

Introduction to HTML5 Part – I

Introduction

What is HTML?

- HTML stands for Hyper Text Markup Language.
- HTML is the standard markup language for creating Web pages.
- HTML describes the structure of a Web page.
- HTML elements tell the browser how to display the content.
- HTML consists of a series of elements.

HTML5

- HTML5 provides details of all 40+ HTML tags including audio, video, header, footer, data, data list, article etc.
- HTML5 is a next version of HTML.
- Here, you will get some brand new features which will make HTML much easier. These new introducing features make your website layout clearer to both website designers and users.

HTML Basic Example

Example: A Simple HTML Document

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

My First Heading

My first paragraph.

From the above Example:

- The `<!DOCTYPE html>` declaration defines that this document is an HTML5 document.
- The `<html>` element is the root element of an HTML page.[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>`]
- The `<head>` element contains meta information about the HTML page. [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.]
 - **The `<head>` tag in HTML is an essential element used to define the head section of an HTML document. It is placed inside the `<html>` tag, and used to store information that does not appear directly on the webpage itself.**
 - It contains metadata that helps the browser and search engines to understand the content of the page.
 - In HTML 4, the `<head>` element was mandatory but in HTML5, the `<head>` element can be omitted.

```
<!DOCTYPE html>
<html lang="en">

    <head>
        <title>Document Title</title>
        <meta charset="UTF-8">
        <meta name="description" content="An example webpage.">
    </head>

    <body>
        <h1>Hello, World!</h1>
    </body>

</html>
```

Hello, World!

- The **<title>** element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab). [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)]
- The **<title> tag** in HTML is used to define the title of a web page. This title appears in the browser's title bar or tab, and it is also used by search engines as the clickable headline in search results.
 - HTML title tag is used to provide a title name for your webpage. It is necessary for Search Engine Optimization (SEO).
 - The HTML title tag must be used inside the <head> tag.
 - The title of the page is displayed on the title bar of the browser.
 - Let's see the example of HTML title tag.
 - **Example 1 :**

```
<!DOCTYPE html>

<html>
<head>
    <title>First web page.</title>
</head>
<body>
    <p>Welcome to my first web page.</p>
</body>
</html>
```



Welcome to my first web page.

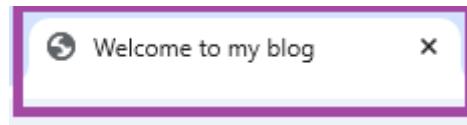
- Example 2 :

```
<!DOCTYPE html>
<html>

<head>
    <title>Welcome to my blog</title>
</head>

<body>
    <h1>Blog Homepage</h1>
    <p>This is my homepage of my blog</p>
</body>

</html>
```



Blog Homepage

This is my homepage of my blog

- The `<body>` element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.
- The `<h1>` element defines a large heading.
- The `<p>` element defines a paragraph.

HTML Editors

- Web pages can be created and modified by using professional HTML editors.
- However, for learning HTML we recommend a simple text editor like Notepad (PC) orTextEdit (Mac).

HTML Documents

- All HTML documents must start with a document 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>`.

```
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

My First Heading

My first paragraph.

The `<!DOCTYPE>` Declaration

- The `<!DOCTYPE>` declaration represents the document type, and helps browsers to display web pages correctly.
- It must only appear once, at the top of the page (before any HTML tags).
- The `<!DOCTYPE>` declaration is not case sensitive.
- The `<!DOCTYPE>` declaration for HTML5 is:

```
<!DOCTYPE html>
```

HTML Headings

- HTML headings are defined with the `<h1>` to `<h6>` tags.
- `<h1>` defines the most important heading. `<h6>` defines the least important heading:
- Search engines use the headings to index the structure and content of your web pages.

- Users often skim a page by its headings. It is important to use headings to show the document structure.
- **<h1>** headings should be used for main headings, followed by **<h2>** headings, then the less important **<h3>**, and so on.

Example:

```
<!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 <p> tag** defines the paragraph and is used to give structure to text content within a webpage. It is a block-level element & used to add the space or margins after and before the element this is done by browsers by default.
- HTML paragraphs are defined with the **<p>** tag:

```
<!DOCTYPE html>
<html>
<body>

<p>This is a paragraph.</p>
<p>This is another paragraph.</p>

</body>
</html>
```

This is a paragraph.

This is another paragraph.

HTML Links

- The link's destination is specified in the href attribute.
- HTML links are defined with the tag:

```
<!DOCTYPE html>
<html>
<body>

<h2>HTML Links</h2>
<p>HTML links are defined with the a tag:</p>

<a href="https://rvrjcce.ac.in/">This is a link</a>

</body>
</html>
```

HTML Links

HTML links are defined with the a tag:

[This is a link](https://rvrjcce.ac.in/)



HTML Images

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

Example 1:

```
<!DOCTYPE html>
<html>
<body>

<h2>HTML Images</h2>
<p>HTML images are defined with the img tag:</p>



</body>
</html>
```

HTML Images

HTML images are defined with the `img` tag:



Example2:

```
<!DOCTYPE html>
<html>
<body>

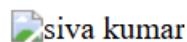
<h2>HTML Images</h2>
<p>HTML images are defined with the img tag:</p>



</body>
</html>
```

HTML Images

HTML images are defined with the img tag:



HTML Elements

- An HTML element is defined by a start tag, some content, and an end tag.
- The HTML element is everything from the start tag to the end tag:

<tagname>Content goes here...</tagname>

Examples of some HTML elements:

<h1>My First Heading</h1>

<p>My first paragraph.</p>

Start tag	Element content	End tag
<h1>	My First Heading	</h1>

<p>	My first paragraph.	</p>
 	<i>none</i>	<i>none</i>

Nested HTML Elements

- HTML elements can be nested (this means that elements can contain other elements).
- All HTML documents consist of nested HTML elements.
- The following example contains four HTML elements (`<html>`, `<body>`, `<h1>` and `<p>`):

```
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

My First Heading

My first paragraph.

- The `<html>` element is the root element and it defines the whole HTML document.
- It has a start tag `<html>` and an end tag `</html>`.
- Then, inside the `<html>` element there is a `<body>` element:
- The `<body>` element defines the document's body.
- It has a start tag `<body>` and an end tag `</body>`.
- Then, inside the `<body>` element there are two other elements: `<h1>` and `<p>`:

HTML Attributes

- All HTML elements can have attributes.
 - Attributes provide additional information about elements.
 - Attributes are always specified in the start tag.
 - Attributes usually come in name/value pairs like: name="value".
- **The href Attribute**
- The `<a>` tag defines a hyperlink. The `href` attribute specifies the URL of the page the link goes to:

```
<!DOCTYPE html>
<html>
<body>

<h2>The href Attribute</h2>

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

<a href="https://rvrjcce.ac.in/">Visit RVRJCCE</a>

</body>
</html>
```

The href Attribute

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

[Visit RVRJCCE](https://rvrjcce.ac.in/)



- **The src Attribute**
- The `` tag is used to embed an image in an HTML page. The `src` attribute specifies the path to the image to be displayed:

```
<!DOCTYPE html>
<html>
<body>

<h2>The src Attribute</h2>
<p>HTML images are defined with the img tag, and the filename of the image source is specified in the src attribute:</p>



</body>
</html>
```

The src Attribute

HTML images are defined with the img tag, and the filename of the image source is specified in the src attribute:



- There are two ways to specify the URL in the src attribute:
- **1. Absolute URL** - Links to an external image that is hosted on another website.
Example: src="https://www.w3schools.com/images/img_girl.jpg".
- **Notes:** External images might be under copyright. If you do not get permission to use it, you may be in violation of copyright laws. In addition, you cannot control external images; it can suddenly be removed or changed.
- **2. Relative URL** - Links to an image that is hosted within the website. Here, the URL does not include the domain name. If the URL begins without a slash, it will be relative to the current page. Example: src="img_girl.jpg". If the URL begins with a slash, it will be relative to the domain. Example: src="/images/img_girl.jpg".

- **The width and height Attributes**
- The `` tag should also contain the **width** and **height** attributes, which specify the width and height of the image (in pixels):

```

<!DOCTYPE html>
<html>
<body>

<h2>Width and Height Attributes</h2>

<p>The width and height attributes of the img tag, defines the width and height of the image:</p>



</body>
</html>

```

Width and Height Attributes

The width and height attributes of the img tag, defines the width and height of the image:



- The alt Attribute
- The required `alt` attribute for the `` tag specifies an alternate text for an image, if the image for some reason cannot be displayed. This can be due to a slow connection, or an error in the `src` attribute, or if the user uses a screen reader.

Example 1:

```
<!DOCTYPE html>
<html>
<body>

<h2>The alt Attribute</h2>
<p>The alt attribute should reflect the image content, so users who cannot see the image get an understanding of what the image contains:</p>



</body>
</html>
```

The alt Attribute

The alt attribute should reflect the image content, so users who cannot see the image get an understanding of what the image contains:



Example 2:

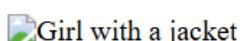
- See what happens if we try to display an image that does not exist:

```
<!DOCTYPE html>
<html>
<body>



<p>If we try to display an image that does not exist, the value of the alt attribute will be displayed instead. </p>

</body>
</html>
```



If we try to display an image that does not exist, the value of the alt attribute will be displayed instead.

- **The style Attribute**
- The **style** attribute is used to add styles to an element, such as color, font, size, and more.

```
<!DOCTYPE html>
<html>
<body>

<h2>The style Attribute</h2>
<p>The style attribute is used to add styles to an element, such as color:</p>

<p style="color:red;">This is a red paragraph.</p>

</body>
</html>
```

The style Attribute

The style attribute is used to add styles to an element, such as color:

This is a red paragraph.

- **The title Attribute**
- The **title** attribute defines some extra information about an element.
- The value of the title attribute will be displayed as a tooltip (Tooltip text is a short, descriptive message that appears when a user hovers over or long presses an object or control.) when you mouse over the element:

```
<!DOCTYPE html>
<html>
<body>

<p><abbr title="World Health Organization">WHO</abbr> was founded in 1948.</p>
<p title="Free Web tutorials">javatpoint.com</p>

</body>
</html>
```

WHO was founded in 1948.

javatpoint.com

HTML Styles

- The HTML style attribute is used to add styles to an element, such as color, font, size, and more.
 - Use the style attribute for styling HTML elements.
 - Use “**background-color**” for background color.
 - Use “**color**” for text colors.
 - Use “**font-family**” for text fonts.
 - Use “**font-size**” for text sizes.
 - Use “**text-align**” for text alignment.
- The HTML style attribute has the following syntax:

```
<tagname style="property:value;">
```

- **Background Color**
 - The CSS **background-color** property defines the background color for an HTML element.
 - **Example 1 :**

```
<!DOCTYPE html>
<html>
<body style="background-color:powderblue;">

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

This is a heading

This is a paragraph.

- **Example 2:** Set background color for two different elements:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="background-color:powderblue;">This is a heading</h1>
<p style="background-color:tomato;">This is a paragraph.</p>

</body>
</html>
```

This is a heading

This is a paragraph.

- **Text Color**

- The CSS **color** property defines the text color for an HTML element:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="color:blue;">This is a heading</h1>
<p style="color:red;">This is a paragraph.</p>

</body>
</html>
```

This is a heading

This is a paragraph.

