CNU 국립 충남대학교 CHUNGNAM NATIONAL UNIVERSITY

3. HTML Tutorial II

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충남대학교 컴퓨터공학과

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HTML Tables

Defining HTML Tables *Try it!*

- Tables are defined with the **<table>** tag.
- Tables are divided into **table rows** with the **<tr>** tag.
- Table rows are divided into **table data** with the **<td>** tag.
  - Table data <td> are the data containers of the table
  - Can contain all sorts of HTML elements like text, images, lists, other tables, etc.
- A table row can also be divided into **table headings** with the **<th>** tag.

An HTML Table with a Border Attribute

- If you do not specify a border for the table, it will be displayed without borders.
- Remember to define borders for both the table and the table cells.
  - *Try it! (using the border Attribute), Try it! (using the CSS border property)*

HTML Tables (cont'd)

- **An HTML Table with Collapsed Borders** *Try it!*
  - If you want the borders to collapse into one border, add **CSS border-collapse**.
- **An HTML Table with Cell Padding** *Try it!*
  - Cell padding specifies the space between the cell content and its borders.
  - To set the padding, use the **CSS padding** property.
- **HTML Table Headings**
  - Defined with the **<th>** tag. *Try it!*
  - With the **CSS text-align** property *Try it!*

HTML Tables (cont'd)

- **An HTML Table with Border Spacing**
  - Border spacing specifies the space between the cells
  - To set the border spacing for a table, use the **CSS border-spacing** property. *Try it!*
  - If the table has collapsed borders, border-spacing has no effect.
- **Table Cells that Span Many Columns**
  - Use the **colspan** attribute. *Try it!*
- **Table Cells that Span Many Rows**
  - Use the **rowspan** attribute. *Try it!*

HTML Tables (cont'd)

- **An HTML Table With a Caption**
  - Use the **<caption>** tag. *Try it!*
  - <caption>tag must be inserted immediately after the <table> tag.
- **Different Styles for Different Tables** *Try it!* *Try it!*
- Test Yourself with Exercises!

HTML Lists

- **HTML can have Unordered List, Ordered Lists, or Description Lists.**

Unordered HTML List

- The first item
- The second item
- The third item
- The fourth item

Ordered HTML List

1. The first item
2. The second item
3. The third item
4. The fourth item

HTML Description List

The first item
Description of item
The second item
Description of item

HTML Lists (cont'd)

- **Unordered HTML Lists** *Try it!*
  - Starts with the **<ul>** tag. Each list item stats with the **<li>** tag.
  - The list items will be marked with bullets (small black circles)
- **Unordered HTML Lists – The Style Attribute**
  - To define the style of the marker

Style	Description	
list-style-type:disc	The list items will be marked with bullets (default)	*Try it!*
list-style-type:circle	The list items will be marked with circles	*Try it!*
list-style-type:square	The list items will be marked with squares	*Try it!*
list-style-type:none	The list items will not be marked	*Try it!*

HTML Lists (cont'd)

- **Ordered HTML Lists** *Try it!*
  - Starts with the **<ol>** tag. Each list item starts with the **<li>** tag.
  - The list items will be marked with numbers.

- **Ordered HTML Lists – The Type Attribute**

Type	Description	
type="1"	The list items will be numbered with numbers (default)	*Try it!*
type="A"	The list items will be numbered with uppercase letters	*Try it!*
type="a"	The list items will be numbered with lowercase letters	*Try it!*
type="I"	The list items will be numbered with uppercase roman numbers	*Try it!*
type="i"	The list items will be numbered with lowercase roman numbers	*Try it!*

HTML Lists (cont'd)

- **HTML Description Lists** *Try it!*
  - A list of terms, with a description of each item.
  - **<dl>** tag defines a description list.
  - **<dt>** tag defines the term(name), and the **<dd>** tag defines the data(description).
- **Nested HTML Lists** *Try it!*
  - List items can contain new list, and other HTML elements, like images and links, etc.
- Test Yourself with Exercises!

