

# 2PGDCA4 (B)-Programming With ASP. Net

## UNIT-I

### 1. Concept of Hyper Text and HTML:

HTML stands for Hypertext Markup Language. It allows the user to create and structure sections, paragraphs, headings, links, and block quotes for web pages and applications.

HTML is not a programming language, meaning it doesn't have the ability to create dynamic functionality. Instead, it makes it possible to organize and format documents, similarly to Microsoft Word. When working with HTML, we use simple code structures (tags and attributes) to mark up a website page. Overall, HTML is a markup language that is really straightforward and easy to learn even for complete beginners in website building.

It is the predominant markup language for web pages. It is used to create web pages using markup language. HTML is a combination of Hypertext and Markup language to create structured web page content such as headings, paragraphs, lists, links, quotes, and other so many items. HTML support to display image files, objects file such as audio, video that you embedded in HTML to create an interactive web page. Popular scripts languages JavaScript, as well as other scripting languages, are you can use it to create dynamic user interactive web pages.

For example, we can create a paragraph by placing the enclosed text within a starting `<p>` and closing `</p>` tag.

`<p>This is how you add a paragraph in HTML.</p>`

`<p>you can have more than one! </p>`

#### 1.1 The History of HTML:

HTML was invented by Tim Berners-Lee, a physicist at the CERN research institute in Switzerland. He came up with the idea of an Internet-based hypertext system. Hypertext means a text that contains references (links) to other texts that viewers can access immediately. He published the first version of HTML in 1991, consisting of 18 HTML tags. Since then, each new version of the HTML language came with new tags and attributes (tag modifiers) to the markup.

According to Mozilla Developer Network's HTML Element Reference, currently, there are 140 HTML tags, although some of them are already obsolete (not supported by

modern browsers). Due to a quick rise in popularity, HTML is now considered an official web standard. The HTML specifications are maintained and developed by the World Wide Web Consortium (W3C).

The biggest upgrade of the language was the introduction of HTML5 in 2014. It added several new semantic tags to the markup, that reveal the meaning of their own content, such as <article>, <header>, and <footer>.

## 1.2 How Does HTML Work?

HTML documents are files that end with an .html or .htm extension. You can view them using any web browser (such as Google Chrome, Safari, or Mozilla Firefox). The browser reads the HTML file and renders its content so that internet users can view it.

Usually, the average website includes several different HTML pages.

For instance: home pages, about pages, contact pages would all have separate HTML documents.

Each HTML page consists of a set of tags (also called elements), which you can refer to as the building blocks of web pages. They create a hierarchy that structures the content into sections, paragraphs, headings, and other content blocks.

Most HTML elements have an opening and a closing that use the <tag></tag> syntax.

Below, you can see a code example of how HTML elements can be structured:

```
<div>
  <h1>The Main Heading</h1>
  <h2>A catchy subheading</h2>
  <p>Paragraph one</p>
  
  <p>Paragraph two with a <a href="https://example.com">hyperlink</a></p>
</div>
```

### Explanation of above given code:

- The outmost element is a simple division (<div></div>) you can use to mark up bigger content sections.
- It contains a heading (<h1></h1>), a subheading (<h2></h2>), two paragraphs (<p></p>), and an image (<img>).
- The second paragraph includes a link (<a></a>) with a href attribute that contains the destination URL.
- The image tag also has two attributes: src for the image path and alt for the image description.

## Pros and Cons of HTML

Like most things, HTML comes with a handful of strengths and limitations.

### Pros:

- A widely used language with a lot of resources and a huge community behind.
- Runs natively in every web browser.
- Comes with a flat learning curve.
- Open-source and completely free.
- Clean and consistent markup.
- The official web standards are maintained by the World Wide Web Consortium (W3C).
- Easily integrable with backend languages such as PHP and Node.js.

### Cons:

- Mostly used for static web pages. For dynamic functionality, you may need to use JavaScript or a backend language such as PHP.
- It does not allow the user to implement logic. As a result, all web pages need to be created separately, even if they use the same elements, e.g. headers and footers.
- Some browsers adopt new features slowly.
- Browser behavior is sometimes hard to predict (e.g. older browsers don't always render newer tags).

## 2. HTML Element Syntax:

An HTML element is an individual component of an HTML document. It represents semantics, or meaning. For example, the title element represents the title of the document. Most HTML elements are written with a *start tag* (or opening tag) and an *end tag* (or closing tag), with content in between. Elements can also contain attributes that defines its additional properties.

### 2.1 HTML Tags Vs Elements:

Technically, an HTML element is the collection of start tag, its attributes, an end tag and everything in between. On the other hand an HTML tag (either opening or closing) is used to mark the start or end of an element, as you can see in the above illustration. However, in common usage the terms HTML element and HTML tag are interchangeable i.e. a tag is an element is a tag. For simplicity's sake of this website, the terms "tag" and "element" are used to mean the same thing — as it will define something on your web page.

## 2.2 Case Insensitivity in HTML Tags and Attributes:

In HTML, tag and attribute names are not case-sensitive (but most attribute values are case-sensitive). It means the tag `<P>`, and the tag `<p>` defines the same thing in HTML which is a paragraph.

But in XHTML they are case-sensitive and the tag `<P>` is different from the tag `<p>`.

```
<p>This is a paragraph.</p> <P>This is also a valid paragraph.</P>
```

## 2.3 Empty HTML Elements:

Empty elements (also called self-closing or void elements) are not container tags — that means you cannot write `<hr> some content </hr>` or `<br>some content</br>`.

A typical example of an empty element is the `<br>` element, which represents a line break. Some other common empty elements are `<img>`, `<input>`, `<link>`, `<meta>`, `<hr>`, etc.

```
<p>This paragraph contains <br> a line break.</p>

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

## 2.4 Nesting HTML Elements:

Most HTML elements can contain any number of further elements (except empty elements), which are, in turn, made up of tags, attributes, and content or other elements.

The following example shows some elements nested inside the `<p>` element.

