

# CS1315: Introduction to Media Computation

HTML:  
What it is, how to generate it

## Hypertext Markup Language (HTML)

- HTML is a kind of SGML (Standardized general markup language)
  - **SGML was invented by IBM and others as a way of defining parts of a document COMPLETELY APART FROM HOW THE DOCUMENT WAS FORMATTED.**
- HTML is a simpler form of SGML, but with a similar goal.
  - **The original idea of HTML was to define the parts of the document and their relation to one another *without* defining what it was supposed to look like.**
  - **The look of the document would be decided by the client (browser) and its limitations.**
    - For example, a document would look different on a PDA than on your screen or on your cellphone.
    - Or in IE vs. Netscape vs. Opera vs....

## Evolution of HTML

- But with the explosive growth of the Web, HTML has become much more.
  - **Now, people want to control the look-and-feel of the page down to the pixels and fonts.**
  - **Plus, we want to grab information more easily out of Web pages.**
    - Leading to XML, the eXtensible Markup Language.
    - XML allows for new kinds of markup languages (that, say, explicitly identify prices or stock ticker codes) for business purposes.
- We're going to be focusing on a version of HTML *based* on XML, called XHTML

## Markup means adding tags

- A *markup language* adds *tags* to regular text to identify its parts.
- A tag in HTML is enclosed by <angle brackets>.
- Most tags have a starting tag and an ending tag.
  - **A paragraph is identified by a <p> at its start and a </p> at its end.**
  - **A heading is identified by a <h1> at its start and a </h1> at its end.**



## Is this a Web page?

- Yes!
- The only difference between this page and one on the Web is that the one on the Web (a) has been uploaded to a Web server and (b) placed in a directory that the Web server can access.
  - See the **Networking chapter**
- Easiest way to try it out as a Web page: Attach this file to your CoWeb page.
  - Or use **FTP to transfer it to a Web space you have access to.**

## What if you forget the DOCTYPE? Or an ending tag?

- It'll probably work.
- Browsers have developed to deal with all kinds of HTML which does *not* follow the rules.
  - **But if the browser has to guess, then it may guess wrong**
    - That is, not what you expected or meant.
  - **Which is when your document may look different on different browsers.**

## Other things in there

- We're simplifying these tags a bit.
- More can go in the <head>
  - **Javascript (for interaction: we will discuss this later)**
  - **CSS (for formatting: we won't discuss this)**
  - **References to other documents (like cascading style sheets and scripts)**
- The <body> tag can also set colors.
  - **<body bgcolor="#FFFFFF" text="#000000" link="#3300CC" alink="#CC0033" vlink="#550088">**
  - **These are actually setting RGB values**

## A tiny tutorial on hexadecimal

- You know decimal numbers (base 10)
  - **0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16**
- You've heard a little about binary (base 2)
  - **0000,0001,0010,0011,0100,0101...**
- Hexadecimal is base 16
  - **0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F,10 (16 base 10)**

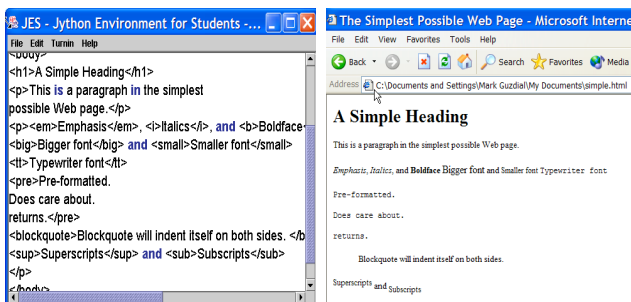
## Hexadecimal colors in HTML

- #FF0000 is Red
  - 255 for red (FF), 0 for green, 0 for blue
- #0000FF is Blue
  - 0 for red, 0 for green, 255 for blue
- #000000 is black
  - 0 for red, 0 for green, 0 for blue
- #FFFFFF is white
  - 255 for red, 255 for green, 255 for blue

## Emphasizing your text

- There are six levels of headings defined in HTML.
  - <h1>...<h6>
  - Lower numbers are larger, more prominent.
- Styles
  - <em>Emphasis</em> <strong>Strong emphasis</strong>
    - <i>Italics</i>, and <b>Boldface</b>
  - <big>Bigger font</big> and <small>Smaller font</small>
  - <tt>Typewriter font</tt>
  - <pre>Pre-formatted</pre>
  - <code>Code such as Python</code>
  - <blockquote>Blockquote</blockquote>
  - <sup>Superscripts</sup> and <sub>Subscripts</sub>

## Examples of styles



## Finer control: <font>

- Can control type face, color, or size

```
<body>  
<h1>A Simple Heading</h1>
```

### A Simple Heading

This is in helvetica  
Happy Saint Patrick's Day!  
This is a bit bigger

```
<p><font face="Helvetica">  
    This is in helvetica  
</font></p>
```

```
<p><font color="green">  
    Happy Saint Patrick's Day!  
</font></p>
```

Can also use  
hexadecimal RGB  
specification here.

```
<p><font size="+2">  
    This is a bit bigger  
</font></p>
```

```
</body>
```

## Breaking a line

- Line breaks are part of formatting, not content, so they were added grudgingly to HTML.
- Line breaks don't have a closing tag, so include the ending "/" inside.
  - `<br />`

