

Module 1:

HTML

Hyper Text Markup Language

Outline

- ❑ What is HTML ?
- ❑ Different HTML Tags
- ❑ Text formatting tags
- ❑ Tables, Frames tags

❑ Use of various HTML Tag for Form Design ❑ HTML5

Features

HTML: HyperText Markup Language

- HTML documents are simply text documents with a specific form
 - Documents comprised of **content** and **markup tags**
 - **Content**: actual information being conveyed
 - **markup tags**: tell the Web browser **how to display** the

- An HTML file must have an **.htm** or **.html** file extension • An HTML file can be created using a **simple text editor**

Creating HTML Pages

- HTML files can be created with text editors:
 - NotePad, NotePad ++, wordpad.
- Or HTML editors (WYSIWYG Editors):
 - Microsoft FrontPage
 - Macromedia Dreamweaver
 - Microsoft Word
 - Visual Studio

First Example

```
<html>  
<head>  
<title>Title of page</title>  
</head>  
<body>  
This is my first homepage.  
</body>  
</html>
```

Open this file using a browser, and you will see...

HTML Tags

- HTML tags are used to mark-up HTML elements
 - Surrounded by angle brackets `<` and `>`
 - HTML tags normally come in pairs, like `<tagname>` (start tag) and `</tagname>` (end tag)
 - The text between the start and end tags is the element content
 - Not case-sensitive
 - Follow the latest web standards: Use lowercase tags

HTML Document: Basic Structure

- Every HTML page begins with a document type declaration that informs the browser which version of HTML the page is

being used

- E.g.

<!Doctype HTML> //in HTML 5

- Begins with `<html>` and ends with `</html>`
- The two primary structural components in HTML are the head and the body

`<html>`

`<head> </head>`

`<body> </body>`

`</html>`

HTML Tags

- Headings Tags

- Paragraph Tags
- Formatting Tags
 - Hyperlinks
 - Images

HTML Headings

- Headings are defined with the <h1> to <h6> tags. • <h1> defines the most important heading. <h6> defines the least important heading.
- Example:

```
<!DOCTYPE html>
<html>
<body>
<h1>Heading 1</h1> (largest)
<h2>Heading 2</h2>
<h3>Heading 3</h3>
<h4>Heading 4</h4>
<h5>Heading 5</h5>
<h6>Heading 6</h6> (smallest)
</body>
```

```
</html>
```

HTML Headings

- **Headings Are Important**
- Search engines use the headings to index the structure and content of your web pages.
- Users skim(scan) your pages 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.

HTML Horizontal Rules <hr>

The <hr> element is used to separate content (or define a change) in an HTML page:

- **Example:**

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h1>This is heading 1</h1>
```

<hr>

<h2>This is heading 2</h2>

</body>

</html>

HTML Basic Tags

Tag	Description
<u><html></u>	Defines the root of an HTML document
<u><body></u>	Defines the document's body
<u><head></u>	A container for all the head elements (title, scripts, styles, meta information, and more)
<u><h1> to <h6></u>	Defines HTML headings
<u><hr></u>	Defines a thematic change in the content

HTML Paragraph <p> Tags

- The HTML <p> element defines a **paragraph**:
- **Example:**

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

HTML Line Breaks **
** tag

- The HTML **
** element defines a **line break**.
- Use **
** if you want a line break (a new line) without starting a new paragraph

- **Example:**

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<p>This is <br> a paragraph <br> with line breaks</p>
```

```
</body>
```

```
</html>
```

HTML preformatted `<pre>` Element

- The text inside a `<pre>` element is displayed in a fixed-width font (usually Courier), and it preserves both spaces and line breaks

