CMPSCI 120 Fall 2008
Lab #3
Professor William T. Verts

Setting Up

Go to the link for the encrypted telnet program PuTTY (Simon Tatham's site in the UK at **`http://www.chiark.greenend.org.uk/~sgtatham/putty/`**). Click on his "Download" link, and then click to download `putty.exe` for Windows (the topmost and leftmost link in the table). Save it to your desktop or flash drive. There is no installation required; the single `.exe` file that you download is all that is needed. Scan it for viruses before you run it (I doubt you will find any problems).

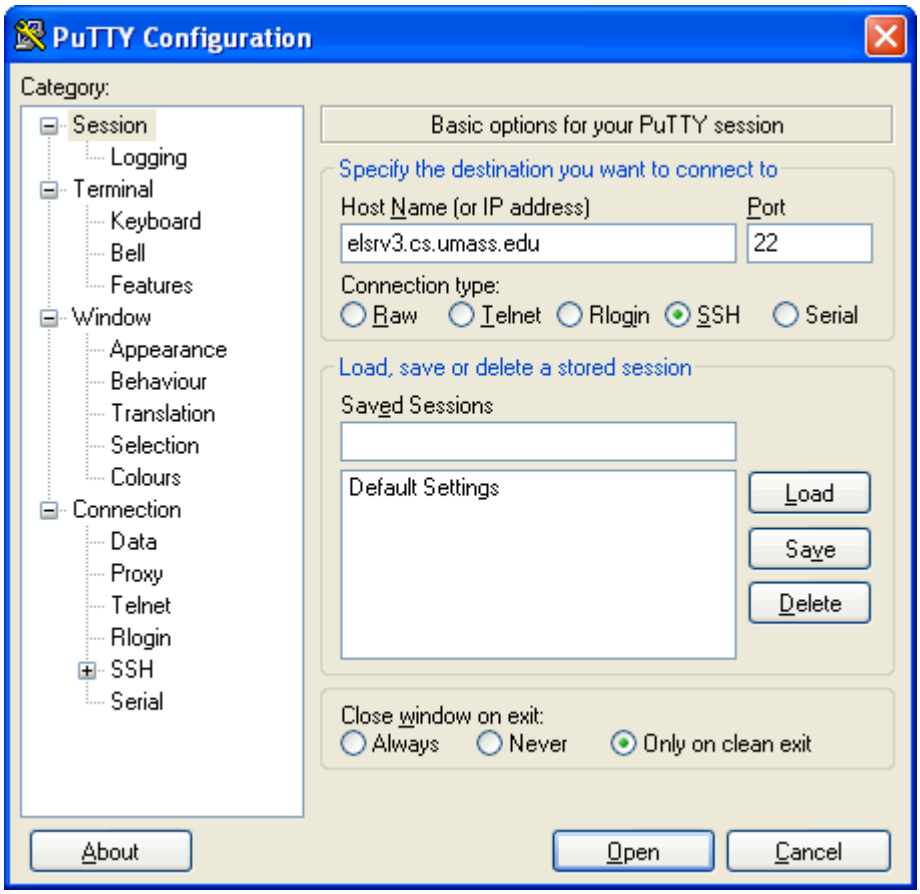
If you do not already have WinSCP installed and have a machine where you can install it, go to the link for WinSCP (**`http://winscp.net/eng/download.php`**) and download the Installation package to an empty folder on your computer. I recommend that you get the last "released" package and not the beta version. Scan for viruses the `.exe` you downloaded, and then run it to install WinSCP on your computer. Installation will put new entries in the Programs menu and will also place a quick-launch icon on the Windows Desktop. If you cannot do this on your own computer, for this assignment you may use WinSCP in the campus labs run by OIT.

Remember that PuTTY is a Windows package that implements a secure (encrypted) version of telnet, and WinSCP is a Windows package that implements a secure (encrypted) version of ftp. If you already have preferred secure telnet and ftp programs (or are using a Mac) you may use them, but all the instructions in this document will refer specifically to PuTTY and WinSCP.

For both PuTTY and WinSCP the "host name" in our class will always be **`elsrv3.cs.umass.edu`** (notice that the leftmost part of the host name is `elsrv3`, and not `elserv3`).

