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What is HTML

HTML is an acronym which stands for Hyper Text Markup Language which is used for creating web pages and web applications. Let's see what is meant by Hypertext Markup Language, and Web page.

Hyper Text: HyperText simply means "Text within Text." A text has a link within it, is a hypertext. Whenever you click on a link which brings you to a new webpage, you have clicked on a hypertext. HyperText is a way to link two or more web pages (HTML documents) with each other.

Markup language: A markup language is a computer language that is used to apply layout and formatting conventions to a text document. Markup language makes text more interactive and dynamic. It can turn text into images, tables, links, etc.

Web Page: A web page is a document which is commonly written in HTML and translated by a web browser. A web page can be identified by entering an URL. A Web page can be of the static or dynamic type. With the help of HTML only, we can create static web pages.

Hence, HTML is a markup language which is used for creating attractive web pages with the help of styling, and which looks in a nice format on a web browser. An HTML document is made of many HTML tags and each HTML tag contains different content.

Let's see a simple *Example* of HTML.

```
<!DOCTYPE>
<html>
<head>
<title>Web page title</title>
</head>
<body>
<h1>Write Your First Heading</h1>
<p>Write Your First Paragraph.</p>
</body>
</html>
```

Description of HTML *Example*

<!DOCTYPE>: It defines the document type or it instruct the browser about the version of HTML.

<html>: This tag informs the browser that it is an HTML document. Text between html tag describes the web document. It is a container for all other elements of HTML except <!DOCTYPE>

<head>: It should be the first element inside the <html> element, which contains the metadata (information about the document). It must be closed before the body tag opens.

<title>: As its name suggested, it is used to add title of that HTML page which appears at the top of the browser window. It must be placed inside the head tag and should close immediately. (Optional)

<body>: Text between body tag describes the body content of the page that is visible to the end user. This tag contains the main content of the HTML document.

<h1> : Text between <h1> tag describes the first level heading of the webpage.

<p> : Text between <p> tag describes the paragraph of the webpage.

Brief History of HTML

In the late 1980's , a physicist, Tim Berners-Lee who was a contractor at CERN, proposed a system for CERN researchers. In 1989, he wrote a memo proposing an internet-based hypertext system.

Tim Berners-Lee is known as the father of HTML. The first available description of HTML was a document called "HTML Tags" proposed by Tim in late 1991. The latest version of HTML is HTML5.

HTML Versions

Since the time HTML was invented, there are lots of HTML versions in market, the brief introduction about the HTML version is given below:

HTML 1.0: The first version of HTML was 1.0, which was the barebones version of HTML language, and it was released in1991.

HTML 2.0: This was the next version which was released in 1995, and it was standard language version for website design. HTML 2.0 was able to support extra features such as form-based file upload, form elements such as text box, option button, etc.

HTML 3.2: HTML 3.2 version was published by W3C in early 1997. This version was capable of creating tables and providing support for extra options for form elements. It can also support a web page with complex mathematical

equations. It became an official standard for any browser till January 1997. Today it is practically supported by most of the browsers.

HTML 4.01: HTML 4.01 version was released on December 1999, and it is a very stable version of HTML language. This version is the current official standard, and it provides added support for stylesheets (CSS) and scripting ability for various multimedia elements.

HTML5: HTML5 is the newest version of HyperText Markup language. The first draft of this version was announced in January 2008. There are two major organizations one is W3C (World Wide Web Consortium), and another one is WHATWG (Web Hypertext Application Technology Working Group) which are involved in the development of HTML 5 version, and still, it is under development.

Features of HTML

1) It is a very easy and simple language. It can be easily understood and modified.

2) It is very easy to make an effective presentation with HTML because it has a lot of formatting tags.

3) It is a markup language, so it provides a flexible way to design web pages along with the text.

4) It facilitates programmers to add a link on the web pages (by html anchor tag), so it enhances the interest of browsing of the user.

5) It is platform-independent because it can be displayed on any platform like Windows, Linux, and Macintosh, etc.

6) It facilitates the programmer to add Graphics, Videos, and Sound to the web pages which makes it more attractive and interactive.

7) HTML is a case-insensitive language, which means we can use tags either in lower-case or upper-case.

Why learn HTML?

- It is a simple markup language. Its implementation is easy.
- It is used to create a website.
- Helps in developing fundamentals about web programming.
- Boost professional career.

Advantages:

- HTML is used to build websites.
- It is supported by all browsers.
- It can be integrated with other languages like CSS, JavaScript, etc.

Disadvantages:

- HTML can only create static web pages. For dynamic web pages, other languages have to be used.
- A large amount of code has to be written to create a simple web page.
- The security feature is not good.

HTML text Editors

An HTML file is a text file, so to create an HTML file we can use any text editors.

Text editors are the programs which allow editing in a written text, hence to create a web page we need to write our code in some text editor.

There are various types of text editors available which you can directly download, but for a beginner, the best text editor is Notepad (Windows) or TextEdit (Mac).

After learning the basics, you can easily use other professional text editors which are, Notepad++, Sublime Text, Vim, etc.

In our tutorial, we will use Notepad and sublime text editor. Following are some easy ways to create your first web page with Notepad, and sublime text.

Building blocks of HTML

An HTML document consist of its basic building blocks which are:

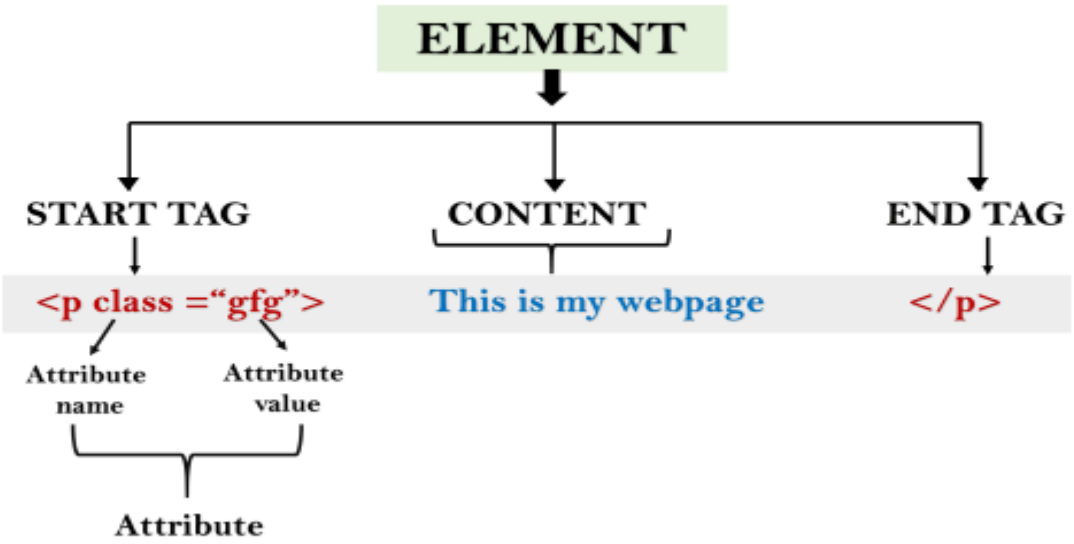
Tags: An HTML tag surrounds the content and apply meaning to it. It is written between < and > brackets.

Attribute: An attribute in HTML provides extra information about the element, and it is applied within the start tag. An HTML attribute contains two fields: name & value.

Syntax

```
<tag name  attribute_name= " attr_value"> content </ tag name>
```

Elements: An HTML element is an individual component of an HTML file. In an HTML file, everything written within tags are termed as HTML elements.



***Example*:**

```
<!DOCTYPE html>
<html>
  <head>
    <title>The basic building blocks of HTML</title>
 </head>
  <body>
       <h2>The building blocks</h2>
       <p>This is a paragraph tag</p>
       <p style="color: red">The style is attribute of paragraph tag</p>
       <span>The element contains tag, attribute and content</span>
  </body>
</html>
```

HTML Tags

HTML tags are like keywords which defines that how web browser will format and display the content. With the help of tags, a web browser can distinguish between an HTML content and a simple content. HTML tags contain three main parts: opening tag, content and closing tag. But some HTML tags are unclosed tags.

When a web browser reads an HTML document, browser reads it from top to bottom and left to right. HTML tags are used to create HTML documents and render their properties. Each HTML tags have different properties.

An HTML file must have some essential tags so that web browser can differentiate between a simple text and HTML text. You can use as many tags you want as per your code requirement.

All HTML tags must enclosed within < > these brackets.