```
<p>Here is some <b>bold</b> text.</p>
<p>Here is some <em>emphasized</em> text.</p>
<p>Here is some <mark>highlighted</mark> text.</p>
```

HTML tags should be nested in correct order. They must be closed in the inverse order of how they are defined, that means the last tag opened must be closed first.

```
<p><strong>These tags are nested properly.</strong></p>
<p><strong>These tags are not nested properly.</p></strong>
```

## 2.5 HTML Elements Types:

Elements can be placed in two distinct groups: block level and inline level elements. The former make up the document's structure, while the latter dress up the contents of a block. Also, a block element occupies 100% of the available width and it is rendered with a line break before and after. Whereas, an inline element will take up only as much space as it needs.

The most commonly used block-level elements are `<div>`, `<p>`, `<h1>` through `<h6>`, `<form>`, `<ol>`, `<ul>`, `<li>`, and so on. Whereas, the commonly used inline-level elements are `<img>`, `<a>`, `<span>`, `<strong>`, `<b>`, `<em>`, `<i>`, `<code>`, `<input>`, `<button>`, etc.

## 3. Head Section:

### 3.1 Head Section:

HTML `<head>` section is a container tag and is placed before the `<body>` tag. The `<head>` element contains general information about the page, meta-information, and style sheet URL and document type information.

HTML `<head>` tag inside elements does not display in a body part in a web browser.

HTML `<head>` tag contains following elements that describe the metadata: `<title>`, `<meta>`, `<link>`, `<style>`, `<script>`, and `<base>`.

### 3.2 HTML Head Section Structure:

```
<html>
<head>
  <title>Document title</title>
  <meta charset="UTF-8"/>
  <meta name="description" content="Free Web tutorials"/>
  <link rel="stylesheet" type="text/css" href="style.css"/>
  <script type="text/javascript" src="script.js"></script>
</head>
<body>
  <!-- Document body -->
</body>
</html>
```

### 3.3 Head Section Elements:

#### HTML `<title>` Element:

The HTML `<title>` element is used to represent the title of the HTML document and it is required in all HTML documents. The `<title>` element is displayed in a browser tab. Only one `<title>` element allowable per document and it's required to define within the `<head>` element.

Example:

```
<html>
<head>
  <title>Document title</title>
```

```
</head>
<body>
  <!-- Document body -->
</body>
</html>
```

### **HTML <meta> Element:**

HTML <meta> element is used to provide structured meta-information about a web page. It contains a variety of information about the document. The <meta> tag is used to specify page description, keywords, and other important information. It helps to optimize the web page on the search engine. This process is known as search engine optimization (SEO).

Example:

```
<html>
<head>
  <meta charset="UTF-8"/>
  <meta name="description" content="HTML meta element"/>
  <meta name="keywords" content="html, css, js"/>
  <meta name="author" content="way2tutorial"/>
</head>
<body>
  <!-- Document body -->
</body>
</html>
```

### **HTML <link> Element:**

HTML <link> element is used to load an external style sheet into HTML document.

Example:

```
<!DOCTYPE html>
<html>
<head>
  <link rel="stylesheet" type="text/css" href="style.css"/>
</head>
<body>
  <!-- Document body -->
</body>
</html>
```

### **HTML <style> Element:**

HTML <style> element is used to write CSS style to an HTML document. It contains CSS properties.

Example:

```
<html>
<head>
```

```

<style>
  p {
    font-size: 15px;
    color: red;
  }
  h2 {
    font-weight: normal;
    color: #196a8e;
  }
</style>
</head>
<body>
  <!-- Document body -->
</body>
</html>

```

### HTML <script> Element:

HTML <script> element used to defines client-side JavaScript that is specified within the document or embedded external JavaScript file through the SRC attribute.

Example:

```

<html>
<head>
  <script type="text/javascript" src="script.js"></script>
</head>
<body>
  <!-- Document body -->
</body>
</html>

```

## 4. Body Section:

### 4.1 Definition:

HTML body section is a main contain section of web page all contain that will be seen when the user loads the webpage. HTML body section supported all the contains such as text, hyper-links, images, Special Character, lists, tables, frames, forms etc. It's most powerful section and important section to display web page.

### 4.2 Body Section Structure:

```

<html>
<head>
  <link rel="stylesheet" type="text/css" href="styles.css">
  <title>Example for Body section elements</title>
</head>
<body>

```

```
<!-- Body Part -->
<p> This is Body Section </p>
<a href="../html_tutorial.php"> goto HTML Index Page </a>
</body>
</html>
```

### 4.3 Basic Body Section Elements:

Tag	Description
<u>&lt;a&gt;</u>	Defines the internal link, external link and Subdirectory link.
<u>&lt;br /&gt;</u>	Defines the single line break.
<u>&lt;code&gt;</u>	Defines the computer code on text base.
<u>&lt;div&gt;</u>	Defines the division section in a document.
<u>&lt;form&gt;</u>	Defines the HTML form for use in input documents
<u>&lt;frame&gt;</u>	Defines the many individual part
<u>&lt;hr /&gt;</u>	Defines the horizontal line.
<u>&lt;p&gt;</u>	Defines the paragraph in web documents.
<u>&lt;pre&gt;</u>	Defines the preformatted text.
<u>&lt;span&gt;</u>	Defines a section in a web document.
<u>&lt;table&gt;</u>	Defines the table.



<u>&lt;textarea&gt;</u>	Defines the multiline text.
-------------------------	-----------------------------

## 5. HTML Tags:

HTML tags are the hidden keywords within a web page that define how your web browser must format and display the content. Most tags must have two parts, an opening and a closing part. For example, `<html>` is the opening tag and `</html>` is the closing tag. Note that the closing tag has the same text as the opening tag, but has an additional forward-slash ( / ) character. I tend to interpret this as the "end" or "close" character. There are some tags that are an exception to this rule, and where a closing tag is not required. The `<img>` tag for showing images is one example of this. Each HTML file must have the essential tags for it to be valid, so that web browsers can understand it and display it correctly. The rest of the HTML file can contain as little or as many tags as you want to display your content.

### 5.1 Essential HTML Tags:

There are four sets of HTML tags that are needed to form the basic structure for every HTML file:

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

#### Definition —

**<html> </html>**

This basically defines the document as web page. It also identifies the beginning and end of the HTML document. All other tags must fall between the html tags.

**Header - <head> </head>**

The header contains information about the document that will not appear on the actual page, such as the title of the document, the author, which stylesheet to use and also meta tags.

**Title - <title> </title>**

The title tag defines the title that will appear in the title bar of your web browser. The title must appear between the head tags.

**Body - <body> </body>**

The body tags contain all the information and other visible content on the page. All your images, links and plain text must go between the <body> and </body> tags.

These four tags are special. There must only be one set of each and they must be in the correct order like in the example below. The fun and creative part comes when using the basic tags for adding content and headings.

Example:

Below is a basic html document. Notice that everything falls between the html tags, the title appears within the head of the document, and that the body comes after the head.

