WEB PAGES DESIGN

Coding Standards, Block Elements, Text Elements, and Character References (Part 1)

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Lecture 2.
Class 2.
Time: 10:30 - 12:30
Department: Businesses Information Technology (BIT)

Outline

- HTML Coding Conventions
- Comments, HTML Elements Should Describe Web Page, Content Accurately, Content Model Categories
- Block Elements, blockquote Element, Whitespace Collapsing
- pre Element, Phrasing Elements, Editing Elements, q and cite Elements
- Summary

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HTML Coding Conventions

- If a web page uses improper syntax, different browsers might render the web page differently.
- In a worst-case scenario, the web developer tests the web page on a browser where no errors are evident, mistakenly concludes that all is well, and publishes the web page on the Web. And then a user loads the web page using a different browser, and that browser renders the page in an inappropriate manner.
- So as a web developer, how do you deal with this problem? You should test with multiple browsers and check the syntax using the W3C's HTML validation service.
- The coding-style convention rules pertain to the format of code. For example, there are rules about when to use uppercase versus lowercase, when to insert blank lines, and when to indent. Those rules help programmers understand the code more easily, but the browsers don't care about such things.
- Companies like their programmers to follow standard coding conventions so the resulting programs are easier to maintain.

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HTML Coding Conventions (continue…)

- We’ll go over some of the more important style rules:

1. For every container element, include both a start tag and an end tag. So even though it’s legal to omit a p element’s end tag, don’t do it.
2. Use lowercase for all tag names (e.g., meta) and attributes (e.g., name).
3. Use lowercase for attribute values unless there’s a reason for uppercase. For a meta author element, use title case for the author’s name because that’s how people’s names are normally spelled (e.g., name=“Ahmed Mohamad").
4. For attribute-value assignments, surround the value with quotes, and omit spaces around the equals sign.

- Google’s Style Guide says “All code has to be lowercase” except when it’s appropriate for a value to use uppercase.
- Based on that, <!DOCTYPE html> should be <!doctype html>. However, the vast majority of examples on the W3C and WHATWG websites use uppercase for DOCTYPE, and the Google Style Guide uses uppercase for DOCTYPE, so that’s what we recommend. If you prefer all lowercase for the doctype instruction, ask your boss or teacher if that’s OK. The browsers will handle either DOCTYPE or doctype.

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Comments

- As a programmer in the real world, you’ll spend lots of time looking at and editing other people’s code. And, other people will spend lots of time looking at and editing your code. Therefore, everyone’s code needs to be understandable. One key to understanding is good comments.
- Comments are words that humans read but the computer skips.

for example:

```
<!-- The following image should be updated once a month. -->
<img src="januaryPicture.gif" width="400" height="250">
```

- For comments that are short enough to fit on one line we can see to form a comment, surround commented text with <!-- and --> markers.

- For comments that are too long to fit on one line, Here’s an example:

```
<!--
    If the user clicks one of the color buttons, that will cause the
    following paragraph's font color to change to the button's color.
-->
```

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HTML Elements Should Describe Web Page Content Accurately

- The main goal in web programming is to use appropriate HTML elements so your web page’s content is described accurately.
- It is good practice to describe web page content accurately and fully?
- It’s a form of documentation, and documentation helps programmers understand and maintain the web page code more easily.
- It enables the programmer to manipulate the web page more effectively using CSS and JavaScript.

- For example
- If you use p elements for all your paragraphs, you can use CSS to make all the paragraphs indented for their first lines.
- Another example, if you use heading elements (h1-h6) for all your headings, you can use JavaScript to make all the headings larger when a button is clicked.

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Content Model Categories

- What Content Is Allowed Within a Particular Container?
- It’s good at identifying syntax errors, like misspelling tag names. It’s also good at containership rules. For example, the head container must contain a title element, and a p container must not contain a div container.
- With lots of elements (around 115), there are lots of containership rules (more than 11,000). Rather than having you remember each of those rules, it’s easier to assign elements to certain categories and have those categories be the basis for the containership rules.
- Now go to the content model categories diagram, using the URL from Figure 1. and hover your mouse over the metadata oval.

