Web Document Structure

Progressive Enhancement

The Original World Wide Web

- Share “documents”
- Structured documents
  - Paragraphs
  - headings (lots of levels)
  - lists (bulleted, numbered, definitions)
  - figures with captions
- Markup language (HTML)
  - Use tags that would help *format* content in a “document reader” called a web browser (bad idea)
  - Add extra meaning to the words in a way that machines would understand
- Example: 11201961 …without markup, it’s just data

Information Management: A Proposal

Tim Berners-Lee, CERN
March 1989, May 1990

Overview

[illegible]

[illegible]

Losing Information at CERN

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Progressive enhancement

- A strategy for structured web design
- Using web technologies in a layered fashion
- Progressive Enhancement consists of the following core principles:
    - basic content should be accessible to all web browsers
    - basic functionality should be accessible to all web browsers
    - sparse, semantic markup contains all content
    - enhanced layout is provided by externally linked CSS
    - enhanced behavior is provided by unobtrusive, externally linked JavaScript
    - end-user web browser preferences are respected

Progressive enhancement

- Web pages are often visualized as being made up of layers:
    - Content - the foundational layer
        1. Structure
        2. Presentation
        3. Behavior
- Each layer enhances the base content in some way

The Technology behind the Layers

0. Content - MS Word (?) …anything
1. Structure - HTML
2. Presentation - CSS
3. Behavior - JavaScript

What is HTML?

- HTML:
  The set of markup symbols or codes placed in a file intended for display on a Web browser page.

- The World Wide Web Consortium (http://w3c.org) sets the standards for HTML and its related languages.

HTML Elements

- Each markup code represents an HTML **element .**
- Each element has a purpose.

  Most elements are coded as a pair of tags:
  an opening tag and a closing tag.
- Tags are enclosed in angle brackets, "**<**" and "**>**" symbols.

What is HTML5 ?

- Newest draft version of HTML/XHTML
- Supported by modern browsers
  - Safari, Google Chrome, Firefox, Internet Explorer 9
- Intended to be backwards compatible
- Adds new elements
- Adds new functionality
  - Edit form data
  - Native video and audio
  - And more!

Source: W3C http://www.w3.org/html/logo/

Document Type Definition

- **Document Type Definition (DTD)**
  - doctype statement
  - identifies the version of HTML contained in your document.
  - placed at the top of a web page document

DTD Examples

XHTML 1.0 Transitional DTD

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0
  Transitional//EN"
  http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd>
```

HTML5 DTD

```
<!DOCTYPE html>
```

Example HTML5 Web Page

```
<!DOCTYPE html>

<html>

    <head>
         <meta charset="utf-8">
         <title>Page Title Goes Here</title>
    </head>

