

Web Site Design

Stanford University Continuing Studies CS 21

Mark Branom

branom@alumni.stanford.edu

<http://web.stanford.edu/people/markb/>

Course Web Site: <http://web.stanford.edu/group/csp/cs03/>

Week 3 Agenda



- Graphics
- Setting image size & other tips
- ImageMaps
- Video/Sound

Structure of a URL

- Uniform Resource Locators provide links from a page anywhere on the World Wide Web to any resource on the Internet.
- Starts with the protocol (defines how the info is to be sent and received):
 - http:// Web page
 - ftp:// FTP site
 - mailto: send a mail message
 - file:/// File on a local (desktop) machine

The server and domain

- Servers are computers which provide HTML web pages to a browser using the *http* protocol.
- Must have direct, permanent connection to the Internet
- Domain defines the server on the internet where the resources are located. Common ones are .com (commercial), .org (nonprofit organization), .mil (military), and .edu (educational facility)
- Common country codes are: .uk (United Kingdom), .jp (Japan), .au (Australia)

Directory Path



- Directory path consists of zero or more directories separated by forward-slash characters. (/)
- Important distinction between PCs and the internet: directories on PCs are separated by backwards slash. (\)

Links

- `Mark's resume `
- This is an absolute link. It defines completely the domain of the host computer (`web.stanford.edu`), as well as the path (`/people/markb`) and the file (`resume.html`).
- `Mark's resume`
- This is a relative link. Note that the protocol, domain, and path are omitted from the URL. The browser will assume the current domain and path are to be used.

By current, we mean the domain and directory of the page that is currently being displayed (ie, relative to the current page, find *this* page).

Using Graphics on Web Pages

- Graphics on web pages are separate files. Unlike a Word document, where the graphics actually "live" within the document, to get a graphic on a web page, designers point to the graphic file in the HTML source code like this:

```

```

- Graphics are copyrighted material and should only be used with permission.

Graphics can be described as either relative or fully qualified URLs

<http://web.stanford.edu/group/csp/cs03/demos/bunny.html>

```
<html>
  <head>
    <title>Bunny Webpage</title>
  </head>
  <body bgcolor="turquoise">
    <h2 align="center">BUNNY!</h2>
    <p align="center">
      
    </p>
  </body>
</html>
```

Relative reference (relative to the location of the HTML document)

```
<html>
  <head>
    <title>Bunny Webpage</title>
  </head>
  <body bgcolor="turquoise">
    <h2 align="center">BUNNY!</h2>
    <p align="center">
      
    </p>
  </body>
</html>
```

Fully qualified URL



Bunny.html

In the bunny web page example, both bunny.html and bunny.gif are located in the same directory.

(<http://web.stanford.edu/group/csp/cs03/demos/>)

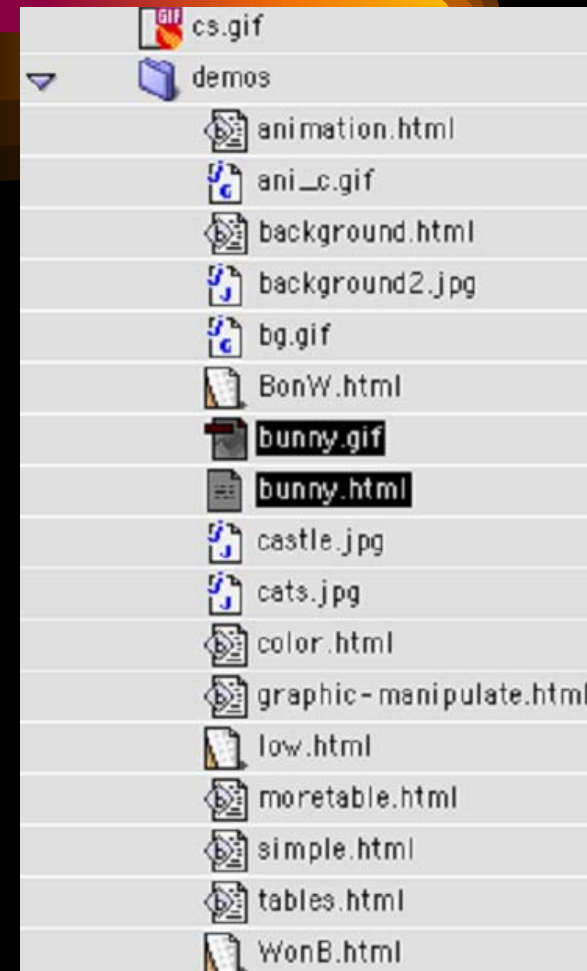
That's why we could use relative URL to insert the graphic (``).

