HTML Basics

Text, Images, Tables, Forms

HTML Structure

- HTML is comprised of "elements" and "tags"
  - Begins with `<html>` and ends with `</html>`
- Elements (tags) are nested one inside another:

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

- Tags have attributes:

`<img src="logo.jpg" alt="logo" />`

- HTML describes structure using two main sections: `<head>` and `<body>`

First HTML Page

test.html

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

My First HTML Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back | Search Favorites

Address \HTML, CSS, JavaScript\HTML\Demos\test.html Go Links

This is some text that will appear on the web page.

Done   My Computer
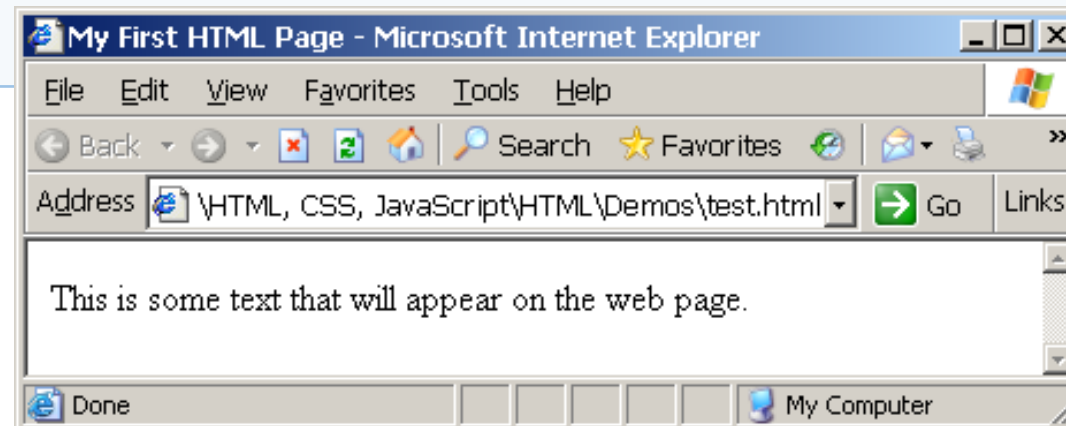
Tags Attributes

- Tags can have attributes
  - Attributes specify properties and behavior
  - Example:
  - Few attributes can apply to every element:
    - `id`, `style`, `class`, `title`
    - The `id` is unique in the document
    - Content of `title` attribute is displayed as hint when the element is hovered with the mouse
    - Some elements have obligatory attributes

Attribute `alt` with value "logo"

```
<img src="logo.gif" alt="logo" />
```

Headings and Paragraphs

- Heading Tags (h1 – h6)

```
<h1>Heading 1</h1>
<h2>Sub heading 2</h2>
<h3>Sub heading 3</h3>
```

- Paragraph Tags

```
<p>This is my first paragraph</p>
<p>This is my second paragraph</p>
```

- Sections: div and span

```
<div style="background: skyblue;">
   This is a div</div>
```

Headings and Paragraphs – Example

headings.html
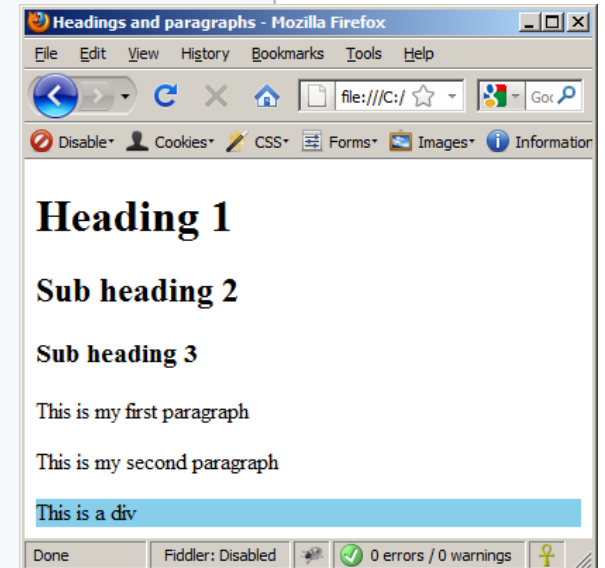
```
<!DOCTYPE HTML>
<html>
  <head><title>Headings and paragraphs</title></head>
  <body>
    <h1>Heading 1</h1>
    <h2>Sub heading 2</h2>
    <h3>Sub heading 3</h3>

    <p>This is my first paragraph</p>
    <p>This is my second paragraph</p>

    <div style="background:skyblue">
      This is a div</div>
  </body>
</html>
```

The <!DOCTYPE> Declaration

- HTML documents must start with a document type definition (DTD)
  - It tells web browsers what type is the served code
  - Possible versions: HTML 4.01, XHTML 1.0 (Transitional or Strict), XHTML 1.1, HTML 5
- Example:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

  - See http://w3.org/QA/2002/04/valid-dtd-list.html for a list of possible doctypes

HTML vs. XHTML

- XHTML is more strict than HTML
- Tags and attribute names must be in lowercase
- All tags must be closed (
, <img/>) while HTML allows <br> and <img> and implies missing closing tags (<p>par1 <p>par2)
- XHTML allows only one root <html> element (HTML allows more than one)

- XHTML or EXtensible HyperText Markup Language is a mix of HTML and XML, very similar to HTML

- Some differences between HTML and XHTML include:Closing tags: HTML allows some elements to not have a closing tag, but XHTML requires all elements to have a closing tag.

- Overlapping elements: XHTML does not allow elements to overlap, but HTML does.

- Attribute values: XHTML requires all attribute values to be quoted, including numeric values, but HTML does not.

- Minimized attributes: XHTML does not allow attributes to be minimized, but HTML does.

XHTML vs. HTML (2)

- Many element attributes are deprecated in XHTML, most are moved to CSS

- Attribute minimization is forbidden, e.g.

```
<input type="checkbox" checked>
```

```
<input type="checkbox" checked="checked" />
```

- Note: Web browsers load XHTML faster than HTML.

The `<head>` Section

- Contains information that doesn't show directly on the viewable page

- Starts after the `<!doctype>` declaration

- Begins with `<head>` and ends with `</head>`

- Contains mandatory single `<title>` tag

- Can contain some other tags, e.g.
  - `<meta>`
  - `<script>`
  - `<style>`
  - `<!-- comments -->`

\<head\> Section: \<title\> tag

- Title should be placed between \<head\> and \</head\> tags

```
<title> WELCOME TO HTML </title>
```

- Used to specify a title in the window title bar

- Search engines and people rely on titles

<head> Section: <meta>

- Meta tags additionally describe the content contained within the page

```
<meta name="description" content="HTML tutorial" />

<meta name="keywords" content="html, web design, styles" />

<meta name="author" content="Chris Brewer" />

<meta http-equiv="refresh" content="5; url=http://www.google.com" />
```

