



CUI Abbottabad

Department of Computer Science

Web Technologies

Lecture-3-[CLO-2]
HTML-Part2

Agenda

- Tables creation
 - Attributes, CellSpacing, CellPadding
 - RowSpan, ColSpan, other attributes
 - Nested Tables
- links
- Images

Tables in HTML

- Display information in rows and columns
- A **row** is made up of a set of cells on the same line from left to right
- A **column** is made up of a line of cells going from top to bottom.
- In html a table is created using **< table >** element.
- Inside the < table > element, the table is written out row by row.
- A row is contained inside a **< tr >** element – which stands for table row .

Tables in HTML

- Inside the row either we put headings of columns using `<th>` tag element or we put data related to those headings using `<td>` tag element.
- Following is the general syntax of a table in html:

```
<table attributes...>
```

```
  <tr attributes...>
```

```
    <th attributes...>heading-1 </th><th>heading2</th>....
```

```
  </tr>
```

```
  <tr>
```

```
    <td attributes..>data-item1</td><td>data-item2</td>...
```

```
  </tr>
```

```
  .
```

```
  .
```

```
</table>
```

Code Example-Table-3-1.html

Attributes of <table> element

- <table> can use different attributes:
 - All the universal attributes like **border**, **width**, **align**, **size**, **bgcolor** etc
 - It also contains unique attributes like:
 - **cellpadding**
 - **cellspacing**
 - **dir** attribute for the direction of text inside the table cells
 - **summary** attribute for purpose of table data
- Table attributes will be applied to all other elements in the table:

Table elements and their attributes

- Inside the table row<tr>, the <th> and <td> both tags have some common attributes:
 - **align**----for horizontal alignment
 - **bgcolor**---for cell background color
 - **colspan/rowspan**---for merging of columns or rows
 - **valign**-----for vertical alignment
 - **width**-----for width of cell
- <caption> tag is used to display the table heading, this tag should be written right after the opening <table> tag and before other tags

Code-example-> [Table-3-1-with-Attributes.html](#)

Cellpadding and cellspacing Table

- Cellpadding attribute specifies the space, in pixels, between the cell wall and the cell content.
 - Code-example [Table-3-2-CellPadding.html](#)
- Cellspacing attribute specifies the space, in pixels, between cells.
 - Code-example [Table-3-3-cellspacing.html](#)

colspan and rowspan Tables

- **Colspan:** Use the colspan attribute to make cells stretch over more than one columns, in other words merge more than one columns
 - Code-exp. <Table-3-4-colspan.html>
- **Rowspan:** Use the rowspan attribute to make cells stretch over more than one row, in other words merge more than one rows
 - Code-exp- <Table-3-5-rowspan.html>
- **Note:** rowspan and colspan are attributes of <th> or <td>

Spanning columns using the colspan attribute

Spanning rows using the rowspan attribute

Grouping sections of Table

Splitting Up Tables Using a Head, Body, and Foot

- `<thead>` to create a separate table header
- `<tbody>` to indicate the main body of the table
- `<tfoot>` to create a separate table footer
- Note that the `<tfoot>` element must appear before the `<tbody>` element in the source document. Figure 3.1

`<thead>`

Transaction date	Payment type and details	Paid out	Paid in	Balance
------------------	--------------------------	----------	---------	---------

`<tbody>`

12 Jun 09	Amazon.com	\$49.99		\$8411.16
13 Jun 09	Total	\$60.00		\$8351.16
14 Jun 09	Whole Foods	\$75.28		\$8275.88
14 Jun 09	Visa Payment	\$350.00		\$7925.88
15 Jun 09	Cheque 122501		\$1450.00	\$9375.88
17 Jun 09	Murco	\$60.00		\$9315.88
18 Jun 09	Wrox Press		\$1000.00	\$10315.88
18 Jun 09	McLellans Bakery	\$25.00		\$10290.88
18 Jun 09	Apple Store	\$1350.00		\$8940.88

