

What is Programming?

- Programming is the process of writing a certain amount of code that tells what to do and how to do the computer.
- Programming is important to perform a particular type of task efficiently, fast and in cheap price.
- Some Common examples of programming languages are C, C++, Python, Ruby, Java , Javascript etc.

What is HTML?

- HTML stands for Hypertext(links between different parts of the document) Markup Language
- HTML is a scripting language that includes different tags to create web pages.

OR
- HTML is code that is used to design webpages and the contents involved in that webpage.

OR
- HTML is a Markup language that is used to create documents on the World Wide Web incorporating text, graphics, sound, video, and hyperlinks
- It is a Markup language because it does not involve any kind of logical operations, Calculations, etc.
- HTML is used in web development in order to make the structure/layout of the webpage.

History of HTML?

- HTML was developed by physicist Tim Berners Lee in 1980 who was a contractor at CERN which was used by researchers to share documents. Tim Berners Lee wrote the HTML and server software in the 1990s. HTML was built in 1990 but was not officially launched. It was officially launched in 1995.

Versions	Date
HTML	1991
HTML+	1993
HTML 2.0	1995
HTML 3.2	1997
HTML 4.01	1999
XHTML 1.0	2000
HTML 5	2012
XHTML 5	2013

Why XHTML is not used?

- XML(extensible markup language) is a markup language where all documents must be marked up correctly (be "well-formed").
- XHTML was developed to make HTML more extensible and flexible to work with other data formats (such as XML). In addition, browsers ignore errors in HTML pages and try to display the website even if it has some errors in the markup. So XHTML comes with a much stricter error handling.

BASIC STRUCTURE OF HTML DOCUMENT

```
<!DOCTYPE HTML>
```

```
<HTML>
```

```
<HEAD>
```

```
    <TITLE> PAGE TITLE </TITLE>
```

```
    </HEAD>
```

```
<BODY>
```

```
    ---BODY PART---
```

```
    </BODY>
```

```
</HTML>
```

Type of document and help web browser to display web page correctly

It contains title of page and meta description of any webpage

It contains actual content seen in webpage

How to open text editor in windows(Notepad)?

Step 1:

- ❖ Go to the Start menu.
- ❖ Type notepad and press Enter.

Step 2:

- ❖ Press the Windows logo + R key.
- ❖ Type notepad and click on the Ok button

How to save HTML file?

1. Choose **File>Save As** and choose HTML from the drop-down list.
2. Give the filename an extension of **.html**, specify the file location, and **click save**.
3. Open the HTML file in a web browser to examine the converted file.

How to Open HTML file?

1. **Right Click** on the file
2. And click on **Open** to open the HTML file.

OR

Double-click on the file to open the HTML file.

HTML DOCTYPE <!DOCTYPE html>

- The declaration is not an HTML tag. It is "information" to the browser about what document type to expect.
- We use <!DOCTYPE HTML> to tell the browser that we are sending an html file to the browser.
- It aware the browser that the file is an HTML file.

What are Elements and Attributes in HTML?

Elements:

- 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>`

Nested 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>)