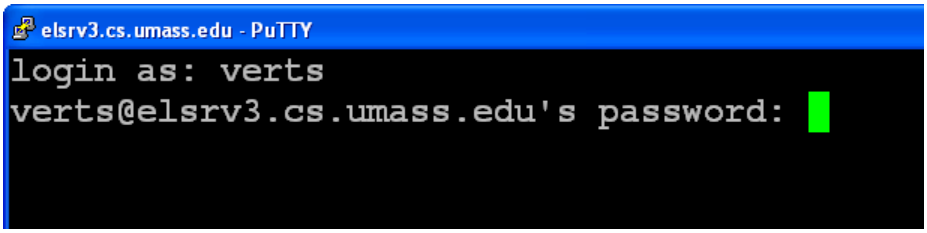
Logging In for the First Time

Run PuTTY. You will initially see a Configuration screen as shown below. For this class the Host Name will always be **`elsrv3.cs.umass.edu`** and the Connection Type will always be **SSH** (secure shell):



Click the Open button to attempt the connection. If you get any message about the server's host key not being known, click the button that accepts the key and lets you proceed (once accepted you should not get this message again). You will next get a challenge from the remote server.

In the challenge, you will be asked for your username. This will be the same as the username you use for UMail. When you hit Enter↵, the server will ask for your password, which initially will be your student ID number. You will not see the password as you type it in.



When you enter your password and hit Enter↵, you should see the challenge accepted by the server. You will follow this process every time you wish to log in.

The first time you successfully log in to the UNIX server you will be prompted to change your password. Please select something that you can remember that contains both letters and digits, of 6 to 8 characters in length, but not based on any dictionary word. If you forget or lose this password I cannot retrieve it for you, but I can change the password back to your ID number if necessary.

PART 1: Building a Basic Web Page

At the UNIX prompt type in the following commands, in order. When done correctly, these steps need be performed only once. Pay close attention to case: all UNIX commands are entered in lower case.

1. **`chmod a+rx .`**	This sets the permissions on your home account to allow folks from outside to get in. DO NOT MESS UP ON THIS ONE and DO NOT FORGET THE DOT. It is possible to lock yourself out of your own account. If you do, you will need to get me to fix the permissions remotely.
2. **`mkdir public_html`**	This creates the "nest" for your Web pages. Notice that the name contains an underscore character.
3. **`chmod a+rx public_html`**	This sets the permissions on `public_html` to allow outside Web requests.
4. **`cd public_html`**	This opens the `public_html` folder.
5. **`mkdir cmpsci120`**	This creates a subfolder for our class in the `public_html` folder, called `cmpsci120`.

6. **chmod a+rx cmpsci120** — This sets the permissions on `cmpsci120` to allow outside Web requests.

7. **cd cmpsci120** — This opens the `cmpsci120` folder.

8. **pwd** — This prints the current working directory. Don't proceed to the next step unless the response you get from this command ends with the following (with your username in the blank):

    … … …/____/public_html/cmpsci120

9. **emacs index.html** — This starts the emacs text editor with a new file called `index.html` (it is new because there are no files at all in this folder). Type in the following simple Web page, putting your name in the blank. Please follow my indentation and capitalization pattern as closely as possible (I indent 4 spaces per single level, or one Tab ⇆ every two levels).

```
<HTML>
    <HEAD>
        <TITLE>________</TITLE>
    </HEAD>

    <BODY BGCOLOR="#00FFFF">
        <CENTER>
            Welcome to ________
            Web page!
        </CENTER>
    </BODY>
</HTML>
```

    When complete, hit Ctrl X Ctrl C to exit emacs and save your page.

10. **chmod a+r index.html** — This sets the permissions on the `index.html` file so that it is visible on the Web.

11. **ls -al** — This shows the files in the current directory. You should see `index.html` with the permissions:

        rw-r--r--

    Do not proceed unless this is correct.

12. **logout** — This terminates the connection and closes the PuTTY connection.

At this point your page should be visible on the Web, at either of the following addresses (with your username in the blank:

`http://elsrv3.cs.umass.edu/~_____/cmpsci120/`

`http://elsrv3.cs.umass.edu/~_____/cmpsci120/index.html`

Verify that your Web page works and is visible in a browser.

Editing Your Page

If everything works you will not need to perform this section at this time, but you will need to do this in the future. You *may* need to follow this procedure if you need to fix something for this assignment.

1. Log back in.	Use PuTTY to connect back to `elsrv3`. Use your regular username and your new password.
2. **`cd public_html`**	Open the `public_html` folder.
3. **`cd cmpsci120`**	Open the `cmpsci120` folder.
4. **`emacs index.html`**	Use the emacs text editor to edit your Web page. Exit emacs with Ctrl X Ctrl C.
5. Load the page in the browser.	Point your browser at your Web page and test it. If there are any problems go back to step 4.
6. **`logout`**	Close everything down.