- **Example:**

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<p>The pre tag preserves both spaces and line breaks:</p>
```

<pre>

My Bonnie lies over the ocean.

Oh, bring back my Bonnie to me.

</pre>

</body> </html>

Summary: HTML Paragraph Tags

Tag	Description
<code><p></code>	Defines a paragraph
<code>
</code>	Inserts a single line break
<code><pre></code>	Defines pre-formatted text

HTML Attributes

- Tags can have attributes that provide additional information to an HTML element
 - Attributes always come in pairs like: **name = "value"**

- Attributes are always specified in the start tag
- **Attribute values** should always be enclosed in quotes.
Double quotes are most common.
- Also **case-insensitive**: however, lowercase is recommended
- **<tagname a1="v1" a2="v2"></tagname>**
- For example,
<table border="0"> is a start tag that defines a table that has no borders

HTML Style Attribute

- Setting the style of an HTML element, can be done with the **style attribute**.
- The HTML style attribute has the following **syntax**:

<tagname style="property:value;">

HTML Background Color

- The background-color property defines the background color for an HTML element.
- **Example:**

```
<!DOCTYPE html>
```

```
<html>
```

```
<body style="background-color:blue">
```

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

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

</body>

</html>

HTML Text Color

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

- **Example:**

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

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

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

```
</body>
```

```
</html>
```

HTML Text Size

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

```
<!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>
```

HTML Text Alignment

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

- **Example:**

```
<!DOCTYPE html>
<html>
<body>
<h1 style="text-align:center">Centered Heading</h1>
<p style="text-align:center">Centered paragraph.</p>
</body>
</html>
```

HTML Text Formatting Tags

- HTML also defines special **elements** for defining text with a special **meaning**.
- Formatting elements were designed to display special types of text:

** - Bold text**

** - Important text**

<i> - Italic text

** - Emphasized text**

<mark> - Marked text

<small> - Small text

** - Deleted text**

<ins> - Inserted text

<sub> - Subscript text

<sup> - Superscript text

HTML **** and **** Elements

- The HTML **** element defines **bold** text, without any extra

importance.

- The HTML `` element defines **strong** text, with added semantic "strong" importance.

- **Example:**

```
<!DOCTYPE html>
<html>
<body>
<p>This text is normal.</p>
<p><b>This text is bold.</b></p>
<p><strong>This text is strong.</strong></p>
</body>
```

`</html>`

HTML `<i>` and `` Elements

- The HTML `<i>` element defines *italic* text, without any extra importance.
- The HTML `` element defines *emphasized* text, with added

semantic importance.

- **Example:**

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

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

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

```
</body>
```

```
</html>
```

HTML **<small>** Element

- The HTML **<small>** element defines smaller text:

- **Example:**

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h2>HTML <small>Small </small> Formatting</h2>  
</body>  
</html>
```

HTML **<mark>**, **** Element

- The HTML **** element defines deleted (removed) text. •
- The HTML **<mark>** element defines marked or highlighted text •

Example:

```
<!DOCTYPE html>  
<html>  
<body>  
<h2>HTML <mark>Marked </mark> Formatting</h2>
```



```
<p>My favorite color is <del> blue </del> red.</p>  
</body>  
</html>
```

HTML <sub> , <sup>Element

- The HTML <sub> element defines ^{subscripted} text.
- The HTML <sup> element defines ^{superscripted} text.
- **Example:**

```
<!DOCTYPE html>  
<html>  
<body>  
<p>This is <sub> subscripted </sub> text.</p>  
<p>This is <sup> superscripted </sup> text.</p>  
</body>  
</html>
```

Summary: HTML Text Formatting Tags

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

HTML Comment Tags

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

following syntax:

<!-- Write your comments here -->

- **Example:**

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

<!-- This is a comment -->

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

<!-- Comments are not displayed in the browser -->

```
</body>
```

```
</html>
```

HTML Image Tags

- In HTML, images are defined with the `` tag.
- The **** tag is empty, it contains attributes only, and

does **not have a closing tag.**

- The src attribute specifies the URL (web address) of the image:

- **alt** Attribute: provides an alternate text for an image, if the user for some reason cannot view it
 - The value of the alt attribute should describe the image: ****

HTML Image Tags(contd..)

