



# WEB ENGINEERING & DEVELOPMENT

## SWE 363

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### **Module 2-1-2: Markup Languages & HTML**

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## Objectives/Outline

### • Objectives

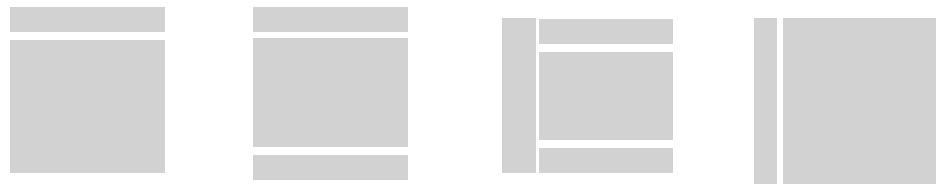
- ...
- Create pages that have frames
- Create pages that have forms to collect user inputs
- Use meta data to improve search engine results and to redirect a user
- Use the `<!DOCTYPE>` to declare the DTD

### • Outline

- ...
- HTML Elements
  - Frames
  - Forms
  - Head Element
    - Meta data
  - `<!DOCTYPE>` tag

# Frames

- Allow the browser window to be divided into an independent set of frames
- More than one HTML document can be displayed in the same browser window
- Frequently used to add a menu bar to a web site where the constant back and forth clicking would become tedious in a single page.
- Allow easier navigation under some circumstances
- The designer can divide the window horizontally and vertically in various ways, e.g.



- The disadvantages of using frames are:
  - The web developer must keep track of many HTML documents
  - It is difficult to print/bookmark the entire page

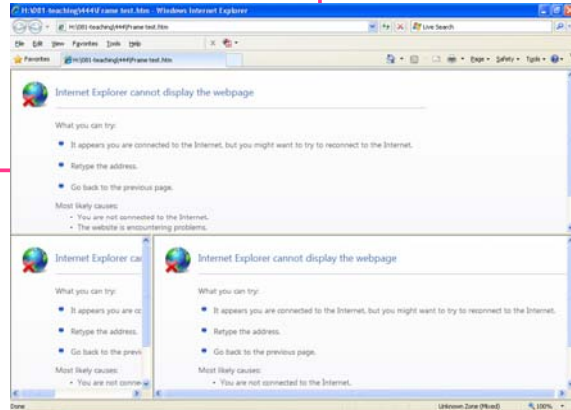
# Frames (cont.)

- The `<frameset>` tag
  - Defines how to divide the window into frames
  - Each frameset defines a set of rows or columns
  - The values of the rows/columns indicate the amount of screen area each row/column will occupy
- The `<frame>` tag
  - Defines what HTML document to put into each frame
- Useful tips
  - If a frame has visible borders, the user can **resize** it by dragging the border
  - To prevent a user from resizing a frame, add **`noresize="noresize"`** to the `<frame>` tag
  - Add the **`<noframes>`** tag for browsers that do not support frames

# Examples

```
<html >
  <frameset rows="50%, 50%">
    <frame src="tryhtml_frame_a.htm">
    <frameset cols="25%, 75%">
      <frame src="tryhtml_frame_b.htm">
      <frame src="tryhtml_frame_c.htm">
    </frameset>
  </frameset>
</html >
```

No <body>  
element



# Examples (cont.)

```
<html >
  <frameset cols="120, *">
    <frame src="tryhtml_contents.htm">
    <frame src="tryhtml_frame_a.htm" name="showframe">
  </frameset>
</html >
```

Name the frame and use *target*  
attribute in the <a> element to  
specify where to load the page

```
<html >
<frameset cols="15%, 85%">
  <frame src="menu_bar.htm" name="si demenu">
  <frame src="mai n.htm" name="mai nwi ndow">
</frameset>
<noframes>
  Your browser does not support frames.
  <a href="framel ess_mai n.htm">Pl ease vi si t the framel ess
  page. </a>
</noframes>
</html >
```

Only to be displayed in  
browsers that are not  
able to show frames

# Frames Attributes

Attribute	Value	Description
align	left right top middle bottom	Specifies how to align the iframe according to the surrounding text
frameborder	1 0	Specifies whether or not to display a frame border
height	pixels %	Defines the height of the iframe
longdesc	URL	A URL to a long description of the frame contents
marginheight	pixels	Defines the top and bottom margins of the iframe
marginwidth	pixels	Defines the left and right margins of the iframe
name	frame_name	Specifies a unique name of the iframe (to use in scripts)
scrolling	yes no auto	Define scroll bars
src	URL	The URL of the document to show in the iframe
width	pixels %	Defines the width of the iframe