If You Get Stuck

If you miss any of the instructions, you may need to go back and fix certain things. Possible problems include misspelling or miss-capitalizing folder names, setting or omitting certain file permissions, or creating the `index.html` file in the wrong place. Please email me or the TAs if you need help.

PART 2: Building Buttons (Paint)

In this section we will be designing a button to put on our Web page.

Bring up Windows Paint (Start-All Programs-Accessories-Paint). Yes, I know it is the world's most brain-dead painting package, but it is free, so humor me. As you follow the steps below, remember that you can undo up to the last three drawing commands with either Edit-Undo or Ctrl Z.

Click on Image-Attributes and then set the Width to exactly 200 pixels and the Height to 50 pixels. Make sure that the Colors box is set to Colors and not Black and White. Click OK to close the dialog box.

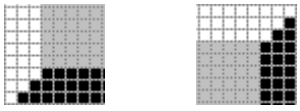
Click on View-Zoom-Custom... and set the Zoom to radio buttons to 600%. Click OK to close the dialog box.

Click on View-Zoom-Show Grid (alternatively, you can toggle the grid on and off with Ctrl G). Make sure that the grid is visible.

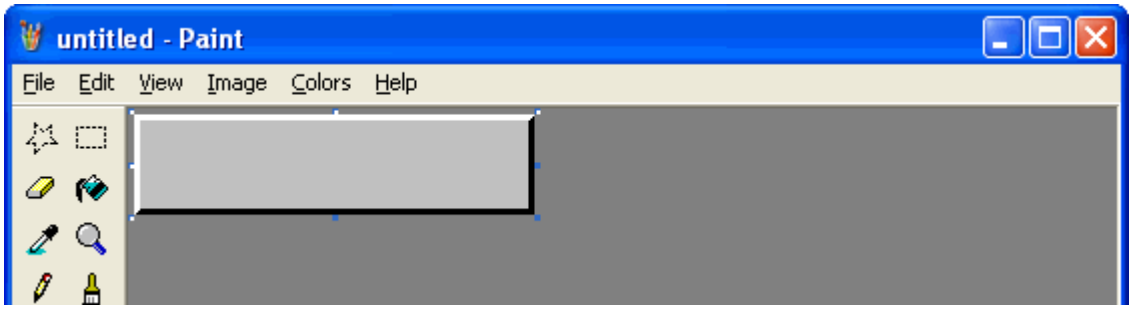
Left-click the light gray color in the color palette. Click to select the Fill with Color button from the tool palette (the one that looks like a spilling paint can). Click anywhere in the drawing area to flood it with the gray color.

Click the Line button from the tool palette, and make sure that the line width is set to the minimum value (1 pixel wide).

Left-click the white color in the color palette. Draw a 3-pixel-wide line on the left side and on the top side. Left-click the black color in the color palette. Draw a 3-pixel-wide line on the right side and on the bottom side. At the lower-left and upper-right corners make sure that the white and black lines join in a diagonal pattern. If necessary, you may need to use the Pencil tool to fine-tune the diagonal. The corner diagonals should look *exactly* as follows:

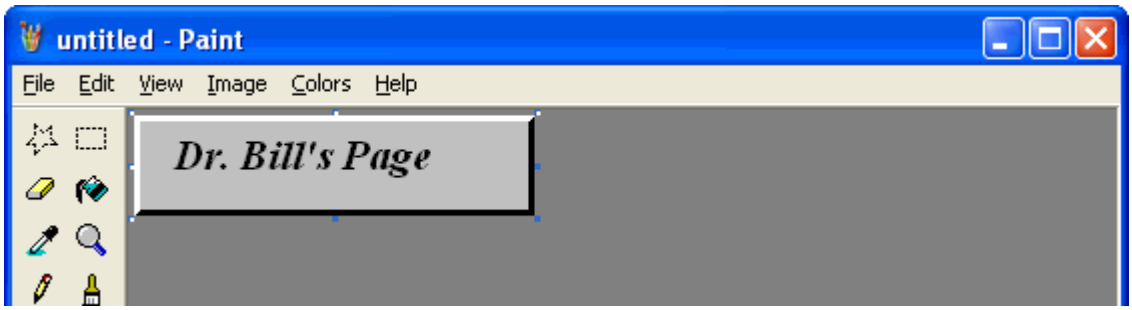


Click View-Zoom-Normal Size to bring the button down to the size it will appear on your Web page. The button should look exactly like the following image, in the 2003 version of Paint:



Do not proceed until you get the button set up correctly.