If we wanted to use the fully-qualified URL, it would have been:

```

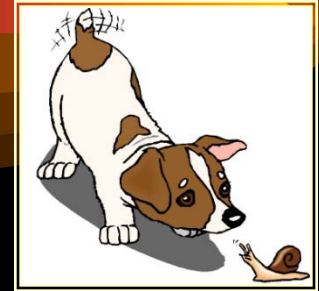
```

But since both bunny.gif and bunny.html are in the same web space, it makes better sense to use the relative URL.



Types of Web Graphics

GIF: GIF (Graphics Interchange Format) is the most common graphic type on the web. It can be pronounced with a hard or soft “g.” GIF is limited to 8-bit color information (256 colors) and works best for line art. It allows for transparent and animated graphics.



JPEG: JPEG (Joint Photographic Experts Group) was designed for color-rich images, such as photographs. JPEG compresses graphics with high color depth (24-bit color -- up to 16 million colors) so that they are smaller and download faster. JPEG compression is "lossy" -- some image detail is lost during compression



PNG: PNG (Portable Network Graphics) was also designed for color-rich images, but unlike the JPEG format, PNGs are not lossy. Like the GIF, PNG files allow for transparency and animation.



Using Existing Web Graphics

- Not a graphic artist? Don't despair! Few of us are!
- There are numerous graphics archives on the Web where you can find wonderful, usable, professional-looking graphics for use on your web pages.
- Remember, graphics are copyrighted -- don't use them unless you have explicit written permission to use them.
- Here are a couple of graphics archives that contain images that would be OK to use (assuming you follow the prescribed attribution and usage rules):
 - <http://commons.wikimedia.org>
 - <http://www.flickr.com/creativecommons/>

