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HTML

# Hypertext Markup Language

Charles Severance

[www.dr-chuck.com](http://www.dr-chuck.com)

# HTML

- A way of marking up text to indicate that some text is different than other text
- We “tag” portions of the text to communicate meaning

`<p>`This is a paragraph with a  
`<strong>`loud`</strong>` word in it.`</p>`  
`<p>`And this is yet another paragraph.`</p>`



- Home
- Announcements
- Resources
- Podcasts
- Polls
- Chat Room
- Email Archive**
- Calendar
- Instructor IM
- Software
- Site Info
- SI 539 F08
- SI 539 W08

## Email Archive

[Options](#) [Permissions](#)

You are authorized to send email from: csev@umich.edu

Email sent to the following addresses will be archived and sent to participants:

[si539@ctools.umich.edu](mailto:si539@ctools.umich.edu)

0ae836b9-7fc9-4060-006f-27b2066ac545@ctools.umich.edu

Viewing 1 - 20 of 446 items

|< < show 20 items... > >|

<u>From</u>	<u>Subject</u>	<u>Date Received</u> ▾
Anthony Whyte <arwhyte@umich.edu>	Google Chrome comic book	Sep 2, 2008 10:58 AM EDT

<li>

<a href="mailto:si539@ctools.umich.edu"  
title="Send mail to si539@ctools.umich.edu">

si539@ctools.umich.edu

</a>

</li>

View Source

# Evolution of HTML

# The Web is a Young Technology

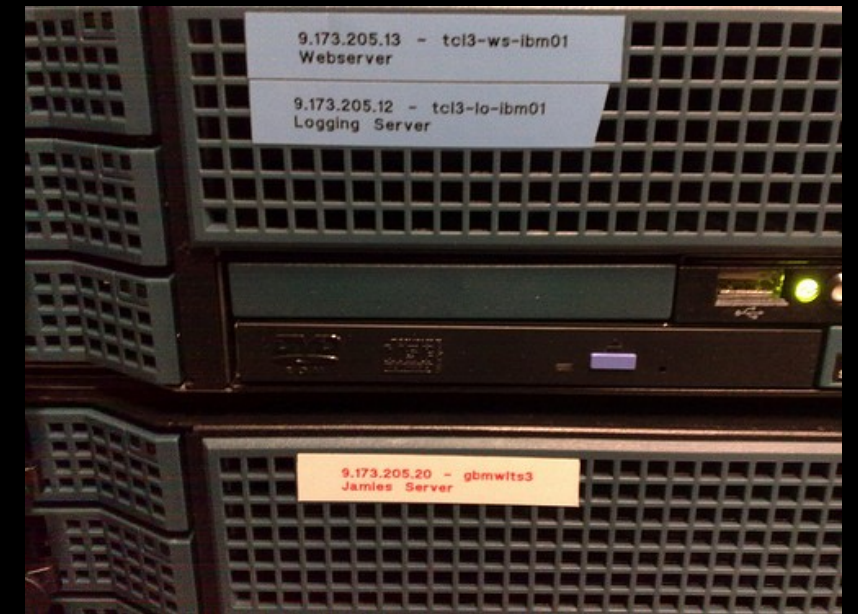
- Invented in early 1990's
- Popular in 1994
- Robert Cailliau -  
coFounder of the World-  
Wide-Web



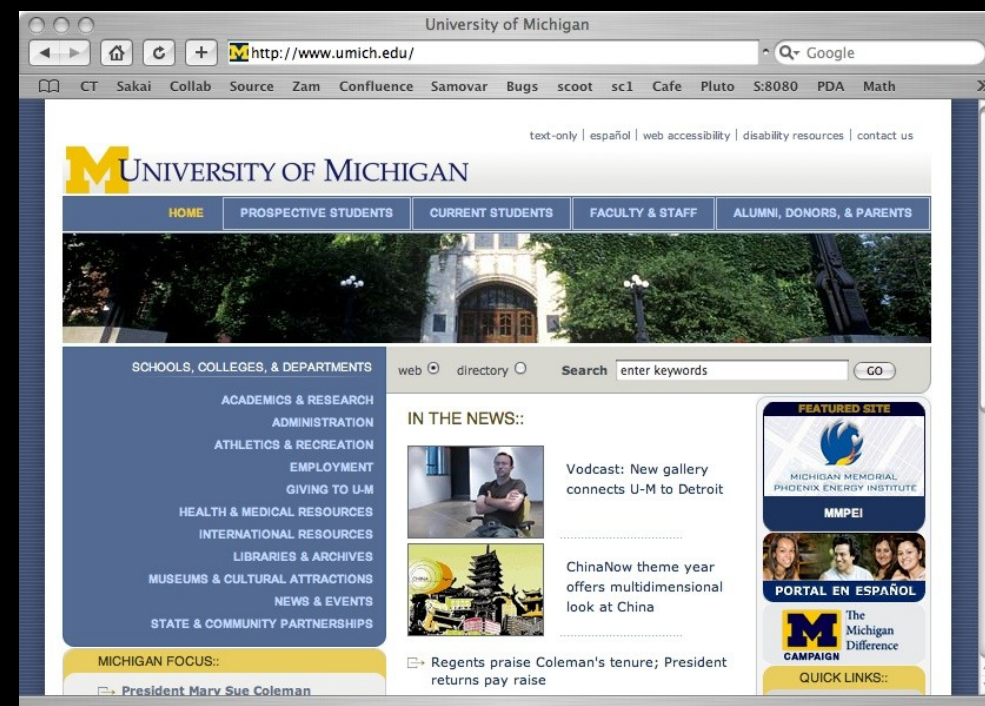
<http://www.dr-chuck.com/media.php?id=70>