- The width and height attributes always defines the width and height of the image in pixels.
- **Note:** the browser expects to find the image in the same folder as the web page.
- **Example:**

<!DOCTYPE html>

```
<html>
```

```
<body>
```

```
<h2>Image Size</h2>
```

```
 </body>
```

```
</html>
```

HTML Links - Hyperlinks

- HTML links are hyperlinks.
- You can click on a link and jump to another document.

- **Syntax:**

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

- **Example:**

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<a href="https://www.google.com">Visit our Search Engine</a>
```

</body>

</html>

HTML Links - Image as Link

- It is common to use images as links:

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h2>Image Links</h2>
```

```
<a href="www.google.com">
```

```

```

```
</a>
```

```
</body>
```

```
</html>
```

HTML Lists

HTML List Example

An Unordered List:

- Item
- Item
- Item
- Item

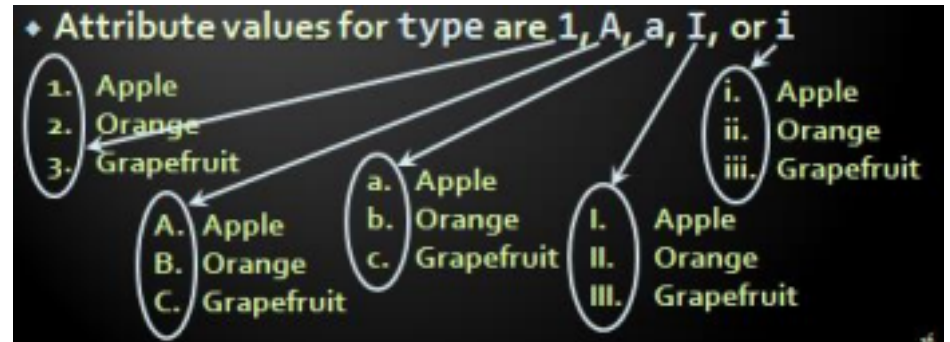
An Ordered List:

1. First item
2. Second item
3. Third item
4. Fourth item

Ordered Lists: `` Tag

- Create an Ordered List using ``:


```
<ol type="1">  
  <li>Apple</li>  
  <li>Orange</li>  
  <li>Grapefruit</li>  
</ol>
```



Ordered HTML List - The Type Attribute

The `type` attribute of the `` tag, defines the type of the list item marker:

Type	Description
<code>type="1"</code>	The list items will be numbered with numbers (default)
<code>type="A"</code>	The list items will be numbered with uppercase letters
<code>type="a"</code>	The list items will be numbered with lowercase letters
<code>type="I"</code>	The list items will be numbered with uppercase roman numbers
<code>type="i"</code>	The list items will be numbered with lowercase roman numbers

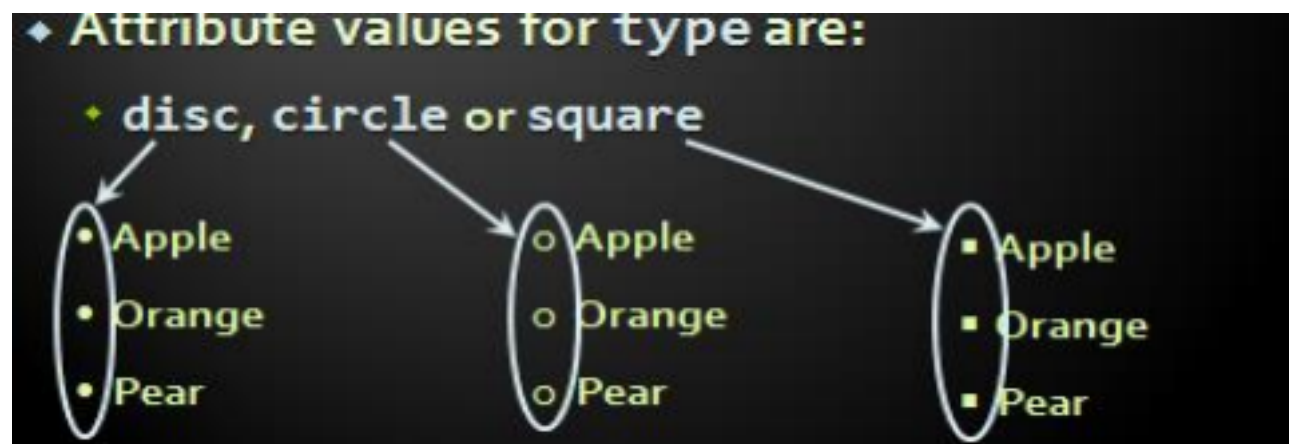
Example

```
<!DOCTYPE html>
<html>
<body>
<h2>An ordered HTML list</h2>
<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>
</body>
</html>
```