    <body>
         body text and more HTML5 tags go here
    </body>

</html>
```

Head & Body Sections

- **Head Section**
  Contains information that describes the Web page document

  <head>

  …head section info goes here

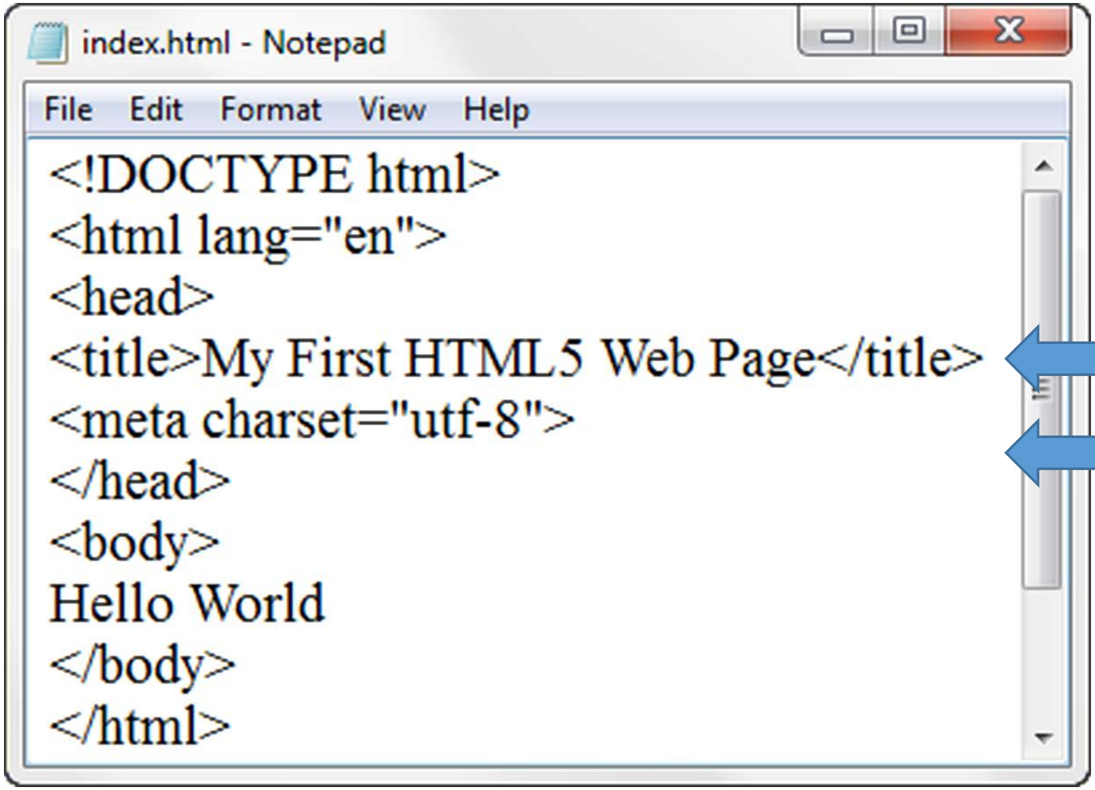
  </head>

- **Body Section**
  Contains text and elements that display in the Web page document

  <body>

  …body section info goes here

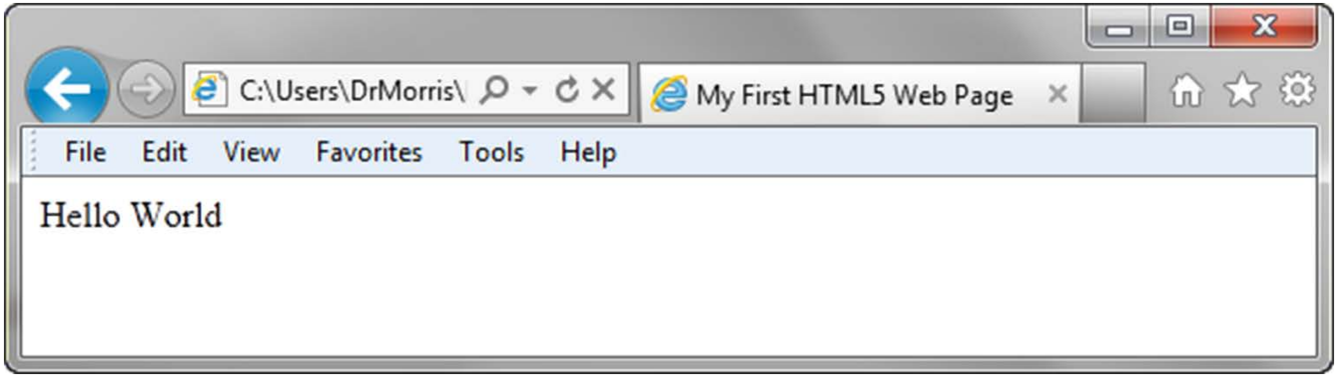
  </body>



