab.**

**A:** This lab consists some of basic concepts about creating. Some of the components we have already done in previous semesters like HTML, CSS and JavaScript. Where as some like PHP and SQL are new, which now know what they used for and where they are used.

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**Tasks 1.2**

In **bootstrap-5.2.3-examples.zip** I looked at the HTML and CSS of **blog** and **dashboard** web pages.Both of them are using **bootstrap** library. In which we use class name to style an element.

For Example:

**<div class="col-4 d-flex justify-content-end align-items-center"></div>**

**In the line above **col-4** means it has the ¼ of the total width, **d-flex** means that it is using flexbox and **justify-content-end** and **align-items-center** will align the element at the end horizontally and in the middle vertically.**

**In the same way both of the web pages are styled using **bootstrap 5****

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**Tasks 1.3**

**Q: What is a Framework? List top three frameworks used for PHP language. How do these help developers?**

**Ans: Framework:**

A framework is already written code that provides a base to other software engineers. Like Angular Js framework is JavaScript code that developers use as an abstraction to write their own code. Three PHP framework are:

1. Laravel
2. Symfony
3. Lumen

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**Tasks 1.4**

**Q: What is the difference between Library and Framework?**

**Ans:** Library provide only a specific function or very limited set of functionalities like in C language **stdio.h** is library that only provides input and output functions.

While framework is complete set of functionalities that a developer can use to create a software. For example Laravel is a framework of PHP, so it will have all the functions needed to create a server.

**Tasks 1.5**

**Q: What is PHP MVC Framework? Give examples.**

**Ans:** MVC is design pattern that frameworks use to structure their applications. PHP frameworks are those frameworks that use MVC design pattern.

Examples of popular MVC frameworks are Symfony, CakePHP, Phalcon etc.

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**Tasks 1.6**

**Q: What differences do you see in SQL and NoSQL Databases?**

**Ans:** The differences between SQL and NoSQL are following.

**SQL NoSQL**

**1.** SQL databases are table based.

**2.** SQL databases are vertically scallable.

**3.** SQL databases are well structured and less error prone but expensive to structure as they should be structured ahead of time.

**1.** While NoSQL are document based key value, graph etc.

**2.** NoSQL databases are horizantally scallable.

**3.** NoSQL databases are good at storing large amount of unstructured data as documents or key value pairs.

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**Tasks 1.7**

**Q: What is web hosting and domain? List some popular hosting websites.**

**Ans: Hosting:**

Hosting a place where we store out HTML, CSS and JavaScript file to be accessed by our clients.

**Domain:**

Domain is the address that is linked to out hosting server’s IP address that is used to access our web pages by the clients. Following are the some popular hosting websites.

1. HostGator
2. Hostinger
3. SiteGround

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