COMS 359: Interactive Media
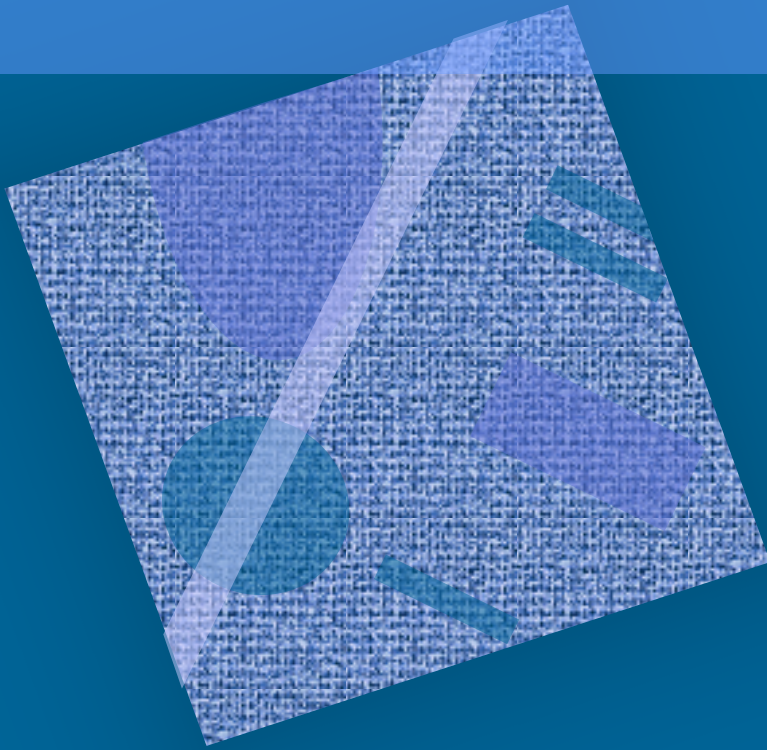
Agenda

- Review
- HTML
  - Introduction
  - Structure
- Preview

Review

gunkelweb.com/coms359

Introduction

- World Wide Web vs. Internet

Internet
- Developed by DARPA in the 1960's
- Privatized in the mid-1980's
- Global network of computer networks

Introduction

- World Wide Web vs. Internet

Web Publishing Process

Web Server
Web Host

Connect via
ISP or AOL

HTTP

INTERNET

PCs with Web Browsers
IE or Netscape

FTP

HTML Files
and images

reside on designers'
computer

World Wide Web
- An application that runs on the Internet
- Invented by Tim Berners-Lee (1989)
- Exploded in popularity in the 1990's

Introduction

Tim Berners-Lee

Introduction

Total number of Websites

http://www.internetlivestats.com
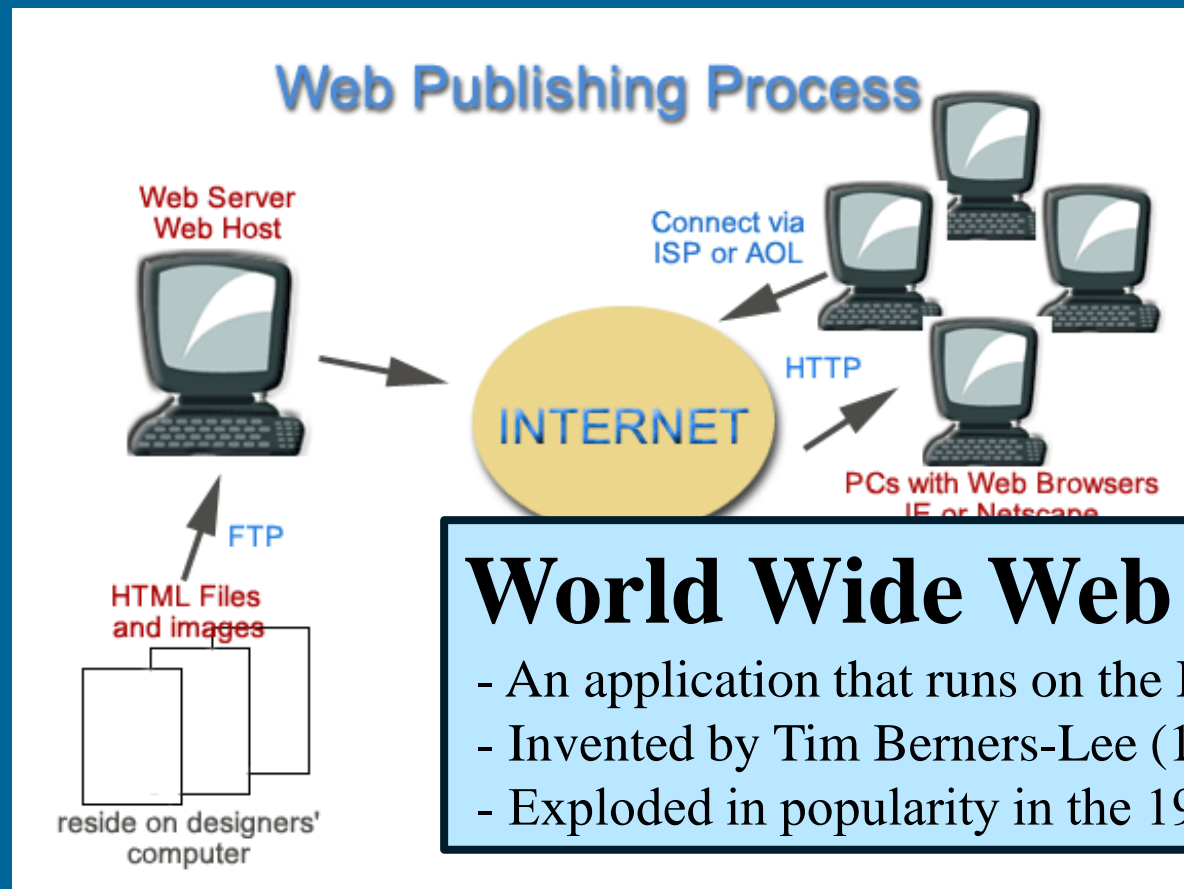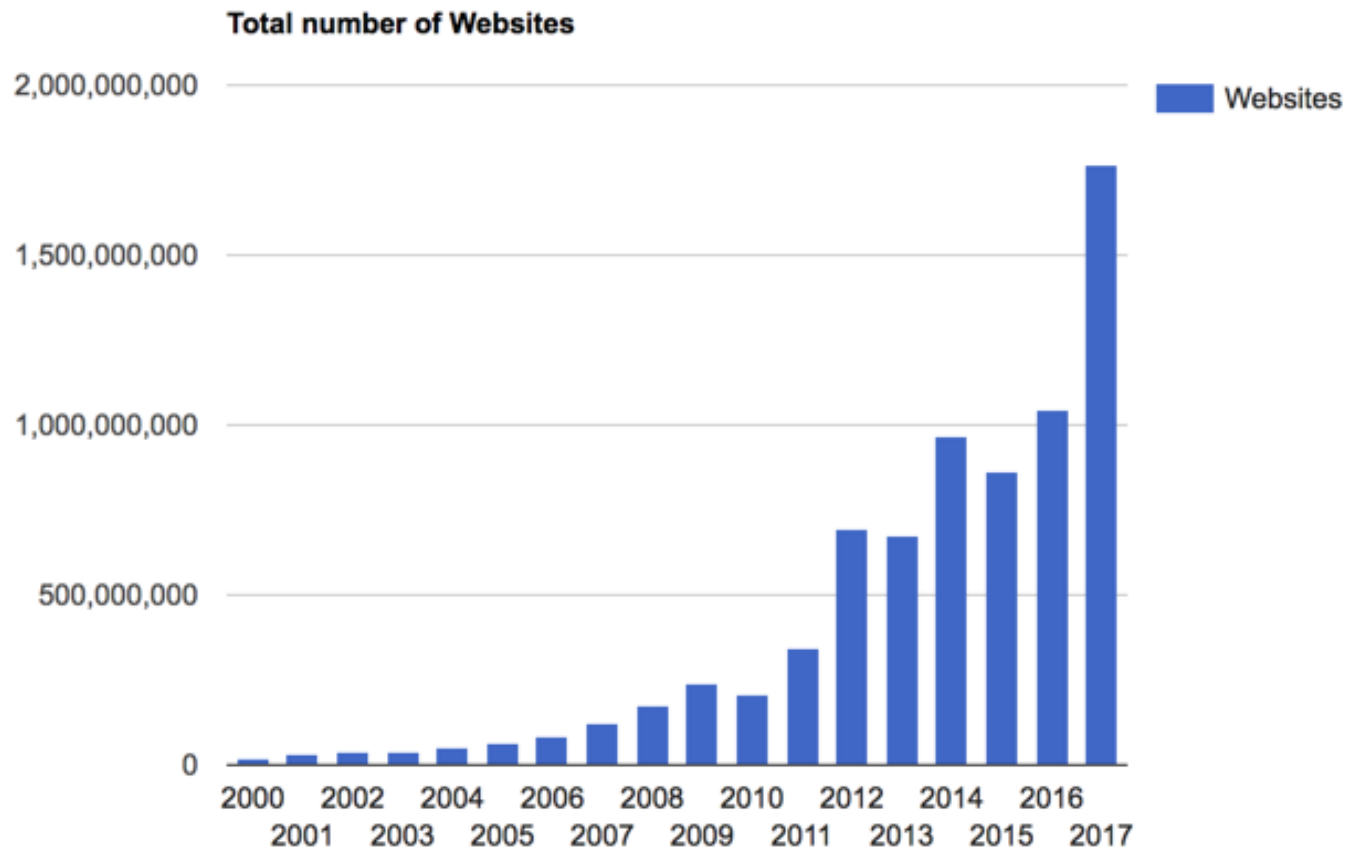
Introduction

- Web Documents

  ## HTML

  Hypertext Markup Language
  A set of markup tags used to define the content, layout and the formatting of a web document.

