

Computer Networks (CSGE301)

Generic Elective - (GE)

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Unit VI

- **Introduction to Web Design:**
- Introduction to hypertext mark-up language (html), Document type definition, creating web pages, lists, hyperlinks, tables, web forms, inserting images, frames, hosting options and domain name registration. Customized Features: Cascading style sheet (CSS) for text formatting and other manipulations.

What is HTML?

- Physicists at CERN(Centre European pour la Recherche Nucleaire) needed a way to easily share information.
- Tim Berners- Lee developed the initial program for linking documents with each other.
- A decade of development led to WWW and HTML, including web browser.
- The markup tags tell the web browser how to display the page.
- 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 file must have an htm or html file extension.
- HTML file can be created using a simple text editor.
- HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

HTML Page Structure

<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>

```
<html>
<head>
<title>B.Sc(H) Mathematics</title>
</head>
<body>
<h1>My First Heading</h1>
<h2>My First Heading 2</h2>
<h3>My First Heading</h3>
<p>My first 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

Document type definition

- **What is doctype?**

A doctype or document type declaration is an instruction which tells the web browser about the markup language in which the current page is written. The Doctype is not an element or tag, it lets the browser know about the version of or standard of HTML or any other markup language that is being used in the document.

- **Declaration of a Doctype:** A DOCTYPE declaration appears at the top of a web page before all other elements. According to the HTML specification or standards, every HTML document requires a document type declaration to ensure that the pages are displayed in the way they are intended to be displayed.

- The DOCTYPE for HTML5 is case-insensitive and can be written as shown below:

- `<!DOCTYPE html>`

- **Doctype Usage:** In the version, HTML 4.01, the usage of DOCTYPE declaration was to create a reference to a document type definition (DTD), since the version HTML 4.01 was completely based on a Standard Generalized Markup Language(SGML).
- The document type definition (DTD) is responsible for specifying the rules for the Standard Generalized Markup Language(SGML) so that the browser processes the content correctly. But in the HTML version, HTML 5 there isn't any need of a reference to a document type definition (DTD) because HTML 5 is not based on a Standard Generalized Markup Language(SGML).
- In HTML 5, the DOCTYPE declaration is only required for enabling the standard mode for writing documents.

Basic HTML

Tag	Description
<u><!DOCTYPE></u>	Defines the document type
<u><html></u>	Defines an HTML document
<u><head></u>	Contains metadata/information for the document
<u><title></u>	Defines a title for the document
<u><body></u>	Defines the document's body
<u><h1> to <h6></u>	Defines HTML headings
<u><p></u>	Defines a paragraph
<u>
</u>	Inserts a single line break
<u><hr></u>	Defines a thematic change in the content
<u><!--...--></u>	Defines a comment

Formatting

<u></u>	Defines bold text
<u><big></u>	Not supported in HTML5. Use CSS instead. Defines big text
<u><pre></u>	Defines preformatted text
<u></u>	Defines important text
<u><sub></u>	Defines subscripted text
<u><sup></u>	Defines superscripted text
<u><template></u>	Defines a container for content that should be hidden when the page loads
<u><time></u>	Defines a specific time (or datetime)
<u><tt></u>	Not supported in HTML5. Use CSS instead. Defines teletype text
<u><u></u>	Defines some text that is unarticulated and styled differently from normal text
<u><var></u>	Defines a variable
<u><wbr></u>	Defines a possible line-break

Forms and Input

Tag	Description
<u><form></u>	Defines an HTML form for user input
<u><input></u>	Defines an input control
<u><textarea></u>	Defines a multiline input control (text area)
<u><button></u>	Defines a clickable button
<u><select></u>	Defines a drop-down list
<u><optgroup></u>	Defines a group of related options in a drop-down list
<u><option></u>	Defines an option in a drop-down list
<u><label></u>	Defines a label for an <input> element
<u><fieldset></u>	Groups related elements in a form
<u><legend></u>	Defines a caption for a <fieldset> element
<u><datalist></u>	Specifies a list of pre-defined options for input controls
<u><output></u>	Defines the result of a calculation

Frames

Tag	Description
<u><frame></u>	Not supported in HTML5. Defines a window (a frame) in a frameset
<u><frameset></u>	Not supported in HTML5. Defines a set of frames
<u><noframes></u>	Not supported in HTML5. Defines an alternate content for users that do not support frames
<u><iframe></u>	Defines an inline frame

Images

Tag	Description
<u></u>	Defines an image
<u><map></u>	Defines a client-side image map
<u><area></u>	Defines an area inside an image map
<u><canvas></u>	Used to draw graphics, on the fly, via scripting (usually JavaScript)
<u><figcaption></u>	Defines a caption for a <figure> element
<u><figure></u>	Specifies self-contained content
<u><picture></u>	Defines a container for multiple image resources
<u><svg></u>	Defines a container for SVG graphics

Audio / Video

Tag	Description
<u><audio></u>	Defines sound content
<u><source></u>	Defines multiple media resources for media elements (<video>, <audio> and <picture>)
<u><track></u>	Defines text tracks for media elements (<video> and <audio>)
<u><video></u>	Defines a video or movie

Links

Tag	Description
<u><a></u>	Defines a hyperlink
<u><link></u>	Defines the relationship between a document and an external resource (most used to link to style sheets)
<u><nav></u>	Defines navigation links

Lists

Tag	Description
<u></u>	Defines an unordered list
<u></u>	Defines an ordered list
<u></u>	Defines a list item
<u><dir></u>	Not supported in HTML5. Use instead. Defines a directory list
<u><dl></u>	Defines a description list
<u><dt></u>	Defines a term/name in a description list
<u><dd></u>	Defines a description of a term/name in a description list

Tables

Tag	Description
<u><table></u>	Defines a table
<u><caption></u>	Defines a table caption
<u><th></u>	Defines a header cell in a table
<u><tr></u>	Defines a row in a table
<u><td></u>	Defines a cell in a table
<u><thead></u>	Groups the header content in a table
<u><tbody></u>	Groups the body content in a table
<u><tfoot></u>	Groups the footer content in a table
<u><col></u>	Specifies column properties for each column within a <colgroup> element
<u><colgroup></u>	Specifies a group of one or more columns in a table for formatting

Styles and Semantics

Tag	Description
<u><style></u>	Defines style information for a document
<u><div></u>	Defines a section in a document
<u></u>	Defines a section in a document
<u><header></u>	Defines a header for a document or section
<u><footer></u>	Defines a footer for a document or section
<u><main></u>	Specifies the main content of a document
<u><section></u>	Defines a section in a document
<u><article></u>	Defines an article
<u><aside></u>	Defines content aside from the page content
<u><details></u>	Defines additional details that the user can view or hide
<u><dialog></u>	Defines a dialog box or window
<u><summary></u>	Defines a visible heading for a <details> element
<u><data></u>	Adds a machine-readable translation of a given content

Meta Info

Tag	Description
<u><head></u>	Defines information about the document
<u><meta></u>	Defines metadata about an HTML document
<u><base></u>	Specifies the base URL/target for all relative URLs in a document
<u><basefont></u>	Not supported in HTML5. Use CSS instead. Specifies a default color, size, and font for all text in a document

Programming

Tag	Description
<u><script></u>	Defines a client-side script
<u><noscript></u>	Defines an alternate content for users that do not support client-side scripts
<u><applet></u>	Not supported in HTML5. Use <embed> or <object> instead. Defines an embedded applet
<u><embed></u>	Defines a container for an external (non-HTML) application
<u><object></u>	Defines an embedded object
<u><param></u>	Defines a parameter for an object

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:

References:-

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