[http://en.wikipedia.org/wiki/Robert\\_Cailliau](http://en.wikipedia.org/wiki/Robert_Cailliau)

# The big picture...



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "  
http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en">  
<head>  
<title>University of Michigan</title>  
....
```



A web server produces HTML which is handed to a browser which needs to lay it out in a blink of an eye and have it pixel perfect as good as a print brochure.

(Screenshot) Source: <http://www.umich.edu>

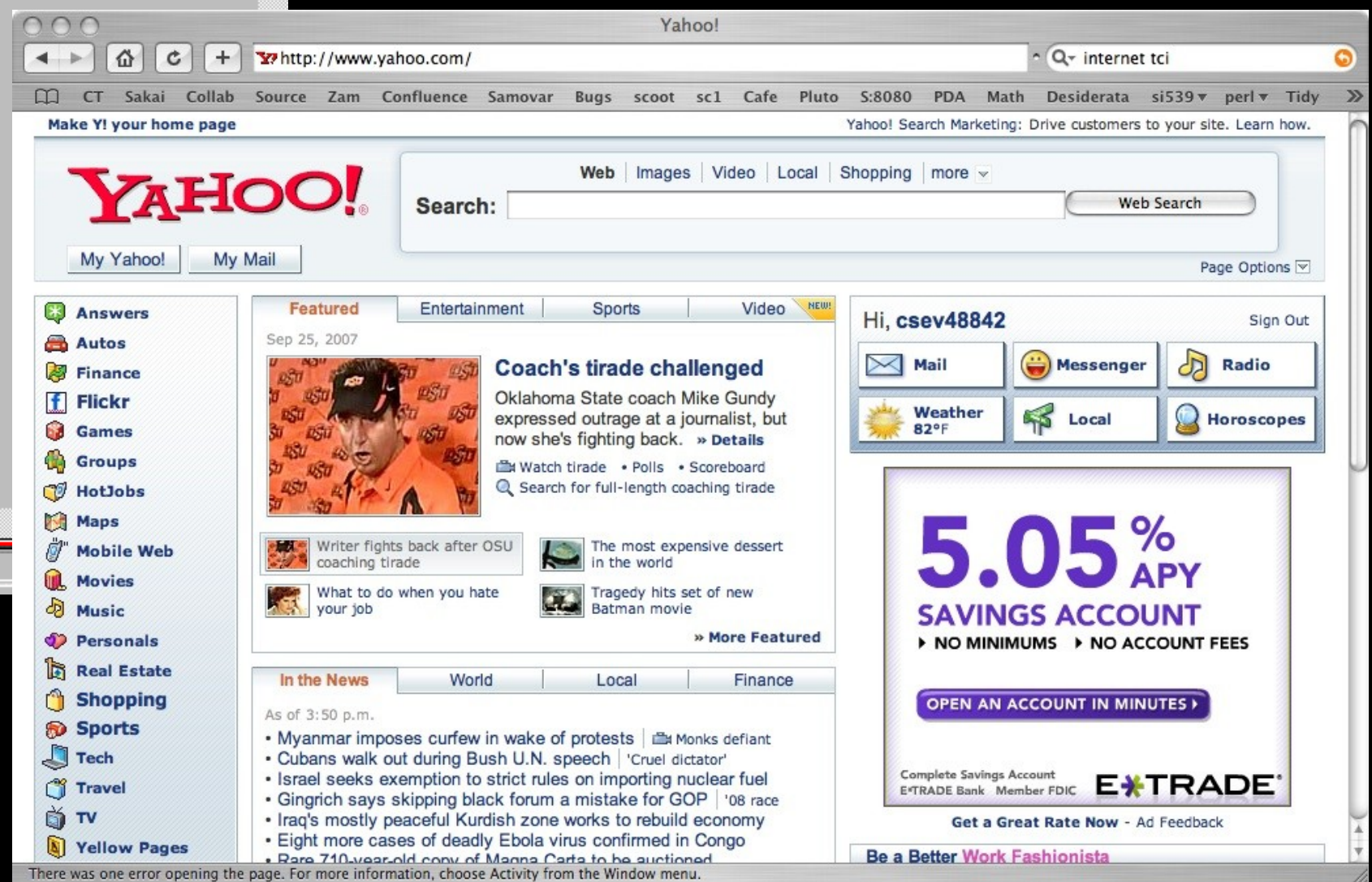
(Server) CC: BY Ketmonkey (flickr) <http://creativecommons.org/licenses/by-nd/2.0/deed.en>



HTML has evolved a \*lot\* over the years - as computers and networks have gotten faster.

1995

2007



Source: [www.yahoo.com](http://www.yahoo.com)



# History of HTML / CSS

- HTML 1.0 - 1993 - The Good Old Days - life was simple
- HTML 2.0 - 1995 - Some interesting layout features - abused
- CSS 1 - 1996
- HTML 3.2 - 1997
- HTML 4.0 - 1997 - Layout moving toward CSS
- CSS Level 2 - 1998
- HTML 4.01 - 1999 - What we use today

HTML has evolved a *\*lot\** over the years - as computers and networks have gotten faster.

<http://en.wikipedia.org/wiki/HTML>

# The Good Old Days

```
<h1>Hello World</h1>
```

Hi there.