  ## CSS

  Cascading Style Sheets
  A style sheet language used to describe the presentation semantics (that is, the look and formatting) of a document written in a markup language, like HTML.
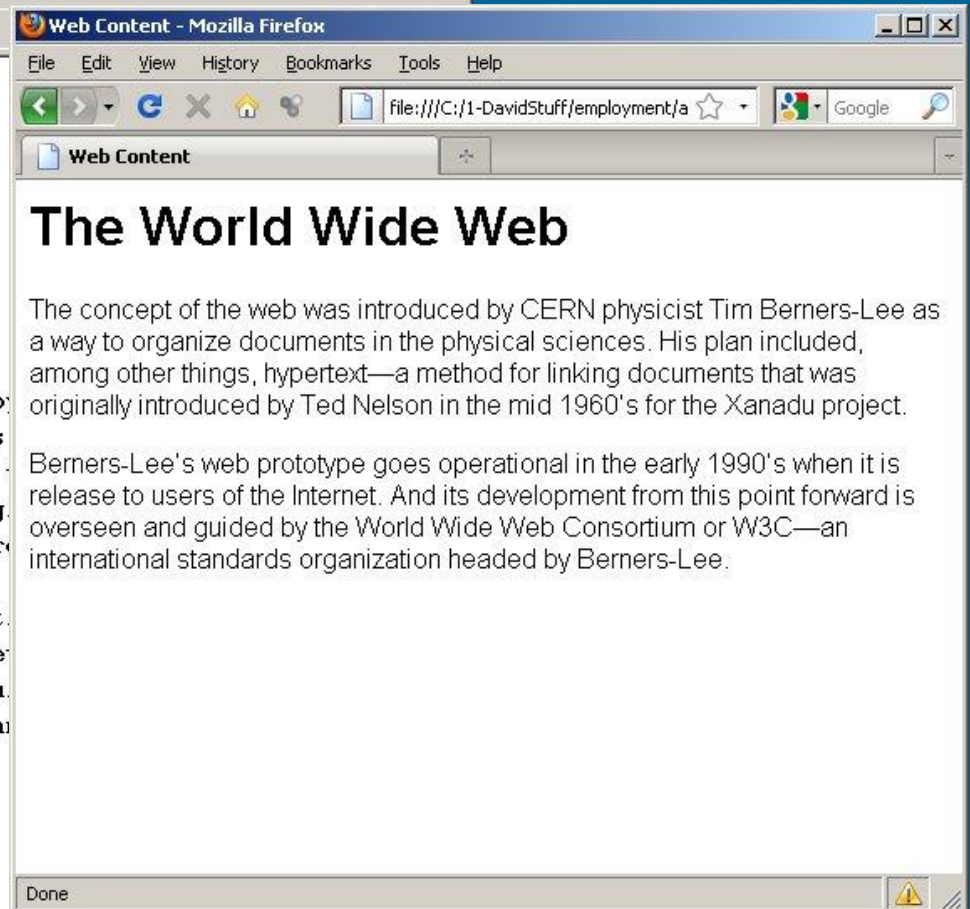
HTML

File   Edit   Search   View   Format   Language   Sett

static_page.html

```html
 1  <html>
 2    <head>
 3      <title>Web Content</title>
 4    </head>
 5
 6  <body>
 7
 8  <h1>The World Wide Web</h1>
 9
10  <p>The concept of the web was introduced by CERN physicist Tim
    Berners-Lee as a way to organize documents in the physical
    sciences.  His plan included, among other things, hypertext—a
    method for linking documents that was originally introduced by Ted
    Nelson in the mid 1960's for the Xanadu project.</p>
11
12  <p>Berners-Lee's web prototype goes operational in the early 1990's
    when it is release to users of the Internet.  And its development
    from this point forward is overseen and guided by the World Wide
    Web Consortium or W3C—an international standards organization
    headed by Berners-Lee.</p>
13
14  </body>
15  </html>
```

HTML

File Edit Search View Format Language Sett...

static_page.html

```
1  <html>
2    <head>
3      <title>Web Content</title>
4    </head>
5
6  <body>
7
8  <h1>The World Wide Web</h1>
9
10 <p>The concept of the web was introduced b
   Berners-Lee as a way to organize documents
   sciences.  His plan included, among other
   method for linking documents that was orig
   Nelson in the mid 1960's for the Xanadu pr
11
12 <p>Berners-Lee's web prototype goes operat
   when it is release to users of the Interne
   from this point forward is overseen and gu
   Web Consortium or W3C—an international sta
   headed by Berners-Lee.</p>
13
14 </body>
15 </html>
```

Web Content - Mozilla Firefox

File Edit View History Bookmarks Tools Help

file:///C:/1-DavidStuff/employment/a   Google

Web Content

The World Wide Web

The concept of the web was introduced by CERN physicist Tim Berners-Lee as a way to organize documents in the physical sciences. His plan included, among other things, hypertext—a method for linking documents that was originally introduced by Ted Nelson in the mid 1960's for the Xanadu project.

Berners-Lee's web prototype goes operational in the early 1990's when it is release to users of the Internet. And its development from this point forward is overseen and guided by the World Wide Web Consortium or W3C—an international standards organization headed by Berners-Lee.

Done

File Edit Search View Format La... S... M... R... Plugins ?

static_page2.html

CSS

```html
1
2  <html>
3    <head>
4      <title>Web Content</title>
5      <style type="text/css">
6          body
7            {
8              color:#888888; margin:20px; background-color:#333333;
9            }
10         h1
11           {
12             font-size:50px; color:#335599; padding:10px;
13           }
14         .content
15           {
16             font:arial; font-size:18px; background-color:#ffffff;
17             margin:20px; padding:20px;
18           }
19      </style>
20    </head>
21
22  <body>
23  <div class="content">
24  <h1>The World Wide Web</h1>
25  <p>The concept of the web was introduced by CERN physicist Tim Berners-Lee as
   a way to organize documents in the physical sciences.  His plan included,
   among other things, hypertext—a method for linking documents that was
   originally introduced by Ted Nelson in the mid 1960's for the Xanadu project.
   </p>
26
27  <p>Berners-Lee's web prototype goes operational in the early 1990's when it
   is release to users of the Internet.  And its development from this point
   forward is overseen and guided by the World Wide Web Consortium or W3C—an
   international standards organization headed by Berners-Lee.</p>
28  </div>
29
30  </body>
31  </html>
```
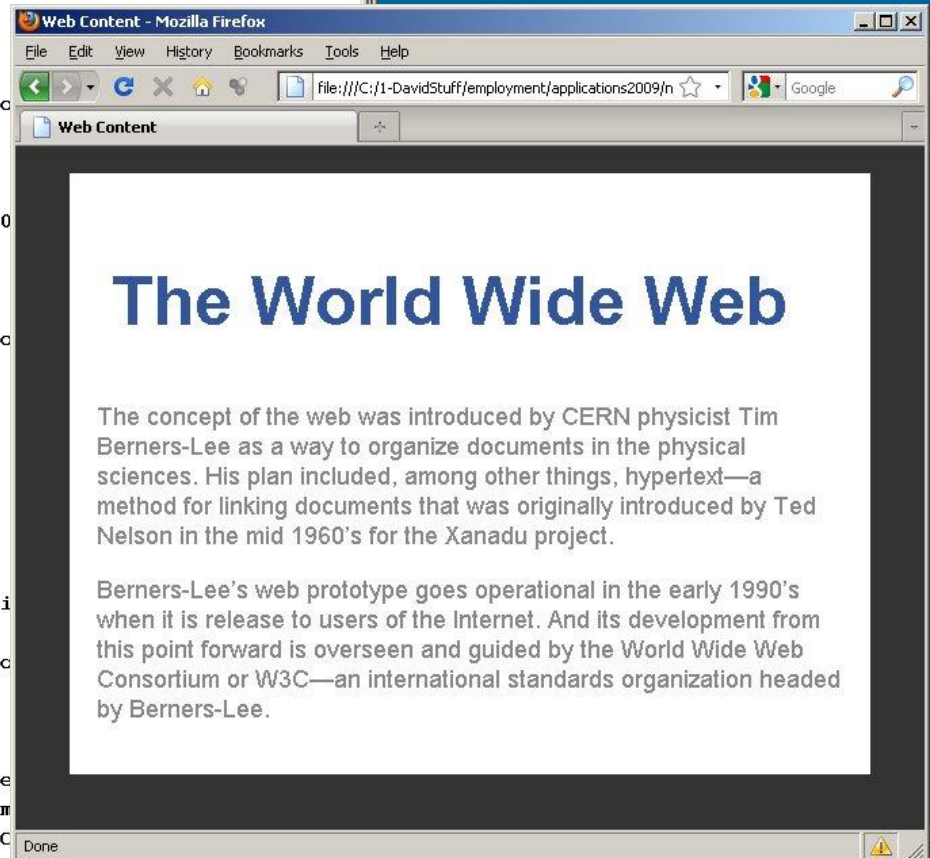
File Edit Search View Format La... ... Plugins ?

static_page2.html

```
 1
 2  <html>
 3    <head>
 4      <title>Web Content</title>
 5      <style type="text/css">
 6        body
 7          {
 8            color:#888888; margin:20px; background-co
 9          }
10        h1
11          {
12            font-size:50px; color:#335599; padding:10
13          }
14        .content
15          {
16            font:arial; font-size:18px; background-co
17            margin:20px; padding:20px;
18          }
19      </style>
20    </head>
21
22  <body>
23  <div class="content">
24  <h1>The World Wide Web</h1>
25  <p>The concept of the web was introduced by CERN physi
    a way to organize documents in the physical sciences.
    among other things, hypertext—a method for linking doc
    originally introduced by Ted Nelson in the mid 1960's
    </p>
26
27  <p>Berners-Lee's web prototype goes operational in the
    is release to users of the Internet.  And its developm
    forward is overseen and guided by the World Wide Web C
    international standards organization headed by Berners-Lee.</p>
28  </div>
29
30  </body>
31  </html>
```

CSS

Web Content - Mozilla Firefox

File Edit View History Bookmarks Tools Help

file:///C:/1-DavidStuff/employment/applications2009/n   Google

Web Content

The World Wide Web

The concept of the web was introduced by CERN physicist Tim Berners-Lee as a way to organize documents in the physical sciences. His plan included, among other things, hypertext—a method for linking documents that was originally introduced by Ted Nelson in the mid 1960's for the Xanadu project.

Berners-Lee's web prototype goes operational in the early 1990's when it is release to users of the Internet. And its development from this point forward is overseen and guided by the World Wide Web Consortium or W3C—an international standards organization headed by Berners-Lee.

Done

Introduction

- ## HTML & CSS

  - ### Negative Characterization
    - Not a programming language like VisualBasic, C, C#, C++, Java, etc.
    - Not a WYSIWYG or page description language (word processors)

  - ### Positive Characterization
    - Markup Languages that are interpreted in the browser and control the content, structure and appearance of information

Introduction

- ## HTML & CSS
  - ### Hypertext
    - Invented by Ted Nelson (1960)
    - Text w/in a page that permits linking to other pages.
    - Interconnected information
    - Berners-Lee included this concept in his original design for Web

Ted Nelson
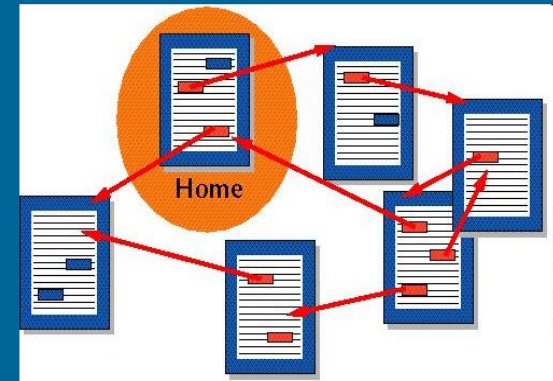
Introduction

- HTML & CSS
  - Open Standard / non-proprietary
  - Portable or platform independent
    - Runs on a number of different kinds of computers running a number of different operating systems
    - Not limited to one kind of computer platform but can be utilized across platforms
    - Consequently, the HTML/CSS you write on a Windows PC will work in iOS, MacOS or Linux