# Inline Frame

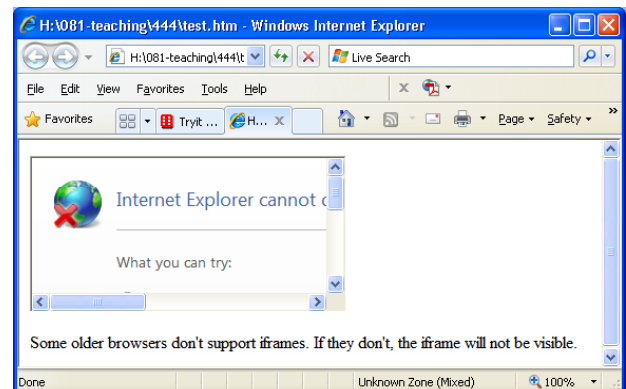
- The iframe element creates an inline frame that contains another document (a frame inside an HTML page)

```
<html >
<body>

<i frame
src ="/defaul t. asp">
</i frame>

<p>
Some older browsers don' t
support i frames. If they
don' t, the i frame will not
be vi si bl e.
</p>

</body>
</html >
```



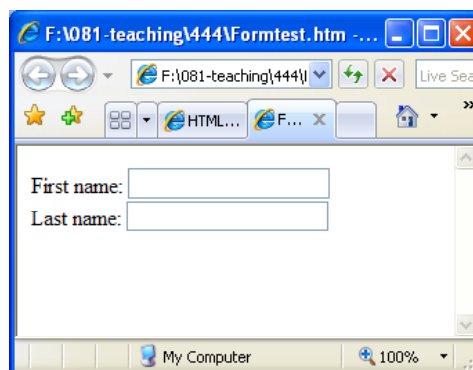
# Forms

- Forms are used to collect different input data from a user
- A form is an area that can contain form elements
  - like text fields, textarea, drop-down menus, radio buttons, checkboxes, etc.
- A form is defined with the `<form>` tag

```
<form> ... .. </form>
```
- The `<input>` tag is the most used element
  - The type of input is specified with the type attribute:
    - Text Fields
    - Radio Buttons
    - Checkboxes
    - Drop Lists

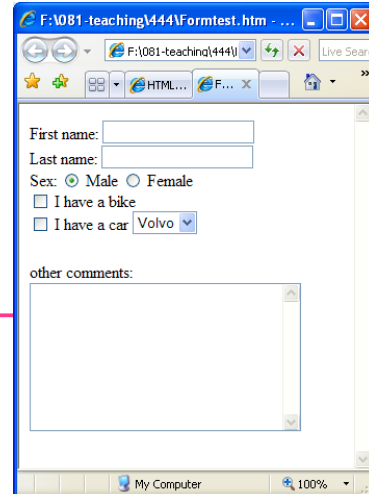
# Example

```
<form>  
  First name: <input type="text" name="fi rstname"> <br>  
  Last name: <input type="text" name="l astname">  
</form>
```



## Examples (cont.)

```
<form>
First name: <input type="text" name="firstname"> <br>
Last name: <input type="text" name="lastname">
<input type="radio" name="sex" value="male" checked> Male<br>
<input type="radio" name="sex" value="female"> Female
<input type="checkbox" name="bike"> I have a bike <br>
<input type="checkbox" name="car"> I have a car
<select name="cars">
  <option value="volvo">Volvo
  <option value="saab">Saab
  <option value="fiat">Fiat
  <option value="audi">Audi
</select>
<textarea rows="10" cols="30">
</textarea>
</form>
```



## Forms (cont.)

- To send the form content to the server
  - The form's *action* attribute defines the name of the file to send the content to
  - The "Submit" button is used to allow the user to activate the send process

```
<form name="input" action="html_form_action.asp" method="get">
Username: <input type="text" name="user">
<input type="Submit" value="Submit">
</form>
```

## Example: Send e-mail from a form

```
<form action="MAILTO:someone@w3schools.com" method="post"
enctype="text/plain" >
```

```
<h3>This form sends an e-mail to W3Schools.</h3>
```

```
Name: <input type="text" name="name" value="yourname"
size="20" ><br>
```

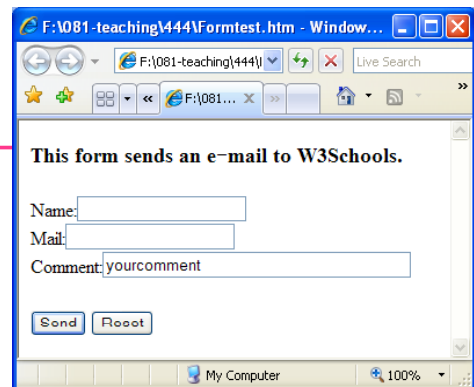
```
Mail: <input type="text" name="mail" value="yourmail"
size="20" > <br>
```

```
Comment: <input type="text" name="comment" value="yourcomment"
size="40" > <br><br>
```