```
<p>
```

A Paragraph

```
<ul>
```

```
<li>List one
```

```
<li>List 2
```

```
</ul>
```

In the good old days you wrote HTML and browsers displayed it - since we wrote it by hand - and modems were slow - it was never too long and never too complex. The browser was never the rate limiting factor.

Writing HTML was like using a simple, weak word processor. The tags acted as formatting commands to the browser.

# The Ugly Middle Ages

- Web Designers designed to browser capabilities - down to particular minor versions of browsers.
- Extensive testing was needed on lots of browsers
- Designers used tables, nested tables, and chopped up graphics to gain control of the look and feel of web pages to produce a “print-like” experience.
- HTML was UGLY, Hard to develop, and brittle - what looked superb on one browser - often was broken on another browser - even a later release of the same browser.

# The Modern Era

- HTML is clean and simple
- There is no presentation in HTML - font, color, spacing, etc etc
- No use of tables except for tabular data
- CSS controls all layout, and look and feel
- Still a bit challenging - but converging

1990-1994	HTML was simple and pages looked pretty ugly.
1995-1999	HTML became more complex and each browser was different.
2000-2005	Browsers slowly supported CSS to varying levels. HTML was still ugly to support multiple browsers.
2005-2008	New browsers supported CSS. Old browsers were still pretty pervasive but diminishing.
2009+	The last “pre-CSS” browser (IE5) is < 0.1%

[http://www.w3schools.com/browsers/browsers\\_stats.asp](http://www.w3schools.com/browsers/browsers_stats.asp)

# What does this mean for us?

- Don't bother with the intermediate steps - don't make all the mistakes :)
- Either keep it simple - or do it well - simple does work
- If you want a professional site use all of the best practices
  - Presentation in CSS + semantic markup in HTML

HTML

# HTML Tag Basics

Start tag

End tag

`<h1>Hello World</h1>`

Tags “mark up” the HTML document. The tags are read and interpreted by the browser - but not shown.

Attribute

``

A self closing tag does not need a corresponding end tag.

Self-closing tag



# The Basic Outline

```
<!DOCTYPE ... >
```

```
<html>
```

```
  <head>
```

```
    <!-- Describes and sets up the document -->
```

```
  </head>
```

```
  <body>
```

```
    <!-- The document to be displayed -->
```

```
  </body>
```

```
</html>
```

# A Simple but Modern Page

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Learning the Google App Engine</title>
</head>
<body>
<h1>Google App Engine: About</h1>
<p>
Welcome to the site dedicated to learning the Google Application Engine. We hope you find
www.appenginelearn.com useful.
</p>
</body>
</html>
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Learning the Google App Engine</title>
</head>
<body>
<h1>Google App Engine: About</h1>
<p>
Welcome to the site dedicated to
learning the Google Application Engine.
We hope you find www.appenginelearn.com useful.
</p>
</body>
</html>
```

Begin Tag

End Tag

Attribute

Whitespace and end lines do not matter except in attributes.

# Validating HTML

- To validate a web page, you can use the online validator
- Paste, or upload the HTML or use a URL
- <http://validator.w3.org>

**Validation Output: 4 Errors**

✘ **Line 13, Column 7: end tag for "p" omitted, but OMITTAG NO was specified.**

```
</body >
```

You may have neglected to close an element, or perhaps you meant to "self-close" an element, that is, ending it with "/>" instead of ">".

