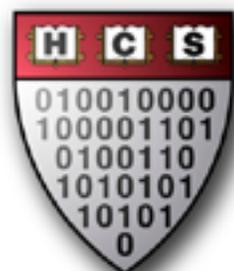


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# PUBLISHING TO THE WORLD WIDE WEB

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# HCS

HARVARD COMPUTER SOCIETY

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## PUBLISHING TO THE WORLD WIDE WEB

It is not too much to say that the **World Wide Web** (WWW) has revolutioned modern society. In just a few years, the web has grown from its humble beginnings in a physics research facility in Switzerland, through a low-key but widespread adoption in government and academic circles, and into the globe-spanning, multi-billion dollar multimedia e-commerce web of today.

These days, it sometimes seems like everyone and their dog has their own a web page. It has been suggested that a company isn't a real company any more unless they have a ".com" on the end of their name. But you don't have to be a huge multinational corporation to establish a presence on the web—one of the greatest features of the web is that it is a great equalizer, allowing single individuals to publish sites just as easily as corporations or universities. Students can, and do, make web pages that are visited by hundreds, riding the cutting edge of design and multimedia.

There's not enough time in any one seminar to take you through absolutely everything that can be done with the web. Our goal, instead, is to cover just the basics of the web's HyperText Markup Language (HTML), the language in which all web pages are written. By the end of this seminar, you will have learned the syntax of HTML, created a home page in your FAS Unix account, and added content and graphics to that page.

### Direct HTML Editing vs. Web Design Tools

There exist many different tools for publishing files to the World Wide Web. Some of the more popular of these include Microsoft Frontpage, Netscape Composer, and HoTMetaL Pro. Fundamentally, all of these tools do the same thing, which is to allow you to edit files containing HTML, the HyperText Markup Language that is used to construct web pages. However, you can also edit HTML files yourself directly, if you know the HTML language.

Rather than focusing on any specific one of the dozens of web editing programs available, in this seminar we are going to teach you the basics of the HTML language and show you how you can edit HTML files directly in any text editor software. This will give you a deeper understanding of how the web works and will give you ultimately greater flexibility in your designs. Most professional web designers use both specialized web design software and direct editing of HTML, so knowing how to use both approaches is best if you plan on continuing with web design seriously.

### Creating a Web Directory In Your Unix Account

First log into your Unix account. Second, create a directory called **public\_html**. Only the files in **public\_html** are visible to the world via the Web.

|                                     |   |
|-------------------------------------|---|
| <code>fas% cd</code>                | <i>Be sure you are in your home directory</i>                       |
| <code>fas% mkdir public_html</code> | <i>Create (<b>Ma</b>Ke <b>DIR</b>ectory) the public_html folder</i> |
| <code>fas% cd public_html</code>    | <i>Change <b>DIR</b>ectory into public_html</i>                     |

You're now ready to start creating and editing HTML files for the web! Whenever you log in, remember that you need to go into the **public\_html** directory (by typing **cd public\_html**) if you're going to edit Web pages.



## Using Pico

**Pico**, the default editor for **Pine**, is an easy-to-use Unix text editor. Pico can be used to create and edit text files in Unix account, including Web pages.

To start Pico, use either of these commands:

**fas% pico** *To create and edit a new file*

**fas% pico [filename]** *To edit an existing file*

A list of commands appears at the bottom of the screen, so you don't need to worry about memorizing commands! On screen, the notation **^X** means to type **x** while holding down the **[CTRL]** key. Pico commands are not case sensitive.

A short guide to Pico has been included in Appendix A of this packet.

## Setting File Permissions

By default, all files in your home directory are private—only you can see or edit them. While this is certainly the behavior you want for most of your files, such as your email, if you want your web page to be viewable by other users, you must change its security permissions to allow other users to access it.

Thus you must explicitly set the permissions every time you add a new file to your web page, either by creating a new file in pico, or by uploading a file via FTP. There are two ways to set permissions on your web page:

1. Run **chmod -R a+rX ~/public\_html**

“chmod” is the Unix command to change file permissions. **a+rX** means to give **a**ll users **r**ead and **eX**ecute permissions on these files. The capitalization of the X means that the execute bit will only be set on directories, not files, which is the desired behavior. The **-R** option means to **r**ecursively change permissions on both the directory and all of its subdirectories. Then you must also run

**chmod o+x ~**

to grant others the ability to execute your home directory, which is necessary for the web server software to be able to list and open your web files.