- **Fonts**

- The CSS **font-family** property defines the font to be used for an HTML element:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="font-family:verdana;">This is a heading</h1>
<p style="font-family:courier;">This is a paragraph.</p>

</body>
</html>
```

This is a heading

This is a paragraph.

- **Text Size**

- The CSS **font-size** property defines the text size for an HTML element:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="font-size:300%;">This is a heading</h1>
<p style="font-size:160%;">This is a paragraph.</p>

</body>
</html>
```

This is a heading

This is a paragraph.

- **Text Alignment**

- The CSS **text-align** property defines the horizontal text alignment for an HTML element:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="text-align:center;">Centered Heading</h1>
<p style="text-align:center;">Centered paragraph.</p>

</body>
</html>
```

Centered Heading

Centered paragraph.

HTML Text Formatting Elements

- HTML text formatting refers to the use of specific HTML tags to modify the appearance and structure of text on a webpage. It allows you to style text in different ways, such as making it bold, italic, underlined, highlighted, or struck-through.

Formatting elements were designed to display special types of text:

- **** - Bold text
- **** - Important text
- **<i>** - Italic text
- **** - Emphasized text
- **<mark>** - Marked text
- **<small>** - Smaller text
- **** - Deleted text
- **<ins>** - Inserted text
- **<sub>** - Subscript text
- **<sup>** - Superscript text

```
<!DOCTYPE html>
<html>
<body>

<p>This text is normal.</p>
<p><b>This text is bold.</b></p>

<p>This text is normal.</p>
<p><strong>This text is important!</strong></p>

<p>This text is normal.</p>
<p><i>This text is italic.</i></p>

<p>This text is normal.</p>
<p><em>This text is emphasized.</em></p>

<p>This is some normal text.</p>
<p><small>This is some smaller text.</small></p>

<p>Do not forget to buy <mark>milk</mark> today.</p>
<p>My favorite color is <del>blue</del> red.</p>
<p>My favorite color is <del>blue</del> <ins>red</ins>.</p>
<p>This is <sub>subscripted</sub> text.</p>
<p>This is <sup>superscripted</sup> text.</p>

</body>
</html>
```

This text is normal.

This text is bold.

This text is normal.

This text is important!

This text is normal.

This text is italic.

This text is normal.

This text is emphasized.

This is some normal text.

This is some smaller text.

Do not forget to buy **milk** today.

My favorite color is ~~blue~~ red.

My favorite color is ~~blue~~ red.

This is _{subscripted} text.

This is ^{superscripted} text.

HTML Comments

- **HTML Comment Tag**

- You can add comments to your HTML source by using the following syntax:

```
<!-- Write your comments here -->
```

- **Note:** Notice that there is an exclamation point (!) in the start tag, but not in the end tag.
- Comments are not displayed by the browser, but they can help document your HTML source code.

- **Add Comments**

- With comments you can place notifications and reminders in your HTML code:

```
<!DOCTYPE html>
<html>
<body>

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

</body>
</html>
```

This is a paragraph.

HTML Colors

- HTML colors are specified with predefined color names, or with RGB, HEX, HSL, RGBA, or HSLA values.

- **Color Names**

- In HTML, a color can be specified by using a color name:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="background-color:Tomato;">Tomato</h1>
<h1 style="background-color:Orange;">Orange</h1>
<h1 style="background-color:DodgerBlue;">DodgerBlue</h1>
<h1 style="background-color:MediumSeaGreen;">MediumSeaGreen</h1>
<h1 style="background-color:Gray;">Gray</h1>
<h1 style="background-color:SlateBlue;">SlateBlue</h1>
<h1 style="background-color:Violet;">Violet</h1>
<h1 style="background-color:LightGray;">LightGray</h1>

</body>
</html>
```

Tomato

Orange

DodgerBlue

MediumSeaGreen

Gray

SlateBlue

Violet

LightGray

- **Background Color**
 - You can set the background color for HTML elements:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="background-color:DodgerBlue;">Hello World</h1>

<p style="background-color:Tomato;">
Siva Kumar
Associate Professor
</p>

</body>
</html>
```

Hello World

Siva Kumar Associate Professor

- **Text Color**

- You can set the color of text:

```
<!DOCTYPE html>
<html>
<body>

<h3 style="color:Tomato;">Hello World</h3>

<p style="color:DodgerBlue;">RVRJCCE.</p>

<p style="color:MediumSeaGreen;">CSE.</p>

</body>
</html>
```

Hello World

RVRJCCE.

CSE.

- **Border Color**

- You can set the color of borders:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="border: 2px solid Tomato;">Hello World</h1>

<h1 style="border: 2px solid DodgerBlue;">Hello World</h1>

<h1 style="border: 2px solid Violet;">Hello World</h1>

</body>
</html>
```

Hello World

Hello World

Hello World

- **Color Values**
 - In HTML, colors can also be specified using RGB values, HEX values, HSL values, RGBA values, and HSLA values.
 - The following three <div> elements have their background color set with RGB, HEX, and HSL values:

```
<!DOCTYPE html>
<html>
<body>

<p>Same as color name "Tomato":</p>

<h1 style="background-color:rgb(255, 99, 71);">rgb(255, 99, 71)</h1>
<h1 style="background-color:#ff6347;">#ff6347</h1>
<h1 style="background-color:hsl(9, 100%, 64%);">hsl(9, 100%, 64%)</h1>

<p>Same as color name "Tomato", but 50% transparent:</p>
<h1 style="background-color:rgba(255, 99, 71, 0.5);">rgba(255, 99, 71, 0.5)</h1>
<h1 style="background-color:hsla(9, 100%, 64%, 0.5);">hsla(9, 100%, 64%, 0.5)</h1>

<p>In addition to the predefined color names, colors can be specified using RGB, HEX, HSL, or even transparent colors using RGBA or HSLA color values.</p>

</body>
</html>
```

Same as color name "Tomato":

rgb(255, 99, 71)

#ff6347

hsl(9, 100%, 64%)

Same as color name "Tomato", but 50% transparent:

rgba(255, 99, 71, 0.5)

hsla(9, 100%, 64%, 0.5)

In addition to the predefined color names, colors can be specified using RGB, HEX, HSL, or even transparent colors using RGBA or HSLA color values.