## Adding a break

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01  
Transition//EN"  
"http://www.w3.org/TR/html4/loose.dtd">  
<html>  
  
  <head>  
    <title>The Simplest Possible Web Page</title>  
  </head>  
  
  <body>  
  
    <h1>A Simple Heading</h1>  
  
    <p>This is a paragraph in the simplest<br />  
    possible Web page.</p>  
  
  </body>  
  
</html>
```

### A Simple Heading

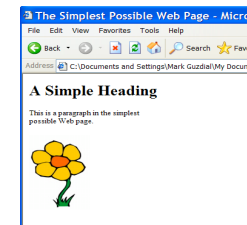
This is a paragraph in the simplest possible Web page.

## Adding an image

- Like break, it's a standalone tag.
  - ``
- What goes inside the quotes is the path to the image.
  - **If it's in the same directory, don't need to specify the path.**
  - **If it's in a subdirectory, you need to specify the subdirectory and the base name.**
  - **You can walk a directory by going up to a parent directory with ".."**
  - **You can also provide a complete URL to an image anywhere on the Web.**

## An example image tag use

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01  
Transition//EN"  
"http://www.w3.org/TR/html4/loose.dtd">  
<html>  
  
  <head>  
    <title>The Simplest Possible Web Page</title>  
  </head>  
  
  <body>  
  
    <h1>A Simple Heading</h1>  
  
    <p>This is a paragraph in the simplest<br />  
    possible Web page.</p>  
  
      
  
  </body>  
  
</html>
```

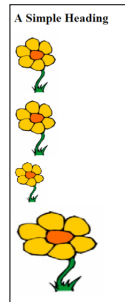


## Parameters to image tags

- You can specify width and height in image tags.

```
<h1>A Simple Heading</h1>

<br />
 <br />
 <br />
 <br />
</body>
</html>
```



## Alt in images

- Some browsers (like audio or Braille) can't show images.
- You can include alternative text to be displayed instead of the image in those cases.
  - ``

## Creating links

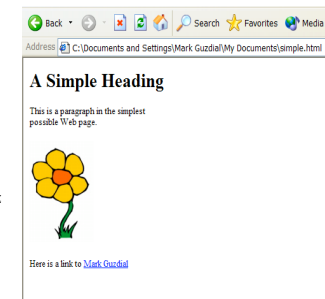
- Links have two main parts to them:
  - A **destination URL**.
  - Something to be clicked on to go to the destination.**
- The link tag is "a" for "anchor"

```
<a href="http://www.cc.gatech.edu/fac/Colin.Potts/">
Colin Potts</a>
```

## What it looks like

```
<body>
<h1>A Simple Heading</h1>
<p>This is a paragraph in the simplest
<br />
possible Web page.</p>

<p>Here is a link to
<a href =
"http://www.cc.gatech.edu/~mark.guz
dial/">Mark Guzdial</a>
</p>
</body>
```



## Images can be links!

```
<h1>A Simple Heading</h1>
```

```
<p>
```


```
<a href="http://www.cc.gatech.edu/">
```

```

```

```
</a>
```

```
</p>
```

Address  C:\Documents and Settings\Mark Guzdial\My

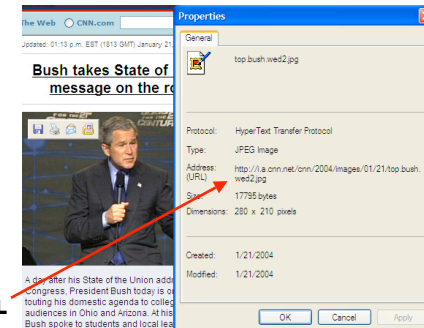
A Simple Heading



## Getting the path to an image

- Depends on platform and browser
- For Windows and IE, right-click on image and choose properties.

There's the URL



## Lists

- Ordered lists (numbered)

```
<ol>
```

```
<li>First item</li>
```

```
<li>Next item</li>
```

```
</ol>
```

- Unordered lists (bulleted)

```
<ul>
```

```
<li>First item</li>
```

```
<li>Second item</li>
```

```
</ul>
```

## Tables

```
<table border="5">
```

```
<tr>
```

```
<td>Column 1</td>
```

```
<td>Column 2</td>
```

```
</tr>
```

```
<tr>
```

```
<td>Element in column 1</td>
```

```
<td>Element in column 2</td>
```

```
</tr>
```

```
</table>
```

### A Simple Heading

|                     |                     |
|---------------------|---------------------|
| Column 1            | Column 2            |
| Element in column 1 | Element in column 2 |

## There is *lots* more to HTML

- Frames
  - Can have subwindows within a window with different HTML content.
  - Anchors can have *target* frames.
- Divisions <div>
- Horizontal rules <hr />
  - With different sizes, colors, shading, etc.
- Applets, Javascript, CSS, etc.

## Best way to learn HTML: Look at pages!

- View source *all* the time, especially when there's something new and cool that you've never seen before.
- There are lots of good on-line tutorials.
- There's even a few good books.

## HTML is *not* a programming language

- Using HTML is called "coding" and it is about getting your codes right.
- But it's not about coding programs.
- HTML has no
  - Loops
  - If's
  - Variables
  - Data types
  - Ability to read and write files
- Bottom line: HTML does not communicate process!