

# HTML

## Chapter 4

Source: CSE 190 M (Web Programming) lecture notes,  
[http://www.cs.washington.edu/education/courses/cse190m/08sp/lectures/slides/lecture02-basic\\_xhtml.html](http://www.cs.washington.edu/education/courses/cse190m/08sp/lectures/slides/lecture02-basic_xhtml.html)

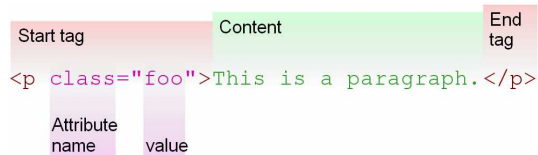
# HTML

- Stands for "HyperText Markup Language"
- Describes the *content* and *structure* of information on a web page
  - Not the same as the *presentation* (appearance on screen)

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# Tags

- HTML surrounds text content with opening and closing **tags**



```
<p class="foo">This is a paragraph.</p>
```

- Can specify additional properties via **attributes** (more on this later)

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# Basic HTML Template

```
<html>
  <head>
    <title>page title goes here</title>
  </head>
  <body>
    page content goes here
  </body>
</html>
```

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# Headings: <h1>, <h2>, ...

- Six levels of headings to separate page into different sections: <h1>, <h2>, ..., <h6>
- Example:

```
<h1>4 Marking Up with HTML</h1>
<h2>4.2 Structuring Documents</h2>
<h3>4.2.1 Headings in HTML</h3>
```

## 4 Marking Up with HTML

### 4.2 Structuring Documents

#### 4.2.1 Headings in HTML

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# Paragraph: <p>

- Start a new paragraph of text
- Example:

```
<p>
  We have designed our civilization based on science
  and technology and at the same time arranged things
  so that almost no one understands anything at all
  about science and technology. This is a clear
  prescription for disaster.
</p>
```

We have designed our civilization based on science and technology and at the same time arranged things so that almost no one understands anything at all about science and technology. This is a clear prescription for disaster.

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## Whitespace

- Most whitespace (e.g., spaces, newlines, tabs) is insignificant
- Browser turns sequence of whitespace characters into a single space before processing HTML
- Example:

```
<p>
  I      drink      your
        MILKSHAKE!
  I      DRINK
  IT     UP!
</p>
```

I drink your MILKSHAKE! I DRINK IT UP!

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## Unnumbered List: <ul>

- <ul> and </ul> surround the items of a list, each of which is enclosed by list item tags, <li> and </li>
- Example:

```
<p>Things to do today:</p>
<ul>
  <li>Run a marathon</li>
  <li>Climb Mt. Everest</li>
  <li>Save the world</li>
</ul>
```

Things to do today:

- Run a marathon
- Climb Mt. Everest
- Save the world

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## Ordered List: <ol>

- Ordered lists are just like unnumbered lists, replacing the bullets with numbers
- Example:

```
<p>Things to do today:</p>
<ol>
  <li>Run a marathon</li>
  <li>Climb Mt. Everest</li>
  <li>Save the world</li>
</ol>
```

Things to do today:

1. Run a marathon
2. Climb Mt. Everest
3. Save the world

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## Horizontal Rule: <hr />

- Horizontal line to visually separate sections of a page
- Example:

```
<hr />
Use
<hr /><hr />
Them
<hr />
Sparingly
<hr />
```

Use

Them

Sparingly

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## Line Break: <br />

- Forces a line break
- Example:

```
<p>
  One fish,<br />Two
  fish,<br />Red fish,<br />
  Blue fish
</p>
```

One fish,  
Two fish,  
Red fish,  
Blue fish

- Notice that even though "Two" and "fish" are on separate lines in HTML, they are on the same line in the displayed web page. Why?

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## Phrase Elements: <em>, <strong>

- Emphasized text (usually italicized): <em>
- Strongly emphasized text (usually bold): <strong>
- Example:

```
<p>
  HTML is <em>really</em>,
  <strong>REALLY</strong> fun!
</p>
```

HTML is *really*, **REALLY** fun!

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## Link: <a>

- Link, or "anchor", to another page
- Requires a **hyperlink reference** (use `href` attribute) to specify the destination URL
- Example:

```
<p>
What would you do for a
<a href="http://www.icecreamusa.com/klondike/">
Klondike Bar</a>?
</p>
```

What would you do for a [Klondike Bar](http://www.icecreamusa.com/klondike/)?