[Valid] Markup Validation of upload://Form Submission - W3C Markup Validator

http://validator.w3.org/check

**W3C** Markup Validation Service  
Check the markup (HTML, XHTML, ...) of Web documents

Jump To: Congratulations · Icons

**This document was successfully checked as XHTML 1.0 Strict!**

**Result:** Passed

**Source:**

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Learning the Google App Engine</title>
</head>
<body>
<h1>Google App Engine: About</h1>
<p>
Welcome to the site dedicated to
learning the Google Application Engine.
We hope you find www.appenginelearn.com useful.

```

**Encoding:** utf-8 (detect automatically)

**Doctype:** XHTML 1.0 Strict (detect automatically)

**Root Element:** html

**Root Namespace:** <http://www.w3.org/1999/xhtml>

This site contains a bunch of stuff including software, television shows, and other miscellaneous material. This also includes a number of activities and sites which I have done with my good friend Richard Wiggins.

**Recent Video:** Dr. Chuck Goes Motocross Racing  
**Funny Video:** Mandy Birthday Project - Remix  
**Updated:** Community Information ToolKit - Building Community Networks

**Quick Links**

**Chuck's TV and Media**  
 Chuck's Talks  
 Chuck's Book  
 Chuck's Columns  
 Resume and Bio  
 Blog (20-Sep 10:01)  
 Chuck's Papers

**Sakai Project**  
 Sakai Planet Blog

**Software Tools**  
 PHP Image software for v300 and Treo-600 SMS  
 ClipBoard-2000 - Distance Education Software  
 Sync-O-Matic 2000 - Distance Education Software  
 Other software Tools

**Projects**  
 Practical Home Networking - A book that Chuck and Rich almost got written. (Version 1, Version 2, Version 3, and Version 4)  
 The Community Information Toolkit - A project to provide public libraries and other organizations a start on using Internet in Commnunity Networking.


**Photo log last update:** September 24 2007 09:21:39 PM  
**Blog last update:** September 20 2007 10:01:30 PM

**Now Playing on Netfact TV**

**Online Lecture: HTML Overview**

**Production date: 1997** This lecture provides a basic overview of HTML and its use. This is a lecture from a fully-online course on the internet and technology. Lecturer: Charles Severance Details: 50 minutes, Real Media 28kbps.

This is a randomly selected show from our library of shows - more shows will be added as they are digitized. You can view the entire collection here.



**W3C® Markup Validation Service**  
 Check the markup (HTML, XHTML) of Web documents

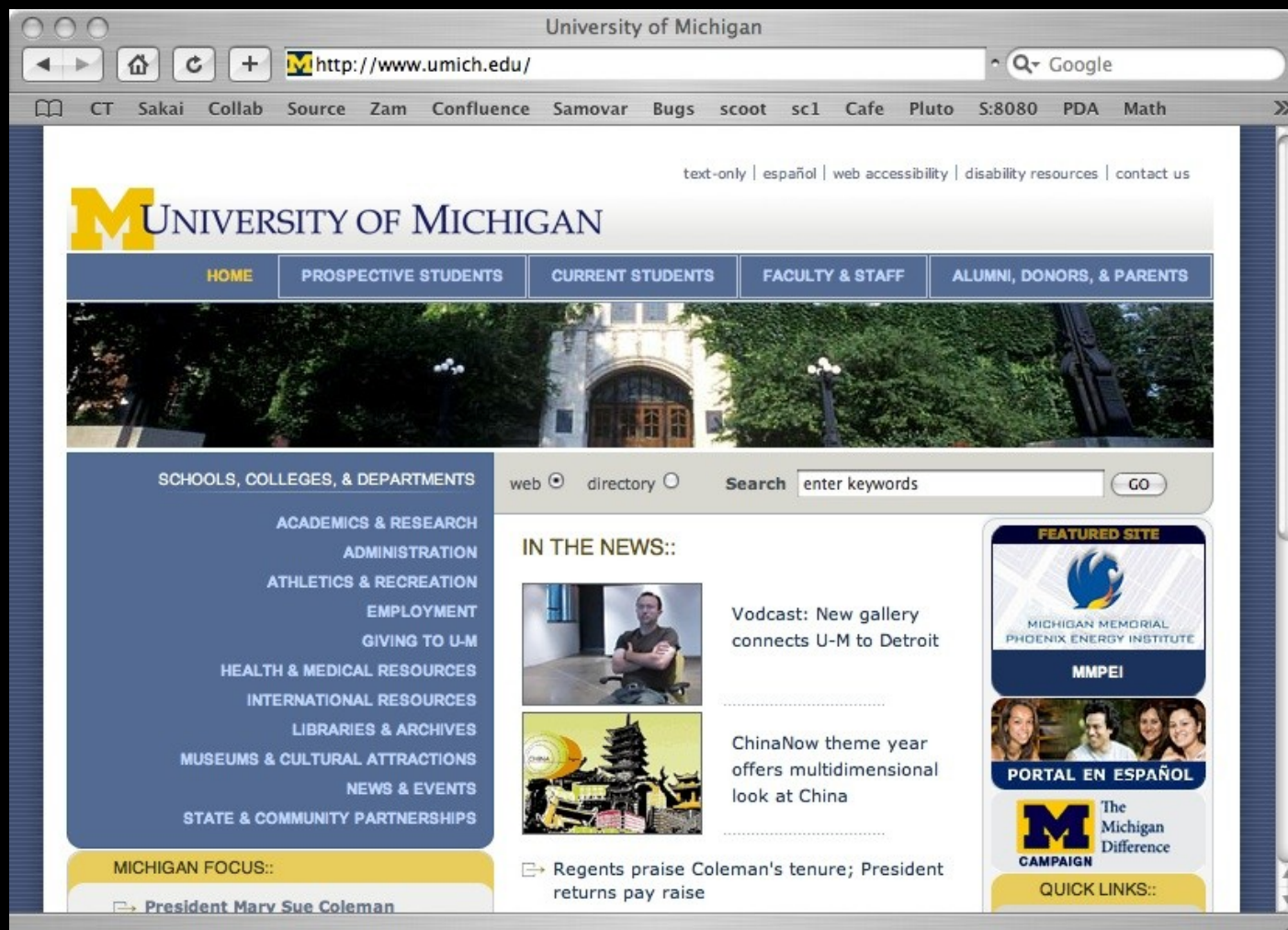
**Jump To:** Important Warnings Validation Output

**This page is not Valid (no Doctype found)!**

<b>Result:</b>	Failed validation, 47 Errors	
<b>Address :</b>	<input type="text" value="http://www.dr-chuck.com/"/>	
<b>Encoding :</b>	utf-8	<input type="text" value="(detect automatically)"/>
<b>Doctype :</b>	(no Doctype found)	<input type="text" value="(detect automatically)"/>
<b>Root Element:</b>	html	

```
<HTML>
<HEAD>
  <META NAME="GENERATOR" CONTENT="Adobe PageMill 3.0 Win">
  <TITLE>dr-chuck.com </TITLE>
</HEAD>
<BODY BGCOLOR="#000000" LINK="#AAAAAA" VLINK="#AAAAAA" ALINK="#AAAAAA">
<table Border=0>
<tr>
...
```

Source: W3C <http://validator.w3.org/check>  
 Source: [www.dr-chuck.com](http://www.dr-chuck.com)



