



HTML

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What is HTML?

- HTML is a **markup** language for **describing** web documents (web pages).
- HTML stands for Hyper Text Markup Language
- A markup language is a set of markup tags
- HTML documents are described by HTML tags
- Each HTML tag describes different document content
- First developed by Tim Berners-Lee in 1990





```
<!DOCTYPE HTML>
<html>
    <head>
        <title>My First HTML Page</title>
        </head>
        <body>
            This is some text...
        </body>
        </html>
```

The **DOCTYPE** declaration defines the document type to be HTML (It is not HTML tag)
The text between <html> and </html> describes an HTML document
The text between <head> and </head> provides information about the document
The text between <title> and </title> provides a title for the document
The text between <body> and </body> describes the visible page content
The text between <hl> and </hl> describes a heading
The text between and describes a paragraph



HTML Tags

- HTML tags are **keywords** with in **angle brackets**:
 - <tagname>webpage body</tagname>
- HTML tags normally come in pairs like and
- The first tag in a pair is the start tag/opening tag, the second tag is the end tag/closing tag
- The end tag is written like the start tag, but with a **slash** before the tag name



- The browser does not display the HTML tags, but uses them to determine how to display the document
- The <!DOCTYPE> declaration helps the browser to display a web page correctly.
- The doctype declaration is not case sensitive. All cases are acceptable.

 Commonly Used

<!DOCTYPE html>
<!DOCTYPE HTML>
<!doctype html>
<!Doctype Html>

In HTML5, only <!DOCTYPE html> declaration is available





Following editors can be used.

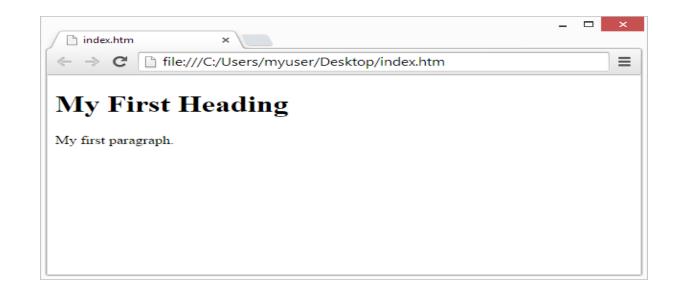
- Adobe Dreamweaver
- 2. Microsoft Expression Web
- 3. CoffeeCup HTML Editor
- 4. Edit++
- 5. Notepad etc.,



Steps to create webpage

- Open Notepad
- II. Write Some HTML

```
<!DOCTYPE HTML>
<html>
<head>
<title>index<title>
</head>
<hl>My First Heading</hl>
My first paragraph.
</html>
```



- III. Save the document as .htm or .html
- IV. Open .htm/.html using web browser.



```
<!DOCTYPE HTML>
<html>
<title>My First HTML Page</title>
<body>
This is some text...
</body>
</html>
```

All HTML documents must start with a type declaration: <!DOCTYPE html>

The HTML document itself begins with <html> and ends with </html> The visible part of the HTML document is between <body> and </body>



HTML Headings

HTML headings are defined with the <h1> to <h6> tags

```
<!DOCTYPE html>
<html>
<body>
<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
<h4>This is heading 4</h4>
<h5>This is heading 5</h5>
<h6>This is heading 6</h6>
</body>
</html>
```

This is heading 1

This is heading 2

This is heading 3

This is heading 4

This is heading 5

This is heading 6



• HTML Paragraphs

• HTML paragraphs are defined with the tag

```
<!DOCTYPE html>
<html>
<body>
This is a paragraph.
<P>This
                         is a paragraph.
<P>This is a
                 paragraph.</P>
<P>This is a paragraph.</>
This is a paragraph.
</body>
</html>
```

This is a paragraph. This is a paragraph.



- HTML element (preformatted text)
 - Fixed width font and for preserving both spaces and line breaks
- HTML Links
 - HTML links are defined with the **<a>** tag

```
<!DOCTYPE html>
<html>
<body>
<a href="http://www.cdac.in">This is C-DAC Link</a>
</body>
</html>

D:\DAC\demohtml.html

D:\DAC\demohtml.html
```

This is C-DAC Link



- HTML Images
 - HTML images are defined with the tag
 - The source file (src), alternative text (alt), and size (width and height) are provided as attributes

```
<!DOCTYPE html>
<html>
<body>
<img src="cdac.jpg" alt="cdac.in" width="104" height="142">
</body>
</html>
```

• The **alt** attribute specifies an alternative text to be used, when an HTML element cannot be displayed.

