

ITNB2123

INTERNET PROGRAMMING

Introduction to HTML5

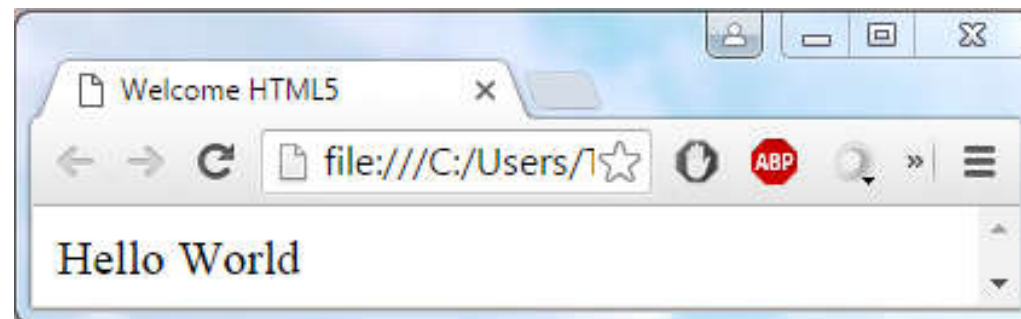
- Understand important components of HTML5 documents.
- Use HTML5 to create web pages.
- Add images to web pages.
- Create and use hyperlinks to help users navigate web pages.
- Mark up lists of information.
- Create tables with rows and columns of data.
- Create and use forms to get user input.

Introduction to HTML5 (Cont.)

- Unlike programming languages, such as C, C++, C#, Java and Visual Basic, **HTML5** is a markup language that specifies the structure and content of documents that are displayed in web browsers.
- We'll create HTML5 documents by typing HTML5 markup text in a text editor (such as Notepad, TextEdit, vi, emacs, sublime text etc.) and saving it with the **.html** or **.htm** filename extension.
- Computers **called** web servers store HTML5 documents.
- Clients (such as web browsers running on your local computer or smartphone) request specific resources such as HTML5 documents from web servers.

Introduction to HTML5 (Cont.)

```
1  <!DOCTYPE <!DOCTYPE html>
2  <html>
3  <head>
4      <title>HTML5</title>
5  </head>
6  <body>
7      <p>Hello World</p>
8  </body>
9  </html>
```



Example 1

Introduction to HTML5 (Cont.)

- The document type declaration (**DOCTYPE**) in line 1 is required in HTML5 documents so that browsers **render** the page in standards mode, according to the HTML and CSS specifications.
- You'll include the DOCTYPE in each HTML5 document you create.
- HTML5 comments start with `<!--` and end with `-->`.
- HTML5 documents delimit most elements with a **start tag** and an **end tag**.
 - A start tag consists of the element name in **angle brackets**.
 - An end tag consists of the element name preceded by a forward slash (/) in angle brackets.

Introduction to HTML5 (Cont.)

- HTML5 markup contains text (and images, graphics, animations, audios and videos) that represents the content of a document and elements that specify a document's structure and meaning.
- Some important elements are:
 - **The html element:** The html element encloses the head section and the body section.
 - **The head element:** The head section contains information about the HTML5 document, such as the character set (UTF-8) that the page uses which helps the browser determine how to render the content and the title. The head section also can contain special document formatting instructions called CSS3 style sheets and client-side programs called scripts for creating dynamic web pages.
 - **The body element:** The body section contains the page's content, which the browser displays when the user visits the web page.

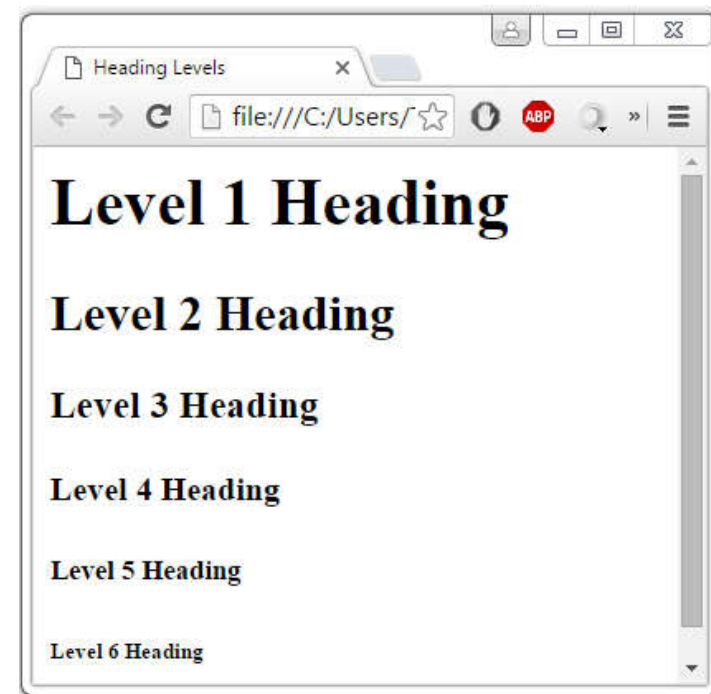
Introduction to HTML5 (Cont.)