Introduction

Versions

- HTML & CSS have evolved over time
- Current Versions: HTML 5 & CSS 3
- Development overseen by W3C
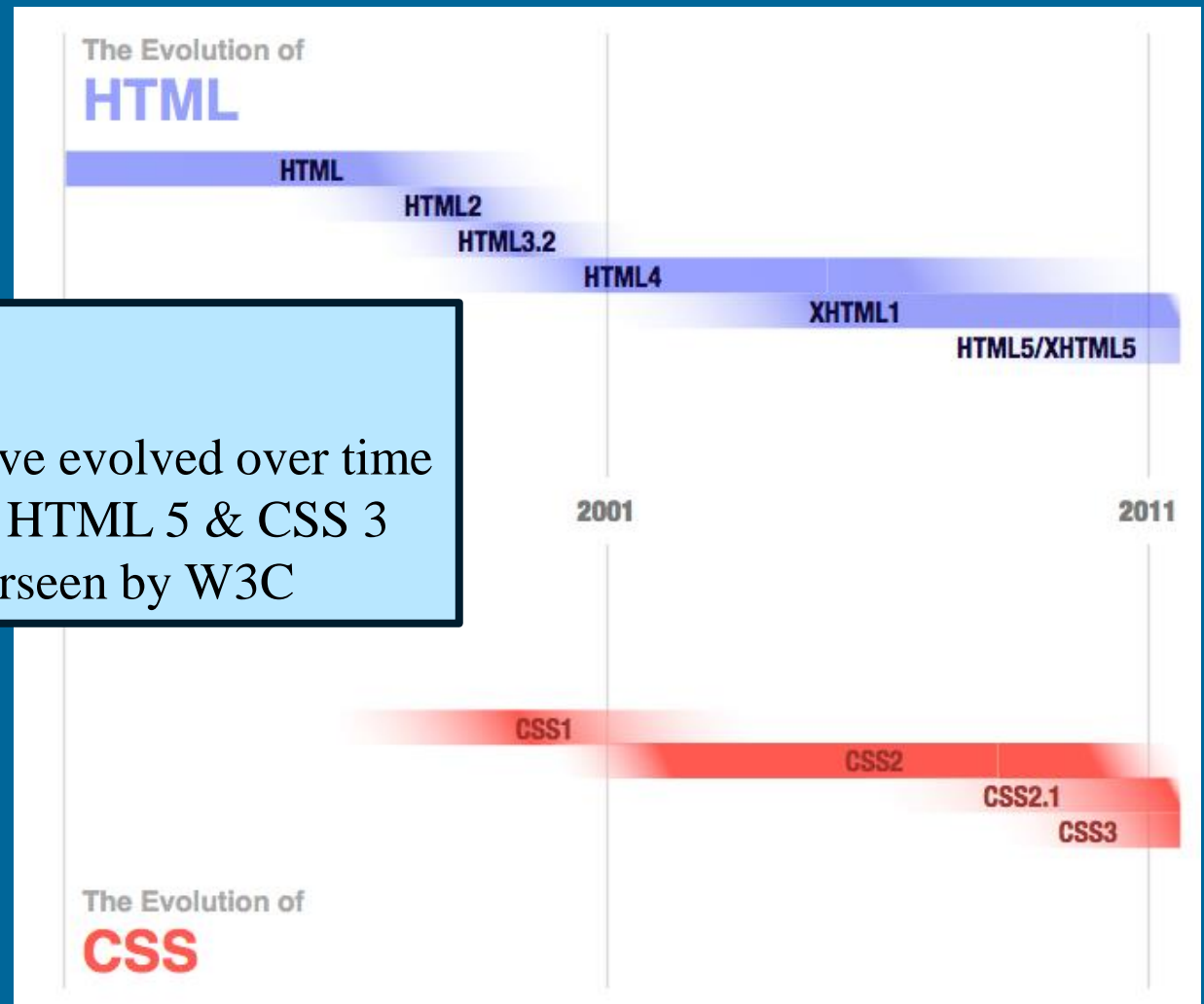
Introduction
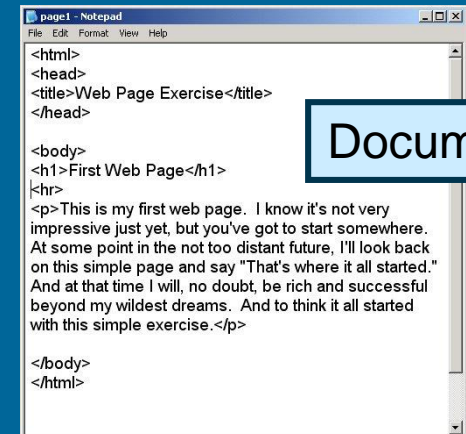
W3C Mission

The World Wide Web Consortium (W3C) is an international community where Member organizations, a full-time staff, and the public work together to develop Web standards. Led by Web inventor Tim Berners-Lee and CEO Jeffrey Jaffe, W3C's mission is to lead the Web to its full potential.

http://www.w3.org

Introduction

- Editor vs. Browser
  - HTML/CSS is written in a text editor
  - HTML/CSS is viewed in a Web Browser
- Document vs. Page
  - A *document* is what you create in the Editor
  - A *page* is what you see when a document is displayed in the Browser

Document
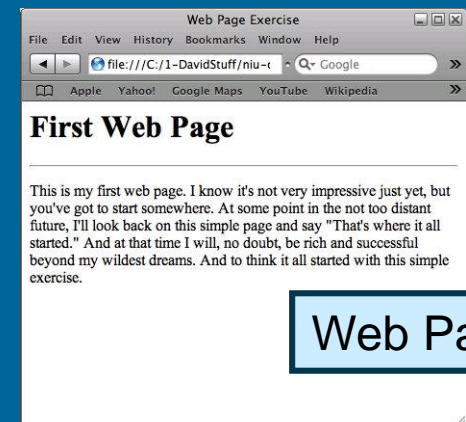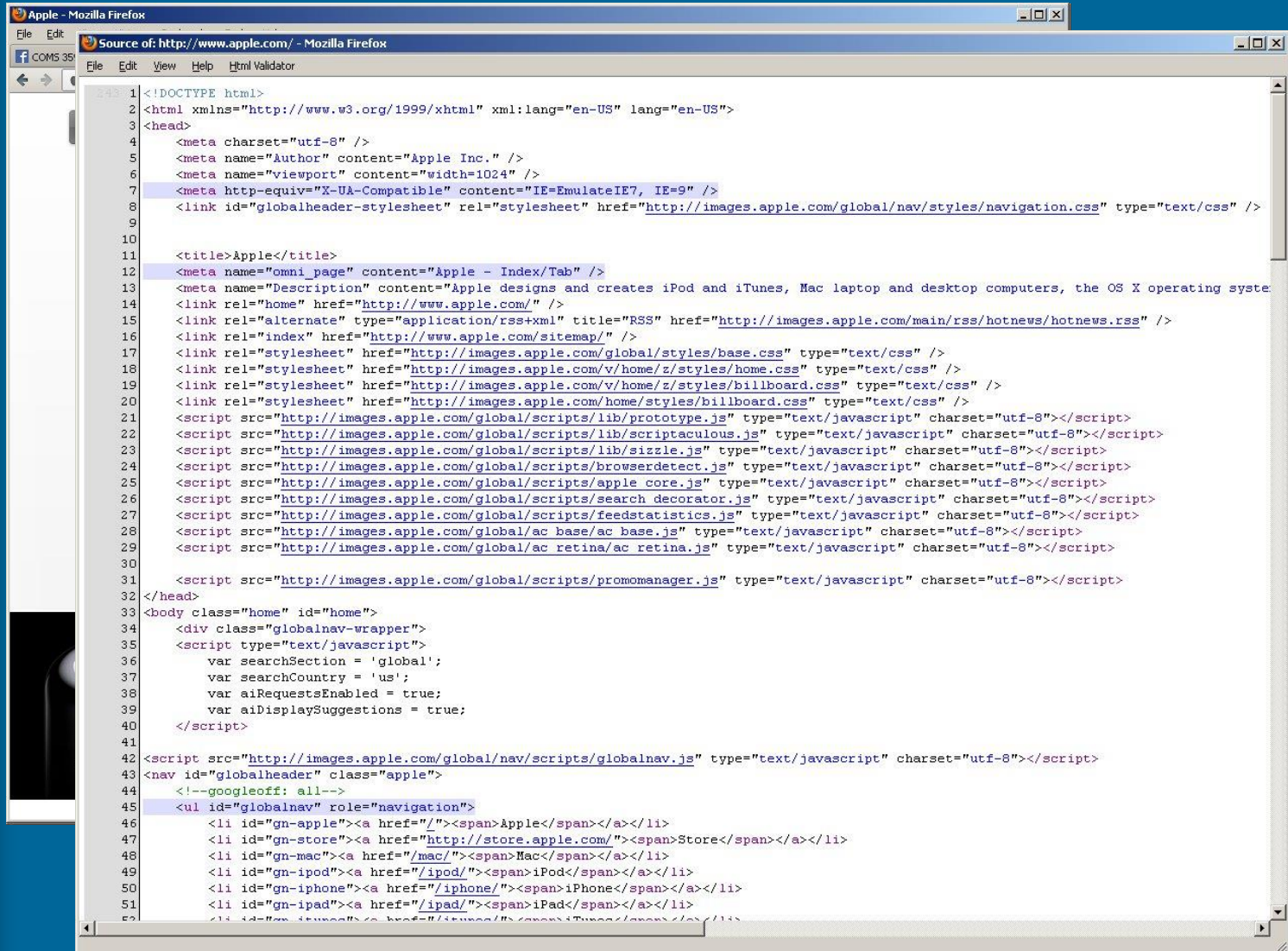
Web Page

Introduction

- Uniform Resource Locator
  - Address or location of a specific web resource
- Format of URLs
  - protocol://domain/path/filename
  - http://www.niu.edu/info/index.html
- URLs reference IP numbers
  - IP number: 136.34.98.01
  - Index maintained by DNS
  - Identify location of web page

Web Browser
You request a Web page or file in your Web browser.

Domain Name Service
DNS checks the domain name of the Website you entered and finds the address of its Web server.