<< Here is the end of "HTML Structure : Using Lists" in Codecademy.com. >>

HTML Block Elements

HTML Block Elements and Inline Elements

- A block-level element always starts on a new line and takes up the full width
  - Example : , <h1>, <p>, <form>, <ul>, <table> *Try it!*
- An inline element does not start on a new line and only takes up as much width as necessary
  - Example : , <b>, <td>, <a>, <img>

HTML Grouping Tags

Tag	Description
	Defines a section in a document (block-level)
	Defines a section in a document (inline)

HTML Classes

- **Classing Block Elements** ***try it!***
  - The HTML class attribute makes it possible to define equal styles for "equal" elements

- **Classing Inline Elements** ***try it!***
  - The HTML class attribute also makes it possible to define equal styles for "equal" elements

- **Test Yourself with Exercises!**

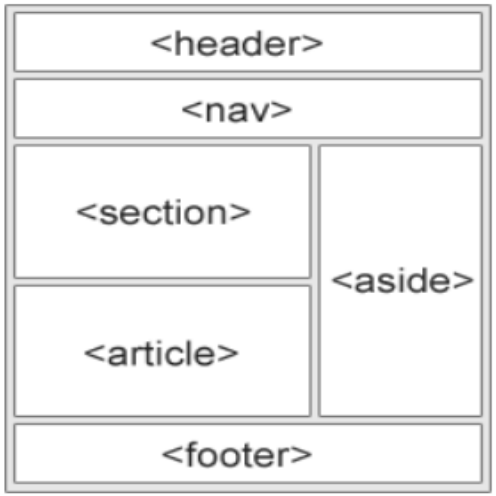
HTML Layouts

- Websites often display content in multiple columns (like a magazine or newspaper).

- HTML Layout Using Elements *Try it!*

HTML Layouts (cont'd)

- **Website Layout Using HTML5** *Try it!*

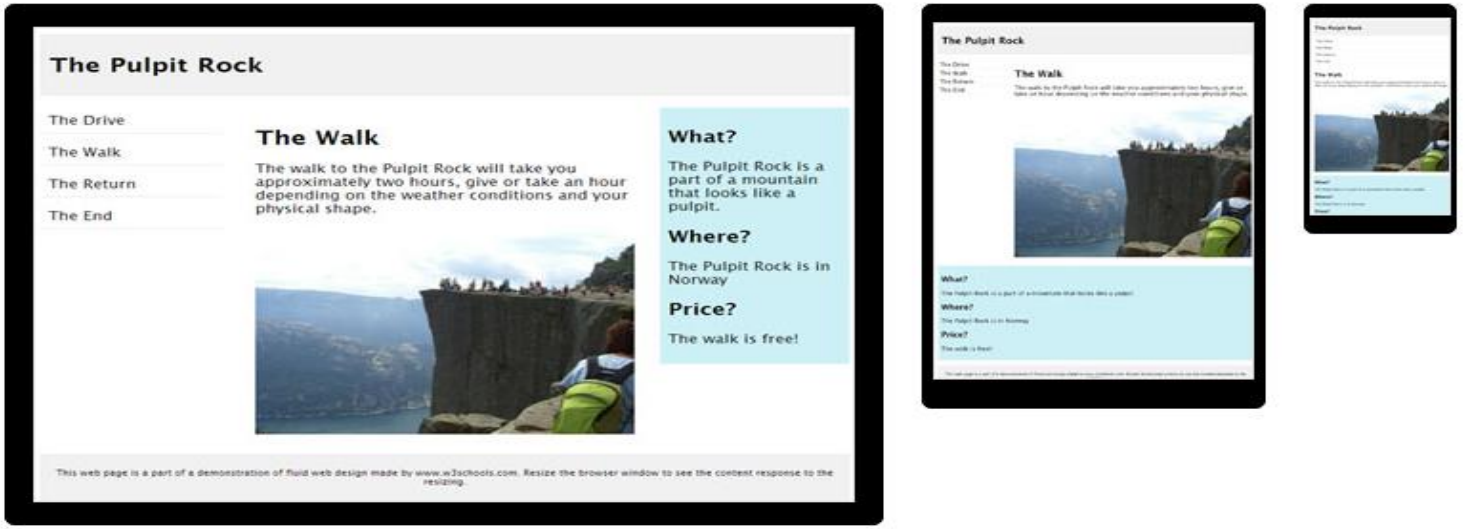


header	Defines a header for a document or a section
nav	Defines a container for navigation links
section	Defines a section in a document
article	Defines an independent self-contained article
aside	Defines content aside from the content (like a sidebar)
footer	Defines a footer for a document or a section
details	Defines additional details
summary	Defines a heading for the details element

- **HTML Layout Using Tables**
  - The <table> element was not designed to be a layout tool
  - The purpose of the <table> element is to display tabular data.

