Web Engineering | Lab Manual-01

NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES
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Lab Manual: 01

Introduction to Web Engineering

Web Engineering is the application of systematic and quantifiable approaches (concepts methods, techniques tools) to cost - effective requirements analysis, design, implementation, testing, operation, and maintenance of **high quality Web applications.**

Technologies to be studied

- HTML
- CSS
- JavaScript
- Bootstrap
- JQuery
- PHP
- MySQL [Database]
- Laravel [PHP FRAMEWORK]

Tools – IDEs

- Visual Studio Code
- Adobe Dreamweaver
- Visual Studio

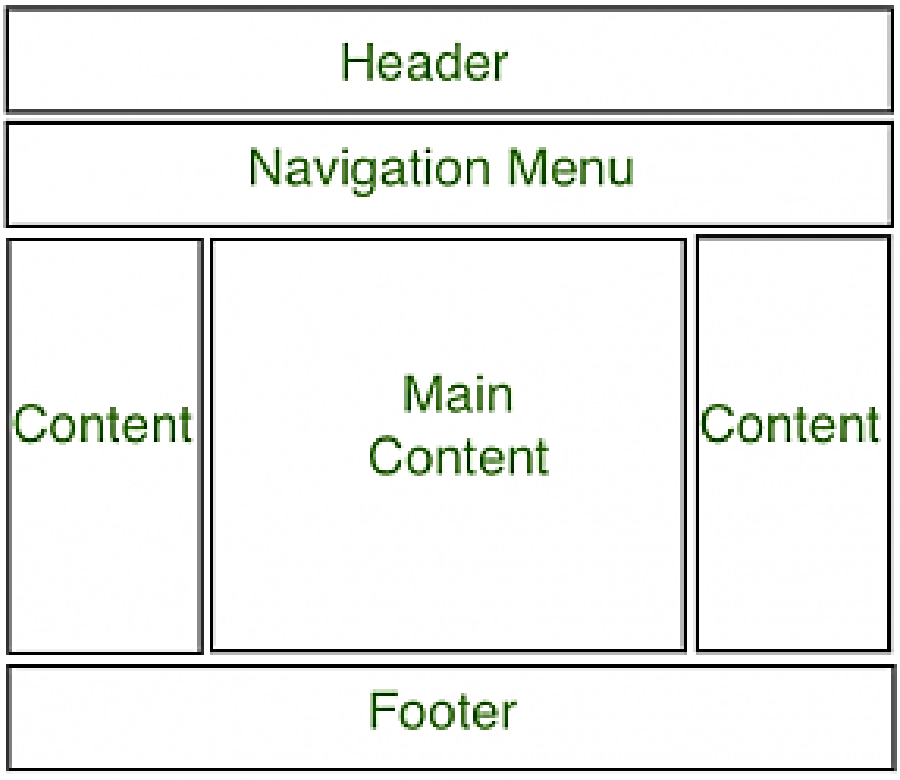
Static and Dynamic Website:

Static Web Page	Dynamic Web Page
The content and layout of a web page is fixed	The content and layout may change during run time
Static Web pages never use databases	Databases is used to generate dynamic content through queries
Static web pages directly run on the browser and do not require any server side application program	Dynamic web pages runs on the server side application programs and displays the results
Static Web pages are easy to develop	Dynamic web page development requires programming skills

Web Base Structure:

Web structure is how information is organized and interconnected on a website. An effective site structure improves usability and user experience which makes web structuring an important step in the web design process. It is important to structure your individual website pages or blog posts in a way that makes it easy for users to find what they are looking for, find similar content and understand where they are on your website. Breadcrumb trails, tags, and contextual sitelinks are used to structure information architecture on individual pages.

Take care of the headers that you put on individual pages. Make sure that they follow the right order, for example, the title of the blog post is H1 and that they all have metadata. Metadata are important part of UX, too. You don't want to confuse users what your site is about.



```
<html>
<head>
<title>Page title</title>
</head>
<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
<p>This is another paragraph.</p>
</body>
</html>
```

- The `<!DOCTYPE html>` declaration defines that this document is an HTML5 document
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the HTML page
- The `<title>` element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)
- The `<body>` element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.
- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph

How to install VS Code including extension?

- Visit the site https://code.visualstudio.com/download
- Then choose based on your computer windows types supporting VS-Code.
- Add extension according to your requirement.

