HTML5 and CSS3
Introductory

Second Edition

Unit B

Structuring Content in a Web Document

Previous Lesson Review

Project Plan – objectives, target audience, type, budget, timeline.

Note: Coding vs Designing vs Planning

Signature Assignment

Project plan for <Description>

Objectives:

Target audience:

Site Type:

Budget:

Timeline:

Milestone	Date
Design mockup submitted for approval	
Draft site publishing to development/production server	22 September 2017
Final signoff from client	
Site goes live	02 December 2017

Client contact info:

ITU Signature Assignment
Professor Mar Castro (CSC 525 HTML/CSS)
2711 N 1st St, San Jose, CA 95134

Zip, upload, & along
with this document
by the end of trimester.

Unit B

Previous Lesson Review

Wireframes – sketch/outline components of each web page.

Storyboard – links among pages

create a new account 🔒

Your Email	
Confirm Email	
Country	United States ▲▼
Zip Code	
Password	
Confirm Password	

☐ Yes, I agree yo the Mint.com Terms of Use

Sign Up

Note:
- You may create a sketch; you don't have to code it for now. It's all about planning.
- It does not have to look good; you just need the plan layout.

Unit B

Basic web page elements (Review/Lab/Setup)

The previous lab you have is a form of basis to build your website from ground up to become Signature Assignment.

deployment-config.json — D:\Users\okaca\Documents\CSC525Labs — Atom

File   Edit   View   Selection   Find   Packages   Help

Project | index.html — CSC525Labs | index.html — SignatureAssignment | deployment-config.json

CSC525Labs
- audio
- css
- html
- images
- js
- deployment-config.json
- index.html

SignatureAssignment
- audio
- css
- doc
- html
- images
- js
- index.html

```json
{
    "type": "sftp",
    "host": "98.129.169.21",
    "username": "csc525",
    "password": "sftpcsc525",
    "port": 22,
    "remotePath": "/var/www/home/csc525/itustudents/mcastro12",
    "uploadOnSave": true
}
```

Please do not use this tool anymore. It's buggy.
XXXXXXXXXXXXXX

File Structures

ITU Server Setup

First initial + last name + student ID
/var/www/home/csc525/itustudents/sa_mcastro12
/var/www/home/csc525/itustudents/lab_mcastro12

Must have index.html

Terminologies

body section – section to display web page.

cascading style sheet (CSS) – describes style of an HTML doc.

child element – element nested within another element.

clients – web server software makes pages available to clients.

code editor – atom html: design for coding/development.

comment – single/multi-line <!– text ->

design document – project plan.

DOCTYPE declaration - an instruction to the web browser (version)

Extension

Grandchild/grandparent/parent element

hand-coding – best way to become familiar with html/programming.

head section – elements specify information about the web page.

Hypertext Markup Language (HTML) – web pages (written in)

Nested – within another element.

one-sided tag – some tags don't have pairs (no closing tag) <img>

Terminologies

preview – open it in more than one browsers.

project plan – design document.

rendering engine – translate web page elements (visual, auditory)

storyboard – links among pages

tag – html codes

template (5)

web page – documents formatted for the web.

web server – computer runs web server

web server software – apache for example

website – available to anyone with web access.
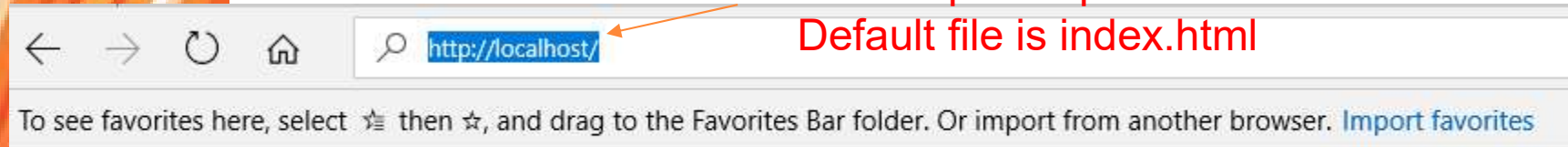
wireframe (4)

World Wide Web (web for short)

World Wide Web Consortium (W3C) - the main international standards organization for the World Wide Web

Web Server Review (Apache and etc.)

Unit B

Default port is port 80
Default file is index.html

http://localhost/

To see favorites here, select 🌟 then ☆, and drag to the Favorites Bar folder. Or import from another browser. Import favorites
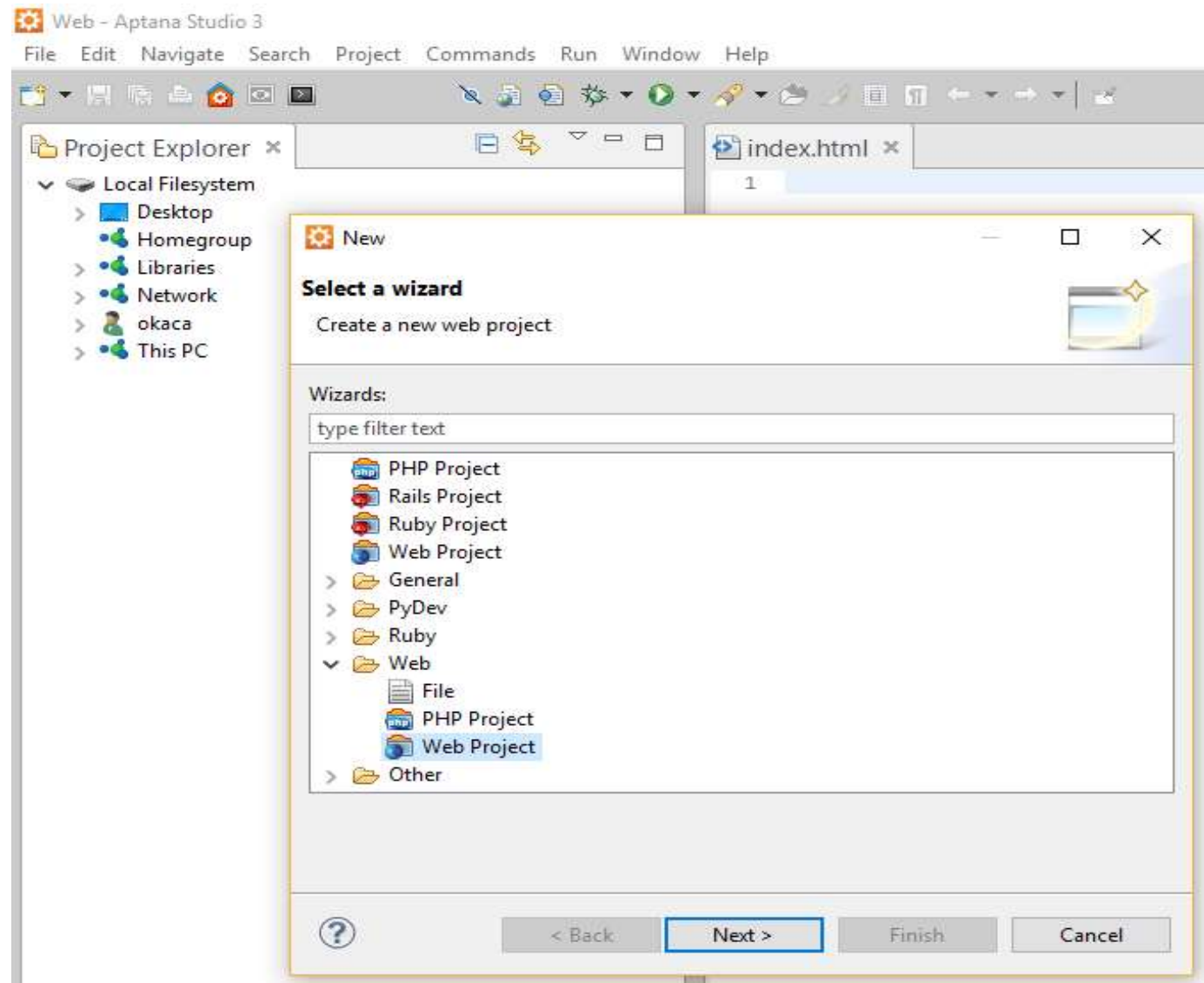
Lakeland Reeds Bed and Breakfast (in body section)

A country perfect for fishing, boating, biking, or just watching day go by.