HTML Elements



- HTML documents are made up by HTML elements.
- HTML elements are written with a start tag, with an end tag,
 with the content in between

Start tag	Element Content	End tag
<h =""></h>	First Heading	
>	First Para	
<h2></h2>	Second Heading	

Some HTML elements does not have end tag





• Elements (tags) are nested one inside another:

```
<html> <head></head> <body></body> </html>
```

- Empty HTML Elements
 - HTML elements with no content are called empty elements.
 - o
is an empty element without a closing tag.
 - HTML5 does not require empty elements to be closed. But if you want stricter validation, or you need to make your document readable by XML parsers, you should close all HTML elements

HTML Attributes



- Attributes provide additional information about HTML elements/tags.
- Attributes are always specified in the start tag
- Attributes come in name/value pairs like: name="value"

Example for attributes

```
<img src="logo.jpg" alt="logo" height=10px width=10px />
```

- src, alt, height and width are attributes of element
- one centimeter = 37.795276 pixel

HTML Attributes



The title Attribute

Centre for Development of Advanced Computing (C-DAC) is the premier R&D
organization of the Department of Electronics and Information Technology (Deity),
Ministry of



 When you move the mouse over the element, the title will be displayed as a tooltip.

The href Attribute

• HTML links are defined with the <a> tag. The link address is specified in the href attribute





<!—Any text here-->

Defines a comment

```
<!--This is a comment. Comments are not displayed in the browser--> This is a paragraph.
```

<!DOCTYPE>

Defines the document type

```
<!DOCTYPE html>
<html>
<head>
<title>Title of the document</title>
</head>
<body>
The content of the document.....
</body>
</html>
```





<a>>

Defines a hyperlink

Visit CDAC site!

<abbr>

Defines an abbreviation or an acronym

The <abbr title="Centre for Development of Advanced Computing">C-DAC</abbr> was founded in 1988.

<address>

Defines contact information for the author/owner of a document

```
<address>
Written by <a href="mailto:webmaster@example.com">Jon Doe</a>.<br>
Visit us at:<br>
Example.com<br>
Box 564, Disneyland<br>
USA
</address>
```



HTML Headings

- Headings are defined with the <hl> to <h6> tags.
 - <h | > defines the most important heading. <h6> defines the least important heading.

```
<h1>This is a heading</h1><h2>This is a heading</h2><h3>This is a heading</h3>
```

HTML Horizontal Rules

```
This is a paragraph.
<hr>
This is a paragraph.
<hr>
This is a paragraph.
<hr>
This is a paragraph.
```

HTML Paragraphs



- HTML documents are divided into paragraphs.
- The HTML element defines a paragraph.
- HTML Line Breaks

```
This is<br/>para<br/>spraph with line breaks
```

The HTML Element

```
      My Bonnie lies over the ocean.

      My Bonnie lies over the sea.

      My Bonnie lies over the ocean.

      Oh, bring back my Bonnie to me.
```

HTML Styles



- Setting the style of an HTML element, can be done with the style attribute.
- Every HTML element has default style (background color is white and text color is black)
 style="property:value;"

```
<body style="background-color:lightgrey"> </body>

<h1 style="color:blue">This is a heading</h1>

<h1 style="text-align:center">Centered Heading</h1>

<h1 style="font-family:verdana">This is a heading</h1>
This is a paragraph.
<h1 style="font-size:300%">This is a heading</h1>
<h1 style="color:blue;text-align:center">This is a heading</h1>
<h1 style="color:blue;text-align:center">This is a heading</h1></pr>
```

HTML Formatting Elements



Tag	Description
<u></u>	Defines bold text
<u></u>	Defines emphasized text
<u><i></i></u>	Defines italic text
<small></small>	Defines smaller text
	Defines important text
<u></u>	Defines subscripted text
<u></u>	Defines superscripted text
<u><ins></ins></u>	Defines inserted text
	Defines deleted text
<mark></mark>	Defines marked/highlighted text

HTML Quotation and Citation Elements CDCC

- The HTML <q> element defines a short quotation.
- HTML <blockquote> for Long Quotations
- HTML <abbr> for Abbreviations
- HTML <address> for Contact Information
- The HTML <cite> element defines the title of a work.
- The HTML <bdo> element defines bi-directional override.