```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "
http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en">
<head>
<title>University of Michigan</title>

```

....

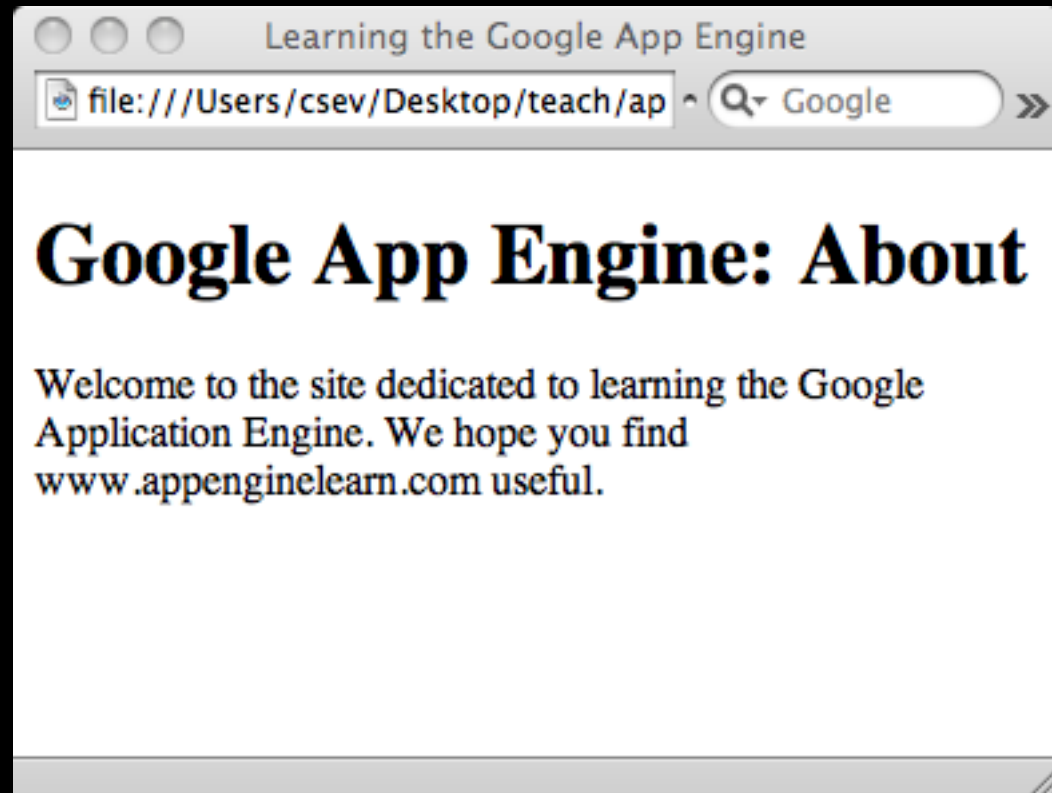
Source: W3C <http://validator.w3.org/check>  
Source: [www.umich.edu](http://www.umich.edu)

```
<h1>Google App Engine: About</h1>
<p>
Welcome to the site
dedicated to learning the
Google Application Engine.
We hope you
find www.appenginelearn.com
useful.
</p>
```



White space and line ends in HTML are ignored - the browser re-flows text based on width and font.

# Browser Text Wrapping / Resize



The browser wraps lines based on its width - resizing the browser dynamically re-wraps lines.



# Symbols

```
<body>
```

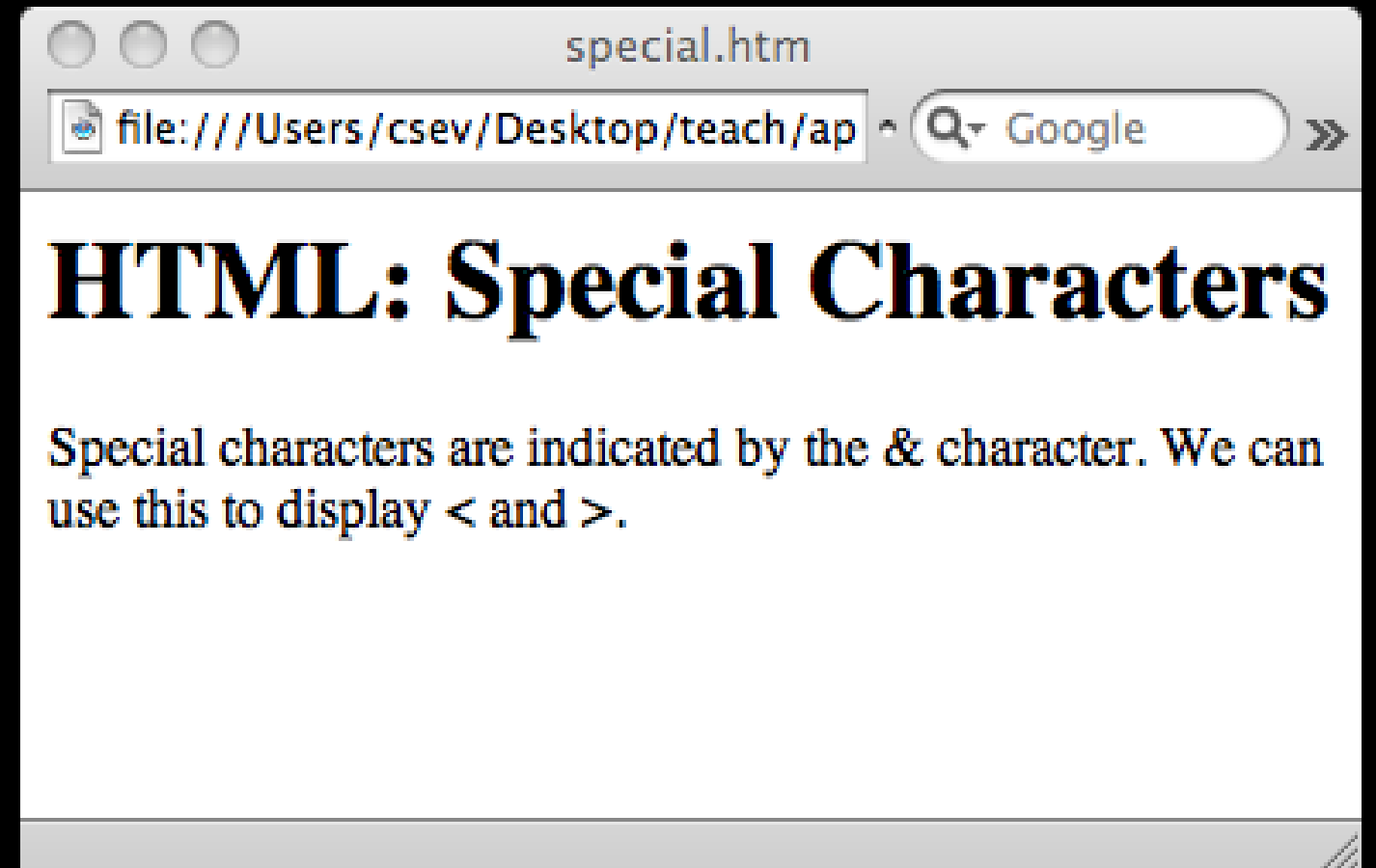
```
<h1>HTML: Special Characters</h1>
```