NOTE:
1. You can use whatever web apache you prefer.
   a. Mac, PC, Virtual Box version.
2. Local Machine VirtualBox: /var/www/html where you drop off your files for development.

Unit B

Project Template

Select the template for this project

| Project Template | Project Location |

Available Templates:

Default Project

Basic Web Template

HTML5 Boilerplate

HTML5 Boilerplate (Cached)

1.

New Web Project

Project

⊗ Location 'D:\workspace\dfasdf' overlaps location of another project 'dfasdf'.

| Project Template | Project Location |

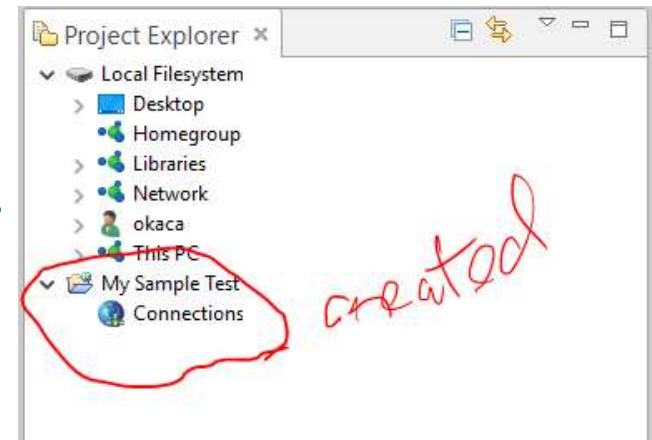Project name: dfasdf

☐ Use default location

Location: D:\workspace\dfasdf   Browse...

Project Explorer ×

∨ Local Filesystem
  > Desktop
    Homegroup
  > Libraries
  > Network
  > okaca
    This PC
∨ My Sample Test
    Connections

2.

created

Project Explorer

```
> Libraries
> Network
> okaca
> This PC
v My Sample Test
  v Connections
    v ITU Web Server
      > atay93747
      > cliu94034
      > dmaithul94036
      > dsurya91120
      > dwant92604
      > fpatel92412
      > fsinnika93950
      > idiaz92039
      > jvora91536
      > jxiao94030
      > kpoldsam91317
      > lvald92444
      > mandhika92699
      v mcastro
        > audio
        > css
        > html
        > images
        > js
          index.html
      > mfond90585
      > mumesh92695
      > rkaushik94136
```

ORGANIZATION: Create the folders Needed. audio, html, css, images, js

Warning:
1. You can see each others' code. Don't worry about it. This is Used to test your code.

2. Do not develop on this directly. Your backup files should be on your PC/Mac.

3. Port being used is 82

← ① dblab.itu.edu:82/mcastro/

Lakeland Reeds Bed and Breakfast (in body section)

A country perfect for fishing, boating, biking, or just watching day go by.

Unit B

Web Project Directory Structure
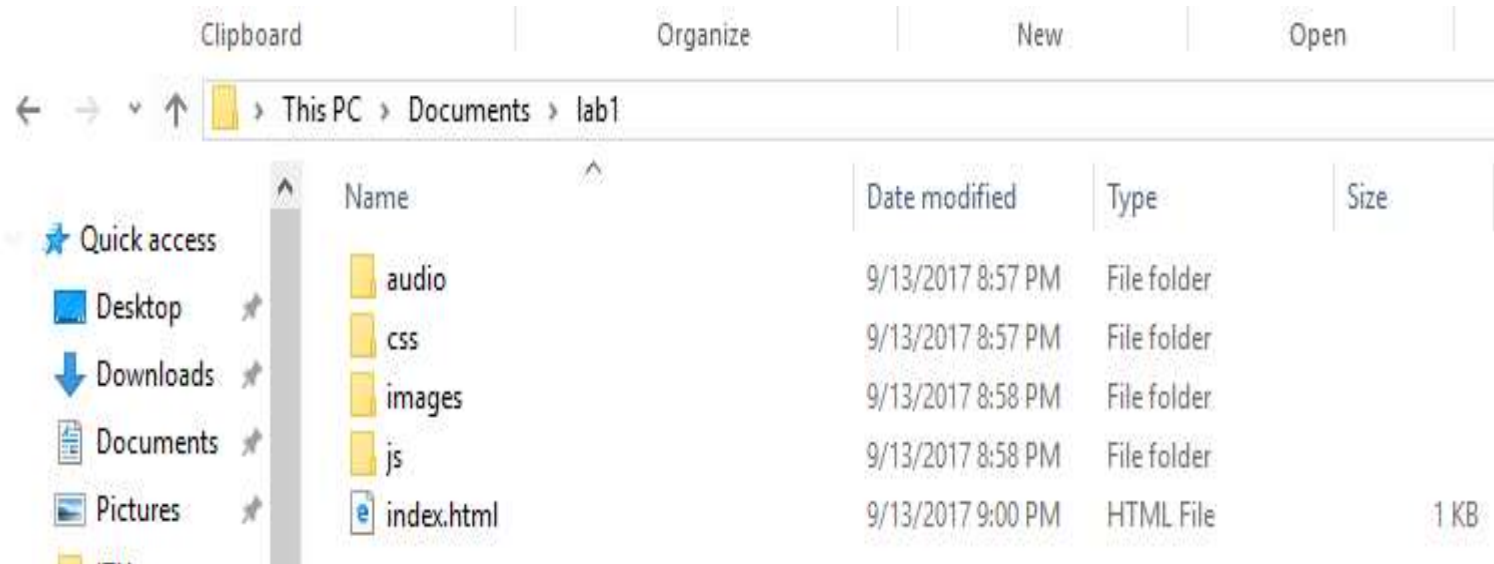
The directory structure of your project should be organized into a hierarchy of folders. It should be stable and scalable; it should not fundamentally change, only be added to. Computers have used the folder metaphor for decades as a way to help users keep track of where something can be found.

Note: See the sample image as my example for my project.

Lab Assignment Submission

Unit B

URL Lab Access:
http://dblab.itu.edu:82/<username>/index.html
Turn in documents:
upload, zip, paste the URL on your EMS.

Hello Professor,

I installed the NGINX web server and attached file for your review.

Thank you   URL

lab1_92444.docx

Incremental Work: The previous lab tag elements should be included in your current lab.

