Front End Development

Introduction to HTML

Requirements

- Text Editors:
  - Notepad/ Notepad++
  - Brackets
  - **Visual Studio Code (VS Code)**
- Operation System:
  - Ubuntu
  - Linux
  - **Windows**
- Browser:
  - Firefox/IE/Safari/Opera
  - **Chrome**

Of course an Internet connection (good speed though)

Course Outline

- This course introduces essential front end web development languages, focusing mainly on **HTML, CSS, Bootstrap and jQuery**. Course content explores front-end web development best practices and the purpose of responsive web design. At the end of the course students will be able to create responsive web pages with HTML, apply formatting styles using CSS and create jQuery scripts for interactivity.

- Flexibility to code on any device. Easy-to-understand

- No Prior Knowledge required:

  You don't need familiarity with HTML, CSS & jQuery to take this course. You'll learn everything from scratch, step-by-step. A very basic familiarity with HTML will be helpful but it is not required.

Important things to remember..

- Attendance : Try not to miss the class. If you are absent, its your responsibility to learn.

- Plagiarism : Plagiarism is the most serious offence in the academic community. In this course, all submitted items that are used to evaluate your performance such as exams, are individual and should not include any code written by someone else

- Exam Dates

9th Feb – Mid Exam

1st Mar– Final Exam

*Changes in schedule(If any), will be notified in advance.

What you will learn today?

Web Basics
Introduction to HTML
Web pages in HTML
Web page Structure
HTML Elements & Attributes
HTML Tags
Sample(Several) Exercises

Web Basics

- The Internet is a global system of interconnected computer networks that use the standard Internet Protocol Suite **TCP/IP*** to serve billions of users worldwide.
- The Internet is a global data communications system. It is a hardware and software infrastructure that provides connectivity between computers.

*TCP/IP stands for Transmission Control Protocol/Internet Protocol, which is a set of networking protocols that allows two or more computers to communicate. The Defense Data Network, part of the Department of Defense, developed TCP/IP, and it has been widely adopted as a networking standard.

World Wide Web & Web Browser

- The Web is a system of interlinked hypertext documents accessed via the Internet.

<u>3 first bricks:</u>

Uniform Resource Locator (URL) i.e., unique identifiers for resources on the Web*

Hyper Text Markup Language (HTML) i.e., the publishing language

Hypertext Transfer Protocol (HTTP) i.e., the exchange protocol

Eg: *https://google.com/
Protocol Identifier – https
Resource Identifier - google.com

- Software when connected to the Internet is able to access documents at remote locations and display them locally in accordance with its interpretation of markup instructions in the document.

To Create a Website..

The following technologies are used to design and develop a website:

- Mark-up Languages
  HTML, XML, etc.
- Cascading Style Sheets (CSS)
- Scripting languages
  JavaScript, jQuery, PHP, etc.
- Responsive Web Design
  Bootstrap

Web of Structured Documents

- Every day, you come across different kinds of printed documents—Newspapers, train timetables and forms.
- Take the example of a newspaper. A newspaper consists of several stories or articles. Each story has a *headline* and then some *paragraphs*, perhaps a *subheading*, and then some more paragraphs; it may also include a *picture*.
- Consider another example: You're catching a train to see a friend, so you check the schedule or timetable to see what time the train leaves. The main part of the schedule is a *table* telling you what times trains arrive and when they depart from different stations. You can probably think of several types of documents that use tables
- Another common type of printed document is a form. For example, think about a metro *form* from the MCIT. Such a form contains fields to write your name, address etc.

HTML

- Mark-up Languages

  Traditionally used to provide typesetting information to printers where text should be indented, margin sizes, bold text, special font sizes and styles, etc. Word processors like MS Word, and typesetting systems like LaTex are also forms of mark-up languages.

- HTML is a markup language.It consists of TAGS: **This is bold**
- HTML describes the structure of the document
- Provides text and other formatting instructions to tell the browser how to render the material.

*Sample Exercise - 1

Structure Of HTML Page

< HTML >

< / HTML>

HTML – Tags & Elements

- If you look at the first and last lines of the code for the sample exercise 1, you see pairs of angle brackets containing the letters “html”. Starting on the first line, the first angled bracket looks like a less-than sign (<); then there are the letters “html,” followed by a second angled bracket, which looks like a greater-than sign (>). The two brackets and all the characters between them are known as a tag.

- **A pair of tags and the content these include are known as an Element.**
- **An element that contains another element is known as the parent, whereas the element that’s between the parent element’s opening and closing tags is called a child of that element. So, the <title> element is a child of the <head> element**

Good to Know

- It is worth noting that the tags in this example are all in lowercase characters; you sometimes see web pages written in HTML where tags are uppercase (or a mix of uppercase and lowercase letters).
- lowercase is recommended for consistency

HTML – Head & Body

- **The** <head> **element:** Often referred to as the head of the page, this contains information

about the page. (This is not the main content of the page.) For example, it might contain a

title and a description of the page or instructions on where a browser can find CSS rules that

explain how the document should look. It consists of the opening <head> tag, the closing

</head> tag, and everything in between.