2. Run **fixwebfiles**.

Fixwebfiles is a special script that exists only on FAS, and which checks the permissions of all files in your web directory and chmods any files which are not public already

If you ever get an error from the web server stating that a file or directory could not be accessed, the cause is most often incorrect permissions settings. Re-run fixwebfiles and the problem will usually go away.



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## INTRODUCTION TO HTML

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**HTML**, the **HyperText Markup Language**, is a language for formatting text using special tags, used for creating documents for viewing on the World Wide Web.

---

**HTML** is a very simple way of creating Web pages. It is not a programming language like C. Instead, a HTML file is just an ordinary text file, containing all of the words you want on your page, plus certain tags that describe how your page should be displayed—things like arrangement of text, placement of images, and even font and color choices are controlled by tags. Web browsers (such as Netscape Navigator or Microsoft Internet Explorer) read and understand these tags and display your web page accordingly.

---

**Tags** are letters or words which are enclosed in **<angle brackets>**. Tags define the essential elements of your page, such as paragraphs, lists, tables, and images. For example, here are some tags: **<A>** **<LI>** **<IMG>** **<HTML>**

---

HTML is case-insensitive, that is, the letters or words in tags can be uppercase or lowercase. However, many web designers feel that using uppercase letters makes it easier to distinguish the tags from the surrounding text. We'll go over a list of the most important tags shortly.

HTML also ignores tabs and line breaks in your document. For example, the following two segments of HTML appear exactly the same in a Web page:

```
<B>This
  is
  a
  sentence.</B>           <B>This   is   a   sentence.</B>
```

You will see that this works to your advantage, as you will be able to format your HTML files so that they are more readable while you are editing them, without affecting the content displayed by a Web browser. To force the creation of a line break in a Web page, use the **<P>** or **<BR>** tags (described below).

Many tags (but not all!) come in pairs, such as **<B>** and **</B>**. The first tag in a pair tells the web browser to begin a section of text, and the second tag in the pair, which has a slash (" / ") character, ends that section of text. For example, the **<B>** tag begins a section of bold text, and the **</B>** tag marks the end of the bold text. Likewise, **<I>** and **</I>** begin and end italic text. Thus, the following HTML code:

```
<B>This text is bold.</B> <I>This text is italic, but NOT bold.</I>
```

will display in your web browser as:

**This text is bold.** *This text is italic, but NOT bold.*



## THE BASIC WEB PAGE

Every web page is entirely enclosed inside a `<HTML>... </HTML>` tags. This means that the first thing in your page should be `<HTML>`, and the last thing `</HTML>`. The page is divided into two pieces, the head and the body. The head should be enclosed by `<HEAD>...</HEAD>` tags. The head contains information *about* the web page, while the body contains the actual page itself. The most common, and often only, thing to be found in the head section is the title, which is marked by a `<TITLE>...</TITLE>` pair of tags. This is what shows up in the title bar at the top of your Web browser window. Other things that can go in the head section are information about the author of the web page and keywords for search engines to use when indexing this page, among other things. Everything else, all the text and images which actually appear in the browser window, goes between the `<BODY>... </BODY>` tags. Here is a very simple sample web page:

```
<HTML>
<HEAD>
<TITLE>This is the title of my page.</TITLE>
</HEAD>
<BODY>
The rest of my page goes here.
</BODY>
</HTML>
```

When viewed in your browser, this HTML code would set the title of the browser window to “This is the title of my page”, and would display “The rest of my page goes here” in the main area of the web browser window.

## Useful HTML tags

There are many HTML tags which do different things. Here are a few:

|   |                |   |
|---|----------------|---|
| <code>&lt;P&gt;</code>                                    | <i>CREATES</i> | [Ends a paragraph, placing a blank line after it] |
| <code>&lt;BR&gt;</code>                                   |                | [Adds a line break]                               |
| <code>&lt;B&gt; Bold text &lt;/B&gt;</code>               |                | <b>Bold text</b>                                  |
| <code>&lt;I&gt; Italic text &lt;/I&gt;</code>             |                | <i>Italic text</i>                                |
| <code>&lt;H1&gt; A heading &lt;/H1&gt;</code>             |                | <b>A heading</b>                                  |
| <code>&lt;H2&gt; A smaller heading &lt;/H2&gt;</code>     |                | <b>A smaller heading</b>                          |
| <code>&lt;H6&gt; The smallest heading &lt;/H6&gt;</code>  |                | <b>The smallest heading</b>                       |
| <code>&lt;CENTER&gt; Centered text &lt;/CENTER&gt;</code> |                | Centered text                                     |