Unordered Lists: Tag

- Create an Unordered List using :

```
<ul type="disk">  
  <li>Apple</li>  
  <li>Orange</li>  
  <li>Grapefruit</li>  
</ul>
```



Unordered HTML List - Choose List Item Marker

The CSS `list-style-type` property is used to define the style of the list item marker

Value	Description
disc	Sets the list item marker to a bullet (default)
circle	Sets the list item marker to a circle
square	Sets the list item marker to a square
none	The list items will not be marked

Unordered List

```
<!DOCTYPE html>
<html>
<body>
<h2>Unordered List with Disc Bullets</h2>
<ul style="list-style-type:disc">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>
</body>
```

</html>

Definition lists: <dl> tag

- Create definition lists using <dl>

- Pairs of text and associated definition; text is in <dt> tag, definition in <dd> tag

<dl>

<dt>HTML</dt>

<dd>A markup language ...</dd>

<dt>CSS</dt>

<dd>Language used to ...</dd>

</dl>

- Renders without bullets

- Definition is indented

Lists – Example

<p> Order List</p>

<ol type="1">

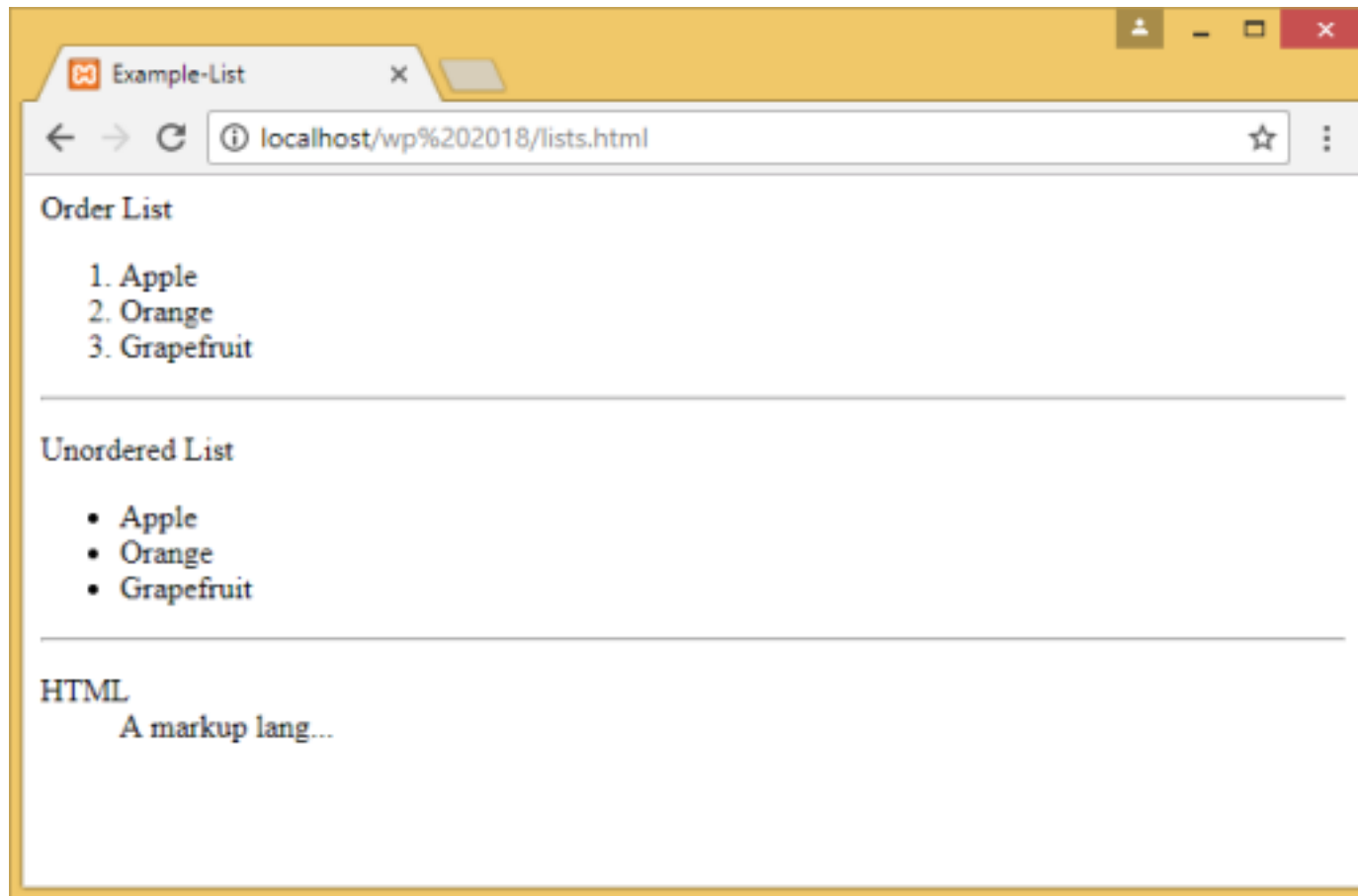
Apple

Orange

Grapefruit

```
</ol>
<hr>
<p>Unordered List</p>
<ul type="disc">
  <li>Apple</li>
  <li>Orange</li>
  <li>Grapefruit</li>
</ul>
<hr>
<dl>
  <dt>HTML</dt>
  <dd>A markup lang...</dd>
</dl>
```

Output:



HTML Table

- An HTML table is defined with the <table> tag.
- Each table row is defined with the <tr> tag. •

A table header is defined with the <th> tag.

- By default, table headings are bold and centered.
- A table data/cell is defined with the <td> tag.

Example