```
<html>
<head>
  <title>My Page Title</title>
</head>
<body>
```

This is where all my web page content goes!

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

**5.2 Some other useful HTML Tags:**

When you learn beginners HTML, It's important to have a basic HTML tags understanding. Here all Basic HTML tags are listed to help you learn.

**HTML Paragraph Tag:**

Defines a paragraph into web document. HTML paragraph define using <p> tag.

Example:

```
<body>
  <p> This is first Paragraphs </p>
  <p> This is Second Paragraphs </p>
</body>
```

**HTML Comment Tag:**

Defines the Comments <!-- Your Comment --> tag.

Example:

```
<body>
   <!--Image file-->
</body>
```

### HTML Images Tag:

To display images into web document. HTML Images are define inside the <img /> tag.

Example:

```
<body>
  
</body>
```

### HTML Link Tag:

Defines the Link in internal or External document. HTML Link are defined inside the <a> tag.

Example:

```
<body>
  <a href="http://www.way2tutorial.com">Web Development Tutorial</a>
</body>
```

### HTML Headings Tags:

Defines the Heading <h1> to <h6> tags.

```
<body>
  <h1>Heading h1</h1>
  <h2>Heading h2</h2>
  <h3>Heading h3</h3>
  <h4>Heading h4</h4>
  <h5>Heading h5</h5>
  <h6>Heading h6</h6>
</body>
```

## 6. Inserting Texts:

The INS element defines inserted text.

```
<ins>inserted text</ins>
```

This element changes into a block-level element or an inline element by the situation.

1. When a block-level element is included in the content of this element. This element is treated as a block-level element.
2. When a block-level element is not included in the content of this element:  
This element is treated as an inline element.

## Example

```
<p>Normal text, <ins>Inserted text,</ins> Normal text,</p>
```

Output

Normal text, Inserted text, Normal text,

In the following cases, this INS element is treated as a block-level element.

```
<ins>
```

```
<p>Inserted text</p>
</ins>
```

Output

Inserted text

In the following cases, this INS element is treated as an inline element.

```
<ins>
<u>Inserted text</u>
</ins>
```

Output

Inserted text

```
<p>I started playing baseball in <del>2000</del> <ins>2001</ins>.</p>
```

Output

I started playing baseball in ~~2000~~ 2001.

## 6.1 HTML Formatting Tags:

### Definition:

HTML formatting tags use for formatting a text style. It will become necessary to make minor changes to the formatting of those elements.

HTML `<b>` tag use for formatting output bold text. Following are few common formatting tags.

Tag	Example	Results
<code>&lt;b&gt;</code>	<code>&lt;b&gt;Bold Text&lt;/b&gt;</code>	An example of <b>Bold Text</b>
<code>&lt;big&gt;</code>	<code>&lt;big&gt;Big Text&lt;/big&gt;</code>	An example of Big Text
<code>&lt;center&gt;</code>	<code>&lt;center&gt;Center Text&lt;/center&gt;</code>	An example of Center Text
<code>&lt;em&gt;</code>	<code>&lt;em&gt;Emphasized Text&lt;/em&gt;</code>	An example of <i>Emphasized Text</i>
<code>&lt;i&gt;</code>	<code>&lt;i&gt;Italic Text&lt;/i&gt;</code>	An example of <i>Italic Text</i>
<code>&lt;small&gt;</code>	<code>&lt;small&gt;Small Text&lt;/small&gt;</code>	An example of Small Text
<code>&lt;strong&gt;</code>	<code>&lt;strong&gt;Strong Text&lt;/strong&gt;</code>	An example of <b>Strong Text</b>
<code>&lt;sub&gt;</code>	<code>&lt;sub&gt;Subscript Text&lt;/sub&gt;</code>	An example of Subscript Text
<code>&lt;sup&gt;</code>	<code>&lt;sup&gt;Superscript Text&lt;/sup&gt;</code>	An example of Superscript Text
<code>&lt;del&gt;</code> <code>&lt;s&gt;</code> <code>&lt;strike&gt;</code>	<code>&lt;del&gt;Delete Text&lt;/del&gt;</code> <code>&lt;s&gt;Strike Text&lt;/s&gt;</code> <code>&lt;strike&gt;Strike Text&lt;/strike&gt;</code>	An example of <del>Delete Text</del> An example of <del>Strike Text</del> An example of <del>Strike Text</del>
<code>&lt;u&gt;</code>	<code>&lt;u&gt;Underline Text&lt;/u&gt;</code>	An example of <u>Underline Text</u>
<code>&lt;tt&gt;</code>	<code>&lt;tt&gt;Teletype Text&lt;/tt&gt;</code>	An example of Teletype Text
<code>&lt;blockquote&gt;</code>	<code>&lt;blockquote&gt;Long Quotation&lt;/blockquote&gt;</code> <code>&lt;q&gt;Short Quotation Text&lt;/q&gt;</code>	An example of Long Quotation Text An example of Short Quotation Text

## 7. Inserting Images:

- HTML `<img />` tag is insert image into a web document.
- HTML image path define/declare inside `<img />` tag.
- The `<img />` tag is empty tag, that mean's no closing tag.

- `<img />` tag have some attributes are use for display image on web page.
- The src attribute, src stands for "source", that is path of image URL.
- Alt Attribute used to define an "alternate text" for an image. This specifies text to be identified in the image name.
- Width and Height specifies the size of image to display on webpage.

## 7.1 Image Tag Attribute:

Attributes	Values	Description
src	"image source url path"	Required, Image path should be absolute path.
width	"size_px"	Specifies the Width to display the image.
Height	"size_px"	Specifies the Height to display the image.
Align	"left" "right"	Specifies the image align side.
Border	"Size" eg. "0"	Specifies the image border size.
alt	"alternate text"	Required Attribute. Specifies text to be identify the image.

### Example:

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

Output



### Image alignment (Right side):

Image can be align in **left** or **right** relative such as paragraphs text.