## Lists

You can also create lists. The **<UL>** tag, short for **unordered list**, defines a list of bulleted items. After the **<UL>** tag, every time you want to create a new bulleted item, put in an **<LI>** tag. (**LI** stands for **List Item**.) The **<LI>** tag does not have an end tag going along with it; instead, the next **<LI>** tag just starts a new bullet. To end the list, put in a **</UL>** tag. For example:

```
<UL> <LI>Apple  
      <LI>Orange  
      <LI>Pear </UL>
```

CREATES

- Apple
- Orange
- Pear

If you want a numbered list, use **<OL>** (**ordered list**) instead of **<UL>**. You can also nest lists inside each other if you want.

## Using Tags with Attributes

Some tags are more complicated than those we have seen thus far. These tags can take certain options, called *attributes*, which modify the behavior of the tag. Attributes are specified in the form *name=value*, where *name* is the name of the attribute, and *value* is the value that attribute should be set to. Here is an example of this with the **<BODY>** tag. (more on this later!)

```
<BODY BACKGROUND="bg.gif" TEXT="white" LINK="blue">
```

All attributes are separated by spaces, but still located inside the angle brackets; they have a keyword, an equal sign, and a value in quotation marks. In many cases, you can leave out the quotation marks and the web browser will still understand your HTML, but this is not recommended. More complex tags, such as the **<A>** tag for links and the **<IMG>** tag for images, have many different attributes that can be set.



## MAKING LINKS

---

**Hyperlinks** are what make the web what it is today. A single web page by itself is not very interesting. The true power of the web is the way it links information together, allowing you to link your web page to others, tying it into a global body of knowledge and information.

---

## URLs

Every web page has its own unique address, called a **Uniform Resource Locator** (URL for short). Here is an example:

**`http://www.hcs.harvard.edu/~seminar/basic_web_packet.html`**

All URL's for web pages begin with a string of characters to specify what type of a URL it is (or, more precisely, which computer networking protocol should be used to access the information at that location.) For regular web pages, this string will be **http://**, which stands for **HyperText Transfer Protocol**. Other types of URL include **mailto:**, for email addresses, **news:** for Usenet discussion group servers, and **ftp://** for the file transmission protocol, used to move files between computers.

For HTTP and FTP URLs, the name of the computer on which the site resides follows next. Examples of site addresses include: **www.fas.harvard.edu**, **www.whitehouse.gov**, and **www.yahoo.com**. Web servers very often have the string **www** in their site addresses, but this is by no means a requirement.

Following the web site address in every URL is another slash and then the location of the target page in the directory structure of that site. Most web pages end with the extension **.html**, although **.htm** and other endings are also used. In the example above, the URL is pointing to the page named **basic\_web.html** in the **~seminar/** directory of the **www.hcs.harvard.edu** web site. (The tilde (~) actually refers to the fact that this is in the home directory of the user **seminar**.) The actual page contains a hypertext version of this packet.

Here is another example of a URL:

**`http://www.college.harvard.edu/`**                      *The Harvard College Home Page*

As you'll notice, for ease of use some URLs don't actually include any page name in them, such as this one above. In this case, the URL points to the default page in that directory of the site – this default page is almost always called **index.html**. Thus, **http://www.college.harvard.edu/** actually points to **http://www.college.harvard.edu/index.html**.

## The Anchor Tag

To add a hyperlink to your web page, all you need to know is the URL of the target web page to which you wish to point. The HTML tag for making links is **<A HREF="...">**, where the A stands for **Anchor**. Here is a sample link:

```
<A HREF="http://www.college.harvard.edu/">Harvard College Home Page</A>
```

You include the URL of the target web page inside quotes after the **<A HREF="...">** tag. The text between the **<A HREF="...">** tag and the closing **</A>** tag will be included as text describing the hyperlink and will appear as underlined and blue in most web browsers. Thus on the actual page, this link would look like this:

[Harvard College Home Page](http://www.college.harvard.edu/)



You can put links in the middle of paragraphs, or even around only part of a word. Example:

```
Greetings! I am a junior at
<A HREF="http://www.college.harvard.edu/">Harvard College</A>
located in Cambridge, MA.<P>
```

This looks like:

Greetings! I am a junior at [Harvard College](http://www.college.harvard.edu/) located in Cambridge, MA.