Unit B

Objectives

- Evaluate web accessibility standards

- Incorporate attributes

- Implement the `div` element

- Add HTML5 semantic elements

Unit B

Objectives (continued)

- Use special characters

- Specify the viewport

- Validate your HTML code

- Create an XHTML document

Evaluate Web Accessibility Standards

Web pages should be accessible to provide access to the widest possible audience.

- User Agents – programs/devices that interpret web documents.
  - Chrome, Apple Safari, Mozilla, Firefox, and Microsoft Internet Explorer (IE).

- Some users with disabilities may use some custom browser settings – see next slide as a example.

Note: It is very difficult to implement. It will be on test/quiz, but not in our implementation.

Evaluate Web Accessibility Standards (continued)

- Web page enhanced for accessibility

Revisions Bookstore and Cafe

Custom brewed coffee and hand-selected books.

Special orders are our specialty.

Learn about our store history, look at our upcoming events, and see where we're located.

412 N. 25th St.
Richmond, VA 23223
(804) 555-2565
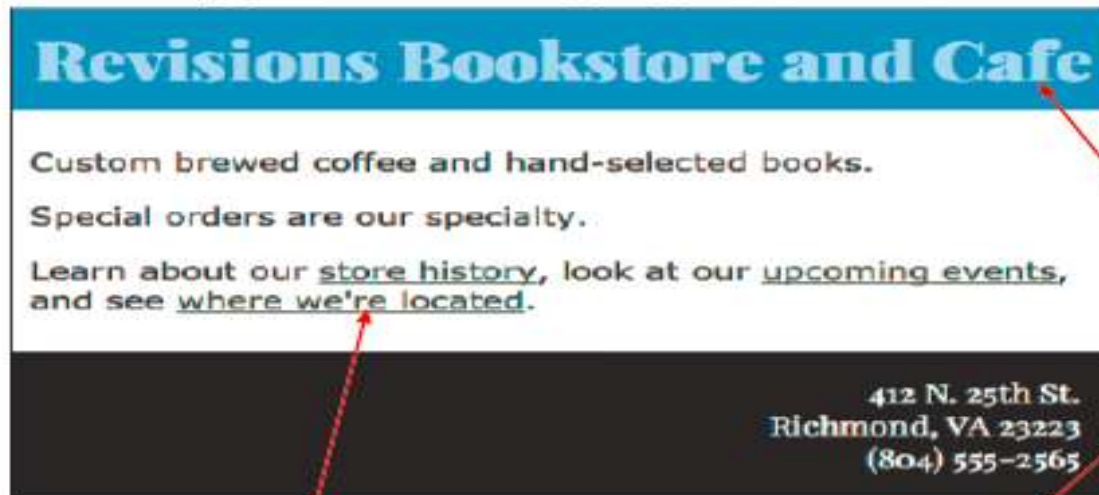
Background darkened for improved text contrast

Navigation bar added to facilitate moving around site and to make site organization viewable at a glance

Revisions Bookstore and Cafe

Home | Store History | Upcoming Events | Location

Custom brewed coffee and hand-selected books.

Special orders are our specialty.

412 N. 25th St.
Richmond, VA 23223
(804) 555-2565
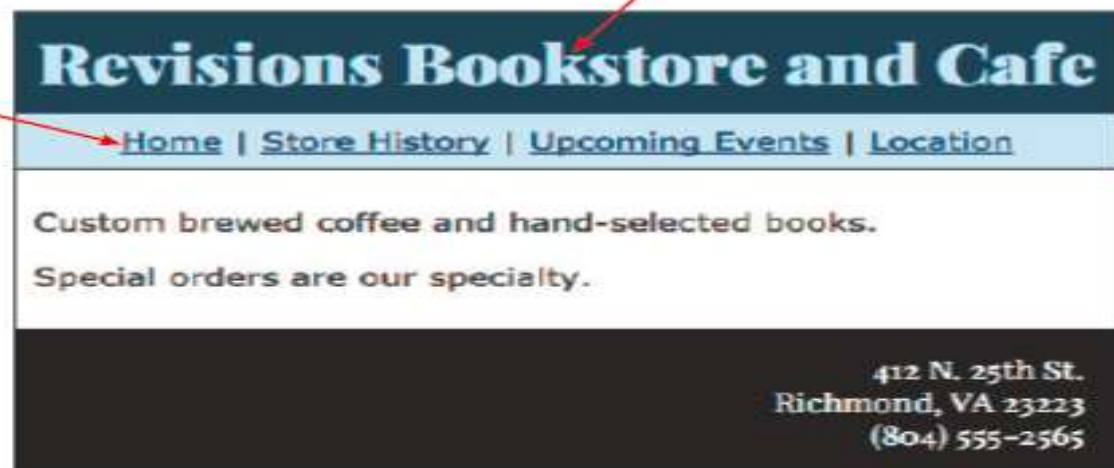
Evaluate Web Accessibility Standards

Web Content Accessibility Guidelines (WCAG): reference for implementing web accessibility.

Site: https://www.w3.org/WAI/intro/wcag

- A widely used reference for implementing web accessibility.

- Maintained by W3C (World Wide Web Consortium). http://www.w3.org/

Evaluate Web Accessibility Standards

WCAG describes the following techniques for helping your web content meet the following goals:

1. Perceivable - by all audiences

2. Operable - by users

3. Understandable - the language in which the page is written

4. Robust - coded according to Web standards

Evaluate Web Accessibility Standards

Perceivable

Make the Web page perceivable to <u>specific groups</u>, such as visually impaired users. Based on WCAG:

1. Captioning instead of audio/video

2. Not playing audio automatically

3. Good structure for web pages

4. Separate background/foreground

5. Not relying solely on color

6. Content has meaningful order.

Evaluate Web Accessibility Standards

Operable

Make it more readily operable by users, such as limited requirement for use of the mouse and the ability to make changes to automatic scrolling and refreshing rates – links, headings, labels, clear titles, keyboard functions, Navigation.
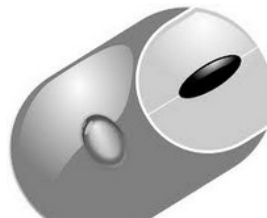
Evaluate Web Accessibility Standards

Understandable

The language in which the page is written should be clearly indicated, and explanations should be included for specialized vocabulary.

- Readable text, consistent menus/navigation, helping users avoid mistakes, label elements, and give instructions.

Click here to
REGISTER

Unit B

Evaluate Web Accessibility Standards

Robust

Accessed by the widest variety of programs and devices, they should be coded according to Web standards

Mobile phones

Evaluate Web Accessibility Standards (Class Activities)

Assume that they are designing a Web site for a World War II veterans' organization. What special features will they include in the design of the Web site in order to make it accessible to the veterans?

Note: This is a job of web designer, not web developer.