Hosted Web Server
The site's Web server sends back the data for the requested Web page or file.
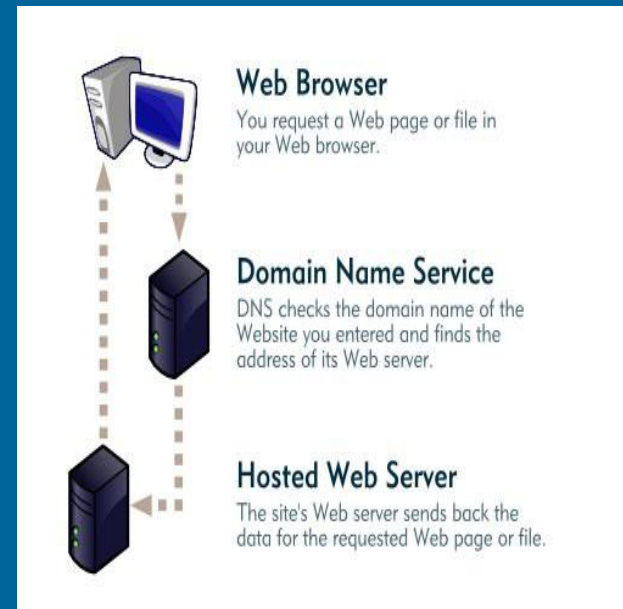
- # View Source
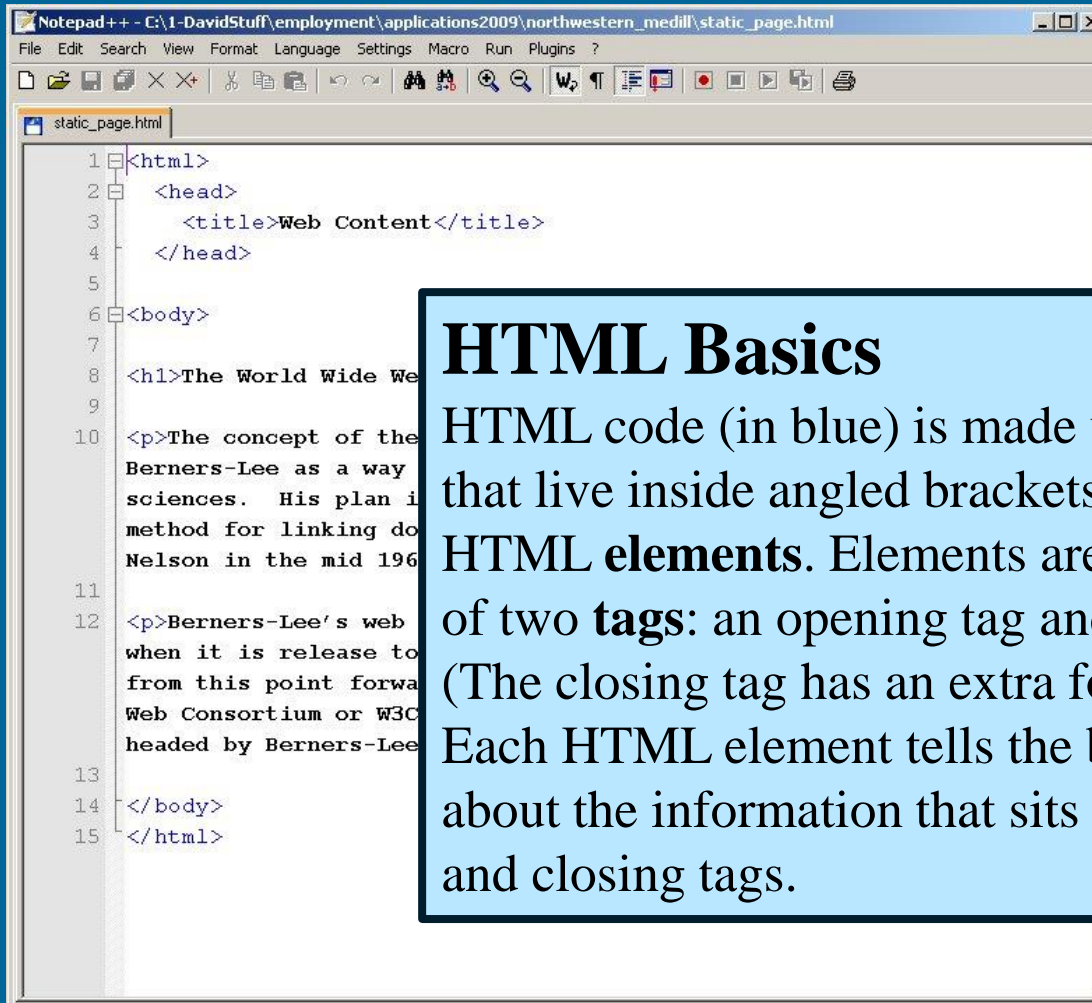
```html
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en-US" lang="en-US">
<head>
    <meta charset="utf-8" />
    <meta name="Author" content="Apple Inc." />
    <meta name="viewport" content="width=1024" />
    <meta http-equiv="X-UA-Compatible" content="IE=EmulateIE7, IE=9" />
    <link id="globalheader-stylesheet" rel="stylesheet" href="http://images.apple.com/global/nav/styles/navigation.css" type="text/css" />


    <title>Apple</title>
    <meta name="omni_page" content="Apple - Index/Tab" />
    <meta name="Description" content="Apple designs and creates iPod and iTunes, Mac laptop and desktop computers, the OS X operating syste
    <link rel="home" href="http://www.apple.com/" />
    <link rel="alternate" type="application/rss+xml" title="RSS" href="http://images.apple.com/main/rss/hotnews/hotnews.rss" />
    <link rel="index" href="http://www.apple.com/sitemap/" />
    <link rel="stylesheet" href="http://images.apple.com/global/styles/base.css" type="text/css" />
    <link rel="stylesheet" href="http://images.apple.com/v/home/z/styles/home.css" type="text/css" />
    <link rel="stylesheet" href="http://images.apple.com/v/home/z/styles/billboard.css" type="text/css" />
    <link rel="stylesheet" href="http://images.apple.com/home/styles/billboard.css" type="text/css" />
    <script src="http://images.apple.com/global/scripts/lib/prototype.js" type="text/javascript" charset="utf-8"></script>
    <script src="http://images.apple.com/global/scripts/lib/scriptaculous.js" type="text/javascript" charset="utf-8"></script>
    <script src="http://images.apple.com/global/scripts/lib/sizzle.js" type="text/javascript" charset="utf-8"></script>
    <script src="http://images.apple.com/global/scripts/browserdetect.js" type="text/javascript" charset="utf-8"></script>
    <script src="http://images.apple.com/global/scripts/apple_core.js" type="text/javascript" charset="utf-8"></script>
    <script src="http://images.apple.com/global/scripts/search_decorator.js" type="text/javascript" charset="utf-8"></script>
    <script src="http://images.apple.com/global/scripts/feedstatistics.js" type="text/javascript" charset="utf-8"></script>
    <script src="http://images.apple.com/global/ac_base/ac_base.js" type="text/javascript" charset="utf-8"></script>
    <script src="http://images.apple.com/global/ac_retina/ac_retina.js" type="text/javascript" charset="utf-8"></script>

    <script src="http://images.apple.com/global/scripts/promomanager.js" type="text/javascript" charset="utf-8"></script>
</head>
<body class="home" id="home">
    <div class="globalnav-wrapper">
    <script type="text/javascript">
        var searchSection = 'global';
        var searchCountry = 'us';
        var aiRequestsEnabled = true;
        var aiDisplaySuggestions = true;
    </script>

<script src="http://images.apple.com/global/nav/scripts/globalnav.js" type="text/javascript" charset="utf-8"></script>
<nav id="globalheader" class="apple">
    <!--googleoff: all-->
    <ul id="globalnav" role="navigation">
        <li id="gn-apple"><a href="/"><span>Apple</span></a></li>
        <li id="gn-store"><a href="http://store.apple.com/"><span>Store</span></a></li>
        <li id="gn-mac"><a href="/mac/"><span>Mac</span></a></li>
        <li id="gn-ipod"><a href="/ipod/"><span>iPod</span></a></li>
        <li id="gn-iphone"><a href="/iphone/"><span>iPhone</span></a></li>
        <li id="gn-ipad"><a href="/ipad/"><span>iPad</span></a></li>
```

Introduction

- Instructional Procedure
  - Begin with HTML
    - Learn to use HTML to markup page content and structure
    - Project One will be an HTML project
  - Begin CSS in October
    - Learn to use CSS to style HTML
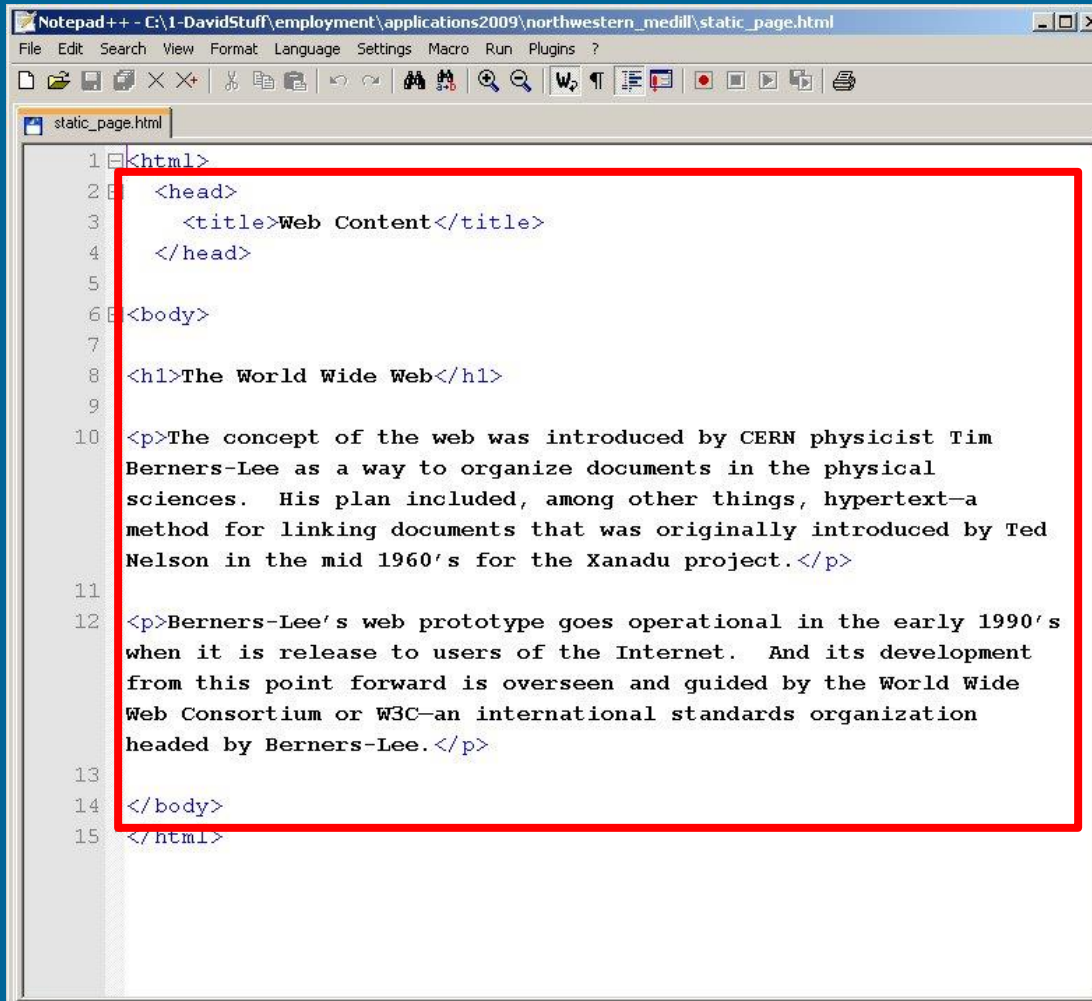   - Projects Two and Three will be HTML/CSS

Structure

```
Notepad++ - C:\1-DavidStuff\employment\applications2009\northwestern_medill\static_page.html    _ | □ | X
File  Edit  Search  View  Format  Language  Settings  Macro  Run  Plugins  ?

static_page.html

 1 <html>
 2   <head>
 3     <title>Web Content</title>
 4   </head>
 5
 6 <body>
 7
 8 <h1>The World Wide We
 9
10 <p>The concept of the
   Berners-Lee as a way
   sciences.  His plan i
   method for linking do
   Nelson in the mid 196
11
12 <p>Berners-Lee's web
   when it is release to
   from this point forwa
   Web Consortium or W3C
   headed by Berners-Lee
13
14 </body>
15 </html>
```

HTML Basics

HTML code (in blue) is made up of characters that live inside angled brackets—these are called HTML **elements**. Elements are usually made up of two **tags**: an opening tag and a closing tag. (The closing tag has an extra forward slash in it.) Each HTML element tells the browser something about the information that sits between its opening and closing tags.