Every tag in HTML perform different tasks.

If you have used an open tag <tag>, then you must use a close tag </tag> (except some tags)

Syntax

<tag> content </tag>

Note: HTML Tags are always written in lowercase letters. The basic HTML tags are given below:

HTML Tag *Example*s

```
<p> Paragraph Tag </p>

<h2> Heading Tag </h2>

<b> Bold Tag </b>

<i> Italic Tag </i>

<u> Underline Tag</u>
```

Unclosed HTML Tags
Some HTML tags are not closed, for ***Example*** br and hr.

 Tag: br stands for break line, it breaks the line of the code.

<hr> Tag: hr stands for Horizontal Rule. This tag is used to put a line across the webpage.

HTML Meta Tags
DOCTYPE, title, link, meta and style

HTML Text Tags
<p>, <h1>, <h2>, <h3>, <h4>, <h5>, <h6>, , , <abbr>, <acronym>, <address>, <bdo>, <blockquote>, <cite>, <q>, <code>, <ins>, <del>, <dfn>, <kbd>, <pre>, <samp>, <var> and

HTML Link Tags
<a> and <base>

HTML Image and Object Tags
<img>, <area>, <map>, <param> and <object>

HTML List Tags
, <ol>, <li>, <dl>, <dt> and <dd>

HTML Table Tags
table, tr, td, th, tbody, thead, tfoot, col, colgroup and caption

HTML Form Tags
form, input, textarea, select, option, optgroup, button, label, fieldset and legend

HTML Scripting Tags
script and noscript

HTML Attribute

HTML attributes are special words which provide additional information about the elements or attributes are the modifier of the HTML element.

Each element or tag can have attributes, which defines the behaviour of that element.

Attributes should always be applied with start tag.

The Attribute should always be applied with its name and value pair.

The Attributes name and values are case sensitive, and it is recommended by W3C that it should be written in Lowercase only.

You can add multiple attributes in one HTML element, but need to give space between two attributes.

Syntax

```
<element attribute_name="value">content</element>
```

Example

```
 <!DOCTYPE html>
<html>
<head>
</head>
<body>
    <h1> This is Style attribute</h1>
   <p  style="height:  50px;  color:  blue">It  will  add  style property in element</p>
    <p  style="color:  red">It  will  change  the  color  of content</p>
</body>
</html>
```

Explanation of above example:

In the above statement, we have used paragraph tags in which we have applied style attribute. This attribute is used for applying CSS property on any HTML

element. It provides height to paragraph element of 50px and turns it colour to blue.

The title attribute in HTML

Description: The title attribute is used as text tooltip in most of the browsers. It display its text when user move the cursor over a link or any text. You can use it with any text or link to show the description about that link or text. In our ***Example***, we are taking this with paragraph tag and heading tag.

Example

```
<!DOCTYPE html>
<html>
  <head>
 </head>
<body>

  <h1 title="This is heading tag">Example of title attribute</h1>
  <p title="This is paragraph tag">Move the cursor over the heading and paragraph, and you will see a description as a tooltip</p>

</body>
</html>
```

The href attribute in HTML

Description: The href attribute is the main attribute of <a> anchor tag. This attribute gives the link address which is specified in that link. The href attribute provides the hyperlink, and if it is blank, then it will remain in same page.

Example

With link address:

```
<a href="https:// https://www.mlsu.ac.in">This is a link</a>
```

Without link address:

```
<a href="">This is a link</a>
```

The src Attribute

The src attribute is one of the important and required attribute of <img> element. It is source for the image which is required to display on browser. This attribute can contain image in same directory or another directory. The image name or source should be correct else browser will not display the image.

Example

```
<img src="whitepeacock.jpg" height="400" width="600">
```

Note: The above ***Example*** also has height and width attribute, which define the height and width of image on web page.

Quotes: single quotes or double quotes?

In this chapter you have seen that, we have used attribute with double quotes, but some people might use single quotes in HTML. So, use of single quotes with HTML attribute, is also allowed. The following both statements are absolutely fine.

```
<a href="https://www.mlsu.ac.in/">A link to HTML.</a>
<a href='https://www.mlsu.ac.in/'>A link to HTML.</a>
```

IN HTML5, you can also omit use of quotes around attribute values.

HTML Elements

An HTML file is made of elements. These elements are responsible for creating web pages and define content in that webpage. An element in HTML usually consist of a start tag <tag name>, close tag </tag name> and content inserted between them. Technically, an element is a collection of start tag, attributes, end tag, content between them.

Note: Some elements does not have end tag and content, these elements are termed as empty elements or self-closing element or void elements.

Such as:

```
<p> Hello world!!! </p>
```

Example

```
<!DOCTYPE html>
<html>
<head>
    <title>WebPage</title>
</head>
<body>
   <h1>This is my first web page</h1>
    <h2> How it looks?</h2>
     <p>It looks Nice!!!!!</p>
</body>
</html>
```

All the content written between body elements are visible on web page.

Void element: All the elements in HTML do not require to have start tag and end tag, some elements does not have content and end tag such elements are known as Void elements or empty elements. These elements are also called as unpaired tag.

Some Void elements are
 (represents a line break) , <hr>(represents a horizontal line), etc.

Nested HTML Elements: HTML can be nested, which means an element can contain another element.

Block-level and Inline HTML elements
For the default display and styling purpose in HTML, all the elements are divided into two categories:

- Block-level element
- Inline element

Block-level element:
These are the elements, which structure main part of web page, by dividing a page into coherent blocks.

A block-level element always starts with new line and takes the full width of web page, from left to right.

These elements can contain block-level as well as inline elements.

Following are the block-level elements in HTML.

<address>, <article>, <aside>, <blockquote>, <canvas>, <dd>, , <dl>, <dt>, <fieldset>, <figcaption>, <figure>, <footer>, <form>, <h1>-<h6>, <header>, <hr>, <li>, <main>, <nav>, <noscript>, <ol>, <output>, <p>, <pre>, <section>, <table>, <tfoot>, <ul> and <video>.

***Example*:**

```
<!DOCTYPE html>
<html>
            <head>
    </head>
<body>
    <div style="background-color: lightblue">This is first div</div>
    <div style="background-color: lightgreen">This is second div</div>
    <p style="background-color: pink">This is a block level element</p>
</body>
</html>
```

In the above ***Example*** we have used

tag, which defines a section in a web page, and takes full width of page.

We have used style attribute which is used to styling the HTML content, and the background color are showing that it's a block level element.

Inline elements:

Inline elements are those elements, which differentiate the part of a given text and provide it a particular function.

These elements do not start with new line and take width as per requirement.

The Inline elements are mostly used with other elements.

<a>, <abbr>, <acronym>, <b>, <bdo>, <big>,
, <button>, <cite>, <code>, <dfn>, , <i>, <img>, <input>, <kbd>, <label>, <map>, <object>, <q>, <samp>, <script>, <select>, <small>, , , <sub>, <sup>, <textarea>, <time>, <tt>, <var>.

***Example*:**

```
<!DOCTYPE html>
<html>
    <head>
    </head>
<body>
    <a href="https://www.google.co.in/">Click on link</a>
    <span style="background-color: lightblue">this is inline element</span>
    <p>This will take width of text only</p>
 </body>
</html>
```

Following is the list of the some main elements used in HTML:

Start tag	Content	End tag	Description
<h1> ..... <h6>	These are headings of HTML	</h1>??..</h6>	These elements are used to provide the headings of page.
** **	This is the paragraph		This element is used to display a content in form of paragraph.
** **	This is div section		This element is used to provide a section in web page.
** **			This element is used to provide a line break. (void element)
<hr>			This element is used to provide a horizontal line. (void element)

HTML Formatting

HTML Formatting is a process of formatting text for better look and feel. HTML provides us ability to format text without using CSS. There are many formatting tags in HTML. These tags are used to make text bold, italicized, or underlined. There are almost 14 options available that how text appears in HTML and XHTML.

In HTML the formatting tags are divided into two categories:

Physical tag: These tags are used to provide the visual appearance to the text.

Logical tag: These tags are used to add some logical or semantic value to the text.

NOTE: There are some physical and logical tags which may give same visual appearance, but they will be different in semantics.

Here, we are going to learn 14 HTML formatting tags. Following is the list of HTML formatting text.