- **RGB Color Values**

- In HTML, a color can be specified as an RGB value, using this formula:

rgb(*red, green, blue*)

- Each parameter (red, green, and blue) defines the intensity of the color with a value between 0 and 255.

- This means that there are $256 \times 256 \times 256 = 16777216$ possible colors!
- **HEX Color Values**
- In HTML, a color can be specified using a hexadecimal value in the form:
 $\#rrggbb$
- Where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0-255).

- **HSL Color Values**
- In HTML, a color can be specified using hue, saturation, and lightness (HSL) in the form:
 $hsl(hue, saturation, lightness)$
- Hue is a degree on the color wheel from 0 to 360. 0 is red, 120 is green, and 240 is blue.

HTML Lists

- HTML lists allow web developers to group a set of related items in lists.
- **Unordered HTML List**
- An unordered list starts with the `` tag. Each list item starts with the `` tag.
- The list items will be marked with bullets (small black circles) by default:

- **Ordered HTML List**
- An ordered list starts with the `` tag. Each list item starts with the `` tag.
- The list items will be marked with numbers by default:

```
<!DOCTYPE html>
<html>
<body>

<h2>An Unordered HTML List</h2>

<ul>
<li>Coffee</li>
<li>Tea</li>
<li>Milk</li>
</ul>

<h2>An Ordered HTML List</h2>

<ol>
<li>Coffee</li>
<li>Tea</li>
<li>Milk</li>
</ol>

</body>
</html>
```

An Unordered HTML List

- Coffee
- Tea
- Milk

An Ordered HTML List

1. Coffee
2. Tea
3. Milk

- **HTML Description Lists**
 - HTML also supports description lists.
 - A description list is a list of terms, with a description of each term.
 - The **<dl>** tag defines the description list, the **<dt>** tag defines the term (name), and the **<dd>** tag describes each term:

```
<!DOCTYPE html>
<html>
<body>

<h2>A Description List</h2>

<dl>
  <dt>Coffee</dt>
  <dd>- black hot drink</dd>
  <dt>Milk</dt>
  <dd>- white cold drink</dd>
</dl>

</body>
</html>
```

A Description List

Coffee
- black hot drink
Milk
- white cold drink

- HTML List Tags

Tag	Description
<u></u>	Defines an unordered list
<u></u>	Defines an ordered list
<u></u>	Defines a list item
<u><dl></u>	Defines a description list
<u><dt></u>	Defines a term in a description list
<u><dd></u>	Describes the term in a description list

HTML Tables

- HTML tables allow web developers to arrange data into rows and columns.
- **HTML Table Tags :**

HTML Tags	Descriptions
<u><table></u>	Defines the structure for organizing data in rows and columns within a web page.
<u><tr></u>	Represents a row within an HTML table, containing individual cells.
<u><th></u>	Shows a table header cell that typically holds titles or headings.
<u><td></u>	Represents a standard data cell, holding content or data.
<u><caption></u>	Provides a title or description for the entire table.
<u><thead></u>	Defines the header section of a table, often containing column labels.
<u><tbody></u>	Represents the main content area of a table, separating it from the header or footer.
<u><tfoot></u>	Specifies the footer section of a table, typically holding summaries or totals.
<u><col></u>	Defines attributes for table columns that can be applied to multiple columns at once.
<u><colgroup></u>	Groups together a set of columns in a table to which you can apply formatting or properties collectively.

Example 1:

```
<!DOCTYPE html>
<html>

<body>
    <table>
        <tr>
            <th>Firstname</th>
            <th>Lastname</th>
            <th>Age</th>
        </tr>
        <tr>
            <td>Priya</td>
            <td>Sharma</td>
            <td>24</td>
        </tr>
        <tr>
            <td>Arun</td>
            <td>Singh</td>
            <td>32</td>
        </tr>
        <tr>
            <td>Sam</td>
            <td>Watson</td>
            <td>41</td>
        </tr>
    </table>
</body>

</html>
```

Firstname Lastname Age

Priya	Sharma	24
Arun	Singh	32
Sam	Watson	41

In this example:

- <table>: This tag starts the table. Everything between the opening <table> and closing </table> tags makes up the table.
- <tr>: Stands for “table row”. Each <tr> tag defines a row in the table.
- <th>: Stands for “table header”. It’s used for the headers of the columns. In this case, “Firstname”, “Lastname”, and “Age” are headers. Text in <th> tags is usually bold and centered by default.

- <td>: Stands for “table data”. This tag is used for actual data cells under each column. For instance, “Priya” is the data under the “Firstname” header, “Sharma” under the “Lastname”, and “24” under the “Age”.
- The first <tr> has three <th> elements, setting up the column titles.
- The subsequent <tr> tags each contain three <td> elements, representing the data for each person listed in the table.