The <script> Tag – Example

```html
<!DOCTYPE HTML>
<html>
  <head>
    <title>JavaScript Example</title>
    <script type="text/javascript">
      function sayHello() {
        document.write("<p>Hello World!<\/p>");
      }
    </script>
  </head>
  <body>
    <script type=
      "text/javascript">
      sayHello();
    </script>
  </body>
</html>
```
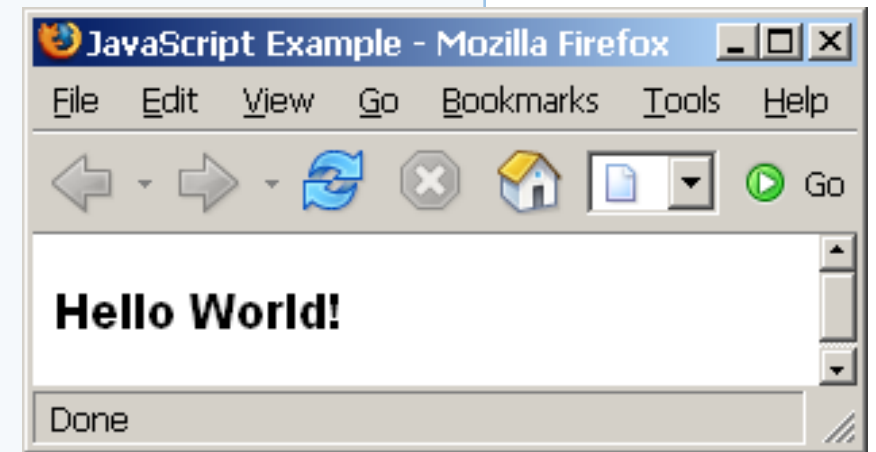
JavaScript Example - Mozilla Firefox

File   Edit   View   Go   Bookmarks   Tools   Help

Hello World!

Done

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\<body> Section: Introduction

- The \<body> section describes the viewable portion of the page
- Starts after the \<head> \</head> section
- Begins with \<body> and ends with \</body>

```
<html>
  <head><title>Test page</title></head>
  <body>
    <!-- This is the Web page body -->
  </body>
</html>
```

Text Formatting

- Text formatting tags modify the text between the opening tag and the closing tag
  - Ex. Hello makes "Hello" bold

****	**bold**
<i></i>	*italicized*
<u></u>	<u>underlined</u>
****	Sample^{superscript}
****	Sample$_{subscript}$
****	**strong**
****	*emphasized*
<pre></pre>	`Preformatted text`
<blockquote></blockquote>	`Quoted text block`
<del></del>	Deleted text – ~~strike through~~

Text Formatting – Example

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
 <head>
  <title>Page Title</title>
 </head>
 <body>
 <h1>Notice</h1>
 <p>This is a <em>sample</em> Web page.</p>
 <p><pre>Next paragraph:
   preformatted.</pre></p>
 <h2>More Info</h2>
 <p>Specifically, we're using XHMTL 1.0 transitional.<br />
  Next line.</p>
 </body>
</html>
```


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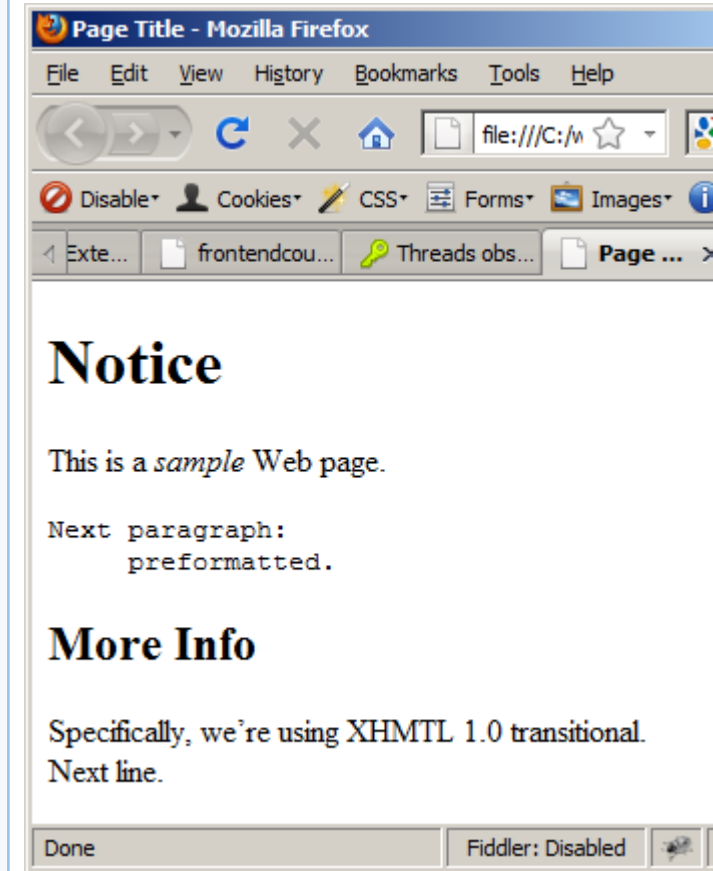
Hyperlinks: <a> Tag

- Link to a document called `form.html` on the same server in the same directory:

  ```
  <a href="form.html">Fill Our Form</a>
  ```

- Link to a document called `parent.html` on the same server in the parent directory:
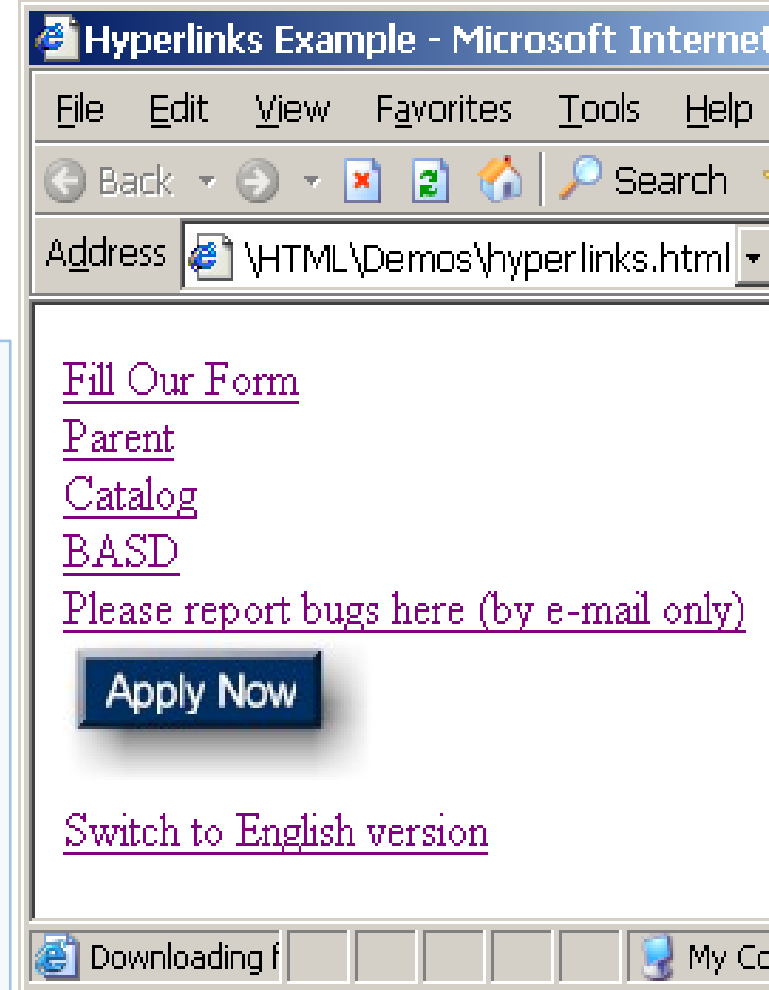
  ```
  <a href="../parent.html">Parent</a>
  ```

- Link to a document called `cat.html` on the same server in the subdirectory `stuff`:

  ```
  <a href="stuff/cat.html">Catalog</a>
  ```

Hyperlinks – Example

hyperlinks.html