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## Pathnames

- **absolute path**: complete URL or a path starting from the root directory
- Link references need not be complete URLs.
  - Can be *relative* to the directory containing the file that has the reference.
- **relative path**: path that is relative to some directory

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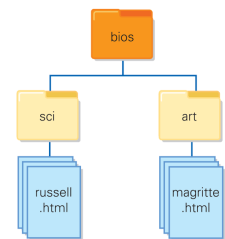
## Relative Path From A To B

- Figure out how to get to the directory containing **B** from the directory containing **A**.
- To go down a level, refer to the subdirectory's name.
- To go up a level, refer to the parent directory as two dots (`..`)\*
- Use slashes after each directory listed.

\*One dot (`.`) refers to the current directory.

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## Example



- Referencing `magritte.html` from `russell.html`:  
Check out the biography of  
`<a href=" ../art/magritte.html">Rene Magritte</a>`.  
↑  
**parent directory of sci**

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## Use Relative Paths Where Possible

- Relative paths make it easy to move whole websites.
- For example, if my website moved from `foo.com` to `bar.com`, then the following would cease to work:\*  
`<a href="http://www.foo.com/page2.html">Next page</a>`
- The right way:  
`<a href="page2.html">Next page</a>`

\*This example assumes the page containing the link is in the web site's root directory.

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## Image: <img />

- Inserts a graphical image
- Requires the `src` attribute to specify the location of the image file
- Example:



```



```

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## Image File Formats

- Most common image file formats\* for web pages
  - .gif
    - Graphics Interchange Format
    - Pronunciation: jif (like the peanut butter)
  - .jpg, .jpeg
    - Joint Photographic Experts Group is the name of the committee that created the standard
    - Pronunciation: JAY-peg
  - .png
    - Portable Network Graphics
    - Pronunciation: ping

\*Image file formats differ on how they store an image (pixels vs. lines) and how they compress the image (lossy vs. lossless). For more information, see [http://en.wikipedia.org/wiki/image\\_file\\_formats](http://en.wikipedia.org/wiki/image_file_formats)

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## Exercise: What Is Displayed?

```
<p>
Solve for x and y where 2<x<8 and 0<y (i.e. y is a
positive number) and x*y=42. Is y>x? Show work.
</p>
```

... is displayed in Internet Explorer as:

Solve for x and y where 2x? Show work.

- What happened?
  - IE interpreted <x and everything up to > as a tag
    - Solve for x and y where 2<x<8 and 0<y (i.e. y is a positive number) and x\*y=42. Is y>x? Show work.

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## Malformed HTML

```
<p>
Solve for x and y where 2<x<8 and 0<y (i.e. y is a
positive number) and x*y=42. Is y>x? Show work.
</p>
```

... is displayed in Internet Explorer as:

Solve for x and y where 2x? Show work.

... is displayed in Firefox as:

Solve for x and y where 2<8 and 0x? Show work.

- Why don't they display the same thing?
  - Browsers handle malformed HTML in their own way.

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## Malformed HTML

```
<p>
Solve for x and y where 2<x<8 and 0<y (i.e. y is a
positive number) and x*y=42. Is y>x? Show work.
</p>
```

- How do we print what we originally intended?
  - **escape sequence**: a sequence of characters (prefixed by a special symbol, the *escape character*) that takes on an alternative interpretation (i.e., *escapes* normal interpretation)
  - In HTML, the escape character is the ampersand (&). Each escape sequence is terminated by a semi-colon (;).
  - Example:
 

|       |             |   |
|-------|-------------|---|
| &lt;  | displays as | < |
| &amp; | displays as | & |

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## Escape Sequence

Table 4.2. Special Symbols for Western European Language Accent Marks

| Symbol | HTML     | Symbol | HTML     | Symbol | HTML     | Symbol | HTML     |
|--------|----------|--------|----------|--------|----------|--------|----------|
| à      | &agrave; | á      | &aacute; | â      | &acirc;  | ã      | &atilde; |
| ä      | &auml;   | å      | &aring;  | ç      | &ccedil; | è      | &egrave; |
| é      | &eacute; | ê      | &ecirc;  | ë      | &euml;   | ì      | &igrave; |
| í      | &iacute; | î      | &icirc;  | ï      | &iuml;   | ñ      | &ntilde; |
| ò      | &ograve; | ó      | &oacute; | ô      | &ocirc;  | õ      | &otilde; |
| ö      | &ouml;   | ø      | &oslash; | ù      | &ugrave; | ú      | &uacute; |
| û      | &ucirc;  | ü      | &uuml;   |        |          |        |          |

Note: For an accent mark on an uppercase letter, make the letter following the & uppercase.

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## Escape Sequence

```
<p>
Solve for x and y where 2&lt;x&lt;8 and 0&lt;y (i.e.
y is a positive number) and x*y=42. Is y&gt;x? Show
work.
</p>
```

Solve for x and y where 2<x<8 and 0<y (i.e. y is a positive number) and x\*y=42. Is y>x? Show work.

- List of escape sequences
  - <http://www.escapecodes.info/>

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