

动态网站开发(三) HTML 与网页基础

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What is the World Wide Web?

- The World Wide Web (Web) is a network of information resources
- A uniform naming scheme for locating resources on the Web (e.g., URIs).
- Protocols, for access to named resources over the Web (e.g., HTTP).
- Hypertext, for easy navigation among resources (e.g., HTML).
- HTML is a markup language (file format, declarative), NOT a programming language (imperative).

URIs

- `http://example.com/static/html?id=2011#tag`
 - Naming scheme: `http`
 - Name of the hosting server: `example.com`
 - Path of the resource: `/static/html`
 - Query (often dynamic): `id=2011`
 - Fragment Identifier: `#tag`
- Relative URIs
 - Similar to relative path in file system
 - `http://example.com/folder/doc.htm`
 - `../images/logo.png = example.com/images/logo.png`

HTML

```
<!DOCTYPE html>  
<html>  
<head>  
<meta http-equiv="Content-Type"  
content="text/html;charset=UTF-8">  
<title>Hello World!</title>  
</head>  
<body>  
<p>This is a sample paragraph.</p>  
</body>  
</html>
```

Elements

- `<p>Paragraph 1</p>`
 - start tag
 - content
 - end tag
- Tag names are case-insensitive, lowercase recommended in HTML5
- Elements allowed to be written without end tags
 - `<dt><dd><p><option><tr><td><th>`
- Elements not allowed to write end tags
 - `<base>
<embed><hr><input><link><met`
`a>`

Attributes

- Elements may have associated properties, called attributes, which may have values.

- test.html

```
<h1 id="section1">
```

This is an identified heading thanks to the id attribute

```
</h1>
```

- URI: test.html#section1
- ```
<p class="large">
<button style="height:30px;font-size:24px">
<input type="text" name="username">
```



















# Comments

- `<!-- This is a comment. -->`
- `<!-- Comments can be broken into  
multiple lines. -->`
- Authors should avoid putting two or more adjacent hyphens inside comments.



# Colors

- #FFFFFF00, #FF0, Yellow, YELLOW, yellow

	Black = "#000000"		Green = "#008000"
	Silver = "#C0C0C0"		Lime = "#00FF00"
	Gray = "#808080"		Olive = "#808000"
	White = "#FFFFFF"		Yellow = "#FFFF00"
	Maroon = "#800000"		Navy = "#000080"
	Red = "#FF0000"		Blue = "#0000FF"
	Purple = "#800080"		Teal = "#008080"
	Fuchsia = "#FF00FF"		Aqua = "#00FFFF"

# <meta>

```
<meta http-equiv="Content-Type"
content="text/html; charset=utf-8" />
<title> 格物网 </title>
<meta name="keywords" content=" 格物 , 格物网 ,
科大 , 中国科大 , USTC" />
<meta name="author" content="boj @ Gewu
Team" />
<base href="http://<?
=$_SERVER['HTTP_HOST'] ?>/" />
<link rel="stylesheet" type="text/css"
href="static/common.css" />
<script src="static/common.js"
type="text/javascript"></script>
```

# Element Identifier: id

- Id must be unique within a document
- `<p id="para1">The first paragraph.</p>`
- As a style sheet selector.
  - `#para1 { border: 1px solid #CCC }`
- As a target anchor for hypertext links.
  - `<a href="#para1">Go to Paragraph 1</a>`
- As a means to reference a particular element from a script.
  - `<script>document.getElementById("para1").value = "Revised Content";</script>`

# Element Identifier: class

- Assign one or more class names to an element; the element may be said to belong to these classes
- `<style>`
- `p .large {font-size:30px; line-height:50px}`
- `p .blue {color:blue}`
- `</style>`
- `<p class="large blue">TEXT</p>`

# Grouping Elements

- `<div>`: block level
  - Block level elements may contain inline and other block-level elements.
  - Block level elements begin on new lines.
- `<span>`: inline
  - Inline elements may only contain data and other inline elements.
  - Inline elements do not begin new lines.