```
<a href="form.html">Fill Our Form</a> <br />
<a href="../parent.html">Parent</a> <br />
<a href="stuff/cat.html">Catalog</a> <br />
<a href="http://www.devbg.org" target="_blank">BASD</a>
<br />
<a href="mailto:bugs@example.com?subject=Bug
Report">Please report bugs here (by e-mail only)</a>
<br />
<a href="apply-now.html"><img src="apply-now-button.jpg"
/></a> <br />
<a href="../english/index.html">Switch to English
version</a> <br />
```

Images: <img> tag

- **Inserting an image with `<img>` tag:**

```
<img src="/img/basd-logo.png">
```

- **Image attributes:**

src	Location of image file (relative or absolute)
alt	Substitute text for display (e.g. in text mode)
height	Number of pixels of the height
width	Number of pixels of the width
border	Size of border, 0 for no border

- **Example:**

```
<img src="./php.png" alt="PHP Logo" />
```

Lists

HTML supplies several list elements. Most list elements are composed of one or more <LI> (List Item) elements.

Ordered list.

Unordered list.

Definition list.
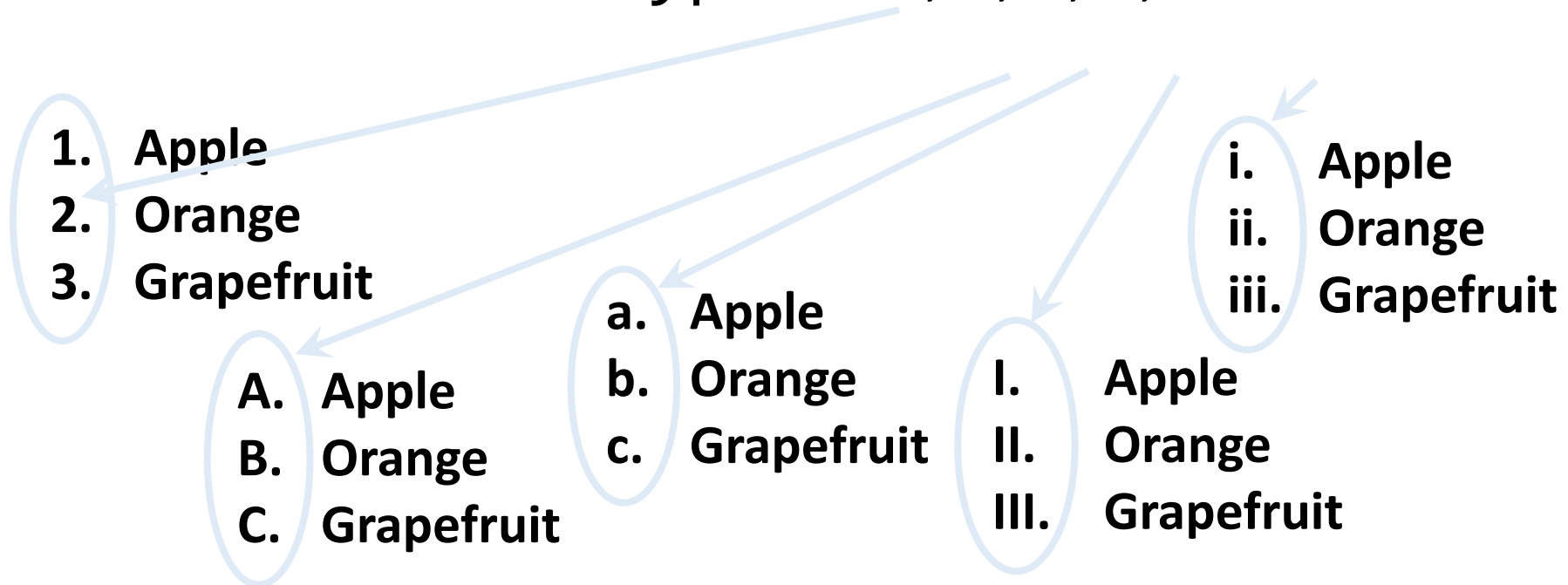
Ordered Lists: <ol> Tag

- Create an Ordered List using :

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

- Attribute values for type are 1, A, a, I, or i

1. Apple
2. Orange
3. Grapefruit

A. Apple
B. Orange
C. Grapefruit

a. Apple
b. Orange
c. Grapefruit

I. Apple
II. Orange
III. Grapefruit

i. Apple
ii. Orange
iii. Grapefruit

Unordered Lists: <ul> Tag

- Create an Unordered List using `<ul></ul>`:

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

- Attribute values for `type` are:

  - `disc`, `circle` or `square`

- **Apple**

- **Orange**

- **Pear**

o **Apple**

o **Orange**

o **Pear**

▪ **Apple**

▪ **Orange**

▪ **Pear**
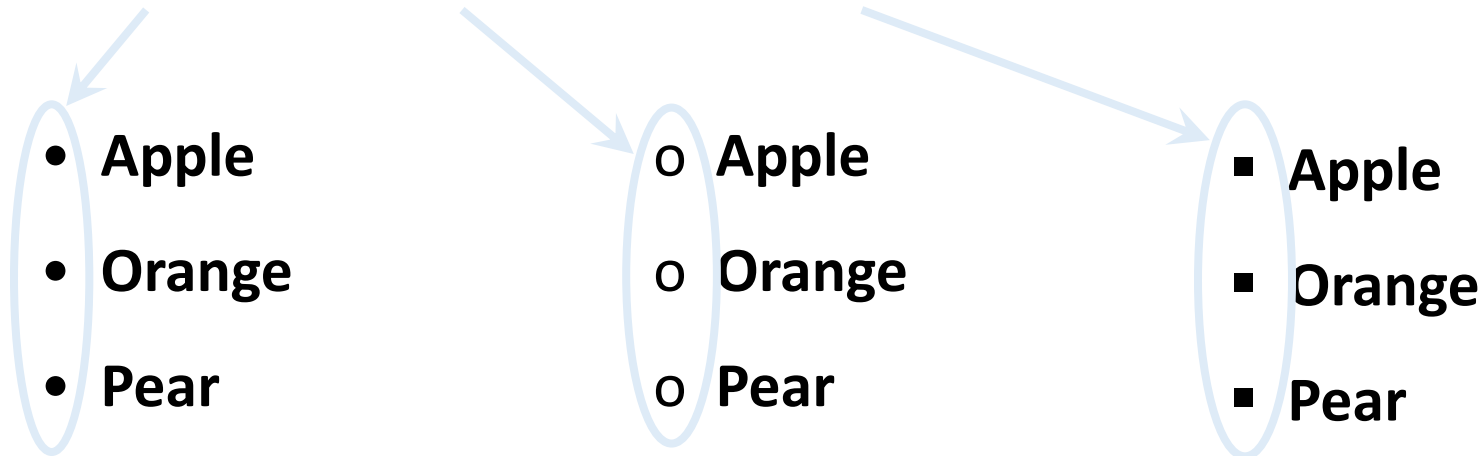
Definition lists: <dl> tag

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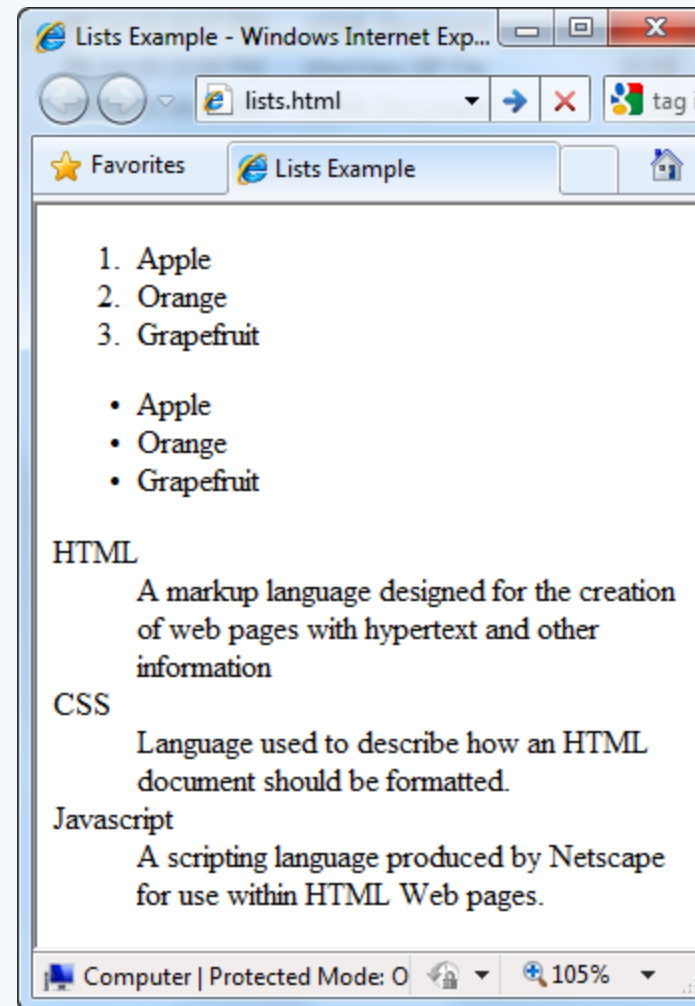
```
<ol type="1">
    <li>Apple</li>
    <li>Orange</li>
    <li>Grapefruit</li>
</ol>