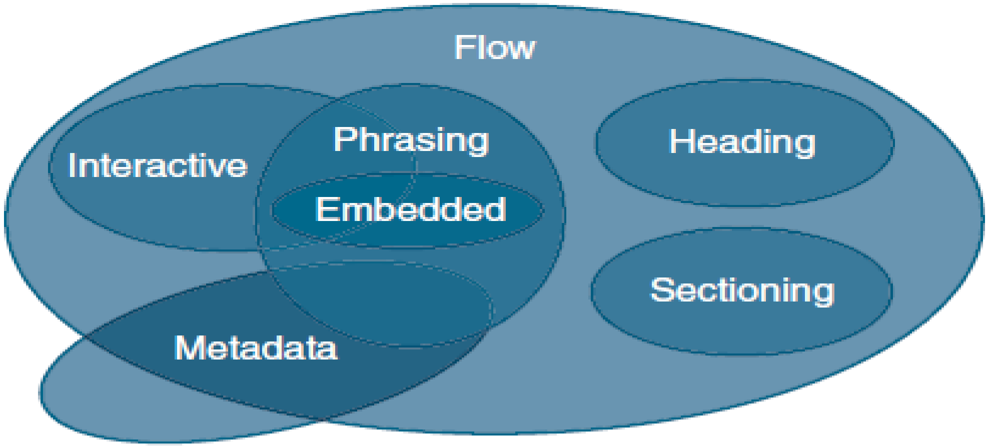

Figure 1. Content model categories

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Content Model Categories (continue…)

- Note: HTML Living Standard,” Web Hypertext Application Technology Working Group (WHATWG), last modified June 1, 2017, https://html.spec.whatwg.org/multipage/semantics.html.
- World Wide Web Consortium (W3C), “W3C HTML 5.1 Recommendation: Semantics, structure, and APIs of HTML documents,” last modified November 1, 2016,. https://www.w3.org/TR/html51/dom.html#kinds-of-content

- That generates a list of all the elements in the metadata category- base, link, meta, noscript, script, style, and title.
- To determine which elements are allowed inside the p container, look up the p element in the W3C standard and read the “content model” section, which says “phrasing content.” The p container is allowed to include elements that are in the phrasing category.

- Content Model Category Descriptions
- We used for the head container’s contents. So an alternative definition of the metadata category is that it includes all the elements that are allowed in the head container.

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Content Model Categories (continue…)

- The flow category includes plain text and all the elements that are allowed in a web page body container. The blockquote, div, hr, p, and pre elements are flow content elements, and they are not in any other content model categories. The script element is for JavaScript.
- The phrasing category elements are - abbr, b, br, cite, code, del, dfn, em, i, ins, kbd, mark, q, s, samp, small, span, strong, sub, sup, time, u, var, wbr.
- The embedded category includes elements that refer to a resource that's separate from the current web page. For example, the audio element uses an audio file. Here are the embedded category- audio, canvas, iframe, img, and video.
- The interactive category includes elements that are intended for user interaction. the interactive category elements- a, button, input, select, textarea.
- The heading category includes elements that define a header for a group of related content. heading category elements like - h1, h2, h3, h4, h5, h6.
- The sectioning category includes elements that define a group of related content. For example, the aside element is for content that's not part of the web page's main flow. The sectioning category element- sarticle, aside, nav, section.

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Block Elements

- A block element expands to fill the width of its container, so for a given container, there will be only one block element for each row in the container.
- For each block element's container is the body element, which spans the width of the browser window. So for those examples, the block element also spans the width of the entire browser window. That's different from a phrasing element in that :
- (1) a phrasing element's width matches the width of the element's contents
- (2) multiple phrasing elements can display in one row.

