

Internet Programming I

Chapter 2 Web Development Using HTML



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Objectives



After success completion of the chapter you will be able to:

- Identify the core web development technologies
- Understand the HTML document structure and contents models.
- Identify and use HTML elements and attributes
- Build website using HTML

Lesson 2

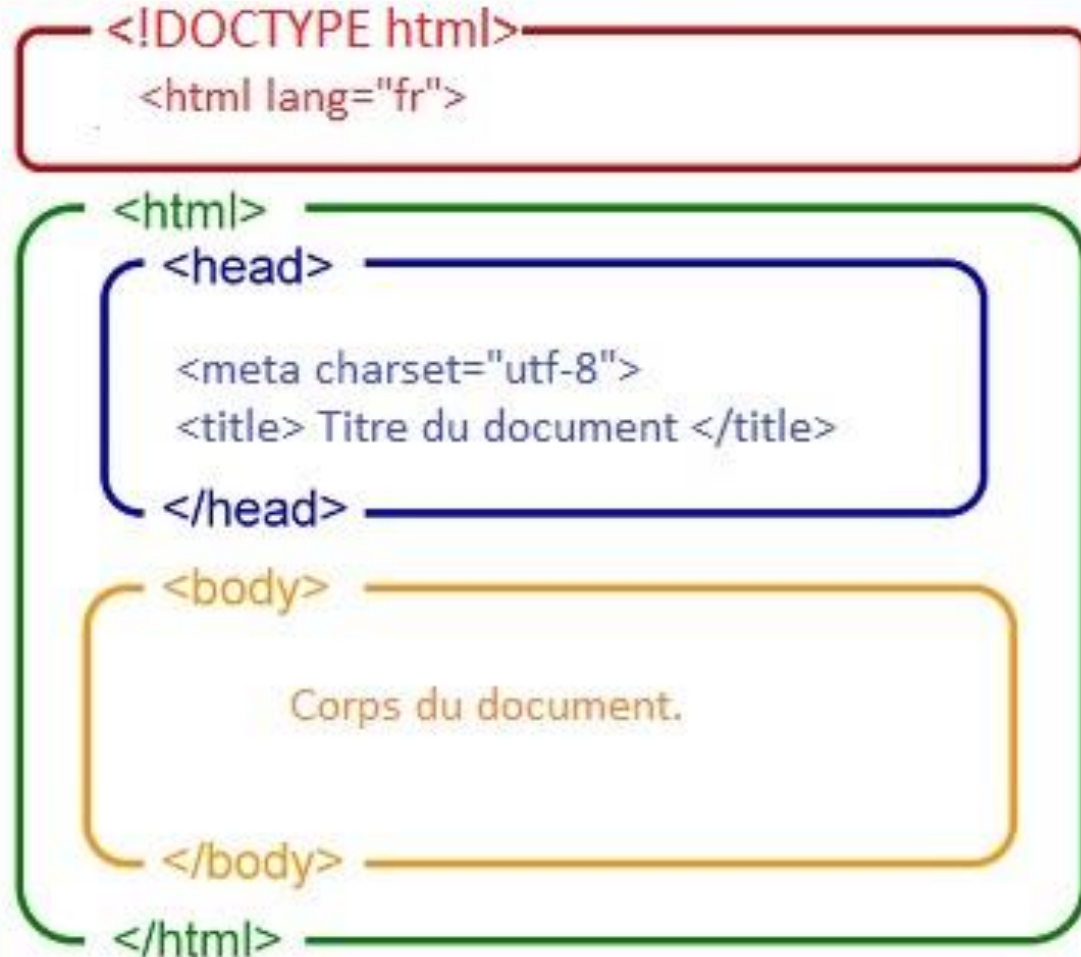
HTML Elements

(More on HTML Doc Structure
and Text Markup Elements)

- Document structure elements
 - *Recalling HTML document structure*
 - *Doctype declaration*
 - *Head section elements*
 - *Body Element*
- Text markup elements
 - *Heading elements*
 - *Paragraph and line break elements*
 - *List elements*
 - *Text formatting*
 - *Computer Outputs markups*
 - *Citation and Definition markups*
- HTML Entity and Comment

1. Document Structure Elements

Recalling HTML Document Structure



(a) The `<html>` tag

- It represents the root (top-level element) of an HTML document, so it is also referred to as the root element.
- A container for all other HTML elements (i.e. except the `<!DOCTYPE>` tag, all other elements must be descendants of it).
- Specify the *lang attribute* for the `<html>` tag, to declare the language of the Web page to assist search engines/browsers.