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

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

</html>
```

HTML Table - Adding a Border

- If you do not specify a border for the table, it will be displayed without borders.

- A border is set using the CSS border property need to be specified inside <head> tag within <style> tag

```
<head>
```

```
<style>
```

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

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

```
}
```

```
</style>
```

```
</head>
```

HTML Table - Adding Cell Padding

- Cell padding specifies the space between the cell content and its borders.
- If you do not specify a padding, the table cells will be displayed without padding.

```
<head>
```

```
<style>
```

```
th, td {
```

```
padding: 15px;
```

```
}
```

```
</style>
```

```
</head>
```

HTML Table - Left-align Headings

- By default, table headings are bold and centered.
- To left-align the table headings, use the CSS text align property:

```
<head>
```

```
<style>
```

```
th {  
    text-align: left;  
}  
</style>  
</head>
```

HTML Table - Adding a Caption

- To add a caption to a table, use the <caption> tag:
- **<caption> tag should be specified immediately after table tag in html document**
- Example:
 <caption>Monthly savings</caption>

```
<!DOCTYPE html>
<html>
<head> <style>
table, th, td {
border: 1px solid black;
}
th, td {
padding: 5px;
text-align: left;
}
</style> </head>
<body>
```

```
<table style="width:100%">
<caption>Monthly savings</caption> <tr>
<th>Month</th>
<th>Savings</th>
</tr>
```