Downloading Graphics

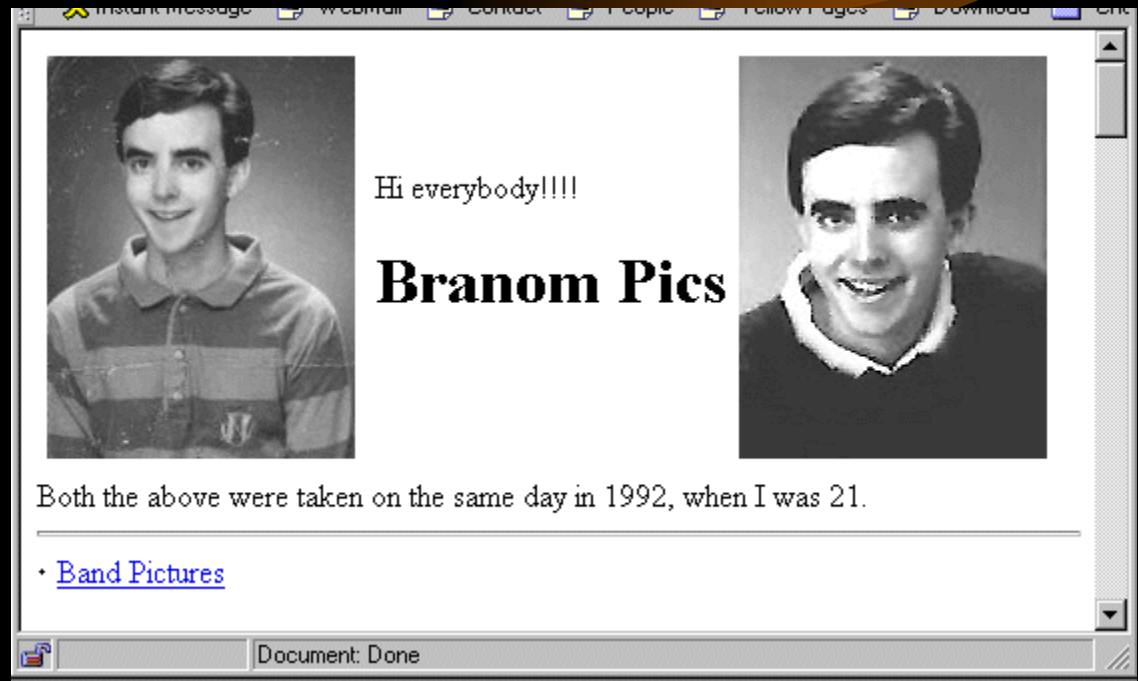


- In your web browser:
 - Point your mouse over the image and right-click the image.
 - Choose “Save Image (Picture) As . . .”
 - Specify the destination location of the image file on your computer. Click OK.

Downloading Graphics example

- Suppose you came across this website I've created which has some pictures of me.

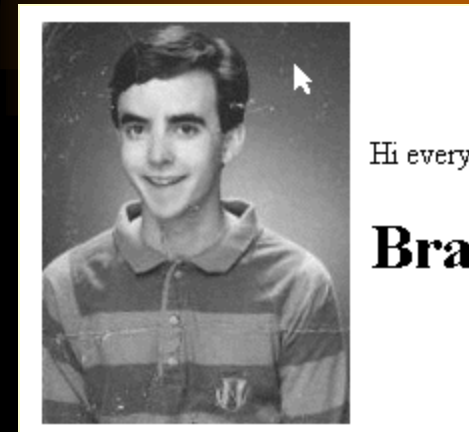
Suppose you really loved the picture of me on the left and you want to download it for use on your own website. How would you go about doing this?



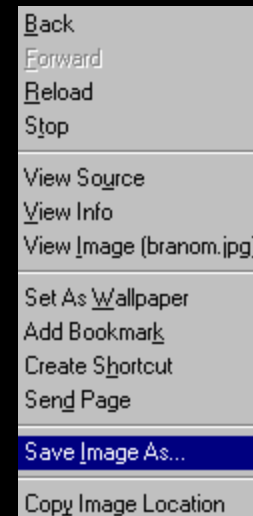
BTW, the URL is: <http://web.stanford.edu/~markb/pictures.html>

Downloading Graphics example (cont.)

- Step 1: Move the mouse over the image that you want and right-click on the image you want (on a Macintosh, hold down the mouse over the image you want)

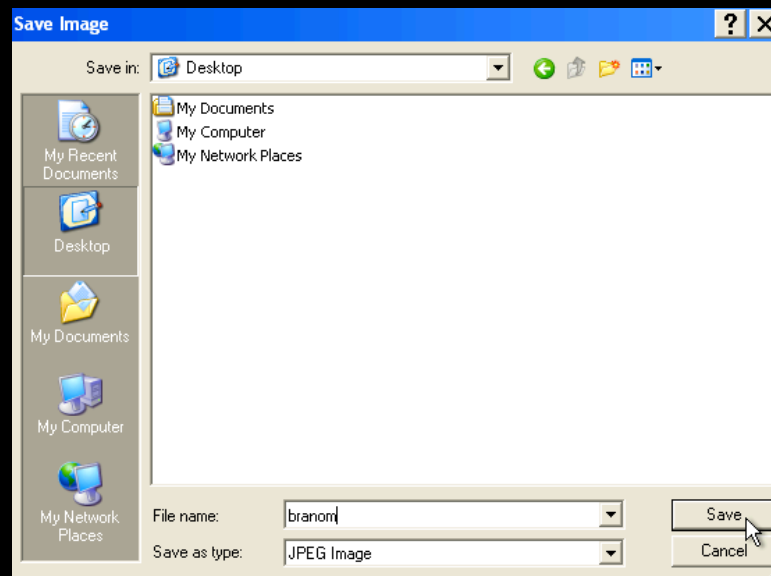


- Step 2: Choose “Save Image As”



Downloading Graphics example (cont.)

