Marwadi University

01CE0306-Web Technology

Unit-1 HTML

Prof. Vaibhav K Matalia
Computer Engineering Department

Outline

- Basic of HTML
- HTML Tags and Attributes
- HTML Formatting Tags
- Meta Tags
- Character Entities
- Tables
- Lists
- Hyperlink
- Images
- Forms
- Semantic elements of HTML5
- Multimedia Tags
- HTML5 Input types and attributes

Basic of HTML

Marwadi University

- HTML stands for Hyper Text Markup Language
- HTML is the standard markup language for creating Web pages.
- HTML was developed by Tim Berners-Lee in 1991
- HTML uses tags. These tags are understood by browser such as Mozilla firefox, Google chrome, Internet explorer etc.
- Browsers do not display the HTML tags, but use them to produce the content of the page.
- The first ever version of HTML was HTML 1.0
- It is platform independent.
- Images, video and audio can be added to a web page.

Structure of HTML:-

```
<html>
<head>
        <title>Page Title</title>
</head>
<body>
        <h1>My First Heading</h1>
        <p>My first paragraph.</p>
</body>
</html>
```

- Anything written in triangular bracket is known as tag.
- HTML tags are in lower case.HTML is not case sensitive.

Basic Tags

- A web browser read an HTML document top to bottom, left to right.
- Each time the browser finds a tag, it is displayed accordingly (paragraph look like paragraph, table look like table etc).
- Tags have 3 major parts: opening tag(s), content(s), and closing tag(s).
- Some of the most common basic tag listed below:

  <html>

  <head>

  <title>

  <body>

  Header tag

  Paragraph tag

  <hr>

  <!--...-->

<html>:-

- The HTML document itself begins with <html> and ends with </html>.
- This tag tells the browser that this is an HTML document.
- It represents the root of an HTML document.
- This tag is the container for all other HTML elements.

<head>:-

- It includes title of the document, scripts, style, links to scripts, links to CSS files, meta tags etc.
- Tags included inside head tags are not displayed on browser window.

<title>:-

- The <title> tag is required in all HTML documents and it defines the title of the document.
- It display title in the browser toolbar.

<body>:-

- The visible part of the HTML document is between <body> and </body>.
- It is used to contain a web page's content, including hyperlinks, images, tables, text, etc.
- It is required in every HTML document, and there may only be one <body> tag per page.

Heading tag:-

- Any document starts with a heading.
- HTML also has six levels of headings, which use the elements <h1>,<h2>,<h3>,<h4>,<h5> and <h6>.
- <h1> defines the most important heading. <h6> defines the least important heading.
- While displaying any heading, browser adds one line before and one line after that heading.
- Headings are Important for Search engines to index the structure and content of your web pages.

- Use HTML headings for headings only. Don't use headings to make text BIG or bold.
- Each HTML heading has a default size. However, you can specify the size for any heading with the style attribute, using the CSS font-size property:

<h1 style="font-size:60px;">Marwadi University-Rajkot</h1>

Example:-

<h1>Marwadi University-Rajkot</h1>
<h2>Marwadi University-Rajkot</h2>
<h3>Marwadi University-Rajkot</h3>
<h4>Marwadi University-Rajkot</h4>
<h5>Marwadi University-Rajkot</h5>
<h6>Marwadi University-Rajkot</h6>

Paragraph tag:-

- The HTML element defines a paragraph:
- Each paragraph of text should go in between an opening and a closing tag.
- Browsers automatically add some space (margin) before and after each element.

Example:-

<h1>Gujarat: Good rainfall expected for next three days</h1>

Interaction between two systems will provide good rainfall across the state mentioned the forecast by India. The department has also issued warning of very heavy rainfall.

<hr> tag:-

- It is useful when you are changing a topic or want to separate content on a page.
- It inserts horizontal line in HTML page.
- It does not require an end tag.

**
 tag:-**

- The <br> tag inserts a single line break.
- The <br> tag is an empty tag which means that it has no end tag.
- The <br> tag is useful for writing addresses or poems.
- Use the <br> tag to enter line breaks, not to separate paragraphs.

Example:-

```
<h1>Contact Us</h1>
<p>Marwadi University<br>
Rajkot-Morbi Road,Rajkot 360 003<br>
Gujarat,India<br>
Email:info@marwadiuniversity.ac.in<br>
Landline:0281-7123456</p>
```

<!-- .... --> tag:-

- The comment tag is used to insert comments in the source code.
- Comments are not displayed in the browsers.
- We can use comments to explain your code.

Attributes:-

- Attribute provides additional information about an HTML element.
- Attributes are always specified in the opening tag.
- Attributes usually come in name/value pairs like: name="value".
- All HTML elements can have attributes.

src attribute:-

- If we want to insert an image into a webpage, then we need to use the <img> tag and the src attribute.
- The src attribute identifies an image by a path. We need to specify address of the image.

Example:<img src="D://study/1.jpg">

alt attribute:-

- The alt attribute specifies an alternative text to be used, when an image cannot be displayed(because of slow connection, an error in the src attribute)
- The value of the attribute can be read by screen readers.
- The alt attribute helps search engines decipher the subject of an image so they know when to include an image in relevant search results. This makes images with alt attributes more likely to be found.

- Images with alt attributes are more likely to rank higher in search result.

height and width attribute:-

- This attribute is used to adjust the width and height of an image.

Example:-<img src="logo.png" alt="Marwadi University Logo" width="500" height="600">

style attribute:-

- It is used to add styles to an element such as color,font,size and more.
- The HTML style attribute has following syntax:
  <tagname style="property:value;">
- The property is a CSS property. The value is a CSS value.

Example:-<h1 style="color:red">Marwadi University-Rajkot</h1>

lang attribute:-

- If all the content of our page is written in one language we can specify language by adding lang attribute on the opening of HTML element.
- The value of lang attribute is language code.
- When we have content in different languages in one HTML page in that case we just find element which has different language and apply lang attribute.

Example:-

```
<html lang="en"><!--default language of html page is english-->
<body>
        <h2>Multiple languages example</h2>
        <h2 lang="fr">Je cherche cette adresse<h2><!--Text is in French-->
        <h2 lang="es">Por favor, habla más despacio</h2><!--Text is in Spanish-->
        <h2 lang="it">Ho preso l’autobus per venire qui.</h2>
</body>
</html>
```

href attribute:-

- href stands for hyper reference.
- It is used to link one page with another page.
- The href attribute specifies the URL of the page the link goes to.