Incorporate Attributes

- Attribute: additional code within an opening element tag that specifies information about that element, e.g.
  - `<html lang="en">`
  - `Syntax:` *<element* lang="*language_code*">

- To use an attribute, use
  - Attribute name
  - Attribute value surrounded by quotes
  - Separated by an equal sign, e.g.
  - `<meta charset="utf-8">`

Incorporate Attributes

Code using attributes:

`lang` attribute

```
1  <!DOCTYPE html>                                          Attribute name
2  <html lang="en">
3    <head>                                                 Attribute value
4      <title>Lakeland Reeds Bed and Breakfast - About Us</title>   enclosed in quotes
Attribute placed within
opening <html> tag    keland Reeds Bed and Breakfast
                      ..lename: aboutus.html
```
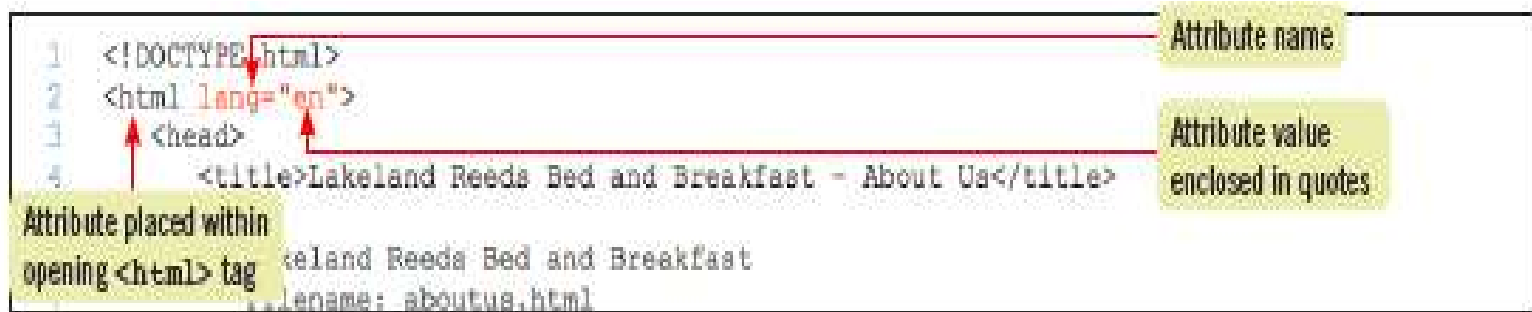
- Used to declare the language of a Web page.

- Meant to assist search engines and browsers

SYNTAX: <element tag [space] attribute name [equal sign] "attribute value">

Incorporate Attributes

Code using attributes:

`lang` attribute

ISO 639-1 defines abbreviations for languages by W3C. Other code.

Language	ISO Code
Abkhazian	ab
Afar	aa
Afrikaans	af
Akan	ak
Albanian	sq
Amharic	am
Arabic	ar

Note: The lang attribute specifies the language of the element's content.

Incorporate Attributes

Example of French text example:

`<p lang="fr">Ceci est un paragraphe.</p>`

```
<!DOCTYPE html>
<html>
<body>

<p>This is a paragraph.</p>
<p lang="fr">Ceci est un paragraphe.</p>

</body>
</html>
```

HTML code

This is a paragraph.

Ceci est un paragraphe.

Example

Incorporate Attributes

How do we create dual language sites? Site xample: https://www.sjgov.org/

1. Create a new folder for your second language.

2. Set the font for your second language. #second-language { font-family: SimHei; }

3. Step 3: Create the second language pages

4. Step 4: Update your navigation menus

5. Step 5: Set up a language switcher

Note: Google translator can do that automatically.

Unit B

Incorporating Attributes
HTML Character Sets

- Browsers must know what character set (character encoding) to use to display HTML correctly.

- ==HTML – default character encoding is UTF-8==

- This has not always been the case. The character encoding for the early web was ASCII.

https://www.w3schools.com/charsets/ref_html_ascii.asp

Incorporate Attributes

Code using attributes:

`charset` attribute: UTF-8 Example

Unicode vs UTF-8
Unicode (**character set)**. UTF-8 (**encoding)**.

Unicode is a list of characters with unique decimal numbers (code points). A = 65, B = 66, C = 67, ...

This list of decimal numbers represent the string "hello": 104 101 108 108 111

Unicode Lookup: https://unicodelookup.com/

Incorporate Attributes
(<u>Display</u> HTML page correctly)

Code using attributes:

`charset` attribute

```
5          <!--
           Lakeland Reeds Bed and Breakfast
meta element    Filename: aboutus.html
added to head
        section   Author:   Faduma Egal
10         Date:     10/13/18
11         HTML5 and CSS3 Illustrated Unit B, Lessons
12         -->
13     <meta charset="utf-8">                    Attribute name
14   </head>
                                                 Attribute value
closing tag for  dy>                             enclosed in quotes
head section   <h1>Lakeland Reeds Ded and Dreakfast</h1>
           <h2>About Us</h2>
```

HTML Standard (default character encoding):
UTF – Unicode Transformation Format.
The '8' means uses 8-bit blocks to represent a character.
The number of blocks needed to represent a character varies from 1 to 4.

Incorporate Attributes

Code using attributes:

`charset` attribute: UTF-8 Example

Unicode vs UTF-8

Encoding is how these numbers are translated into binary numbers to be stored in a computer:
UTF-8 encoding will store "hello" like this (binary): 01101000 01100101 01101100 01101100 01101111
Encoding translates numbers into binary.
Character sets translates characters to numbers.

Unit B

ASCII code

Binary	Hex	Decimal	Character	Description		Binary	Hex	Decimal	Character
0	0	0	NUL	Null character		100000	20	32	(space)
1	1	1	SOH	Start of Header		100001	21	33	!
10	2	2	STX	Start of Text		100010	22	34	"
11	3	3	ETX	End of Text		100011	23	35	#
100	4	4	EOT	End of Transmission		100100	24	36	$
101	5	5	ENQ	Enquiry		100101	25	37	%
110	6	6	ACK	Acknowledgment		100110	26	38	&
111	7	7	BEL	Bell		100111	27	39	'
1000	8	8	BS	Backspace		101000	28	40	(
1001	9	9	HT	Horizontal Tab		101001	29	41	)
1010	A	10	LF	Line Feed		101010	2A	42	*
1011	B	11	VT	Vertical Tab		101011	2B	43	+
1100	C	12	FF	Form Feed		101100	2C	44	,
1101	D	13	CR	Carriage Return		101101	2D	45	-
1110	E	14	SO	Shift Out		101110	2E	46	.
1111	F	15	SI	Shift In		101111	2F	47	/
10000	10	16	DLE	Data Link Escape		110000	30	48	0
10001	11	17	C1 (XON)	Device Control 1		110001	31	49	1
10010	12	18	DC2	Device Control 2		110010	32	50	2
10011	13	19	DC3(XOFF)	Device Control 3		110011	33	51	3
10100	14	20	DC4	Device Control 4		110100	34	52	4
10101	15	21	NAK	Negativ Acknowledgemnt		110101	35	53	5
10110	16	22	SYN	Synchronous Idle		110110	36	54	6
10111	17	23	ETB	End of Transmission Block		110111	37	55	7
11000	18	24	CAN	Cancel		111000	38	56	8
11001	19	25	EM	End of Medium		111001	39	57	9
11010	1A	26	SUB	Substitute		111010	3A	58	:
11011	1B	27	ESC	Escape		111011	3B	59	;
11100	1C	28	FS	File Separator		111100	3C	60	<
11101	1D	29	GS	Group Separator		111101	3D	61	=
11110	1E	30	RS	Reqst to Send		111110	3E	62	>
11111	1F	31	US	Unit Separator		111111	3F	63	?