```
<tr>
<td>January</td>
<td>$100</td>
</tr>
</table> </body> </html>
```

HTML Table - Cells that Span

Many Columns

- To make a cell span more than one column, use the colspan attribute:

Cell that spans two columns

To make a cell span more than one column, use the colspan attribute.

Name	Telephone	
Bill Gates	55577854	55577855

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
</head>
```

```
<body>
```

```
<table style="width:100%"> <tr>
```

```
<th>Name</th>
```

```
<th colspan="2">Telephone</th>
```

```
</tr>
```

```
<tr>
```

```
<td>Bill Gates</td>  
<td>55577854</td>  
<td>55577855</td>  
</tr>  
</table>  
</body>  
</html>
```

HTML Table - Cells that Span

Many Rows

- To make a cell span more than one row, use the rowspan attribute:

Cell that spans two rows

To make a cell span more than one row, use the rowspan attribute.

Name:	Bill Gates
Telephone:	55577854
	55577855

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
</head>
```

```
<body>
```

```
<table style="width:100%">
```

```
<tr>
```

```
<th>Name:</th>
```

```
<td>Bill Gates</td>
```

```
</tr>
```

```
<tr>
```

```
<th rowspan="2">Telephone:</th>
```

```
<td>55577854</td>
```

```
</tr>
```

```
<tr>  
<td>55577855</td>  
</tr>  
</table>  
</body>  
</html>
```

HTML: Frames

- HTML frames are used to **divide your browser window into multiple sections** where each section can load a separate HTML document.
- A collection of frames in the browser window is known as a frameset.
- The window is divided into frames in a similar way the tables are organized: into rows and columns.

Frame Tag

- The <frameset> tag is not supported in HTML5.

- The <frameset> tag defines a frameset.
- The <frameset> element holds one or more <frame> elements.

Each <frame> element can hold a separate document.

- The <frameset> element specifies HOW MANY columns or rows there will be in the frameset, and HOW MUCH percentage/pixels of space will occupy each of them.

Horizontal Frameset Example

```
<!DOCTYPE html>
<html>
<frameset rows="25%,*,25%">
  <frame src="frame_a.html">
```

```
<frame src="frame_b.html">  
<frame src="frame_c.html">  
</frameset>  
</html>
```

Mixed Frameset Example

```
<!DOCTYPE html>  
<html>  
  
<frameset rows="50%,50%">  
  <frame src="frame_a.html">  
  <frameset cols="25%,75%">
```

Frame A

Note: The frameset, frame, and noframes elements are not supported in HTML5.

```
<frame src="frame_b.html">  
<frame src="frame_c.html">  
</frameset>  
</frameset>
```

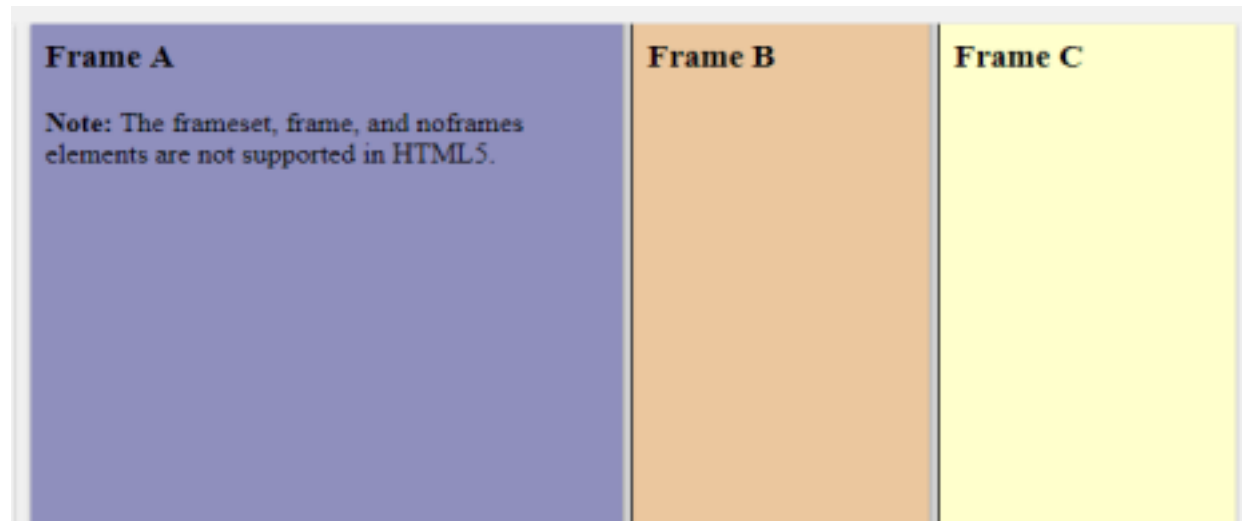
```
</html>
```

Frameset with NoResize Example