Example:-Click here

title attribute:-

- The title attribute defines some extra information about an element.
- The value of the title attribute will be displayed as a tooltip when you mouse over the element.

Example:-<img src="osi_ref.jpg" title="OSI Reference Model">

HTML Formatting Tags

- HTML Formatting is a process of arranging contents for better look.
- HTML formatting is used to design the page content part.
- HTML provides us ability to format contents without using CSS.
- There are many formatting tags in HTML which are listed below.

<b>:-The HTML <b> element defines bold text, without any extra importance.

:-The HTML element defines text with strong importance. The content inside is typically displayed in bold.

Note:-<b> and both tag is used to define bold text. If something is written in strong tag search engine considered that text as important.

<i>:-It is used to make text italic.

:-It is used to make text italic. This tag is used to add semantic value to the text.

<mark>:-The HTML <mark> element defines text that should be marked or highlighted.

<del>:-The HTML <del> element defines text that has been deleted from a document. Browsers will draw a line through deleted text.

<ins>:-The HTML <ins> element defines a text that has been inserted into a document. Browsers will usually underline inserted text.

<sub>:-It defines subscript text. Text appears below the normal line and in smaller font. It can be used for chemical formulas.

<sup>:-It defines superscript text. Text appears above the normal line and in smaller font.

Meta Tags

- Meta-data(page description,keywords,author) is represented by the <meta> tag.
- The <meta> tag provides information about the HTML document.
- The contents of the <meta> tag are not displayed in the webpage.
- Meta-data is used by browsers and search engines.
- Search engine and browser get information about web page through <meta> tags.
- The <meta> tag is placed within the <head> tag and it can be used more than one times in a document.

description:-We can provide description of web page by <meta> tag. If we don't define the description in <meta> tag then search engine use first two lines of the article as description.

keyword:-From keywords, search engine know which topic related information is provided on a particular page.

author:-The information about the author of the web page is provided by the <meta> tag

character set:-We can also provide the character encoding information that is used in the document by <meta> tag.

```
<html>
<head>
	<title>Meta Tag</title>
	<meta charset="uft-8">
	<meta name="description" content="Free video lecture and material on Web Technology">
	<meta name="keywords" content="HTML,CSS,Bootstrap,Javascript,PHP">
	<meta name="author" content="vaibhav patel">
	<meta name="viewport" content="width=device-width,initial-scale=1.0">
	<meta http-equiv="refresh" content="5">
	<!-- <meta http-equiv="referesh" content="5;url=http://www.google.com"> -->
</head>
<body>
</body>
</html>
```

Character entities

Marwadi University

- HTML character entities are basically set of characters used to represent few characters reserved by the HTML.
- If we use the less than(<) or greater than(>) signs in out text, the browser might mix them with tags.
- We can use character entities to display characters that are not present on our keyboard.
- HTML entities provide wide range of characters which can allow us to add icons, geometric shapes, mathematical operators etc.
- A character entity look like this:

  &entity_name;

  OR

  &#entity_number;

- To display a less than sign (<) we must write: < or <
- Entity names are case sensitive.

Result	Description	Entity Name	Entity Number
	Non-breaking space		160
<	Less than	&lt;	60
>	Greater than	&gt;	62
£	Pound	&pound;	163
€	Euro	&euro	8364
©	Copyright	&copy;	169
®	registered trademark	&reg;	174

Advantage of entity name: An entity name is easy to remember.

Disadvantage of entity name: Browsers may not support all entity names, but the support for numbers is good.

pre tag

Marwadi University

- The HTML <pre> tag is used to specify pre formatted texts.
- If we use the pre tag, our content will be displayed in the same way as we have written.
- Texts within <pre>.....</pre> tag is displayed in a fixed-width font. Usually it is displayed in Courier font.
- It maintains both space and line break.
- It is widely used to display language examples e.g. Java, C#, C, C++ etc because it displays the code as it is typed.

Example:-

```
<pre>
        #include &lt;stdio.h&gt;
        #include &lt;conio.h&gt;
        void main()
        {
```

```
int a,b,z;
clrscr();
printf("Enter the value of a");
scanf("%d",&a);
printf("Enter the value of b");
scanf("%d",&b);
z=a;
a=b;
b=z;
printf("The value of a is =%d",a);
printf("The value of b is =%d",b);
getch();
}
```
</pre>

Tables

Marwadi University

- HTML tables allow web developers to arrange data into rows and columns.
- The HTML tables are created using the <table> tag.
- A table in HTML consists of table cells inside rows and columns.
- Each table cell is defined by a <td> and a </td> tag.td stands for table data.
- Everything between <td> and </td> are the content of the table cell. Text (data) is displayed left aligned by default using tag <td>.
- A table cell can contain all sorts of HTML elements: text, images, lists, links, other tables, etc.
- Each table row starts with a <tr> and ends with a </tr> tag.tr stands for table row.
- We can have as many rows as you like in a table; just make sure that the number of cells are the same in each row.

Table Heading:-

- Table heading can be defined using <th> tag.
- We will put top row as table heading.
- <th> tag are centered and bold by default.

cellpadding and cellspacing attribute:-

- This two attribute use to adjust space in our table.
- Cellpadding is the space between cell borders and content within the cell. By default padding is set to 0.
- Cellspacing is the space between each cell. By default the space is set to 2 pixels.

rowspan and colspan attribute:-

- The rowspan and colspan are the attributes of <td> tag.
- We will use colspan attribute if you want to merge two or more columns into a single column.

- Similar way you will use rowspan if you want to merge two or more rows into a single row.

width and height attribute:-

- We can specify table width or height in terms of pixels or in terms of percentage of available screen area.

Table caption:-

- It is used to give title for table.
- It shows up at top of the table.

Table backgrounds:-

- We can set table background using one of the following two ways -

  bgcolor attribute:-You can set background color for whole table or just for one cell.

  background attribute:-You can set background image for whole table or just for one cell.

  bordercolor attribute:-You can also set border color also using bordercolor attribute.