Example:

```
<!DOCTYPE html>
<html>
  <body>
    <h1>My First Heading</h1>
    <p>My first paragraph.</p>
  </body>
</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"**.

Examples:

- The **<a>** tag defines a **hyperlink**. The **href** attribute specifies the **URL** of the page the link goes to:
`Google`
- The **** tag is used to embed an image in an HTML page. The **src** attribute specifies the path to the image to be displayed:
``

What are Tags and Types of Tags?

Tags:

- The basic formulae used to write HTML code are called tags.
- Without Tag, we cannot write HTML.
- The text character which is enclosed in a left angle bracket (<) and a right angle bracket(>) is called an HTML tag.

<tag name>text</tag name>

Types of Tag:

- ❖ Paired Tag
- ❖ Unpaired Tag/Single Tag/Empty Tag

❖ Paired Tag:

The tag which has both a **closing and opening tag** is called paired tag.

OR

The tag which contains both **starting and finishing tag** is called paired tag.

For examples: <html>....</html>, <head>.....</head>, <p>....</p>, <form>....</form>,etc.

❖ Unpaired Tag:

The tag which does not have both a **closing and opening tag** is called unpaired tag.

OR

The tag which does not contain **both starting and finishing tag** is called paired tag.

For examples:
, , <hr>,etc

❖ Differences between Block level and Inline Elements:

Block Level Element	Inline Element
Begins a new line of text	Does not begin a new line of text.
Its width extend beyond the inner content	Its width only extends as far as the inner content.
You can set the width and height values.	You can't set width and height values.
Can Contain text, data , inline elements, or other block level elements.	Can Contain text, data or other inline elements
e.g. <p>, <div>,<h1>,,etc.	e.g. <a>,,,,<i>,etc.

❖ Div Element:

The div (division) element is a **generic block-level element**, most often used to divide **page content into blocks**. A **block element** is a page element that starts a new line and has a width equal to the entire page or the parent container.

You'll very often see **divs** used to group related paragraphs, images, headings, and links. For example, a three-paragraph article may be enclosed in a div, and a navigation menu containing links might be enclosed in another div. Using **divs** this way makes it easier to identify different sections of a page and apply styling to them with CSS.

❖ Span Element:

The span element is a generic **inline element**, typically used to apply styling to a **portion** of inline content. An **inline element does not start a new line** and only takes up as much space on the page as its content. Span tags are used on small segments of text, links, images, and other HTML elements that appear **inline** with the surrounding content.

❖ Paragraph Tag<p>:

In HTML to create a paragraph we use <p> tag. The attribute of <p> tag is align.

The values of align attributes are left, right and center.

Example:

```
<html>
<head>
<title>Example of paragraph tag</title>
</head>
<body>
<p>Lorem Ipsum is simply dummy text of the printing and typesetting industry.
Lorem Ipsum has been the industry's standard dummy text ever since the 1500s,
when an unknown printer took a galley of type and scrambled it to make a type
specimen book. </p>
</body>
</html>
```

❖ Heading Tag<h₁>, <h₂>, <h₃>, <h₄>, <h₅>, <h₆>:

The **defined titles** in the HTML is called Heading. To put different styles of heading in HTML we use heading tag. Heading tags are of different labels **from<h₁> to <h₆>**. The text within <h₁> is the **largest text** and the text within <h₆> is the **smallest text**.

```
<html>
  <head>
    <title>Example of paragraph tag</title>
  </head>
  <body>
    <h1>NITNEPAL</h1>
    <h2>NITNEPAL</h2>
    <h3>NITNEPAL</h3>
    <h4>NITNEPAL</h4>
    <h5>NITNEPAL</h5>
    <h6>NITNEPAL</h6>
  </body>
</html>
```

❖ Different types of List in HTML:

It is the collection of data items arranged with order or without order. There are three types of list in HTML:

- Ordered list
- Unordered list
- Definition list

Ordered list

The type of list in which the numbers are used to list the items is called ordered list.

We use `` tag to create ordered list. The attributes of the `` tag are type and text. The start attribute defines the start of number. The default start value is 1. To list the item we use `` tag. The ordered list which contains another ordered list is called Nested Ordered list.

E.g. To display the following output

1. Input device

a. Mouse

b. Keyboard

2. Output Device

i. Printer

ii. Monitor

3. Memory

A. Primary Memory

B. Secondary memory

```
<html>
<head>
<title>Webpage</title>
</head>
<body>
<ol>
<li>Input device</li>
<ol type="a">
<li>Mouse</li>
<li>Keyboard</li>
</ol>
<li>Output device</li>
<ol type="i">
<li>Printer</li>
<li>Monitor</li>
</ol>
<li>Memory</li>
<ol type="A">
<li>Primary memory</li>
<li>Secondary memory</li>
</ol>
</ol>
</body>
</html>
```

Unordered list

The items that are arranged without any order or with Bullet. The attribute of unordered list is <type>. To create an unordered list tag is used. The value of type attributes are:

disc 

Circle 

Square 

To list the tag tag is used

Example:

O input device

O output device

o Memory

o CPU