`<tfoot>`

		\$1970.27	\$2450.00	\$8940.88
--	--	-----------	-----------	-----------

Nested Tables

- You can include markup inside a table cell, as long as the whole element is contained within that cell
- Placing another entire table inside a table cell, is called a nested table

Table-3-6-NestedTables

Nested
table

	Morning	Afternoon	
Saturday	Cycling	Fishing	
Sunday	Rowing	Group1 Water skiing	Group2 Wake boarding

Note: no
border in
nested table

- Code exp- [Table-3-6-NestedTable1.html](#)

Image Tag

- an is used to insert an image in the webpage.
- The most popular image formats used by web developers today are:
 - PNG (Portable Network Graphics)
 - JPEG (Joint Photographic Experts Group)
 - GIF(Graphics Interchange Format)-----for animated images
- The HTML standard doesn't list what image formats to support, so each user agent(browser) supports different formats.
- A complete guide to image formats supported by web browsers is available in figure 3.3

Image Tag...Image Formats

Abbreviation	File format	MIME type	File extension(s)	Browser compatibility
APNG	Animated Portable Network Graphics	image/apng	.apng	Chrome, Edge, Firefox, Opera, Safari
BMP	Bitmap file	image/bmp	.bmp	Chrome, Edge, Firefox, Internet Explorer, Opera, Safari
GIF	Graphics Interchange Format	image/gif	.gif	Chrome, Edge, Firefox, Internet Explorer, Opera, Safari
ICO	Microsoft Icon	image/x-icon	.ico, .cur	Chrome, Edge, Firefox, Internet Explorer, Opera, Safari
JPEG	Joint Photographic Expert Group image	image/jpeg	.jpg, .jpeg, .jfif, .pjpeg, .pjp	Chrome, Edge, Firefox, Internet Explorer, Opera, Safari
PNG	Portable Network Graphics	image/png	.png	Chrome, Edge, Firefox, Internet Explorer, Opera, Safari
SVG	Scalable Vector Graphics	image/svg+xml	.svg	Chrome, Edge, Firefox, Internet Explorer, Opera, Safari
TIFF	Tagged Image File Format	image/tiff	.tif, .tiff	None built-in; add-ons required
WebP	Web Picture format	image/webp	.webp	Chrome, Edge, Firefox, Opera

Figure 3.3

Image Tag

General Syntax-1

`optional text`

General Syntax-2

`
optional text
`

Note:

text in **red** and **dark blue** color is fixed(used as it is)
Write your own value in place of text in **purple** color

With "Style" attribute more then one "name:value" pairs can be combined and separated with ";"

Image Tag attributes

src

- used to mention the name of image file with its format for example “flower.png” here flower is image name and .png is its format
- If image file is in some other location or directory the complete address of image file is needed. For example “D://myimages/flower.png”.



width: used to give width of image in numbers in pixels

height: used to give height of image in numbers in pixels

alt: used to give the alternate text to be displayed in case of image not found

Note: Always specify the width and height of the image otherwise it may capture more space in web page(page might flicker while the image loads)

Image Tag

void elements:

- Some HTML5 elements (called **void elements**) contain only attributes and do not mark up text (i.e., text is not placed between a start and an end tag). Note the optional text in between and
- Although this optional text is not required in HTML5, you can terminate void elements (such as the img element) by using the **forward slash character (/)** inside the closing right angle bracket (>) of the start tag.
- “ / ” is used at end of follows example to shorten the image tag:
`<img src = "jhttp.png" width = "92" height = "120"
alt = "Java How to Program book cover" />`

“ / ” used to omit optional text and end tag

code example: [Listing-3-2.html](#)