Incorporate Attributes (Quick Quiz)

- The charset attribute specifies the ___ _____.

- T/F   An attribute is additional code added between the opening and closing element tags.

- T/F   An attribute includes two parts: a name and a value.

Implement the `div` Element

- `div` element: Used to group other elements such as heading and its related paragraphs

- Used as the parent element to the other nested elements

- Use of `div` element does not change the appearance of the web page

Note: It is mainly used for code organization.

Implement the `div` Element (continued)

- Code containing a `div` element

```
1    <!DOCTYPE html>
2    <html lang="en">
3        <head>
4            <title>Lakeland Reeds Bed and Breakfast - About Us</title>
             <!--
                 Lakeland Reeds Bed and Breakfast
                 Filename: aboutus.html

                 Author:   your first and last name
                 Date:     today's date
                 HTML5 and CSS3 Illustrated Unit B, Lessons
             -->
13           <meta charset="utf-8">
14       </head>
15       <body>
16           <h1>Lakeland Reeds Bed and Breakfast</h1>
17           <div>
18               <h2>About Us</h2>
19               <p>Lakeland Reeds is an ideal place to unplug from your daily routine. We're
20               here to help you get the most out of your time with us, from canoes and life
21               vests for a day out on the lake, to DVDs and popcorn for a quiet evening in. We
22               look forward to welcoming you!</p>
23           </div>
24           <p>45 Marsh Grass Ln. - Marble, MN 55764 - (218) 555-5253</p>
25       </body>
26   </html>
```

Children of new `div` element indented three additional spaces

Opening `<div>` tag added

Closing `</div>` tag added

Implement the `div` Element (continued example)

- Code containing a `div` element

```
<!DOCTYPE html>
<html>
<body>
<p> HTML/CSS Class.</p>
<div style="color:#0000FF">
 <h3>This is a CSC525 class div element</h3>
 <p>This is an HTML/CSS classroom text in a div element.</p>
</div>
<p>This is some sample text.</p>
</body>
</html>
```
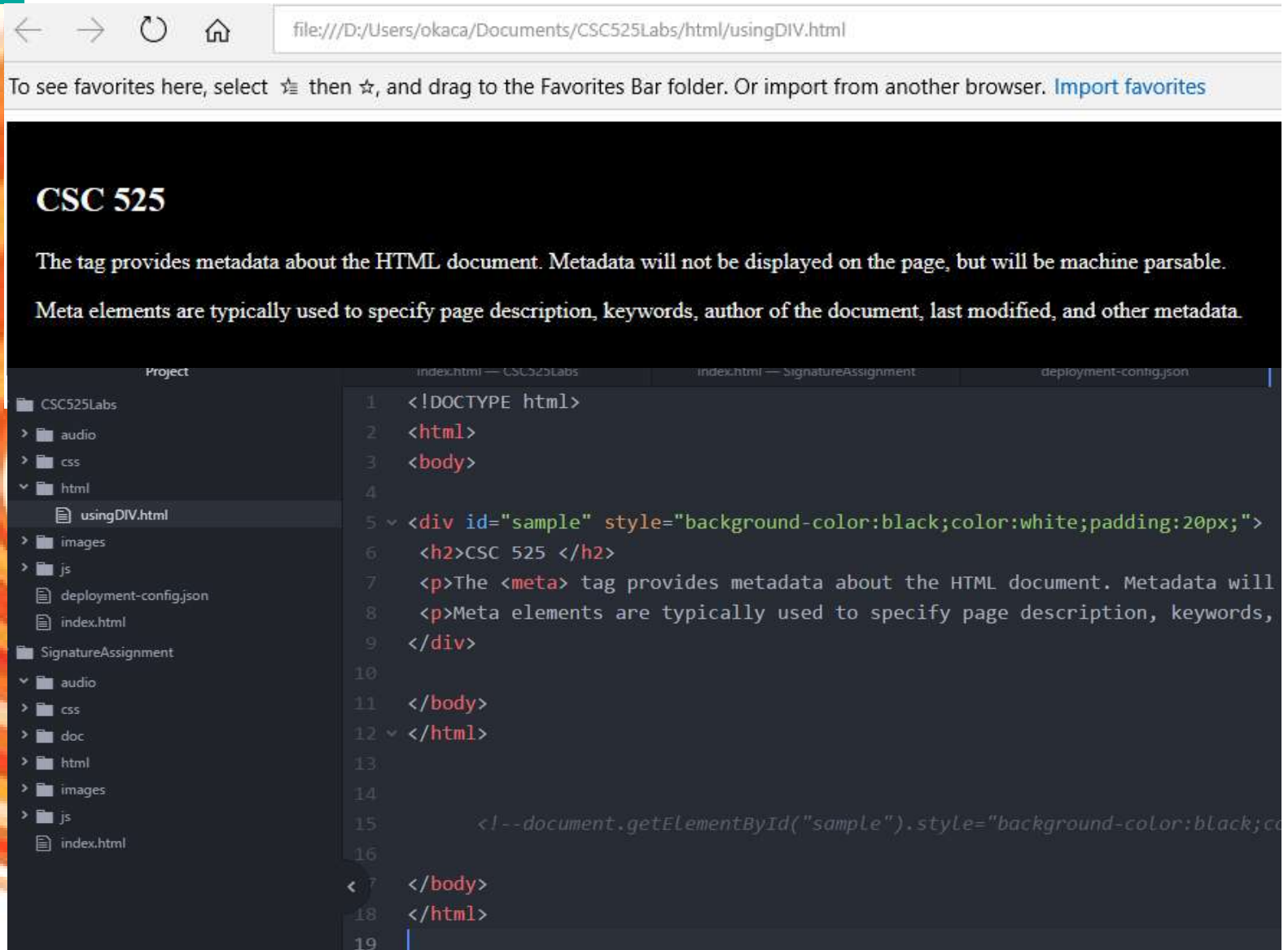
HTML/CSS Class.

This is a CSC525 class div element

This is an HTML/CSS classroom text in a div element.

This is some sample text.

Browser's output.

DIV Demo in class

Unit B

file:///D:/Users/okaca/Documents/CSC525Labs/html/usingDIV.html

To see favorites here, select ≡ then ☆, and drag to the Favorites Bar folder. Or import from another browser. Import favorites

CSC 525

The tag provides metadata about the HTML document. Metadata will not be displayed on the page, but will be machine parsable.

Meta elements are typically used to specify page description, keywords, author of the document, last modified, and other metadata.

Project
- CSC525Labs
  - audio
  - css
  - html
    - usingDIV.html
  - images
  - js
  - deployment-config.json
  - index.html
- SignatureAssignment
  - audio
  - css
  - doc
  - html
  - images
  - js
  - index.html

index.html — CSC525Labs   index.html — SignatureAssignment   deployment-config.json

```
1    <!DOCTYPE html>
2    <html>
3    <body>
4
5    <div id="sample" style="background-color:black;color:white;padding:20px;">
6      <h2>CSC 525 </h2>
7      <p>The <meta> tag provides metadata about the HTML document. Metadata will
8      <p>Meta elements are typically used to specify page description, keywords,
9    </div>
10
11   </body>
12   </html>
13
14
15       <!--document.getElementById("sample").style="background-color:black;co
16
17   </body>
18   </html>
19
```

Class Activities

What are the implications of including multiple div elements in a single Web page? Is there any point in nesting div elements one inside the other in order to give different CSS styles to different groups of elements? Consider these questions with respect to how to structure your web page.