(b) HTML <!DOCTYPE> Declaration

- All HTML documents must start with this declaration.
- The declaration is not an HTML tag.
- It is an "information" to the browser about what document type to expect.
- In HTML 5, the declaration is simple: `<!DOCTYPE html>`
- In older documents (HTML 4 or XHTML), the declaration is more complicated because the declaration must refer to a DTD (Document Type Definition).
- The declaration in HTML 4.01 and XHTML 1.1 is as follow respectively:
 - `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">`
 - `<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">`

(c) HTML Document Head Section (<head> element)

- Primarily holds information for machine processing not human-readability
- It contains machine-readable information(metadata) about the document, like its title, scripts, and style sheets.

Inside the head section

- Title
- Style
- Script
- no script
- Meta
- Link
- base

The <title> element

- It defines the *document's title* that is shown in a browser's title bar/ page's tab
- It only contains text.
- It is required in every HTML documents.
- Always used within a page's <head> block.

Usage notes

- It defines a title in the browser toolbar
- It provides a title for the page when it is added to favorites
- It displays a title for the page in search-engine results

Page titles and SEO

- The contents of a page title can have significant implications for SEO.
- The page title is used by search engine algorithms to decide the order when listing pages in search results.
- A few guidelines and tips for composing good titles:
 - a) *Avoid one- or two-word titles – go for a longer, descriptive phrase, or a term-definition*
 - b) *Avoid too length titles*
 - ✓ *Search engines typically display about the first 55–60 characters of a page title. Text beyond that may be lost, so try not to have titles longer than that.*
 - c) *Don't use "keyword blobs" / list of words*
 - ✓ *If your title is just a list of words, algorithms often reduce your page's position in the search results.*
 - *Make title unique as possible within your own site. Duplicate or near-duplicate titles can contribute to inaccurate search results.*

The <meta> element

- It represents metadata that cannot be represented by other HTML meta-related elements, like titles, base etc.
- It always go inside the <head> element.
- Typically used to specify *character set, page description, keywords, author of the document, and viewport settings*.
- It will not be displayed on the page, but is machine parsable.
- It is used by browsers (how to display content or reload page), search engines (keywords), and other web services.

Attributes of the <meta> element

Attribute	Value	Description
<u>charset</u>	<i>character_set</i>	Specifies the character encoding for the HTML document
<u>content</u>	<i>text</i>	Specifies the value associated with the http-equiv or name attribute
<u>http-equiv</u>	content-security-policy, content-type, default-style, refresh	Provides an HTTP header for the information/value of the content attribute
<u>name</u>	application-name, author, description, generator, keywords, viewport	Specifies a name for the metadata

Example

- *Define a description of web page*

`<meta name="description" content="Free Web tutorials for HTML and CSS">`

- *Define keywords for search engines:*

`<meta name="keywords" content="HTML, CSS, JavaScript">`

- *Define the author of a page:* `<meta name="author" content="John Doe">`

- *Refresh document every 30 seconds:* `<meta http-equiv="refresh" content="30">`

- *Setting the viewport:*

`<meta name="viewport" content="width=device-width, initial-scale=1.0">`

sets the width of the page to follow
the screen-width of the device

sets the initial zoom level
when the page is first loaded

(d) HTML Document body Section (<body> element)

- Defines the document's body.
- There can only be one <body> element in an HTML document.
- It contains all the contents of an HTML document;



Inside the body section

- Text formatting
- Links
- Table
- Form
- Images and multimedia
- Embedded elements
- Interactive elements
- Graphics etc.

- It is sectioning root category with permitted flow content model
- It includes the global attributes.