CSS inline style attribute in HTML Tags

- CSS(cascading style sheets) are used to make uniform and more attractive look to web pages in a website. We will study CSS after completion of HTML section.
- But CSS inline “**style**” attribute can be used inside html tags, here we are using it in element as described in following program.

```
ImageWithStyle - Notepad
File Edit Format View Help
<!DOCTYPE html>
<html>
<head> <meta charset = "utf-8"> <title>images with style</title> </head>
<body>
    <h2><font color="pink">Image with border 0</font></h2>

    <img src = "smiley.gif" alt="smiley image" style="width:42px;height:42px;border:0">

    <p> <font color="blue">we have added border 0 to prevent earlier browsers to display border around image</font></p>
</body></html>
```

Use of Style attribute to assign more than one name:value pairs

Assigning of width, height and border (three properties)in one style attribute

code example: [ImageWithStyle.html](#)

CSS float property

- CSS float property is used to let the image float to the right or to the left of a text of document, as described in following example:

Code example- [ImageWithStyle2.html](#)

Several white diagonal lines of varying lengths and thicknesses are positioned in the bottom right corner of the slide, creating a modern, abstract graphic element.

Hyperlinks in HTML

- One of the most important and primary HTML5 features is the **hyperlink, through which we can link(reference)** to other resources, such as web pages in same or other website, one web page, images, other documents, audios, videos, email address and specific location inside same or another web document.
- Web browsers typically underline text hyperlinks and color their text blue by default so that users can distinguish hyperlinks among other text in the web document.
- Hyperlinks are created using the **<a> (anchor) element**.

Hyperlinks in HTML

- General syntax of hyperlink is as follows:

```
<a href="url/address" target="location">text/image/any element</a>
```

- In the above anchor tag description you will put your required document address in place of “url/address”. Also in case of reaching any specific location put the location name in target attribute. Within starting and ending <a> tag we can put either text or image or any other tag element as hyperlink.
- By default hyperlinks are displaying as underlined in blue color. The active hyperlink color is red and visited hyperlink color is purple.
- But using CSS(later) we can change hyperlinks default colors and properties values.
- Example-code: [Listing-3-3.html](#)
- Example-code: [Listing-3-4.html](#)

Target attribute in Hyperlink

- The **target** attribute specifies where to open the linked document(address assigned to **href** attribute).

The target attribute can have one of the following values:

_blank - Opens the linked document in a new window

_tab - Opens the linked document in a new 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

Code example-[Listing-3-5.html](#)

External Hyperlinks

- External links are links that refer to a web page external to the current web page.
- In external links as the web page belongs to some other location hence, in such link we assign the complete URL/absolute address of the web page in href attribute
- Code Example-[Listing-3-6.html](#)
- Code Example-[Listing-3-7.html](#)

Hyperlink to an Email address

- Using Anchor tag<a> we can also link *to* an e-mail address by assigning a **mailto: URL** to href attribute in <a>.
- **When the user clicks this type** of anchored link, most browsers launch the user's default e-mail program (for example, Mozilla Thunderbird, Microsoft Outlook or Apple Mail) to enable the user to write an email message to the linked address
- Example-code-[Listing-3-8.html](#)

Image as Hyperlink

- Images can be used as hyperlinks by nesting an `` element in an anchor element.

```
<a href="url/address" target="location">  
      
</a>
```