HTML Links

- Links are found in nearly all web pages.
- HTML links are called Hyperlinks
 - A hyperlink is a text or an image you can click on, and jump to another document.
- HTML Links Syntax

```
<a href="url">link text</a>
```

```
<a href="http://www.cdac.in">Visit our C-DAC Site</a>
```

Image link





HTML Links (2)

- HTML Links Colors
- When you move the mouse over a link, two things will normally happen:
 - The mouse arrow will turn into a little hand
 - The color of the link element will change
- By default, a link will appear like this (in all browsers):
 - An unvisited link is underlined and blue
 - A visited link is underlined and purple
 - An active link is underlined and red

HTML Links (3)



Example of Links

- HTML Links The target Attribute
 - The target attribute specifies where to open the linked document.

```
<a href="http://www.google.com/" target="_blank">Visit google Site!</a>
```



HTML Links (4)

Target Attribute and its values

Target Value	Description	
_blank	Opens the linked document in a new window or tab	
_self	Opens the linked document in the same frame as it was clicked	
_parent	Opens the linked document in the parent frame	

- HTML Links Image as Link
 - Images are used as links

```
<a href="default.asp">
     <img src="smiley.gif" alt="HTML" style="width:42px;height:42px;border:0">
     </a>
```



HTML Links (5)

- HTML Links Create a Bookmark
 - HTML bookmarks are used to allow readers to jump to specific parts of a Web page.
 - To make it, you must first create the bookmark, and then add a link to it.
 - When the link is clicked, the page will scroll to the location with the bookmark.

```
<h2 id="tips">Useful Tips Section</h2>
```

Bookmark is created with id attributre

Visit the Useful Tips Section

HTML Images



- In HTML images are defined with the tag
- The tag is empty, it contains attributes only, and does not have a closing tag.
- The src attribute defines the url (web address or path) of the image

```
<img src="url" alt="some_text" style="width:128px; height:128px">
```

• The alt attribute specifies an alternate text for the image, if it cannot be displayed.

HTML Image attributes



Property	Value	Description
align	top, bottom, middle, left, right	Specifies the alignment of an image according to surrounding elements
alt	text	Specifies an alternate text for an image
border	pixels	Specifies the width of the border around an image
height	pixels	Specifies the height of an image
hspace	pixels	Specifies the whitespace on left and right side of an image
src	URL	Specifies the URL of an image
usemap	#mapname	Specifies an image as a client-side image-map
vspace	pixels	Specifies the whitespace on top and bottom of an image
width	pixels	Specifies the width of an image

HTML Image Maps



- An image-map is an image with clickable areas.
- The image-map is created by using <map> tag.
- The name attribute of the <map> tag is associated with the 's usemap attribute and creates a relationship between the image and the map.
- The <map> tag contains a number of <area> tags, that defines the clickable areas in the image-map

₹ (

HTML Image attributes

```
This is some text. <img src="smiley.gif" alt="Smiley</p>
face" align="left|right|middle|top|bottom"> This is some text.</p
 <img src="smiley.gif" alt="Smiley face" border="5">
<img src="smiley.gif" alt="Smiley" height="42" width="42">
<img src="smiley.gif" alt="Smiley face" hspace="20">
<img src="planets.gif" width="145" height="126" alt="Planets" usemap="#planetmap">
<img src="smiley.gif" alt="Smiley face" vspace="50">
<img src="smiley.gif" alt="Smiley" style="float:right;width:42px;height:42px;">
```





Number	First Name	Last Name	Points
I	Eve	Jackson	94
2	John	Doe	80

```
            Eve
```

Tables are defined with the tag.
Tables are divided into table rows with
the tag.

Table rows are divided into **table data** with the tag.

A table row can also be divided into **table headings** with the **>** tag.