➢ blockquote Element

- We should use a blockquote element when we have a quotation that is too long to embed within surrounding text. It's a block element, so it spans the width of its container.
- For a blockquote element example, see figure 2. In the figure's browser window, note the margins on the four sides of the quote text.

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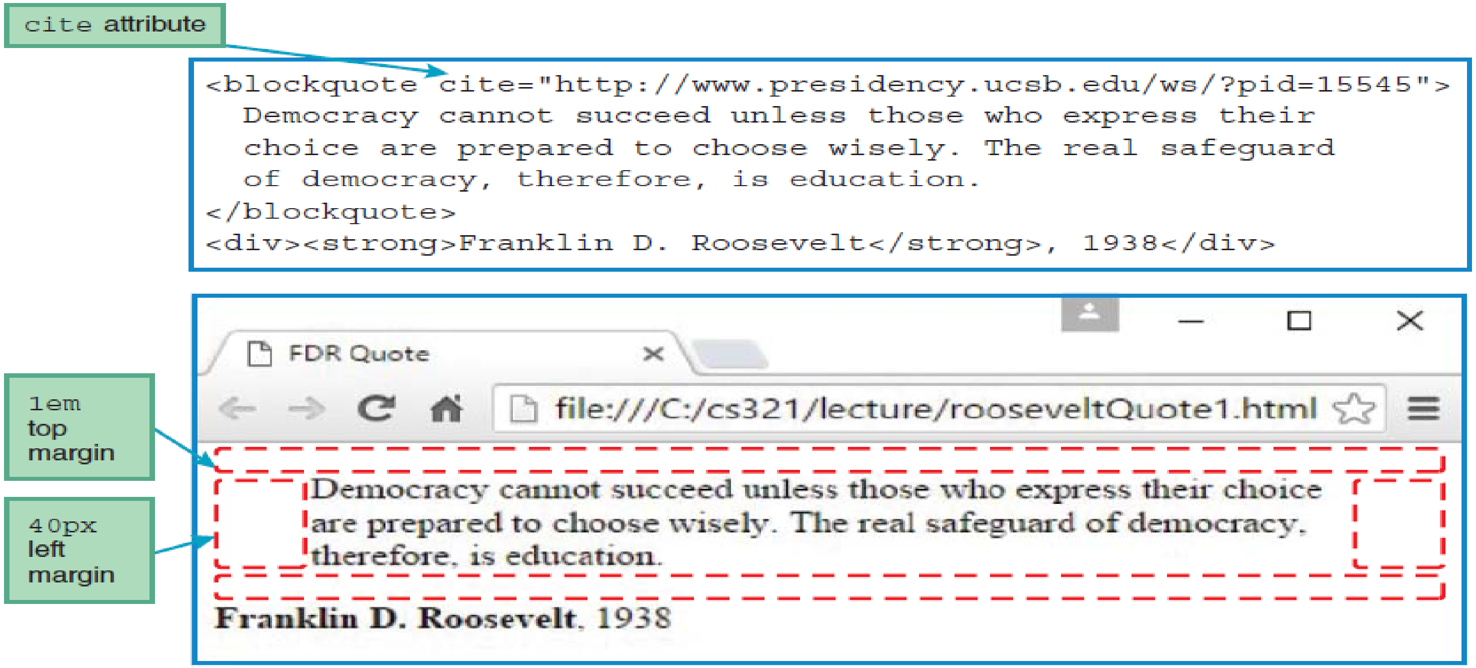
blockquote Element (continue…)

➢ blockquote Element (continue…)



```
<blockquote cite="http://www.presidency.ucsb.edu/ws/?pid=15545">
  Democracy cannot succeed unless those who express their
  choice are prepared to choose wisely. The real safeguard
  of democracy, therefore, is education.
</blockquote>
<div><strong>Franklin D. Roosevelt</strong>, 1938</div>
```

Democracy cannot succeed unless those who express their choice are prepared to choose wisely. The real safeguard of democracy, therefore, is education.