You can also add **targets** to different points on the same page. A good example of the use of targets can be found at [http://www.hcs.harvard.edu/~seminar/basic\\_web\\_packet.html](http://www.hcs.harvard.edu/~seminar/basic_web_packet.html). To create a link to a location inside of a page, you must first create an *named anchor* to link to. This is done using the `<A NAME="..."></A>` tag, like this:

```
<A NAME="about"> </A><H2>About the World Wide Web</H2><P>
```

Note that there's nothing between the `<A>` and `</A>` tags; this is called an "empty named anchor" and works fine in most browsers. However, some older web browsers have problems with this; you can work around those simply by moving the `</A>` to the end of the line. In any case, once you have created your named anchor, you can then create a link to that specific location within the page as follows:

```
<A HREF="#about">About the World Wide Web</A>
```

Now, whenever someone clicks on the link "About the World Wide Web", they will be sent further down the page to the beginning of that section of the packet. You can also combine links to a page and a section in order to link to a specific point on another page, like this:

```
<A HREF="web.html#about">About the World Wide Web</A>
```

## Mailto: Links

Another type of link is called a **mailto** link. Instead of bringing up another page, when a person clicks on one of these links they can send e-mail to you, or to an address you specify. To create a mailto link, instead of putting <http://somewhere.something.com/> inside the `<A HREF="...">`, you put **mailto:user@host.domain**. Here is an example:

```
I want your opinion!
<A HREF="mailto:seminar@hcs.harvard.edu">Send me mail!</A>
```

This looks like this:

I want your opinion! [Send me mail!](mailto:seminar@hcs.harvard.edu)

Clicking on the underlined text in Netscape or Internet Explorer will bring up a window where the user can send an e-mail message to the address of the link, in this case **seminar@hcs.harvard.edu**. Note that this only works on properly configured personal browsers; it will not work from public computer clusters or kiosks since the browsers there are not configured for email.



**Publishing to the Web**  
*The Harvard Computer Society*

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## ADDING IMAGES

Without graphics, the web would be a very dull place. Luckily, it's very easy to add images to a web page. Images come in various types. The two most commonly used on the World Wide Web are **GIF**, which stands for **Graphics Interchange Format**, and **JPEG**, which is named for the **Joint Photographic Experts Group**. GIFs are usually used for drawings and icons, while JPEGs are better for photographs. The type of an image is signified by the filename extension; for instance, **susan.gif** would be a GIF, while **cindy.jpeg** is a JPEG. There also exists a format called Progressive Network Graphic (PNG) which is designed to ultimately replace the GIF format. Although PNG has many advantages over GIFs, it has not yet caught on widely.

An image is entered using the **<IMG>** tag. The most important parameter is **SRC**, allows you to specify the source (filename) of the image. For example:

```
<IMG SRC="http://www.hcs.harvard.edu/images/HCS.gif">
```

Another important attribute for images is ALT. The ALT attribute allows you to specify a text string which is displayed as an alternative to the image for non-graphical browsers, as follows:

```
<IMG SRC="friends.jpg" ALT="Photo of my friends and I in Harvard Yard">
```

Modern browsers will display the ALT text in place of the image while it is still downloading, which can be a very useful feature for people dealing with slow modem connections, users with disabilities who surf the web via screen-reader software, and for search engines which cannot understand images but can read ALT text. For these and other reasons, many experts recommend setting an ALT text for every image you use in your web page.

You can also make your images part of a link, by placing the **<IMG>** tag inside of an **<A>** tag. Here is an example:

```
<A HREF="http://www.hcs.harvard.edu/">  
<IMG SRC="http://www.hcs.harvard.edu/images/HCS.gif">  
</A>
```

Secondly, one can specify the alignment of an image with the ALIGN attribute. This can be set to any one of **bottom**, **middle**, **top**, **left**, or **right**. The first three of these refer to how the image aligns with the text on the line it is on, while the next two values will move the image to the side of the page and allow text to wrap around it.

The Harvard Computer Society Account Services team maintains an archive of freely available images that anyone may use in their web page. This archive is located at <http://hcs.harvard.edu/~acctserv/images/>. Feel free to use any of the images there in your own web page.