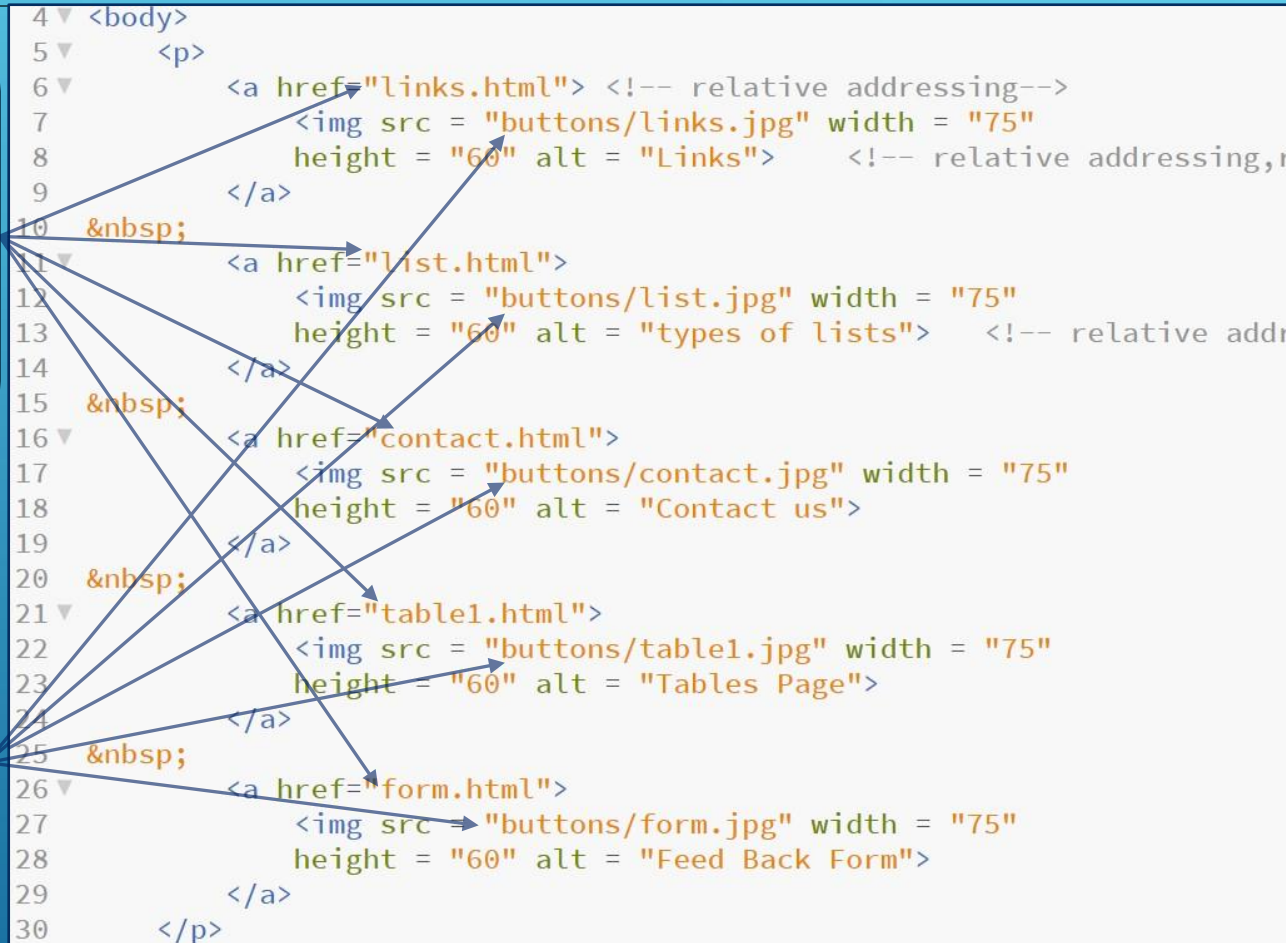
- Code-example-[Listing-3-9.html](#)
- Code-example-[Listing-3-10-images-as-hyperlinks.html](#)

Relative Addressing

Relative address of linked documents are assigned to **href**

Relative address of image file are assigned to **src** attribute

```
4 <body>
5 <p>
6 <a href="links.html"> <!-- relative addressing-->
7 <img src = "buttons/links.jpg" width = "75"
8 height = "60" alt = "Links"> <!-- relative addressing, r
9 </a>
10 &nbsp;
11 <a href="list.html">
12 <img src = "buttons/list.jpg" width = "75"
13 height = "60" alt = "types of lists"> <!-- relative addr
14 </a>
15 &nbsp;
16 <a href="contact.html">
17 <img src = "buttons/contact.jpg" width = "75"
18 height = "60" alt = "Contact us">
19 </a>
20 &nbsp;
21 <a href="table1.html">
22 <img src = "buttons/table1.jpg" width = "75"
23 height = "60" alt = "Tables Page">
24 </a>
25 &nbsp;
26 <a href="form.html">
27 <img src = "buttons/form.jpg" width = "75"
28 height = "60" alt = "Feed Back Form">
29 </a>
30 </p>
```



All linked files in **"href"** exists in same location as of source document hence complete path not needed, only name of file is sufficient to access.