HTML Table attributes



Property	Value	Description
align	left, center, right	Specifies the alignment of a table according to surrounding text
bgcolor	rgb(x,x,x), colorname	Specifies the background color for a table
border	1,0	Specifies whether the table cells should have borders or not
cellpadding	pixels	Specifies the space between the cell wall and the cell content
cellspacing	pixels	Specifies the space between cells
frame	void, above, below hsides, lhs, rhs, vsides, box, border	Specifies which parts of the outside borders that should be visible
rules	None, groups, rows cols, all	Specifies which parts of the inside borders that should be visible
width	Pixels ,%	Specifies the width of a table

HTML Table attributes



```
Month
Savings
```

HTML Lists



- HTML can have Unordered lists, Ordered lists, or Description lists
- An unordered list starts with the
 tag. Each list item starts with the tag.

```
CoffeeTeaMilk
```

Output Coffee Tea Milk

HTML Ordered Lists



An ordered list starts with the
 tag. Each list item starts with the tag.

```
    <oli>Coffee
    Tea
    Milk
```

```
Type
```





Property	Value	Description
compact	compact	Specifies that the list should render smaller than normal
reversed (HTML 5)	reversed	Specifies that the list order should be descending (9,8,7)
start	number	Specifies the start value of an ordered list
type	I, A, a, I, i	Specifies the kind of marker to use in the list

compact>

Reserved When present, it specifies that the list order should be descending (9,8,7...), instead of ascending (1, 2,

3...).

```
    Coffee
    Tea
    Milk
    Juice
```

HTML Description Lists



- The <dl> tag defines a description list.
- The <dt> tag defines the term (name), and the <dd> tag defines the data (description).

A Description List

```
Coffee
- black hot drink
Milk
- white cold drink
```





• List can be nested (lists inside lists).

We can display list horizontally also using CSS



- HTML Forms are required to collect some data from the site visitor.
- For example
 - Uploading personnel, educational and professional details for job application
 - During user registration you would like to collect information such as name, email address, credit card, etc.



- A form will take input from the site visitor and then will post it to a back-end application such as CGI, Perl Script or PHP script etc.
- The back-end application will perform required processing on the passed data based on defined business logic inside the application.



General syntax in HTML:

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

- HTML forms contain form elements.
 - Form elements are having different types of input elements
 - Checkboxes
 - Radio buttons
 - Submit buttons and more.



- The <input> Element
 - The **<input>** element is one of the most important **form** elements.

Input's Type Attribute	Description
text	Defines normal text input
radio	Defines radio button input (for selecting one of many choices)
submit	Defines a submit button (for submitting the form)
Password or number	Defines password or number



- <input> type: text
 - <input type="text"> defines a one-line input field for text input
 - The default width of a text field is 20 characters



- <input> type: Radio button
 - Radio buttons let a user select ONE of a limited number of choices under one category

```
<form>
<input type="radio" name="Gender" value="male" checked>Male
<br>
<br>
<input type="radio" name="Gender" value="female">Female
</form>
```

• If the name attribute is not mentioned, both the buttons can be selected.



<input> type: Submit button

- Submit defines a button which sends the form to form-handler
- The form-handler is typically a server page with a script for processing input data.
- The form-handler is specified in the form's action attribute. This attribute defines the action to be performed when form is submitted.

HTML forms



 Following is the list of attributes for <input> tag for creating text field

Attribute	Description	
type	Indicates the type of input control and for text input control it will be set to text . (type=text, type=password, type=number)	
value	This can be used to provide an initial value inside the control.	
size	Allows to specify the width of the text-input control in terms of characters.	
maxlength	Allows to specify the maximum number of characters a user can enter into the text box.	



- <form>: method attribute
 - Common way to submit the form is by submit button
 - The form submitted goes to web-server

```
<form action="action_page.php" method="GET|POST">
```

- GET method is used for passive submission (eg: search engine query)
- POST method is used if the form is updating any data or includes sensitive information like password.



Group Forming

- For group forming, **<fieldset>** tag is used.
- The <fieldset> is used along with <legend> inside the <form> tag.
- Syntax : Group Forming using <fieldset> tag

```
<form>
<fieldset>
<legend>Personal information:</legend>
Form elements
</fieldset>
</form>
```



HTML Forms (5)

- Example: Grouping Form Data with <fieldset>
 - The <fieldset> element groups related data in a form.
 - The <legend> element defines a caption for the <fieldset> element.

```
<form action="action_page.php">
  <fieldset>
    <legend>Personal information:</legend>
    First name:<br>
    <input type="text" name="firstname" value="Mickey">
    <hr>>
    Last name: <br>
    <input type="text" name="lastname" value="Mouse">
    <br><br><br><
    <input type="submit" value="Submit">
  </fieldset>
</form>
```

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HTML Form Elements

• <select> Element: It is used along with <option> tag for drop-down list

```
<select name="cars">
<option value="volvo">Volvo</option>
<option value="saab">Saab</option>
</select>
```