- Step 3: Choose the location on your computer where you want to save the image. I'm going to save it to my Desktop for the moment.



- That's it! Now that I've downloaded the image to my computer, I can refer to it in my webpage with the `` tag.

Creating Web Graphics

- If you are familiar with creating computer graphics, applying that knowledge to creating web graphics isn't too difficult.
- If you're not a graphic artist, the process and options could easily take up a course all their own.
- Things to consider:
 - When you create your own graphic, save it in a "true image format" (BMP on Windows, PICT on the Mac). Make any changes to the graphic in the native file format. THEN resave a copy as GIF or JPEG
 - Save the graphics as 75-100 dpi -- anything much more than that is wasted
 - Smaller file sizes are better when it comes to web graphics. The larger the graphic, the longer the download time.

Photographs



- Existing photos can be converted to digital format using a scanner and scanner software. Most scanner software allows you to save the graphic as a GIF or JPEG. If you aren't happy with the resulting photo, it can be "cleaned up" using a program such as Photoshop or Fireworks. New photos can be converted to digital format (usually JPEG) by the processor. CVS, Walmart, and other processors can save your photos on a CD-ROM as well as creating prints for you. Again, these photos can be "cleaned up" using a program such as Photoshop.

Creating Web Graphics



- Graphics Software Packages
 - There are a wide variety of software packages available for the creation of Web graphics. Some are designed specifically for this purpose (such as Fireworks) while others can do much more than merely create Web graphics but do a great job at that task as well (such as Photoshop).
 - Creating graphics can be a simple process (creating a button with a text label) or a much more complicated process (creating a logo).
 - Visit the Resources page for suggestions on software. Also, there is a listing of free tools available for download on the web.

Background Graphics

- HTML method: modify the <BODY> tag:

```
<body background="THE_URL" >
```

CSS method: add a body style to the style sheet

```
body { background: url(THE_URL); }
```

where THE_URL is the location of the graphic

- Background graphics are generally small graphics that tile across the browser window to create a filled-in effect. As such, some graphics are better suited to being background graphics than others.
- General rules:
 - Keep the graphic/text contrast high
 - Keep the background graphic SIMPLE -- too much color, too much pattern can make it really hard to read over
 - Don't overuse background graphics -- it can become distracting

Animated Graphics



- Using Existing Animations
 - Most graphics archives include animated sections
 - Most animations are a form of GIF format; in terms of placing animations on a web page, there is no difference between an animated GIF and a non-animated GIF (same tag, same process).
- Creating New Animations
 - There are software packages specifically for creating animations. Animations are a series of static graphics that are "stitched" together and saved into one file. The browser shows each of the static images in sequence resulting in the animations.

Graphics

- ``

SRC="URL" (required): URL is the location of the image file

ALT="text": Alternative text which is displayed if the browser cannot process the image. The text will display as a tooltip in Windows *Internet Explorer*.

TITLE="text": Title of an image -- this will be displayed as a tooltip in most browsers

HEIGHT="XX": Height in pixels of the image file

WIDTH="YY": Width in pixels of the image file

BORDER="ZZ": Size of the border, in pixels (select 0 if you don't want a border)

ALIGN="LEFT/RIGHT/TOP/MIDDLE/BOTTOM": Alignment of the image in relationship to the surrounding text

To find the width & height of an image (Internet Explorer):

1. Launch *Internet Explorer* and locate the website that has the image.
2. Place the mouse over the image.
3. On a Windows-based PC, press the right-click button. On a Macintosh, control-click the mouse button.
4. A dialog box will appear. Select "Properties".
5. Look at Dimensions: Your image will be listed in pixels (Width x Height)

To find the width & height of an image (Firefox):

1. Launch *Firefox* and locate the website that has the image.
2. Place the mouse over the image.
3. On a Windows-based PC, press the right-click button. On a Macintosh, control-click the mouse button.
4. A dialog box will appear. Select "Open this Image" (Macintosh) or "View Image" (PC).
5. Look in the title bar.
The image size should be displayed in pixels: Width x Height

What is an image map?

