

1  **HTML5 and CSS3**

HOW TO CODE, TEST AND VALIDATE A WEB PAGE

2  **HTML Tags—Page 1**

- HTML tags are used for “marking up” (formatting) content on a web page
  - HTML—hypertext *markup* language
- Two-sided tags:
  - Format:
    - ✦ `< element> content</ element>`
  - Example:
    - ✦ `<p>Welcome to HTML</p>`
    - ✦ The `<p>` tag defines a “paragraph” on a web page

3  **HTML Tags—Page 2**

- One-sided tags:
  - Format:
    - ✦ `< element />`
    - ✦ The ending `/` is included in the tag
  - Example:
    - ✦ `<br />`
    - ✦ The `<br />` tag creates a single-spaced line break

4  **Attributes**

- Attributes provide additional “formatting” for tags
  - Format:
    - ✦ `< element attribute1 = "value1" attribute2 = "value2" ... >`
    - The quotes around each *value* are required only if the value is two or more words (style suggestion—use quotes all the time)
  - Example”
    - ✦ `<p id = "top">Welcome to HTML</p>`
    - ✦ The `id` attribute is used to “name” the tag

5  **Document Type Declaration  
(Page 1)**

- The DOCTYPE declaration states the type of language (version) used in the HTML (or other) document:
  - The first line in the web document
  - The DOCTYPE declaration for HTML5
    - `<!DOCTYPE html>`

6  **Document Type Declaration  
(Page 2)**

- The DOCTYPE for HTML 4.01
  - `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01/EN" "http://www.w3.org/TR/html4/strict.dtd">`
- The DOCTYPE for XHTML
  - `<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 strict//EN" "http://www.w3.org/TR/xhtml1-strict.dtd">`

7  **Basic Structure of an HTML Document**

```
<!DOCTYPE ...>
<html>
  <head>
    head content
  </head>
```

```

    <body>
      body content
    </body>
  </html>

```

### 8 **Try It Out**

- Create the basic structure of an HTML document

### 9 **Notepad—Save HTML File**

- Notepad normally saves files as .txt
  - If not careful, you might end up with a file that is named something like "filename.htm.txt"
- To save a web document as an HTML file:
  - Click on "File" and then click either "Save" or "Save As"
  - Navigate to the "save to" folder
  - Change the "Save As Type" drop-down menu to "All Files (\*.\*)"
  - Name the file being sure to include the .htm extension, e.g. "MyHomePage.htm" and click <Save>
    - ✦ Extension .html also is valid

### 10 **Notepad—Open HTML File**

- To save a web document:
  - Click on the "File" menu and click "Open"
  - Navigate to the folder where the file is located
  - Change the "Save As Type" drop-down menu to "All Files (\*.\*)"
  - Select the filename from the list and click <Open>

### 11 **Try It Out**

- Save the web document as "first.htm"

### 12 **The "Head" Element—Page Title**

- First (required) element inside the head area is the page title element
- Not displayed on page but rather in browser's title bar or a browser tab
- Format:
  - <title>*document title*</title>
- Example:
  - <title>My First Web Page</title>

### 13 **Try It Out**

- Add a title to the document
- View the web page

### 14 **Comments**

- Notes or comments about the code
  - Ignored by the browser
- Can be spread out over several lines
- Format:
  - <!-- comment -->
- Example:
  - <!-- This is my first web page  
Author: Carl B. Struck -->

### 15 **Whitespace**

- Horizontal and vertical space left between characters is known as whitespace
  - The return character and tabs also are whitespace
- Used to indent lines as well as to doublespace between *groups* of statements
  - Makes the code easier to read

- Ignored by browser but does add to the size of document

16  **Try It Out**

- Add a comment to the document head

17  **The Heading Elements**

- A “grouping element” that contains text that define “titles” for the main sections of the content of a web page
- Displayed in bold
- Format:
  - `<hn>content</hn>`
  - ... in which *n* is a value between 1 and 6 denoting a larger (1) to smaller (6) font size
- Example:
  - `<h1>My First Web Page</h1>`
  - The `<h1>` tag usually denotes a “major” heading

18  **Try It Out**

- Add a heading to the body of the document

19  **Paragraph Elements**

- A “grouping element” that defines a “paragraph” on a web page
- Implements double-spacing after each paragraph
- Format:
  - ✕ `<element>content</element>`
- Example:
  - ✕ `<p>Welcome to HTML. In this unit you will learn about the structure of a web document and some of its basic elements.</p>`
  - `<p>When you code an HTML document, you need to adhere to the rules for HTML. These rules are referred to as syntax. </p>`

20  **Try It Out**

- Add two paragraphs to the body of the document

21  **Line Breaks**

- A one-sided element that inserts a one-line break into text
  - Even if the text is not on a new line in the HTML code
- Must be placed within grouping elements such as paragraphs or headings
- Format:
  - `<br />`
- Example:
  - `<p>Prof. Carl B. Struck<br />East Islip NY</p>`
  - ✕ Displays as:
    - Prof. Carl B. Struck
    - East Islip NY

22  **Try It Out**

- Add a paragraph with a line break to the document

23  **CSS Syntax**

- Style sheets are written in CSS (Cascading Style Sheet) language and implement web page formatting and layout
- Style “rules” (or “rule sets”) provide a method of creating consistent formatting of elements throughout an entire web page or even an entire website
- For example it makes it much simpler to format all the headings, paragraphs, list

elements, etc. for all the pages in the site so that they are identical in style

- The style is *defined once* and *applied automatically* each time the tag and/or element is used

#### 24 **Designing a Style Rule—Page 1**

- Format:

○ *selector*

```
{
  property1: value1;
  property2: value2;
  ...
}
```

- ✦ The *selector* is the name of an element (e.g. a tag or ID or classname) or a “group” of elements
- ✦ The *property* is the name of a format type and the *value* is the value assigned to it

#### 25 **Designing a Style Rule—Page 2**

- Examples:

○ h1

```
{
  text-align: center;
}
```

○ p

```
{
  font-family: Arial;
  color: blue;
}
```

#### 26 **Try It Out**

- Create a style sheet document named “mystyles.css”

#### 27 **External Style Sheets**

- A web page can link to a separate (external) style sheet file
- Linked style sheets are created as a *separate document files* with the extension .css; a link tag is placed into each web page that will implement the style sheet
- The link tag is placed in the head section
- Format:

○ `<link href = "location/filename" rel = "stylesheet" type = "text/css" />`

- Example:

○ `<link href = "mystyles.css" rel = "stylesheet" type = "text/css" />`

#### 28 **Try It Out**

- Apply an existing external (layout) style sheet to the documents

#### 29 **HTML Testing and Validation**

- Testing and debugging involves “running” the web page (viewing it in a one or more browsers) and checking to see that it renders correctly
- The W3C (World Wide Web Consortium) Markup Validation Service website can be used to validate that a web page follows correct syntax rules
  - Validate by URL (enter the web address) or File Upload (browse and find the web document on your computer) and then click the <Check> button

#### 30 **Try It Out**

- Validate the web page on the “W3C Markup Validation Service” website