```
<!DOCTYPE html>
<html lang="en">
<head>
<title>My First HTML5 Web Page</title>
<meta charset="utf-8">
</head>
<body>
Hello World
</body>
</html>
```

Title Element

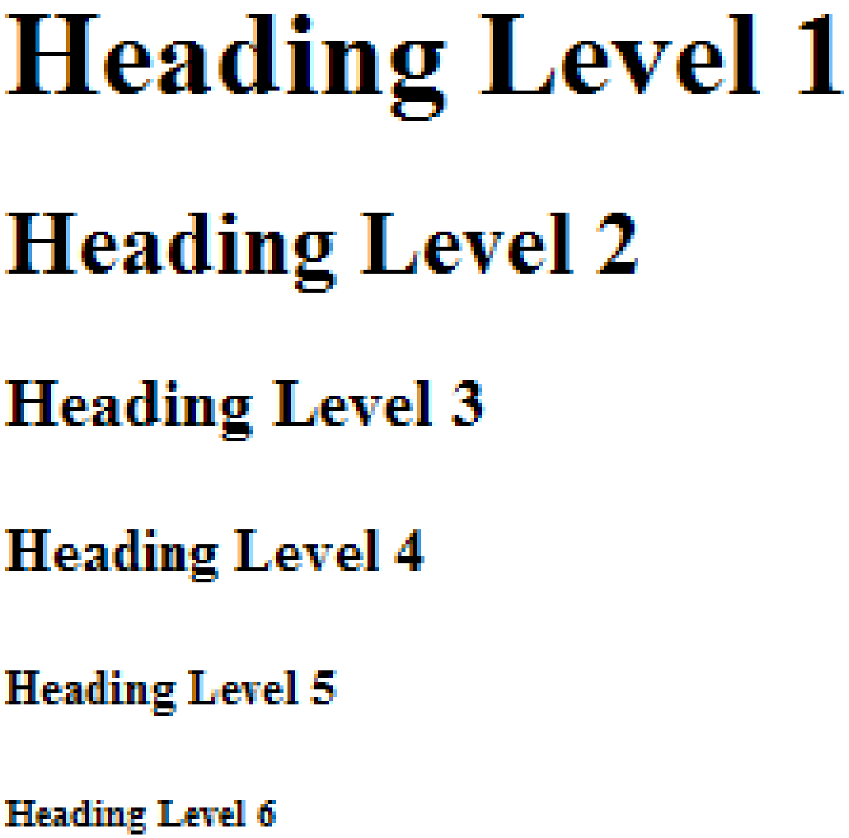
Meta Element



Hello World

Heading Element

```
<h1>Heading Level 1</h1>
<h2>Heading Level 2</h2>
<h3>Heading Level 3</h3>
<h4>Heading Level 4</h4>
<h5>Heading Level 5</h5>
<h6>Heading Level 6</h6>
```



Heading Level 1

Heading Level 2

Heading Level 3

Heading Level 4

Heading Level 5

Heading Level 6

Paragraph Element

- Paragraph element

<p> …*paragraph goes here*… </p>

  - Groups sentences and sections of text together.
  - Block Display – Configures empty space above and below

Line Break Element

- Line Break element
  - Stand-alone, or void tag

    ***…text goes here* <br>**
    This starts on a new line….

  - Causes the next element or text to display on a new line

HTML Lists

- Unordered List
- Ordered List
- Description List

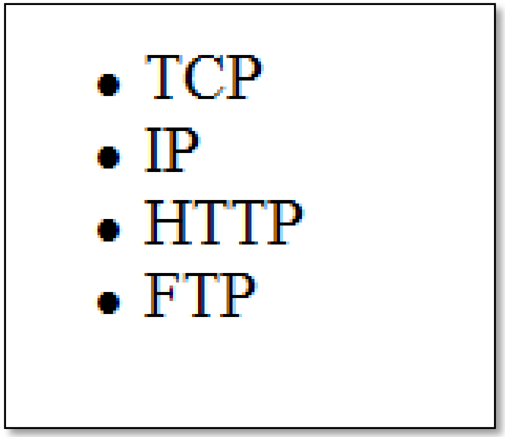
  formerly called a definition list

Unordered List

- Displays a bullet, or list marker, before each entry in the list.

- <ul>
  Contains the unordered list

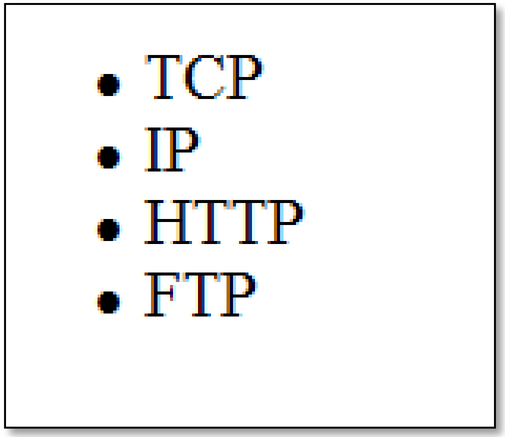
- <li>
  Contains an item in the list



- TCP
- IP
- HTTP
- FTP

Unordered List Example