Element name	Description
<b>	This is a physical tag, which is used to bold the text written between it.
****	This is a logical tag, which tells the browser that the text is important.
<i>	This is a physical tag which is used to make text italic.
****	This is a logical tag which is used to display content in italic.
<mark>	This tag is used to highlight text.
<u>	This tag is used to underline text written between it.
<tt>	This tag is used to appear a text in teletype. (not supported in HTML5)
<strike>	This tag is used to draw a strikethrough on a section of text. (Not supported in HTML5)
<sup>	It displays the content slightly above the normal line.
<sub>	It displays the content slightly below the normal line.
<del>	This tag is used to display the deleted content.
<ins>	This tag displays the content which is added
<big>	This tag is used to increase the font size by one conventional unit.
<small>	This tag is used to decrease the font size by one unit from base font size.

1) Bold Text

HTML and formatting elements

The HTML element is a physical tag which display text in bold font, without any logical importance. If you write anything within ..... element, is shown in bold letters.

See this Example:

```
<p> <b>Write Your First Paragraph in bold text.</b></p>
```

The HTML tag is a logical tag, which displays the content in bold font and informs the browser about its logical importance. If you write anything between ???????. , is shown important text.

See this Example:

```
<p><strong>This is an important content</strong>, and this is
normal content</p>
```

Example

```
<!DOCTYPE html>

<html>

<head>

    <title>formatting elements</title>

</head>

<body>

<h1>Explanation of formatting element</h1>

<p><strong>This is an important content</strong>, and this is
normal content</p>

</body>

</html>
```

2) Italic Text

HTML and formatting elements

The HTML element is physical element, which display the enclosed content in italic font, without any added importance. If you write anything within ..... element, is shown in italic letters.

See this Example:

```
<p> <i>Write Your First Paragraph in italic text.</i></p>
```

The HTML tag is a logical element, which will display the enclosed content in italic font, with added semantics importance.

See this Example:

This is an important content, which displayed in italic font.

```
<!DOCTYPE html>
<html>
<head>
    <title>formatting elements</title>
</head>
<body>
<h1>Explanation of italic formatting element</h1>
<p><em>This is an important content</em>, which displayed in italic font.</p>
</body>
</html>
```

3) HTML Marked formatting

If you want to mark or highlight a text, you should write the content within <mark>.....</mark>.

See this Example:

<h2> I want to put a <mark> Mark</mark> on your face</h2>

4) Underlined Text
If you write anything within <u>.....</u> element, is shown in underlined text.

See this Example:

 <u>Write Your First Paragraph in underlined text.</u>

5) Strike Text
Anything written within <strike>.....</strike> element is displayed with strikethrough. It is a thin line which cross the statement.

See this Example:

 <strike>Write Your First Paragraph with strikethrough</strike>.

6) Monospaced Font
If you want that each letter has the same width then you should write the content within <tt>.....</tt> element.

Note: We know that most of the fonts are known as variable-width fonts because different letters have different width. (for ***Example***: 'w' is wider than 'i'). Monospaced Font provides similar space among every letter.

See this Example:

Hello <tt>Write Your First Paragraph in monospaced font.</tt>

7) Superscript Text
If you put the content within ^{.....} element, is shown in superscript; means it is displayed half a character's height above the other characters.

See this Example:

Hello ^{Write Your First Paragraph in superscript.}

8) Subscript Text

If you put the content within _{.....} element, is shown in subscript; means it is displayed half a character's height below the other characters.

See this Example:

Hello _{Write Your First Paragraph in subscript.}

9) Deleted Text

Anything that puts within ~~.....~~ is displayed as deleted text.

See this Example:

Hello ~~Delete your first paragraph.~~

10) Inserted Text

Anything that puts within <ins>.....</ins> is displayed as inserted text.

See this Example:

 ~~Delete your first paragraph.~~<ins>Write another paragraph.</ins>

11) Larger Text

If you want to put your font size larger than the rest of the text then put the content within <big>.....</big>. It increase one font size larger than the previous one.

See this Example:

Hello <big>Write the paragraph in larger font.</big>

12) Smaller Text

If you want to put your font size smaller than the rest of the text then put the content within <small>.....</small>tag. It reduces one font size than the previous one.

See this Example:

Hello <small>Write the paragraph in smaller font.</small>

HTML Heading

A HTML heading or HTML h tag can be defined as a title or a subtitle which you want to display on the webpage. When you place the text within the heading tags <h1>.....</h1>, it is displayed on the browser in the bold format and size of the text depends on the number of heading.

There are six different HTML headings which are defined with the <h1> to <h6> tags, from highest level h1 (main heading) to the least level h6 (least important heading).

h1 is the largest heading tag and h6 is the smallest one. So h1 is used for most important heading and h6 is used for least important.

Headings in HTML helps the search engine to understand and index the structure of web page.

See this Example:

```
<h1>Heading no. 1</h1>
<h2>Heading no. 2</h2>
<h3>Heading no. 3</h3>
<h4>Heading no. 4</h4>
<h5>Heading no. 5</h5>
<h6>Heading no. 6</h6>
```

Note: Heading elements (h1....h6) should be used for headings only. They should not be used just to make text bold or big.

HTML headings can also be used with nested elements. Following are different codes to display the way to use heading elements.

***Example*:**

```
<!DOCTYPE html>
<html>
 <head>
    <title>Heading elements</title>
 </head>
 <body>
     <h1>This is main heading of page. </h1>
      <p>h1 is the most important heading, which is used to
display the keyword of page </p>
     <h2>This is first sub-heading</h2>
      <p>h2 describes the first sub heading of page. </p>
     <h3>This is Second sub-heading</h3>
      <p>h3 describes the second sub heading of page.</p>
      <p>We can use h1 to h6 tag to use the different sub-heading
with their paragraphs if
                    required.
                </p>
   </body>
</html>
```

As you can see, all the extra lines and unnecessary spaces are removed by the browser.

**How to Use
 and <hr> tag with paragraph?**

An HTML
 tag is used for line break and it can be used with paragraph elements. Following is the ***Example*** to show how to use
 with <p> element.

***Example*:**

```
<!DOCTYPE html>
<html>
     <head>
    </head>
  <body>
      <h2> Use of line break with pragraph tag</h2>
          <p><br>Papa and mama, and baby and Dot,
     <br>Willie and me?the whole of the lot
               <br>Of us all went over in Bimberlie's sleigh,
                 <br>To grandmama's house on Christmas day.
          </p>
   </body>
</html>
```

An HTML <hr> tag is used to apply a horizontal line between two statements or two paragraphs. Following is the ***Example*** which is showing use of <hr> tag with paragraph.

***Example*:**

```
<!DOCTYPE html>
<html>
 <head>
    </head>
 <body>
   <h2> Example to show a horizontal line with paragraphs</h2>
     <p> An HTML hr tag draw a horizontal line and separate two
paragraphs with that line.<hr> it will start a new paragraph.
     </p>
  </body>
</html>
```

HTML Paragraph

HTML paragraph or HTML p tag is used to define a paragraph in a webpage. Let's take a simple example to see how it work. It is a notable point that a browser itself add an empty line before and after a paragraph. An HTML <p> tag indicates starting of new paragraph.

Note: If we are using various <p> tags in one HTML file then browser automatically adds a single blank line between the two paragraphs.

See this example:

```
<p>This is first paragraph.</p>
<p>This is second paragraph.</p>
<p>This is third paragraph.</p>
```

Space inside HTML Paragraph

If you put a lot of spaces inside the HTML p tag, browser removes extra spaces and extra line while displaying the page. The browser counts number of spaces and lines as a single one.

```
<p>
I am
going to provide
you a tutorial on HTML
and hope that it will
be very beneficial for you.
</p>
<p>
Look, I put here a lot
of spaces                    but          I know, Browser will
ignore it.
</p>
<p>
```

```
You cannot determine the display of HTML</p>
<p>because resized windows may create different result.
</p>
```

**How to Use
 and <hr> tag with paragraph?**

An HTML
 tag is used for line break and it can be used with paragraph elements. Following is the example to show how to use
 with <p> element.

Example:

```
<!DOCTYPE html>
<html>
     <head>
    </head>
  <body>
      <h2> Use of line break with pragraph tag</h2>
          <p><br>Papa and mama, and baby and Dot,
     <br>Willie and me?the whole of the lot
               <br>Of us all went over in Bimberlie's sleigh,
                 <br>To grandmama's house on Christmas day.
          </p>
   </body>
</html>
```

An HTML <hr> tag is used to apply a horizontal line between two statements or two paragraphs. Following is the example which is showing use of <hr> tag with paragraph.