```
<html>
<head>
</head>
<body>
  
  <p>Natural resources (economically referred to as land or raw
  materials)
    occur naturally within environments that exist relatively
    undisturbed
    by mankind, in a natural form. A natural resource is often
    characterized
    by amounts of biodiversity existent in various
    ecosystems.</p>
</body>
</html>
```

Output:

Natural resources (economically referred to as land or raw materials) occur naturally within environments that exist relatively undisturbed by mankind, in a natural form. A natural resource is often characterized by amounts of biodiversity existent in various ecosystems.



**Image alignment (Left side):**

```
<html>
<head>
</head>
<body>
  
  <p>Natural resources (economically referred to as land or raw
  materials)
    occur naturally within environments that exist relatively
    undisturbed
    by mankind, in a natural form. A natural resource is often
    characterized
    by amounts of biodiversity existent in various
    ecosystems.</p>
</body>
</html>
```

Output:



Natural resources (economically referred to as land or raw materials) occur naturally within environments that exist relatively undisturbed by mankind, in a natural form. A natural resource is often characterized by amounts of biodiversity existent in various ecosystems.



### Image alignment (Wrap around):

```
<html>
<head>
</head>
<body>
  
  <p>Natural resources (economically referred to as land or raw
  materials)
    occur naturally within environments that exist relatively
    undisturbed
    by mankind, in a natural form. A natural resource is often
    characterized
    by amounts of biodiversity existent in various ecosystems.
  Natural
  <br clear="all" />
  resources are derived from the environment. Many of
  them are essential for our survival while others are used for
  satisfying
  our wants. Natural resources may be further classified in
  different ways.
</p>
</body>
</html>
```

### Output:



Natural resources (economically referred to as land or raw materials) occur naturally within environments that exist relatively undisturbed by mankind, in a natural form. A natural resource is often characterized by amounts of biodiversity existent in various ecosystems. Natural resources are derived from the environment. Many of them are essential for our

survival while others are used for satisfying our wants. Natural resources may be further classified in different ways.

## 7.2 Image Link:

```
<html>
<head>
</head>
<body>
  <a href="http://www.way2tutorial.com/html/tutorial.php">
    
  </a>
</body>
</html>
```

Output:



## 8. Inserting hyperlink:

The "href" attribute names the connection to another web page. Actually is the place where it will be sent the user who clicks on the link.

Links can be:

- intern - to specifically places from the page(anchors)
- locals - to other pages from the same domain
- globals - to other domains, outside the site

## HTML Links - Syntax

Hyperlinks are defined with the HTML `<a>` tag:

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

Example:

```
<a href="https://www.w3schools.com/html/">Visit our HTML tutorial</a>
```

```
<html>
```

```
<body>
```

```
<h2>HTML Links</h2>
```

```
<p><a href="https://www.w3schools.com/html/">Visit our HTML tutorial</a></p>
```

```
</body>
```

```
</html>
```

Output:

## HTML Links

[Visit our HTML tutorial](https://www.w3schools.com/html/)

Explanation-The `href` attribute specifies the destination address (`https://www.w3schools.com/html/`) of the link. The **link text** is the visible part (Visit our HTML tutorial). Clicking on the link text will send you to the specified address.

### 8.1 Local Links:

The example above used an absolute URL (a full web address). A local link (link to the same web site) is specified with a relative URL (without [https://www....](https://www.w3schools.com/html/)).

Example:

```
<a href="html_images.asp">HTML Images</a>
```

```
<html>
```

```
<body>
```

```
<h2>Local Links</h2>
```

```
<p><a href="html_images.asp">HTML Images</a> is a link to a page on this website.</p>
```

```
<p><a href="https://www.w3.org/">W3C</a> is a link to a website on the World Wide Web.</p>
```

```
</body>
```

```
</html>
```

Output:

## Local Links

[HTML Images](#) is a link to a page on this website.

[W3C](https://www.w3.org/) is a link to a website on the World Wide Web.

### 8.2 HTML Links - the target attribute:

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

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

- **\_blank** - Opens the linked document in a new window or tab
- **\_self** - Opens the linked document in the same window/tab as it was clicked (this is default)
- **\_parent** - Opens the linked document in the parent frame
- **\_top** - Opens the linked document in the full body of the window
- *framename* - Opens the linked document in a named frame

This example will open the linked document in a new browser window/tab:

Example

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

```
<html>
```

```
<body>
```

```
<h2>The target Attribute</h2>
```

```
<a href="https://www.w3schools.com/html/" target="_blank">Visit our HTML  
tutorial!</a>
```

```
<p>If you set the target attribute to "_blank", the link will open in a new browser window  
or tab.</p>
```