```
<p>
```

Special characters are indicated by the **&amp;** character. We can use this to display **&lt;** and **&gt;**.

```
</p>
```

```
</body>
```



Entity	Symbol
&gt;	>
&lt;	<
&amp;	&
&pound;	£
&copy;	©
&trade;	™

# Header Levels

```
<h1>First Major Heading</h1>  
  <h2>First Subheading</h2>  
  <h2>Second Subheading</h2>  
    <h3>A Sub-subheading</h3>  
<h1>Another Major Heading</h1>  
  <h2>Another Subheading</h2>
```

- First Major Heading
  - First Subheading
  - Second Subheading
    - A Sub-subheading
- Another Major Heading
  - Another Subheading

Headers were very ugly in default rendering - most folks started with <h3>.

# Lists

```
<body>
  <h1>App Engine: Topics</h1>
  <ul>
    <li>Python Basics</li>
    <li>Python Functions</li>
    <li>Python Python Objects</li>
    <li>Hello World</li>
    <li>The WebApp Framework</li>
    <li>Using Templates</li>
  </ul>
</body>
```

## App Engine: Topics

- Python Basics
- Python Functions
- Python Python Objects
- Hello World
- The WebApp Framework
- Using Templates

```
<body>
  <!-- Make sure to style the h1 -->
  <h1>App Engine: Topics</h1>
  <ul>
    <li>Python Basics</li>
    <li>Python Functions</li>
    <li>Python Python Objects</li>
    <!-- Leave these two out for a while
    <li>Hello World</li>
    <li>The WebApp Framework</li>
  -->
    <li>Using Templates</li>
  </ul>
</body>
```



# Comments

# Link Anatomy

Start Tag

Clickable Text

End Tag

```
<a href="sites.htm"> Sites </a>
```

Where to go when link is clicked (an attribute).

We will make this pretty later with CSS.

**AppEngineLearn**

- Sites
- Topics

# Links Between Files

```
<h1><a href="index.htm">AppEngineLearn</a></h1>
```

```
<ul>
```

```
<li><a href="sites.htm">Sites</a></li>
```

```
<li><a href="topics.htm">Topics</a></li>
```

```
</ul>
```

```
<h1>Google App Engine: About</h1>
```

```
<p>
```

```
Welcome to the site dedicated to  
learning the Google Application Engine.
```

```
We hope you find www.appenginelearn.com useful. </p>
```



# Multiple Files

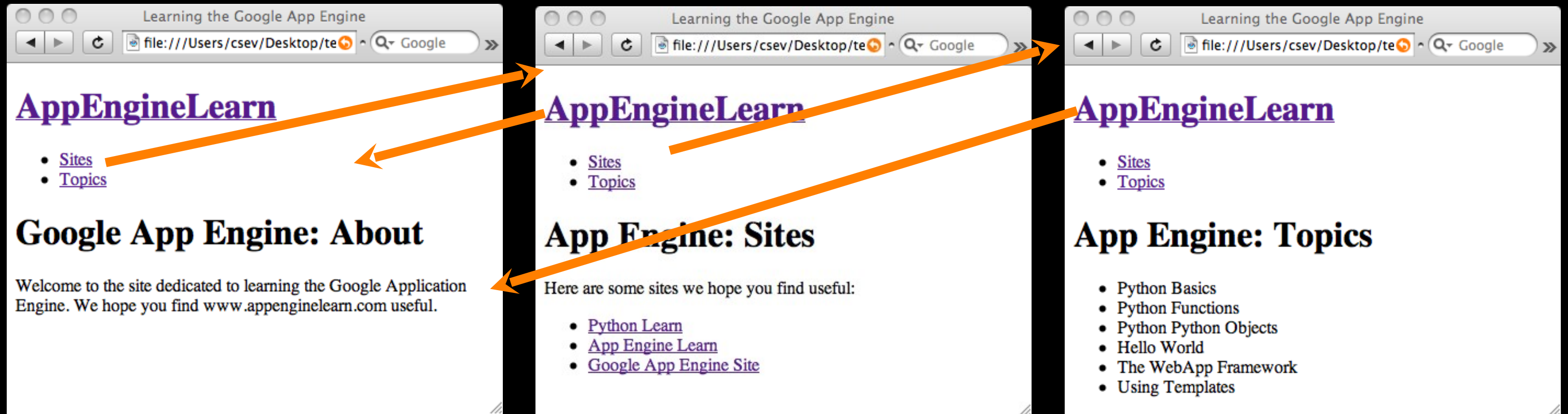
```
csev$ ls -l
-rw-r--r--  1 csev  staff  618  Dec  18  22:56  index.htm
-rw-r--r--  1 csev  staff  883  Dec  18  22:57  sites.htm
-rw-r--r--  1 csev  staff  679  Dec  18  22:57  topics.htm
csev$
```

# Special File Names

- When a URL points to a directory in your web server, it looks for a file with a special name:
  - `index.html`, `index.htm`, `index.php`, `default.htm`, etc..
- While there is a convention, the “default file” is configurable - so nothing is “sure”
- Usually `index.htm` or `index.html` is a safe bet
- This only works when viewing through a web server - when viewing from disk, you must view the file.



# Navigating