```
<ul>
   <li>TCP</li>
   <li>IP</li>
   <li>HTTP</li>
   <li>FTP</li>
 </ul>
```



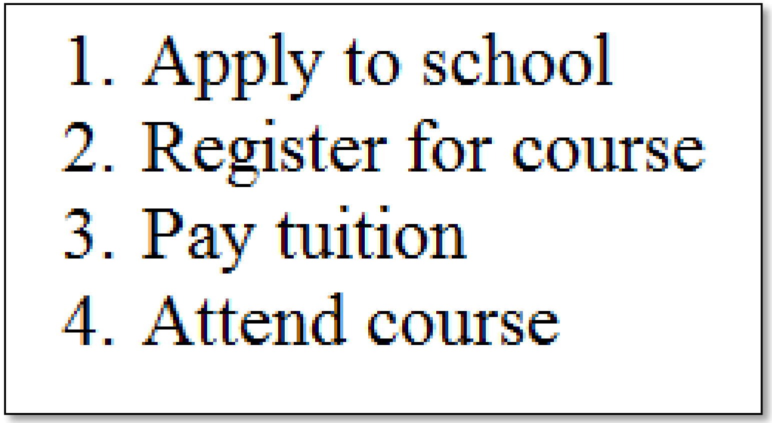
- TCP
- IP
- HTTP
- FTP

Ordered List

- Displays a numbering or lettering system to itemize the information contained in the list
- <ol>
  Contains the ordered list
  - type attribute determines numbering scheme of list, default is numerals
- <li>
  Contains an item in the list

Ordered List Example

```
<ol>
   <li>Apply to school</li>
   <li>Register for course</li>
   <li>Pay tuition</li>
   <li>Attend course</li>
 </ol>
```



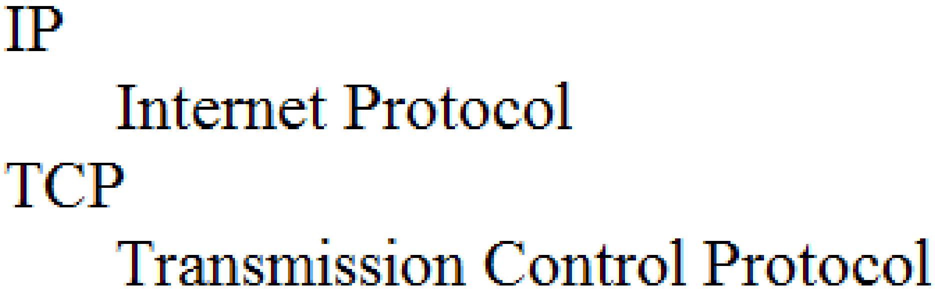
1. Apply to school
2. Register for course
3. Pay tuition
4. Attend course

Description List

- Useful to display a list of terms and descriptions or a list of FAQ and answers
  - <dl>
    Contains the description list
  - <dt>
    Contains a term/phrase/sentence
    Configures empty space above and below the text
  - <dd>
    Contains a description of the term/phrase/sentence
    - Indents the text
    - Configures empty space above and below the text

Description List Example

```
<dl>
   <dt>IP</dt>
        <dd>Internet Protocol</dd>
    <dt>TCP</dt>
         <dd>Transmission Control Protocol</dd>
</dl>
```



IP

Internet Protocol

TCP

Transmission Control Protocol

Proper Nesting

CODE:

```
<p><em>Call for a free quote for your web development needs:
<strong>888.555.5555 </strong></em></p>
```

BROWSER DISPLAY:

Call for a free quote for your web development needs: ***888.555.5555***

Special Characters

- Display special characters such as quotes, copyright symbol, etc.

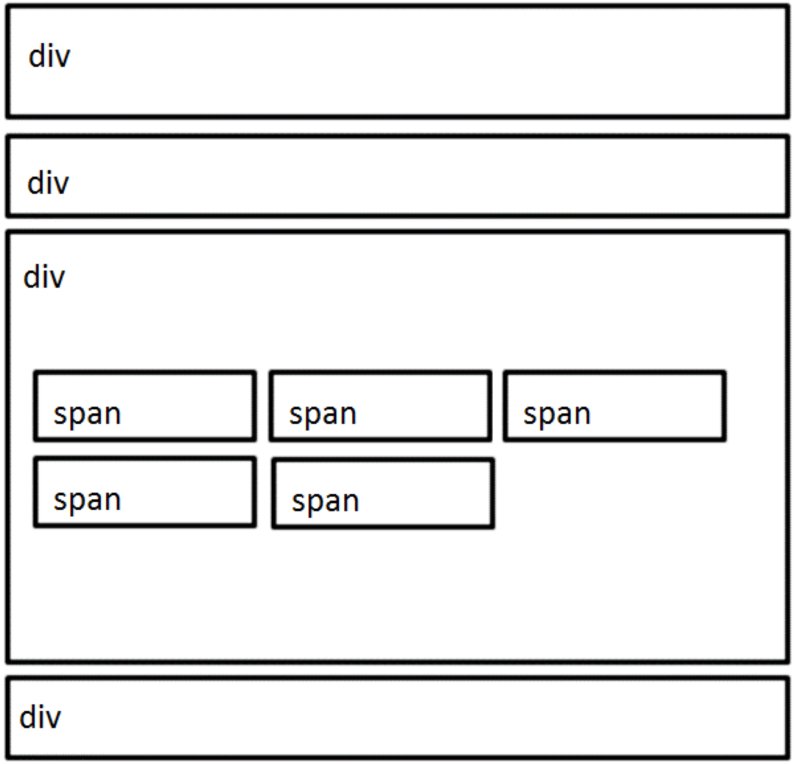
Character	Code
©	&copy;
<	&lt;
>	&gt;
&	&amp;
	&nbsp;

Structural elements

<div> and <span>

Block vs inline

- Some elements display as “blocks” by default
  - Stack-up, top-to-bottom
  - 100% width
- Some elements display “inline”
  - Line-up side-by-side
  - Only as wide as needed



Div Element

- Configures a structural block area or “division” on a web page with empty space above and below.
- Can contain other block display elements, including other div elements
  - Block elements are as tall (height) as they need to be (based on their content) and always take up all the width (100% wide)

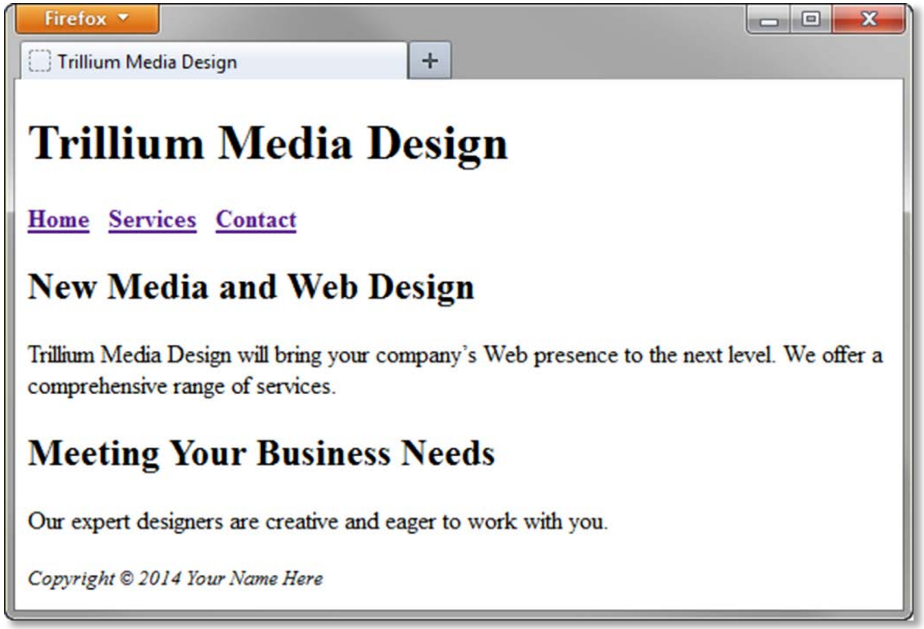
```
<div>Home Services Contact</div>
```

span element

- Purpose:
  - configure a specially formatted area displayed in-line with other elements, such as within a paragraph.
  - In-line elements are one line tall (height) and wrap to the next line when they run out of space (width)
  - There is no additional empty space above or below a span – it is inline display.
- This is a <span>line of inline text</span> that continues on and on.

HTML5 Structural Elements