<ul type="disc">
    <li>Apple</li>
    <li>Orange</li>
    <li>Grapefruit</li>
</ul>

<dl>
    <dt>HTML</dt>
    <dd>A markup lang…</dd>
</dl>
```

Lists Example - Windows Internet Exp...

lists.html

Favorites   Lists Example

1. Apple
2. Orange
3. Grapefruit

• Apple
• Orange
• Grapefruit

HTML
    A markup language designed for the creation
    of web pages with hypertext and other
    information
CSS
    Language used to describe how an HTML
    document should be formatted.
Javascript
    A scripting language produced by Netscape
    for use within HTML Web pages.

Computer | Protected Mode: O   105%

HTML Special Characters

Symbol Name	HTML Entity	Symbol
Copyright Sign	©	©
Registered Trademark Sign	®	®
Trademark Sign	™	™
Less Than	<	<
Greater Than	>	>
Ampersand	&	&
Non-breaking Space		
Em Dash	—	—
Quotation Mark	"	"
Euro	€	€
British Pound	£	£
Japanese Yen	¥	¥

HTML Tables

US time	European date (D/M/Y) & time	Y-M-D date & time	Dollar	Chinese money	IP addresses	Names	Numbers
							26.32 E +03
	29/10/1965	83-03-24		YMB 4	98.176.35.80		
Fri Mar 22 21:48:49 UTC+0200 1957		1967-08-22 06:07:16 PM		YMB -81.38	162.117.253.34	dyse chidi	
Thu, 14 Feb 2002 04:24:20 UTC	06/07/99 06:46:01 AM	81-02-04 09:09:54 AM		YMB -108.83	122.205.50.6	bochai dychai	-191.45E-05
Monday, May 30, 1994 4:47:31 PM	06/09/05 05:11:16 AM			YMB 33.16		dydy balie	-131.20E+01
09/28/2000	24/11/1957		$-38.77	YMB 112.42	15.192.151.209		
		97-08-13 00:01:33 AM	$14.5	YMB -1.75	99.93.147.150	dychai tonchai	-187.28E-05
Mon, 29 Oct 1979 00:44:03 UTC		87-10-16	$14.66	YMB 61.14		chite malie	- 125.19 E -03
Sat, 9 Jan 1982 05:45:06 UTC	04/06/68	74-10-20	$20.47		121.169.225.22	dyma bama	138.11E+02
04/05/75		2000-03-20	$68.84	YMB 88.19	239.133.227.68	made liete	195.44 E +03
Monday, July 15, 2002 1:05:02 AM	01/02/1961 09:40:16 AM		$97.9	YMB 44.28	223.66.228.116	mava sete	-107
this is footer	row	number	ONE!	adsf	adsf	adsf	adsf

```
<html>
<head>
<title>How To Create HTML Tables</title>
</head>
<body>
<table border=1 cellspacing=0 cellpadding=0>
<tr>
<td width= 110 valign=top>
<br/>upper left corner
</td>
<td width=110 valign=top>
<br/>upper right corner
</td>
</tr>
<tr>
<td width= 110 valign=top>
<br/>left center cell
</td>
<td width=110 valign=top>
<br/>right center cell
</td>
</tr>
<tr>
<td width= 110 valign=top>
<br/>lower left corner
</td>
<td width=110 valign=top>
<br/>lower right corner
</td>
</tr>
</table>
</body>
</html>
```
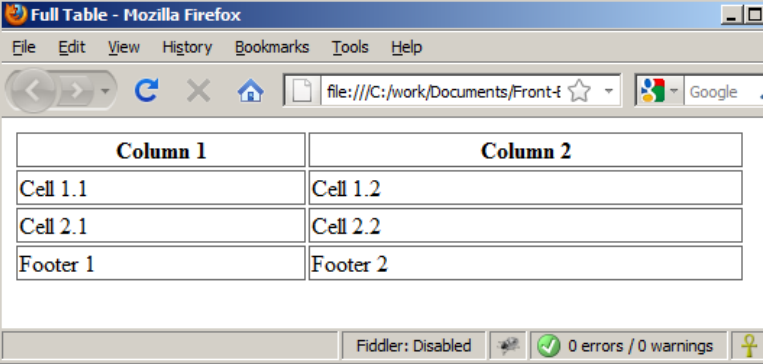
Title	Title	Title	Title	Title	Title
Data	Data	Data	Data	Data	Data
Data	Data	Data	Data	Data	Data
Data	Data	Data	Data	Data	Data
Data	Data	Data	Data	Data	Data
Data	Data	Data	Data	Data	Data

HTML Tables

- Tables represent tabular data

  - A table consists of one or several rows

  - Each row has one or more columns

- Tables comprised of several core tags: `<table></table>`: begin / end the table
  `<tr></tr>`: create a table row
  `<td></td>`: create tabular data (cell)

- Tables should not be used for layout. Use CSS floats and positioning styles instead

HTML Table:

```
<table>
<colgroup>
  <col style="width:200px" /><col />
</colgroup>
<thead>
  <tr><th>Column 1</th><th>Column 2</th></tr>
</thead>
<tfoot>
  <tr><td>Footer 1</td><td>Footer 2</td></tr>
</tfoot>
<tbody>
  <tr><td>Cell 1.1</td><td>Cell 1.2</td></tr>
  <tr><td>Cell 2.1</td><td>Cell 2.2</td></tr>
</tbody>
</table>
```


table-full.html

Nested Tables

- Table data "cells" (`<td>`) can contain nested tables (tables within tables):