```
<h1><a href="index.htm">AppEngineLearn</a></h1>
```

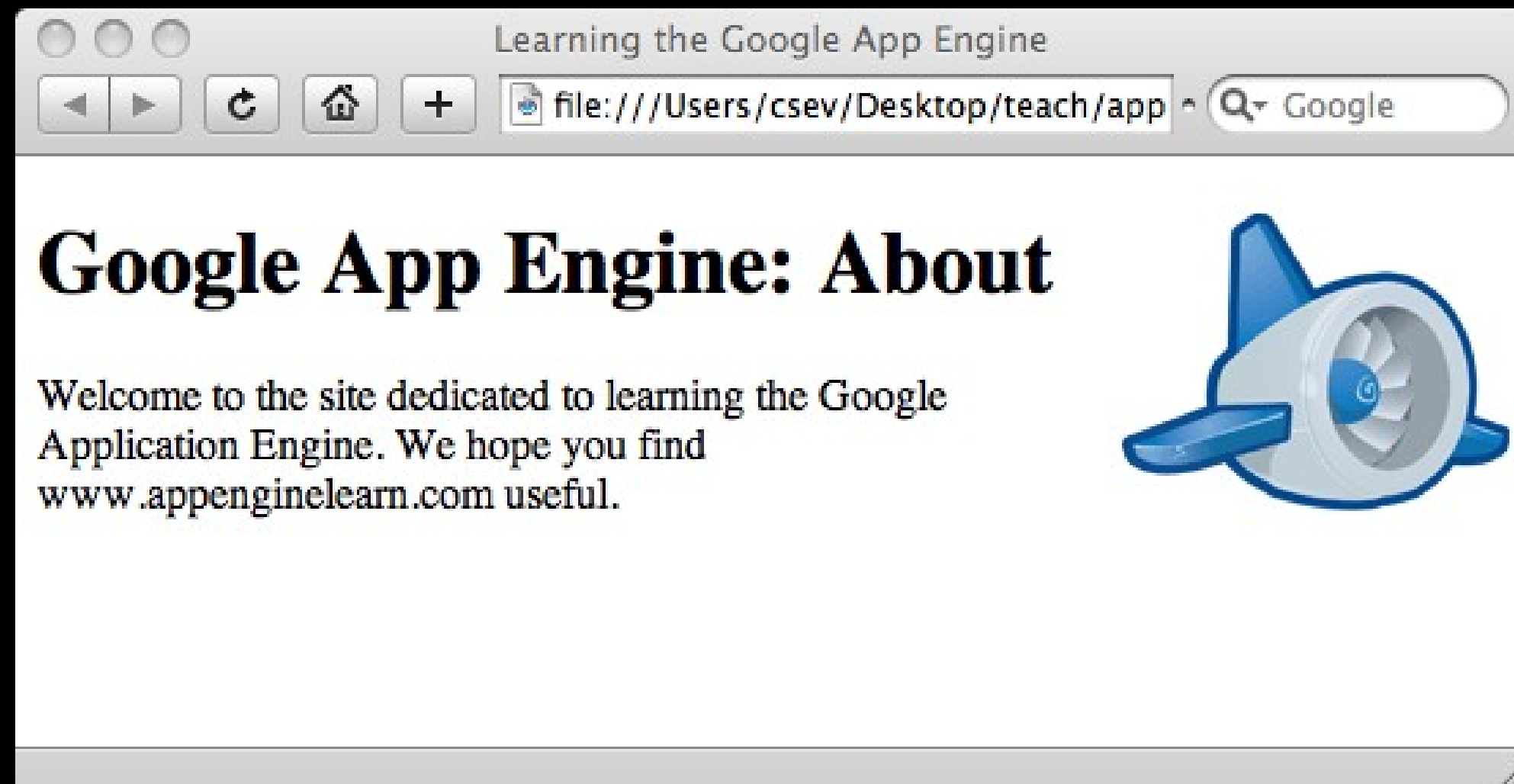
```
<ul>
```

```
<li><a href="sites.htm">Sites</a></li>
```

```
<li><a href="topics.htm" >Topics</a></li>
```

```
</ul>
```

# Images



# Images

Which image to display

Begin Tag

```

```

Optional - makes display quicker. Will resize to fit.

End Tag

Put the image on the right and wrap text around it.

Show this when hovering, images are off, or for screen readers.

All information is communicated through the attributes of the img tag.

# Images

```
<h1>
```

```

```

```
Google App Engine: About</h1>
```

```
<p>
```

```
Welcome to the site dedicated to  
learning the Google Application Engine.  
We hope you find www.appenginelearn.com useful.
```

```
</p>
```

In this case, the file `appengine.jpg` needs to be in the same directory as the file `index.html`.