Quick Quiz

T/F   The div element does not imply any semantic meaning to its contents.

T/F   A div element changes the appearance of the content it encloses when the code is rendered in a browser.

T/F   The content you want marked by the div element should be included in the opening div tag.

T/F   The div element is the parent of the elements it encloses.

Add HTML5 Semantic Elements

All HTML elements have semantic value because they indicate the meaning of their content, e.g.

- ➤ `h1` indicates a heading one
- ➤ `p` indicates a paragraph

h1 heading size ⎯Large

h2 heading size

h3 heading size

h4 heading size

h5 heading size

h6 heading size

HTML has headings in different sizes

▼Small

Add HTML5 Semantic Elements

`div` element has limited semantic meaning because it groups elements but adds no other meaning.

Add HTML5 Semantic Elements (continued)

- Search engines use semantic elements to provide more accurate search results

- Selected HTML5 semantic elements

element	intended use
article	stand-alone piece of work, such as a single entry in a blog
aside	part of a page that's tangential to the main page content, such as a sidebar or pull quote
footer	information about a section or document that usually appears at the end, such as contact information, attributions, and/or footnotes
header	information about a section or document that usually appears at the beginning, such as a heading, logo, and/or table of contents
nav	main elements of site and page navigation
section	section of content focused on a common theme, such as a chapter of a larger work

Unit B

Add HTML5 Semantic Elements (continued)

- `script` element helps browsers interpret elements

- Code with semantic elements and script

Quick Quiz

a. T/F   You use semantic elements to indicate the meaning of the content enclosed by those semantic elements.

b. T/F   One of the most meaningful semantic elements you will use is the div element because it is rich with semantic meaning.

Unit B

Use Special Characters

- Some characters cannot be entered directly into HTML text
  - They may be misinterpreted as computer instructions

- Character reference: formatted code that represents characters in the HTML character set
  - Have the format &*code*;

Use Special Characters (continued)

- Two types of character references
  - Numeric character reference, format `&#code;`, e.g. `•` for a bullet symbol
  - Named character reference, only a few, format `&code;`, e.g. `>` for greater than symbol (>)

- Important character references

character	character name	numeric character reference	named character reference
&	ampersand	&	&
'	apostrophe	'	' (does not work in older versions of Internet Explorer)
>	greater-than sign	>	>
<	less-than sign	<	<
"	quotation mark	"	"

Unit B

Use Special Characters (continued)

- Code for special characters in web page

```
1   <!DOCTYPE html>
2   <html lang="en">
3       <head>
4           <title>Lakeland Reeds Bed &amp; Breakfast - About Us</title>
5           <!--
6               Lakeland Reeds Bed and Breakfast
7               Filename: aboutus.html
8
9               Author:    your first and last name
10              Date:      today's date
11              HTML5 and CSS3 Illustrated Unit B, Lessons
12          -->
13          <meta charset="utf-8">
14          <script src="modernizr.custom.62074.js"></script>
15      </head>
16      <body>
17          <header>
18              <h1>Lakeland Reeds Bed &amp; Breakfast</h1>
19          </header>
20          <div>
21              <h2>About Us</h2>
22              <p>Lakeland Reeds is an ideal place to unplug from your daily routine. We're
23              here to help you get the most out of your time with us, from canoes and life
24              vests for a day out on the lake, to DVDs and popcorn for a quiet evening in. We
25              look forward to welcoming you!</p>
26          </div>
27          <footer>
28              <p>45 Marsh Grass Ln. &#8226; Marble, MN 55764 &#8226; (218) 555-5253</p>
29          </footer>
30      </body>
31  </html>
```

Named character references for the ampersand (&) character

Numeric character references for the bullet (•) character

Unit B

Special Character Demo

```html
<!DOCTYPE html>
<html>
<body>

<div id="biography" style="background-color:green;color:white;padding:20px;">
 <h2>CSC 525 </h2>
 <p>My name is Daniel Craig who is a student at ITU. I'm 25 years old and I'm <br>
 pursuing an MS in Computer Science.</p>
</div>

<!--document.getElementById("biography").style="background-color:black;color:red;"-->

<div id="specialchar">
  <p>I will display &euro;</p>
  <p>I will display &#8364;</p>
  <p>I will display &#x20AC;</p>
  <p>I will display &#38; or &amp;</p>
  <p>I will display &#62; or &gt;</p>
  <p>I will display &#34;</p>
</div>

</body>
</html>

</body>
</html>
```

Unit B

Quick Quiz

a. T/F All characters on the keyboard have a numeric character reference.

b. T/F All characters on the keyboard have an abbreviation-based character reference.

c. T/F It is important to use character references for all non-alphanumeric characters.

Specify the Viewport

`<meta name="viewport" content="width=device-width">`

- Viewport: the imaginary window through which most mobile browsers display web pages

- `viewport` meta element: used to change a browser's viewport settings
  - `name` attribute set to the value of `viewport`
  - `content` attribute specifying one or more pairs of properties and values

Specify the Viewport (continued)

- Most commonly used viewport content value: "`width=device-width`"

- `viewport` attribute properties

property	description	allowable values
width	The width of the viewport	device-width or a value in pixels
height	The height of the viewport	device-height or a value in pixels
initial-scale	The scale of the viewport when the document opens	a number representing the scale, with 1.0 equal to 100%
minimum-scale	The lower limit on the scale of the viewport	a number representing the scale, with 1.0 equal to 100%
maximum-scale	The upper limit on the scale of the viewport	a number representing the scale, with 1.0 equal to 100%
user-scalable	Whether a user is allowed to zoom the page or not	yes or no

Specify the Viewport
Add meta data to the head section.