Attributes of <body> element - non-conforming

Attribute	Value	Description
alink	color	Specifies the color of active link (while the mouse button is held down during a click) in a document.
background	URL	Specifies a background image for the document.
bgcolor	color	Specifies the background color of the document.
link	color	Specifies the color of unvisited links in a document.
text	color	Specifies the foreground color for text in a document.
vlink	color	Specifies the color of visited links in a document.
topmargin, bottommargin, leftmargin,, rightmargin	Pixel, %	Specify the margin of the of the body (top, bottom, left and right respectively)

2. Text Markup Elements

(a) Heading elements

- In the same way that a book has the main title, chapter titles, and subtitles, an HTML document can too.

```
<h1>How to Make a Cake</h1> ← - - - - - Main heading
<h2>Ingredients</h2> ← - - - - - Sub heading
    <h3>Ingredients for Sponge</h3> }
    <h3>Ingredients for Toppings</h3> } Sub sub heading
<h2>Instructions</h2>
    <h3>Preparation</h3>
    <h3>Process</h3>
<h2>Serving the Cake</h2>
```



Definition and Usage

- Heading elements allow you to specify that certain parts of your content are headings.
- HTML contains 6 section heading levels, `<h1>` to `<h6>`
- The heading element importance level
 - `<h1>` define the **most important** (highest) heading level
 - `<h6>` define the **lowest** (less important) headings.
- Commonly 3 to 4 heading elements are used at most.
- The heading Tags are block level elements.
- It's content model categories are **flow content** and **heading content**
- These elements only include the **global attributes**.

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6



- **Heading information**
 - Allow **search engines** to index the structure and content of your web pages
 - Users often skim a page by its headings and determine the content layout of web page automatically.
 - Also it is a common navigation technique for users of **screen reading software** to jump from heading to heading and quickly determine the content of the page.
- As a result,
 - Avoid skipping heading levels: always start from <h1>, followed by <h2> and so on
 - Use only one **<h1> per page or view** (considered a best practice)
 - <h1> should concisely describe the overall purpose of the content.
 - It is important to use headings to show the document structure.
- Avoid using heading elements to **resize text (i.e. to make text **BIG** or **bold**)**.

2. Text Markup Elements (cont'd)

(b) Paragraph elements

- HTML paragraphs any structural grouping of related content, such as texts, images or form fields.
- The `<p>` HTML element represents a paragraph.
- It belongs **flow content** category.
- Paragraphs are **block-level** elements and.
 - Always starts on a new line
 - Browsers automatically add white space (margin) before and after a paragraph.
- This element only includes the **global attributes**.
- Breaking up content into paragraphs helps make a page more accessible.
- Allow **screen-readers** to provide shortcuts that let their users skip to the next or previous paragraph, and skim the content.



■ HTML <p> content display

- Large or small screens, and resized windows will create different results.
- With HTML, you cannot change the display by adding extra spaces or extra lines in HTML code.
- The browser will automatically remove any extra spaces and lines.

■ Note:

- Don't use empty <p> which is problematic for people who use screen-reading technology.

```
<p>
This paragraph contains a lot of lines
in the source code, but the browser
ignores it.
</p>

<p>
This paragraph
contains      a lot of spaces
in the source      code,
but the      browser
ignores it.
</p>
```

Output of the example

This paragraph contains a lot of lines in the source code, but the browser ignores it.

This paragraph contains a lot of spaces in the source code, but the browser ignores it.

<pre> elements

- Represents preformatted text which is to be presented exactly as written in the HTML file.
 - The text is typically rendered using a non-proportional, or "monospaced", font.
 - Unlike <p> element, it preserves whitespace both spaces and line breaks:
- Provide an alternate description for any images or diagrams.
- It is a block-level element which belongs to flow content category

```
<pre>
```

```
&lt;t; I'm an expert in my field. &gt;
```

```
-----
\      ^  ^
  (oo)\_____
  ( _)\         )\ \
      ||-----w||
      ||           ||
```

```
</pre>
```

Output

```
< I'm an expert in my field. >
```

```
-----
\      ^  ^
  (oo)\_____
  ( _)\         )\ \
      ||-----w||
      ||           ||
```

2. Text Markup Elements (cont'd)

(c) Line break elements (<hr> and
)

<hr/>

- Represents a thematic break between paragraph-level elements:
- E.g., a change of scene in a story, or a shift of topic within a section.
- Displayed as a horizontal rule in visual browsers.

- Produces a line break in text (carriage-return).
- It is useful for writing a poem or an address, where the division of lines is significant.
- Only enter line breaks, not to add space between paragraphs.

- Both <hr> and
 support both **global attributes** and **event attributes**
- Both are block-level elements,
- <hr> is flow content whereas
 is phrasing content



Example

`<p> §1: The first rule of Fight Club is: You do not talk about Fight Club. </p>`

`<hr/>`

`<p> §2: The second rule of Fight Club is: Always bring cupcakes. </p>`

§1: The first rule of Fight Club is: You do not talk about Fight Club.