```
<h1>
```

```

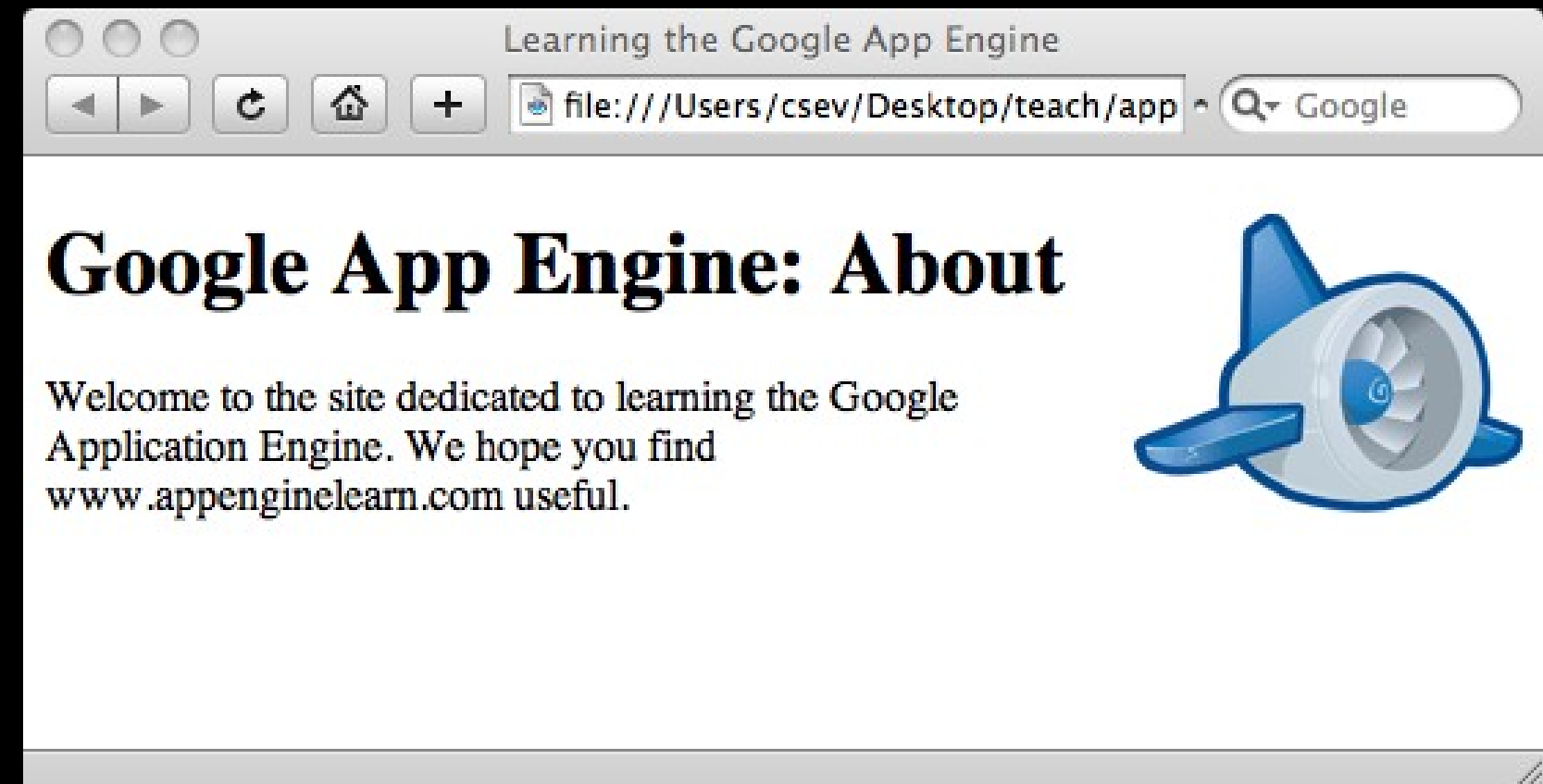
```

```
Google App Engine: About</h1>
```

```
<p>
```

```
Welcome to the site dedicated to  
learning the Google Application Engine.  
We hope you find  
www.appenginelearn.com useful.
```

```
</p>
```



```
<h1>

Google App Engine: About</h1>
<p>
Welcome to the site dedicated to
learning the Google Application Engine.
We hope you find www.appenginelearn.com useful.
</p>
```



```
<h1>

Google App Engine: About</h1>
<p>
Welcome to the site dedicated to
learning the Google Application Engine.
We hope you find www.appenginelearn.com useful.
</p>
```



# Summary

- HTML has gone through many changes and evolutions
  - It started clean and simple - then got ugly and nasty - now we are back to a clean and simple approach
- HTML Markup needs to focus on meaning - not formatting
- Formatting is handled using CSS - Cascading Style Sheets