- Code with `viewport` element and resulting display

```
1   <!DOCTYPE html>
2   <html lang="en">
3       <head>
4           <title>Lakeland Reeds Bed &amp; Breakfast - About Us</title>
5           <!--
6               Lakeland Reeds Bed and Breakfast
7               Filename: aboutus.html
8
9               Author:    your first and last name
10              Date:      today's date
11              HTML5 and CSS3 Illustrated Unit B, Lessons
12          -->
13          <meta charset="utf-8">
14          <meta name="viewport" content="width=device-width">
15          <script src="modernizr.custom.62074.js"></script>
16      </head>
```
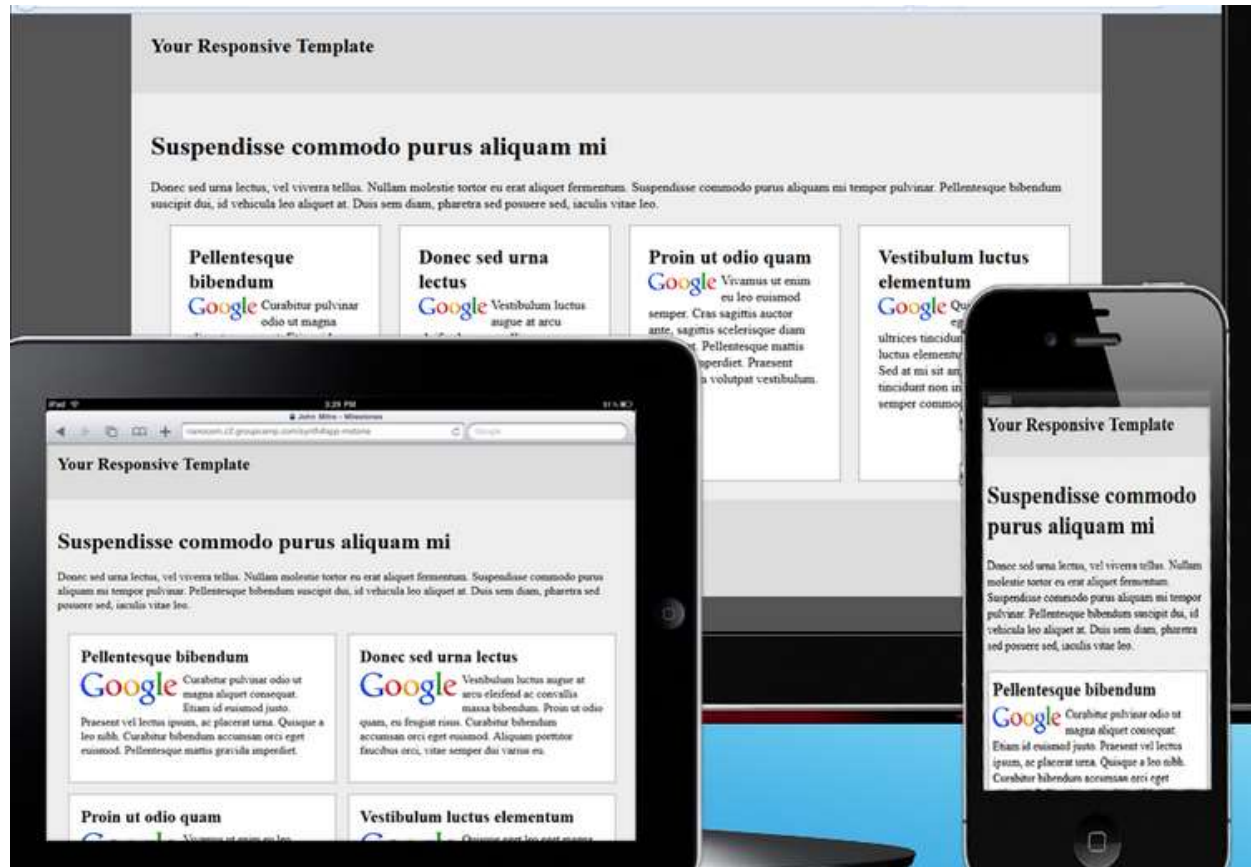
Note: This Meta tag tells the mobile device to not zoom. This allows the Responsive Template for mobile devices to be loaded in the scripts.

Mobile devices commonly mark a phone number as a link so users can touch it to call the number

10.0.1.4   C

Lakeland Reeds Bed & Breakfast

About Us

Lakeland Reeds is an ideal place to unplug from your daily routine. We're here to help you get the most out of your time with us, from canoes and life vests for a day out on the lake, to DVDs and popcorn for a quiet evening in. We look forward to welcoming you!

45 Marsh Grass Ln. • Marble, MN 55764 • (218) 555-5253

Specify the Viewport Example (Different User Agents)

Note: Your web should appear normal in all types of devices as you see here. This is just an example. It makes your site responsive.

Viewport Demo

Unit B

```
1   <!DOCTYPE html>
2   <html>
3   <head>
4     <meta charset="UTF-8">
5     <meta name="description" content="Free Web tutorials">
6     <meta name="keywords" content="HTML,CSS,XML,JavaScript">
7     <meta name="author" content="John Doe">
8     <meta name="viewport" content="width=device-width, initial-scale=1.0">
9   </head>
10  <body>
11
12  <p>William Shakespeare (baptized on April 26, 1564 to April 23, 1616) was an English playwright,
13  actor and poet also known as the "Bard of Avon" and often called England's national poet.
14  Born in Stratford-upon-Avon, England, he was an important member of the Lord Chamberlain's Men
15  company of theatrical players from roughly 1594 onward. Written records give little indication of
16  the way in which Shakespeare's professional life molded his artistry. All that can be deduced is that,
17  in his 20 years as a playwright, Shakespeare wrote plays that capture the complete range of human emotion and conflict.</p>
18
19  </body>
20  </html>
21
```

Unit B

Debug your HTML code

- <mark>Bug: a problem that results from incorrectly written code</mark>

- <mark>Debug: the process of finding and removing bugs from code</mark>

- Common bugs and causes

bug	common causes
Element appearance different than expected	Missing tags around content
	Element enclosed by tags for a different element
	Opening tag missing
	Closing > omitted from a tag
Special character not displayed correctly	Invalid character code specified
	& omitted from start of character code
	Code for a different character specified

Classroom Activities

T/F   A browser will automatically resize a web page to fit the display device.

T/F   The viewport meta element instructs the browser to assume that the width of the content matches the width of the device.

2. **Quick Quiz**: The viewport meta element uses the _____ attribute. (content)

Debug your HTML code (continued)

- Code with bugs and resulting page

```
17        <body>
18          <header>
19              Lakeland Reeds Bed &amp; Breakfast</h1>
20          </header>
21          <div>
22              <h2>About Us</h2>
                <p>Lakeland Reeds is an ideal place to unplug from your daily routine. We're
                here to help you get the most out of your time with us, from canoes and life
                vests for a day out on the lake, to DVDs and popcorn for a quiet evening in. We
26              look forward to welcoming you!</p>
27          </div>
28          <footer>
29              <p>45 Marsh Grass Ln. &#8226; Marble, MN 55764 &#8226; (218) 555-5253</p>
30          </footer>
31      </body>
32  </html>
```

Opening `<h1>` tag removed

Opening & deleted from character code

Opening & still part of character code

Lakeland Reeds Bed & Bre ×

file:///C:/Users/sasha_000/Documents/Unit_B/Lessons/about

Lakeland Reeds Bed & Breakfast

Top-level heading displayed smaller than previously because opening `<h1>` tag deleted from code

About Us

Lakeland Reeds is an ideal place to unplug from your daily routine. the most out of your time with us, from canoes and life vests for a d and popcorn for a quiet evening in. We look forward to welcoming

First bullet character replaced by remainder of character code because opening & symbol deleted from character code