Example:

```
<!DOCTYPE html>
<html>
 <head>
    </head>
 <body>
   <h2> Example to show a horizontal line with paragraphs</h2>
     <p> An HTML hr tag draw a horizontal line and separate two
paragraphs with that line.<hr> it will start a new paragraph.
     </p>
  </body>
</html>
```

HTML Phrase tag

The HTML phrase tags are special purpose tags, which defines the structural meaning of a block of text or semantics of text. Following is the list of phrase tags, some of which we have already discussed in HTML formatting.

- Abbreviation tag : <abbr>
- Acronym tag: <acronym> (not supported in HTML5)
- Marked tag: <mark>
- Strong tag:
- Emphasized tag :
- Definition tag: <dfn>
- Quoting tag: <blockquote>
- Short quote tag : <q>
- Code tag: <code>
- Keyboard tag: <kbd>
- Address tag: <address>

1. Text Abbreviation tag

This tag is used to abbreviate a text. To abbreviate a text, write text between <abbr> and </abbr> tag.

Example

```
<p>An <abbr title = "Hypertext Markup language">HTML
</abbr>language is used to create web pages. </p>
```

2. Marked tag:

The content written between <mark> and </mark> tag will show as yellow mark on browser. This tag is used to highlight a particular text.

Example

```
<p>This tag will <mark>highlight</mark> the text.</p>
```

3. Strong text:

This tag is used to display the important text of the content. The text written between and will be displayed as important text.

Example

```
<p>In HTML it is recommended to use <strong>lower-case</strong>,
while writing a code. </p>
```

4. Emphasized text

This tag is used to emphasize the text, and displayed the text in italic form. The text written between and tag will italicized the text.

Example

```
<p>HTML is an <em>easy </em>to learn language.</p>
```

5. Definition tag:

When you use the <dfn> and </dfn> tags, it allow to specify the keyword of the content. Following is the ***Example*** to show how to definition element.

Example

```
<p><dfn>HTML </dfn> is a markup language. </p>
```

6. Quoting text:

The HTML <blockquote> element shows that the enclosed content is quoted from another source. The Source URL can be given using the cite attribute, and text representation of source can display using <cite> ..... </cite>element.

Example

```
<blockquote          cite="https://www.keepinspiring.me/famous-
quotes/"><p>?The first step toward success is taken when you
refuse to be a captive of the environment in which you first
find yourself.?</p></blockquote>

 <cite>-Mark Caine</cite>
```

7. Short Quotations:

An HTML <q> ..... </q> element defines a short quotation. If you will put any content between <q> ..... </q>, then it will enclose the text in double quotes.

Example:

```
<p>Steve Jobs said: <q>If You Are Working On Something That You Really Care About, You Don?t Have To Be Pushed. The Vision Pulls You.</q>?</p>
```

8. Code tags

The HTML <code> </code> element is used to display the part of computer code. It will display the content in monospaced font.

```
<p>First Java program</p>
      <p><code>class Simple{ public static void main(String args[]){
       System.out.println("Hello Java"); }} </code>
     </p>
```

9. Keyboard Tag

In HTML the keyboard tag, <kbd>, indicates that a section of content is a user input from keyboard.

```
<p>Please press <kbd>Ctrl</kbd> + <kbd>Shift</kbd> + t<kbd></kbd> to restore page on chrome.</p>
```

10. Address tag

An HTML <address> tag defines the contact information about the author of the content. The content written between <address> and </address> tag, then it will be displayed in italic font.

```
<address> You can ask your queries by contact us on <a href="">Example123@newdomain.com</a>
```


 You can also visit at:
58 S. Garfield Street. Villa Rica, GA 30187.

</address>

HTML Anchor

The HTML anchor tag defines a hyperlink that links one page to another page. It can create hyperlink to other web page as well as files, location, or any URL. The "href" attribute is the most important attribute of the HTML a tag. and which links to destination page or URL.

href attribute of HTML anchor tag

The href attribute is used to define the address of the file to be linked. In other words, it points out the destination page.

The syntax of HTML anchor tag is given below.

```
<a href = "..........."> Link Text </a>
```

Let's see an example of HTML anchor tag.

```
<a href="second.html">Click for Second Page</a>
```

Specify a location for Link using target attribute

If we want to open that link to another page then we can use target attribute of <a> tag. With the help of this link will be open in next page.

Example:

```
<!DOCTYPE html>
<html>
<head>
    <title></title>
</head>
<body>
<p>Click on <a href="https://www.javatpoint.com/" target="_blank"> this-link </a>to go on home page of JavaTpoint.</p>
</body>
</html>
```

Note:

- The target attribute can only use with href attribute in anchor tag.
- If we will not use target attribute then link will open in same page.

Appearance of HTML anchor tag

- An unvisited link is displayed underlined and blue.
- A visited link displayed underlined and purple.
- An active link is underlined and red.

HTML Image

HTML img tag is used to display image on the web page. HTML img tag is an empty tag that contains attributes only, closing tags are not used in HTML image element.

Let's see an example of HTML image.

```
<h2>HTML Image Example</h2>
<img src="good_morning.jpg" alt="Good Morning Friends"/>
```

Attributes of HTML img tag

The src and alt are important attributes of HTML img tag. All attributes of HTML image tag are given below.

1) src

It is a necessary attribute that describes the source or path of the image. It instructs the browser where to look for the image on the server.

The location of image may be on the same directory or another server.

2) alt

The alt attribute defines an alternate text for the image, if it can't be displayed. The value of the alt attribute describe the image in words. The alt attribute is considered good for SEO prospective.

3) width

It is an optional attribute which is used to specify the width to display the image. It is not recommended now. You should apply CSS in place of width attribute.

4) height

It h3 the height of the image. The HTML height attribute also supports iframe, image and object elements. It is not recommended now. You should apply CSS in place of height attribute.

Use of height and width attribute with img tag

You have learnt about how to insert an image in your web page, now if we want to give some height and width to display image according to our requirement, then we can set it with height and width attributes of image.

Example:

```
<img src="animal.jpg" height="180" width="300" alt="animal image">
```

Note: Always try to insert the image with height and width, else it may flicker while displaying on webpage.

Use of alt attribute

We can use alt attribute with tag. It will display an alternative text in case if image cannot be displayed on browser. Following is the example for alt attribute:

```
<img src="animal.png" height="180" width="300" alt="animal image">
```

How to get image from another directory/folder?

To insert an image in your web, that image must be present in your same folder where you have put the HTML file. But if in some case image is available in some other directory then you can access the image like this:

```
<img src="E:/images/animal.png" height="180" width="300" alt="animal image">
```

In above statement we have put image in local disk E------>images folder------>animal.png.

Note: If src URL will be incorrect or misspell then it will not display your image on web page, so try to put correct URL.

Use <img> tag as a link

We can also link an image with other page or we can use an image as a link. To do this, put <img> tag inside the <a> tag.

Example:

```
<a      href="https://www.javatpoint.com/what-is-robotics"><img
src="robot.jpg" height="100" width="100"></a>
```

HTML Table

HTML table tag is used to display data in tabular form (row * column). There can be many columns in a row.

We can create a table to display data in tabular form, using <table> element, with the help of <tr> , <td>, and <th> elements.

In Each table, table row is defined by <tr> tag, table header is defined by <th>, and table data is defined by <td> tags.

HTML tables are used to manage the layout of the page e.g., header section, navigation bar, body content, footer section etc. But it is recommended to use div tag over table to manage the layout of the page.

HTML Table Tags

Tag	Description
<table>	It defines a table.
<tr>	It defines a row in a table.
<th>	It defines a header cell in a table.
<td>	It defines a cell in a table.
<caption>	It defines the table caption.
<colgroup>	It specifies a group of one or more columns in a table for formatting.
<col>	It is used with <colgroup> element to specify column properties for each column.
<tbody>	It is used to group the body content in a table.
<thead>	It is used to group the header content in a table.
<tfooter>	It is used to group the footer content in a table.

HTML Table Example

Let's see the example of HTML table tag.

```
<table>
<tr><th>First_Name</th><th>Last_Name</th><th>Marks</th></tr>
<tr><td>Sonoo</td><td>Jaiswal</td><td>60</td></tr>
<tr><td>James</td><td>William</td><td>80</td></tr>
<tr><td>Swati</td><td>Sironi</td><td>82</td></tr>
<tr><td>Chetna</td><td>Singh</td><td>72</td></tr>
</table>
```

HTML Table with Border

There are two ways to specify border for HTML tables.

