Unit - 2

Basics of HTML:

* HTML stands for Hyper text Markup Language, which is the most widely used language on web to develop web Pages.

* HTML was created by Berners-Lee in the first standard "HTML 2.0" was the first standard HTML Specification which was published in 1995. HTML 4.01 was a major version of HTML and it was published in late 1999.

* Though HTML 4.01 version is widely used but currently we are having HTML-5 version which is an extension to HTML 4.01, and this version was published in 2012

* I will list down some of the key advantages of learning HTML:

Create web site: You can create a website or customize an existing web template if you know HTML well.

Become a web designer - If you want to start a web designing is a must Skill.

Understand web - If you want to optimize your website, to boost its speed and performance, it is good to know HTML to yield best results.

Learn other languages - once you understand the basic of HTML then other related technologies like Javascript, Php, or angular are become easier to understand.

Basic tags and syntax :-

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

examples :-

```
<!DOCTYPE>
<html>
<body>
<h1> Govt Arts and Science </h1>
<p> 2nd year <br> MSC Cs </p>
<hr>
<p> Web Programming Eattact </p> </hr>
</body>
</html>
```

Introduction HTML5

* HTML5 is the latest and most enhanced version of HTML.
* Technically, HTML is not a Programming language, but rather a markup language but rather a markup language, but rather a markup language.
* In this tutorial, we will discuss the features of HTML5 and how to use it in practice.
* This tutorial has been designed for beginners in HTML5 to make them understand the basic-to-advanced Concepts of the subject.
* Before starting this tutorial, you should have a basic understanding of HTML and its tags.

Semantic elements:-

A semantic element clearly describes its meaning to both the browser and the developer

eg:-

Non-Semantic element

 and tells nothing about its content

Semantic element

<form>, <table> and <article> clearly defines its content.

structural elements

* This article provides a tour through the elements available in HTML to structure and group content, from old favourites like to new HTML5 additions such as <article> and <aside>

HTML Style Guide and Coding Conventions :-

* A Consistent, clean, and tidy HTML code makes it easier for others to read and under-stand your code

* Here are some guidelines and tips for Creating good HTML Code

Always Declare Document type

* Always declare the document type as the first line in your document

* The Correct document type for HTML is

<!DOCTYPE html>

Use Lowercase element Names

* HTML allows mixing upper case and lower-case letters in element names

* However, we recommend using lowercase element names, because:

  * Mixing Uppercase and lowercase names looks bad
  * Developers normally use lowercase names
  * lowercase looks cleaner
  * lowercase is easier to write

Good:-

```
<body>
<p> This is a paragraph</p>
</body>
```

Bad:-

```
<BODY>
<P> This is a paragraph </P>
</BODY>
```

What is Svg?

* Svg stands for Scalable vector Graphics
* Svg is used to define graphics for the web
* Svg is a W3C recommendation

<Svg> Element

* The HTML <Svg> element is a Container for Svg graphics.
* Svg has seval methods for drawing paths, boxes, circles, text, and graphic images.

<Canvas> Element

* The HTML <Canvas> element is used to draw graphics, on the fly, via JavaScript.
* Canvas has several methods for drawing paths, boxes, circles, text, and adding images.

* The <canvas> elements is only a container for graphics. You must use JavaScript to actually draw the graphics.

Web APIs :-

* API stands for Application programming interface

* A Web API is an application programming interface for the web

* A Browser API can extend the functionality of a web browser

* A Server API can extend the functionality of a web server.

HTML <audio> Tag :-

```
<html>
<body>
<h1> The audio element </h1>
<p> click on the play button to
Play a sound : </p>
<audio controls>
<source src = " horse.ogg "
type = "audio/ogg" >
<source src = " horse.mp3 " type = "
audio/mpeg" >
Your browser does not support the audio
</audio>
```

</body>
</html>

The <audio> tag is used to embed sound content in a document. Such as music or other audio streams.

HTML <video> tag:-

```
<html>
<body>
<h1>The video element</h1>
<video width="320" height="240" controls>
<source src="movie.mp4" type="video/mp4">
<source src="movie.ogg" type="video/ogg">
Your browser does not support the video tag.
</video>
</body>
</html>
```

Drag and Drop:-

Drag and drop is a very common feature. It is when you "grab" an object and drag it to a different location.

The localstorage :-

* The localstorage object stores the data with no expiration date.

* The data will not be deleted when the browser is closed, and will be available the next day, week, or year.

Websockets API :-

* Websockets is a next-generation bidirectional communication technology for web applications which operates over a single socket and is exposed via a JavaScript interface in HTML 5 compliant browsers

* Once you get a web socket connection with the web server, you can send data from browser to server by calling a send() method. and recive data from server to browser by an onmessage event handler.

Debugging :-

Debugging is the process of testing, finding, and reducing bugs (errors) in computer programs.

validating :-

If a form field is empty this function alerts a message, and return false, to prevent the form from being submitted.

Cascading Style Sheets.

* CSS stands for cascading style sheets.

* CSS saves a lot of work. it can control the layout of multiple web page all at once.

* CSS is used to format the lay-out of a webpage

* There are 4 types of Cascading Style Sheets

(1) Inline style sheet
(2) Internal style sheet
(3) Embedded style sheet
(4) External style sheet

Inline Style Sheet:-

* An inline CSS is used to apply a unique style to a single HTML element

* An inline CSS uses the style to a single HTML element.

eg:

```
<html>
<body>
<h1 Style = "color : blue;"> MSc Computer Science </h1>
<p Style = "color : red ; "> Web Programming Essiential </p>
</body>
```

</html>

Internal Style sheet :-

* An internal Cascading Style Sheet is used to define a style for a single HTML Page.

* An internal CSS is defined in the <head> Section of an HTML Page, within a <Style> element.

eg:-

```
<html>
<head>
<style>
body { background-Color : Powderblue; }
h1 { Color : blue ; }
P { Color : red ; }
</style>
</head>
<body>
<h1> This is web Page </h1>
<P> This is Paragraph </P>
</body>
</html>
```

External Cascading Style Sheet

* An external style sheet is used to define the style for many HTML pages.

* To use an external style sheet, add a link to it in the <head> section of each HTML page:

eg:-

```
<html>
<body>
<link rel="style sheet" href="
Style sheet.css">
</head>
</body>
```

Stylesheet.css

```
body { background-Color: Powerblue;
h1 { Color: blue; }
P { Color: red; }
```

Embedded Style Sheet:-

Linked style sheets are more flexible than embedded style sheet but we shall use an embedded style sheet as our first example.

Introduction to CSS3

* Cascading Style Sheets (CSS) is a Style Sheet language used for describing the look and formatting of a document written in a markup language.

* CSS3 is a latest standard of CSS ~~is~~ earlier versions

* The main difference between CSS2 and CSS3

- Media queries
- Namespaces
- Selectors level 3
- Color

CSS3 Modules:-

* CSS3 is Collaboration of CSS2 Specifications and new specifications we can called this Collabration is module.

* Some of the modules are shown below-

- Selectors
- Box Model
- Backgrounds
- Image values and Replaced

Content

- Text Effects
- 2D Transformations
- 3D - Transformations
- Animations
- Multiple Column layout
- User interface