Structure


```
Notepad++ - C:\1-DavidStuff\employment\applications2009\northwestern_medill\static_page.html

File  Edit  Search  View  Format  Language  Settings  Macro  Run  Plugins  ?

static_page.html

 1 <html>
 2   <head>
 3     <title>Web Content</title>
 4   </head>
 5
 6 <body>
 7
 8 <h1>The World Wide Web</h1>
 9
10 <p>The concept of the web was introduced by CERN physicist Tim
   Berners-Lee as a way to organize documents in the physical
   sciences.  His plan included, among other things, hypertext—a
   method for linking documents that was originally introduced by Ted
   Nelson in the mid 1960's for the Xanadu project.</p>
11
12 <p>Berners-Lee's web prototype goes operational in the early 1990's
   when it is release to users of the Internet.  And its development
   from this point forward is overseen and guided by the World Wide
   Web Consortium or W3C—an international standards organization
   headed by Berners-Lee.</p>
13
14 </body>
15 </html>
```
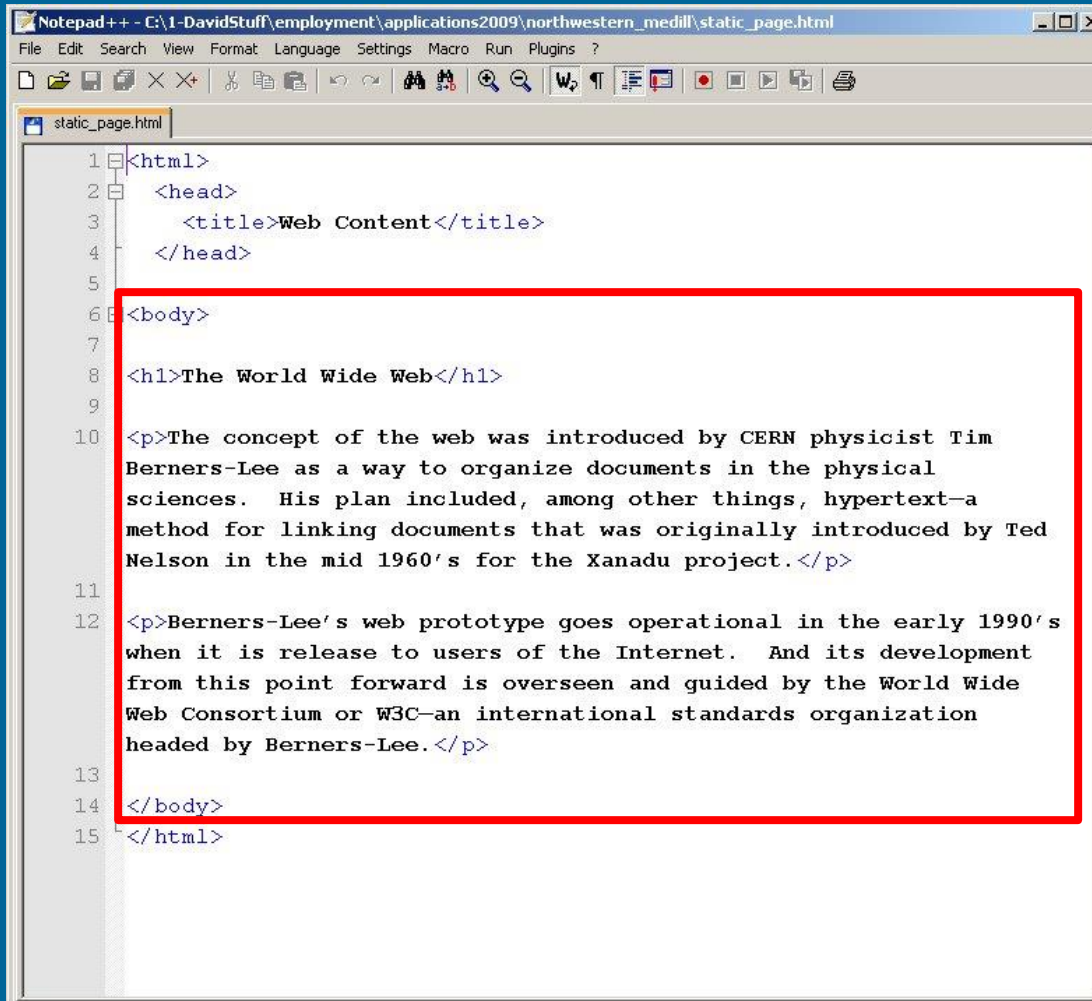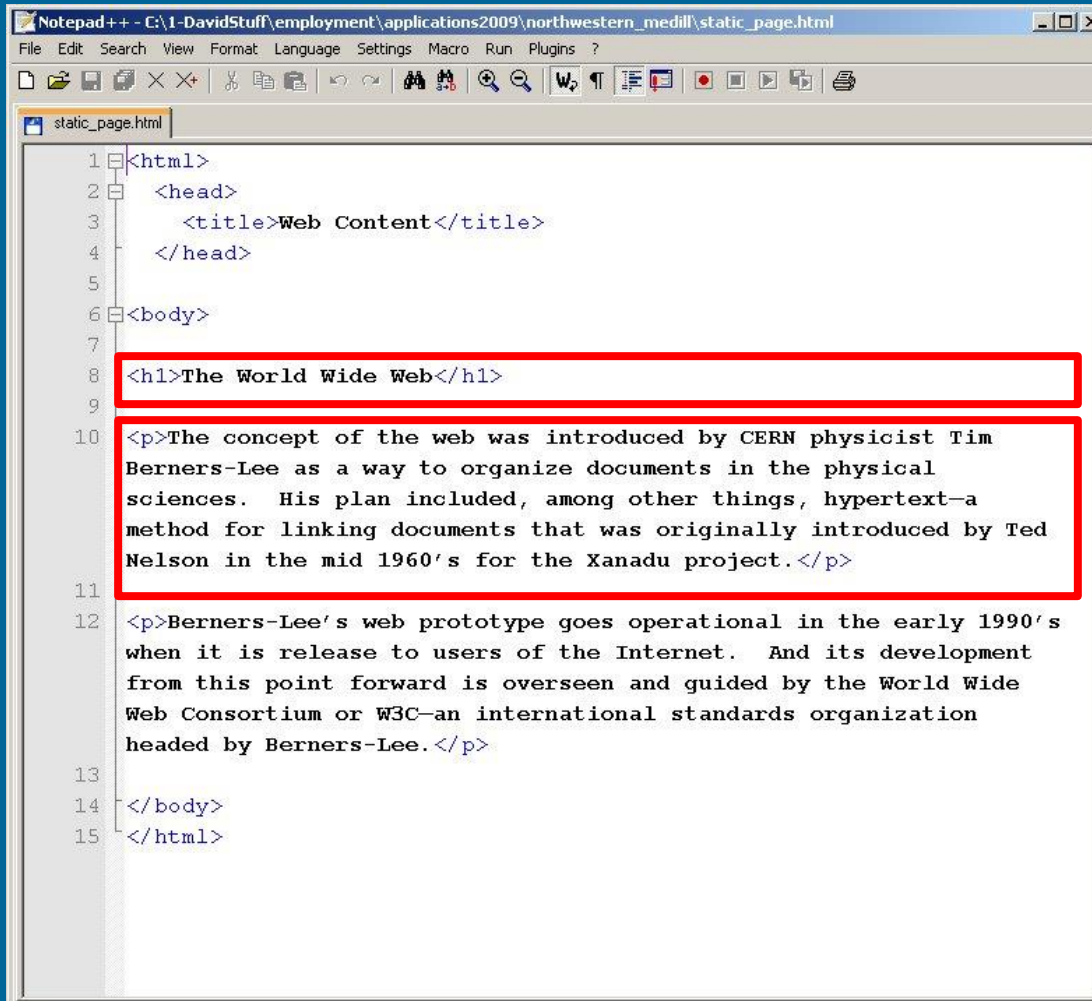
<html> Element
Contains everything in the HTML document

Structure

```
Notepad++ - C:\1-DavidStuff\employment\applications2009\northwestern_medill\static_page.html    _|□|×|
File  Edit  Search  View  Format  Language  Settings  Macro  Run  Plugins  ?

static_page.html

  1  <html>
  2    <head>
  3      <title>Web Content</title>
  4    </head>
  5
  6  <body>
  7
  8  <h1>The World Wide Web</h1>
  9
 10  <p>The concept of the web was introduced by CERN physicist Tim
     Berners-Lee as a way to organize documents in the physical
     sciences.  His plan included, among other things, hypertext—a
     method for linking documents that was originally introduced by Ted
     Nelson in the mid 1960's for the Xanadu project.</p>
 11
 12  <p>Berners-Lee's web prototype goes operational in the early 1990's
     when it is release to users of the Internet.  And its development
     from this point forward is overseen and guided by the World Wide
     Web Consortium or W3C—an international standards organization
     headed by Berners-Lee.</p>
 13
 14  </body>
 15  </html>
```

\<head\> Element

Defines the document head and contains the \<title\> element

This information is NOT seen in the browser window

Structure

```
Notepad++ - C:\1-DavidStuff\employment\applications2009\northwestern_medill\static_page.html
File  Edit  Search  View  Format  Language  Settings  Macro  Run  Plugins  ?

static_page.html

 1  <html>
 2    <head>
 3      <title>Web Content</title>
 4    </head>
 5
 6  <body>
 7
 8  <h1>The World Wide Web</h1>
 9
10  <p>The concept of the web was introduced by CERN physicist Tim
    Berners-Lee as a way to organize documents in the physical
    sciences.  His plan included, among other things, hypertext—a
    method for linking documents that was originally introduced by Ted
    Nelson in the mid 1960's for the Xanadu project.</p>
11
12  <p>Berners-Lee's web prototype goes operational in the early 1990's
    when it is release to users of the Internet.  And its development
    from this point forward is overseen and guided by the World Wide
    Web Consortium or W3C—an international standards organization
    headed by Berners-Lee.</p>
13
14  </body>
15  </html>
```

<body> Element
Contains everything that is seen in the browser window

Structure

Notepad++ - C:\1-DavidStuff\employment\applications2009\northwestern_medill\static_page.html

File Edit Search View Format Language Settings Macro Run Plugins ?

static_page.html

```
 1  <html>
 2    <head>
 3      <title>Web Content</title>
 4    </head>
 5
 6  <body>
 7
 8  <h1>The World Wide Web</h1>
 9
10  <p>The concept of the web was introduced by CERN physicist Tim
    Berners-Lee as a way to organize documents in the physical
    sciences.  His plan included, among other things, hypertext—a
    method for linking documents that was originally introduced by Ted
    Nelson in the mid 1960's for the Xanadu project.</p>
11
12  <p>Berners-Lee's web prototype goes operational in the early 1990's
    when it is release to users of the Internet.  And its development
    from this point forward is overseen and guided by the World Wide
    Web Consortium or W3C—an international standards organization
    headed by Berners-Lee.</p>
13
14  </body>
15  </html>
```

\<h1\> Element
Defines a page heading

\<p\> Element
Defines a paragraph

Structure

- HTML Tags

\<p\>
Opening tag

\</p\>
Closing tag

Browsers do not display the HTML tags but interpret the tags to define the appearance of content situated between the open and closing tags.