1. By border attribute of table in HTML
2. By border property in CSS

1) HTML Border attribute

You can use border attribute of table tag in HTML to specify border. But it is not recommended now.

```
<table border="1">
<tr><th>First_Name</th><th>Last_Name</th><th>Marks</th></tr>
<tr><td>Sonoo</td><td>Jaiswal</td><td>60</td></tr>
<tr><td>James</td><td>William</td><td>80</td></tr>
<tr><td>Swati</td><td>Sironi</td><td>82</td></tr>
<tr><td>Chetna</td><td>Singh</td><td>72</td></tr>
</table>
```

2) CSS Border property

It is now recommended to use border property of CSS to specify border in table.

```
<style>
table, th, td {
  border: 1px solid black;
}
</style>
```

You can collapse all the borders in one border by border-collapse property. It will collapse the border into one.

```
<style>
table, th, td {
  border: 2px solid black;
  border-collapse: collapse;
}
</style>
```

HTML Table with cell padding
You can specify padding for table header and table data by two ways:

By cellpadding attribute of table in HTML

By padding property in CSS

The cellpadding attribute of HTML table tag is obselete now. It is recommended to use CSS. So let's see the code of CSS.

```
<style>
table, th, td {
  border: 1px solid pink;
  border-collapse: collapse;
}
th, td {
  padding: 10px;
}
</style>
```

HTML Table width:
We can specify the HTML table width using the CSS width property. It can be specify in pixels or percentage.

We can adjust our table width as per our requirement. Following is the example to display table with width.

```
table{
     width: 100%;
    }
```

Example:

```
<!DOCTYPE html>
<html>
<head>
    <title>table</title>
    <style>
        table{
            border-collapse: collapse;
            width: 100%;
        }
    th,td{
        border: 2px solid green;
        padding: 15px;
    }

    </style>
  </head>
<body>
  <table>
    <tr>
        <th>1 header</th>
        <th>1 header</th>
        <th>1 header</th>
    </tr>
    <tr>
```

```
        <td>1data</td>
        <td>1data</td>
        <td>1data</td>
    </tr>
    <tr>
        <td>2 data</td>
        <td>2 data</td>
        <td>2 data</td>
    </tr>
    <tr>
        <td>3 data</td>
        <td>3 data</td>
        <td>3 data</td>
    </tr>
</table>
</body>
</html>
```

HTML Table with colspan

If you want to make a cell span more than one column, you can use the colspan attribute.

It will divide one cell/row into multiple columns, and the number of columns depend on the value of colspan attribute.

Let's see the example that span two columns.

CSS code:

```
<style>
table, th, td {
  border: 1px solid black;
  border-collapse: collapse;
}
th, td {
  padding: 5px;
}
</style>
HTML code:

<table style="width:100%">
  <tr>
  <th>Name</th>
  <th colspan="2">Mobile No.</th>
  </tr>
  <tr>
  <td>Ajeet Maurya</td>
  <td>7503520801</td>
  <td>9555879135</td>
  </tr>
</table>
```

HTML Table with rowspan

If you want to make a cell span more than one row, you can use the rowspan attribute.

It will divide a cell into multiple rows. The number of divided rows will depend on rowspan values.

Let's see the example that span two rows.

CSS code:

```
<style>
table, th, td {
  border: 1px solid black;
  border-collapse: collapse;
}
th, td {
  padding: 10px;
}
</style>
```

HTML code:

```
<table>
<tr><th>Name</th><td>Ajeet Maurya</td></tr>
<tr><th rowspan="2">Mobile No.</th><td>7503520801</td></tr>
<tr><td>9555879135</td></tr>
</table>
```

HTML table with caption

HTML caption is diplayed above the table. It must be used after table tag only.

```
<table>
<caption>Student Records</caption>
<tr><th>First_Name</th><th>Last_Name</th><th>Marks</th></tr>
<tr><td>Vimal</td><td>Jaiswal</td><td>70</td></tr>
<tr><td>Mike</td><td>Warn</td><td>60</td></tr>
<tr><td>Shane</td><td>Warn</td><td>42</td></tr>
<tr><td>Jai</td><td>Malhotra</td><td>62</td></tr>
</table>
```

Styling HTML table even and odd cells

CSS code:

```
<style>
table, th, td {
  border: 1px solid black;
  border-collapse: collapse;
}
th, td {
  padding: 10px;
}
table#alter tr:nth-child(even) {
  background-color: #eee;
}
table#alter tr:nth-child(odd) {
  background-color: #fff;
}
table#alter th {
```

```
  color: white;
  background-color: gray;
}
</style>
```

NOTE: You can also create various types of tables using different CSS properties in your table.

HTML Lists

HTML Lists are used to specify lists of information. All lists may contain one or more list elements. There are three different types of HTML lists:

1. Ordered List or Numbered List (ol)
2. Unordered List or Bulleted List (ul)
3. Description List or Definition List (dl)

Note: We can create a list inside another list, which will be termed as nested List.

HTML Ordered List | HTML Numbered List

HTML Ordered List or Numbered List displays elements in numbered format. The HTML ol tag is used for ordered list. We can use ordered list to represent items either in numerical order format or alphabetical order format, or any format where an order is emphasized. There can be different types of numbered list:

- Numeric Number (1, 2, 3)
- Capital Roman Number (I II III)
- Small Romal Number (i ii iii)
- Capital Alphabet (A B C)
- Small Alphabet (a b c)

To represent different ordered lists, there are 5 types of attributes in <ol> tag.

Type	Description
Type "1"	This is the default type. In this type, the list items are numbered with numbers.
Type "I"	In this type, the list items are numbered with upper case roman numbers.
Type "i"	In this type, the list items are numbered with lower case roman numbers.
Type "A"	In this type, the list items are numbered with upper case letters.
Type "a"	In this type, the list items are numbered with lower case letters.

HTML Ordered List Example

Let's see the example of HTML ordered list that displays 4 topics in numbered list. Here we are not defining type="1" because it is the default type.

```
<ol>
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
```

ol type="I"
Let's see the example to display list in roman number uppercase.

```
<ol type="I">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
```

ol type="i"
Let's see the example to display list in roman number lowercase.

```
<ol type="i">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
```

ol type="A"
Let's see the example to display list in alphabet uppercase.

```
<ol type="A">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
```

ol type="a"
Let's see the example to display list in alphabet lowercase.

```
<ol type="a">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
```

start attribute
The start attribute is used with ol tag to specify from where to start the list items.

<ol type="1" start="5"> : It will show numeric values starting with "5".

<ol type="A" start="5"> : It will show capital alphabets starting with "E".

<ol type="a" start="5"> : It will show lower case alphabets starting with "e".

<ol type="I" start="5"> : It will show Roman upper case value starting with "V".

<ol type="i" start="5"> : It will show Roman lower case value starting with "v".

```
<ol type="i" start="5">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ol>
```

reversed Attribute:
This is a Boolean attribute of HTML <ol> tag, and it is new in HTML5 version. If you use the reversed attribute with

tag then it will numbered the list in descending order (7, 6, 5, 4.....1).

Example:

```
<ol reversed>
<li>HTML</li>
<li>Java</li>
<li>JavaScript</li>
<li>SQL</li>
 </ol>
```

HTML Unordered List | HTML Bulleted List

HTML Unordered List or Bulleted List displays elements in bulleted format . We can use unordered list where we do not need to display items in any particular order. The HTML ul tag is used for the unordered list. There can be 4 types of bulleted list:

- disc
- circle
- square
- none

To represent different ordered lists, there are 4 types of attributes in <ul> tag.

Type	Description
Type "disc"	This is the default style. In this style, the list items are marked with bullets.
Type "circle"	In this style, the list items are marked with circles.
Type "square"	In this style, the list items are marked with squares.
Type "none"	In this style, the list items are not marked .

HTML Unordered List Example

```
<ul>
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ul>
```

ul type="circle"

```
<ul type="circle">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
```

```
 <li>SQL</li>
</ul>
```

ul type="square"

```
<ul type="square">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ul>
```

ul type="none"

```
<ul type="none">
 <li>HTML</li>
 <li>Java</li>
 <li>JavaScript</li>
 <li>SQL</li>
</ul>
```

Note: The type attribute is not supported in HTML5, instead of type you can use CSS property of list-style-type. Following is the example to show the CSS property for ul tag.

```
<ul style="list-style-type: square;">
    <li>HTML</li>
    <li>Java</li>
    <li>JavaScript</li>
    <li>SQL</li>
  </ul>
```

Code:

```
<!DOCTYPE html>
<html>
 <head>
  </head>
 <body>
 <h2>The type attribute with CSS property</h2>
   <ul style="list-style-type: square;">
    <li>HTML</li>
     <li>Java</li>
           <li>JavaScript</li>
           <li>SQL</li>
    </ul>
 </body>
</html>
```

HTML Description List or Definition List

HTML Description list is also a list style which is supported by HTML and XHTML. It is also known as definition list where entries are listed like a dictionary or encyclopedia.