Franklin D. Roosevelt, 1938

Figure 2. An example blockquote

- For example, figure 3. shows the typical default display properties for the blockquote element.
- The figure shows five CSS rules that are commonly used as defaults when a browser renders a blockquote element.

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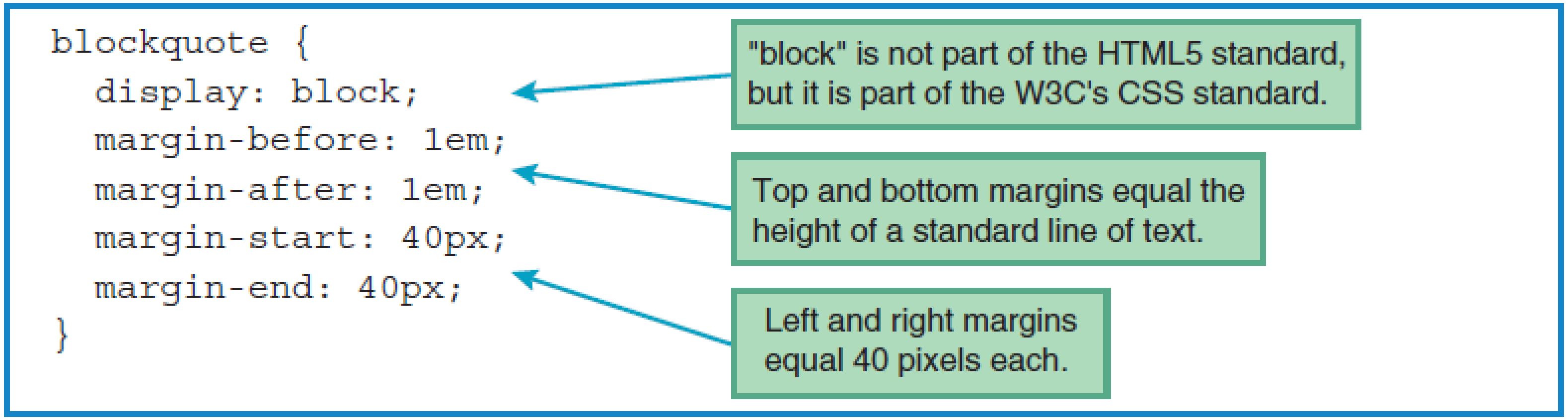
blockquote Element (continue…)

➢ blockquote Element (continue…)



```
blockquote {
  display: block;
  margin-before: 1em;
  margin-after: 1em;
  margin-start: 40px;
  margin-end: 40px;
}
```

"block" is not part of the HTML5 standard, but it is part of the W3C's CSS standard.

Top and bottom margins equal the height of a standard line of text.

Left and right margins equal 40 pixels each.

Figure 3. Typical default display properties for the blockquote element

- The format of Figure 3., It's CSS.
- The first CSS rule says to use a block value for the display property. That means that the element the rule applies to, blockquote in this case, will span the width of its container. Thus, the display:
- block property-value pair matches the characteristics of the block element described earlier.
- The second and third CSS rules apply to the top and bottom margins. The 1em values cause each of the two margins to be the height of one line of text.
- The fourth and fifth CSS rules apply to the left and right margins. The 40px values cause each of the two margins to be 40 pixels wide, where 1 pixel is the size of an individually projected dot on a typical computer monitor.

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blockquote Element (continue…)

- ➢ blockquote Element (continue…)
- cite Attribute
- In Figure 2. blockquote code, we notice the cite attribute in the element's start tag? For your convenience, here's the start tag again:

  <blockquote cite="http://www.presidency.ucsb.edu/ws/?pid=15545">
- The purpose of the cite attribute is to document where the quote can be found on the Internet. The cite attribute's value must be in form of a URL.
- Browsers do not display the cite attribute's value. That's because the URL value is not for end users.
- Instead, it serves as documentation for the web developer(s) in charge of maintaining the web page. Presumably, the web developer would check URL every now and then to make sure it's still active.
- Another benefit of including the cite attribute is that it can be used as a "hook" for adding functionality to the blockquote element.