```
<html>
<head>
<title>Unordered list</title>
</head>
<UL type=Circle> <li>Input device</li>
<li>Output device</li>
<li>Memory</li>
<li>CPU</li>
</ul>
</body>
</html>
```

❖ HTML Tables:

It is a collection of rows and columns. In HTML <table> tag is used to create the table in webpage. To insert the table row <TR> tag is used and to insert the data in the table column <TD> tag is used. the attributes of table tags are:-

- 1) border: It specifies the size of the border around a table and cells within the table.
- 2) <BGCOLOR>: It sets the background color using either the color name or color code.
- 3) Cellspacing: It specifies the space between cells.
- 4) cellpadding: It specifies the amount of space between the border of a cell and items within the cell.
- 5) Width: It specifies the width of a table in either pixel or percent.

Attributes of <tr> Tag:

- 1) align: It specifies the alignment of content in a row of cells as left, right..
- 2) valign: specify the vertical alignment of content in a row of cells at the top, bottom or middle.

Attributes of <td> Tag:

- 1) align: It specifies the alignment of content in a cell at left, right or center.
- 2) valign: specify the vertical alignment of content in a cell at the top, bottom, or middle.
- 3) Rowspan: specifies the number of rows a cell will span.
- 4) Colspan: specifies the number of column a cell will span.
- 5) th: it defines a table header. A normal cell with text that is bold and centre.

❖ Grouping Elements:

There are a number of additional tags that allow us to group related HTML content together. Some examples include `<header>`, `<section>`, `<article>` and `<footer>`. All of these HTML elements (including `<div>`) have no effect on the HTML content itself, but instead group and contain other elements. In this tutorial, we covered about `<div>`, `<header>` and `<footer>`.

Example to be illustrated in the lecture.

Marquee Tag:

An HTML marquee is a **scrolling piece of text** displayed either horizontally across or vertically down your webpage depending on the settings. This is created by using HTML `<marquee>` tag.

e.g. `<marquee>We are from NITNEPAL</marquee>`

❖ Semantic Elements:

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

Examples of Semantic elements:<form>,<table>, and article – clearly defines its content.

Examples of Non-Semantic elements : <div>, - Tells nothing about its content.

Different tags of Semantic elements are:-

Tag	Description
<u><article></u>	Defines independent, self-contained content
<u><aside></u>	Defines content aside from the page content
<u><details></u>	Defines additional details that the user can view or hide
<u><figcaption></u>	Defines a caption for a <figure> element
<u><figure></u>	Specifies self-contained content, like illustrations, diagrams, photos, code listings, etc.
<u><footer></u>	Defines a footer for a document or section
<u><header></u>	Specifies a header for a document or section
<u><main></u>	Specifies the main content of a document
<u><mark></u>	Defines marked/highlighted text
<u><nav></u>	Defines navigation links
<u><section></u>	Defines a section in a document
<u><summary></u>	Defines a visible heading for a <details> element
<u><time></u>	Defines a date/time

❖ Special Characters:

Some special characters in HTML are:-

Some Mathematical Symbols Supported by HTML

Char	Number	Entity	Description	Try it
forall	∀	∀	FOR ALL	Try it»
partial	∂	∂	PARTIAL DIFFERENTIAL	Try it»
exists	∃	∃	THERE EXISTS	Try it»
empty	∅	∅	EMPTY SETS	Try it»
nabla	∇	∇	NABLA	Try it»
isin	∈	∈	ELEMENT OF	Try it»
notin	∉	∉	NOT AN ELEMENT OF	Try it»
ni	∋	∋	CONTAINS AS MEMBER	Try it»
prod	∏	∏	N-ARY PRODUCT	Try it»
sum	∑	∑	N-ARY SUMMATION	Try it»

Char	Number	Entity	Description	Try it
©	©	©	COPYRIGHT SIGN	Try it»
®	®	®	REGISTERED SIGN	Try it»
€	€	€	EURO SIGN	Try it»
™	™	™	TRADEMARK	Try it»
←	←	←	LEFTWARDS ARROW	Try it»
↑	↑	↑	UPWARDS ARROW	Try it»
→	→	→	RIGHTWARDS ARROW	Try it»
↓	↓	↓	DOWNWARDS ARROW	Try it»
♠	♠	♠	BLACK SPADE SUIT	Try it»
♣	♣	♣	BLACK CLUB SUIT	Try it»
♥	♥	♥	BLACK HEART SUIT	Try it»
♦	♦	♦	BLACK DIAMOND SUIT	Try it»

❖HTML Formatting Elements:

Some special formatting elements in HTML are:-

HTML Formatting Elements

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

❖ HTML Comments:

HTML comments are not displayed in the browser, but they can help document your HTML source code.

❖ HTML Comment Tag:

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

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

You can also hide more than one line. Everything between the `<!--` and the `-->` will be hidden from the display.

❖HTML Colors:

In HTML colors can be applied to the elements by following ways:

- Color Names
- RGB
- HEX
- HSL

Color Names: In Color Name, the colors are provided to elements by simply writing the color name.

For example:-