Example2:

```

<!DOCTYPE html>
<html>

  <body>
    <table>
      <tr>
        <th>Student Name</th>
        <th>Branch Name</th>
        <th>Section</th>
      </tr>
      <tr>
        <td>Prasad</td>
        <td>CSE</td>
        <td>A</td>
      </tr>
      <tr>
        <td>Praveen</td>
        <td>ECE</td>
        <td>B</td>
      </tr>
      <tr>
        <td>Pradeep</td>
        <td>EEE</td>
        <td>C</td>
      </tr>
    </table>
  </body>

</html>

```

Student Name	Branch Name	Section
Prasad	CSE	A
Praveen	ECE	B
Pradeep	EEE	C

HTML Table Borders

- HTML tables can have borders of different styles and shapes.
- **How To Add a Border:** To add a border, use the CSS `border` property on `table`, `th`, and `td` elements:
- **Example 1:**

```
<!DOCTYPE html>
<html>
<head>
<style>
table, th, td {
    border: 1px solid black;
}
</style>
</head>
<body>

<h2>Table With Border</h2>

<p>Use the CSS border property to add a border to the table.</p>
```

```
<table style="width:100%">
<tr>
<th>Firstname</th>
<th>Lastname</th>
<th>Age</th>
</tr>
<tr>
<td>Jill</td>
<td>Smith</td>
<td>50</td>
</tr>
<tr>
<td>Eve</td>
<td>Jackson</td>
<td>94</td>
</tr>
<tr>
<td>John</td>
<td>Doe</td>
<td>80</td>
</tr>
</table>

</body>
</html>
```

Table With Border

Use the CSS border property to add a border to the table.

Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94
John	Doe	80

- [Example 2:](#)
- [Collapsed Table Borders](#)
- To avoid having double borders like in the example above, set the CSS `border-collapse` property to `collapse`. This will make the borders collapse into a single border:

```
<!DOCTYPE html>
<html>
<head>
<style>
table, th, td {
    border: 1px solid black;
    border-collapse: collapse;
}
</style>
</head>
<body>

<h2>Collapsed Borders</h2>
<p>If you want the borders to collapse into one border, add the CSS border-collapse property.</p>
```

```

<table style="width:100%">
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
    <th>Age</th>
  </tr>
  <tr>
    <td>Jill</td>
    <td>Smith</td>
    <td>50</td>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
  <tr>
    <td>John</td>
    <td>Doe</td>
    <td>80</td>
  </tr>
</table>

</body>
</html>

```

Collapsed Borders

If you want the borders to collapse into one border, add the CSS border-collapse property.

Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94
John	Doe	80

HTML Forms

- An HTML form is used to collect user input. The user input is most often sent to a server for processing.
- 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.
- **The HTML <form> element is used to create HTML forms.**
- **The Syntax is :**

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

- **Example 1:HTML <input> element**

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

Enter your name

- **Example2:TextField Control**

```
<!DOCTYPE html>
<html>
<body>

<h2>Text input fields</h2>

<form>
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname" value="John"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname" value="Doe">
</form>

<p>Note that the form itself is not visible.</p>
<p>Also note that the default width of text input fields is 20 characters.</p>

</body>
</html>
```

Text input fields

First name:

John

Last name:

Doe

Note that the form itself is not visible.

Also note that the default width of text input fields is 20 characters.

- **Example 3: HTML Form**

```
<form>
    <label for="firstname">First name: </label>
    <input type="text" name="firstname" required>
    <br>
    <label for="lastname">Last name: </label>
    <input type="text" name="lastname" required>
    <br>
    <label for="email">email: </label>
    <input type="email" name="email" required>
    <br>
    <label for="password">password: </label>
    <input type="password" name="password" required>
    <br>
    <input type="submit" value="Login!">
</form>
```

First name:

Last name:

email:

password:

- **Example4:HTML Form Elements**

```

<form>
    <label for="name">Name:</label>
    <input type="text" name="name"><br><br>
    <label for="sex">Sex:</label>
    <input type="radio" name="sex" id="male" value="male">
    <label for="male">Male</label>
    <input type="radio" name="sex" id="female" value="female">
    <label for="female">Female</label> <br><br>
    <label for="country">Country: </label>
    <select name="country" id="country">
        <option>Select an option</option>
        <option value="nepal">Nepal</option>
        <option value="usa">USA</option>
        <option value="australia">Australia</option>
    </select><br><br>
    <label for="message">Message:</label><br>
    <textarea name="message" id="message" cols="30" rows="4"></textarea><br><br>
    <input type="checkbox" name="newsletter" id="newsletter">
    <label for="newsletter">Subscribe?</label><br><br>
    <input type="submit" value="Submit">
</form>

```

Name:

Sex: Male Female

Country:

Message:

Subscribe?

- **The <input> Element**

- The HTML **<input>** element is the most used form element.
- An **<input>** element can be displayed in many ways, depending on the **type** attribute.
- The **<form>** element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.
- Here are some examples:

Type	Description
<input type="text">	Displays a single-line text input field
<input type="radio">	Displays a radio button (for selecting one of many choices)
<input type="checkbox">	Displays a checkbox (for selecting zero or more of many choices)
<input type="submit">	Displays a submit button (for submitting the form)
<input type="button">	Displays a clickable button

- The <label> Element

- The `<label>` tag defines a label for many form elements.
- The `<label>` element is useful for screen-reader users, because the screen-reader will read out loud the label when the user focuses on the input element.
- The `<label>` element also helps users who have difficulty clicking on very small regions (such as radio buttons or checkboxes) - because when the user clicks the text within the `<label>` element, it toggles the radio button/checkbox.
- The `for` attribute of the `<label>` tag should be equal to the `id` attribute of the `<input>` element to bind them together.

- The
 Element

- The `
` tag in HTML inserts line breaks in a text. It stands for "Break". This tag is particularly useful when you want to create a new line within a paragraph or other element without starting a new paragraph.