- Paragraph Element (`<p>...</p>`) Some elements, such as the paragraph element denoted with `<p>` and `</p>`, help define the structure of a document. All the text placed between the `<p>` and `</p>` tags forms one paragraph.
- End Tags: This document ends with two end tags, which close the body and html elements, respectively. The tag informs the browser that the HTML5 markup is complete.

Headings

- Some text in an HTML5 document may be more important than other text. HTML5 provides six heading elements (**h1 through h6**) for specifying the relative importance of information.

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <title>Heading Levels</title>
5 </head>
6 <body>
7   <h1>Level 1 Heading</h1>
8   <h2>Level 2 Heading</h2>
9   <h3>Level 3 Heading</h3>
10  <h4>Level 4 Heading</h4>
11  <h5>Level 5 Heading</h5>
12  <h6>Level 6 Heading</h6>
13 </body>
14 </html>
```



Example 2

Linking

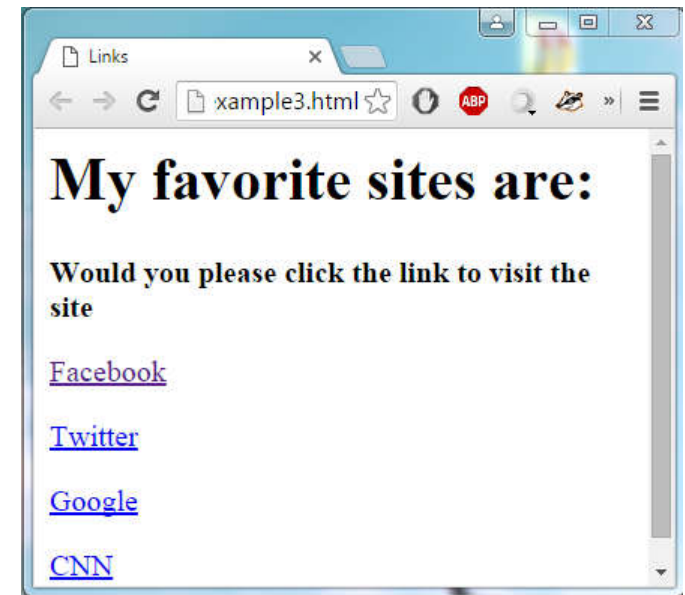
- One of the most important HTML5 features is the [hyperlink](#), which references (or links to) other resources, such as HTML5 documents and images. When a user clicks a hyperlink, the browser tries to execute an action associated with it.
- Web browsers typically [underline text hyperlinks and color their text blue](#) by default so that users can distinguish hyperlinks from plain text.

Linking (Cont.)

- Links are created using the **a** (anchor) element. In line (9) (defines a hyperlink to the URL assigned to attribute **href** (hypertext reference), which specifies a resource's location, such as:
 - a web page or location within a web page
 - a file
 - an e-mail address
- The anchor element in line 9 links the text Facebook to a web page located at `http://www.facebook.com`. The browser changes the color of any text link once you've clicked the link (in this case, the links are purple rather than blue).

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <title>Links</title>
5 </head>
6 <body>
7   <h1>My favorite sites are:</h1>
8   <p><strong>Would you please click the link to visit the site</strong> </p>
9   <p><a href = "http://www.facebook.com">Facebook</a></p>
10  <p><a href = "http://www.twitter.com">Twitter</a></p>
11  <p><a href = "http://www.google.com">Google</a></p>
12  <p><a href = "http://www.cnn.com">CNN</a></p>
13 </body>
14 </html>
```

Example 3



Linking (Cont.)

Hyperlinking to an E-Mail Address

- Anchors can link to e-mail addresses using a **mailto:** URL.
- 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 e-mail message to the linked address.