```
<p style="color:red;">Welcome to NITNepal</p>
```

```
<p style="color:tomato;">Welcome to NITNepal</p>
```

❖ RGB Colors:

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!

For example, `rgb(255, 0, 0)` is displayed as red, because red is set to its highest value (255), and the other two (green and blue) are set to 0.

Another example, `rgb(0, 255, 0)` is displayed as green, because green is set to its highest value (255), and the other two (red and blue) are set to 0.

To display black, set all color parameters to 0, like this: `rgb(0, 0, 0)`.

To display white, set all color parameters to 255, like this: `rgb(255, 255, 255)`.

❖ Hex 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).

For example, #ff0000 is displayed as red, because red is set to its highest value (ff), and the other two (green and blue) are set to 00.

Another example, #00ff00 is displayed as green, because green is set to its highest value (ff), and the other two (red and blue) are set to 00.

To display black, set all color parameters to 00, like this: #000000.

To display white, set all color parameters to ff, like this: #ffffff.

❖ HSL Colors:

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.

Saturation is a percentage value. 0% means a shade of gray, and 100% is the full color.

Lightness is also a percentage value. 0% is black, and 100% is white.

❖ HTML Links:

HTML Links - Hyperlinks

HTML links are hyperlinks.

You can click on a link and jump to another document.

When you move the mouse over a link, the mouse arrow will turn into a little hand.

Note: A link does not have to be text. A link can be an image or any other HTML element!

HTML Links - Syntax

The HTML `<a>` tag defines a hyperlink. It has the following syntax:

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

The most important attribute of the `<a>` element is the `href` attribute, which indicates the link's destination.

The *link text* is the part that will be visible to the reader.

Clicking on the link text, will send the reader to the specified URL address.

Link Titles

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

Example

```
<a href="https://www.w3schools.com/html/" title="Go to W3Schools HTML section">Visit our HTML  
Tutorial</a>
```

HTML Links - The target Attribute

By default, the linked page will be displayed in the current browser window. To change this, you must specify another target for the link.

The `target` attribute specifies where to open the linked document.

The `target` attribute can have one of the following values:

- `_self` - Default. Opens the document in the same window/tab as it was clicked
- `_blank` - Opens the document in a new window or tab
- `_parent` - Opens the document in the parent frame
- `_top` - Opens the document in the full body of the window

Example

Use `target="_blank"` to open the linked document in a new browser window or tab:

```
<a href="https://www.w3schools.com/" target="_blank">Visit W3Schools!</a>
```

[Try it Yourself »](#)

HTML Links - Use an Image as a Link

To use an image as a link, just put the `` tag inside the `<a>` tag:

Example

```
<a href="default.asp">  
    
</a>
```

[Try it Yourself »](#)

Link to an Email Address

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

Example

```
<a href="mailto:someone@example.com">Send email</a>
```

[Try it Yourself »](#)

❖ HTML ID:

The HTML `id` attribute is used to specify a unique id for an HTML element.

You cannot have more than one element with the same id in an HTML document.

Using The id Attribute

The `id` attribute specifies a unique id for an HTML element. The value of the `id` attribute must be unique within the HTML document.

The `id` attribute is used to point to a specific style declaration in a style sheet. It is also used by JavaScript to access and manipulate the element with the specific id.

The syntax for id is: write a hash character (#), followed by an id name. Then, define the CSS properties within curly braces {}.

❖ HTML Class:

The HTML `class` attribute is used to specify a class for an HTML element.

Multiple HTML elements can share the same class.

Using The class Attribute

The `class` attribute is often used to point to a class name in a style sheet. It can also be used by a JavaScript to access and manipulate elements with the specific class name.

Different Elements Can Share Same Class

Different HTML elements can point to the same class name.

In the following example, both `<h2>` and `<p>` point to the "city" class and will share the same style:

Example