Introduction to HTML5 Part - II

- we will discuss the functionality of the newer form input types provided by HTML5.
Sometimes, while filling the registration form or any online form, it would require to follow the proper format to fill the particular data. Now it is easy to use the webform to fill up the common data like **date**, **email**, **url** etc. There are almost 13 new input types introduced in HTML5 form. We will see all the input types & understand them one by one.
- **Input Type attributes:**
 1. [color](#): This input type allows the user to select a color from a color picker.
 2. [date](#): This input type allows the user to select a date from a drop-down calendar.
 3. [time](#): This input type allows the user to enter a time.
 4. [datetime](#): This input type allows the user to select date and time along with timezone.
 5. [datetime-local](#): This input type allows the user to select both local date and time.
 6. [week](#): This input type allows the user to select week and year from the drop-down calendar.
 7. [email](#): This input type allows the user to enter an e-mail address.
 8. [month](#): This input type allows the user to select a month and year from a drop-down calendar.
 9. [number](#): This input type allows the user to enter a numerical value.
 10. [range](#): This input type allows the user to enter a numerical value within a specified range.
 11. [search](#): This input type allows the user to enter a search string within the input field.
 12. [tel](#): This input type allows the user to enter a telephone number.
 13. [url](#): This input type allows the user to enter the URL.

(OR)

Input Type	Description
<code><input type="text"></code>	Single-line text input
<code><input type="password"></code>	Masked text input for passwords
<code><input type="checkbox"></code>	Toggle for selecting multiple options
<code><input type="radio"></code>	Single selection from multiple options
<code><input type="submit"></code>	Button to submit form data
<code><input type="button"></code>	General-purpose button
<code><input type="file"></code>	Input for uploading files
<code><input type="number"></code>	Input for numerical values
<code><input type="date"></code>	Input for selecting dates
<code><input type="email"></code>	Input for email addresses
<code><input type="color"></code>	Input for selecting colors
<code><input type="range"></code>	Slider for selecting a numeric value within a range
<code><input type="hidden"></code>	Hidden input for form data
<code><input type="image"></code>	Input using an image for form submission

- The Syntax is:

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

```
<!DOCTYPE html>
<html>
<body>

<form>
    <h1>Show a User Name Control</h1>
    <label for="username">Username: </label>
    <input type="text" id="username" name="username"><br>
    <input type="submit" value="Submit"> <br>
    <br>

    <h1>Show Email Fields</h1>
    <label for="email">Enter your email:</label>
    <input type="email" id="email" name="email">
    <input type="submit"> <br>
    <br>

    <h1>Display a Password Field</h1>
    <label for="email">Email:</label>
    <input type="email" id="email" name="email"><br><br>
    <label for="pwd">Password:</label>
    <input type="password" id="pwd" name="pwd" minlength="8"><br><br>
    <input type="submit"> <br>
    <br>

    <h1>Show a Date Control</h1>
    <label for="birthday">Birthday:</label>
    <input type="date" id="birthday" name="birthday">
    <input type="submit"> <br>
    <br>

    <h1>Show a Time Input Control</h1>
    <label for="appt">Select a time:</label>
    <input type="time" id="appt" name="appt">
    <input type="submit"><br>
    <br>

    <h1>Show a Date and Time Control</h1>
    <label for="birthdaytime">Birthday (date and time):</label>
    <input type="datetime-local" id="birthdaytime" name="birthdaytime">
    <input type="submit"> <br>
    <br>

    <h1>Display a Week Input Control</h1>
    <label for="week">Select a week:</label>
    <input type="week" id="week" name="week">
    <input type="submit"><br>
    <br>

    <h1>Display a Month Input Control</h1>
    <label for="bdaymonth">Birthday (month and year):</label>
    <input type="month" id="bdaymonth" name="bdaymonth">
    <input type="submit"> <br>
    <br>
```

```

<h1>Display a Telephone Input Field</h1>
<label for="phone">Enter a phone number:</label><br><br>
<input type="tel" id="phone" name="phone" placeholder="123-45-678" pattern="[0-9]{3}-[0-9]{2}-[0-9]{3}" required><br><br>
<small>Format: 123-45-678</small><br><br>
<input type="submit"><br>
<br>

<h1>Display a Number Field</h1>
<label for="quantity">Quantity (between 1 and 5):</label>
<input type="number" id="quantity" name="quantity" min="1" max="5">
<input type="submit"> <br>
<br>

<h1>Display a Search Field</h1>
<label for="gsearch">Search Google:</label>
<input type="search" id="gsearch" name="gsearch">
<input type="submit"><br>
<br>

<h1>Show a Color Picker</h1>
<label for="favcolor">Select your favorite color:</label>
<input type="color" id="favcolor" name="favcolor" value="#ff0000"><br><br>
<input type="submit"><br>
<br>

<h1>Show File-select Fields</h1>
<label for="myfile">Select a file:</label>
<input type="file" id="myfile" name="myfile"><br><br>
<input type="submit"><br>
<br>

<h1>Display a Reset Button</h1>
<label for="email">Enter your email:</label>
<input type="email" id="email" name="email"><br><br>

<label for="pin">Enter a PIN:</label>
<input type="text" id="pin" name="pin" maxlength="4"><br><br>

<input type="reset" value="Reset">
<input type="submit" value="Submit"><br>
<br>

<h1>Display a URL Input Field</h1>
<label for="homepage">Add your homepage:</label>
<input type="url" id="homepage" name="homepage"><br><br>
<input type="submit"><br>
<br>

</form>

</body>
</html>

```

Show a User Name Control

Username:

Show Email Fields

Enter your email:

Display a Password Field

Email:

Password:

Show a Date Control

Birthday:

Show a Time Input Control

Select a time:

Show a Date and Time Control

Birthday (date and time):

Display a Week Input Control

Select a week:

Display a Month Input Control

Birthday (month and year):

Display a Telephone Input Field

Enter a phone number:

Format: 123-45-678

Display a Number Field

Quantity (between 1 and 5):

Display a Search Field

Search Google:

Show a Color Picker

Select your favorite color:

Show File-select Fields

Select a file: No file chosen

Display a Reset Button

Enter your email:

Enter a PIN:

Display a URL Input Field

Add your homepage:

HTML Frames

HTML Frames allow you to divide the browser window into multiple sections (frames), where each frame can load a separate HTML document. This feature was introduced in early versions of HTML to create layouts like menus, headers, and content areas **without needing multiple copies of the same content**.