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blockquote Element (continue…)

- ➢ blockquote Element (continue…)
- Block Formatting
- For a blockquote element with enclosed text that’s greater than one line, you should use block formatting. Block formatting is a coding-style convention where start and end tags go on their own lines and enclosed text is indented.
- For example

```
<blockquote cite="http://www.presidency.ucsb.edu/ws/?pid=15545">
     Democracy cannot succeed unless those who express their
     ...
</blockquote>
```

- For a div element example, see Figure 2. div element code, copied here for your convenience:

```
<div><strong>Franklin D. Roosevelt</strong>, 1938</div>
```

- The p and div elements are both block elements. So, in these code fragments, why does the p element use block formatting, but the div element does not? The block formatting style rule says to use block formatting for all block elements with content longer than one line.
- The preceding p example, the content (plain text) is longer than one line, so block formatting is used. In preceding div example, content (a strong element plus plain text) is shorter than one line, so block formatting is not used.

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Whitespace Collapsing

- Whitespace refers to characters that are invisible when displayed on the browser window. The most common whitespace characters are the blank, newline, and tab characters.
- The web developer generates those characteristics by pressing the spacebar, enter, and tab keys, respectively.
- If your HTML code contains consecutive blank spaces, newlines, or tabs, the browser will display the web page with only one whitespace character.
- Example 1.

```
 <!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<meta name="author" content="Catherine Pulsifer,2020">
<title>Our Journey</title>
</head>
<body>
<h2>Our Journey</h2>                <!-- use a plain text -->
         Our journey through life has its ups and downs
       Sometimes feelings of being sad and others of a clown
                We all have highs and the lows
              Many happy times and times of sorrow.
```

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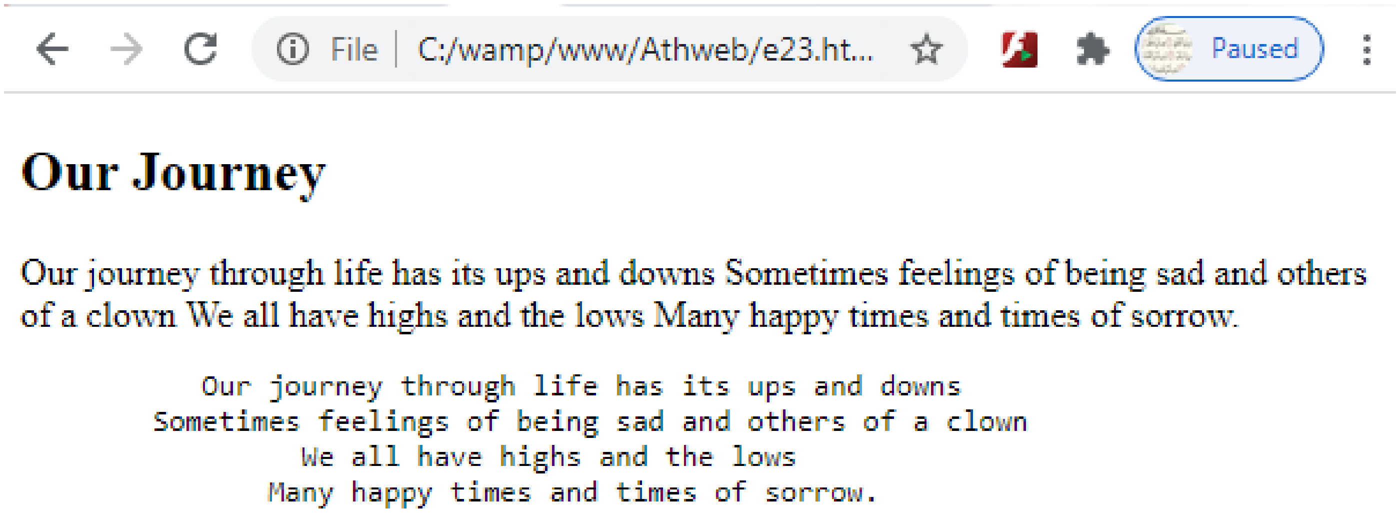
Whitespace Collapsing (continue…)