Tags have predefined, default appearances that are rendered in the browser.

Tags are generally written in lower case (but upper case will still work in the browser).

Structure

- Attributes

<p align="center">

Attributes allow designers to code changes to the default appearance of a tag

Attributes are made up of a NAME and a VALUE. The value is associated with the name by an equals sign and contained by quotation marks.

The attribute name and value are placed only in the opening tag of an element.

Structure

- Evolution of Tags
  - <u>New</u> = tags recently introduced by the W3C; may not be compatible with the current browsers
  - <u>Deprecated</u> = tags that are on their way out; may still be used but should begin to replace them with new tags
  - <u>Obsolete</u> = tags that should no longer be used
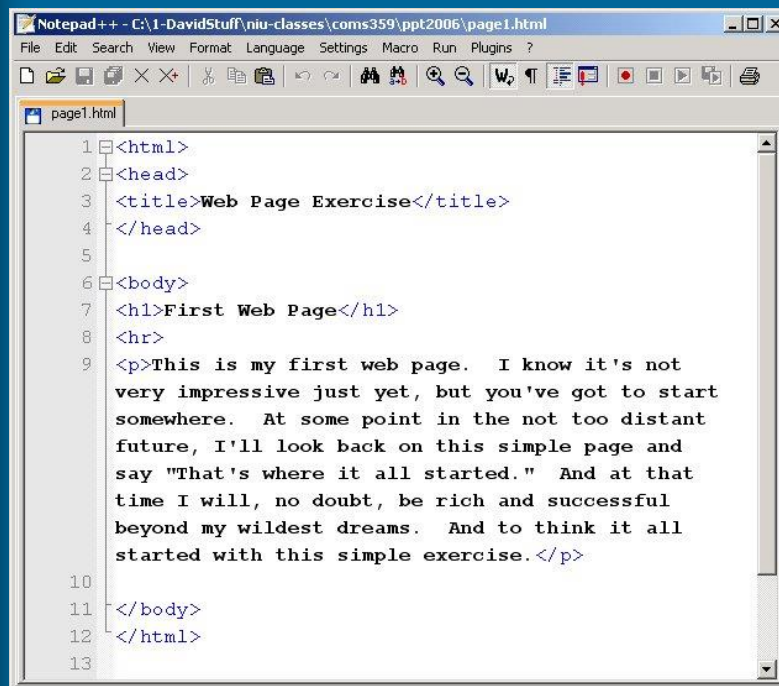
Writing HTML

- Writing vs. Viewing
  - HTML is written in a *Text Editor* and viewed with a *Web Browser*
  - Work with two windows and switch between them
    - Write HTML in your Text Editor
    - View the results in the Web Browser
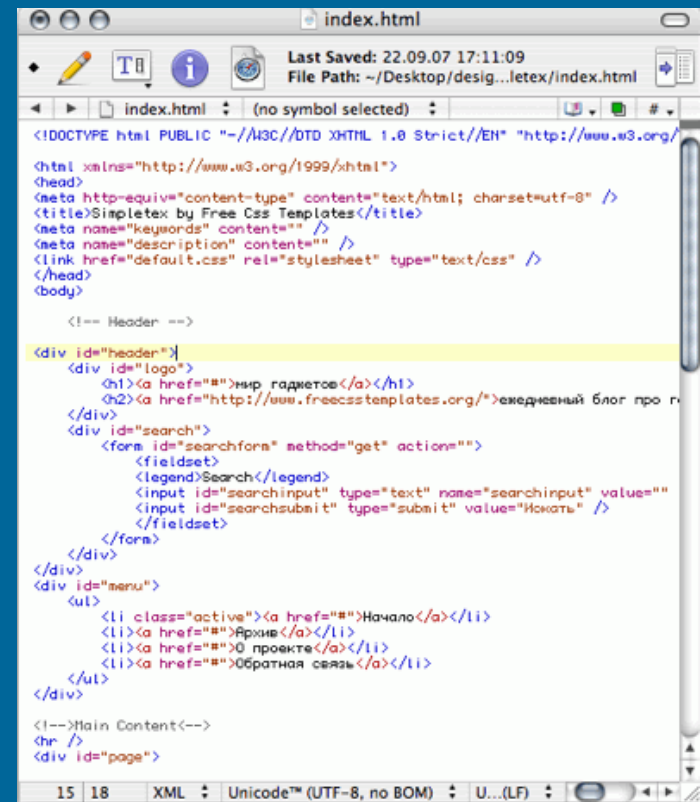
Writing HTML

- ## Text Editors

NotePad++

Text Wrangler

Writing HTML

- Browsers

MS-IE

Firefox
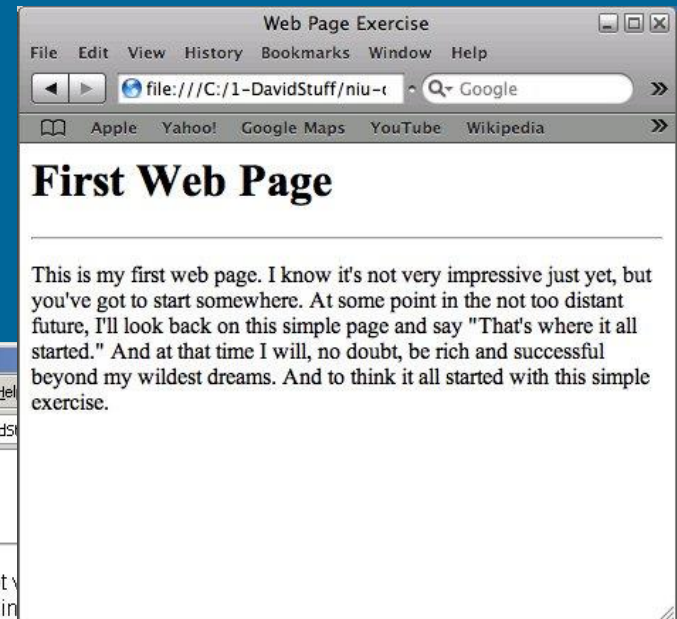
Safari

Writing HTML

- Process
  - Write document in text editor
  - Save document with an .html file extension
  - Toggle (Alt-Tab) to Web Browser
  - Open file in Web Browser to view the page
  - Go back to Text Editor to make changes

Writing HTML

1. <html>

 - Identifies the document

 - Attributes

   dir = ltr or rtl
   lang = abbreviations ISO 639
   version - now deprecated
- First and last tag on the page

```
page1 - Notepad
File  Edit  Format  View  Help

<html>




</html>
```
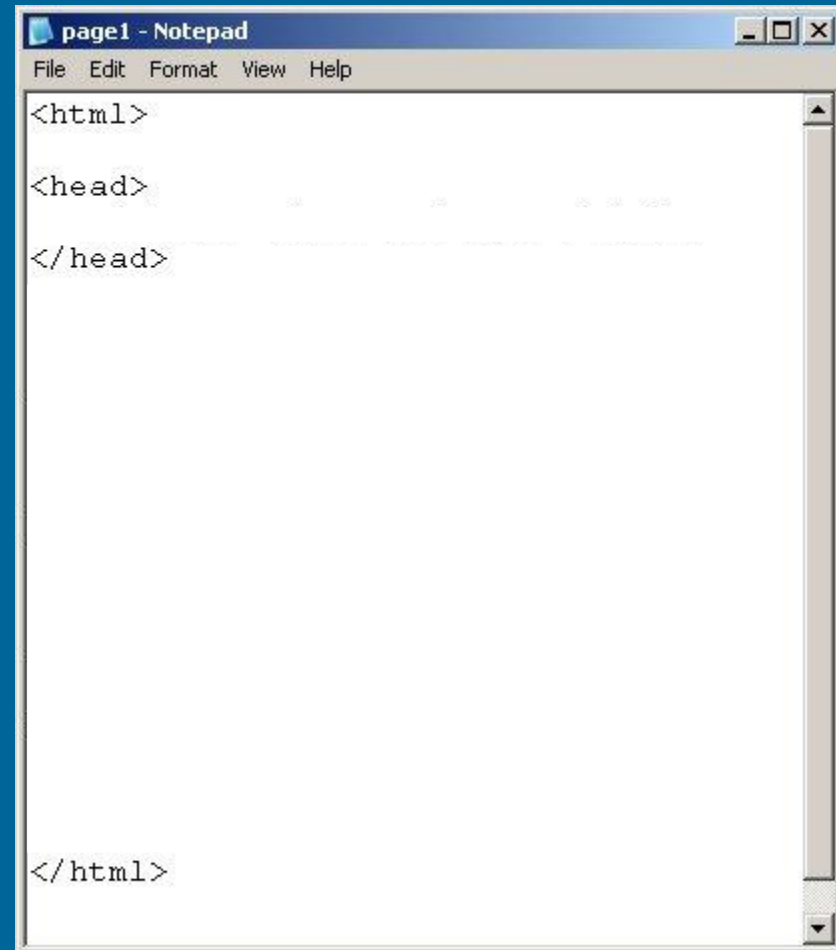
Writing HTML

2. <head>

- Attributes – dir & lang,
- Contains the other tags that
  make up the header
- Head must contain the <title>
  but can also have a number of
  other tags:

<base>	<nextid>
<basefont>	<style>
<isindex>	<script>
<link>	<meta>

```
page1 - Notepad
File  Edit  Format  View  Help
<html>

<head>

</head>




</html>
```

Writing HTML

3. <title>

  - Attributes - dir & lang

  - Situated in <head> container

- Identifies the title of the page
- Title is contained between the
   <title> </title> tags
- Title is not displayed on the
   page. It is displayed in ID bar
   and used for
     - Bookmarks/Favorites
     - History List