§2: The second rule of Fight Club is: Always bring cupcakes.

`<h3>A Poem</h3>`

`<p> O'er all the hilltops
 Is quiet now,
 In all the treetops
 Hearest thou
 Hardly a breath;
 The birds are asleep in the trees:
 Wait, soon like these
 Thou too shalt rest.
</p>`

A Poem

O'er all the hilltops
Is quiet now,
In all the treetops
Hearest thou
Hardly a breath;
The birds are asleep in the trees:
Wait, soon like these
Thou too shalt rest.


Output

align 


Sets the alignment of the rule on the page. If no value is specified, the default value is `left`.

color 

Sets the color of the rule through color name or hexadecimal value.

noshade 

Sets the rule to have no shading.

size 

Sets the height, in pixels, of the rule.

width 

Sets the length of the rule on the page through a pixel or percentage value.

<hr>

Attributes

2. Text Markup Elements (cont'd)

(d) List elements

- HTML offers web developers mechanisms to group a set of related items in lists
- HTML lists are used to present list of information in well-formed and semantic way.
- There are three main types of list in HTML, each one has a specific purpose

➤ *Used to create a list of related items, in no particular order*

Unordered List

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

➤ *Used to create a list of terms and their descriptions.*

Ordered List

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

➤ *Used define a list of terms like in dictionary*

Description List

The first item

Description of item

The second item

Description of item

Attribute(s) of list elements

No	List element	Attribute(s)	Attribute value(s)
1		type	Circle / disc / square / triangle
2		reversed	Boolean
		type	1 (default), A / a / I / i
		start	integer - indicates the current ordinal value of list item
3		value	Integer - start counting from for the list items.
		type	1 (default) A / a / I / i
4	<dd>	nowrap	Yes/no (default), If the value is set to yes, the definition text will not wrap

Example: Ordered list

```
<h2>Hot Drink</h2>
<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
  <li>macchiato</li>
</ol>
```

Hot Drink

1. Coffee
2. Tea
3. Milk
4. macchiato

```
<h2>Hot Drink</h2>
<ol type="a" start = "4">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
  <li>macchiato</li>
</ol>
```

Hot Drink

- d. Coffee
- e. Tea
- f. Milk
- g. macchiato

```
<h2>Hot Drink</h2>
<ol type="a" reversed = "1">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
  <li>macchiato</li>
</ol>
```

Hot Drink

- d. Coffee
- c. Tea
- b. Milk
- a. macchiato

Example: Unordered list

```
<ul>
  <li>Fruit
    <ul>
      <li>Bananas</li>
      <li>Apples
        <ul>
          <li>Green</li>
          <li>Red</li>
        </ul>
      </li>
      <li>Pears</li>
    </ul>
  </li>
  <li>Vegetables</li>
  <li>Meat</li>
</ul>
```

- Fruit
 - Bananas
 - Apples
 - Green
 - Red
 - Pears
- Vegetables
- Meat

Nested list

```
<ol>
  <li>Fruit
    <ul type = "disc">
      <li>Bananas</li>
      <li>Apples
        <ul type = "circle">
          <li>Green</li>
          <li>Red</li>
        </ul>
      </li>
      <li>Pears</li>
    </ul>
  </li>
  <li>Vegetables</li>
  <li>Meat</li>
</ol>
```

1. Fruit
 - Bananas
 - Apples
 - Green
 - Red
 - Pears
2. Vegetables
3. Meat

Example: Description list

```
<h2>Acronym List</h2>

<dl>
  <dt>HTML</dt>
  <dd>- Hypertext Markup Language</dd>
  <dt>CSS</dt>
  <dd>- Cascading Style Sheet</dd>
  <dt>PHP</dt>
  <dd>- Hypertext Preprocessor</dd>
</dl>
```

Acronym List

HTML

- Hypertext Markup Language

CSS

- Cascading Style Sheet

PHP

- Hypertext Preprocessor

(e) Text formatting elements

- HTML provides several tags that you can use to make some text on your web pages to **appear differently than normal text**.
- Formatting elements were designed to display *special types of text*:

Tag	Usage	Description
	Defines bold text	<ul style="list-style-type: none">➤ Represent boldface element which used to draw the <i>reader's attention to the contents</i>, which are not otherwise granted special importance.➤ Does not used for styling text;
<i>	Defines italic text	<ul style="list-style-type: none">➤ Now define semantics rather than typographic appearance➤ It used to represent a range of text set off from the normal text like <i>idiomatic text, technical terms, taxonomical designations, Transliterations, Thoughts among others</i>