# Structured Text

- Phrase Elements
  - `<em>`: emphasis (italics)
  - `<strong>`: stronger emphasis (bold font)
  - `<code>`
  - `<abbr>`
- Quotations
  - `<blockquote cite="example.com/ref.html"><p>404  
Not Found</blockquote>`
- Have not so much influence on visual effects

# Headings

- `<h1>`
- `<h2>`
- `<h3>`
- `<h4>`
- `<h5>`
- `<h6>`

# Subscripts and superscripts

- `<sub>`
  - `H<sub>2</sub>O`
- `<sup>`
  - `E = mc<sup>2</sup>`
- For further math support: MathML



# Lines and Paragraphs

- `<p>`: paragraph
  - Empty `<p>` elements are ignored.
- `<br />`: CRLF (Carriage Return + Line Feed)
  - Do not use `<br>` to generate space between `<p>`.
- `<pre>`: Consider enclosed text pre-formatted.
  - For presenting code
- `<ins>`: insert (underline)
- `<del>`: delete (strike)

# Lists

- Unordered lists: `<ul>`, ordered lists: `<ol>`
- `<ul><li>First Line</li><li>Second Line</li></ul>`
- `<ol type="A" start="1"><li>First Point</li><li>Secode Point</li></ol>`
  - Types: 1 (2,3...), a (b,c...), A (B,C...), i (ii,iii...), I (II, III...)
  - Start: start from which number
  - `<ol><li>One</li><li>Two</li><li value="20">Twenty</li><li value="1">Ten</li><li>Two</li></ol>`

# Definition Lists

- `<dl>`
  - `<dt>`Title 1
  - `<dd>`Definition 1
  - `<dt>`Title 2
  - `<dd>`Definition 2
- `</dl>`
- The visual effect is: text enclosed in `<dd>` have an additional left margin.

# Tables

- `<TABLE>`
- `<CAPTION><EM>A test table with merged cells</EM></CAPTION>`
- `<TR><TH rowspan="2"><TH colspan="2">Average`
- `<TH rowspan="2">Red<BR>eyes`
- `<TR><TH>height<TH>weight`
- `<TR><TH>Males<TD>1.9<TD>0.003<TD>40%`
- `<TR><TH>Females<TD>1.7<TD>0.002<TD>43%`
- `</TABLE>`