Linking (Cont.)

```
1  <!DOCTYPE <!DOCTYPE html>
2  <html>
3  <head>
4  |   <title>Mail To</title>
5  </head>
6  <body>
7  |   <p>
8  |       To write to <a href = "mailto:abdullah@unitar.com"> Abdullah Almasri</a>,
9  |       click the link and your default email client will open an email message
10 |       and address it to us.
11 |   </p>
12 </body>
13 </html>
```



Example 4

```

1 <!DOCTYPE <!DOCTYPE html>
2 <html>
3 <head>
4   <title>Images</title>
5 </head>
6 <body>
7 <p>
8   <img src = "web3.png" width = "200" height = "320" alt = "Group of Icons">
9   <img src = "web4.png" width = "200" height = "320" alt = "Book Title">
10  <img src = "web2.jpeg" width = "200" height = "320" alt = "Picture can't render">
11 </p>
12 </body>
13 </html>

```



Example 5

Images

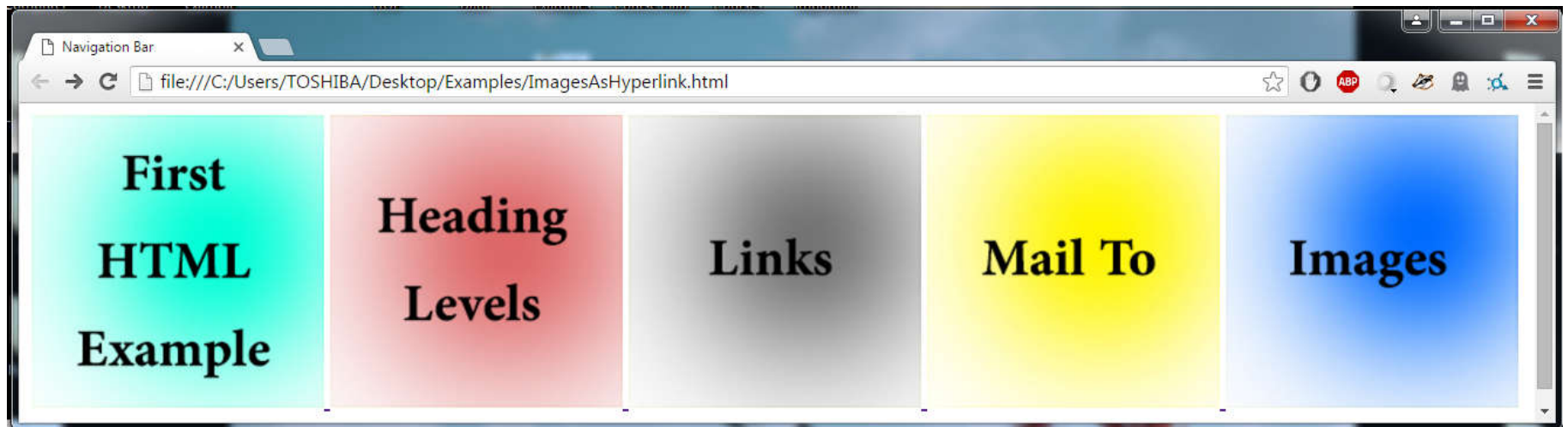
- Use an **img** element to include an image in the document. The image file's location is specified with the **src** (source) attribute.
- Images are measured in pixels (“picture elements”), which represent dots of color on the screen.
- A browser may not be able to render an image for several reasons. It may not support images, as is the case with text-only browsers; or the client may have disabled image viewing to reduce download time. Every **img** element in an HTML5 document must have an **alt** attribute. If a browser cannot render an image, the browser displays the **alt** attribute's value.

Introduction to HTML5 (Cont.)

- Using Images as Hyperlinks.
- Special Characters.
- Lists.
- Nested Lists.
- Tables.
- Using *rowspan* and *colspan* with Tables.

Using Images as Hyperlinks

- By using images as hyperlinks, we can create graphical web pages that link to other resources. In the following figure, we create five different image hyperlinks. Clicking an image in this example takes the user to a corresponding web page.



Using Images as Hyperlinks (Cont.)

```
1 <!DOCTYPE <!DOCTYPE html>
2 <html>
3 ▼ <head>
4     <meta charset = "utf-8">
5     <title>Navigation Bar</title>
6 </head>
7 ▼ <body>
8 ▼     <p>
9         <a href="example1.html">
10             
11         </a>
12         <a href="example2.html">
13             
14         </a>
15         <a href="example3.html">
16             
17         </a>
18         <a href="example4.html">
19             
20         </a>
21         <a href="example5.html">
22             
23         </a>
24     </p>
25 </body>
26 </html>
```

Example 6

Using Images as Hyperlinks (Cont.)