Tag	Usage	Description
<code><mark></code>	Define marked/ Highlighted text	<ul style="list-style-type: none">➤ Used indicate a portion of the document's content which is likely to be relevant to the user's current activity➤ Indicate a text which is of special interest even though its importance is not marked in the original source material.➤ Not used for syntax highlighting purposes
<code><small></code>	Defines small text	<ul style="list-style-type: none">➤ Represents side-comments and small print, like copyright and legal text, independent of its styled presentation.➤ By default, it renders text within it one font-size smaller, such as from small to x-small.
<code><big></code>	Defines big text	<ul style="list-style-type: none">➤ Deprecated element➤ It renders the enclosed text at a font size one level larger than the surrounding text (medium becomes large).

Tag	Usage	Description
<code><sub></code>	Defines subscripted text (used only for typographical reasons)	<p>An appropriate use cases include:</p> <ul style="list-style-type: none">➤ Marking up footnote numbers, and subscript in mathematical variable numbers➤ Denoting the number of atoms of a given element within a chemical formula
<code><sup></code>	Defines superscripted text (used only for typographical reasons)	<p>An appropriate use cases include:</p> <ul style="list-style-type: none">➤ Displaying exponents, displaying superior lettering, representing ordinal numbers
<code></code>	Defines emphasized text	<ul style="list-style-type: none">➤ Unlike <code><i></code>, marks text that has stress emphasis➤ Can be nested with greater degree of emphasis
<code></code>	Defines strong text	<ul style="list-style-type: none">➤ Unlike <code></code>, indicates that its contents have strong importance, seriousness, or urgency.➤ Typically the contents are rendered in bold type

Cont'd

Example:

Hello dears this is a **HTML text formating** practical exercise.

When you come over to my house, **beware** of the dog! Even though the word beware is displayed as bold, since it is marked using the `` element, the purpose is to mark it as important!

Would you like to spend the weekend sailing and fishing on my boat *Slice Of Life?*

My mom made a *small* mistake in leaving the door open and a sparrow flew in!

I like to drink H_2O every day to keep me hydrated. My birthday is the 29th of February 1995.

While the bank robber was busy gathering the cash from the counter, my friend whispered in my ear, 'Let's sneak out of here...'. We slowly moved towards the door and then made a dash for it!

This text is highlighted with a marker, and this is not.

`<h1>`

``

``

`<i>`

``

`<sub>`

`<sup>`

`<small>`

`<mark>`

Example 1: Text formatting

HTML code of the output on previous slide

```
<!DOCTYPE html>
<html>
<head><title>HTML Formatting Elements Examples</title>
</head>
<body>
  <!-- All HTML formatting tags described earlier
  are used below. -->
  <h1>Example:</h1>
  <p>Hello dears this is a <b> HTML text formating </b>
    practical exercise. </p>
  <p>When you come over to my house, <strong>beware</strong>
    of the dog! Even though the word beware is displayed as bold,
    since it is marked using the <strong> element,
    the purpose is to mark it as important!</p>
  <p>Would you like to spend the weekend sailing and fishing
    on my boat <i>Slice Of Life</i>?</p>
  <p>My mom made a <em>small</em> mistake in leaving
    the door open and a sparrow flew in! </p>
  <p>I like to drink H<sub>2</sub>O every day to keep me hydrated.
    My birthday is the 29<sup>th</sup> of February 1995. </p>
  <p>While the bank robber was busy gathering the cash from
    the counter, my friend whispered in my ear,
    <small>'Let's sneak out of here...'
```



Tag	Usage	Description
<code><ins></code>	Defines inserted text	<ul style="list-style-type: none"> ➤ Represents a range of text that has been added to a document ➤ Has two attributes: <code>cite</code> and <code>datetime</code>
<code></code>	Defines deleted text	<ul style="list-style-type: none"> ➤ Represents a range of text that has been deleted from a document. ➤ This can be used when rendering <i>"track changes" or source code diff information</i> ➤ Has two attributes: <code>cite</code> and <code>datetime</code>
<code><s></code>	Strikethrough text	<ul style="list-style-type: none"> ➤ Renders text with a strikethrough to indicate content that is no longer relevant or no longer accurate ➤ But like <code></code>, not important when indicating document edits
<code><u></code>	Underline text	<ul style="list-style-type: none"> ➤ Used to be called the "Underline" element in older versions. ➤ Currently it is in use of different purpose in a way that indicates that it has a non-textual annotation



Example: ins and ~~elements~~

~~Old Heading~~

New Heading <ins>

This paragraph needs some changes. This is a new sentence.
Here is some more text.