HTML Responsive Web Design

- **What is Responsive Web Design?**
  - Responsive Web Design makes your web page look good on all devices (desktops, tables, and phones).
- One way to create a responsive design, is to create it yourself ***Try it!***
- Another way to create a responsive design, is to use a responsive style sheet, like W3.CSS



HTML Iframes

- **Used to display a web page within a web page.**
- **Iframe Syntax**

```
<iframe  src= "URL" >< /iframe>
```

- **Iframe – Set Height and Width** *Try it!*
- **Iframe – Remove the Border**
  - By default, an iframe has a black border around it.
    - To remove the border, use the CSS border property. *Try it!*
  - Can also change the size, style and color of the iframe's border. *Try it!*
- **Use iframe as a Target for a Link** *Try it!*

HTML Scripts

- **The HTML <script> Tag**
  - Used to define a client-side script, such as a JavaScript
  - Contains scripting statements or it points to an external script file through the src attribute.
  - Common uses for JavaScript are image manipulation, form validation, and dynamic changes of content. *Try it!* *Try it!* *Try it!*

- **The HTML <noscript> Tag** ***Try it!***
  - Used to provide an alternate content for users that have disabled scripts in their browser or have a browser that doesn't support client-side scripting.
  - Can contain all the elements that you can find inside the <body> element of a normal HTML page.

HTML Head

- **The HTML <head> Element**
  - Container for meta data (data about data).
    - HTML meta data is data about HTML document.
    - Metadata is not displayed.
    - The following tags describes meta data
      - <title>, <style>, <meta>, <link>, <script>, and <base>

- **The HTML <title> Element**
  - Defines the title of the document
  - Defines a title in the browser toolbar.
  - Provides a title for the page when it is added to favorites.
  - Displays a title for the page in search engine results.
  - Required

HTML Head (cont'd)

- **The HTML <style> Element** *Try it!*
  - Used to define style information for an HTML document.
- **The HTML <link> Element** *Try it!*
  - Defines the page relationship to an external resource.
  - Most often used to link to style sheets.
- **The HTML <meta> Element** *Try it!*
  - Used to specify page description, keywords, author, and other metadata.
  - Used by browsers (how to display content), by search engines(keywords), and other web services.

HTML Head (cont'd)

- **The HTML <script> Element** *Try it!*
  - Used to define client-side JavaScripts.

- **The HTML <base> Element** *Try it!*
  - Specifies the base URL and base target for all relative URLs in a page.

HTML Entities

HTML Entities

- Reserved characters in HTML must be replaced with character entities.
- Characters, not present on your keyboard, can also be replaced by entities.

```
&entity_name;

OR

&#entity_number;
```

  - The advantage of using an entity name, instead of a number, is that the name is easier to remember.
  - The disadvantage is that browsers may not support all entity names, but the support for numbers is good.

HTML Entities (cont'd)

Some Other Useful HTML Character Entities

- Entity names are case sensitive

Result	Description	Entity Name	Entity Number
	non-breaking space		
<	less than	&lt;	&#60;
>	greater than	&gt;	&#62;
&	ampersand	&amp;	&#38;
¢	cent	&cent;	&#162;
£	pound	&pound;	&#163;
¥	yen	&yen;	&#165;
€	euro	&euro;	&#8364;
©	copyright	&copy;	&#169;
®	registered trademark	&reg;	&#174;

HTML Symbol Entities

- *Math*, *Greek*, *Currency*, *Arrows*, *Symbols*

HTML Entities (cont'd)

- Combining Diacritical Marks

Mark	Character	Construct	Result
`	a	à	à
´	a	á	á
ˆ	a	â	â
˜	a	ã	ã
`	O	Ò	Ò
´	O	Ó	Ó
ˆ	O	Ô	Ô
˜	O	Õ	Õ

HTML Symbols

HTML Symbol Entities

- HTML entities were described in the previous chapter.
- Many mathematical, technical, and currency symbols, are not present on a normal keyboard.
- To add these symbols to an HTML page, you can use an HTML entity name.

Example

```
<p>I will display &euro;</p>
<p>I will display &#8364;</p>
<p>I will display &#x20AC;</p>
```

Will display as:

```
I will display €
I will display €
I will display €
```

HTML Symbols (cont'd)

- Some Mathematical Symbols Supported by HTML

Char	Number	Entity	Description
∀	&#8704;	&forall;	FOR ALL
∂	&#8706;	&part;	PARTIAL DIFFERENTIAL
∃	&#8707;	&exist;	THERE EXISTS
∅	&#8709;	&empty;	EMPTY SETS
∇	&#8711;	&nabla;	NABLA
∈	&#8712;	&isin;	ELEMENT OF
∉	&#8713;	&notin;	NOT AN ELEMENT OF
∋	&#8715;	&ni;	CONTAINS AS MEMBER
∏	&#8719;	&prod;	N-ARY PRODUCT
∑	&#8721;	&sum;	N-ARY SUMMATION

HTML Symbols (cont'd)