*A test table with merged cells*

	Average		Red eyes
	height	weight	
Males	1.9	0.003	40%
Females	1.7	0.002	43%

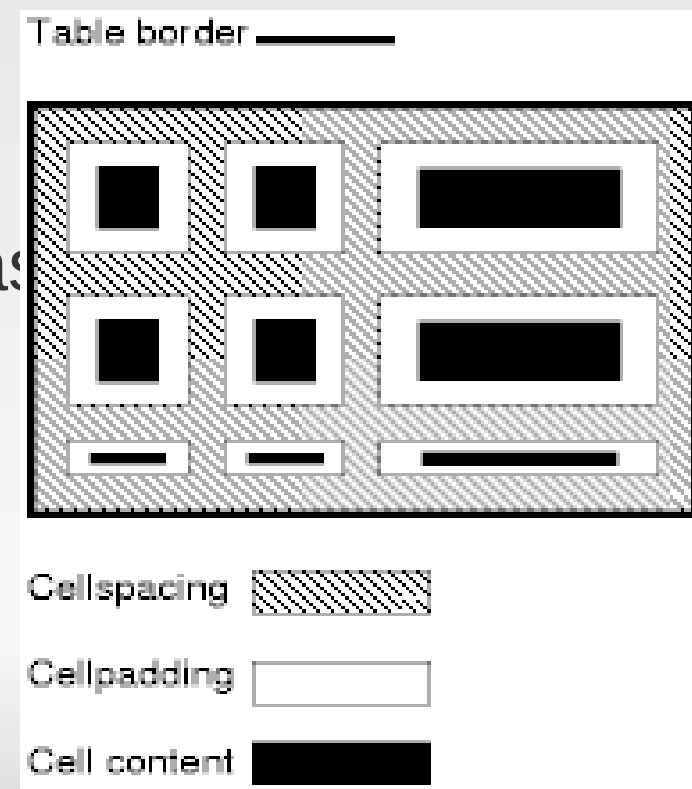
# Tables

- `<tr>`: table row
- `<th>`: table header (rendered as bold)
- `<td>`: table data
- Cells that span several rows or columns
  - Rowspan, colspan (for `<th>`, `<td>`)
  - `<TABLE border="1">`
  - `<TR><TD>1 <TD rowspan="2">2 <TD>3`
  - `<TR><TD>4 <TD>6`
  - `<TR><TD>7 <TD>8 <TD>9`
  - `</TABLE>`

1	2	3
4		6
7	8	9

# Table Formatting

- Border: frame
- Horizontal Alignment
  - align = left (default for data) | center (default for header) | right | justify | char
- Vertical Alignment
  - valign = top | middle | bottom | base
- Cell Margins
  - cellspacing = length
  - cellpadding = length
- Define formatting in CSS!



# Links

- `<a href="example.com" title="show examples">Anchor Text</a>`
- An absolute URI
  - `http://www.example.com/one.html#anchor-one`
- A relative URI
  - `./one.html#anchor-one`
  - `one.html#anchor-one`
- When the link is defined in the same document
  - `#anchor-one`

# Anchor Names

- Anchor names must be unique and case-sensitive.
  - RIGHT: `<a href="#xxx">`
  - WRONG: `<a href="#XXX">`
  - `<a name="xxx">` OR `<a id="xxx">`
  - Anchor names should be restricted to ASCII chars.
- Use id OR name?
  - The id attribute can act as more than just an anchor name (e.g., style sheet selector).
- Nested links `<a>`, `<link>` are illegal.



# Document Relationship

- `<link>`
  - External style sheets
  - Provide info to search engines
- `<base>`: Path info
  - Often used in `<head>` section
- Base URI for calculating relative URIs:
  - Set by `<base>` element
  - Given by meta data of HTTP header
  - The current document

# Images

- ``
- Alignment: bottom | middle | top | left | right
  - the object's position with respect to SURROUNDING text:
  - Bottom / middle / top: bottom / center / top of object aligned with baseline (default bottom)
  - left and right, cause the image to float to the current left or right margin

# Objects

- `<object classid="..." standby="...">`
- `<param name="height" value="200" valuetype="data">`
- `<param name="width" value="100" valuetype="data">`
- `</object>`

# Trying to render objects

- Try to render the object, not render its contents
- If failed, try to render its contents
- `<!-- First, try the Python applet -->`
- `<OBJECT title="The Earth as seen from space"`
- `classid="http://www.observer.mars/TheEarth.py">`
- `<!-- Else, try the MPEG video -->`
- `<OBJECT data="TheEarth.mpeg" type="application/mpeg">`
- `<!-- Else, try the GIF image -->`
- `<OBJECT data="TheEarth.gif" type="image/gif">`
- `<!-- Else render the text -->`
- The `<STRONG>Earth</STRONG>` as seen from space.
- `</OBJECT></OBJECT></OBJECT>`

# Font style

- TT: Renders as teletype or monospaced text.
- I: Renders as italic text style.
- B: Renders as bold text style.
- BIG: Renders text in a "large" font.
- SMALL: Renders text in a "small" font.
- STRIKE and S: Deprecated. Render strike-through style text.
- U: Deprecated. Renders underlined text.