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Validating Your HTML Code

- Code validation: automated process for comparing your code against HTML5 coding standards
  - ➢ Useful for identifying the source of a specific problem
  - ➢ Useful for ensuring code works now and in the future
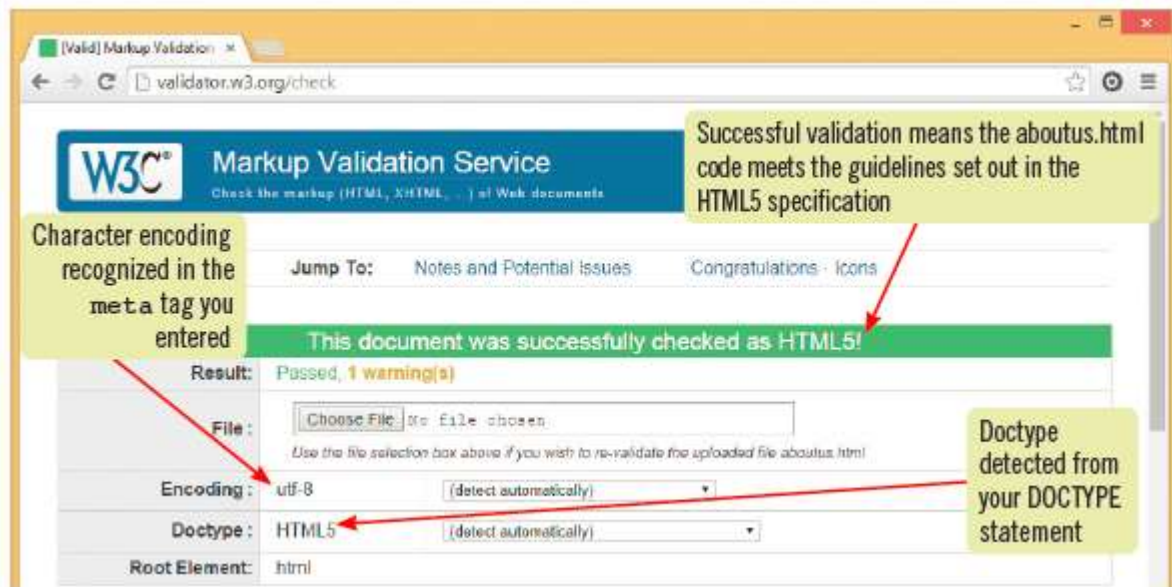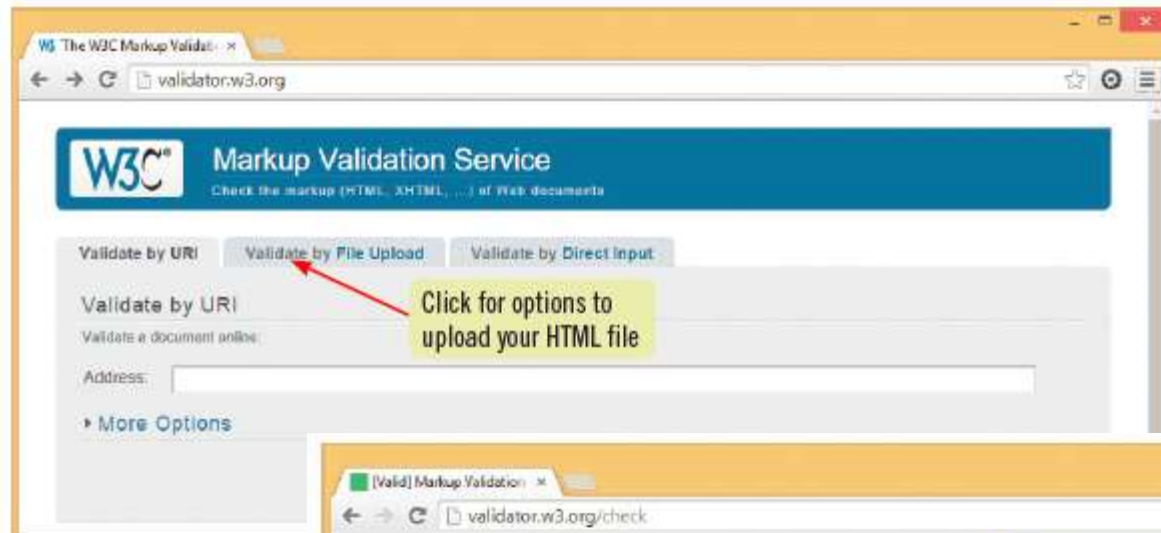- Use online tools to validate your code

Validate Your HTML Code (continued)

- Common validation errors and warnings

error message	common cause
"End tag for body seen, but there were unclosed elements."	You entered the opening tag for an element but left out its closing tag.
"End of file seen when expecting text or an end tag."	
"Unclosed element *element*."	
"End of file reached when inside an attribute value. Ignoring tag."	You forgot the closing quotes (") after an attribute value.
"Named character reference was not terminated by a semicolon. (Or & should have been escaped as &.)"	You forgot the closing semicolon (;) after a character reference.
"Character reference was not terminated by a semicolon."	

warning message	explanation
"Using experimental feature: *HTML5 Conformance Checker*."	The w3.org validator does not consider its HTML5 validation service 100% accurate because the language is constantly being updated.
"Byte-Order Mark found in a UTF-8 file."	Your editor saved your document based on a standard that is not universally supported by older editors or browsers.

Unit B

Validate your HTML code (continued)

- Markup validation service and results

Unit B

Validate my code

Showing results for http://dblab.itu.edu:82/mcastro/index.html

Checker Input

Show ☐ source ☐ outline ☐ image report | Options... |

Check by | address ∨ |

| http://dblab.itu.edu:82/mcastro/index.html |

| Check |

1. | Error | **The character encoding was not declared. Proceeding using** | windows-1252 | .

http://dblab.itu.edu:82/mcastro/index.html

Create an XHTML Document

- XHTML (Extensible Hypertext Markup Language): version of HTML that conforms to rules of another language XML (Extensible Markup Language)

- XHTML requires additional code, e.g.
  - Uses XHTML DOCTYPE statement
  - Closing all empty elements with a space and a slash (/) in closing tag

Unit B

Create an XHTML Document (continued)

- Differences between HTML and XHTML

aspect	HTML	XHTML
Tag nesting	Tags may be closed out of order	Tags must be closed in the order opened
Tag case	Tags may be written in upper or lower case	Tags must be written in lower case
Tag closure	Closing tags may be omitted for some elements	All opening tags must be matched with closing tags
Attribute-value pairs	Certain attribute names may be specified without values	Values required for all attributes
One-sided tags	One-sided tags do not need to be closed	One-sided tags must be closed
script and style elements	Element content requires no special formatting	Element content must be marked with code identifying it as CDATA
Attribute values	Values may be enclosed within quotes	Values must be enclosed within quotes
id and name attributes	Either attribute may be used	id attribute may be used, but name attribute prohibited
Character codes for certain special characters	Codes recommended	Codes required

Create an XHTML Document (continued)

- HTML code changed to XHTML

Quick Quiz

a. T/F Every HTML document is a valid XHTML document.

b. T/F XHTMLreplaced HTML as the only language for writing Web pages.

c. T/F XHTML is a version of HTML that conforms to the rules of XML.

Unit B

Summary

- Make your website accessible; use WCAG standards as a reference

- Use attributes to specify additional information about an element, using the format

  ➢ attribute name="value"

- Use the `div` element to group related elements and to add limited semantic meaning

Summary
(continued)

- Use semantic elements to group related elements and to indicate the role of the elements; used by search engines to improve results

- Character references for code that might be misinterpreted by browser
  - Numeric character reference; `&#code;`
  - Named character reference; `&code;`

Unit B

Summary (continued)

- Use `viewport` meta element to change a browser's viewport settings and determine the window display, format includes two parts, e.g.
  - ➤ `name="viewport"`
  - ➤ `content="width=device-width"`

- Debug your code to find and fix coding errors

HTML5 and CSS3 – Illustrated, 2nd Edition

Unit B

Summary (continued)

- Validate your code against HTML5 standards to
  - ➢ Help find errors
  - ➢ Ensure browsers display the page correctly
  - ➢ Ensure the web page works in the future

- XHTML based on XML and requires additional coding that HTML does not