```
<!DOCTYPE html>  
<html>  
<frameset cols="50%,*,25%">  
  <frame src="frame_a.htm" noresize="noresize">  
  <frame src="frame_b.htm">  
  <frame src="frame_c.htm">  
</frameset>
```


</html>

iframes Tag



- You can define an **inline frame** with HTML tag **<iframe>**.
- Can appear anywhere in your document.
- The **<iframe>** tag defines a **rectangular region within the document in which the browser can display a separate document, including scrollbars and borders.**
- An inline frame is used to embed another document within the current HTML document.
- The **src** attribute is used to specify the URL of the document

that occupies the inline frame.

iframe Tag Example

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h2>HTML Iframes</h2>
```

```
<p>You can use the height and width attributes to specify the size  
of the iframe:</p>
```

```
<iframe src="demo_iframe.htm" height="200"  
width="300"></iframe>
```

```
</body>
```

HTML Iframes

You can use the height and width attributes to specify the size of the iframe:

This page is

</html>

iframe Tag Example

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h2>Remove the Iframe Border</h2>
```

```
<p>To remove the default border of the iframe, use CSS:</p>
```

```
<iframe src="demo_iframe.htm" style="border:none;"></iframe>
```

```
</body>
```

```
</html>
```

Remove the Iframe Border

To remove the default border of the iframe, use CSS:

**This page is
displayed in an
iframe**

iframe Tag Example

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h2>Custom Iframe Border</h2>
```

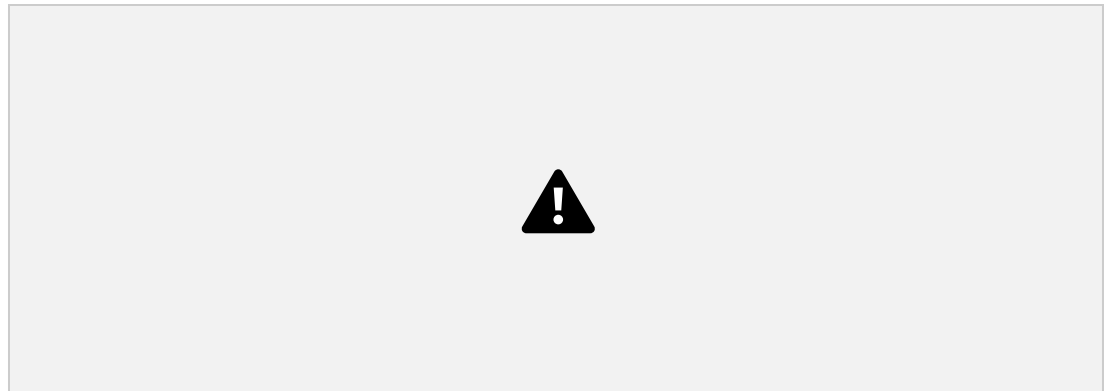
```
<p>With CSS, you can also change the size, style and color of the  
iframe's border:</p>
```

```
<iframe src="demo_iframe.htm" style="border:2px solid  
red;"></iframe>
```

```
</body>
```

```
</html>
```

<div> tag



- The <div> tag defines a division or a section in an HTML document.
- The <div> element is often used as a container for other HTML elements to style them with CSS or to perform certain tasks with JavaScript.