"buttons" folder exists in same location as of source document hence complete path not needed, that is why address started from buttons folder in **src**

Figure 3.10

Relative Addressing

In listing 3.10, in lines 6-9,11-14,16-19,21-24 and 26-29:

1. In `<a>` tag attribute href contains the linked file name only not full path of the file because the linked document is also in same directly as of source document. Hence full address is not needed-----this is known as **relative addressing**
2. The ``element's src attribute value specifies that this image (links.jpg) resides in a directory named buttons. The buttons directory and the source HTML5 document are in the same directory. Hence we used relative addressing otherwise complete(absolute) address of image will be required-----this is also known as **relative addressing**

relative addressing: the document is stored relative to the location of the source document.

Absolute Addressing

- **Absolute path/address** means complete path of document where it resides: not relative to location of source document.
- Absolute path is used when the location of file is not relevant to location of source document, it may be in other directory or on any other remote location

Example-1

```

```

Example-2

```

```

Example-code-[Listing-3-11.html](#)

Internal Linking

- Internal linking is a mechanism that enables the user to jump among locations/sections in the same document.
- Internal linking is useful for long documents that contain many sections, hence clicking an internal link enables the user to find/reach a section without scrolling through the entire document.

Following steps are needed for the creation of Internal Linking:

1. Assign id to the target html element/section.
2. Assign “#id” in href attribute of anchor tag. When clicks on this link then control will transfer to id given in href.
3. Example-Code-[Listing-3-12.html](#)

Internal Linking....

```
1  <!DOCTYPE html>
2
3
4  <!-- Internal Linking -->
5  <html>
6    <head>
7      <meta charset = "utf-8">
8      <title>Internal Links</title>
9    </head>
10
11   <body>
12     <!-- id attribute creates an internal hyperlink destination -->
13     <h1 id = "features">The Best Features of the Internet</h1>
14
15     <!-- an internal link's address is "#id" -->
16     <p><a href = "#bugs">Go to <em>Favorite Bugs</em></a></p>
17
18     <ul>
19       <li>You can meet people from countries
20         around the world.</li>
21       <li>You have access to new media as it becomes public:
22         <ul>
23           <li>New games</li>
24           <li>New applications
25             <ul>
26               <li>For Business</li>
27               <li>For Pleasure</li>
28             </ul>
29           </li>
```

symbol used to
access a specific
location in the
document

go to element which has id
"bugs". When the user clicks on this
link the control will go to line#52
where the <h1> has id "bugs"

Listing-3-12.html

Internal Linking

```
30
31     <li>Around the clock news</li>
32     <li>Search Engines</li>
33     <li>Shopping</li>
34     <li>Programming
35         <ul>
36             <li>HTML5</li>
37             <li>Java</li>
38             <li>Dynamic HTML</li>
39             <li>Scripts</li>
40             <li>New languages</li>
41         </ul>
42     </li>
43 </ul>
44 </li>
45
46     <li>Links</li>
47     <li>Keeping in touch with old friends</li>
48     <li>It is the technology of the future!</li>
49 </ul>
50
51 <!-- id attribute creates an internal hyperlink destination -->
52 <h1 id = "bugs">My 3 Favorite Bugs</h1>
53 <p>
54     <!-- internal hyperlink to features -->
55     <a href = "#features">Go to <em>Favorite Features</em></a>
56 </p>
57 <ol>
58     <li>Fire Fly</li>
59     <li>Gal Ant</li>
60     <li>Roman Tic</li>
61 </ol>
62 </body>
63 </html>
```

here is element
location which has id
"bugs"

Listing-3-12.html

External Link to Specified Location

- A hyperlink can also reference an internal link in *another* document by specifying the document name followed by a pound sign(#) and the id of the specific element location. This will be done by following syntax.