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).
<dl>
  <dt>Aries</dt>
  <dd>-One of the 12 horoscope sign.</dd>
  <dt>Bingo</dt>
  <dd>-One of my evening snacks</dd>
 <dt>Leo</dt>
 <dd>-It is also an one of the 12 horoscope sign.</dd>
  <dt>Oracle</dt>
  <dd>-It is a multinational technology corporation.</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.

Code:

```
<!DOCTYPE html>
<html>
<head>
    <title>Nested list</title>
</head>
<body>
    <p>List of Indian States with thier capital</p>
<ol>
    <li>Delhi
        <ul>
            <li>NewDelhi</li>
        </ul>
    </li>
    <li>Haryana
        <ul>
            <li>Chandigarh</li>
        </ul>
    </li>
    <li>Gujarat
        <ul>
            <li>Gandhinagar</li>
        </ul>
    </li>
    <li>Rajasthan
        <ul>
            <li>Jaipur</li>
        </ul>
    </li>
    <li>Maharashtra
```

```
        <ul>
            <li>Mumbai</li>
        </ul>
    </li>
    <li>Uttarpradesh
        <ul>
            <li>Lucknow</li></ul>
    </li>
</ol>
</body>
</html>
```

HTML Form

An HTML form is a section of a document which contains controls such as text fields, password fields, checkboxes, radio buttons, submit button, menus etc.

An HTML form facilitates the user to enter data that is to be sent to the server for processing such as name, email address, password, phone number, etc. .

Why use HTML Form

HTML forms are required if you want to collect some data from of the site visitor.

For example: If a user want to purchase some items on internet, he/she must fill the form such as shipping address and credit/debit card details so that item can be sent to the given address.

HTML Form Syntax

```
<form action="server url" method="get|post">

  //input controls e.g. textfield, textarea, radiobutton, button

</form>
```

HTML Form Tags

Let's see the list of HTML 5 form tags.

Tag	Description
<form>	It defines an HTML form to enter inputs by the used side.
<input>	It defines an input control.
<textarea>	It defines a multi-line input control.
<label>	It defines a label for an input element.
<fieldset>	It groups the related element in a form.
<legend>	It defines a caption for a <fieldset> element.
<select>	It defines a drop-down list.
<optgroup>	It defines a group of related options in a drop-down list.
<option>	It defines an option in a drop-down list.
<button>	It defines a clickable button.

HTML 5 Form Tags
Let's see the list of HTML 5 form tags.

Tag	Description
<datalist>	It specifies a list of pre-defined options for input control.
<keygen>	It defines a key-pair generator field for forms.
<output>	It defines the result of a calculation.

HTML <form> element
The HTML <form> element provide a document section to take input from user. It provides various interactive controls for submitting information to web server such as text field, text area, password field, etc.

Note: The <form> element does not itself create a form but it is container to contain all required form elements, such as <input>, <label>, etc.

Syntax:

```
<form>
//Form elements
</form>
```

HTML <input> element
The HTML <input> element is fundamental form element. It is used to create form fields, to take input from user. We can apply different input filed to gather different information form user. Following is the example to show the simple text input.

Example:

```
<body>
  <form>
     Enter your name  <br>
    <input type="text" name="username">
  </form>
</body>
```

HTML TextField Control

The type="text" attribute of input tag creates textfield control also known as single line textfield control. The name attribute is optional, but it is required for the server side component such as JSP, ASP, PHP etc.

```
<form>
    First Name: <input type="text" name="firstname"/> <br/>
    Last Name:  <input type="text" name="lastname"/> <br/>
 </form>
```

Note: If you will omit 'name' attribute then the text filed input will not be submitted to server.

HTML <textarea> tag in form

The <textarea> tag in HTML is used to insert multiple-line text in a form. The size of <textarea> can be specify either using "rows" or "cols" attribute or by CSS.

Example:

```
<!DOCTYPE html>
<html>
<head>
    <title>Form in HTML</title>
</head>
<body>
  <form>
        Enter your address:<br>
      <textarea rows="2" cols="20"></textarea>
  </form>
</body>
</html>
```

Label Tag in Form
It is considered better to have label in form. As it makes the code parser/browser/user friendly.

If you click on the label tag, it will focus on the text control. To do so, you need to have for attribute in label tag that must be same as id attribute of input tag.

NOTE: It is good to use <label> tag with form, although it is optional but if you will use it, then it will provide a focus when you tap or click on label tag. It is more worthy with touchscreens.

```
<form>
    <label for="firstname">First Name: </label> <br/>
              <input type="text" id="firstname"
name="firstname"/> <br/>
   <label for="lastname">Last Name: </label>
              <input type="text" id="lastname"
name="lastname"/> <br/>
 </form>
```

HTML Password Field Control
The password is not visible to the user in password field control.

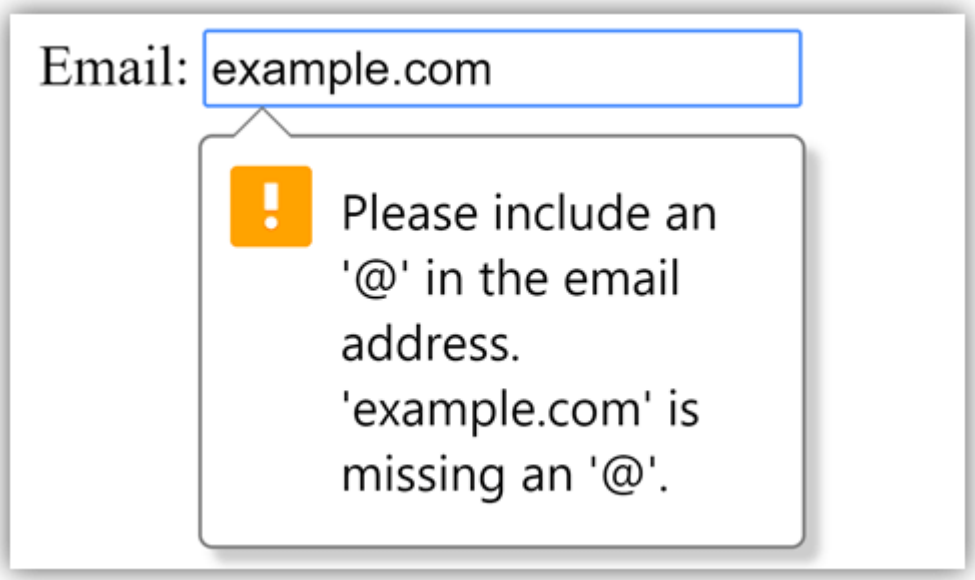
```
<form>
    <label for="password">Password: </label>
              <input type="password" id="password"
name="password"/> <br/>
</form>
```

HTML 5 Email Field Control

The email field in new in HTML 5. It validates the text for correct email address. You must use @ and . in this field.

```
<form>
    <label for="email">Email: </label>
            <input type="email" id="email" name="email"/>
<br/>
</form>
```

Note: If we will not enter the correct email, it will display error like:



Radio Button Control

The radio button is used to select one option from multiple options. It is used for selection of gender, quiz questions etc.

If you use one name for all the radio buttons, only one radio button can be selected at a time.

Using radio buttons for multiple options, you can only choose a single option at a time.

```
<form>
    <label for="gender">Gender: </label>
                <input type="radio" id="gender" name="gender"
value="male"/>Male
                <input type="radio" id="gender" name="gender"
value="female"/>Female <br/>
</form>
```

Checkbox Control

The checkbox control is used to check multiple options from given checkboxes.

```
<form>
Hobby:<br>
                <input type="checkbox" id="cricket"
name="cricket" value="cricket"/>
                   <label for="cricket">Cricket</label> <br>
                <input type="checkbox" id="football"
name="football" value="football"/>
                   <label for="football">Football</label> <br>
                <input type="checkbox" id="hockey" name="hockey"
value="hockey"/>
                   <label for="hockey">Hockey</label>
</form>
```

Note: These are similar to radio button except it can choose multiple options at a time and radio button can select one button at a time, and its display.

Submit button control

HTML <input type="submit"> are used to add a submit button on web page. When user clicks on submit button, then form get submit to the server.