# Font modifier

- `<font size="3" color="yellow">text</font>`
- Size Attribute:
  - An integer between 1 and 7. This sets the font to some fixed size, whose rendering depends on the user agent.
  - A relative increase in font size. The value "+1" means one size larger. The value "-3" means three sizes smaller. All sizes belong to the scale of 1 to 7.
- Deprecated (use CSS instead)

# Horizontal Line

- Horizontal Rule
- `<hr align="center" size="" width="" />`
  - Align = left | center | right
- Deprecated

# Frame

- A web page consist of independent windows
- `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN" "http://www.w3.org/TR/html4/frameset.dtd">`
- `<FRAMESET cols="20%, 80%">`  
`<FRAMESET rows="100, 200">`  
`<FRAME src="contents_of_frame1.html">`  
`<FRAME src="contents_of_frame2.gif">`  
`</FRAMESET>`  
`<FRAME src="contents_of_frame3.html">`  
`<NOFRAMES>Non-frame content</NOFRAMES>`  
`</FRAMESET>`



# Nested Frame Sets

- `<FRAMESET cols="33%, 33%, 34%">`  
...contents of first frame...  
`<FRAMESET rows="40%, 50%">`  
...contents of second frame, first row...  
...contents of second frame, second row...  
`</FRAMESET>`  
...contents of third frame...  
`</FRAMESET>`
- The contents of a frame must not be in the same document.

# Inline frames

- Frequently used.
- `<IFRAME src="foo.html" width="400" height="500" scrolling="auto" frameborder="1">`
- Your browser does not support frames.
- `</IFRAME>`

# Forms

- ```
<FORM action="http://somesite.com/prog/adduser"
method="post">
<p><LABEL for="username">Username: </LABEL>
<INPUT type="text" id="username">
<p><LABEL for="password">Password: </LABEL>
<INPUT type="password" id="password">
<p><LABEL for="comment">Comment: </LABEL>
<TEXTAREA id="email">Type comment here</TEXTAREA>
<p><INPUT type="radio" name="sex" value="Male">Male
<INPUT type="radio" name="sex" value="Female">Female
<p><INPUT type="submit" value="Send"> <INPUT
type="reset">
</FORM>
```

Control Types

- Button
 - Submit
 - Reset
 - Push (no default behavior)
- Checkbox
 - "checked" attribute is or not set (regardless of its value)
- Radio
 - Mutually exclusive options (on/off)

Control Types

- Menu
 - `<select> (<option></option>)+ </select>`
- Text input
 - `<input type="text | password">`
 - `<textarea>`
- File select
 - `<input type="file">`
- Hidden
 - `<input type="hidden">` (Used for additional attrs)
- Object

Keyboard Navigation

- "tabindex" attribute
 - Tabbing order defines the order in which elements receive focus when navigated via keyboard TAB
- "accesskey" attribute
 - A single character to an element. Pressing the access key gives focus to the element.
 - "Alt" key should be pressed in addition to access key.

Disabled Controls

- "disabled" attribute
 - Do not receive focus.
 - Skipped in tabbing navigation.
 - Cannot be successful.
- "readonly" attribute
 - May not be modified by user.
 - Can receive focus.
 - Included in tabbing navigation.
 - May be successful.

Form Submission

- Step one: Identify the successful controls
- Step two: Build a form data set
- Step three: Encode the form data set
 - enctype
- Step four: Submit the encoded form data set
 - Method: get / post
- Form content types
 - application/x-www-form-urlencoded (default)
 - multipart/form-data (files)

HTML events

- Onload
- Onunload
- Onclick
- Ondblclick
- Onmousedown
- Onmouseup
- Onmouseover
- Onmousemove
- Onmouseout
- Onfocus
- Onblur
- Onkeypress
- Onkeydown
- Onkeyup
- Onsubmit
- Onreset
- Onselect
- Onchange

References

- Learners:
 - [Http://www.w3school.com.cn](http://www.w3school.com.cn)
- Official
 - [Http://www.w3.org](http://www.w3.org)
 - HTML 4.01 Specification
 - XHTML 1.0
 - HTML5

Thanks!