```
<h2 class="city">Paris</h2>
<p class="city">Paris is the capital of France</p>
```

❖ HTML Iframes:

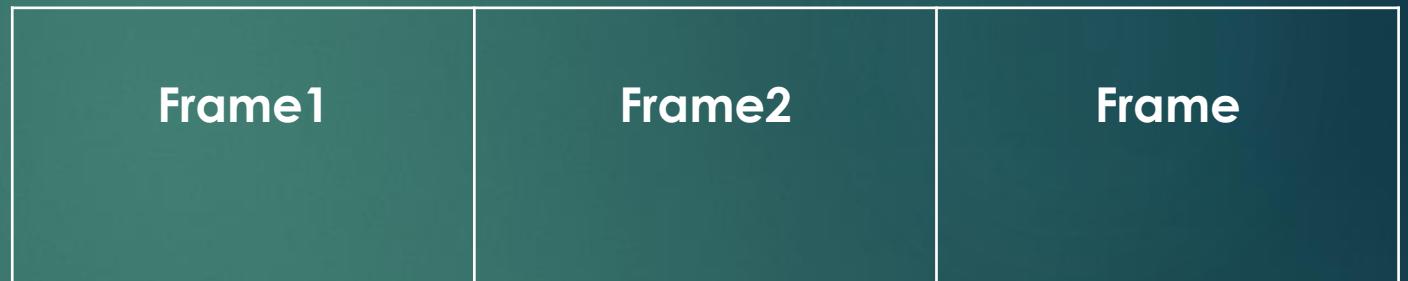
It is an area of a web browser window defined by a **frame** page. A frame appears in a web browser as one of the numbers of different areas in which pages can be displayed. The frame may be **scrollable** and **resizable** and may have a border. We display a page in a frame **by creating a hyperlink** to the page and specifying the same as a part of the hyperlink. frame page is a page that divides a web browser into a window into different areas called **frames** that can independently display several web pages. We can create different frames using the **<frameset>** tag. The attributes of the frameset tag are:-

- i) **Rows**:- it specifies the number of cols on the webpage.
- ii) **Cols(Columns)** :- It specifies the number of cols on the webpage.

<frame> tag:- It is used to **associate** an HTML document with each frame created with a **frameset** tag. The attribute of this tag is **src**. It specifies the name of the document to be displayed on the specified frame.

Example of Frame Tag:-

```
<html>  
<head>  
<title>Example of Frame</tilte>  
</head>  
<frameset cols="*,*,*">  
<framesrc="frame1.html">  
<framesrc="frame2.html">  
<framesrc="frame3.html">  
</frameset>  
</html>
```



❖ HTML File Paths:

HTML File Paths

A file path describes the location of a file in a web site's folder structure.

File paths are used when linking to external files, like:

- Web pages
- Images
- Style sheets
- JavaScripts

Absolute File Paths

An absolute file path is the full URL to a file:

Example

```

```

Relative File Paths

A relative file path points to a file relative to the current page.

In the following example, the file path points to a file in the images folder located at the root of the current web:

Example