- Lines 9-11 create an image hyperlink by nesting an **img** element in an anchor element.
- The **img** element's **src** attribute value specifies that this image (**first.jpg**) resides in a directory named **Image**.
- The **Image** directory and the HTML5 document are in the same directory.
- Images from other web documents also can be referenced by setting the **src** attribute to the name and location of the image. If you refer to an image on another website, the browser has to request the image resource from that site's server.
- Clicking an image hyperlink takes a user to the web page specified by the surrounding anchor element's **href** attribute. When the mouse hovers over a link of any kind, the URL that the link points to is displayed in the status bar at the bottom of the browser window.

Special Characters

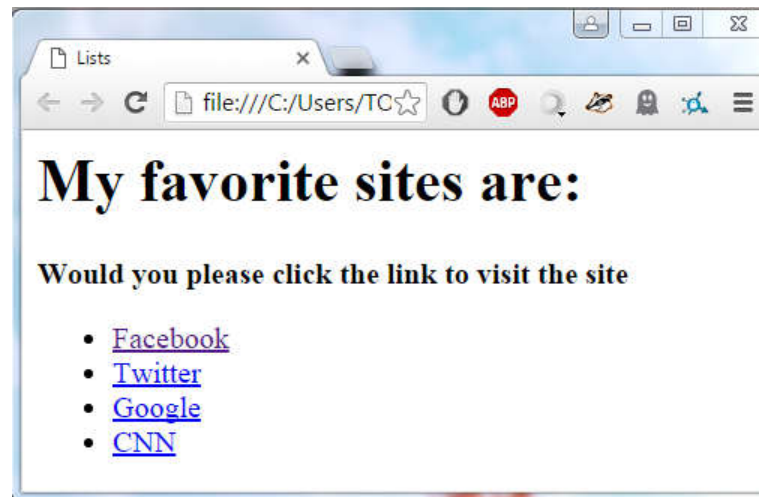
Symbol	Description	Character entity reference
<i>HTML5 character entities</i>		
&	ampersand	&
'	apostrophe	'
>	greater-than	>
<	less-than	<
"	quote	"
<i>Other common character entities</i>		
non-breaking space		
©	copyright	©
—	em dash	—
–	en dash	–
¼	fraction 1/4	¼
½	fraction 1/2	½
¾	fraction 3/4	¾
...	horizontal ellipsis	…
®	registered trademark	®
§	section	§
™	trademark	™

Lists

- How to use lists in a web page to organize content that similar in nature?
- Figure (following slide) displays text in an unordered list (i.e., a simple bullet-style list that does not order its items by letter or number. The unordered-list element **ul** (lines 9-14) creates a list in which each item begins with a bullet symbol.
- Each entry in an unordered list is an **li** (list item) element (lines 10-13).
- Most web browsers render each **li** element on a new line with a bullet symbol indented from the beginning of the line.

Lists (Cont.)