<option> Element (options to select)

```
<option value="fiat" selected>Fiat
```

<textarea> Element

```
<textarea name="message" rows="10" cols="30">
The cat was playing in the garden.
</textarea>
```

HTML Form Elements (2)



<button> element defines a clickable button

```
<button type="button" onclick="alert('Hello World!')">Click Me!</button>
```

- <datalist> Element (HTML 5 Element)
 - The **<datalist>** element specifies a list of pre-defined options for an **<input>** element.
 - Users will see a drop-down list of pre-defined options as they input data

```
<form action="action_page.php">
<input list="browsers">
  <datalist id="browsers">
      <option value="Internet Explorer">
      <option value="Firefox">
  </datalist>
  </form>
```

HTML Form Elements (3)



- <keygen> Element (HTML 5 Element)
 - <keygen> element is used to provide a secure way to authenticate users.
 - The <keygen> element specifies a key-pair generator field in a form.
 - When the form is submitted, two keys are generated, one private and one public.
 - The private key is stored locally, and the public key is sent to the server.
 - The public key could be used to generate a client certificate to authenticate the user in the future.

HTML Form Elements (4)



<keygen> Element (HTML 5 Element)

```
<form action="action_page.php">
  Username: <input type="text" name="user">
  Encryption: <keygen name="security">
  <input type="submit">
  </form>
```

<output> element (HTML 5 Element)

HTML Form Input Types



```
<input type="text" name="firstname">

<input type="password" name="firstname">

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

<input type="radio" name="Gender" value="female">Female

<input type="checkbox" name="vehicle" value="Car">car

<input type="button" onclick="alert('Hello World!')" value="Click Me!">
```

- Some more input types are
 - Color, date, time, range, email, month, number, datetime, datetime-local, URL, week, tel(telephone) [All are HTML 5 Elements]

HTML Form Input Restrictions



- Disabled
 - Specifies that an input field should be disabled
- Max (HTML 5)
 - Specifies the maximum value for an input field
- Maxlength
 - Specifies the maximum number of character for an input field
- Min (HTML 5)
 - Specifies the minimum value for an input field
- Pattern (HTML 5)
 - Specifies a regular expression to check the input value against

HTML Form Input Restrictions(2)



- Readonly
 - Specifies that an input field is read only (cannot be changed)
- Required (HTML 5)
 - Specifies that an input field is required (must be filled out)
- Size
 - Specifies the width (in characters) of an input field
- Step (HTML 5)
 - Specifies the legal number intervals for an input field
- Value
 - Specifies the default value for an input field

HTML Form Input Restrictions(3)



```
<form>
  Enter a date before 1980-01-01:
  <input type="date" name="bday" max="1979-12-31"><br>
  Enter a date after 2000-01-01:
  <input type="date" name="bday" min="2000-01-02"><br>
  </form>
<form>
    Select your favorite color:
    <input type="color" name="favcolor">
  </form>
<form>
    <input type="range" name="points" min="0" max="10">
  </form>
```

HTML Form: Input Attributes



The value Attribute

• The value attribute specifies the initial value for an input field

```
<input type="text" name="firstname" value="John">
```

The readonly Attribute

• The readonly attribute specifies that the input field is read only (cannot be changed):

```
<input type="text" name="firstname" value="John" readonly>
```

The disabled Attribute

The disabled attribute specifies that the input field is disabled.

```
<input type="text" name="firstname" value="John" disabled>
```

HTML Form: Input Attributes (2)



The size Attribute

• The size attribute specifies the size (in characters) for the input field

```
<input type="text" name="firstname" value="John" size="40">
```

- Input Attributes (The following are HTML5 Attributes)
 - Autocomplete
 - Autofocus
 - Form
 - Formaction
 - Formmethod
 - Formnovalidate
 - Formtarget
 - List
 - Min & max
 - Pattern
 - Required
 - step

HTML From Input Attributes (2)



Autocomplete (HTML5 attribute)

```
<form action="action_page.php" autocomplete="on">
```

The autofocus Attribute (HTML5 attribute)

```
Firstname:<input type="text" name="fname" autofocus>
```

- The formtarget Attribute (HTML5 attribute)
 - The **formtarget** attribute specifies a name or a keyword that indicates where to display the response that is received after submitting the form.

```
<form action="action_page.php">
  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">
  </form>
```



THANKYOU