```
<table>                                    nested-tables.html
  <tr>
    <td>Contact:</td>
    <td>
      <table>
        <tr>
          <td>First Name</td>
          <td>Last Name</td>
        </tr>
      </table>
    </td>
  </tr>
</table>
```
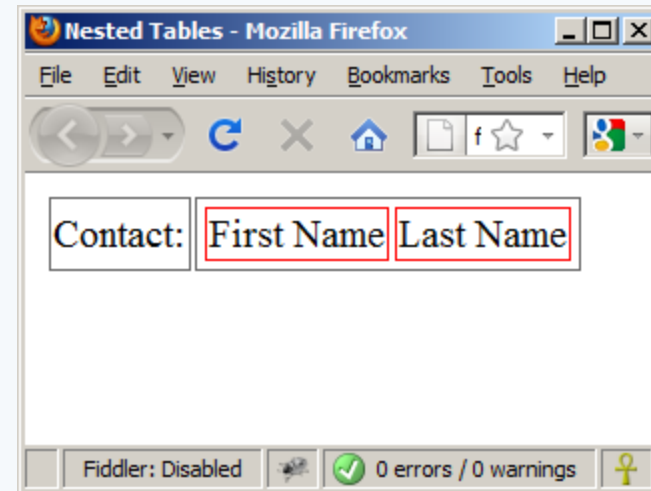
Cell Spacing and Padding

- Tables have two important attributes:
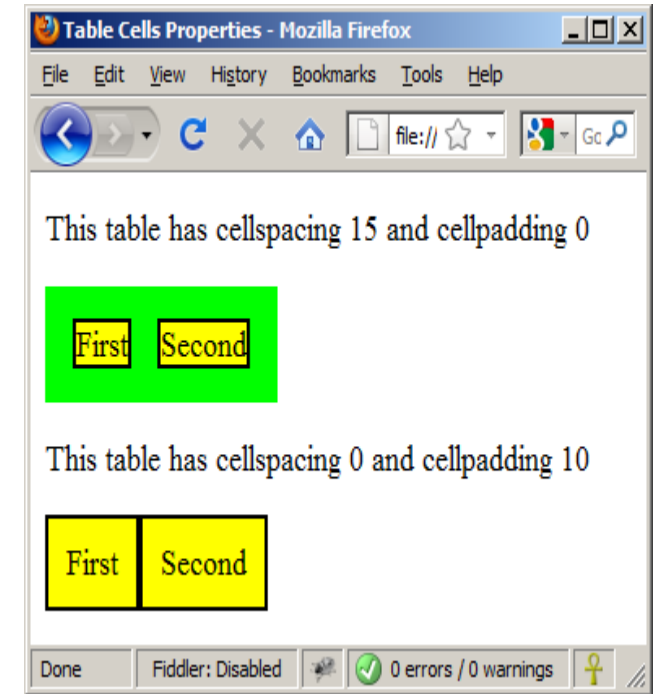
◆ **`cellspacing`**
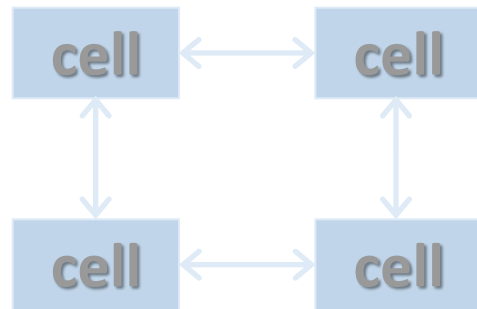
◆ **Defines the empty space between cells**

◆ **`cellpadding`**
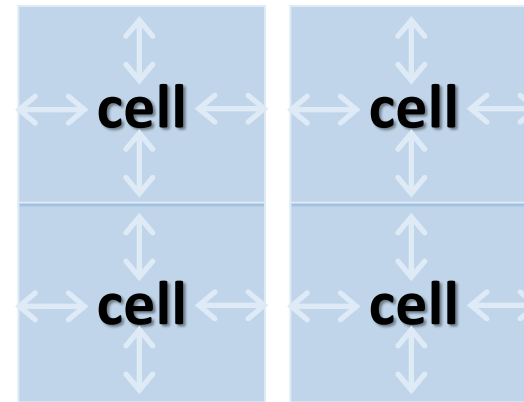
◆ **Defines the empty space around the cell content**

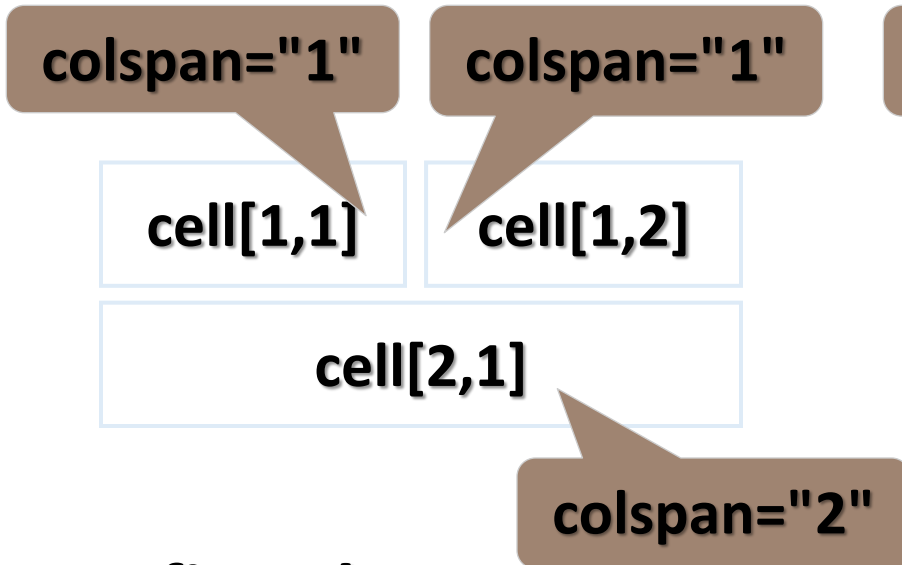# Cell Spacing and Padding – Example

table-cells.html

```html
<html>
  <head><title>Table Cells</title></head>
  <body>
    <table cellspacing="15" cellpadding="0">
      <tr><td>First</td>
      <td>Second</td></tr>
    </table>
    <br/>
    <table cellspacing="0" cellpadding="10">
      <tr><td>First</td><td>Second</td></tr>
    </table>
  </body>
</html>
```
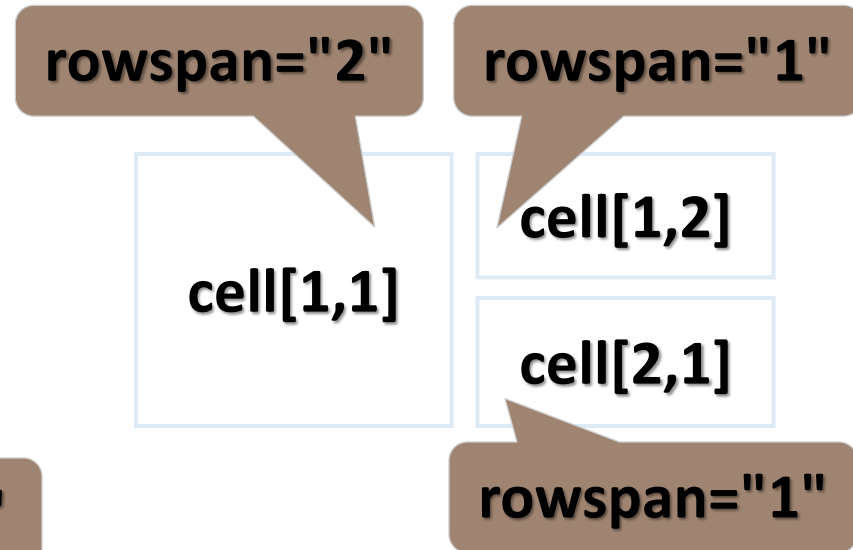
Column and Row Span

- Table cells have two important attributes:

◆ **`colspan`**

`colspan="1"` `colspan="1"`

cell[1,1]	cell[1,2]
cell[2,1]	

`colspan="2"`

◆ **Defines how many columns the cell occupies**

◆ **`rowspan`**

`rowspan="2"` `rowspan="1"`

cell[1,1]	cell[1,2]
	cell[2,1]

`rowspan="1"`

◆ **Defines how many rows the cell occupies**

Column and Row Span –

table-colspan-rowspan.html