- **The** <body> **element:** Often referred to as the body of the page, this contains the information you actually see in the main browser window. It consists of the opening <body> tag, the closing </body> tag, and everything in between.

- Thing to notice here is that the tags appear in a symmetrical order. If you want to have one element inside another, both the element's opening and closing tags must be

*Sample Exercise – 1(Add bold)

HTML - Attributes

- Attributes in HTML are much like the attributes you experience every day. They are the qualities that describe a person or thing, such as a *tall* man or a *brown* dog. Similarly, HTML elements can be described in ways that web browsers can understand.
- What differentiates web documents from standard documents are the *links* (or *hyperlinks*) that take you from one web page to another. Lets create a new sample using link. Links are created using an <a> element. (a - anchor.)
- Attributes are used to say something about the element that carries them, and they always appear on the opening tag of the element that carries them. Almost all attributes consist of two parts: a name and a value. The *name* is the property of the element that you want to set.
- In example, the <a> element carries an attribute whose name is href, which you can use to indicate where the link should take you. The *value* is what you want the value of the property to be. In our example, the value was the URL of the site that the link should take you to, so the value of the href attribute is http://www.google.com.

*Sample Exercise - 2

Handy Tip

Learning from Others by Viewing Their Source Code

HTML – Core Attributes

- id - You can use the *id* attribute to uniquely identify any element within a page.
- class - You can use the class attribute to specify that an element belongs to a *class* of elements.
- title - The *title* attribute gives a suggested title for the element.
- style - The *style* attribute enables you to specify CSS rules within the element.

*Sample Exercise - 3

HTML – Core Elements

- <!DOCTYPE html>

  The DOCTYPE (DOCument TYPE) tells the browser what rules to follow

when showing the document to the user. It represents the document type, and helps browsers to display web pages correctly. It must only appear once, at the top of the page (before any HTML tags).

- <head>

  head can contain combination of following elements <base>, <title>, <link>, <style>, <script> , <meta>

Lets see some of them in detail..

HTML – Core Elements(<head>)

- <title>

  At the top of a browser window. As the default name for a bookmark in browsers such as Firefox, Chrome. The test for a good title is whether visitors can tell what they will find on that page just by reading the title, without looking at the actual content of the page

- <meta>(data about the data)

  Includes information about the document such as a description or the name of the author. A <meta> charset (UTF-8) is character encoding capable of encoding all characters on the web. A <meta> viewport element gives the browser instructions on how to control the page's dimensions and scaling. X-UA-Compatible is a document mode meta tag that allows web authors to choose what version of Internet Explorer the page should be rendered as

*Sample Exercise – Auto generate code

HTML – Core Elements(<body>)

- The six levels of headings: <h1>, <h2>, <h3>, <h4>, <h5>, and <h6>
- Paragraphs <p>, preformatted sections <pre>, line breaks
, and addresses <address>
- Grouping elements: , <header>, <hgroup>, <nav>, <section>, <article>, and <hr>
- Presentational elements: <b>, <i>, <sup>, and <sub>
- Phrase elements: , , <abbr>, <dfn>, <blockquote>, <q>, <cite>, <code>, <kbd>, <var>, and <samp>
- Lists such as unordered lists using <ul> and <li>; ordered lists using <ol> and <li> and definition lists using <dl>, <dt>, and <dd>
- Editing elements: <ins> and <del>

*Next few slides will explain body elements in detail

- **Creating Headings Using <hn> Elements**:

No matter what sort of document you create, most documents have headings in one form or another. Newspapers use headlines, a heading on a form tells you the purpose of the form, the title of a table of sports results tells you the league or division the teams play in and so on.

HTML offers six levels of headings, which use the elements <h1>, <h2>, <h3>, <h4>, <h5>, and <h6>.Browsers display the *<h1>* element as the largest of the six and *<h6>* as the smallest(Although you can use CSS to override the size and style of any of the elements. – We will see during CSS discussion)

The six heading elements can all carry the core attributes

*Sample Exercise – 4,5

- **Creating Paragraphs Using the Element**:

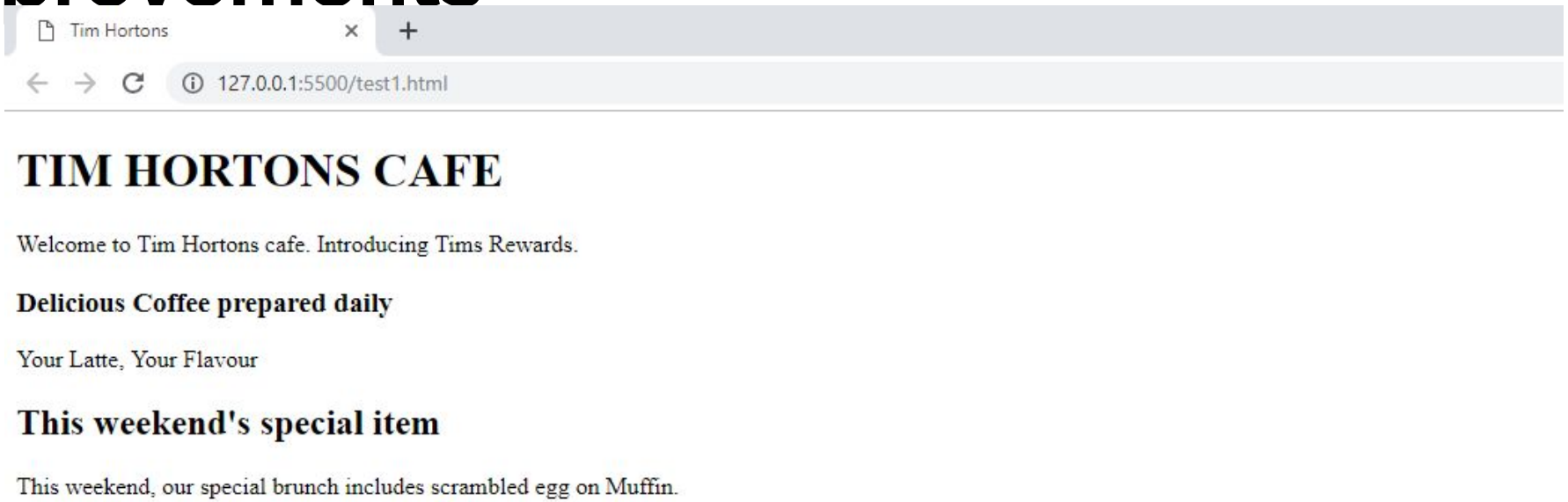
The * * element offers another way to structure your text. Each paragraph of text should go in between an opening and closing tag, as in the example discussed. When a browser displays a paragraph, it usually inserts a new line before the next paragraph and adds a little bit of extra vertical space.

Whenever you use the *
* element, anything following it starts on the next line. The *
* element is an example of an empty element. You don't need opening and closing tags, because there is nothing to go in between them.

Sometimes you want your text to follow the exact format of how it is written in the HTML document. Any text between the opening *<pre>* tag and the closing *</pre>* tag preserves the formatting of the source document. The most common uses of the <pre> element are to represent computer source code. *</pre>* element displays content in the monospaced font.

*Sample Exercise – 6

TIME TO THINK
Please create a sample website as below and suggest any improvements



*test - 1

- **Grouping Content**:

The * * element represents a generic block of content and is designed to be used with classes and ids to give structure to documents. Taking the markup from Tim Horton Example, you could mark it up with elements representing different content sections.

When you want to quote a passage from another source, you should use the *<blockquote>* element. Text inside a <blockquote> element is usually indented from the left. Use the cite attribute on the <blockquote> element to indicate the source of the quote.

The <q> tag defines a short quotation. Browsers normally insert quotation marks around the quotation. Same cite attribute is used here.

*Sample Exercise – 7,8

Working with Lists:
There are many reasons you might want to add a list to your pages, from putting your five favorite albums on your homepage to including a numbered set of instructions for visitors to follow, etc. You can create three types of lists in HTML:

- Unordered: If you want to make a list of bullet points, write the list within the <ul> element (which stands for unordered list). Each bullet point or line you want to write should then be contained between opening <li> tags and closing tags. (The li stands for list item.)

- Ordered: Sometimes, you want your lists to be ordered. In an ordered list, rather than prefixing each point with a bullet point, you can use either numbers (1, 2, 3), letters (A, B, C), or Roman numerals (i, ii, iii) to prefix the list item. An ordered list is contained inside the <ol> element. Each item in the list should then be nested inside the <ol> element and contained between opening <li> and closing tags

- If you want to specify the number that a numbered list should start at, you can use the start attribute

on the <ol> element. The value of this attribute should be the numeric representation of that point in
the list.

- The boolean reversed attribute allows you to reverse the order of ordered lists, counting down

*Sample Exercise ~ 9,10

Working with Lists: (Contd)

The type attribute allows you to specify the class of markers to use with ordered lists. Please find the below table for available options. If you use this attribute, keep in mind that the values are case-sensitive.

KEYWORD	STATE	DESCRIPTION
1	decimal	Decimal number (default)
a	lower-alpha	Lowercase Latin alphabet
A	upper-alpha	Uppercase Latin alphabet
i	lower-roman	Lowercase Roman numerals
I	upper-roman	Uppercase Roman numerals

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