- Example 1. (continue…)

```
<pre>          <!-- use a pre container -->
          Our journey through life has its ups and downs
       Sometimes feelings of being sad and others of a clown
                 We all have highs and the lows
               Many happy times and times of sorrow.
</pre>
</body>
</html>
```

Output :



Our Journey

Our journey through life has its ups and downs Sometimes feelings of being sad and others of a clown We all have highs and the lows Many happy times and times of sorrow.

```
           Our journey through life has its ups and downs
        Sometimes feelings of being sad and others of a clown
                 We all have highs and the lows
               Many happy times and times of sorrow.
```

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pre Element

- We should use the pre element for text that needs to have its whitespace preserved. Formally, pre stands for “preformatted text.” However, we prefer to pretend that it stands for “preserved whitespace” because that makes more sense.
- In Example1., take a look at the bottom (the one that uses a pre container). Note the blank spaces and newlines. Those are whitespace characters from the source code, and we can thank the pre container for preserving them.

➢ Phrasing elements

- Phrasing elements are meant for text items that would be deemed acceptable within a typical paragraph. For example, the strong element, is a phrasing element.
- phrasing elements are allowed within many container elements besides the p container.
- In determining whether it’s appropriate to use a phrasing element within a given container, think about whether it would be reasonable to put the phrasing element’s text within that type of container.

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Phrasing elements (continue…)

- Phrasing elements(continue…)
- The following below some of phrasing elements:
- Emphasis tag is used to emphasizing or stressing the word(s) within its opening and closing tags.

  Example 2.

  This is a <em>beautiful</em> building

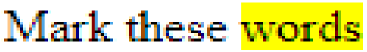
  Output:

  This is a *beautiful* building
- Marked tag is used for marking any word(s) in yellow as if it has been marked or read.

  Example 3.

  Mark these <mark>words</mark>

  Output:



Mark these words

- Address Tag is used for specifying as well as emphasize that the set of text is an address.

  Example4.

  He is Mr. Smith <address>He lives in Lendon.</address>

  Output:

  He is Mr. Smith

  He lives in Lendon

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Editing Elements

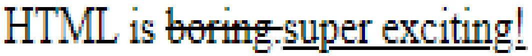
- The ins element is meant to indicate text that has been inserted. If you’re an editor and you’re reviewing someone else’s written work, you’ll probably have suggestions for inserted text every now and then.
- To make the suggested text stand out, you should format it differently from the original text. That way, the original writer can quickly identify what has been suggested. The ins element works the same way.

- The del element is meant to indicate text that has been deleted. Typically, browsers display a del element with strikethrough text.

- For example

```
HTML is <del>boring.</del><ins>super exciting!</ins>
```

Output:



HTML is ~~boring.~~super exciting!

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q and cite Elements

- q Element
- Another phrasing element- the q element. It’s for quoted text that is to be rendered within the flow of surrounding text. That’s different from the blockquote element, which spans the width of its container. Browsers display a q element by surrounding its text with quotes. In Example 5., note that there are no quote marks in the code fragment, and note the inserted quote marks in the resulting web browser.