```
</body>
```

```
</html>
```

Output:

## The target Attribute

[Visit our HTML tutorial!](https://www.w3schools.com/html/)

If you set the target attribute to "\_blank", the link will open in a new browser window or tab.

### 8.3 Image as a Link:

It is common to use images as links:

Example:

```
<html>

<body>

<h2>Image Links</h2>

<p>The image is a link. You can click on it.</p>

<a href="default.asp">

  

</a>

<p>We have added "border:0" to prevent IE9 (and earlier) from displaying a border
around the image.</p>

</body>

</html>
```

Output:

### Image Links

The image is a link. You can click on it.



We have added "border:0" to prevent IE9 (and earlier) from displaying a border around the image.

## 8.4 External Paths:

External pages can be referenced with a full URL or with a path relative to the current web page. This example uses a full URL to link to a web page:

Example:

```
<html>

<body>

<h2>External Paths</h2>

<p>This example uses a full URL to link to a web page:</p>

<p><a href="https://www.w3schools.com/html/default.asp">HTML tutorial</a></p>

</body>

</html>
```

Output:

## External Paths

This example uses a full URL to link to a web page:

[HTML tutorial](https://www.w3schools.com/html/default.asp)

This example links to a page located in the html folder on the current web site:

Example

```
<a href="/html/default.asp">HTML tutorial</a>

<html>

<body>

<h2>External Paths</h2>
```

<p>This example links to a page located in the html folder on the current web site:</p>

<p><a href="/html/default.asp">HTML tutorial</a></p>

</body>

</html>

Output:

## External Paths

This example links to a page located in the html folder on the current web site:

[HTML tutorial](#)

This example links to a page located in the same folder as the current page:

<html>

<body>

<h2>External Paths</h2>

<p>This example links to a page located in the same folder as the current page:</p>

<p><a href="default.asp">HTML tutorial</a></p>

</body>

</html>

Output:

## External Paths

This example links to a page located in the same folder as the current page:

[HTML tutorial](#)



## 9. Background and color controls in HTML:

By default, your webpage background is white in color. HTML provides you following two good ways to decorate your webpage background.

- HTML Background with Colors
- HTML Background with Images

Now let's see both the approaches one by one using appropriate examples.

### 9.1 Html Background with Colors:

The **bgcolor** attribute is used to control the background of an HTML element, specifically page body and table backgrounds.

Following is the syntax to use bgcolor attribute with any HTML tag.

```
<tagname bgcolor = "color_value"...>
```

This color\_value can be given in any of the following formats –

<!-- Format 1 - Use color name -->

```
<table bgcolor = "lime" >
```

<!-- Format 2 - Use hex value -->

```
<table bgcolor = "#f1f1f1" >
```

<!-- Format 3 - Use color value in RGB terms -->

```
<table bgcolor = "rgb(0,0,120)" >
```

### Example

Here are the examples to set background of an HTML tag –

```
<html>

  <head>
    <title>HTML Background Colors</title>
  </head>

  <body>
    <!-- Format 1 - Use color name -->
    <table bgcolor = "yellow" width = "100%">
      <tr>
        <td>
```

```

        This background is yellow
    </td>
</tr>
</table>

<!-- Format 2 - Use hex value -->
<table bgcolor = "#6666FF" width = "100%">
    <tr>
        <td>
            This background is sky blue
        </td>
    </tr>
</table>

<!-- Format 3 - Use color value in RGB terms -->
<table bgcolor = "rgb(255,0,255)" width = "100%">
    <tr>
        <td>
            This background is green
        </td>
    </tr>
</table>
</body>
</html>

```

This will produce the following result –

This background is yellow

This background is sky blue

This background is green

## 9.2 Html Background with Images:

The background attribute can also be used to control the background of an HTML element, specifically page body and table backgrounds. You can specify an image to set background of your HTML page or table.

Following is the syntax to use background attribute with any HTML tag.

```
<tagname background = "Image URL"...>
```

### Example

Here are the examples to set background images of a table.

```

<html>

  <head>
    <title>HTML Background Images</title>
  </head>

  <body>
    <!-- Set table background -->
    <table background = "/images/html.gif" width = "100%"
height = "100">
      <tr><td>
        This background is filled up with HTML image.
      </td></tr>
    </table>
  </body>

</html>

```

This will produce the following result –



## 10. Creating Tables in HTML:

HTML table allows you to arrange data into rows and columns. They are commonly used to display tabular data like product listings, customer's details, financial reports, and so on. You can create a table using the `<table>` element. Inside the `<table>` element, you can use the `<tr>` elements to create rows, and to create columns inside a row you can use the `<td>` elements. You can also define a cell as a header for a group of table cells using the `<th>` element.

The following example demonstrates the most basic structure of a table.

### *Example*

```

<html lang="en">

<head>

  <title>Creating Tables in HTML</title>

```

```
</head>
<body>
  <h2>HTML Table (Default Style)</h2>
  <table>
    <tr>
      <th>No.</th>
      <th>Name</th>
      <th>Age</th>
    </tr>
    <tr>
      <td>1</td>
      <td>Ram Kumar</td>
      <td>36</td>
    </tr>
    <tr>
      <td>2</td>
      <td>Monica</td>
      <td>30</td>
    </tr>
    <tr>
      <td>3</td>
      <td>Ridansh R Kumar</td>
      <td>2</td>
    </tr>
  </table>
</body>
</html>
```

Output:

## HTML Table (Default Style)

No.	Name	Age
1	Ram Kumar	36
2	Monica	30
3	Ridansh R Kumar	2

Tables do not have any borders by default. You can use the CSS border property to add borders to the tables. Also, table cells are sized just large enough to fit the contents by default. To add more space around the content in the table cells you can use the CSS padding property.

The following style rules add a 1-pixel border to the table and 10-pixels of padding to its cells.

### *Example*

```
table, th, td {  
    border: 1px solid black;  
}  
th, td {  
    padding: 10px;  
}
```

```
<html lang="en">

<head>

  <title>Adding Borders and Paddings to HTML Tables</title>

  <style>

    table, th, td {

      border: 1px solid black;