```
<body>
  <header> document headings go here </header>
  <nav> main navigation goes here </nav>
  <main> main content goes here </main>
  <footer>  document footer information goes here </footer>
</body>
```



Trillium Media Design

Home Services Contact

New Media and Web Design

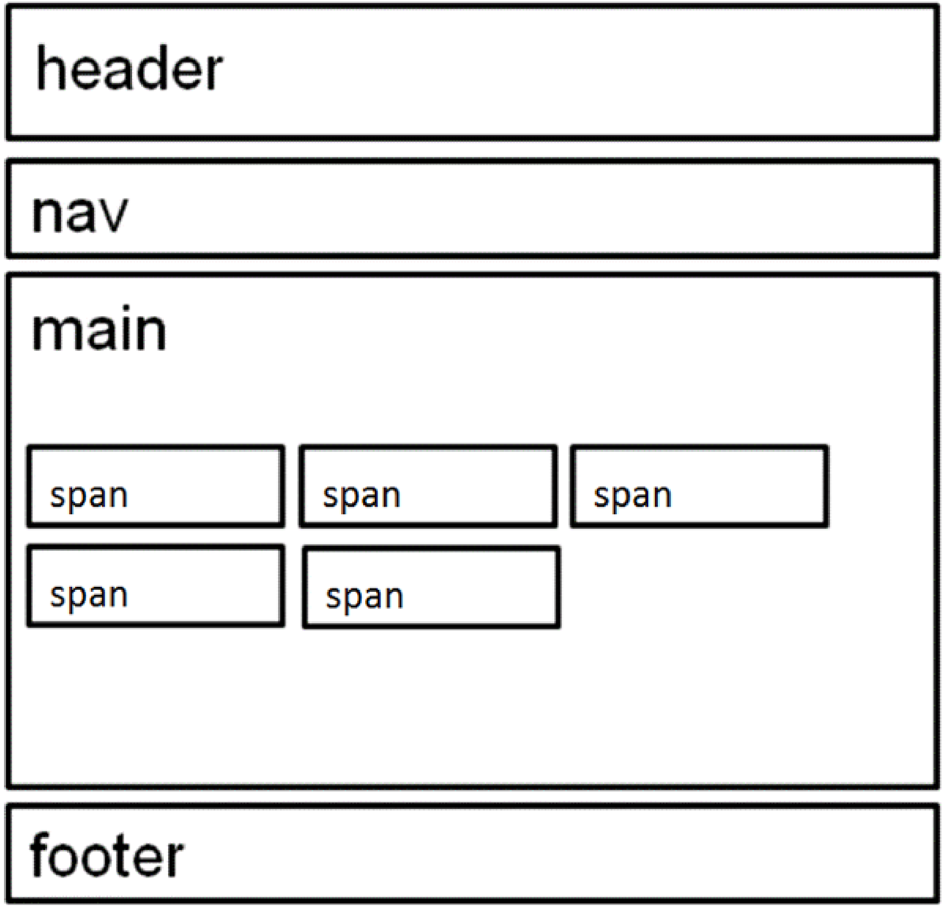
Trillium Media Design will bring your company's Web presence to the next level. We offer a comprehensive range of services.

Meeting Your Business Needs

Our expert designers are creative and eager to work with you.

Copyright © 2014 Your Name Here

HTML5 Structural Elements



- header Element

  <header></header>
  Contains the web page document's headings

- nav Element

  <nav></nav>
  Contains web page document's main navigation

- main Element
  <main></main>
  Contains the web page document's main content

- footer Element

  <footer></footer>
  Contains the web page document's footer

More about elements

- Elements = tags (synonymous)
- Semantic markup: HTML elements exist to describe the meaning and structure of the content, *not* to describe its appearance.
  - E.g.: only use an "ordered" list for ordered data, not just because you want numbers on a list.
- Most tags have an open and closing tag; some are stand alone
  - e.g. <img> or <br>
- DIV and SPAN are elements that you can use that provides no semantic value to the document.

Anchor Element

- Specifies a hyperlink reference (href) to a file
- Text between the <a> and </a> is displayed on the web page.