- Image maps allow a webmaster to take an image and define more than one hyperlink for the image. Each hyperlinked section is called a "hotspot".
- To define a hotspot, webmasters open the image in a graphics program and record the coordinates of the points corresponding to the hotspot boundaries.

Map tags

```

```

```
<map name="name-of-map">
```

```
  <area shape="rect" coords="x,y,a,b" href="link1.html" />
```

```
  <area shape="circle" coords="x,y,r" href="link2.html" />
```

```
  <area shape="polygon" coords="x1,y1,a1,b1,x2,y2,a2,b2,..."  
    href="link3.html" />
```

```
</map>
```

rect

```
<area shape="rect" coords="x,y,a,b"  
href="link1.html" />
```

- Coordinates refer to the x/y coordinates for the upper left and the lower right coordinates for the rectangle.

circle

```
<area shape="circle" coords="x,y,r"  
href="link2.html" />
```

- The x/y coordinates refer to the center of the circle. The r refers to the size of the radius (in pixels).

polygon

```
<area shape="polygon"  
coords="x1,y1,a1,b1,x2,y2,a2,b2,..."  
href="link3.html" />
```

- Coordinates refer to the x/y coordinates for as many are needed to define the polygon.

Imagemap software



- Macintosh
 - Dreamweaver
 - <http://www.adobe.com/software/dreamweaver>
- Windows-based PCs
 - Dreamweaver
 - <http://www.adobe.com/software/dreamweaver>
 - MapEdit
 - <http://www.boutell.com/mapedit/>

Enhancing with sound/video

- Adding sound and/or video to your website can make viewing your site an exciting and vibrant experience.
- However, depending on how you utilize this technology, it can also bog down the servers, and make visitor experience of your website a real drag.

Sound and Video Archives

- <http://broadcast.yahoo.com/>
- <http://commons.wikimedia.org/wiki/Category:Sound>
- <http://commons.wikimedia.org/wiki/Category:Video>
- <http://www.mp3.com/>
- <http://archive.museophile.org/audio/>
- <http://www.youtube.com/>
- <http://www.gofish.com/>
- <http://www.guba.com/>
- <http://www.ourmedia.org/>

Using the Anchor Tag

- `Click here to listen`
- `Click here to view`
- `Click here to view`
- `Click here to listen/view`

- Advantages:
 - Page loads instantly. No waiting for large files to download in the background.
 - Works with all browsers, even version 1.1N

- Disadvantages:
 - Requires plug-ins or players
 - Can't adjust the height/width or location of the video/sound.

<embed> tag

- SRC="URL"
- AUTOSTART="TRUE|FALSE"
- ALIGN="BOTTOM|TOP|LEFT|RIGHT"
- ALT="ALTERNATIVE TEXT"
- BORDER="XX" -- in pixels
- LOOP="TRUE|FALSE"
- HEIGHT="XX" -- in pixels
- WIDTH="XX" -- in pixels
- HIDDEN="TRUE|FALSE"
- VSPACE="XX" -- space above/below embedded object (in pixels)

<embed> examples

```
<embed src="bach.mp3" hidden="true"
height="0" width="0" border="0"
alt="Bach's Fugue in D
Major" ></embed>
```

```
<embed src="movie.mov"
autostart="true" loop="false"
height="640" width="480" >
</embed>
```

HTML5 Video



- See *Dive into HTML5: Video on the Web*

`http://diveintohtml5.info/video.html`

Homework



- Look around for graphics to use in your web site.