Click on the Text button in the tool palette. Click in the button, towards the left edge (but do not overlap the white part of the bevel). The text area will probably appear as a white box on the gray button; click the "transparent background" button to make the gray background reappear. Extend the text selection area by dragging the tiny square handle on the right side of the selection to the right; make the selection area cover most of the button (but do not overlap the black part of the bevel). Click View-Text Toolbar to bring up the Fonts dialog. Pick Times New Roman, 16 points, Bold, and Italic. Click back in the text selection of the button, and type the phrase ***Dr. Bill's Page***. The phrase might not be centered in the button, but do not worry about it at this time. Click any other tool to lock in the text (it makes the text selection area and the text toolbar both vanish). The button should now look something like this:



Now we will worry about centering the text in the button.

Click the Select button in the tool palette. Click-drag a selection-box over the area containing the text. Make the selection as small as possible, but still containing all of the text. Click-drag the selected area until the text is as close to the center of the button as you can get just by eyeballing it. The area where the button used to be will appear as white. This is shown below:

Click the Fill with Color button in the tool palette to lock in the new position of the selection. Select the same light gray you used earlier, and flood-fill the new white area to finish up the button. This is shown below:

This is the final version of the button.

Click on File-Save As... and steer to a folder where you wish to keep your buttons. Click the Save as type: drop-down list to 256 Color Bitmap and set the File name: to **`Button_Dr_Bill.bmp`** (with the underscores). Save the button. Answer "yes" to any dialog that asks if you wish to lose color information. The purpose of this step is to reduce the number of colors in a way that will allow us to later save the button as a **`.GIF`** without damaging the colors (speckling the image).

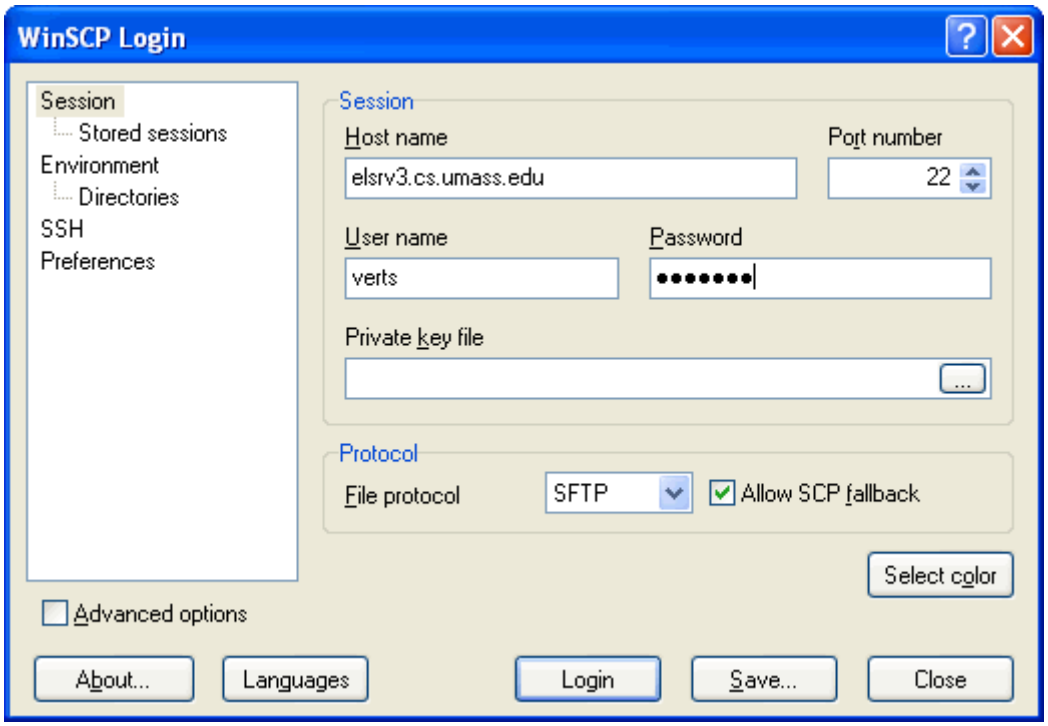
Click on File-Save As... again, and change the Save as type: to **`.GIF`**, then save the button once again.

Look in the folder where you saved the buttons. You should now have two files stored there; **`Button_Dr_Bill.BMP`** (11K in size) and **`Button_Dr_Bill.GIF`** (2K in size).