## Scanning Images

There are two main ways to acquire other images for your Web page: scanning and downloading. You can scan images using the scanners that are available in several computer labs, including the East Terminal Room (Science Center B14, the room containing the Help Desk), the Mac and PC Classrooms (Science Center B11C and 120), the Tech Showcase (Science Center 119) and a few of the House labs around campus (particularly those in the Quad).

Locate an available computer that is attached to a scanner, and run the **DeskScan II** program found on the Apple menu or Start Menu (frequently in a group called something like "Lab Additions"). Place your photo or drawing on the scanner, at the top edge near where the cover hinges. In DeskScan, click the **Preview** button. This will scan



in a preliminary version of your image and display it on screen with a selection rectangle around it.

Use the mouse to move the selection rectangle until it covers only those portions of the image you wish to scan. This allows you to crop out parts you do not want. You can also use the controls on the left side of the DeskScan window to adjust the **zoom factor**, the **brightness**, and the **contrast** of your image. All these settings will appear on the preview image so that you can get some idea of what your scanned image will look like. When you are satisfied with your settings, press the **Final** button. This will make the final scan and prompt you for where to save the file. You should most likely choose a location on the desktop of the computer you are using. Your image will be scanned and saved to the location you have chosen.

DeskScan saves images in the **TIFF** file format, while web pages can only contain **GIF**, **JPEG**, or **PNG** images. This means that you must open up your newly scanned image and convert it to one of these formats. For photographs, **JPEG** is usually the best choice. This can be done with many different graphics programs; we recommend **Adobe Photoshop** for this purpose. Photoshop is available on all lab machines; if you want a graphics program for use on your own computer, we recommend the significantly less expensive Paint Shop Pro.

Open Photoshop by double-clicking on its icon. Select **Open** from the File menu and open your image. Then, select **Save As** from the File menu and set the file type to **JPG**. This will save your image in the correct format to be displayed on your web page.

You can also scan images directly into Photoshop. To do so, open Photoshop, and select **Import | Twain32** from the File Menu. (On some computers, this will be labeled **Acquire** instead of **Import**.) This will open DeskScan and allow you to save your image, but rather than being saved as a TIFF file, the image will be placed directly into Photoshop where you may manipulate and save it as desired.

## Downloading Images

Another way to acquire images is by downloading them from other Web pages. First, you must locate an image on the Web that you would like to download. If you are using a PC, click with the right mouse button on the image and select **Save Image** or **Save Image As...**, type a filename, and the image will be saved to your hard disk. On a Macintosh, point to the image and hold down the mouse button until a menu appears. Then, select **Save Image** or **Save Image As...**, and enter a filename.

**Note:** Placing an image on your Web page constitutes copying and is illegal for copyrighted images. Many images found on the Internet are copyrighted, as are commercial photographs, including images found in books and magazines. Please make sure you have the permission of an image's copyright holder before placing it on your web page. The best place to find images which are legal to copy is through image libraries that are specially designed to provide images you can use. You can find many of these through the Yahoo index. Just go to <http://www.yahoo.com/> and then click on the **"World Wide Web"** section, which is found just below **Computers and Internet**; then select **Page Creation, Design and Layout**, and finally **Graphics**. Even in these libraries, you should check for copyright information before copying any image.



## Transferring Images to Your Unix Account

Once you have scanned an image or downloaded one to your computer, you must transfer the image to your Unix account (**upload**) and place it in the same directory as your Web pages. On the Macintosh, you can accomplish this using the **Fetch** program. The PC uses a similar program, called **WS\_FTP**. The directions below refer to Fetch.

- New Connection:**
- Under **Host**, type in the name of the server (e.g. **fas.harvard.edu**).
  - Under **User ID**, type in your username
  - Under **Password**, type in your password.

- Transferring Files:**
- Remember to go to the proper directory before downloading or uploading. For transferring images to be used in Web pages, you should go to the **public\_html** directory. To traverse the directory tree, double-click on a directory to enter it, and use the list box at the top of the FTP session window to move up.
  - When transferring files, you should normally set the file type to binary, unless you are transferring files containing only plain text. When uploading files to a Unix or PC server from a Macintosh, it is important to transfer binary files as **Raw Data**. If you are transferring to a Mac, **MacBinary II** is the preferred method. This method will keep all Mac-specific information about the file intact. When you are uploading files on a PC using WS\_FTP, you should always use **Binary** mode, regardless of where you are transferring the files to.
  - With Fetch, to **download** files, select the file(s) or directories to download, and then click on **Get File...** to begin the transfer. Use the Option key to select more than one file and/or directory. To **upload** files, select the file to upload, and then click on **Put File...** to begin the transfer. If you are uploading multiple files/directories, then from the **Remote** menu, select **Put Folders and Files...** from which you can then select the files to upload.
  - With WS\_FTP, to **download** files, select the file(s) or directories to download in the right hand window pane, and navigate the left hand window pane to the directory you want to save your downloaded files in. Then simply push the **left arrow** button (<-->) to download files from the right pane to the left. To **upload** files, similarly use the **right arrow** button (-->) to transfer files from the left pane to the right.