◆ Key Tags Used in Frames

1. `<frameset>`

- Replaces the `<body>` tag when using frames.
- Defines how to split the screen (rows or columns).
- Attributes:
 - `rows` – divides horizontally
 - `cols` – divides vertically

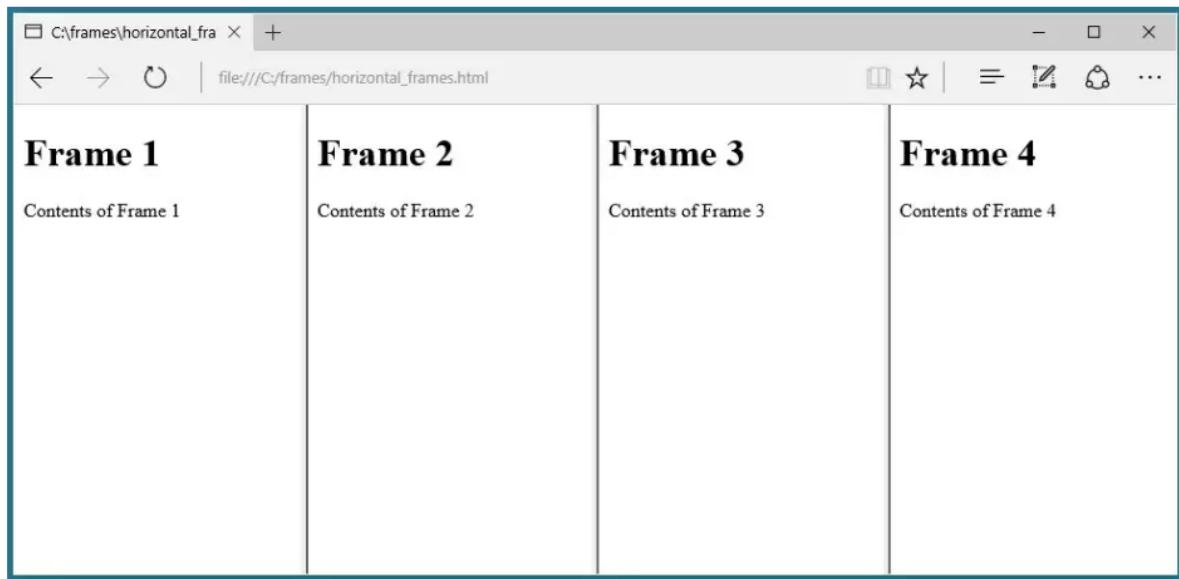
2. `<frame>`

- Defines each individual frame inside the `<frameset>`.
- Loads a specific HTML page into the frame.
- Attributes:
 - `src` – file to load
 - `name` – gives the frame a name for targeting
 - `scrolling, noresize, frameborder` – control frame appearance