- Some Greek Letters Supported by HTML

Char	Number	Entity	Description
Α	&#913;	&Alpha;	GREEK CAPITAL LETTER ALPHA
Β	&#914;	&Beta;	GREEK CAPITAL LETTER BETA
Γ	&#915;	&Gamma;	GREEK CAPITAL LETTER GAMMA
Δ	&#916;	&Delta;	GREEK CAPITAL LETTER DELTA
Ε	&#917;	&Epsilon;	GREEK CAPITAL LETTER EPSILON
Ζ	&#918;	&Zeta;	GREEK CAPITAL LETTER ZETA

HTML Symbols (cont'd)

- Some Other Entities Supported by HTML

Char	Number	Entity	Description
©	©	©	COPYRIGHT SIGN
®	®	®	REGISTERED SIGN
€	€	€	EURO SIGN
™	™	™	TRADEMARK
←	←	←	LEFTWARDS ARROW
↑	↑	↑	UPWARDS ARROW
→	→	→	RIGHTWARDS ARROW
↓	↓	↓	DOWNWARDS ARROW
♠	♠	♠	BLACK SPADE SUIT
♣	♣	♣	BLACK CLUB SUIT
♥	♥	♥	BLACK HEART SUIT
♦	♦	♦	BLACK DIAMOND SUIT

HTML Encoding (Character Sets)

Differences Between Character Sets

What is Character Encoding?

- ASCII : first character encoding standard. It defines 127 different alphanumeric characters that could be used on the internet.
- ANSI : the original Windows character set. It supported 256 different character codes
- ISO-8859-1 : the default character set for HTML 4. It also supported 256 different character codes
- UTF-8 : the default character encoding for HTML 5. It covers almost all of the characters and symbols in the world.

The HTML charset Attribute

- To display an HTML page correctly, a web browser must know the character set used in the page
- Specified in the <meta> tag

```
<meta charset = "UTF-8">
```

HTML Uniform Resource Locators

- **URL – Uniform Resource Locator**
  - Used to address a document (or other data) on the web.
  - Syntax rule

http://www.w3schools.com/html/default.asp

scheme://host.domain:port/path/filename

- scheme : define the **type** of Internet service (most common is **http**)
- host : defines the **domain host** (default host for http is **www**)
- domain : defines the Internet **domain name** (w3schools.com)
- port : defines the **port number** at the host (default for http is **80**)
- path : defines a **path** at the server (If omitted : the root directory of the site)
- filename : defines the name of a document or resource

HTML Uniform Resource Locators (cont'd)

Common URL Schemes

Scheme	Short for	Used for
http	HyperText Transfer Protocol	Common web pages. Not encrypted
https	Secure HyperText Transfer Protocol	Secure web pages. Encrypted
ftp	File Transfer Protocol	Downloading or uploading files
file		A file on your computer

URL Encoding *Try it!*

- URLs can only be sent over the Internet using the ASCII character-set.
- Since URLs often contain characters outside the ASCII set, the URL has to be converted into a valid ASCII format.
  - Replace unsafe ASCII characters with a "%" followed by two hexadecimal digits
  - Replace a space with a plus (+) sign or with %20

HTML and XHTML

- **What Is XHTML?**
  - XHTML stands for EXtensible HyperText Markup Language
  - XHTML is almost identical to HTML
  - XHTML is stricter than HTML
  - XHTML is HTML defined as an XML application
  - XHTML is supported by all major browsers
- **The Most Important Differences from HTML**
  - Documents Structure
    - XHTML DOCTYPE is mandatory
    - The xmlns attribute in <html> is mandatory
    - <html>, <head>, <title>, and <body> are mandatory
  - XHTML Elements
    - XHTML elements must be properly nested
    - XHTML elements must always be closed
    - XHTML elements must be in lowercase
    - XHTML documents must have one root element
  - XHTML Attributes
    - Attribute names must be in lower case
    - Attribute values must be quoted
    - Attribute minimization is forbidden

HTML and XHTML (cont'd)

- **<!DOCTYPE....> Is Mandatory**
  - An XHTML document must have an XHTML DOCTYPE declaration.

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

- XHTML Elements Must Be Properly Nested
  - In HTML, some elements can be improperly nested within each other, like this.

```
<b><i>This text is bold and italic</b></i>
```

  - In XHTML, all elements must be properly nested within each other, like this.\

```
<b><i>This text is bold and italic</i></b>
```

- XHTML Elements Must Always Be Closed
- Empty Elements Must Also Be Closed
- XHTML Elements and Attribute Names Must Be In Lower Case
- Attribute Values Must Be Quoted
- Attribute Minimization Is Forbidden