If you need help using Fetch or WS\_FTP, you can read the online help by pressing the **Help** button, or you can contact the Help Desk staff or your User Assistant. Fetch and WS\_FTP are also covered in more detail in our Using Harvard's Network with your PC and Macintosh seminars.



## CHANGING COLORS

Normally, the background of a page is gray or white, the text is black, and the links are blue. However, you do not have to leave those colors as they are. To set the colors of a web page, you supply attributes to the **<BODY>** tag. There are five colors you can set: the background color (**BGCOLOR**); the text color (**TEXT**); the link color (**LINK**); the active link color (**ALINK**), which is the color a link turns when you click on it; and the visited link color (**VLINK**), which is the color of a link to a page that the visitor has already seen. Here is an example:

```
<BODY BGCOLOR="white" TEXT="black" LINK="blue" ALINK="red" VLINK="fuchsia">
```

The following colors are available by name: **black, white, aqua, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, and yellow.**

You can specify other colors very precisely using the *RGB* syntax. Instead of using a named color, you give three numbers, the amount of red, green, and blue you want in the color. Each quantity is expressed as a two-digit hexadecimal number (where the digits include **0123456789ABCDEF**, instead of just **0123456789**.) Therefore, **00** represents none of that color and **FF** represents the maximum amount. A color has a **#** followed by the two digits for red, two for green, and two for blue. Here are some examples:

|                    |                  |                     |                   |
|--------------------|------------------|---------------------|-------------------|
| Black: "#000000"   | White: "#FFFFFF" | Aqua: "#00FFFF"     | Green: "#00FF00"  |
| Crimson: "#DC143C" | Gold: "#FFD700"  | Lavender: "#E6E6FA" | Salmon: "#FA8072" |

As you can see, the standard colors (that you can refer to by name) are chosen because each of the three pieces (red, green, and blue) are either **00** or **FF**. By giving an RGB color you can find shades in between. For information about RGB values and what colors they map to, just go to <http://www.yahoo.com/> and then click on **World Wide Web**, which is found just below **Computers and Internet**; then select **Page Creation, Design and Layout**, and finally **Color Information**. Look through these sites for color maps or converters.

## WORKING WITH FONTS

Just as you can control the colors of your web page, it is also possible to control the fonts that are used. This is done with the **<FONT> ... </FONT>** tag, which takes three main attributes: **SIZE**, **COLOR**, and **FACE**.

By specifying **SIZE** in the range of +3 to -3, you can change the size of a portion of text relative to the rest of the page. +3 is very large, -3 is very small, and so on in between. The **COLOR** attribute works just like the color commands described previously, taking either one of the defined color names such as white or maroon, or else a hexadecimal color code. For example,

```
<FONT SIZE="+2" COLOR="purple"> This text will appear larger and purple.  
</FONT>
```

will display as

This text will appear larger and purple.



Lastly, the **FACE** attribute may be used to choose which typeface, such as Times New Roman or Helvetica, will be used for some portion of text. Note that whether or not this works is highly dependent on what fonts are installed on a given computer. Therefore the **FACE** tag allows you to specify a series of possible choices for display font; the first font that can be found will be the one that is used, and if none of the named fonts are located, the browser will use the default font anyway. Thus

```
<FONT FACE="Korinna, Bookman Old Style, Times New Roman">  
Welcome! </FONT>
```

may display on some systems as **Welcome!** and on others as Welcome! depending on which of those three fonts are installed.