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <title>Lists</title>
5 </head>
6 <body>
7   <h1>My favorite sites are:</h1>
8   <p><strong>Would you please click the link to visit the site</strong> </p>
9   <ul>
10    <li><a href = "http://www.facebook.com">Facebook</a></li>
11    <li><a href = "http://www.twitter.com">Twitter</a></li>
12    <li><a href = "http://www.google.com">Google</a></li>
13    <li><a href = "http://www.cnn.com">CNN</a></li>
14  </ul>
15 </body>
16 </html>
```

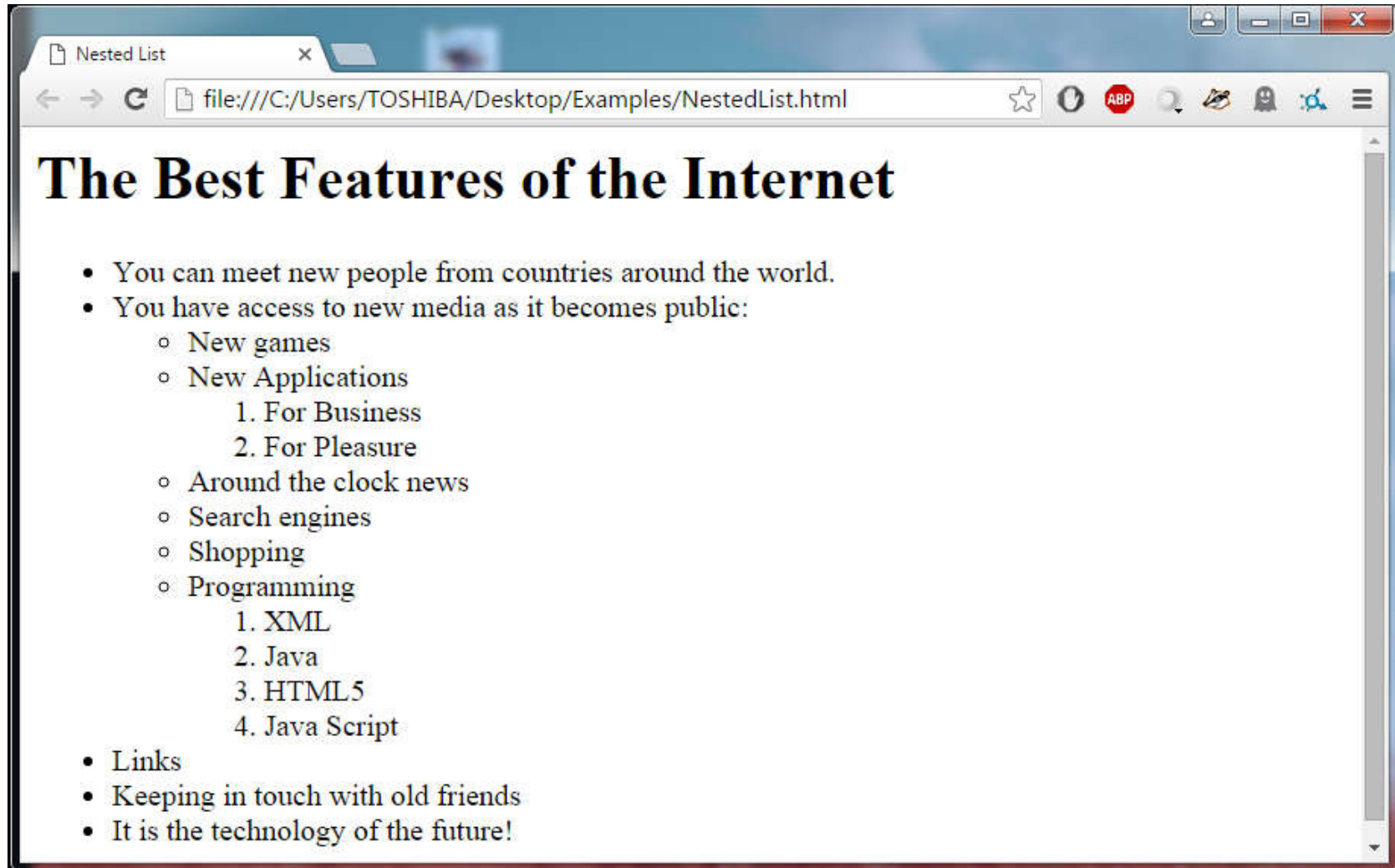


Example 7

Nested Lists

- Lists may be nested to represent hierarchical relationships, as in a multilevel outline.
- Figure (Slide No.24) demonstrates nested lists and ordered lists.
- The ordered-list element **ol** creates a list in which each item begins with a number.

Nested List (Cont.)



Nested List (Cont.)

```
1  <!DOCTYPE <!DOCTYPE html>
2  <html>
3  <head>
4      <meta charset = "utf-8">
5      <title>Nested List</title>
6  </head>
7  <body>
8      <h1>The Best Features of the Internet</h1>
9      <ul>
10         <li>You can meet new people from countries around the world.</li>
11         <li>You have access to new media as it becomes public:
12             <ul>
13                 <li>New games</li>
14                 <li>New Applications
15                     <ol>
16                         <li>For Business</li>
17                         <li>For Pleasure</li>
18                     </ol>
19                 </li>
20                 <li>Around the clock news</li>
21                 <li>Search engines</li>
22                 <li>Shopping</li>
23                 <li>Programming
24                     <ol>
25                         <li>XML</li>
26                         <li>Java</li>
27                         <li>HTML5</li>
28                         <li>Java Script</li>
29                     </ol>
30                 </li>
31             </ul>
32         </li>
33         <li>Links</li>
34         <li>Keeping in touch with old friends</li>
35         <li>It is the technology of the future!</li>
36     </ul>
37 </body>
38 </html>
```

Example 8