Example:-

```
<table border="1" cellpadding="10" cellspacing="7" align="center">
        <tr>
                <th>Name</th>
                <th>Salary</th>
        </tr>
        <tr>
                <td>Vatsal Makadia</td>
                <td>40000</td>
        </tr>
        <tr>
                <td>Bhaumik Patel</td>
                <td>67000</td>
        </tr>
</table>
```

Lists

- Lists are used to group together related pieces of information.
- Lists are easy to read.
- There are four list types in HTML:
    1. Unordered list
    2. Ordered list
    3. Description list
    4. Nested list

Unordered list:-

- An unordered list is a collection of related items that have no sequence.
- Unordered list is created by <ul> tag.
- Each list item starts with the <li> tag.
- Each item in the list is marked with a bullet.

type attribute:

- You can use type attribute for <ul> tag to specify the type of bullet you like.
- By default, it is a disc.Following are the possible options-

<ul type = "square">

<ul type = "disc">

<ul type = "circle">

Example:-

```
<ul type="square">
        <li>B.Tech</li>
        <li>B.Sc.</li>
        <li>BCA</li>
        <li>BBA</li>
        <li>B.Com</li>
</ul>
```

Ordered list:-

- If you are required to put your items in a numbered list instead of bulleted, then HTML ordered list will be used.
- This list is created by using <ol> tag.
- The numbering starts at one and is incremented by one for each successive ordered list element tagged with <li>.

type Attribute:-

- By default, it is a number. Following are the possible options.

<ol type="1">
<ol type="A">
<ol type="a">
<ol type="I">
<ol type="i">

start Attribute:-

- We can use start attribute for <ol> tag to specify the starting point of numbering we need.
- Following are the possible options −

<ol type = "1" start = "4"> - Numbers starts with 4.
<ol type = "I" start = "4"> - Numbers starts with IV.
<ol type = "i" start = "4"> - Numbers starts with iv.
<ol type = "a" start = "4"> - Letters starts with d.
<ol type = "A" start = "4"> - Letters starts with D.

Example:-

```
<ol start="3" type="i">
        <li>B.Tech</li>
        <li>B.Sc.</li>
        <li>BCA</li>
        <li>BBA</li>
</ol>
```

Definition(description) List:-

- HTML also supports description lists.
- A definition list is a list of terms, with a description of each term.
- The definition list is very appropriate when you want to present glossary, list of terms or other name-value list.
- The HTML definition list contains following three tags:

    <dl> tag defines the start of the list.

    <dt> tag defines a term.

    <dd> tag defines the term definition (description).

Example:-

```
<dl>
        <dt>HTTP</dt>
                <dd>Hypertext Transfer Protocol</dd>
```

```
        <dt>URL</dt>
                <dd>Uniform Resource Locator</dd>
        <dt>WWW</dt>
                <dd>World Wide Web</dd>
</dl>
```

HTML Nested List:-

- A list within another list is termed as nested list. If you want a bullet list inside a numbered list then such type of list will called as nested list.

Example:-

```
<ol>
        <li>Hardware
                <ul type="square">
                        <li>Floppy
                        <li>CD ROM
                        <li>Blue ray
                </ul>
```

```
        <li>Software
            <ul type="disc">
                <li>MS Word
                <li>Tubro C
            </ul>
</ol>
```

HTML Colors:-

- Colors are an essential part of any web page.
- It gives a good look and feel to your website.
- There are more than 200 colors which are accepted by a browser.

HTML Color Coding Methods:-

Color Names:-

- In HTML, a color can be specified by using a color name:
- W3C has listed 16 basic color names that will validate with an HTML validator but there are over 200 different color names supported by major browsers.

W3C Standard 16 Colors

Black	Gray	Silver	White
Yellow	Lime	Aqua	Fuchsia
Red	Green	Blue	Purple
Maroon	Olive	Navy	Teal

HEX Codes:-

- A hexadecimal is a 6 digit representation of a color. The first two digits(RR) represent a red value, the next two are a green value(GG), and the last are the blue value(BB).
- A hexadecimal value can be taken from any graphics software like Adobe Photoshop, Paintshop Pro or MS Paint.

- Each hexadecimal code will be preceded by a hash sign #.

Syntax:- This is Paragraph

Where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0-255).

- For example, #ff0000 is displayed as red, because red is set to its highest value (ff), and the other two (green and blue) are set to 00.
- Another example, #00ff00 is displayed as green, because green is set to its highest value (ff), and the other two (red and blue) are set to 00.
- To display black, set all color parameters to 00, like this: #000000.
- To display white, set all color parameters to ff, like this: #ffffff.

RGB Values:-

- In HTML, a color can be specified as an RGB value, using this formula:
  rgb(red, green, blue)
- Each parameter (red, green, and blue) defines the intensity of the color with a value between 0 and 255.
- This means that there are 256 x 256 x 256 = 16777216 possible colors!
- For example, rgb(255, 0, 0) is displayed as red, because red is set to its highest value (255), and the other two (green and blue) are set to 0.
- Another example, rgb(0, 255, 0) is displayed as green, because green is set to its highest value (255), and the other two (red and blue) are set to 0.
- To display black, set all color parameters to 0, like this: rgb(0, 0, 0).
- To display white, set all color parameters to 255, like this: rgb(255, 255, 255).
- All the browsers does not support rgb() property of color so it is recommended not to use it.

RGBA Values:-

- RGBA color values are an extension of RGB color values with an Alpha channel - which specifies the opacity for a color.
- An RGBA color value is specified with:
  rgba(red, green, blue, alpha)
- The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all).

HSL Values:-

- HSL stands for hue, saturation, and lightness.
- In HTML, a color can be specified using hue, saturation, and lightness (HSL) in the form:
  hsl(hue,saturation,lightness)
- Hue is measured in degrees of the color circle ranging from 0 to 360 degrees (red=0°, blue=120°, green=240°).

- Saturation can be described as the intensity of a color. It is a percentage value.100% is pure color, no shades of gray.50% is 50% gray, but you can still see the color.0% is completely gray; you can no longer see the color.
- Lightness can be described as how much light we want to give the color. It is a percentage value, where 0% means no light,50% means 50% light(neither dark nor light) and 100% means full lightness(white).

HSLA Values:-

- HSLA color values are an extension of HSL color values, with an Alpha channel - which specifies the opacity for a color.
- An HSLA color value is specified with:hsla(hue, saturation, lightness, alpha)
- The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all).