div Tag Example

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<p>This is some text.</p>
```

```
<div style="background-color:lightblue">
```

```
<h3>This is a heading in a div element</h3>
```

```
<p>This is some text in a div element.</p>
```

```
</div>
```

```
<p>This is some text.</p>
```

```
</body>
```

```
</html>
```

HTML Forms

HTML Forms

- HTML Forms are required, when you **want to collect some data from the site visitor.**

- For example, during user registration you would like to collect information such as name, email address, credit card, etc.
- A form will **take input from the site visitor and then will post it to a back-end application** such as CGI, ASP Script or PHP script etc.
- There are various form elements available like text fields, textarea fields, drop-down menus, radio buttons, checkboxes, etc.

Forms Syntax

`<form action = "Script URL" method = "GET/POST">`

`form elements like input, textarea etc.`

`</form>`

action

- Backend script ready to process your passed data.

method

- Method to be used to upload data. The most frequently used are GET and POST methods.

Forms Syntax

Form elements

Text Input Controls , Checkboxes Controls, Radio Box Controls, Select Box Controls, File Select boxes , Hidden Controls, Clickable Buttons , Submit and Reset Button

target

- Specify the target window or frame where the result of the script will be displayed. It takes values like `_blank`, `_self`, `_parent` etc.

GET Method

- The default method when submitting form data is GET.
- However, when GET is used, the submitted form data will be **visible in the page address field**:

When to use GET??

Appends form-data into the URL in name/value pairs

The length of a URL is limited (about 3000 characters)

Never use GET to send sensitive data! (will be visible in the URL)

Useful for form submissions where a user wants to bookmark the result

GET is better for non-secure data, like query strings in Google

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<p>This form will be submitted using the GET method:</p>
```

```
<form method="GET" target="_blank" >
```

```
First name:<br>
```

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

```
<br>
```

```
Last name:<br>
```

```
<input type="text" name="lastname" value="Mouse">
```

```
<br><br>
```

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

```
</form>
```

```
</body>
```

POST Method

- Always use POST if the form data contains sensitive or personal information.
- The POST method does not display the submitted form data in the page address field.

- **When to use POST??**

POST has no size limitations, and can be used to send large amounts of data.

Form submissions with POST cannot be bookmarked

```
<html>
```

```
<body>
```

```
<p>This form will be submitted using the POST method:</p>
```

```
<form method="POST" target="_blank" >
```

```
First name:<br>
```

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

```
<br>
```

```
Last name:<br>
```

```
<input type="text" name="lastname" value="Mouse">
```

```
<br><br>
```

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

```
</form>
```

```
</body>
```

```
</html>
```

HTML Form Controls

There are different types of form controls that you can use to collect data using HTML form –

- Text Input Controls
- Checkboxes Controls
- Radio Box Controls
- Select Box Controls
- File Select boxes
- Hidden Controls
- Clickable Buttons
- Submit and Reset Button

Text Input Controls

- **Single-line text input controls** – This control is used for

items that require only one line of user input, such as search boxes or names. They are created using HTML **<input>** tag.

- **Password input controls** – This is also a single-line text input but it masks the character as soon as a user enters it. They are also created using HTML **<input>** tag.
- **Multi-line text input controls** – This is used when the user is required to give details that may be longer than a single sentence. Multi-line input controls are created using HTML **<textarea>** tag.

1. Single-line text input controls

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>Text Input Control</title>
```

```
</head>
```

<body>

<form > First name: <input type = "text" name = "first_name" />

Last name: <input type = "text" name = "last_name" />

</form>



</body> </html>

1. Single-line text input controls



2. Password input controls

```
<!DOCTYPE html>
<html>
  <head>
    <title>Password Input Control</title>
  </head>
  <body>
    <form >
      User ID : <input type = "text" name = "user_id" /> <br>
      Password: <input type = "password" name = "password" />
    </form>
    </body> </html>
```



2. Password input controls