```
<table cellspacing="0">
    <tr class="1"><td>Cell[1,1]</td>
        <td colspan="2">Cell[2,1]</td></tr>
    <tr class="2"><td>Cell[1,2]</td>
        <td rowspan="2">Cell[2,2]</td>
        <td>Cell[3,2]</td></tr>
    <tr class="3"><td>Cell[1,3]</td>
        <td>Cell[2,3]</td></tr>
</table>
```

Cell[1,1]	Cell[2,1]	
Cell[1,2]	Cell[2,2]	Cell[3,2]
Cell[1,3]		Cell[2,3]

HTML Forms

Entering User Data from a Web Page
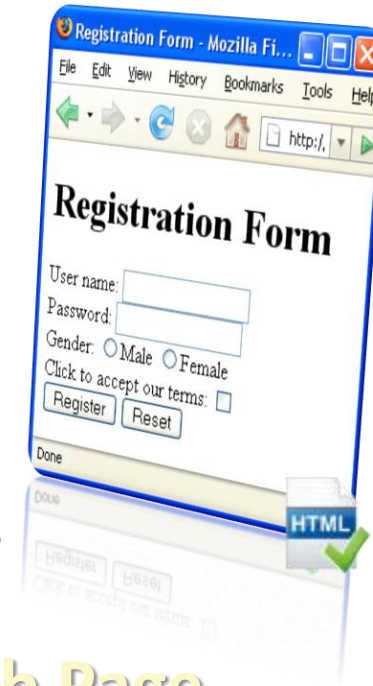
HTML Forms

- An HTML form is a section of a document which contains controls such as text fields, password fields, checkboxes, radio buttons, submit button, menus etc.
- An HTML form facilitates the user to enter data that is to be sent to the server for processing such as name, email address, password, phone number, etc.
- HTML forms are required if you want to collect some data from of the site visitor.
- SYNTAX:

<form action="server url" method="get|post">   **</form>**

- Forms are the primary method for gathering data from site visitors
- Create a form block with

- Example:

```
<form name="myForm" method="post"
action="path/to/some-script.php">
    ...
</form>
```

HTML Form Tags

Tag	Description
<form>	It defines an HTML form to enter inputs by the used side.
<input>	It defines an input control.
<textarea>	It defines a multi-line input control.
<label>	It defines a label for an input element.
<fieldset>	It groups the related element in a form.
<legend>	It defines a caption for a <fieldset> element.
<select>	It defines a drop-down list.
<optgroup>	It defines a group of related options in a drop-down list.
<option>	It defines an option in a drop-down list.
<button>	It defines a clickable button.

Form Fields

- Single-line text input fields:

```
<input type="text" name="FirstName" value="This
is a text field" />
```

- Multi-line textarea fields:

```
<textarea name="Comments">This is a multi-line
text field</textarea>
```
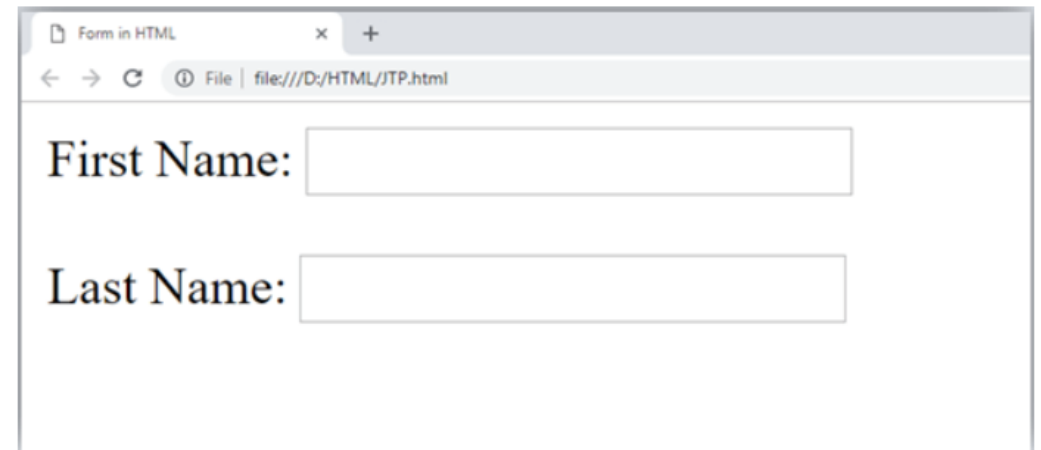
- Hidden fields contain data not shown to the user:

```
<input type="hidden" name="Account" value="This
is a hidden text field" />
```
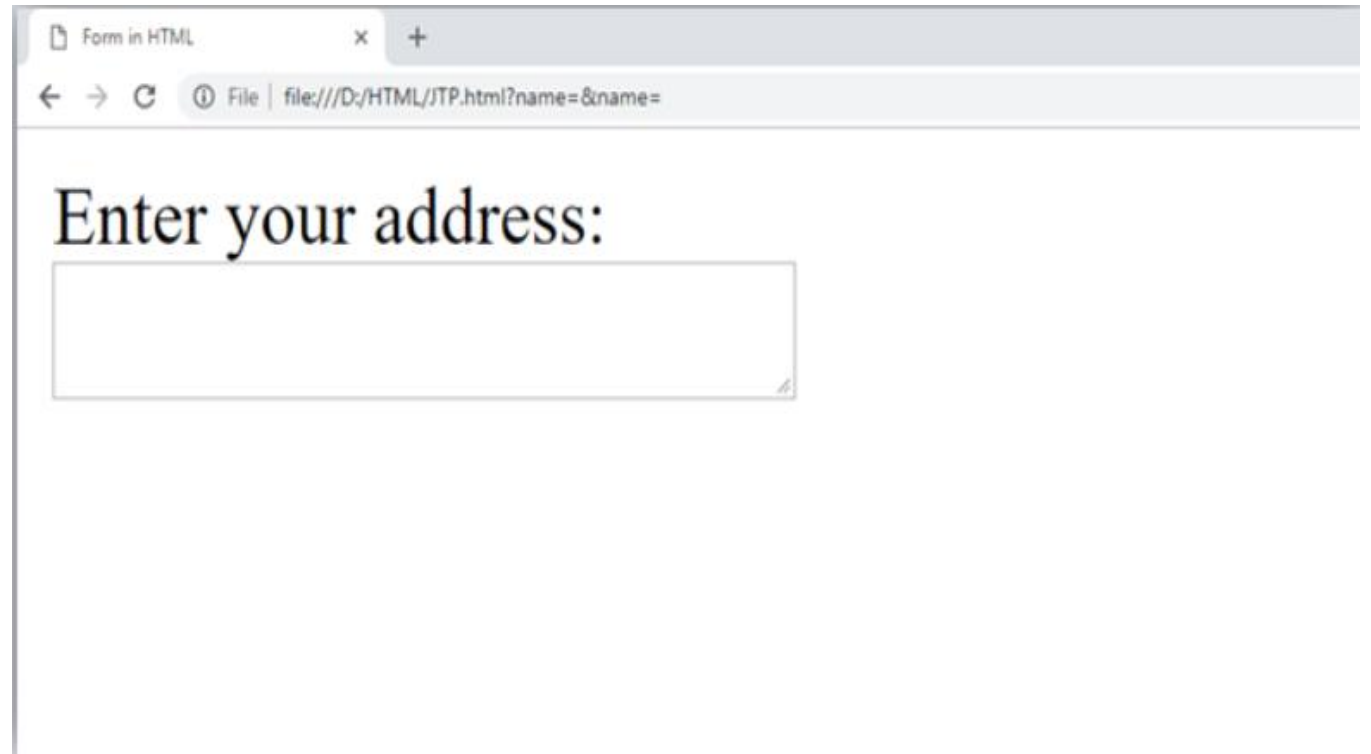
- Often used by JavaScript code

TEXT FIELD

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