---

page1 - Notepad

File Edit Format View Help
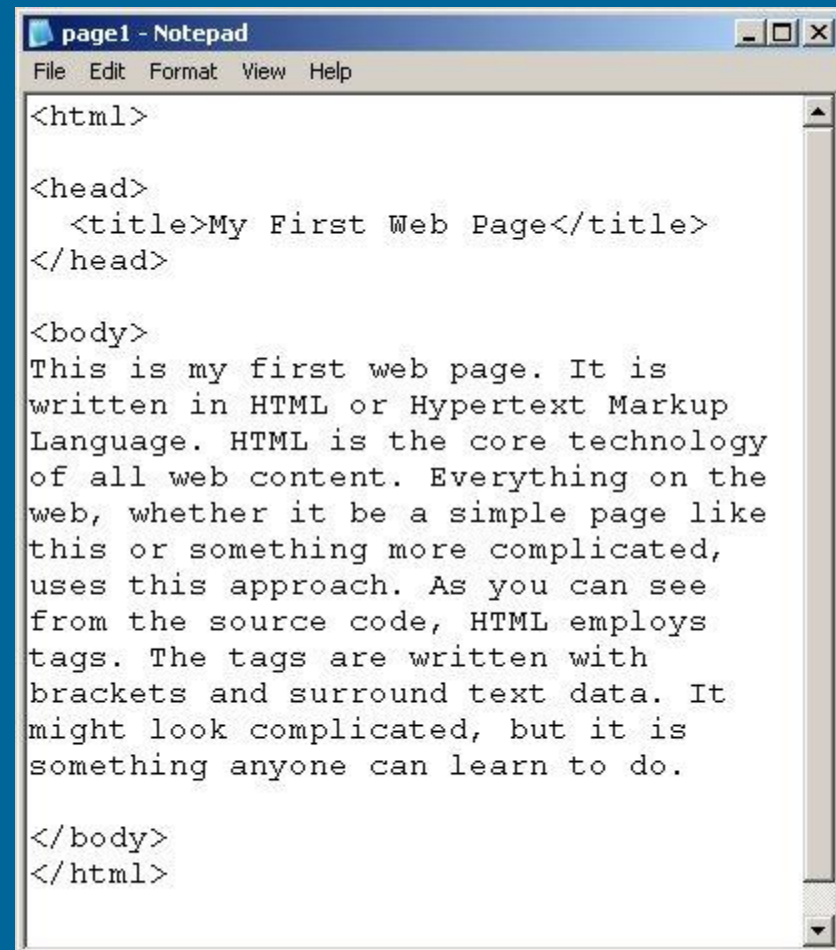
```
<html>

<head>
  <title>My First Web Page</title>
</head>
```

```
</html>
```

Writing HTML

4. <body>

 - Several attributes
   bgcolor
   background
   text
   link
- The <body> contains the
   Content of the web page

```
page1 - Notepad
File  Edit  Format  View  Help

<html>

<head>
  <title>My First Web Page</title>
</head>

<body>
This is my first web page. It is
written in HTML or Hypertext Markup
Language. HTML is the core technology
of all web content. Everything on the
web, whether it be a simple page like
this or something more complicated,
uses this approach. As you can see
from the source code, HTML employs
tags. The tags are written with
brackets and surround text data. It
might look complicated, but it is
something anyone can learn to do.

</body>
</html>
```
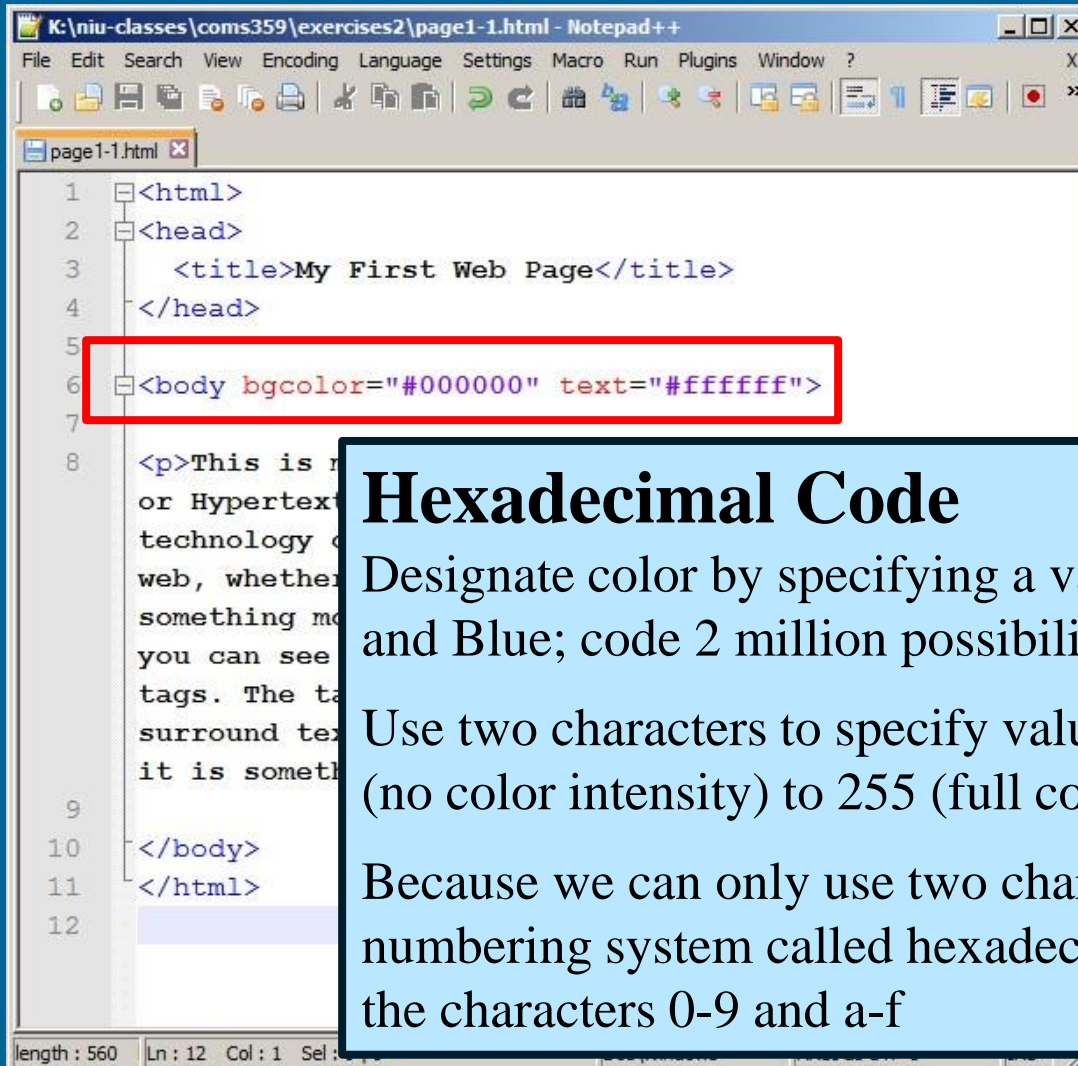
Writing HTML

- Viewing the first page
  1) Save the document
     - File/Save As
     - Save as Type: Text Document
     - Name: page1.html
     - Drive: removable media
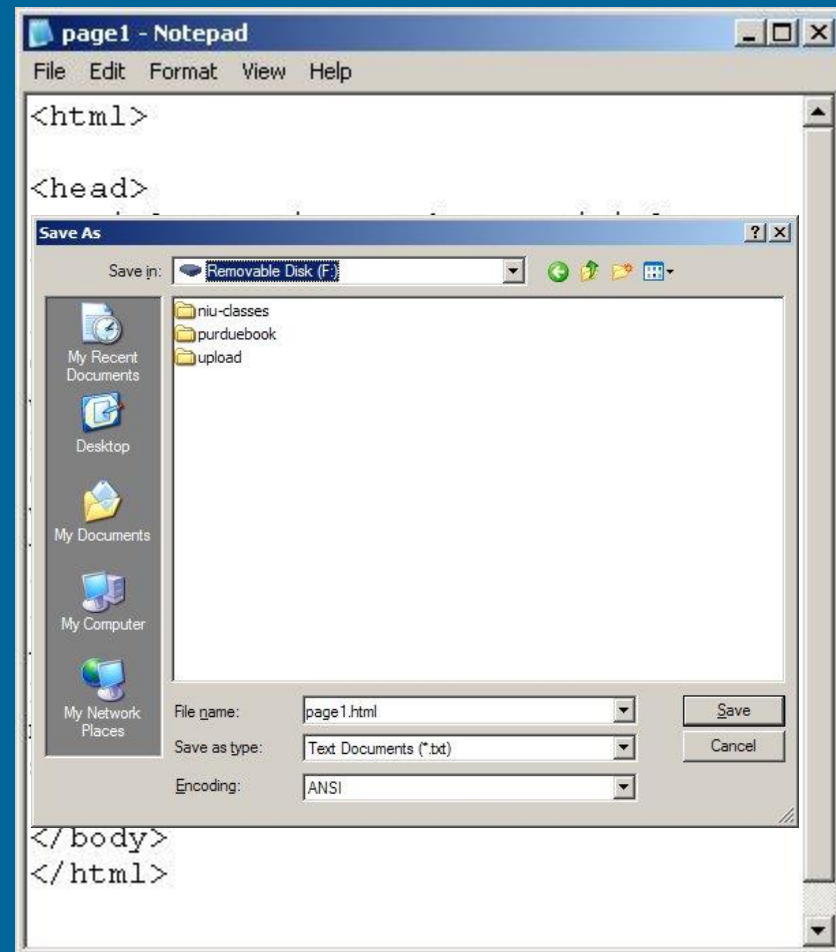
Writing HTML