Syntax:

```
<input type="submit" value="submit">
```

The type = submit , specifying that it is a submit button

The value attribute can be anything which we write on button on web page.

The name attribute can be omit here.

Example:

```
<form>
    <label for="name">Enter name</label><br>
    <input type="text" id="name" name="name"><br>
    <label for="pass">Enter Password</label><br>
    <input type="Password" id="pass" name="pass"><br>
    <input type="submit" value="submit">
</form>
```

HTML <fieldset> element:
The <fieldset> element in HTML is used to group the related information of a form. This element is used with <legend> element which provide caption for the grouped elements.

Example:

```
 <form>
     <fieldset>
      <legend>User Information:</legend>
    <label for="name">Enter name</label><br>
<input type="text" id="name" name="name"><br>
<label for="pass">Enter Password</label><br>
<input type="Password" id="pass" name="pass"><br>
<input type="submit" value="submit">
</fieldset>
lt;/form>
```

HTML Form Example

Following is the example for a simple form of registration.

```
<!DOCTYPE html>
 <html>
 <head>
  <title>Form in HTML</title>
</head>
 <body>
     <h2>Registration form</h2>
    <form>
     <fieldset>
        <legend>User personal information</legend>
        <label>Enter your full name</label><br>
        <input type="text" name="name"><br>
         <label>Enter your email</label><br>
         <input type="email" name="email"><br>
         <label>Enter your password</label><br>
         <input type="password" name="pass"><br>
         <label>confirm your password</label><br>
         <input type="password" name="pass"><br>
         <br><label>Enter your gender</label><br>
         <input type="radio" id="gender" name="gender"
value="male"/>Male  <br>
         <input type="radio" id="gender" name="gender"
value="female"/>Female <br/>
         <input type="radio" id="gender" name="gender"
value="others"/>others <br/>
          <br>Enter your Address:<br>
         <textarea></textarea><br>
         <input type="submit" value="sign-up">
```

```
      </fieldset>
   </form>
  </body>
</html>
```

HTML Form Input Types

In HTML <input type=" "> is an important element of HTML form. The "type" attribute of input element can be various types, which defines information field. Such as <input type="text" name="name"> gives a text box.

Following is a list of all types of <input> element of HTML.

type=" "	Description
text	Defines a one-line text input field
password	Defines a one-line password input field
submit	Defines a submit button to submit the form to server
reset	Defines a reset button to reset all values in the form.
radio	Defines a radio button which allows select one option.
checkbox	Defines checkboxes which allow select multiple options form.
button	Defines a simple push button, which can be programmed to perform a task on an event.
file	Defines to select the file from device storage.
image	Defines a graphical submit button.

HTML5 added new types on <input> element. Following is the list of types of elements of HTML5

type=" "	Description
color	Defines an input field with a specific color.
date	Defines an input field for selection of date.
datetime-local	Defines an input field for entering a date without time zone.
email	Defines an input field for entering an email address.
month	Defines a control with month and year, without time zone.
number	Defines an input field to enter a number.
url	Defines a field for entering URL
week	Defines a field to enter the date with week-year, without time zone.
search	Defines a single line text field for entering a search string.
tel	Defines an input field for entering the telephone number.

Following is the description about types of <input> element with examples.

1. <input type="text">:

<input> element of type "text" are used to define a single-line input text field.

Example:

```
<form>
    <label>Enter first name</label><br>
    <input type="text" name="firstname"><br>
    <label>Enter last name</label><br>
    <input type="text" name="lastname"><br>
    <p><strong>Note:</strong>The default maximum cahracter lenght is 20.</p>
</form>
```

2. <input type="password">:

The <input> element of type "password" allow a user to enter the password securely in a webpage. The entered text in password filed converted into "*" or ".", so that it cannot be read by another user.

Example:

```
<form>
    <label>Enter User name</label><br>
    <input type="text" name="firstname"><br>
    <label>Enter Password</label><br>
    <input type="Password" name="password"><br>
    <br><input type="submit" value="submit">
</form>
```

3. <input type="submit">:
The <input> element of type "submit" defines a submit button to submit the form to the server when the "click" event occurs.

Example:

```
<form action="https://www.javatpoint.com/html-tutorial">
    <label>Enter User name</label><br>
    <input type="text" name="firstname"><br>
    <label>Enter Password</label><br>
    <input type="Password" name="password"><br>
    <br><input type="submit" value="submit">
</form>
```

4. <input type="reset">:
The <input> type "reset" is also defined as a button but when the user performs a click event, it by default reset the all inputted values.

Example:

```
<form>
    <label>User id: </label>
     <input type="text" name="user-id" value="user">
              <label>Password: </label>
     <input type="password" name="pass" value="pass"><br><br>
     <input type="submit" value="login">
      <input type="reset" value="Reset">
</form>
```

5. <input type="radio">:
The <input> type "radio" defines the radio buttons, which allow choosing an option between a set of related options. At a time only one radio button option can be selected at a time.

Example:

```
<form>
  <p>Kindly Select your favorite color</p>
  <input type="radio" name="color" value="red"> Red <br>
  <input type="radio" name="color" value="blue"> blue <br>
  <input type="radio" name="color" value="green">green <br>
  <input type="radio" name="color" value="pink">pink <br>
  <input type="submit" value="submit">
</form>
```

6. <input type="checkbox">:
The <input> type "checkbox" are displayed as square boxes which can be checked or unchecked to select the choices from the given options.

Note: The "radio" buttons are similar to checkboxes, but there is an important difference between both types: radio buttons allow the user to select only one option at a time, whereas checkbox allows a user to select zero to multiple options at a time.

Example:

```
<form>
      <label>Enter your Name:</label>
      <input type="text" name="name">
      <p>Kindly Select your favourite sports</p>
      <input type="checkbox" name="sport1"
value="cricket">Cricket<br>
      <input type="checkbox" name="sport2"
value="tennis">Tennis<br>
      <input type="checkbox" name="sport3"
value="football">Football<br>
      <input type="checkbox" name="sport4"
value="baseball">Baseball<br>
      <input type="checkbox" name="sport5"
value="badminton">Badminton<br><br>
      <input type="submit" value="submit">
  </form>
```

7. <input type="button">:

The <input> type "button" defines a simple push button, which can be programmed to control a functionally on any event such as, click event.

Note: It mainly works with JavaScript.

Example:

```
<form>
     <input type="button" value="Clcik me "
onclick="alert('you are learning HTML')">
</form>
```

Note: In the above example we have used the "alert" of JS, which you will learn in our JS tutorial. It is used to show a pop window.

8. <input type="file">:
The <input> element with type "file" is used to select one or more files from user device storage. Once you select the file, and after submission, this file can be uploaded to the server with the help of JS code and file API.

Example:

```
<form>
     <label>Select file to upload:</label>
     <input type="file" name="newfile">
     <input type="submit" value="submit">
</form>
```

9. <input type="image">:
The <input> type "image" is used to represent a submit button in the form of image.

Example:

```
<!DOCTYPE html>
<html>
<body>
<h2>Input "image" type.</h2>
<p>We can create an image as submit button</p>
  <form>
    <label>User id:</label><br>
     <input type="text" name="name"><br><br>
     <input type="image" alt="Submit" src="login.png"
width="100px">
  </form>

 </body>
</html>
```

HTML5 newly added <input> types element

1. <input type="color">:
The <input> type "color" is used to define an input field which contains a colour. It allows a user to specify the colour by the visual colour interface on a browser.

Note: The "color" type only supports color value in hexadecimal format, and the default value is #000000 (black).

Example:

```
<form>
    Pick your Favorite color: <br><br>
    <input type="color" name="upclick" value="#a52a2a">
Upclick<br><br>
    <input type="color" name="downclick" value="#f5f5dc">
Downclick
</form>
```

2. <input type="date">:
The <input> element of type "date" generates an input field, which allows a user to input the date in a given format. A user can enter the date by text field or by date picker interface.

Example:

```
<form>
    Select Start and End Date: <br><br>
      <input type="date" name="Startdate"> Start date:<br><br>
      <input type="date" name="Enddate"> End date:<br><br>
     <input type="submit">
</form>
```

3. <input type="datetime-local">:

The <input> element of type "datetime-local" creates input filed which allow a user to select the date as well as local time in the hour and minute without time zone information.

Example:

```
<form>
    <label>
      Select the meeting schedule: <br><br>
      Select date & time: <input type="datetime-local" name="meetingdate"> <br><br>
    </label>
      <input type="submit">
</form>
```

4. <input type="email">:

The <input> type "email" creates an input filed which allow a user to enter the e-mail address with pattern validation. The multiple attributes allow a user to enter more than one email address.