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

```
<input type="reset" value="Reset" >
```

```
</form>
```



## The <head> element

- The head element contains general information (meta-information) about a document
  - Using this is optional, but recommended.
- Head tags
  - <title>: defines the document title  
<title>Web Design</title>
  - <base>: defines a base URL for all the links  
<base href="http://www.w3schools.com/images/" />
  - <link>: defines a resource reference  
<link rel="stylesheet" type="text/css" href="theme.css" />
  - <meta>: defines meta information about your page, such as descriptions and keywords for search engines and refresh rates

## Meta tags

- Improving Search Engine Results: This gives you more control over how your page will show up during a search

- Document description: Information inside a meta element describes the document.

```
<meta name="description" content="description of page goes here">
```

- Document keywords: Information inside a meta element describes the document's keywords.

```
<meta name="keywords" content="keywords go here">
```

- Redirect a user (auto-refreshing):

- Redirect a user if the site address has changed
- Refresh the document to update the data

- Controlling indexing/following links on your page

## Example

```
<html >

<head>
<title>Little Joe's Sound Page</title>
<meta name="description" content="Joe's Collection of Cool
Sound files for you to use in your home page!">
<meta name="keywords" content="music sounds midi wav joe
collection">
</head>

<body>
Page Goes Here
</body>

</html >
```



# Meta Tags: Automatic Refreshing

- Auto refreshing means that once one page loads, you can set a certain number of seconds and then the browser will load another page automatically.
- Supported by popular web browsers
- The basic structure is as follows:

```
<meta http-equiv="refresh" content="x_seconds; url=http://www.yourhost.com/pagetosendto.html" >
```

- http-equiv="refresh" tells that this is the refresh meta tag.
- Content gives the number of seconds to wait before refreshing and the URL of the page to load

- Example: refresh to davesite.com after 5 seconds

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

# Meta Tag: Controlling Page Indexing

- You can use the following meta tag to control which pages to be indexed by all search engines and which to be crawled

```
<meta name="robots" content="text" >
```

where text can be any one of the following:

all	Same as index, follow.
index, follow	The default, meaning index the page and follow all links from the page.
noindex, follow	don't index the page but do follow all links from the page.
index, nofollow	index the page, but do not proceed to the links from the page.
noindex, nofollow	do not index the page and do not proceed to links from the page.
none	same as noindex, nofollow.
noimageindex	Altavista only. Prevents the images on the page from being indexed, but the text on the page can still be indexed. May be included index, noindex, follow and nofollow.

- You can also control a specific engine by changing the name value
- Examples

```
<meta name="robots" content="noindex, nofollow" >
```

```
<meta name="googlebot" content="noindex" >
```

# HTML <!DOCTYPE> Tag

- The <DOCTYPE> declaration must be the very first thing in a document, before the <html> tag
  - Has no closing tag
- Used to tell the browser what version of HTML or XHTML is used by the document; i.e. Document Type Definition (DTD) which is the grammar of the markup language
- HTML 4.01 specifies three document types:
  - Strict DTD:
    - Use this when you want clean markup, free of presentational clutter
    - Used together with Cascading Style Sheets (CSS)
  - Transitional DTD:
    - Used when HTML presentational features are included in the document instead of in a style sheet;
    - To accommodate older browsers that don't support CSS
  - Frameset DTD:
    - Used for documents with frames; is equal to the Transitional DTD except for the frameset element replaces the body element

# HTML <!DOCTYPE> Tag (cont.)

- Strict DTD:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"
"http://www.w3.org/TR/html4/strict.dtd">
```

- Transitional DTD:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01
Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
```

- Frameset DTD

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01
Frameset//EN" "http://www.w3.org/TR/html4/frameset.dtd">
```

## Q & A



## References

- Some useful links with examples and other resources:
  - *Internet and World Wide Web How to Program*, 4/e, H. M. Deitel, P. J. Deitel, and A. B. Goldberg, Pearson Education Inc., 2008. Chapter 4.
  - *Web Development and Design Foundations with XHTML*, 4/e, Pearson Education Inc. 2009. Chapter 2.
  - [http://en.wikipedia.org/wiki/List\\_of\\_document\\_markup\\_languages](http://en.wikipedia.org/wiki/List_of_document_markup_languages)
  - W3C at <http://www.w3.org/html/>
  - W3Schools at <http://www.w3schools.com/>
    - <http://www.w3schools.com/html/>
  - <http://www.boutell.com/mapedit>
  - HTML Tutorial  
<http://www.davesite.com/webstation/html/index.shtml>
  - For a full description of meta tags refer to <http://www.html-reference.com/META.htm>