"You're late! ~~I apologize for the delay.~~ A wizard is never late ..."

~~There will be a few tickets available at the box office tonight.~~
SOLD OUT!

<s>

```
<!DOCTYPE html>
<html>
<head>
  <title>HTML Formatting Elements Examples</title>
</head>

<body>
  <!-- All HTML formatting tags described earlier
  are used below. -->
  <h2>Example: <u>ins and del elements </u></h2>

  <del><h3> Old Heading </h3></del>
  <ins><h4> New Heading </h4></ins>

  <p> This paragraph needs some changes.
    <ins datetime="1999-01-05T09:15:30-05:00"
      title="New info inserted by TAP.">
      This is a new sentence. </ins>
      Here is some more text. </p>

  <p>"You're late! <del>I apologize for the delay.</del>
    <ins>A wizard is never late ..." </ins></p>

  <p><s>There will be a few tickets available at the
    box office tonight.</s> SOLD OUT!</p>

</body>
</html>
```



Tag	Usage	Description
<code><kbd></code>	Keyboard input text	Represents a span of inline text <i>denoting textual user input from a keyboard, voice input</i> , or any other text entry device:
<code><samp></code>	Sample output of a computer program	Used to enclose inline text which represents sample (or quoted) output from a computer program.
<code><code></code>	To show the computer code	Displays its contents styled in a fashion intended to indicate that the text is a <i>short fragment of computer code</i>
<code><var></code>	Display the text as a variable	<ul style="list-style-type: none">➤ Represents the name of a variable in a mathematical expression or a programming context.➤ It's typically presented using an italicized version of the current typeface



Example: Computer Output Tags

I was trying to boot my computer, but I got this hilarious message:

Keyboard not found
Press F1 to continue

<samp>

Please press Ctrl + Shift + R to re-render an MDN page.

Save the document by pressing Ctrl + S

<kbd>

The `push()` and `pop()` methods are used add and remove one or more elements to the end of an array respectively and returns the new length of the array.

<code>

Programming code example: `x = 5; y = 6; z = x + y;`

The volume of a box is $l \times w \times h$, where l represents the length, w the width and h the height of the box.

<var>

```
<!DOCTYPE html>
<html>
<head>
  <title>HTML Formatting Elements Examples</title>
</head>
<body>
  <!-- All HTML formatting tags described earlier are used below. -->
  <h3>Example: <u>Computer Output Tags </u></h3>

  <p>I was trying to boot my computer, but I got
  this hilarious message:</p>
  <p><samp>Keyboard not found <br>
    Press F1 to continue</samp></p>
  <p>Please press <kbd>Ctrl</kbd> + <kbd>Shift</kbd> +
  <kbd>R</kbd> to re-render an MDN page.</p>
  <p>Save the document by pressing <kbd>Ctrl + S</kbd></p>

  <p>The <code>push()</code> and <code>pop()</code>
  methods are used add and remove one or more elements
  to the end of an array respectively and returns the
  new length of the array.</p>
  <p>Programming code example:
    <code> x = 5; y = 6; z = x + y; </code></p>

  <p>The volume of a box is <var>l</var> × <var>w</var> × <var>h</var>,
  where <var>l</var> represents the length, <var>w</var> the width and
  <var>h</var> the height of the box.</p>
</body>
</html>
```

Tag	Usage
<code><abbr></code>	<ul style="list-style-type: none">➤ Defines an abbreviation or acronym➤ The optional title attribute can provide an expansion or description for the abbreviation
<code><blockquote></code>	<ul style="list-style-type: none">➤ Defines a section that is quoted from another source.➤ Usually rendered visually by indentation➤ A URL for the source of the quotation may be given using the cite attribute
<code><q></code>	<ul style="list-style-type: none">➤ Defines a short inline quotation that don't require paragraph breaks.➤ Most modern browsers implement this by surrounding the text in quotation marks➤ The cite attribute is intended to point to information explaining the context or the reference for the quote.