    }

    th, td {

      padding: 10px;

    }

  </style>

</head>

<body>

  <h2>Table with Separated Borders</h2>

  <table>

    <tr>

      <th>No.</th>

      <th>Name</th>

      <th>Age</th>

    </tr>

    <tr>
```

```
<td>1</td>

<td>Ram Kumar</td>

<td>36</td>

</tr>

<tr>

<td>2</td>

<td>Monica</td>

<td>30</td>

</tr>

<tr>

<td>3</td>

<td>Ridansh R Kumar</td>

<td>2</td>

</tr>

</table>

</body>

</html>
```

Output:

## Table with Separated Borders

No.	Name	Age
1	Ram Kumar	36
2	Monica	30
3	Ridansh R Kumar	2

### 10.1 Spanning Multiple Rows and Columns:

Spanning allow you to extend table rows and columns across multiple other rows and columns. Normally, a table cell cannot pass over into the space below or above another table cell. But, you can use the rowspan or colspan attributes to span multiple rows or columns in a table.

Example:

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

```
<head>
```

```
<title>Span Multiple Columns in an HTML Table</title>
```

```
<style>
```

```
table {
```

```
width: 300px;
```

```
border-collapse: collapse;
```

```
}
```



```
table, th, td {  
  
    border: 1px solid black;  
  
}  
  
th, td {  
  
    padding: 10px;  
  
}  
  
</style>  
  
</head>  
  
<body>  
  
    <h2>Spanning Columns</h2>  
  
    <table>  
  
        <tr>  
  
            <th>Name</th>  
  
            <th colspan="2">Phone</th>  
  
        </tr>  
  
        <tr>  
  
            <td>Ram Kumar</td>  
  
            <td>5550192</td>  
  
            <td>5550152</td>  
  
        </tr>  
  
    </table>
```

</body>

</html

Output:

## Spanning Columns

Name	Phone	
Ram Kumar	5550192	5550152

Similarly, you can use the rowspan attribute to create a cell that spans more than one row. Let's try out an example to understand how row spanning basically works:

Example:

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

```
<head>
```

```
<title>Span Multiple Rows in an HTML Table</title>
```

```
<style>
```

```
table {
```

```
    width: 300px;
```

```
    border-collapse: collapse;
```

```
}
```

```
table, th, td {
```

```
    border: 1px solid black;
```

```
}
```

```
th, td {
```

```
padding: 10px;

}

</style>

</head>

<body>

  <h2>Spanning Rows</h2>

  <table>

    <tr>

      <th>Name:</th>

      <td>Ram Kumar</td>

    </tr>

    <tr>

      <th rowspan="2">Phone:</th>

      <td>55577854</td>

    </tr>

    <tr>

      <td>55577855</td>

    </tr>

  </table>

</body>

</html>
```

Output:

## Spanning Rows

<b>Name:</b>	Ram Kumar
<b>Phone:</b>	55577854
	55577855

### 10.2 Adding Captions to Tables:

You can specify a caption (or title) for your tables using the `<caption>` element.

The `<caption>` element must be placed directly after the opening `<table>` tag. By default, caption appears at the top of the table, but you can change its position using the CSS `caption-side` property.

Example:

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

```
<head>
```

```
  <title>Adding a Caption to the HTML Table</title>
```

```
  <style>
```

```
    table {
```

```
      width: 300px;
```

```
      border-collapse: collapse;
```

```
    }
```

```
    table, th, td {
```

```
        border: 1px solid black;

    }

    th, td {

        padding: 10px;

    }

    table.secondary caption {

        caption-side: bottom;

    }

</style>

</head>

<body>

    <h2>Table with Caption at the Top</h2>

    <table>

        <caption>Users Info</caption>

        <tr>

            <th>No.</th>

            <th>Name</th>

            <th>Age</th>

        </tr>

        <tr>

            <td>1</td>
```

```
<td>Ram Kumar</td>

<td>36</td>

</tr>

<tr>

<td>2</td>

<td>Monica</td>

<td>30</td>

</tr>

</table>
```

<h2>Table with Caption at the Bottom</h2>

```
<table class="secondary">

<caption>Users Info</caption>

<tr>

<th>No.</th>

<th>Name</th>

<th>Age</th>

</tr>

<tr>

<td>1</td>

<td>Ram Kumar</td>

<td>36</td>
```

```
</tr>

<tr>

  <td>2</td>

  <td>Monica</td>

  <td>30</td>

</tr>

</table>

</body>

</html>
```

Output:

## Table with Caption at the Top

Users Info

No.	Name	Age
1	Ram Kumar	36
2	Monica	30

## Table with Caption at the Bottom

No.	Name	Age
1	Ram Kumar	36
2	Monica	30

Users Info

## 11. Font in HTML:

The <font> tag plays an important role in the web page to create an attractive and readable web page. The font tag is used to change the color, size, and style of a text. The base font tag is used to set all the text to the same size, color and face.

The font tag has basically three attributes which are given below:

- Size
- Face/Type
- Color

**11.1 Font Size:** This attribute is used to adjust the size of the text in the HTML document using font tag with size attribute. The range of size of the font in HTML is from 1 to 7 and the default size is 3.

Example:

```
<html>

    <head>

        <title>HTML font tag</title>

    </head>

    <body>

        <font size = "1"> Ram Kumar!</font><br />

        <font size = "2">Ram Kumar!</font><br />
```



```
<font size = "3"> Ram Kumar!</font><br />
```

```
<font size = "4"> Ram Kumar!</font><br />
```

```
<font size = "5"> Ram Kumar!</font><br />
```

```
<font size = "6"> Ram Kumar!</font><br />
```

```
<font size = "7"> Ram Kumar!</font>
```

```
</body>
```

```
</html>
```

Output:

Ram Kumar!! = "1"

Ram Kumar! = "2"

Ram Kumar! = "3"

Ram Kumar! = "4"

Ram Kumar! = "5"

Ram Kumar! = "6"

Ram Kumar! = "7"

**11.2 Font Type:** Font type can be set by using face attribute with font tag in HTML document. But the fonts used by the user needs to be installed in the system first.

Example:

```
<html>
```

```
  <head>
```

```
    <title>Example of Font Type</title>
```

```
  </head>
```

```
  <body>
```

```
    <font face = "Times New Roman" size = "6">
```

```
      Ram Kumar!!</font><br />
```

```
    <font face = "Verdana" size = "6">
```

```
      Ram Kumar!!</font><br />
```

```
    <font face = "Comic sans MS" size = " 6">
```

```
      Ram Kumar!!</font><br />
```

```
    <font face = "WildWest" size = "6">
```

```
      Ram Kumar!!</font><br />
```

```
    <font face = "Bedrock" size = "6">
```

```
      Ram Kumar!!</font><br />
```

```
  </body>
```

```
</html>
```

Output:

Ram Kumar!!

Ram Kumar!!

Ram Kumar!!

Ram Kumar!!

Ram Kumar!!

**11.3 Font Color:** Font color is used to set the text color using font tag with color attribute in HTML document. Color can be specify either with its name or with its hex code.

Example:

```
<html>

  <head>

    <title>Font Color</title>

    <style>

      body {

        font-size:40px;

        font-weight:bold;

        text-align:center;
```

```
        }  
    </style>  
  
</head>  
  
<body>  
  
    <font color = "#009900">Ram Kumar</font><br />  
  
    <font color = "green">Ram Kumar</font>  
  
</body>  
  
</html>
```

Output:

Ram Kumar  
Ram Kumar

**Supported Browser:** The browser supported by <font> tag are listed below:

- Google Chrome
- Internet Explorer
- Firefox
- Opera
- Safari

## 12. HTML Lists:

HTML lists are used to present list of information in well formed and semantic way. There are three different types of list in HTML and each one has a specific purpose and meaning.

- **Unordered list** — Used to create a list of related items, in no particular order.
- **Ordered list** — Used to create a list of related items, in a specific order.
- **Description list** — Used to create a list of terms and their descriptions.

## 12.1 HTML Unordered Lists

An unordered list created using the <ul> element, and each list item starts with the <li> element.

The list items in unordered lists are marked with bullets. Here's an example:

```
<html lang="en">

<head>

  <title>HTML Unordered List</title>

</head>

<body>

  <h2>HTML Unordered List</h2>

  <ul>

    <li>Chocolate Cake</li>

    <li>Black Forest Cake</li>

    <li>Pineapple Cake</li>

  </ul>

  <hr>

  <h2>HTML Nested Unordered List</h2>

  <ul>

    <li>Chocolate Cake

      <ul>

        <li>Chocolate Velvet Cake</li>

        <li>Chocolate Lava Cake</li>
```

```
</ul>

</li>

<li>Black Forest Cake</li>

<li>Pineapple Cake</li>

</ul>

</body>

</html>
```

Output:

## HTML Unordered List

- Chocolate Cake
- Black Forest Cake
- Pineapple Cake

---

## HTML Nested Unordered List

- Chocolate Cake
  - Chocolate Velvet Cake
  - Chocolate Lava Cake
- Black Forest Cake
- Pineapple Cake

### 12.2 HTML Ordered Lists:

An ordered list created using the `<ol>` element, and each list item starts with the `<li>` element. Ordered lists are used when the order of the list's items is important.

The list items in an ordered list are marked with numbers. Here's an example:

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

```
<head>

  <title>HTML Ordered List</title>

</head>

<body>

  <h2>HTML Ordered List</h2>

  <ol>

    <li>Fasten your seatbelt</li>

    <li>Starts the car's engine</li>

    <li>Look around and go</li>

  </ol>

  <hr>

  <h2>HTML Nested Ordered List</h2>

  <ol>

    <li>Fasten your seatbelt</li>

    <li>Starts the car's engine</li>

    <li>Look around and go

      <ol>

        <li>Check the blind spot</li>

        <li>Check surrounding for safety</li>

      </ol>

    </li>

  </ol>

</body>
```

</html>

Output:

## HTML Ordered List

1. Fasten your seatbelt
2. Starts the car's engine
3. Look around and go

---

## HTML Nested Ordered List

1. Fasten your seatbelt
2. Starts the car's engine
3. Look around and go
  1. Check the blind spot
  2. Check surrounding for safety

The numbering of items in an ordered list typically starts with 1. However, if you want to change that you can use the start attribute, as shown in the following example:

Example:

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

```
<head>
```

```
  <title>Change Start Number in an HTML Ordered List Using CSS</title>
```

```
</head>
```

```
<body>
```

```
  <ol start="10">
```

```
    <li>Mix ingredients</li>
```

```
    <li>Bake in oven for an hour</li>
```

```
    <li>Allow to stand for ten minutes</li>
```



```
</ol>

</body>

</html>
```

Output:

- 10.Mix ingredients
- 11.Bake in oven for an hour
- 12.Allow to stand for ten minutes

Like unordered list, you can also use the CSS list-style-type property to change the numbering type in an ordered list. The following style rule changes the marker type to roman numbers.

Example:

```
<html lang="en">
<head>
  <title>Change Numbering Type in an HTML Unordered List Using CSS</title>
  <style>
    ol {
      list-style-type: upper-roman;
    }
  </style>
</head>
<body>
  <ol>
    <li>Fasten your seatbelt</li>
    <li>Starts the car's engine</li>
    <li>Look around and go</li>
  </ol>
</body>
</html>
```

Output:

- I. Fasten your seatbelt
- II. Starts the car's engine
- III. Look around and go

## 12.3 HTML Description Lists

A description list is a list of items with a description or definition of each item.

The description list is created using `<dl>` element. The `<dl>` element is used in conjunction with the `<dt>` element which specify a term, and the `<dd>` element which specify the term's definition. Browsers usually render the definition lists by placing the terms and definitions in separate lines, where the term's definitions are slightly indented. Here's an example:

```
<html lang="en">
<head>
  <title>HTML Description or Definition List</title>
</head>
<body>
  <h2>HTML Definition List</h2>
  <dl>
    <dt>Bread</dt>
    <dd>A baked food made of flour.</dd>
    <dt>Coffee</dt>
    <dd>A drink made from roasted coffee beans.</dd>
  </dl>
</body>
</html>
```

Output:

### HTML Definition List

Bread

A baked food made of flour.

Coffee

A drink made from roasted coffee beans.

## **13. HTML Frame:**

---

### **13.1 Definition**

- HTML Frame used to split the browser window in several individual frames that can contain a separate HTML web document.
- Frame is use to improve appearance and usability of a site.
- HTML document within frame include a other web pages link can be opened in the desired frame.

### **13.2 Advantages of Frames**

- Frame Provides technical sophisticated appearance to the web site.
- It facility to reduce downloading time and improves the usability of the website.
- Frames generally include navigation link, header or footers, which help user to find and navigate to required information.
- It separates content of website from navigation elements, which is useful for website maintenance and content modification.

### **13.3 Disadvantages of Frames**

- The web developer must be track of more HTML documents linked with main frame.
- It is difficult to print the entire page, which is developed using frame.

### 13.4 <frameset> tag Attributes:

HTML <frameset> tag support following specific attributes.

Attributes	Value	Description
cols	<i>*</i> <i>%</i> <i>pixels</i>	Specifies the number of columns and their width in a frameset. Default value is 100%. <i>*</i> : Allocated remaining size of the window. Eg. Create two vertical frames, use <i>cols="35%, *"</i> . Here <i>*</i> will takes remaining size of the window.
rows	<i>*</i> <i>%</i> <i>pixels</i>	Specifies the number of rows and their height in a frameset. Default value is 100%. <i>*</i> : Allocated remaining size of the window. Eg. Create two horizontal frames, use <i>cols="40%, *"</i> . Here <i>*</i> will takes remaining size of the window.

### 13.5 <frame> tag Attributes:

HTML <frame> tag support following specific attributes.

Attributes	Value	Description
frameborder	<i>0</i> <i>1</i>	Specify whether display a border or not.
longdesc	<i>url</i>	Specify URL link to another page having a long description of the frame contents.
marginheight	<i>pixel_size</i>	Specify the top and bottom margins of frame.
marginwidth	<i>pixel_size</i>	Specify the left and right margins of frame.

name	<i>name</i>	Specify the frame name.
noresize	<i>noresize</i>	Specify that prevents to resize frame.
scrolling	<i>auto</i> <i>yes</i> <i>no</i>	Specify whether scrollbars should be displayed or not.
src	<i>url</i>	Specify web document URL to show in a frame.

### Example Code:

*frame\_1.html*

```

1  <html>
2  <body style="background-color:#ff9900;">
3    <h2 align="center">First frame (frame_1.html)</h2>
4  </body>
5  </html>

```

*frame\_2.html*

```

1  <html>
2  <body style="background-color:#ffcc00;">
3    <h2 align="center">Second frame (frame_2.html)</h2>
4  </body>
5  </html>

```

```
1 <html>
2 <head>
3   <title>Frameset Example 1</title>
4 </head>
5 <frameset rows="35%, 65%">
6   <frame src = "frame_1.html" />
7   <frame src = "frame_2.html" />
8 </frameset>
9 </html>
```

## 14. HTML Forms:

### 14.1 Definition

- HTML Forms is most important feature in HTML. HTML Forms use to get a users information. It is user interactive. HTML Forms is a information tools to get information from the web surfer, such as: name, email address, address, phone number etc.
- A form use to get information about user and information store that data into a web server.

### 14.2 HTML Form Tag

Tag	Description
<u>&lt;form&gt;</u>	Defines a form for user input.
<u>&lt;input&gt;</u>	Defines an input field data.
<u>&lt;button&gt;</u>	Defines a push button
<u>&lt;textarea&gt;</u>	Defines a text-area (a multi-line text input box).

<u>&lt;label&gt;</u>	Defines a label to the description.
<u>&lt;fieldset&gt;</u>	Defines a border to the input data.
<u>&lt;legend&gt;</u>	Defines a caption name write into fieldset.
<u>&lt;select&gt;</u>	Defines a drop-down select list box.
<u>&lt;option&gt;</u>	Defines an option value in the drop-down box.

### 14.3 HTML <input> Tag

The most used form tag is the <input> tag. This is the most commonly used tag within HTML forms. It give you to specify various types of user information fields such as text, checkboxes, radio buttons, Select Lists, Submit etc.

Attributes	Value	Description
type	"text" "button" "password" "file" "checkbox" "radio" "reset" "submit"	use input text value. use to input button use to text is convert password type. use to browse file. use to select option checkbox. use to select in radio type. use to input reset data. use to input submit data.
value	"value"	Specify the default value of element.
name	"value"	Specify unique name for the input element.

size	"number"	Define width of numbered(character) size input box.
maxlength	"number"	Define maximum number(character) allow to enter input box.
checked		Specify input element to be checked when it is first time loaded.
alt	"text"	Define input name to identify.
align	"left" "right" "center"	Define input type align in HTML document.
src	"URL"	Define image open to mouse down submit.

## 14.4 Form Fields Example

- Form Action
- Text Fileds
- Password Fields
- Radio Fields
- Checkbox Fields
- Button Fields
- <textarea> Tag
- Selection List Fields

### References:

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- <https://tutoriahtml.com/en/html-tutorial-elements-body-head-title/>
- [https://way2tutorial.com/html/html\\_head\\_elements.php](https://way2tutorial.com/html/html_head_elements.php)
- [https://www.w3schools.com/html/html\\_elements.asp](https://www.w3schools.com/html/html_elements.asp)



