Handout #15
Nick Parlante

HTML2

Change that Password!

For prudence sake, you should change your leland password once you're done with HW1a. It sent your password over a socket about a 100 times as you tested it, so it's best to change it now.

We'll talk about the various technical angles on password security and technical fixes in the security lectures.

HTML Tags

<h1></h1> -- header

<p> -- paragraph

 -- line break

, <li> -- list

, -- bold, italic

<hr> -- horizontal rule

< > -- < and >

Table Tags

Alignment

Use tables to create alignment

Flexible

Notice how the table adjusts its internal structure depending on the window width and font size chosen on the client side. If specify a fixed table width, this won't work.

<table border=1>

<tr>...</tr>

one row -- contains cells

<td>...</td>

cells within a row (left to right)

<th>...</th>

Like td, but use for "header" labels in the top row

URLs

Url

Uniform Resource Locator -- specify the location where a document may be retrieved There's research into URN Uniform Resource Name which identifies a document reliably no matter where it is stored. URNs are not currently really used, but it's a clear future direction.

http://www.stanford.edu/class/cs193i/

Scheme -- http

Host -- www.stanford.edu

"Path" -- /class/cs193i/

Later, we'll divide the path in to sub-parts

underlined anchor text

There can be other foo="yadda yadda" bindings in the <a> tag -- don't assume the href is the only one. Also, the URL may not be quotes.

Make any element in the document (words in paragraphs, header, lists, pictures ...) a "hyperlink" to another document. In the browser, the link will show up with a distinctive appearance -- typically blue underlining.

E.G.

CS193i

Shows up as an underlined CS193i which links to the class page when clicked.

Blue Underline

IMHO, it's stupid to override that default appearance, since even the most naive user has learned to associate the blue underline with the "link" idea. If pages use different appearances for linking, then everything begins to look potentially clickable which is huge a step backwards in usability for the web.

Usability: clickable things should look clickable

Style

Don't put too much text in the HREF— it's confusing to look at once the line breaks. Just anchor around the key phrases.

Do name it what it is: check out the document archive, or surf over to our horrific Summer Vacation Photos.

Avoid phrases like "click me". Some use phrasing like "see our large complicated and difficult to explain with just a few words site here." I prefer to anchor the description itself if at all possible.

% Encoding

Whitespace and most other non [a-zA-Z0-9] characters are encoded in the URL as a '%' followed by the character's ASCII code in hex

e.g. a space character within URL is encoded as "%20" since hex 20 = 32 decimal which is the ASCII code for a space.

W3C addressing

http://www.w3.org/Addressing/

Page relative URL lookup

Suppose you are within the CS193i page who's full URL is...

http://www.stanford.edu/class/cs193i/index.html

The URL of an enclosing page is sometimes known as the "base" URL.

URLs within the page are evaluated relative to its base URL. That means that if a URL is incomplete, the system will assume any missing components are the same as the base URL.

Effectively, this just means that URLs within a page are assumed to point to things which are "near" the referring page.

Gives you the latitude to use short, relative URLs within a page.

Relative Example

Suppose we are writing HTML which is at
http://www.stanford.edu/class/cs193i/index.html

The URL of the document where the <a href = > is embedded is the "base" URL.

Relative

Binky!

The short, relative reference uses the protocol, host, and front part of the path of the base URL, so expands to the full URL...

http://www.stanford.edu/class/cs193i/binky.html

foo.html

So if you have a document called foo.html in the same directory as your home page, you can refer to it just as "foo.html" and count on the relative lookup to find it.

Extra For Experts

Relative addressing allows you to develop a group of interlinked documents in one place using relative references to refer to each other. Later you can move all the documents somewhere else, and it all continues to work even though the document's full URLs are all different.

You can use "../foo.html" to go up a directory.

Root Relative

A relative url beginnging with a '/' uses the protocol and host, but no par t of the original path. So it essentially goes up to the document root of the same server.

/images/jeffsad.jpeg

e.g. <a href = "/images/jeffsad.jpeg"> refers to an images directory in the document root of the same server as the base URL.

The full URL would be http://www.stanford.edu/images/jeffsad.jpeg

Mailto URL Scheme

A URL which when clicked, opens a window to edit a message to be sent to the given address.

nick@cs.stanford.edu

Name Tags

<a name = spot> marks a particular location in a document.

A URL can refer to that place in the document as <a href = document.html#spot> or with a relative reference within the same document just <a href = #spot>.

The <a> tag may contain both an href= and a name=.

Images

Image file formats -- compression

JPEG

public standard -- Joint Photographic Expert Group. As I recall this is Kodak + a bunch of other image related industrial partners.

".jpg" or ".jpeg"

Best for photos

24 bit color depth

Adjustable lossy compression -- 10x or 20x compression.

MPEG -- the "video" sibling of JPEG.

GIF

".gif"

Best for simple images (the older standard). Unisys charges for the use of the GIF compression scheme in source code, so there is a move afoot to ditch it. That's also why free software tends not to work with GIF.

Transparency

Interlaced

Animated (ugh!)

PNG

Portable Network Graphics

An up-and-coming public standard replacement for GIF -- about 10% better compression, better features, and unencumbered by patents.

<img src = "*URL of image*">

Usually put the image file in the same directory as the referring HTML and then use relative URLs.

"Image map" associates the coordinates of clicks on an image with URLs-- easy to misuse. Very easy to violate the "clickable things should look clickable" interface design rule. Just don't use image maps.

alt=

Put in short text people can see if they are running with images off

width= height=

Include with and height hints in the <img> tag greatly help the browser lay out the page before it has retrieved the images

Image Style

Images = slow

Images are about 100x slower than text, and slowness is typically the #1 complaint of surfers. Just because Photoshop is fun, don't get carried away with clogging up your page with images. Look at how www.yahoo.com works -- you figure they've done some studies on what works best!

Decoration

Use images for decoration to make the page content visual and appealing. Do not use images to convey actual content like body text or links.

Lesson #1 - How HTML is Used

Tim Berners-Lee had a dream of very portable HTML because he understood the great value that any-to-any synergy unlocks. However, that's not what happened.

Designer Mindset

The typical web designer has a "page layout" mindset. They want to specify exactly how things look. Or put another way, they are not comfortable with the "structure but not appearance" paradigm. Therefore...

HTML Bad

Fixed layout, fixed font size

Images for fixed appearance -> SLOW

Fragile -- Some incompatibility

Most pages work on most browsers, but some combinations don't work. The fixed appearance strategy is fragile -- this is what the "structure not appearance" style was good at.

No prayer of working on Palm

HTML Good

90% of browsers

Web designers are learning what combinations work in most browsers.

Extra Work

Getting fixed appearance in all browsers takes 2x as long, but it can be done.

It's being fixed

Web standards and tool vendors are gradually fixing the situation so you can get pretty portable, pretty easy to produce content.