Lab Manual

Course: CSC336-- Web Technologies

CUI

Department of Computer Science
Islamabad Campus

Lab Contents:

The aim of this lab manual is to provide hands-on skills regrading modern web technologies used for the web development. The topics include HTML; CSS; Javascripts; Server-Side Technologies (PhP); Laravel Framework and use of Database Mysql in Web-based Applications

Student Outcomes (SO)

S.#	Description
2	Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines
3	Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
4	Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations
5	Function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary settings.

Intended Learning Outcomes

Sr.#	Description	Blooms Taxonomy Learning Level	SO
CLO -1	Apply the concepts of markup & scripting languages and client side technologies.	*Applying*	2,4
CLO -2	Build a medium size application in a team environment. Develop dynamic applications using current industrial practices.	*Creating*	2-5

Lab Assessment Policy

The lab work done by the student is evaluated using Psycho-motor rubrics defined by the course instructor, viva-voce, project work/performance. Marks distribution is as follows:

Assignments	Lab Mid Term Exam	Lab Terminal Exam	Total
25	25	50	100

Note: Midterm and Final term exams must be computer based.

Table of Contents

Lab 01

HTML Basics

Objective:

- After this lab the students should be able to understand the use of markup language "HTML" and its basic tags.

Activity Outcomes:

The activities provide hands-on practice with the following topics

- Design basic web page using HTML Tags
- Add text formatting tags
- Add lists to web pages
- Add images and videos to the web pages

Instructor Note:

As pre-lab activity, read Chapter 1, 2 from the textbook "Web Design Playground: HTML & CSS the Interactive Way 1st Edition, April 2019 by Paul McFedries".

1) Useful Concepts

Introduction

HTML

HyperText Markup Language (HTML) is the main markup language for displaying web pages and other information that can be displayed in a web browser. HTML is written in the form of HTML elements consisting of tags enclosed in angle brackets (like <html>), within the web page content. HTML tags most commonly come in pairs like <h1> and </h1>, although some tags, known as empty elements, are unpaired, for example <img>. The first tag in a pair is the start tag, the second tag is the end tag (they are also called opening tags and closing tags). In between these tags web designers can add text, tags, comments and other types of text-based content.

The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page.

The HyperText Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img /> and <input /> directly introduce content into the page. Other tags such as <p> surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript, which affects the behavior and content of web pagesThe inclusionion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), former maintainer of the HTML and current maintainer of the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997. A form of HTML, known as HTML5, is used to display video and audio, primarily using the <canvas> element, in collaboration with javascript.

HTML Basic Structure

```
<html>
<head>
<title> Page Title Goes Here </title>
</head>
<body>
content goes here
</body>
</html>

Adding audio,image and video files:
<html>
<head>
<title>adding video</title>
</head>
<body>
<img src=”abc.jpg”>
<video src=”abc.mp4”>
</body>
</html>
```

How To Create basic web page

1. Open Notepad
2. Click on File -> Save as…
3. In the File name pull-down box, type in webpage.html
4. Click on Save

5. Type in content for your file
6. Once you finished the content, click on File -> Save

2) Solved Lab Activites

Activity 1:

- □ **Create basic page of COMSATS University as given below**
- □ **Add text about COMSATS and apply text formatting Solution:**

Solution:

```
<html>
<head>
<title>Home</title>
</head>
<body bgcolor="#98E0F0">
<h1><font color="#1322D6"> COMSATS Institute of Information Technology </font>
</h1>
<hr width="100%" color="#030303" size="4" />


<Center><p><h2><b><pre> Home Department Admissions Academics
Exams</pre></b></h2> </p> </center>
<hr width="100%" color="#030303" size="4" />
<br />

<p> <h2><font color="#1322D6"> Historic Perspective:</font> </h2> </p>


<a href="lol.html"> click here </a><!-- Write your comments here -->

<p>WWF's goal is to: <q>Build a future where people live in harmony with nature.</q></p>

</body>
</html>
```

Activity 2:

- □ **Add list of topics, images and videos to your website**

Solution:

```
<html>
<head>
<title>Home</title>
</head>
<body bgcolor="#98E0F0">
<h1><font color="#1322D6"> COMSATS Institute of Information Technology </font>
</h1>
<hr width="100%" color="#030303" size="4" />
<Center><p><h2><b><pre> Home Department Admissions Academics
Exams</pre></b></h2> </p> </center>
<hr width="100%" color="#030303" size="4" />
<ol type="I" start="4">
<li> computer </li>
<li> mouse </li>
<li> keyboard </li>
</ol>
<br />
<dl>
<dt>Coffee</dt>
<dd>- black hot drink</dd>
<dt>Milk</dt>

<dd>- white cold drink</dd>
</dl>
<img src="akweb.jpg" alt="Mountain View farrrr" style="width:304px;height:228px;">
<iframe width="420" height="315"
src="https://www.youtube.com/embed/XGSy3_Czz8k?autoplay=1">
</iframe>
</body> </html>
```

3) Graded Lab Tasks

Lab Task 1

Learn and try different tags and formatting options on your webpage of Comsats.

Lab Task 2

Create a webpage for Comsats library. Add lists and apply text formatting to your page. Make videos and take images of the library and then add them to your page.

Lab Task 3

Use inline styling to make the webpage created in lab task 2, more aesthetic.