```
<a href="contact.html">Contact Us</a>
```

- href Attribute
  - Indicates the file name or URL

More links

```
<img src="" alt="...">
<a href="">...</a>
```

Absolute and relative links

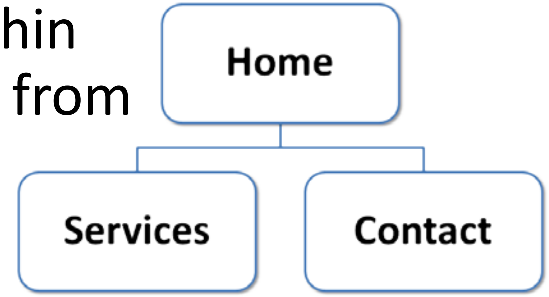
- Absolute
  - Link from one resource to another on a different file system (e.g. a different web server)
  - <a href="http://www.anothersite.com/webpage.html">…</a>

  -- or –

  Link from one resource to another from within the same file system, but with a path that starts at the root (/)

  - <img src=“/users/rkostin/public_html/image.jpg" alt="...">

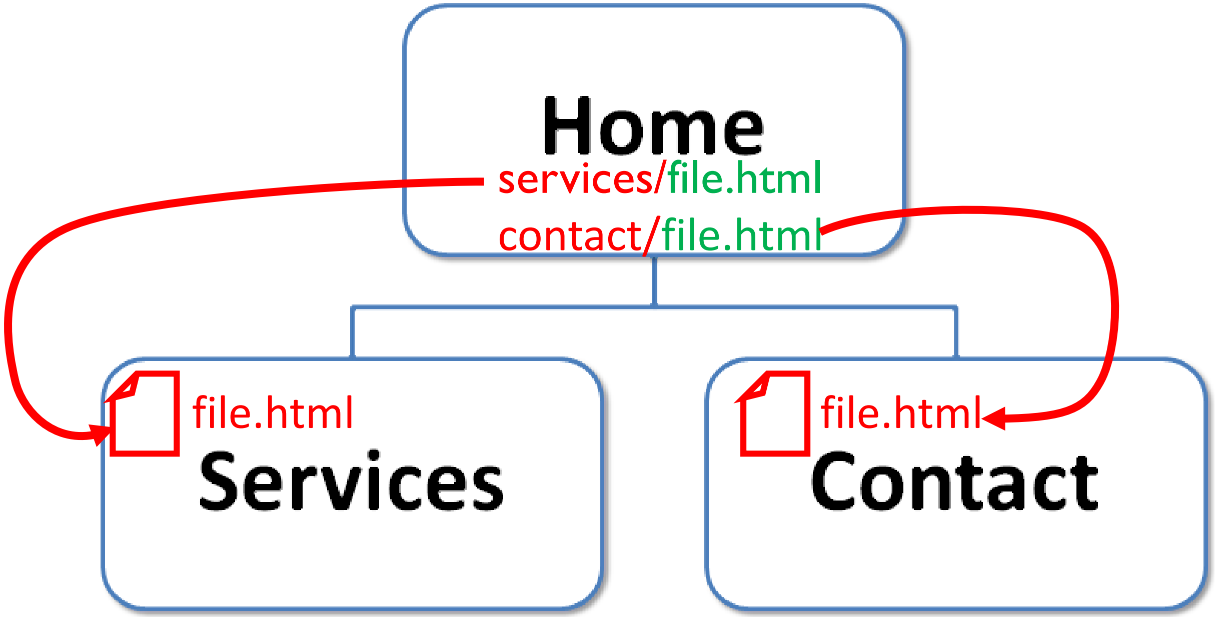
- Relative
  - Link from one resource to another from within the same file system, with the path starting from the location of where the code is written
  - <a href=“services/webpage.html">…</a>



Hyperlinks

- Normal path: “foldername/filename”