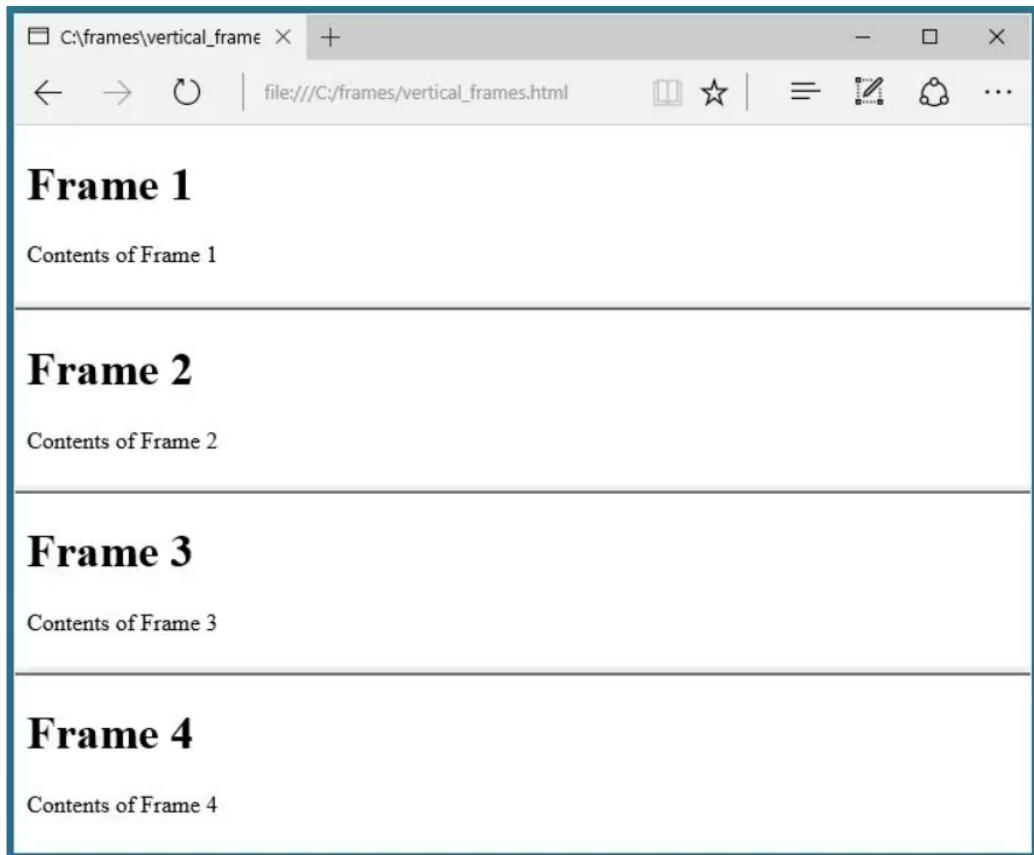
3. `<noframes>`

- Provides alternative content for browsers that do not support frames.
- Frames in HTML allow you to divide a browser window into multiple sections, where each section can load a different HTML document. This technique was once popular for creating complex layouts, but it is now considered outdated due to several limitations and accessibility issues.
- What are Frames in HTML?
- Frames in HTML divide the browser window into multiple sections, each capable of displaying a separate HTML document. These sections are defined using the `<frameset>` tag instead of the standard `<body>` tag

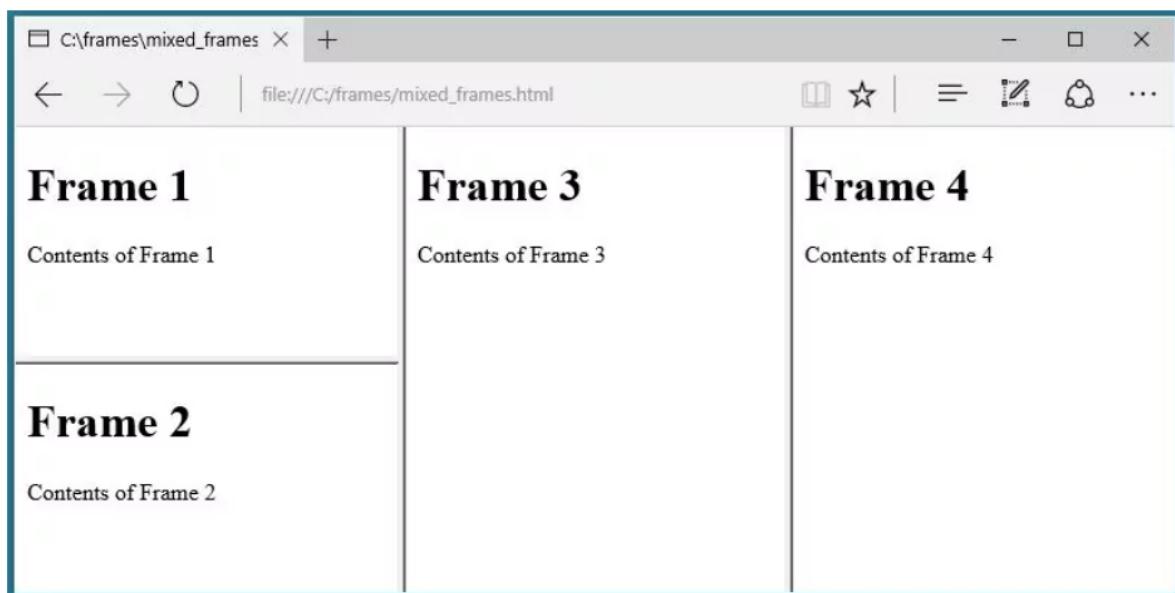
- The main parts of a frameset include:
- **Horizontal frames: Defined using the rows attribute.**
- **Vertical frames: Defined using the cols attribute.**
- Frames allow multiple HTML files to be displayed in different sections of a single browser window.
- Let us see how we can create a frame using HTML.
- How to Create Frames in HTML
- Let's go through the process of creating frames using HTML.
- **Creating Vertical Columns**



- **Creating Horizontal Rows**



- **Mixing Columns and Rows**



Meta Elements

Definition and Usage

- The <meta> tag defines metadata about an HTML document. Metadata is data (information) about data.
- <meta> tags always go inside the <head> element, and are typically used to specify character set, page description, keywords, author of the document, and viewport settings.
- Metadata will not be displayed on the page, but is machine parsable.
- Metadata is used by browsers (how to display content or reload page), search engines (keywords), and other web services.
- There is a method to let web designers take control over the viewport (the user's visible area of a web page), through the <meta> tag (See "Setting The Viewport" example below).

Attributes

Attribute	Value	Description
charset	<i>character_set</i>	Specifies the character encoding for the HTML document
content	<i>text</i>	Specifies the value associated with the http-equiv or name attribute
http-equiv	content-security-policy content-type default-style refresh	Provides an HTTP header for the information/value of the content attribute

<u>name</u>	application-name author description generator keywords viewport	Specifies a name for the metadata
-------------	--	-----------------------------------

EXAMPLE:

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">
  <meta name="description" content="Free Web tutorials">
  <meta name="keywords" content="HTML,CSS,XML,JavaScript">
  <meta name="author" content="John Doe">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
</head>
<body>

<p>All meta information goes in the head section...</p>

</body>
</html>
```

OUTPUT

```
All meta information goes in the head section...
```

More Examples:

Define keywords for search engines:

```
<meta name="keywords" content="HTML, CSS, JavaScript">
```

Define a description of your web page:

```
<meta name="description" content="Free Web tutorials for HTML and CSS">
```

Define the author of a page:

```
<meta name="author" content="John Doe">
```

Refresh document every 30 seconds:

```
<meta http-equiv="refresh" content="30">
```

Setting the viewport to make your website look good on all devices:

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```