`href = "filename.html#id"`

- For example, to link to an html element with the id bugs in Listing-3-12.html:

`href= "Listing-3-12.html#bugs".`

- Similarly, You can send the browser to an internal link on another website by appending the pound sign(#) and id value of an element to any URL, as in:

`href = "URL/filename.html#id"`

External Link to Specified Location

```
1 <!DOCTYPE html>
2
3 <html>
4   <head><meta charset = "utf-8"><title>External link to specific location in a document</title></head>
5
6 <body>
7
8   <h2> I am taking you to see my favorite bugs in another document</h2><br/>
9     <p><h3>So, You have to click <a href="Listing-3-12.html#bugs">Go to <em>Favorite Bugs</em></a>link</h3>
10    </p>
11  </body>
12 </html>
```

Browser will take us to section with id "bugs" in external document "Listing-6-7.html"

When the user clicks the link "Favorite Bugs"

Listing-3-13.html

Applications of hyperlinks

Important application of hyperlinks are:

1. Sequential Links
2. Index Sequential Links

Note: In above applications all types of hyperlinks internal/external/section specific may be used.

Sequential Links

Sequential
links

- are those links that connect web pages of the same website in a chain like fashion in which every link refers to the next or previous page in the sequence.

The screenshot shows the W3Schools website with the HTML Tutorial page open. The browser's address bar displays `www.w3schools.com/html/default.asp`. The website's navigation bar includes links for HTML, CSS, JAVASCRIPT, SQL, PHP, and BOOTSTRAP. A sidebar on the left lists various HTML topics, with 'HTML HOME' highlighted. A blue circle is drawn around this sidebar list, and an arrow points from the 'Sequential links' text box to it. The main content area features a 'FASHION & CLOTHING WHOLESALE' advertisement, the 'HTML(5) Tutorial' heading, and a description of the tutorial. A 'Next Chapter' link is visible on the right. The bottom of the page shows a taskbar with icons for Internet Explorer, File Explorer, and other applications, along with the system clock indicating 12:43 PM on 9/21/2015.

HTML Tutorial

HTML HOME

HTML Introduction

HTML Editors

HTML Basic

HTML Elements

HTML Attributes

HTML Headings

HTML Paragraphs

HTML Styles

HTML Formatting

HTML Quotations

HTML Computercode

HTML Comments

HTML CSS

HTML Links

HTML Images

HTML Tables

HTML Lists

HTML Blocks

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HTML(5) Tutorial

« W3Schools Home

Next Chapter »

With HTML you can create your own Web site.

This tutorial teaches you everything about HTML.

HTML is easy to learn - You will enjoy it.

Examples in Every Chapter

This HTML tutorial contains hundreds of HTML examples.

With our online HTML editor, you can edit the HTML, and click on a button to view the result.

Improve Typing Speed - Free

Free Typing Lessons

12:43 PM 9/21/2015

Index Sequential Link

- Index sequential links are links that refer to text/section on the same web

The screenshot shows the Wikipedia page for 'Web engineering'. The 'Contents' section is highlighted with a red box, and a callout box labeled 'Indexed sequential links' points to it. The 'Contents' section lists the following sections:

- 1 As a discipline
 - 1.1 Modeling disciplines
 - 1.2 Design disciplines, tools and methods
 - 1.3 Implementation disciplines
 - 1.4 Testing disciplines
 - 1.5 Applications categories disciplines
- 2 Attributes
 - 2.1 Web quality
 - 2.2 Content-related
- 3 Education
- 4 See also

The callout box contains the text 'Indexed sequential links'.

Exercise

- Create more than one html document and link them sequentially. Note that there should be no previous link from first page and no next link from Last page.
- Create program in which the source document display the pictures of your favorite game, vehicle and mobile as hyperlinks. When I click any of these pictures then it takes us to its relevant web page where we can see its details .
- Create any web page in which give internal linking to its different sections.