```
<form>
   First Name: <input type="text" name="firstname"/> <br/>
   Last Name:  <input type="text" name="lastname"/> <br/>
</form>
```


Enter your name

Form in HTML   × +

← → C   ⓘ File | file:///D:/HTML/JTP.html

First Name: [   ]

Last Name: [   ]

TEXT AREA

```
<!DOCTYPE html>
<html>
<head>
   <title>Form in HTML</title>
</head>
<body>
 <form>
    Enter your address:<br>
    <textarea rows="2" cols="20"></textarea>
 </form>
</body>
</html>
```

Form in HTML

File | file:///D:/HTML/JTP.html?name=&name=

Enter your address:

Email and password fields

```html
<!DOCTYPE html>
<html>
<head>
    <title>Form in HTML</title>
</head>
<body>
  <form method="post">

        Email: <input type="email" id="email" name="email"/> <br/>
        Password: <input type="password" id="password" name="password"/> <br/>
            <input type="submit" style="color: red" value="submit">
  </form>
</body>
</html>
```

← → C ⓘ File | E:/old%20laptop%20data/APC/FAST%20TR/

Email:
Password:
Submit

Email: @gmail.com

! Please enter a part followed by '@'. '@gmail.com' is incomplete.

Radio button

```
<form>
    <label for="gender">Gender: </label>
        <input type="radio" id="gender" name="gender" value="male"/>Male
        <input type="radio" id="gender" name="gender" value="female"/>Female <br/>
</form>
```

Gender: ◯ Male ◉ Female

Check box

```html
<form>
Hobby:<br>
        <input type="checkbox" id="cricket" name="cricket" value="cricket"/>
          <label for="cricket">Cricket</label> <br>
        <input type="checkbox" id="football" name="football" value="football"/>
          <label for="football">Football</label> <br>
        <input type="checkbox" id="hockey" name="hockey" value="hockey"/>
          <label for="hockey">Hockey</label>
</form>
```

Hobby:
☑ Cricket
☑ Football
☐ Hockey

\<fieldset\> The \<fieldset\> element in HTML is used to group the related information of a form. This element is used with \<legend\> element which provide caption for the grouped elements.