When you are done, close Paint.

Next Steps – Moving the Buttons (WinSCP)

Launch WinSCP. In the login dialog, type in the same host name that you used with PuTTY to connect to your UNIX account, type in your username, and type in your password. I have done this for my account, below (notice that the password is obscured).



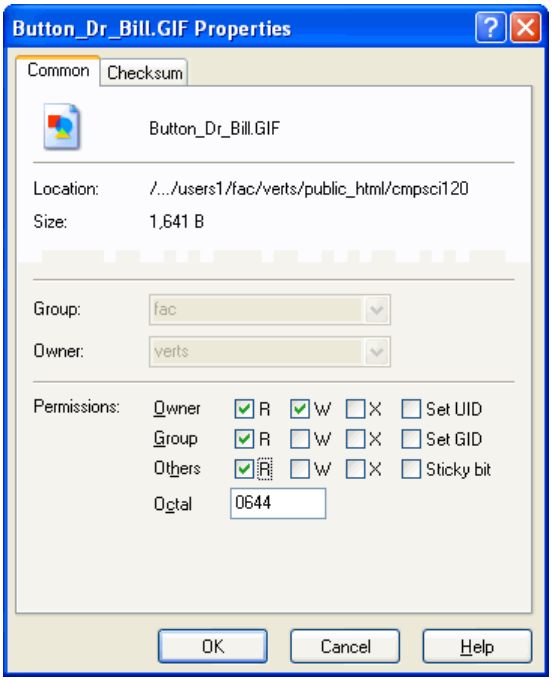
Click the Login button.

If everything works correctly, you will see a view of your local machine in the panel on the left, and a view of the remote UNIX account in the panel on the right. If you do not see this, it is time to ask for help.

If you completed the previous part of the assignment correctly, one of the folders that you will see on the right will be `public_html` (the folder that you created to host your Web page). Double-click `public_html` to open the folder. Inside, you should see the `cmpsci120` folder; double-click it as well to open it. The only file that you should see inside `public_html/cmpsci120` should be the `index.html` file you created in the previous assignment.

In the left panel, find the folder on your local machine where you placed the buttons. Click on the **`Button_Dr_Bill.GIF`** file to select it, then on the Copy button in WinSCP. Make sure the file is copied over in binary mode. Copy the file. It should appear in the right panel, next to the `index.html` file.

Click the **`Button_Dr_Bill.GIF`** file in the right panel, and then click the Properties button in WinSCP. In the dialog, make sure that the permissions are set to **`rw-r--r--`**, as shown, and then click OK:



When this is all correct, close WinSCP. We will need WinSCP again in a future assignment.

Final Steps – Connecting the Buttons (emacs)

Using PuTTY as you did in the previous assignment, log in to the UNIX server. Change into the correct directory as follows:

1. **`cd public_html`** (Change into the Web nest)
2. **`cd cmpsci120`** (Change into the inner folder)
3. **`ls -al`** (See what files are there)

At this point, the only files you should see are `index.html` (created earlier) and the new file `Button_Dr_Bill.GIF` (moved over with WinSCP). Do not proceed unless you see both files.

Start up the emacs text editor on the `index.html` file:

4. **`emacs index.html`**

You will see the text created in the previous assignment.

Change the body text as follows to add the new text (in red below):

```
...
...
<CENTER>
    Welcome to _________
    Web page!
    <A HREF="http://www.cs.umass.edu/~verts">
        <IMG SRC="Button_Dr_Bill.GIF">
    </A>
</CENTER>
...
...
```

Save your page and exit emacs with Ctrl x Ctrl c (and answer `Y` when it asks if you wish to save the changes).

Test your page. Make sure to hit the Refresh button on the browser to load the copy containing the reference to the button. Make sure that clicking the button correctly jumps to my page. Use emacs to correct any mistakes.

Log out when you are finished.

If You Get Stuck

If you miss any of the instructions, you may need to go back and fix certain things. Possible problems include misspelling the name of the `.GIF` file in the Web page, setting or omitting certain file permissions, or copying the `Button_Dr_Bill.GIF` file into the wrong place. Please email me or the TAs if you need help.

What To Turn In

When your page is correct and visible on the Web, and contains the button which correctly links to my page when clicked, send an email message to **both** the graduate TAs **and** to the **`literacy@cs.umass.edu`** account. The subject line must be set to the exact phrase **CMPSCI 120 ASSIGNMENT #3** and the body of the message must contain both your name and username. The next assignment will depend on you successfully completing this one.