- Example 5.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
</head>
<body>
    <p>
    You can fool some of the people all of the time, and all of the people some of the time, but you can't fool all of the people all of the time. <q>Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime.</q>
    <cite>Aphorisms for People</cite>
</p>                                    <!-- use q element and cite element -->
</body>
</html>
```

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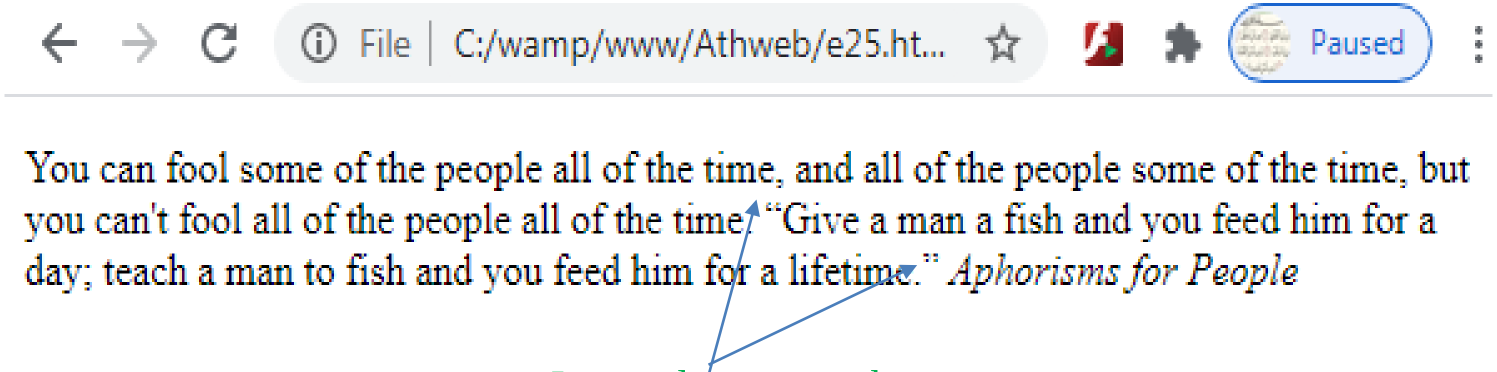
q and cite Elements(continue…)

- Example 5. (continue…)

Output:



You can fool some of the people all of the time, and all of the people some of the time, but you can't fool all of the people all of the time. “Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime.” *Aphorisms for People*

Inserted quote marks

- The moral of the story is to make sure you put the <q> start tag right next to the first character in the quoted text, and you put the </q> end tag right next to the last character in the quoted text.

- cite Element
- cite element represents the cited title of a work; for example, the title of a book, paper, essay, poem, score, song, script, film, TV show, game, sculpture, painting, theater production, play, opera, musical, exhibition, legal case report, or other such work.
- Browsers display a cite container’s text with italics.

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q and cite Elements(continue…)

- cite Element (continue…)
- the cite element can follow a q element, also we can have a cite element follow a blockquote element. As another alternative, you can have a cite element appear within a blockquote element, after blockquote element’s text.

- We talked about the cite attribute as part of the blockquote element. What is the difference between the cite element and the cite attribute?

1. The cite element is for a cited work, like a book title, whereas the cite attribute is strictly for a URL value.
2. Another difference is that browsers display the content in a cite element, whereas browsers do not display the content in a cite attribute.

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Summary

- This lecture showed a brief explanation of HTML Coding Conventions and the style rules.
- We learned the Comments meaning, which are words that humans read but the computer skips.
- Also from this lecture we learned why the HTML Elements Should Describe Web Page Content Accurately and fully.
- The content model categories explained briefly and also mentioned some of examples for each category.
- We clarified the Block Elements that Provide some of characteristics like a block element spans the width of its container, so for a given row, there will be only one block element.
- Also from this lecture we learned the typical default display properties for a blockquote element which are block element and margins on all four sides.
- Also we clarified briefly the whitespace collapsing that have three characters which are -blank, newline, and tab characters.
- We explained the two elements that are used to indicate editing changes—the ins element (for insertions) and the del element (for deletions).
- In this lecture also we highlighted the q and cite elements and also clarified the difference between a q element and a blockquote element, which is a q element is for quoted text that is rendered within the flow of surrounding text. The blockquote element spans the width of its container.

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THANK YOU