HTML History:

Since the early days of the World Wide Web, there have been many versions of HTML:

Year	Version
1989	Tim Berners-Lee invented www
1991	Tim Berners-Lee invented HTML
1993	Dave Raggett drafted HTML+
1995	HTML Working Group defined HTML 2.0
1997	W3C Recommendation: HTML 3.2
1999	W3C Recommendation: HTML 4.01
2000	W3C Recommendation: XHTML 1.0
2008	WHATWG HTML5 First Public Draft
2012	WHATWG HTML5 Living Standard
2014	W3C Recommendation: HTML5
2016	W3C Candidate Recommendation: HTML 5.1
2017	W3C Recommendation: HTML5.1 2nd Edition
2017	W3C Recommendation: HTML5.2

HTML Basic Tags

HTML is the standard markup language for Web pages. With HTML you can create your own Website. HTML is easy to learn.

- HTML stands for Hyper Text Markup Language
- HTML is the standard markup language for creating Web pages
- HTML describes the structure of a Web page
- HTML consists of a series of elements
- HTML elements tell the browser how to display the content
- HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

An HTML element is defined by a start tag, some content, and an end tag:

<tagname> Content goes here... </tagname>

Web Browsers

The purpose of a web browser (Chrome, Edge, Firefox, Safari) is to read HTML documents and display them correctly. A browser does not display the HTML tags, but uses them to determine how to display the document.

HTML Heading

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<h2>This is a Heading</h2>

<h3>This is a Heading</h3>
<h4>This is a Heading</h4>

<h5>This is a Heading</h5>

<h6>This is a Heading</h6>
</body>
</html>
```

HTML Paragraph

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

The HTML `<br>` element defines a line break.

The `<hr>` tag is an empty tag, which means that it has no end tag.

The HTML `<pre>` element defines preformatted text.

The text inside a `<pre>` element is displayed in a fixed-width font (usually Courier), and it preserves both spaces and line breaks

HTML Link using Anchor Tag

```
<a href="https://www.w3schools.com">This is a link</a>
```

HTML Image

```
<img src="w3schools.jpg" alt="W3Schools.com" width="104" height="142">
```

HTML List

HTML List Tags

Tag	Description
	Defines an unordered list
	Defines an ordered list
	Defines a list item
<dl>	Defines a description list
<dt>	Defines a term in a description list
<dd>	Describes the term in a description list

```
<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>
```

```
<dl>
  <dt>Coffee</dt>
  <dd>Black hot drink</dd>
  <dt>Milk</dt>
  <dd>White cold drink</dd>
</dl>
```

The <dl> tag defines a description list.

The <dl> tag is used in conjunction with <dt> (defines terms/names) and <dd> (describes each term/name).

```
p>This text contains <sup>superscript</sup> text.</p>
```

```
p>This text contains <sub>subscript</sub> text.</p>
```

```
p>This text
contains <b>subscript</b> <i>subscript</i> <u>subscript</u> text.</p>
```

Lab Task

Task-1

Display All Heading in your webpage with italic and underline.

Task-2

The objective of this lab task is to learn how to implement a hyper link and how to insert an image on a web page.

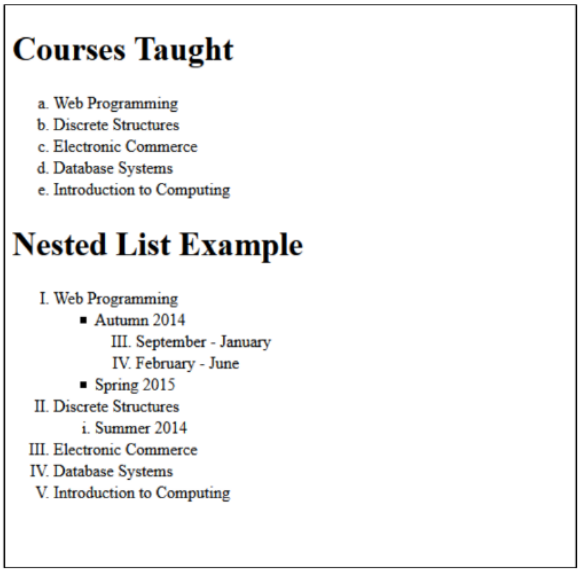
- Create New HTML Page
- Add Paragraphs
- Make some content of paragraph as Bold, Italic and Underline
- Insert a hyper link.
- Insert an image.

Task-3

The objective of this lab task is to learn how to implement a list and how to insert a table.

- Implement a nested list.
- Implement a complex table.

Sample Output:



Task-4

Create a webpage that display like this:

Film Folk

Festival Diary

Here are some of the film festivals we will be attending this year.
Please contact us if you would like more information.

January

Sundance Film Festival
Park City, Utah, USA
20 - 30 January 2011

February

Tropfest
Sydney, Australia
20 February 2011

About Film Folk

Top of page

Task-5

Create a webpage that display like this, you can use any image but display of page should be like this.

Task-5

Create a webpage that display your basic CV, using the tags which you learn in this lab.