Tag	Usage
<code><cite></code>	<ul style="list-style-type: none">➤ Used to describe a reference to a cited creative work, and must include the title of that work➤ Examples: A book, a research paper, an essay, a poem, a musical score, a song, a film/film script, a television show etc.
<code><address></code>	<ul style="list-style-type: none">➤ Defines contact information for the author/owner/a person of a document or organization
<code><bdi></code>	<ul style="list-style-type: none">➤ Tells the browser's bidirectional algorithm to treat the text it contains in isolation from its surrounding text.➤ It's particularly useful when a website dynamically inserts some text and doesn't know the directionality of the text being inserted
<code><bdo></code>	<ul style="list-style-type: none">➤ Overrides the current directionality of text, so that the text within is rendered in a different direction.➤ The dir attribute specify the direction in which text should be rendered

Example of citation tags

Example of citation and definition tags

Browsers usually indent blockquote elements.

A Great Motivational Quote :

<blockquote>

At the end of the day, you are solely responsible for your success and your failure. And the sooner you realize that, you accept that, and integrate that into your work ethic, you will start being successful. As long as you blame others for the reason you aren't where you want to be, you will always be a failure.

Erin Cummings

<cite>

Sean Stephenson said "You'll always have an ego. The moment you forget that, it will start running the show" and I tend to agree.

<abbr>

<q>

The WHO was founded in 1948.

You can use CSS to style your HTML.

How to !wonk ydaerla uoy kniht I ?noitcerid txet edirrevo

<bdo>

The bdi element

- User hrefs: 60 points
- User jdoe: 80 points
- User إيان: 90 points

<bdi>

You can contact us at:
TechOnTheNet.com
123 Somewhere St.
City, State

<address>

Cont'd

Code of the
output on
the previous
slide

```
<!DOCTYPE html>
<html><body>
<h3>Example of citation and definition tags</h3>
<p>Browsers usually indent blockquote elements.</p>
<p>A Great Motivational Quote :</p>
<blockquote cite="https://www.brainyquote.com/authors/erin_cummings">
  At the end of the day, you are solely responsible for your success
  and your failure. And the sooner you realize that, you accept that,
  and integrate that into your work ethic, you will start being successful.
  As long as you blame others for the reason you aren't where you want to be,
  you will always be a failure. <br>
<cite>Erin Cummings</cite> </blockquote>

<p><cite>Sean Stephenson</cite> said <q cite="http://seanstephenson.com/">
  You'll always have an ego. The moment you forget that, it will start
  running the show</q> and I tend to agree.</p>
<p>The <abbr title="World Health Organization">WHO</abbr> was founded in 1948.
<br>
You can use <abbr title="Cascading Style Sheets">CSS</abbr> to style your
<abbr title="HyperText Markup Language">HTML</abbr>.</p>
<p>How to <bdo dir="rtl">override text direction? I think you already know!</bdo></p>
<h4>The bdi element</h4>
<ul>
  <li>User <bdi>hrefs</bdi>: 60 points</li>
  <li>User <bdi>jdoe</bdi>: 80 points</li>
  <li>User <bdi>إيان</bdi>: 90 points</li>
</ul>
<address>You can contact us at:<br>
  TechOnTheNet.com<br>123 Somewhere St.<br>City, State</address>
</body> </html>
```

▪ Other text elements

- `<dfn>` - indicate the term being defined within the context of a definition phrase
- `<data>` - links a given piece of content with a machine-readable translation
- `<time>` - represents a specific period in time. It may include the datetime attribute to translate dates into machine-readable format,
- `<wbr>` - represents a word break opportunity—a position within text where the browser may optionally break a line
- `<ruby>` - represents small annotations that are rendered *above, below, or next* to base text, usually used for showing the pronunciation of East Asian characters

3. HTML Entity and Comment

HTML Entity

- A piece of text ("string") that begins with an **ampersand (&)** and ends with a **semicolon (;)**
- Frequently used to display
 - *Reserved characters* (which would otherwise be interpreted as HTML code)
 - *Invisible characters* (like non-breaking spaces).
 - Characters that are difficult to type with a standard keyboard.