Example: you’re writing an HTML file in the HOME folder, and you want to create links to files to the SERVICES folder and the CONTACTS folder:



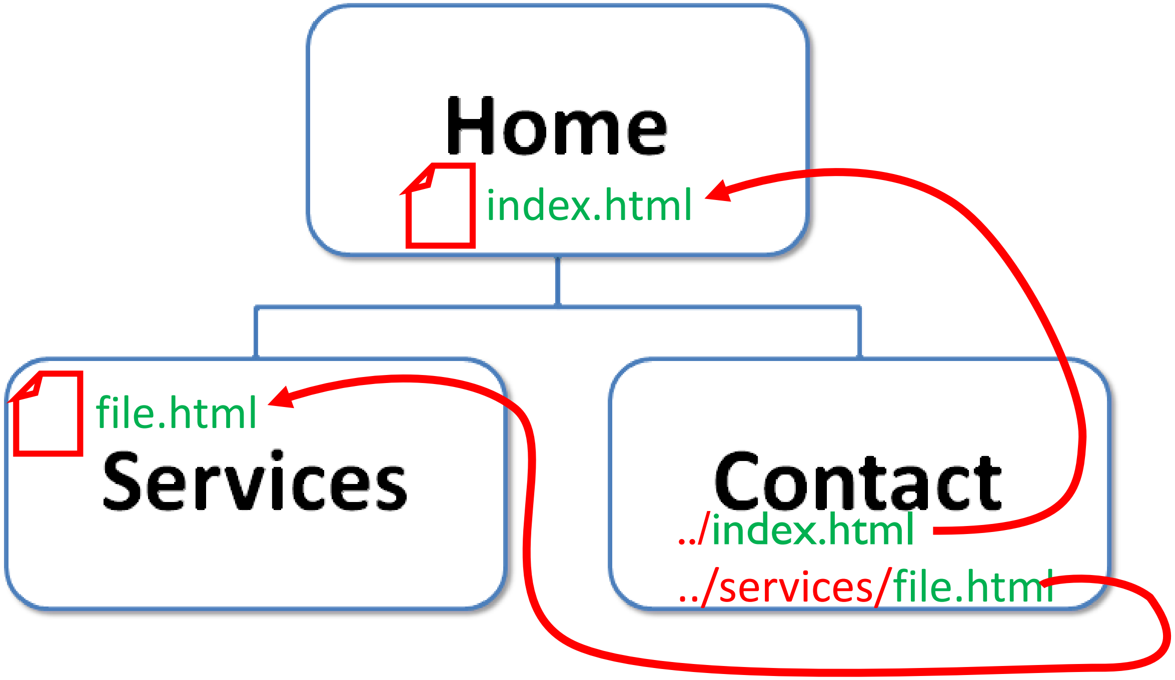
Child links

- Links to subfolders…
  - <img src=“services/image.jpg" alt="...">
  - <a href=“contact/file.html">…</a>

Hyperlinks

- “../” notation

Example: you’re writing a file in the CONTACT folder, and you want to create links to files in the HOME folder and the SERVICES folder:



Parent and sibling links

- Links to parent folders…
  - <img src=“../image.jpg" alt="...">
  - <a href=“../file.html">…</a>
- Links to sibling folders…
  - <img src=“../another-folder/image.jpg" alt="...">
  - <a href=“../another-folder/file.html">…</a>

Writing Valid XHTML

- Check your code for syntax errors
  - Benefit:
    - Valid code →
      more consistent browser display

- W3C HTML Validation Tool
  - http://validator.w3.org

- Fix the TOP error first, then revalidate