## Text Alignment

The default behavior of text on a web page is to be left-aligned; that is, to have all lines start at the same position at the left edge of the page. There are two other possible alignments for text, however: center- and right-aligned. To change the alignment of text, you use the **<DIV>** tag (DIV stands for **DIV**ision; it marks a division of text that is aligned in a certain way) with an **ALIGN=** attribute set to one of {**left, right, center**}. For instance, to right align a portion of text, one would write:

```
<DIV ALIGN="RIGHT">  
This text will appear aligned to the right side of the screen.  
</DIV>
```

Note that the text won't appear right-aligned in the editor, but only when you view the page in a web browser. Because centering text is such a common practice, the tag **<CENTER>** is accepted as a synonym for **<DIV ALIGN="CENTER">**. Also, be sure to remember to add a closing **</DIV>** or **</CENTER>** tag at the end of your division.



## PUTTING IT ALL TOGETHER

If you have several Web pages, you can link from one to another. If the pages are all in the same directory, you don't have to use a complete URL. Just the filename will do. If there are two files, **index.html** and **family.html**, then a link to **family.html** from **index.html** does not need the full pathname to the file. For example:

```
<A HREF="family.html">See my family!</A>
```

Once you are finished, remember that you must make sure each of your files is world-readable by typing **fixwebfiles** at the Unix (**fas%**) prompt.

You should test your pages using Netscape, Internet Explorer, or another Web browser. It's often a good idea to test pages with multiple browsers, because sometimes something that looks good in one browser will not work at all in another. (Netscape is generally more picky about errors than Internet Explorer is.) Make sure you can view all of the pages, and that the links work correctly. It is very easy to make a small error, like forgetting the closing quote in **<A HREF="...">**, or misspelling a tag name, that can confuse your browser. Web browsers will ignore any tag that they do not recognize, including tags that are just misspelled.

It is also possible to create web pages using graphical designer tools such as Microsoft FrontPage. Generally, with these programs you edit and create HTML files on your own computer, and then upload them to the web server using the FTP protocol. More information on using FTP is available at our **Using the FAS Network with your PC** and **Using the FAS Network with your Macintosh** seminars, or by speaking with one of our seminar attendents.

## WHERE TO GO FROM HERE

If you would like more information about making Web pages, you're in luck; the best place to find out more about making web pages is the web itself! There are many excellent resources and references about web design available online.. You can find links to most of these resources on the Harvard Computer Society Web site. Just go to **http://www.hcs.harvard.edu/public/help.html**. The *NCSA Beginner's Guide to HTML* is a particularly good tutorial listing many more HTML tags than we have included in this packet. Other tutorials in more advanced topics can be found at both **www.webmonkey.com** and **www.webreference.com**.

You can publicize your page on the HCS's Student Web Directory. To add yourself, go to **http://www.hcs.harvard.edu/directory/**, then click on **Add Your Homepage**.

Lastly, if you have any questions about material covered during this seminar, or have any suggestions as to how we could improve our programs, please do not hesitate to email us at **seminar@hcs.harvard.edu**.

## The Harvard Computer Society

The **Harvard Computer Society** (HCS) welcomes anyone with an interest in the uses of computing at Harvard and around the world. Our projects include teaching seminars, maintaining and administering several servers, producing various publications both printed and online, developing new software, and anything else at the cutting edge of technology that interests our members.

No computer experience is necessary to participate in the HCS. To get involved or to find out more information, please send e-mail to **info@hcs.harvard.edu**.



## SEMINAR EVALUATION FORM

We would appreciate very much your evaluation of this seminar. When you have completed this form, please give it to one of the seminar's staff members or leave it by the door as you leave.

Thank you for your time.

Please write the date and time of this seminar: \_\_\_\_\_

Please rate this seminar by circling one answer for each category.

|                            |                   |                   |                     |
|----------------------------|-------------------|-------------------|---------------------|
| <b>Overall experience:</b> | <b>Poor</b>       | <b>Good</b>       | <b>Great</b>        |
| <b>Instructor:</b>         | <b>Poor</b>       | <b>Good</b>       | <b>Great</b>        |
| <b>Assistants:</b>         | <b>Poor</b>       | <b>Good</b>       | <b>Great</b>        |
| <b>Pace:</b>               | <b>Too slow</b>   | <b>Just right</b> | <b>Too fast</b>     |
| <b>Level:</b>              | <b>Too basic</b>  | <b>Just right</b> | <b>Too advanced</b> |
| <b>Detail:</b>             | <b>Too little</b> | <b>Just right</b> | <b>Too much</b>     |

Do you feel comfortable creating a web page now? If not, why not?

What can the instructor and assistants improve upon?

What, if anything, should we add to or omit from this seminar?

What additional seminars would you like us to offer? Would you attend?

Do you have any other comments or suggestions?