HTML Links

Marwadi University

- HTML links are also known as hyperlinks.
- We can click on a link and jump to another document.
- When we move the mouse over a link, the mouse arrow will turn into a little hand.
- A link does not have to be a text—it can be an image or any other HTML element.
- The HTML <a> tag defines a hyperlink. It has the following syntax:
  Link Text
- The most important attribute of the <a> element is the href attribute, which indicates the link's destination.
- The text you place between the opening and closing tags will be shown as the link on a page.
- In above syntax the link text is the part that will be visible to the reader.
- Clicking on the link text, will send the reader to the specified URL address.

Example:-Visit Marwadi University

- By default, links will appear as follows in all browsers:
  An unvisited link is underlined and blue
  A visited link is underlined and purple
  An active link is underlined and red

Target Attribute:-

- By default, the linked page will be displayed in the current browser window. To change this, you must specify another target for the link.
- The target attribute specifies where to open the linked document.
- The target attribute can have one of the following values:
  _self - Default. Opens the document in the same window/tab as it was clicked
  _blank - Opens the document in a new window or tab
  _parent - Opens the document in the parent frame
  _top - Opens the document in the full body of the window

Example:-

```
<a href = "https://www.marwadiuniversity.ac.in/" target = "_blank">Opens in New</a> |
<a href = "https://www.marwadiuniversity.ac.in/" target = "_self">Opens in Self</a> |
<a href = "https://www.marwadiuniversity.ac.in/" target = "_parent">Opens in Parent</a> |
<a href = "https://www.marwadiuniversity.ac.in/" target = "_top">Opens in Body</a>
```

Absolute URLs vs. Relative URLs

```
<a href="https://www.google.com/">Google</a><!-- absolute URL:-A full web address in the href attribute-->
<a href="vaibhav/one.html">HTML Tutorial</a><!-- relative URL:-A local link(a link to a page within the same website).It is specified without https://www part-->
```

Use an Image as a Link

- To use an image as a link, just put the <img> tag inside the <a> tag.

Example:-

```
<a href="one.html"><img src="marwadiUni.jpg" alt="Marwadi University Rajkot" width="50px" height="50px"></a>
```

Link to an Email Address

- Use mailto: inside the href attribute to create a link that opens the user's email program(to let them send a new email).

Button as a Link

- To use an HTML button as a link, we have to add some Javascript code.
- JavaScript allows us to specify what happens at certain events, such as a click of a button:

Example:-<input type="button" value="CLICK HERE" onclick="document.location='gallery.html’”>

Link Titles:-

- The title attribute specifies extra information about an element. The information is most often shown as a tooltip text when the mouse moves over the element.

Example:-Marwadi University

Link Bookmarks

- HTML links can be used to create bookmarks, so that readers can jump to specific parts of a web page.
- Bookmarks can be useful if a web page is very long.

Steps to create a bookmark are:

1.Using the id attribute, create a bookmark.
<h2 id="C4">Chapter 4</h2>

2.Add a link to the bookmark(Jump to Chapter 4),from within the same page
Jump to Chapter 4

3.We can also add a link to a bookmark on another page:
Jump to Chapter 4

Note:-Use the ID attribute to define bookmarks in a page. Use the href attribute to link to the bookmark

Images

- Images can improve the design and the appearance of a web page.
- In HTML, images are defined with the <img> tag.

<img src="url">

- The <img> tag is empty, it contains attributes only, and does not have a closing tag.
- The src attribute specifies the URL (web address) of the image.

alt Attribute

- The alt attribute provides an alternate text for an image, if the user for some reason cannot view it (because of slow connection, an error in the src attribute, or if the user uses a screen reader).
- If a browser cannot find an image, it will display the value of the alt attribute.

Image Size - Width and Height

- You can use the style attribute to specify the width and height of an image.

Images in Another Folder

- If not specified, the browser expects to find the image in the same folder as the web page.
- However, it is common to store images in a sub-folder. You must then include the folder name in the src attribute.

Path	Description
<img src="picture.jpg">	picture.jpg is located in the same folder as the current page
<img src="images/picture.jpg">	picture.jpg is located in the images folder in the current folder
<img src="/images/picture.jpg">	picture.jpg is located in the images folder at the root of the current web
<img src="../picture.jpg">	picture.jpg is located in the folder one level up from the current folder

Other Tags

Marwadi University

span tag:-

- HTML tag is used as a generic container of inline elements.
- The tag is used to group inline-elements in a document, to change the color, font, background of a part of text using CSS.
- The tag does not have any default meaning.

Example:- My mother has lightblueeyes.

- HTML is much similar as tag, but is used for block-level elements and tag is used for inline elements.

div tag:-

- The div tag is known as Division tag.
- The div tag is used in HTML to make divisions of content in the web page like (text, images, header, footer, navigation bar, etc).
- div tag has both open( ) and closing ( ) tag and it is mandatory to close the tag.
- The div is the most usable tag in web development because it helps us to separate out data in the web page and we can create a particular section for particular data or function in the web pages.
- div tag is Block level tag. It is a generic container tag.

Form

- An HTML form is used to collect user input. The user input is most often sent to a server for processing.
- <form> is main tag to build a form. The <form> element is a container for different types of input elements such as text fields, password fields,checkboxes,radio buttons, submit buttons etc.

Why use HTML form?

For example, a user wants to buy a bag online, so he/she has to first enter their shipping address in the address form and then add their payment details in the payment form to place an order.

- The form tag has four attributes:

1.Name
2.Action
3.Method
4.Target
5.Enctype

name:-The name attribute specifies the name of a form which is used to reference elements in a JavaScript.

action:-This attribute specifies where to send the form data when a form is submitted.
<form action="URL">

Method:-There are two types of method which is used when submitting the form data.

GET:-

- It display key value pair in URL. Key value pair is separated by ampersand sign.
- If the method is not specified in the form then the default method is GET method.

prons:-

- It is possible to bookmark the page.

Cons:-

- It is not suitable for passing sensitive information such as username, password because it is visible in URL.
- There is a limitation for the total data to be sent.(1024 characters)
- That is address bar can hold upto 255 characters, so if URL is too large then some of the information will be cut.
- GET can't be used to send binary data, like images or word documents, to the server.