Example:

```
<form>
         <label><b>Enter your Email-address</b></label>
        <input type="email" name="email" required>
        <input type="submit">
         <p><strong>Note:</strong>User can also enter multiple email addresses separating by comma or whitespace as following: </p>
         <label><b>Enter multiple Email-addresses</b></label>
         <input type="email" name="email"  multiple>
        <input type="submit">
</form>
```

5. <input type="month">:
The <input> type "month" creates an input field which allows a user to easily enter month and year in the format of "MM, YYYY" where MM defines month value, and YYYY defines the year value. New

Example:

```
<form>
    <label>Enter your Birth Month-year: </label>
    <input type="month" name="newMonth">
    <input type="submit">
</form>
```

6. <input type="number">:
The <input> element type number creates input filed which allows a user to enter the numeric value. You can also restrict to enter a minimum and maximum value using min and max attribute.

Example:

```
<form>
    <label>Enter your age: </label>
    <input type="number" name="num" min="50" max="80">
     <input type="submit">
</form>
```

7. <input type="url">:
The <input> element of type "url" creates an input filed which enables user to enter the URL.

Example:

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

8. <input type="week">:

The <input> type week creates an input field which allows a user to select a week and year form the drop-down calendar without time zone.

Example:

```
<form>
    <label><b>Select your best week of
year:</b></label><br><br>
    <input type="week" name="bestweek">
    <input type="submit" value="Send data">
 </form>
```

9. <input type="search">:

The <input> type "search" creates an input filed which allows a user to enter a search string. These are functionally symmetrical to the text input type, but may be styled differently.

Example:

```
<form>
    <label>Search here:</label>
    <input type="search" name="q">
    <input type="submit" value="search">
</form>
```

10. <input type="tel">:

The <input> element of type ?tel? creates an input filed to enter the telephone number. The "tel" type does not have default validation such as email, because telephone number pattern can vary worldwide.

Example:

```
<form>
      <label><b>Enter your Telephone Number(in format of xxx-xxx-xxxx):</b></label>
      <input type="tel" name="telephone" pattern="[0-9]{3}-[0-9]{3}-[0-9]{4}" required>
      <input type="submit"><br><br>
   </form>
```

HTML form Attribute

HTML <form> element attributes

In HTML there are various attributes available for <form> element which are given below:

HTML action attribute

The action attribute of <form> element defines the process to be performed on form when form is submitted, or it is a URI to process the form information.

The action attribute value defines the web page where information proceed. It can be .php, .jsp, .asp, etc. or any URL where you want to process your form.

Note: If action attribute value is blank then form will be processed to the same page.

Example:

```
<form action="action.html" method="post">
<label>User Name:</label><br>
<input type="text" name="name"><br><br>
<label>User Password</label><br>
<input type="password" name="pass"><br><br>
 <input type="submit">
   </form>
```

HTML method attribute

The method attribute defines the HTTP method which browser used to submit the form. The possible values of method attribute can be:

- **post:** We can use the post value of method attribute when we want to process the sensitive data as it does not display the submitted data in URL.

Example:

```
<form action="action.html" method="post">
```

- **get:** The get value of method attribute is default value while submitting the form. But this is not secure as it displays data in URL after submitting the form.

Example:

```
<form action="action.html" method="get">
```

When submitting the data, it will display the entered data in the form of:

```
file:///D:/HTML/action.html?name=JavaTPoint&pass=123
```

HTML target attribute

The target attribute defines where to open the response after submitting the form. The following are the keywords used with the target attribute.

- _self: If we use _self as an attribute value, then the response will display in current page only.

Example:

```
<form action="action.html" method="get" target="_self">
```

- _blank: If we use _blank as an attribute it will load the response in a new page.

Example:

```
<form action="action.html" method="get" target="_blank">
```

HTML autocomplete attribute

The HTML autocomplete attribute is a newly added attribute of HTML5 which enables an input field to complete automatically. It can have two values "on" and "off" which enables autocomplete either ON or OFF. The default value of autocomplete attribute is "on".

Example:

```
<form action="action.html" method="get" autocomplete="on">
```

Example:

```
<form action="action.html" method="get" autocomplete="off">
```

Note: it can be used with <form> element and <input> element both.

HTML enctype attribute

The HTML enctype attribute defines the encoding type of form-content while submitting the form to the server. The possible values of enctype can be:

- **application/x-www-form-urlencoded**: It is default encoding type if the enctype attribute is not included in the form. All characters are encoded before submitting the form.

Example:

```
<form action="action.html" method="post"
enctype="application/x-www-form-urlencoded" >
```

- **multipart/form-data:** It does not encode any character. It is used when our form contains file-upload controls.

Example:

```
<form action="action.html" method="post"
enctype="multipart/form-data">
```

- **text/plain (HTML5):** In this encoding type only space are encoded into + symbol and no any other special character encoded.

Example:

```
<form action="action.html" method="post" enctype="text/plain"
>
```

HTML novalidate attribute HTML5

The novalidate attribute is newly added Boolean attribute of HTML5. If we apply this attribute in form then it does not perform any type of validation and submit the form.

Example:

```
<form action = "action.html" method = "get" novalidate>
```

HTML <input> element attribute
HTML name attribute

The HTML name attribute defines the name of an input element. The name and value attribute are included in HTTP request when we submit the form.

Note: One should not omit the name attribute as when we submit the form the HTTP request includes both name-value pair and if name is not available it will not process that input field.

Example:

```
<form action = "action.html" method = "get">
        Enter name:<br><input type="name" name="uname"><br>
        Enter age:<br><input type="number" name="age"><br>
        Enter email:<br><input type="email"><br>
        <input type="submit" value="Submit">
    </form>
```

HTML value attribute

The HTML value attribute defines the initial value or default value of an input field.

Example:

```
<form>
        <label>Enter your Name</label><br>
        <input type="text" name="uname" value="Enter
Name"><br><br>
        <label>Enter your Email-address</label><br>
        <input type="text" name="uname" value="Enter
email"><br><br>
          <label>Enter your password</label><br>
        <input type="password" name="pass" value=""><br><br>
        <input type="submit" value="login">
   </form>
```

HTML required attribute HTML5

HTML required is a Boolean attribute which specifies that user must fill that filed before submitting the form.

Example:

```
<form>
        <label>Enter your Email-address</label><br>
        <input type="text" name="uname" required><br><br>
         <label>Enter your password</label><br>
        <input type="password" name="pass"><br><br>
        <input type="submit" value="login">
   </form>
```

HTML autofocus attribute HTML5

The autofocus is a Boolean attribute which enables a field automatically focused when a webpage loads.

Example:

```
<form>
        <label>Enter your Email-address</label><br>
        <input type="text" name="uname" autofocus><br><br>
         <label>Enter your password</label><br>
        <input type="password" name="pass"><br><br>
        <input type="submit" value="login">
   </form>
```

HTML placeholder attribute HTML5

The placeholder attribute specifies a text within an input field which informs the user about the expected input of that filed.

The placeholder attribute can be used with text, password, email, and URL values.

When the user enters the value, the placeholder will be automatically removed.

Example:

```
<form>
        <label>Enter your name</label><br>
        <input type="text" name="uname" placeholder="Your
name"><br><br>
            <label>Enter your Email address</label><br>
        <input type="email" name="email"
placeholder="example@gmail.com"><br><br>
            <label>Enter your password</label><br>
        <input type="password" name="pass" placeholder="your
password"><br><br>
        <input type="submit" value="login">
    </form>
```

HTML disabled attribute
The HTML disabled attribute when applied then it disable that input field. The disabled field does not allow the user to interact with that field.

The disabled input filed does not receive click events, and these input value will not be sent to the server when submitting the form.

Example:

```
<input type="text" name="uname" disabled><br><br>
```

HTML size attribute
The size attribute controls the size of the input field in typed characters.

Example:

```
<label>Account holder name</label><br>
        <input type="text" name="uname" size="40"
required><br><br>
        <label>Account number</label><br>
        <input type="text" name="an" size="30"
required><br><br>
        <label>CVV</label><br>
        <input type="text" name="cvv"  size="1"
required><br><br>
```

HTML form attribute
HTML form attribute allows a user to specify an input filed outside the form but remains the part of the parent form.

Example:

```
User email: <br><input type="email" name="email"
form="fcontrol"  required><br>
         <input type="submit" form="fcontrol">
```