- Viewing the first page

  2) Launch the file in the Web Browser
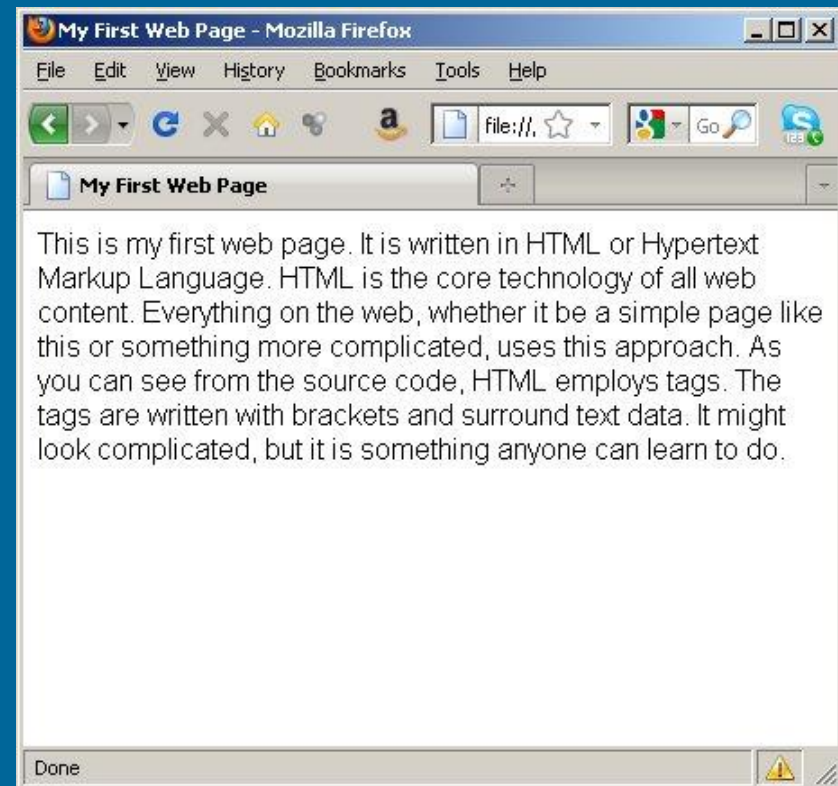
page1.html
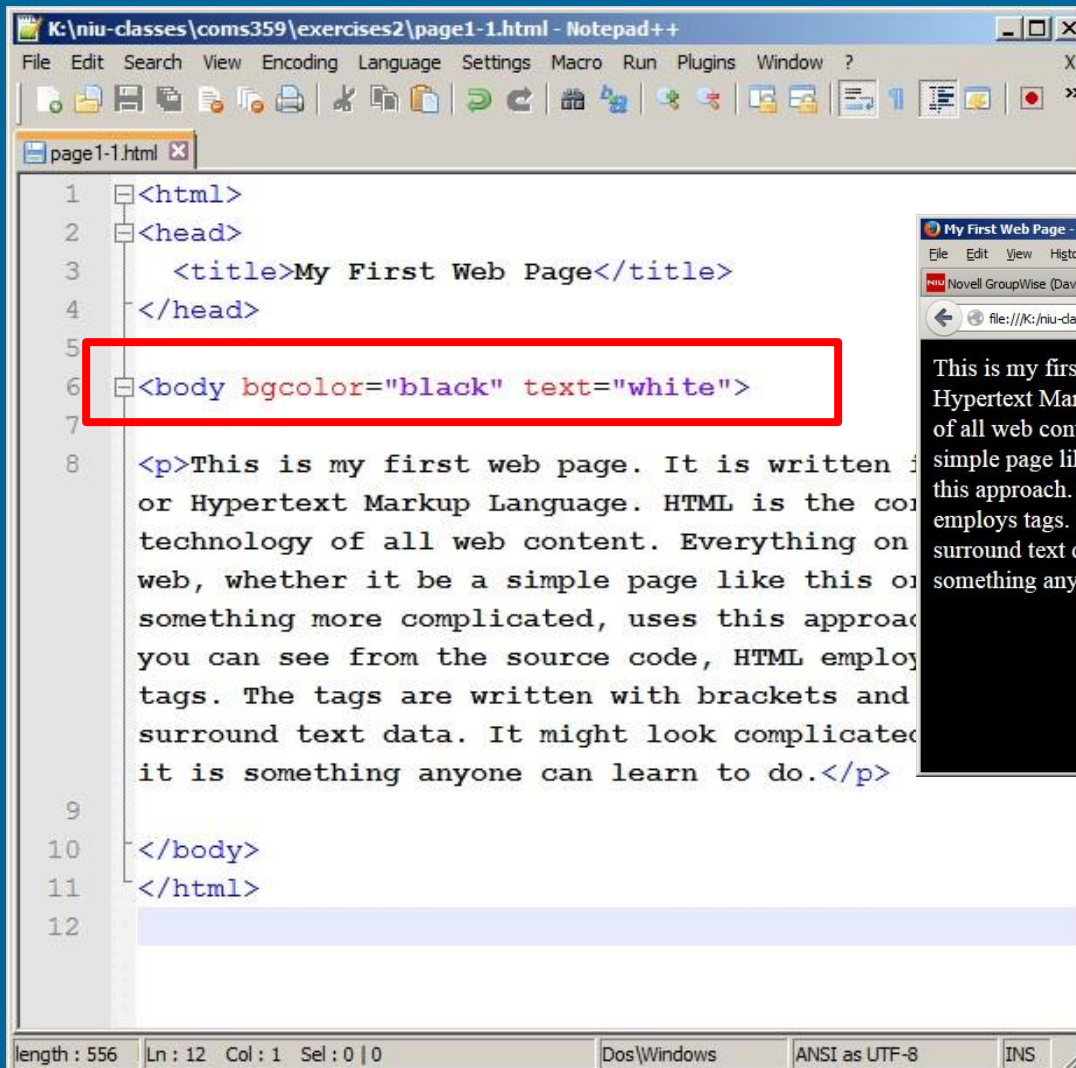
Writing HTML

- Attributes of <body>
  - bgcolor
    - Alters the background color of the page
    - Default value = white
  - text
    - Alters the color of the text on the page
    - Default value = black

Writing HTML

- Designating values for color (3 methods)
  - Color Names
    - 147 predefined color names recognized by browsers
    - i.e. white, black, green, blue…
  - RGB values (only works with CSS)
    - Indicate the intensity of each primary color using integers
    - 24 bit color; 16+ million different possibilities
    - i.e. rgb(100,256,0)
  - Hexadecimal Code
    - Indicate the intensity of each primary color using hex numbers
    - 24 bit color; 16+ million different possibilities
    - i.e. #ff9a07

Writing HTML

Writing HTML

```
K:\niu-classes\coms359\exercises2\page1-1.html - Notepad++          _ □ X

File  Edit  Search  View  Encoding  Language  Settings  Macro  Run  Plugins  Window  ?                    X

page1-1.html

  1   <html>
  2   <head>
  3     <title>My First Web Page</title>
  4   </head>
  5
  6   <body bgcolor="#000000" text="#ffffff">
  7
  8   <p>This is
      or Hypertext
      technology
      web, whether
      something m
      you can see
      tags. The ta
      surround te
      it is someth
  9
 10   </body>
 11   </html>
 12

length : 560   Ln : 12   Col : 1   Sel :
```

Hexadecimal Code

Designate color by specifying a value for Red, Green and Blue; code 2 million possibilities (ff)(ff)(ff)

Use two characters to specify values ranging from 0 (no color intensity) to 255 (full color intensity)
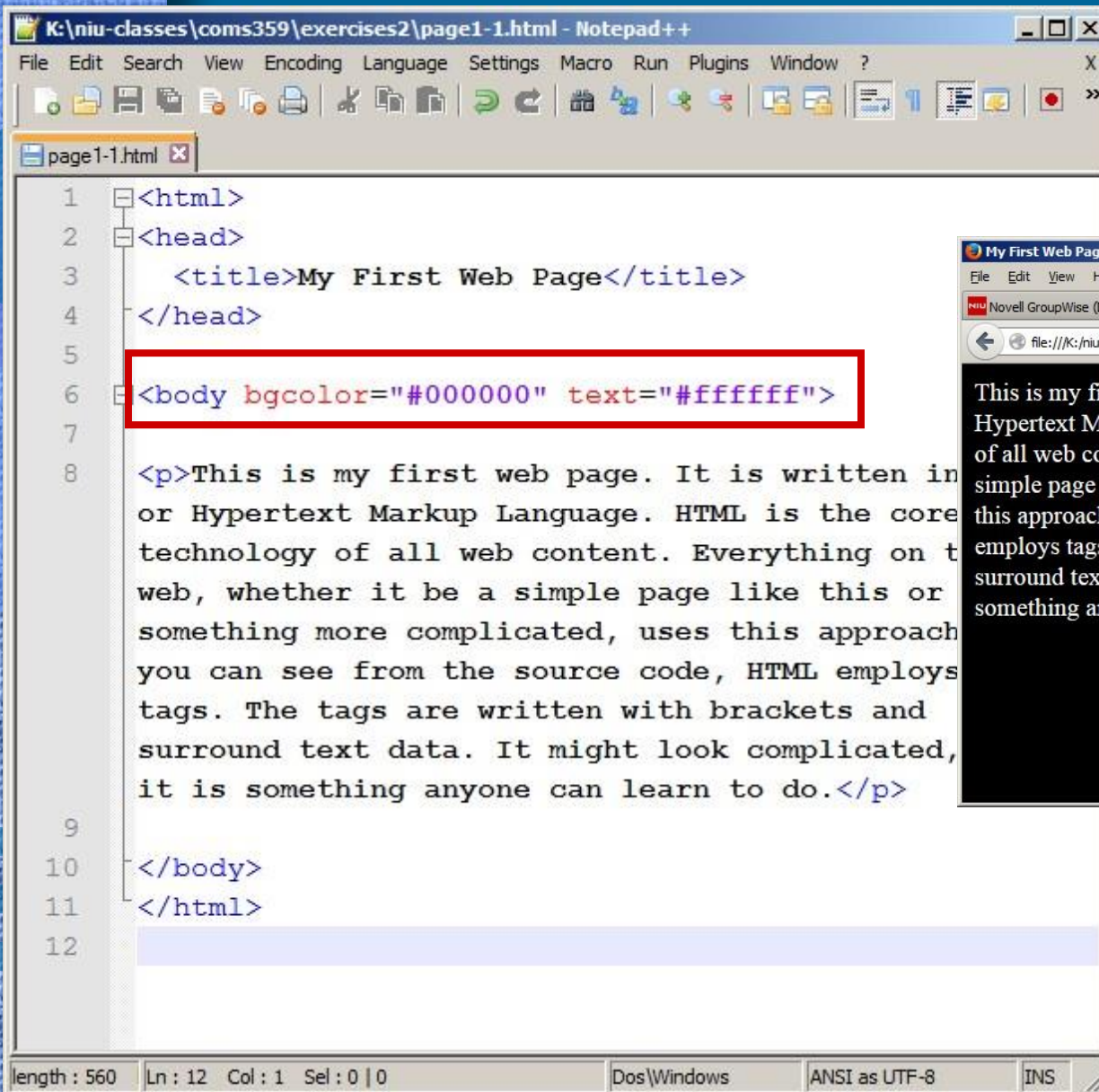
Because we can only use two characters, use a base 16 numbering system called hexadecimal numbering; use the characters 0-9 and a-f
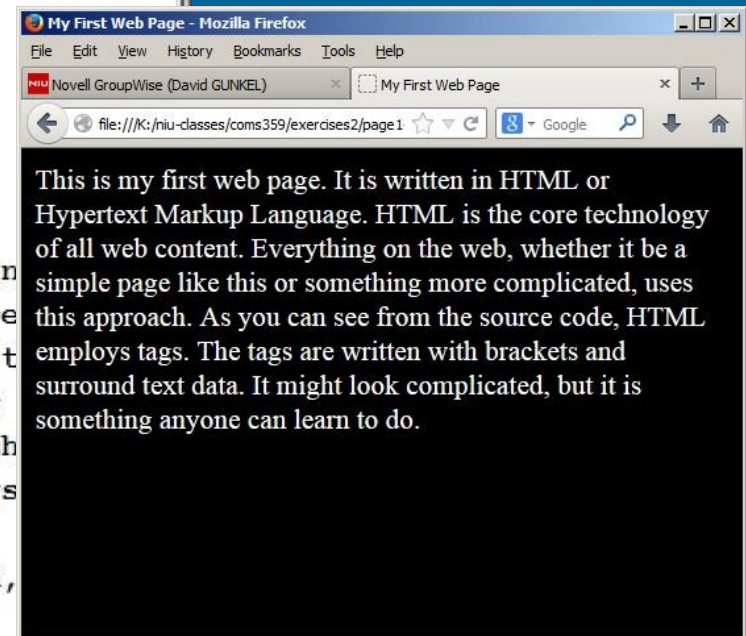
Writing HTML

http://colorpicker.com

https://www.wired.com/2010/02/color_charts/

Modify
page1.html

* Try a number of different combinations

Preview

- Texts & Lists
  - Duckett - ch. 2 (41-60)
  - Duckett - ch. 3 (62-72)

Final Note

- "Practice makes Perfect"
  - Review class exercises
  - Play with HTML
- Text Editors
  - Notepad++ or Text Wrangler
  - Notepad for Windows
  - Do not use MS-Word or other word processing programs