POST:-

- The POST method does not display the submitted form data in URL.

prons:-

- It does not have any restriction on data size to be sent.
- We can send text data as well as binary data (uploading a file) using POST.
- It is more secure than GET because user-entered information is not visible in URL.

target:-

- The target attribute specifies a name or a keyword that indicates where to display the response that is received after submitting the form.
- The default value is "_self" which means the form will be submitted in the current window.
- To make the form result open in a new browser tab, use the value "_blank“.

enctype:-

- The enctype attribute specifies how the form-data should be encoded when submitting it to the server.
- The enctype attribute can be used only if method="post".

Syntax:-<form enctype="multipart/form-data">

- multipart/form-data is necessary if the user will upload a file through the form

Types of Input:-

- <input> tag is used to collect information from the user.
- There are different types of input

<input type="text">:-Displays a single-line text input field. It is used to accept characters and numbers into a textbox.
Syntax:-First Name <input type="text" name="fname">

<input type="password">:-This is similar to the above text box but anything that is typed cannot be seen; instead an asterisk is printed to cover up the entry. As the name suggests, this is used for password entry.
Syntax:-Password <input type="password" name="pwd">

<input type=”checkbox”>:-It is used to define square boxes. It is a form element which allows user to select one more option from given options.

Example:-

```
<form method=”post">
Select Your Hobbies <input type=”checkbox” name=”playing” value=”playing”>Playing
<input type=”checkbox” name=”reading” value=”reading”>Reading
<input type=”checkbox” name=”sleeping” value=”sleeping”>Sleeping
<input type=”checkbox” name=”dance” value=”dance”>Dance
</form>
```

<input type=”radio”/>:- Radio buttons are popular form of interaction. this is similar to checkbox but in group of radio buttons only one can be selected at a time. You may have seen them on quizzes, Questionnaires, Gender etc. For creating group in radio button, we need specify same value of name attribute in all radio buttons.

Example:-

```
<form method=”post”>
Gender <input type=”radio” name=”gender” value=”male”>Male
<input type=”radio” name=”gender” value=”female”>Female
</form>
```

<input type="file">:-It defines a file-select field and a "Browse" button for file uploads. To upload a file through form we must use enctype.

<input type="submit">:-It is used to add submit button on web page. When user clicks on submit button, then form get submit to the server.
Syntax:-<input type=”submit” name=”submit” value=”click here”>

<input type="button">:-It is used to define a clickable Button in a Document. It is mostly used with the Javascript to activate the script.
Syntax:-<input type="button" value="Click here">

<input type=”reset”/>:-This will reset the form to its initial state when selected.
Syntax:-<input type=”reset” value=”cancel”>

<input type="hidden">:-It allows hidden data(not seen by the user) to be passed along with the form.
Example:-<input type="hidden" id="custId" name="custId" value="3487">

Select Tag:-

- HTML <select> tag is used to create a drop down list with multiple options.
- The <option> tag is used to define the possible options to choose from. The tag is put into the <select> tag.
- By default, the first item in the drop-down list is selected.
- To define a pre-selected option, add the selected attribute to the option tag.

Example:-

```
<form method="post”>
Qualification:-
        <select name="degree">
                <option>BTech</option>
                <option>MCA </option>
                <option>MBA</option>
        </select>
</form>
```

Select Tag with optgroup tags

- The <optgroup> tag is used to group several options into one group.
- Using <optgroup> tag with <select> makes easier to access the dropdown list especially if list has large number of options.

- The content of <optgroup> looks like heading in bold.
- The width of the list depends on the length of the text inside <option>.

Example:-

```
<select id="tutorial_choice">
                    <optgroup label="Web">
                            <option value="html">HTML</option>
                            <option value="css">CSS</option>
                            <option value="javascript">Javascript</option>
                    </optgroup>
                    <optgroup label="Database">
                            <option value="sql">SQL</option>
                            <option value="oracle">Oracle</option>
                    </optgroup>
                    <optgroup label="MobileApp">
                            <option value="android">Andriod</option>
                            <option value="iOS">iPhone</option>
                    </optgroup>
 </select>
```

textarea:-

- The HTML <textarea> tag is used to define a multi-line text input control.
- It can hold unlimited number of characters and the texts are displayed in a fixed-width font (usually courier).
- The size of the HTML textarea is defined by <cols> and <rows> attribute, or it can also be defined through CSS height and width properties.
- It helps viewers to place their own comments onto forums.

Example:-

```
<form method="post">
        <textarea rows="5" cols="20" name="comments" placeholder=”Enter Comments
        Here”></textarea>
</form>
```

<label>:-

- The <label> element defines a text label for several form elements.

Syntax: - <label> form_content... </label>

- The label is a normal text, by clicking which, the user can select the form element.
- The for attribute of the <label> tag should be equal to the id attribute of the <input> element to bind them together.

Example:-

```
<label for="firstname">Firstname</label>
<input type="text" id="firstname"/>
```

HTML5

- It stands for Hypertext markup language version 5.
- HTML5 is the latest version of HTML.
- HTML5 is cooperation between the World Wide Web Consortium (W3C) and the Web Hypertext Application Technology Working Group (WHATWG).

What is new in HTML 5:-

- Support multimedia without flash player. So, we can include audio, video in our web page without installing flash player.
- We create drawing in our webpage using canvas without graphics software.
- We can create API, trace user's location.
- HTML5 coding structure is user friendly.
- HTML5 program is run in latest version of Google chrome, Mozilla firefox,opera,Internet explorer 9.0

Structure of HTML 5:-

```
<!DOCTYPE html>
<html>
<head>
        <title>Page title will go here</title>
</head>
<body>
        This is test page
</body>
</html>
```

DOCTYPE declaration:-

- It is an instruction to the web browser about what version of HTML the page is written in.

Syntax:-<!DOCTYPE html>

- This declaration is not case sensitive. So, we can write it in capital or small letter.

Semantic Element of HTML5

- A semantic element clearly describes its meaning to both the browser and the developer.
- Semantic elements = elements with a meaning.

Examples of non-semantic elements: and - Tells nothing about its content.

Examples of semantic elements: <form>, <table>, and <article> - Clearly defines its content.