- **Syntax:**

&entity_name; OR **&#entity_number;**

- *An **entity name** is easy to remember but browsers may not support all entity names. Therefore, the support for entity numbers is good.*

HTML reserved character Entities

Character	Description	Entity Name	Entity Number
	non-breaking space	 	
<	less than	<	<
>	greater than	>	>
&	ampersand	&	&
"	double quotation mark	"	"
'	single quotation mark (apostrophe)	'	'
«	Left-pointing double angle quotation mark	«	«
»	Right-pointing double angle quotation mark	»	»

Currency, Copyright and Trade symbols

Character	Entity Name	Entity Number	Description
¢	¢	¢	Cent
£	£	£	Pound
¤	¤	¤	General currency
€	€	€	Euro
¢	¢	¢	Cent
©	©	©	Copyright
®	®	®	Registered
™	™	™	Trademark

For the complete character entity reference check out

- <https://html.spec.whatwg.org/multipage/named-characters.html#named-character-references>
- <https://www.tutorialrepublic.com/html-reference/html-character-entities.php>

HTML Comment

- The syntax to add comments to your HTML source is as follow

```
<!-- Write your comments  
      goes here -->
```

- Notice that there is an **exclamation point (!)** in the start tag, but not in the end tag.
- Used to hide content - comments are not displayed by the browser, but they can help document your HTML source code.
- With comments you can place notifications and reminders in your HTML code and improve code readability.

Example: Comment

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

<p>This is a paragraph.</p>
<!--
<p>Look at this cool image:</p>

-->
<p>This is a paragraph too.</p>

</body>
</html>
```

This is a paragraph.

This is a paragraph too.

Summary



- Document structure elements
- Text markup elements
- HTML Entity and Comment

- Root element
- Head elements
 - title, meta, link, base
- Body element

- *Heading elements*
- *Paragraph and line break elements*
- *List elements*
- *Text formatting*
- *Demarcating elements*
- *Citation, Quotation markups*

- Reserved character entity
- Special character entity
- Comment

Practical Exercises



Exercise 1:

- Apply HTML text formatting without the use of CSS, formatting must include both **physical** and **logical** tags. E.g. check the screenshot below

The screenshot shows a web browser window with the title "Internet Programming Lab I". The address bar shows the file path "D:/Educational/BSC/IP/IP1/2014EC...". The main content area displays the text "Addis Ababa Science and Technology University" followed by a paragraph in Amharic and English. The text is formatted with various HTML tags, and callouts point to specific examples:

- Deleted text:** A red box highlights the text "Addis Ababa Science and Technology University" which has been removed from the document.
- Underlined text:** A red box highlights the text "Addis Ababa Science and Technology University (Amharic: አዲስ አበባ ሳይንስና ቴክኖሎጂ ዩኒቨርሲቲ)" which is underlined.
- Abbreviated text with it's extended version:** A red box highlights the text "ASTU AASTU" which is abbreviated and followed by its extended version "Addis Ababa Science and Technology University".
- Inserted and made Italic:** A red box highlights the text "ASTU AASTU" which is inserted and made italic.
- Big text:** A red box highlights the text "ASTU AASTU" which is made big.
- Powerful word:** A red box highlights the text "ASTU AASTU" which is made powerful.
- Superscript:** A red box highlights the text "ASTU AASTU" which is made superscript.
- Emphasized text:** A red box highlights the text "ASTU AASTU" which is emphasized.
- Highlighted text:** A red box highlights the text "ASTU AASTU" which is highlighted.

Exercise 2:

Project Update 😊

We are currently in **Pilot Testing phase** where

and test in progress, project to be launched in August.

The project is on schedule and will be tested and finished by late August.

Late August.

Status

1. Energy Work Done
2. Facility Work In Progress
3. Employee Hired for the Project.

The pre
element preserves spaces,
line-breaks, tabs...

Staff Meeting Update

The next staff meeting is to be held. All **necessary work** is in progress!

The water $\text{H}_2\text{O} + \text{CO}_2$

reactor is working in full capacity.

The output is energy formulae $E = mc^2$

Sincerely, Management

Reading Resources/Materials

Chapter 1,2,3:

- ✓ Jon Duckett; HTML and CSS Design and Build Websites, 2011 John Wiley & Sons, Inc., Indianapolis, Indiana

Chapter 2:

- ✓ Paul Deitel, Harvey Deitel, Abbey Deitel (2014). Internet & World Wide Web How To Program (5th Edition), Pearson Education.

Chapter 3,4:

- ✓ Musciano, C., Kennedy, B. (2006). HTML and XHTML: The Definitive Guide, 6th edition. O'Reilly Media, Inc.

Thank You
For Your Attention!!

Any Questions