```

```

HTML Forms:

The **form** is a set of data entry fields on a page data processed on a web server. The data is sent to the server when a website visitor **submits** the form by clicking on a **Button**. The form can be created on the webpage by using a **form** tag. The components of the form tag like textbox, textarea, radio button, and check box can be added to the form by using **<input>** tag with their properties.

The **attributes** of <input> tags are:-

1. <type>:- It specifies the type of object such as textbox, password box, radiobutton, and checkbox that can be placed on the form. The values of <type> attributes are:-
 - :- type="text" → It is used to insert a text box object on the form.
 - :- type="password" → It is used to insert the password entry box object on the form.
 - :- type="radio" → It is used to insert a radio button object on the form.
 - :- type="checkbox" → It is used to insert a checkbox object on the form.
 - :- type="submit" → It is used to insert submit button on the form.
 - :- type="reset" → It is used to insert recheck.
 - :- type="size" → It specifies the visible width, in characters, of an input field.
2. <Name>=> It specifies the name of the object of the form.
3. <size> => IT specifies the length of the text entry field in the terms of number of characters.
4. <Maxsize>=> It specifies the maximum length of text entry field in the terms of number of characters.

5. <Select>:- It enables the user to select one or more items from a menu or a scrolling list.

They are similar in functionality to radio or checkbox but they displayed in different way in screen.

Its attributes are:-

- <Name>:- It specifies the name of the selected list.
- <multiple>:- It specifies the user can select multiple option from the list.
- <option>:- It specifies the individual option list within the selection list. It is written inside the select.

6. <textarea>:-It is used to insert text area in which the user can type many lines of text. The attributes of <textarea> are:-

- <Name>:- It specify the name of the text area.
- <Rows>:- It specify the height of the text area object in terms of rows of text.
- <Cols>:-It specify the width of the text area object in terms of columns.

7. <label> :- The <label> element defines a label for several 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 help 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.

Example:

Student data entry form

Username

Address

Password

Gender

Male Female

Favourite Games

Volleyball football
 Cricket Table Tennis

Program offered

Comment

```
<html>
<head>
<title>Example of form</title>
</head>
<body>
<p>Student data entry form</p>
<form>
<p>Username<input type="text"></p>
<p>Address<input type="text"></p>
<p>Password<input type="password"></p>
<p>Gender</p>
<input type="radio">Male<input type="radio">Female
<p>Favourite Games</p>
<input type="checkbox">Volleyball<input type="checkbox">football<br>
<input type="checkbox">Cricket<input type="checkbox">Table Tennis<br>
<p> Program offered</p>
<select>
<option>Select Faculty</option>
<option>Science</option>
<option>Management</option>
<option>Education</option>
<option>Humanities</option>
</select>
<p>Comment</p>
<textarea rows=25cols=25></textarea>
<input type="submit" value="submit">
<input type="reset" value="reset">
</form>
</body>
</html>
```

HTML Graphics(SVG Element):-

The HTML <svg> element is a container for SVG Graphics.

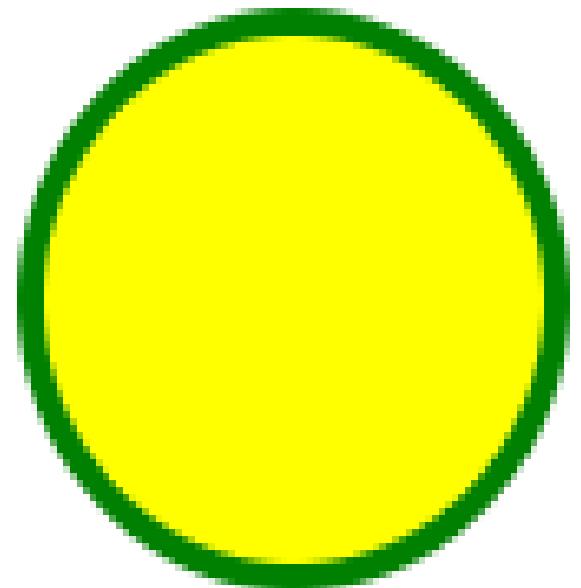
SVG has several methods for drawing paths, boxes, circles, text, and graphic images.

1. SVG Circle:-

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

<svg width="100" height="100">
  <circle cx="50" cy="50" r="40" stroke="green" stroke-width="4" fill="yellow" />
</svg>

</body>
</html>
```