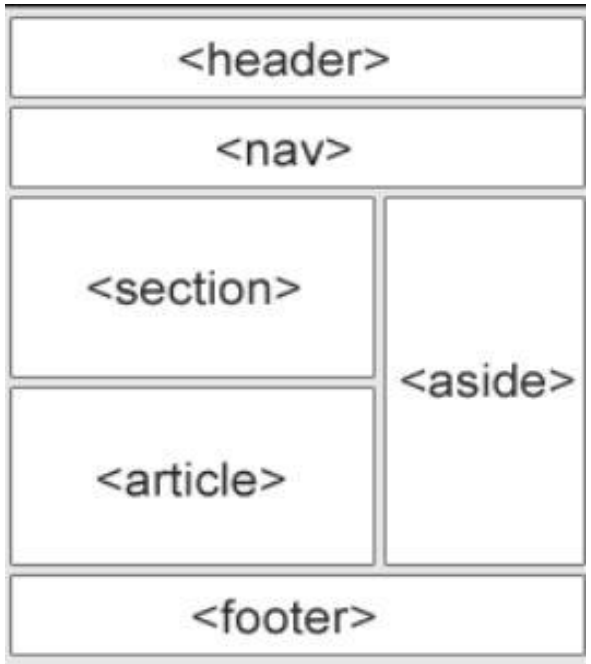
- Many semantic elements which is used to develop any webpages.
- Semantic elements which are explained below

<header>:-

- The <header> element is generally found at the

top of a document, a section, or an article.

- It contains the main heading.



- We can have several <header> element in one document, but a <header> element cannot be placed within a <footer>, <address> or another <header> element.
- It also contains website name, tagline, navigation links, search text box.

Example:-

```
<header>
        <h1>Marwadi University-Rajkot</h1>
        <nav>
                <a href="#">Home</a>|
                <a href="#">About Us</a>|
                <a href="#">Contact Us</a>
        </nav>
        <marquee>Welcome to our page</marquee>
        <input type="text" name="search" placeholder="Search any keyword">
</header>
```

<article>:-

- This tag represents an independent content.
- The content within the <article> tag is independent from the other content of the site.

Example:-Newspaper news, comment

Example:-

```
<article>
        <header>
                <h1>1st unofficial Test: India A register easy win over Windies A</h1>
        </header>
        <p>six-wicket win over West Indies A on the fourth and final Set a target
        of 97 for victory, India needed just 68 runs on ..
         </p>
</article>
```

<section>:-

- It is used to create standalone sections within a webpage containing logically connected content (news block).
- The <section> tag is often used when creating a landing page to divide the page into separate logical blocks.
- For example, a navigation menu must be wrapped in a <nav> tag, but a map display and a list of search results do not have specific elements, and can be put inside a <section>.

<figure>:-

- It is used to add photos in a document.
- As we know image tag is already available in HTML to display the pictures on web pages. But HTML 5 <figure> tag is used to handle the group of diagrams, photos, code listing etc. with some embedded content.
- We can also add a caption for the photo with the help of <figcaption> tag.

Example:-

```
<figure>
        <img src="1.jpg" alt="Flower pot">
        <figcaption>Fig.1:-Flower Pot</figcaption>
</figure>
```

<footer>:-

- It is usually used at bottom of the page.
- Usually, it contains copyright information, contact details, navigation links, author information etc.
- You can have one or many footer elements in one document.

Example:-

```
<footer>
        <p>Posted by:Vaibhav Patel</p>
        <p>Contact information: <a href="mailto:vkmatalia18@gmail.com">Mail
        Us</a></p>
</footer>
```

<nav>:-

- The <nav> elements define the set of navigation links.
- Websites typically have sections dedicated to navigational links, which enables user to navigate the site.
- These links can be placed inside a nav tag.

Example:-

```
<nav>
        <a href="#">HTML</a> |
        <a href="#">CSS</a> |
        <a href="#">JavaScript</a> |
        <a href="#">jQuery</a>
</nav>
```

<dialog>:-

- It is used to create popup dialog on a web page.
- This tag accept single attribute called open that activate element.

Example:-<dialog open>The future depends on what you do today.</dialog>

<aside>:-

- It provides information about the main content.
- The <aside> content is often placed as a sidebar in a document.
- Endnotes, comments, lists of terms, reference information, a collection of links, pull-quotes, etc. are examples of information that can be within the <aside> element.

Example:-

The Disney movie drishyam 2 was released to theater in 20th Dec 2022

<aside>The movie earned $87 million during its initial release</aside>

Note:-The <aside> element does not render as anything special in a browser. However, you can use CSS to style the <aside> element

Other HTML 5 Tags

<fieldset>:-

- The <fieldset> tag is used to group related elements in a form.
- The <fieldset> tag draws a box around the related elements.
- The <legend> tag is used to define a caption for the <fieldset> element.
- The use of this tag is optional while creating HTML form but by using the fieldset tag and the legend tag, we can make our forms much easier to understand for users.

Example:-

```
<fieldset>
    <legend>User basic information</legend>
    <label>First Name</label>
    <input type="text" name="fname"><br><br>
    <label>Last Name</label>
    <input type="text" name="lname"><br><br>
```

```
        <label>Email</label>
        <input type="text" name="email"><br><br>
</fieldset><br><br>
<label>Enter Your Feedback</label>
<textarea cols="30" rows="5"></textarea><br><br>
<input type="submit">
```

<legend>:-

- HTML <legend> tag is used to insert a title or caption to its parent element such as <fieldset>.
- The <legend> element must be the first child of <fieldset > element.
- By using <legend> tag with <form> elements, it is easy to understand the purpose of grouped form elements.

Multimedia Tags

<video>:-

- The <video> tag is used to embed video content in a document, such as a movie clip or other video streams.
- The <video> tag contains one or more <source> tags with different video sources. The browser will choose the first source it supports.
- The text between the <video> and </video> tags will only be displayed in browsers that do not support the <video> element.
- There are three supported video formats in HTML 5: MP4, WebM, and OGG.