```html
<form>
    <fieldset>
     <legend>User Information:</legend>
    <label for="name">Enter name</label><br>
<input type="text" id="name" name="name"><br>
<label for="pass">Enter Password</label><br>
<input type="Password" id="pass" name="pass"><br>
<input type="submit" value="submit">
</fieldset>
It;/form>
```
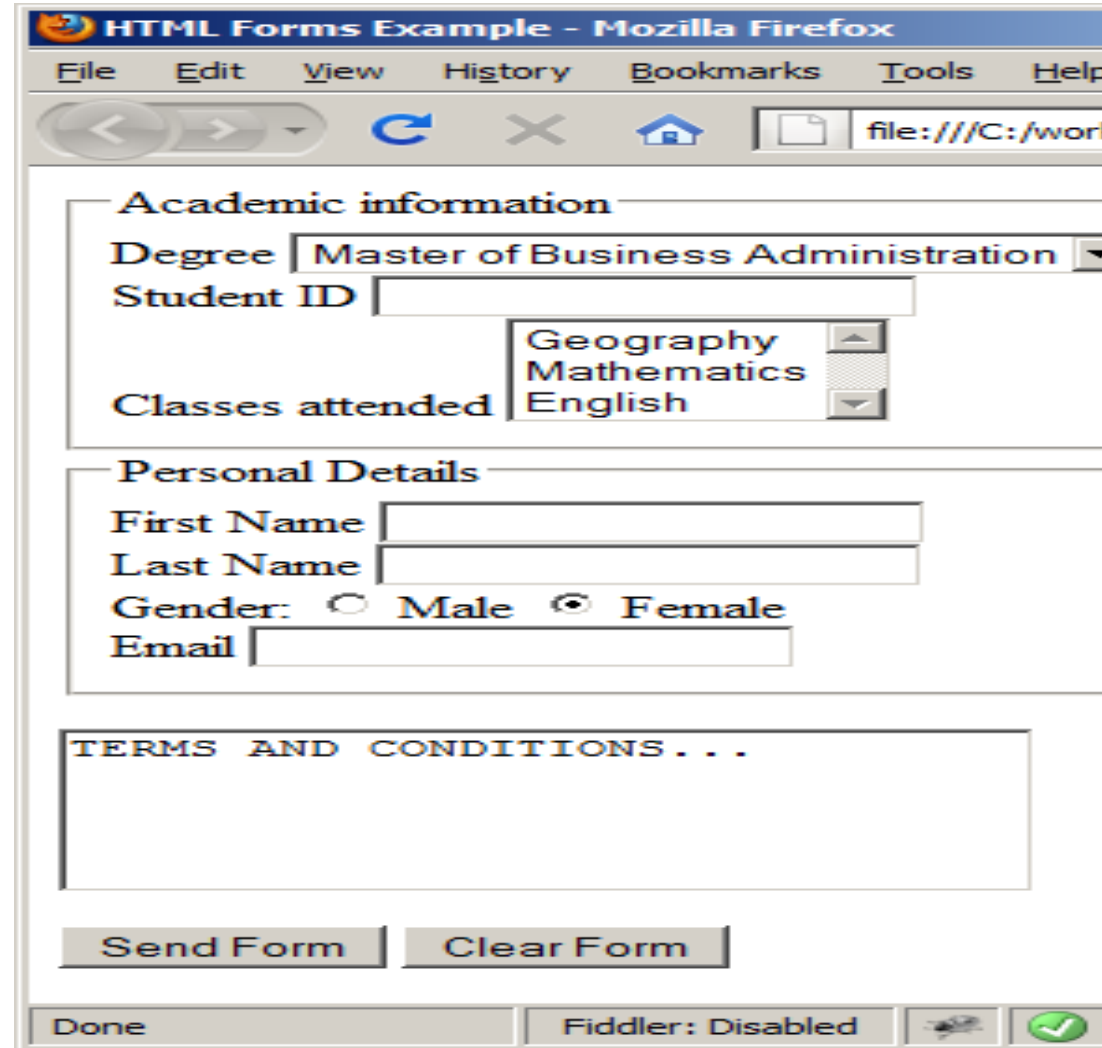
EXAMPLE:

HTML Frames

<frameset>, <frame> and <iframe>

HTML Frames

- Frames provide a way to show multiple HTML documents in a single Web page

- The page can be split into separate views (frames) horizontally and vertically

- Frames were popular in the early ages of HTML development, but now their usage is rejected

- Frames are not supported by all user agents (browsers, search engines, etc.)

  - A <noframes> element is used to provide content for non-compatible agents.

- Frames provide a pleasing interface which makes your website easy to navigate.
- Frameset contains a set of references to HTML files, each of which is displayed inside a separate frame
- There are two tags related to frames i.e., frameset and frame.

<frameset cols=" % , %" | rows=" % , %">……..</frameset>
<frame name="name" src="filename" scrolling =" yes" | "no" frameborder ="0"|"1">

Attributes of \<frameset\> :

- **cols:** No. of columns are in the frameset
- **rows:** No. of rows are in the frameset
- **border: W**idth of the border of each frame in pixels.
- **frameborder:** Three dimensional border should be displayed between frames or not. If it's value is 1, indicates border should be displayed.
- **framespacing:** Amount of space between frames in a frameset.

Attributes of \<frame\> :

- **src:** Indicates the file to be used.
- **name:** Name to the frame.
- **frameborder:** Its value 1 indicates yes, 0 indicates false.
- **marginwidth:** Width of the space between the left and right of the frame border's and the fames content.
- **marginheight:** Height of the space between the top and bottom of the frames borders and its contents.
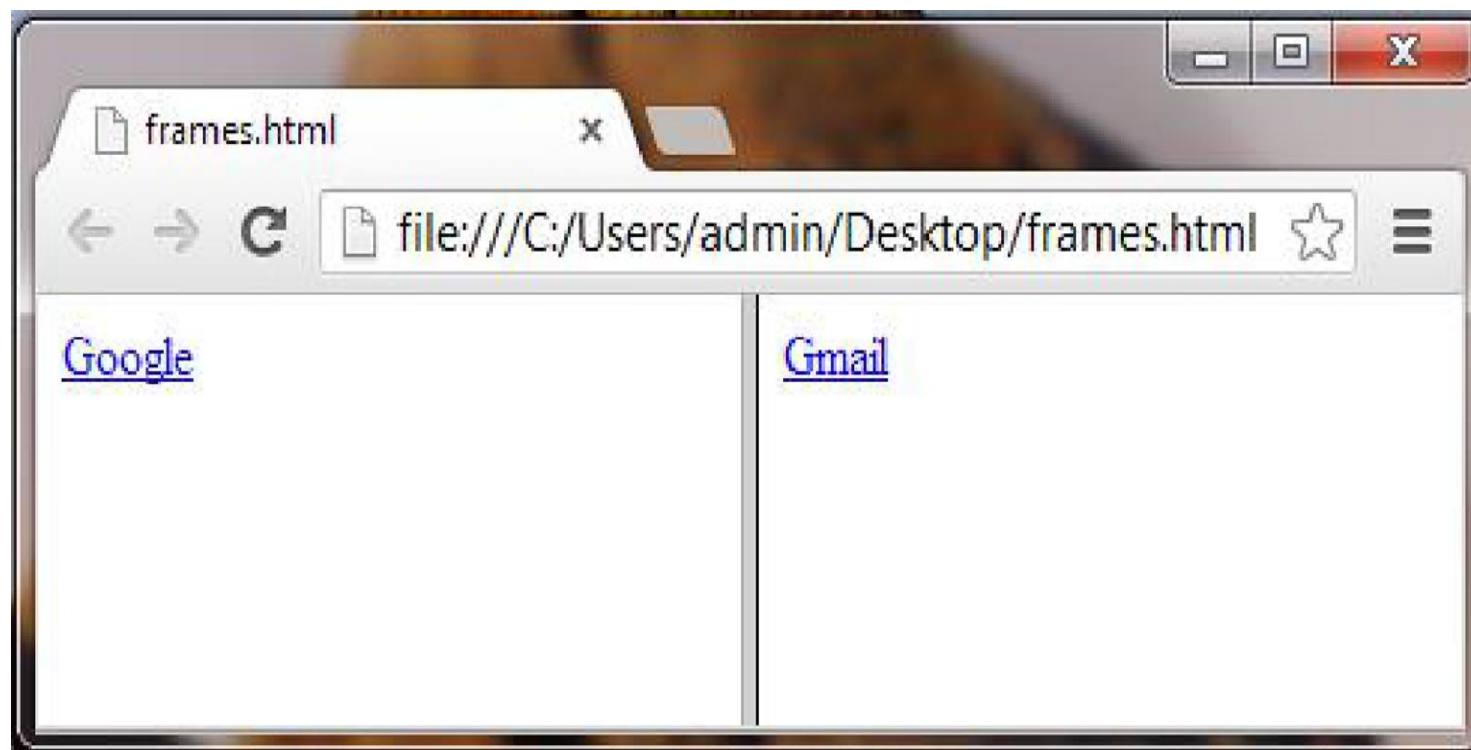
EXAMPLE PROGRAM:

```
<html>
    <frameset cols="200,*">
    <frame src="d:\1.html" name="leftframe">
    <frame src="d:\2.html" name="rightframe">
    </frameset>
</html>
```

1.html
```
<html>
    <body>
        <a href="http://www.google.com" target="leftframe">Google</a>
    </body>
</html>
```
2.html
```
<html>
    <body>
        <a href="http://www.gmail.com" target="rightframe">Gmail</a>
    </body>
</html>
```

frames.html

file:///C:/Users/admin/Desktop/frames.html

Google   Gmail

Inline Frames: `<iframe>`

- Inline frames provide a way to show one website inside another website:

iframe-demo.html

```
<iframe name="iframeGoogle" width="600" height="400"
src="http://www.google.com" frameborder="yes"
scrolling="yes"></iframe>
```

Nested Frameset

```
<html>
<head>
    <title> Nested Lists </title>
</head>
<frameset rows="25%,50%">
    <frame name="a" src="d:\1.html">
<frameset cols="25%,50%">
    <frame name="b" src="d:\2.html">
    <frame name="abc" src="d:\3.html">
</frameset>
</frameset>
</html>
```

file:///C:/Users/admin/Desktop/one.html

Google

Gmail

Youtube

HTML5:

- HTML5 was the fifth and last major version of <u>HTML</u> that is a <u>World Wide Web Consortium (W3C)</u> recommendation.
- HTML5 is the new Standard for HTML

  The most interesting new HTML5 elements are:

➤ New semantic elements like <header>, <footer>, <article>, and <section>.
➤ New attributes of form elements like number, date, time, calendar, and range.
➤ New graphic elements: <svg> and <canvas>.
➤ New multimedia elements: <audio> and <video>.
➤ HTML5 is an improved version of HTML that supports multimedia, graphics, mobile compatibility, and modern web features, making web development easier and more powerful.

HTML	HTML5
It didn't support audio and video without the use of flash player support.	It supports audio and video controls with the use of <audio> and <video> tags.
It uses cookies to store temporary data.	It uses SQL databases and application cache to store offline data.
Does not allow JavaScript to run in browser.	Allows JavaScript to run in background. This is possible due to JS Web worker API in HTML5.

Q1. Design the following template using HTML form controls and table tag elements.

Pizza Shop 2.0	
Name	[pink input field]
Pizza Topping	○ Supreme ○ Vegetarian ○ Hawaiian
Pizza Sauce	Tomato ▼
Optional Extras	☐ Extra Cheese ☐ Gluten Free Base
Delivery Instructions:	
[textarea]	
Send my order	