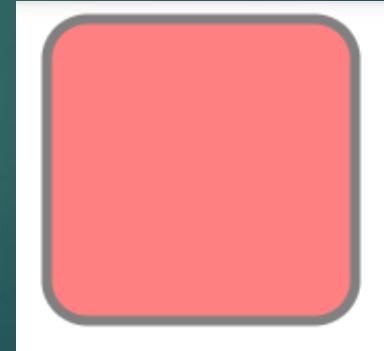
2. SVG Rectangle

```
<svg width="400" height="100">  
  <rect width="400" height="100" style="fill:rgb(0,0,255);stroke-width:10;stroke:rgb(0,0,0)" />  
</svg>
```



3. SVG Rounded Rectangle

```
<svg width="400" height="180">  
  <rect x="50" y="20" rx="20" ry="20" width="150" height="150"  
        style="fill:red;stroke:black;stroke-width:5;opacity:0.5" />  
</svg>
```



HTML Media

1. Video:-

The HTML <video> Element

To show a video in HTML, use the <video> element:

Example

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

How it Works

The `controls` attribute adds video controls, like play, pause, and volume.

It is a good idea to always include `width` and `height` attributes. If height and width are not set, the page might flicker while the video loads.

The `<source>` element allows you to specify alternative video files which the browser may choose from. The browser will use the first recognized format.

The text between the `<video>` and `</video>` tags will only be displayed in browsers that do not support the `<video>` element.

2. Audio:-

The HTML `<audio>` element is used to play an audio file on a web page.

The HTML `<audio>` Element

To play an audio file in HTML, use the `<audio>` element:

Example

```
<audio controls>
  <source src="horse.ogg" type="audio/ogg">
  <source src="horse.mp3" type="audio/mpeg">
Your browser does not support the audio element.
</audio>
```

HTML Audio - How It Works

The `controls` attribute adds audio controls, like play, pause, and volume.

The `<source>` element allows you to specify alternative audio files which the browser may choose from. The browser will use the first recognized format.

The text between the `<audio>` and `</audio>` tags will only be displayed in browsers that do not support the `<audio>` element.

3. Youtube:-

Playing a YouTube Video in HTML

To play your video on a web page, do the following:

- Upload the video to YouTube
- Take a note of the video id
- Define an `<iframe>` element in your web page
- Let the `src` attribute point to the video URL
- Use the `width` and `height` attributes to specify the dimension of the player
- Add any other parameters to the URL (see below)

Example

```
<iframe width="420" height="315"  
src="https://www.youtube.com/embed/tgbNymZ7vqY">  
</iframe>
```

YouTube Autoplay + Mute

You can let your video start playing automatically when a user visits the page, by adding `autoplay=1` to the YouTube URL. However, automatically starting a video is annoying for your visitors!

Note: Chromium browsers do not allow autoplay in most cases. However, muted autoplay is always allowed.

Add `mute=1` after `autoplay=1` to let your video start playing automatically (but muted).

YouTube - Autoplay + Muted

```
<iframe width="420" height="315"  
src="https://www.youtube.com/embed/tgbNymZ7vqY?autoplay=1&mute=1">  
</iframe>
```

YouTube Loop

Add `loop=1` to let your video loop forever.

Value 0 (default): The video will play only once.

Value 1: The video will loop (forever).

YouTube - Loop

```
<iframe width="420" height="315"  
src="https://www.youtube.com/embed/tgbNymZ7vqY?playlist=tgbNymZ7vqY&loop=1">  
</iframe>
```

YouTube Controls

Add `controls=0` to not display controls in the video player.

Value 0: Player controls does not display.

Value 1 (default): Player controls display.

YouTube - Controls

```
<iframe width="420" height="315"  
src="https://www.youtube.com/embed/tgbNymZ7vqY?controls=0">  
</iframe>
```

4. Plugins:-

The <object> Element

The `<object>` element is supported by all browsers.

The `<object>` element defines an embedded object within an HTML document.

It was designed to embed plug-ins (like Java applets, PDF readers, and Flash Players) in web pages, but can also be used to include HTML in HTML:

Example

```
<object width="100%" height="500px" data="snippet.html"></object>
```

The <embed> Element

The `<embed>` element is supported in all major browsers.

The `<embed>` element also defines an embedded object within an HTML document.

Web browsers have supported the `<embed>` element for a long time. However, it has not been a part of the HTML specification before HTML5.

Example

```
<embed src="audi.jpeg">
```