Syntax:-<video src="" controls></video>

Example:-

```
<video width="320px" height="240px" controls>
        <source src="marwadiUniversity.mp4" type="video/mp4">
        Your browser does not support the video tag
</video>
```

Attribute	Value	Description
src	URL	Specifies the URL of the video file
controls		It shows the default video controls like play, pause, volume, etc.
muted		Used to mute the video output
autoplay		Specifies that the video will start playing as soon as it is ready
height	pixels	Sets the height of the video player
width	pixels	Sets the width of the video player
loop		Specifies that the video file will start over again, every time when it is completed.
poster	URL	Specifies the image which is displayed on the screen when the video is not played. (This image will displayed until user hits the play button)
preload	Auto, none metadata	Specifies whether the video should be preloaded or not, and if so, how it should be preloaded.

audio:-

- The <audio> tag is used to embed sound content in a document, such as music or other audio streams.
- The <audio> tag contains one or more <source> tags with different audio sources. The browser will choose the first source it supports.
- The text between the <audio> and </audio> tags will only be displayed in browsers that do not support the <audio> element.
- There are three supported audio formats in HTML: MP3, WAV, and OGG.

Syntax:-<audio src="" controls></audio>

Example:-

```
<audio controls>
        <source src="marwadiUniversity.mp3" type="audio/mpeg">
</audio>
```

Attribute	Value	Description
src	URL	Specifies the URL of the audio file
muted		Mutes the sound when the audio file is played.
autoplay		Plays the audio file automatically after loading the page
controls		Enables audio controls such as play/pause, volume, and others.
loop		Specifies that audio is repeated every time it completes
preload	none Auto Metadata	Specifies how the audio file is loaded once page has been loaded

<iframe>:-

- The <iframe> tag specifies an inline frame.
- It is used to embed another document within current HTML document.

Example 1:-Embed youtube video in our HTML document

```
<iframe src="https://www.youtube.com/embed/Ft4SYtajZO8" width="420px"
height="345px"></iframe>
```

Example 2:-Embed document(gallery.html) in our HTML document

```
<a href="gallery.html" target="myframe">gallery</a>
<iframe width="400px" height="300px" name="myframe"></iframe>
```

Example 3:-Embed google maps in our HTML document

HTML 5 Input Types

- HTML 5 input elements introduced several new values for the type attribute.

date:-

- The date is the value of the type attribute of an <input> element.
- It creates a calendar that allows a user to choose the date. The resulting value includes the day, month, and year.

Example:-

```
<form>
        <label for="birthday">Birthday:</label>
        <input type="date" id="birthday">
</form>
```

- We can also use the min and max attributes to add restrictions to dates.

month:-

- The <input> tag with a type="month" attribute creates a text field that accepts a month and year value.
- Inside this field is a calendar icon. Clicking the icon opens a month/year picker.

Example:-

```
<form>
        select month for election<input type="month" name="emonth" ><br>
</form>
```

week:-

- The <input type="week"> defines a week and year control.

Example:-

```
<form>
        <label>Select vacation week</label>
        <input type="week" name="myweek">
</form>
```

- It is not supported by Firefox, Safari and Internet Explorer browsers. Presently backed by Chrome and Opera browsers.

time:-

- It allows users to easily enter the time(hours and minutes).
- The value of the time input type is commonly in 24-hour format ("hh:mm").

Example:-

```
<form>
        College Timing <input type="time" name="clg_time"><br>
</form>
```

number:-

- The <input> tag with a type="number" attribute creates a numeric input field.
- Use the following attributes to specify restrictions:

    max - specifies the maximum value allowed
    min - specifies the minimum value allowed
    step - specifies the legal number intervals
    value - Specifies the default value

Example:-

```
<form>
        <label for="quantity">Quantity (between 1 and 5):</label>
        <input type="number" id="quantity" name="quantity" min="1" max="5">
</form>
```

range:-

- A form in HTML is used to take input from the user using various ways or methods.
- To take single input, we use textbox and which can be created using <input type=”text” name=”t1”>.In this control, we can type the exact or precise values which can be later validated or saved in the database.
- But sometime we need to select the user's preference where certain information can not be entered. So, in such cases, a normal textbox will not be useful.
- We will make use of range type of input control which can allow the users to select a value within the range.

- The range control is a slider control where by moving the circle, you will be able to select the range.
- This control is not useful in entering the precise value rather it is used where a precise value is not needed.

Example:-

```
<form oninput="res.value=slider1.value">
    <label>Select Price</label><br>
    <input type="range" name="slider1" min="7000" max="20000" step="1000"> <br/>
    <output name="res" for="slider1">10000</output>
</form>
```

email:-

- The <input> tag with a type="email" attribute creates a text field for email addresses.
- The input will be validated when the form is submitted.
- If we try to submit simple text, it forces to enter only email address in emailAddress@example.com format.

Example:-

```
<form>
        <label>Enter your Email-address</label>
        <input type="email" name="email">
        <input type="submit">
</form>
```

url:-

- The <input> tag with a type="url" attribute creates an input field for URL values.
- This field only accepts valid URLs.
- The input will be validated when the form is submitted.
- If you try to submit a simple text, it forces to enter only URL address.

Example:-

```
<form>
        <label>Enter your website URL: </label>
        <input type="url" name="website"><br>
        <input type="submit" value="send data">
</form>
```

color:-

- The <input> tag with a type="color" attribute creates a color picker.
- The control consists of a small button with the current color displayed inside. Clicking this button opens a color picker.
- An initial color can be specified with the value attribute which accepts hex color values.
- The default color value is #000000, which is black.

Example:-

```
<form>
        <label for="favcolor">Select your favorite color:</label>
        <input type="color" id="favcolor" name="favcolor">
</form>
```

tel:-

- The <input> tag with a type="tel" attribute creates an input field for a telephone number.
- Telephone fields are not automatically validated because of the variety of phone number formats across the world.
- Validation for a specific format can be implemented with the pattern attribute.

Example:-

```
<form>
        <label for="phone">Enter your phone number:</label>
        <input type="tel" name="phone">
</form>
```

search:-

- The <input> type "search" creates an input filed which allows a user to enter a search string.
- A search field acts like a normal textbox, but in a few browsers like safari and chrome, as shortly as we begin typing in a search box a little cross seems on the right side of the text box that lets speedily clear the search text box.

Example:-<input type=“search” name=“q”>

datetime:-

- The HTML <input type="datetime"> gives a control for entering a date and time (hour, minute, second) as well as a timezone.
- This feature is out of date.
- This feature has been removed from WHATWG HTML, and is no longer supported in browsers.

datetime-local:-

- The <input> tag with a type="datetime-local" attribute creates an input field that accepts a date and time value which does not include the timezone.
- Clicking the calendar icon opens a datetime picker.
- The -local suffix does not mean the time is local to the user, instead it is a time without a timezone.
- The UI of this control varies from browser to browser. Browser support is limited.

Example:-<input type="datetime-local" id="birthdaytime" name="birthdaytime">

HTML5 Attributes

- There are two types of attributes used in HTML5
    1. Input attribute
    2. Form attribute

Input Attribute:-

autofocus:-

- The autofocus attribute specifies that the input field should automatically get focus when the page loads.

Example:-<input type="text" id="fname" name="fname" autofocus>

autocomplete:-

- The input autocomplete attribute specifies whether a form or an input field should have autocomplete on or off.
- Autocomplete allows the browser to predict the value. When a user starts to type in a field, the browser should display options to fill in the field, based on earlier typed values.
- The autocomplete attribute works with <form> and the following <input> types: text, search, url, tel, email, password, range and color.

Example:-

```
<form>
                <label for="fname">First name:</label>
                <input type="text" id="fname" autocomplete="off"><br>
                <label for="lname">Last name:</label>
                <input type="text" id="lname"><br>
                <input type="submit" value="Submit">
</form>
```

list:-

- List attribute refer datalist element.
- Datalist contains predefined option for an input element.

<input list="datalist_id">

What does <input list=""> do?

- Specifies the id of a <datalist> element which provides a list of autocomplete suggestions for the input field.

Example:-

```
<form action="marwadiUni.html" method="get">
        <input list="browsers" name="web">
        <datalist id="browsers">
                <option value="Internet Explorer">
                <option value="Firefox">
                <option value="Chrome">
                <option value="Opera">
                <option value="Safari">
        </datalist>
        <input type="submit">
</form>
```

min and max:-

- The min and max attributes specify the minimum and maximum values for an <input> element.
- The min and max attributes work with the following input types: number, date, datetime-local, month, time and week.

Example:-

```
<form action=”marwadiUni.html”>
        <label for="datemax">Enter a date before 1980-01-01:</label>
        <input type="date" name="datemax" max="1979-12-31"><br><br>
        <label for="datemin">Enter a date after 2000-01-01:</label>
        <input type="date" name="datemin" min="2000-01-02">
         <input type="submit" value="Submit">
</form>
```

pattern:-

- The pattern attribute is used for checking the exact match against predefined regular expression.
- The following input type is support by the pattern attribute:

type="text“ type="search“ type="url"
type="tel“ type="email“ type="password"

Example:-

```
<form>
    <label for="country_code">Country code:</label>
    <input type="text" name="country_code" pattern=”[A-Za-z]{3}” title=”Three letter country code”><br><br>
    <input type="submit" value="Submit">
</form>
```

placeholder:-

- The placeholder attribute is used for a short hint for specific input field.
- The following input type is support by the placeholder attributes:

type=”text” type=”search” type=”url”
type=”tel” type=”email” type=”password”

Example:-

```
<form>
        <input type="text" name="fname" placeholder="Enter Your First name"><br>
        <input type="text" name="lname" placeholder="Enter Your Last name">
</form>
```

required:-

- It specifies that an input field must be filled out before submitting the form.
- The following input type is support by the required attributes:

type=”text”	type=”search”	type=”url”	type=”tel”
type=”email”	type=”password”	type=”date”	type=”number”
type=”checkbox”	type=”radio”	type=”file”	

step:-

- The step attribute on an <input> tag sets the stepped increment value for the input element.
- The default step value is 1.
- The step attribute can be used together with the max and min attributes to create a range of legal values.
- This attribute applies to type="number" and type="range"

Example:-<input type="number" name="points" step="3" min="1" max="20">

multiple:-

- It allows user to enter more than one value.
- The multiple attributes work with the following input types: email, and file.
- It is also worked with <select> element.

Example:-<input type="file" id="files" name="files" multiple>

formaction:-

- The formaction attribute is used to send the data through the URL, as we do it with action attribute of <form> element.
- The formaction attribute overrides the action attribute of the form element.
- The formaction attribute is used with the type=”submit”.

Example:-

```
<form action="autofocus.html">
                First name: <input type="text" name="fname"><br>
                Last name: <input type="text" name="lname"><br>
                <input type="submit" value="Submit"><br>
                <input type="submit" formaction="novalidate.html" value="Submit to another page">
</form>
```

formtarget:-

- The formtarget attribute specifies a name or a keyword that indicates where to display the response that is received after submitting the form.
- The formtarget attribute overrides the target attribute of the <form> element.
- The formtarget attribute can be used with type="submit" and type="image".

Example: -

```
<form action="welcome.html">
        First name: <input type="text" name="fname"><br>
        Last name: <input type="text" name="lname"><br>
        <input type="submit" value="Submit as normal">
        <input type="submit" formtarget="_blank" value="Submit to a new window/tab">
</form>
```

formmethod:-

- The formmethod attribute defines the HTTP method for sending form-data to the action URL.
- The formmethod attribute overrides the method attribute of the <form> element.
- The formmethod attribute can be used with type="submit" and type="image".

Example:-

```
<form action="welcome.html" method="get">
        <label for="fname">First name:</label>
        <input type="text" id="fname" name="fname"><br><br>
        <label for="lname">Last name:</label>
        <input type="text" id="lname" name="lname"><br><br>
        <input type="submit" value="Submit">
        <input type="submit" formmethod="post" value="Submit using POST">
</form>
```

Marwadi University

Form Attribute:-

- The Form Attributes gives some extra control on Form element.

autocomplete:-

- If auto completion is on, it will auto complete the form and if auto completion is off, the user has to fill the form field manually.
- It is possible to have auto complete “on” and “off” for the form, and “off” and “on” for specific input fields.
- The auto complete attribute works with <form> and the following <input> types:

text	search
url	url
tel	password
date	color

Example:-

```
<form autocomplete="on">
        First name:<input type="text" name="fname"><br>
        Last name: <input type="text" name="lname"><br>
        E-mail: <input type="email" name="email"><br>
        <input type="submit">
</form>
```

novalidate:-

- It specifies that the form-data (input) should not be validated when submitted.

Example:-

```
<form action="welcome.html" novalidate>
        <input type="email" name="email"><br><br>
        <input type="submit">
</form>
```

Marwadi University

Thank You