

CMPSCI 120
Lab #2
Professor William T. Verts

Setting Up

From the class web site follow the link to the CamWatcher program (this program only runs on a PC, sorry Mac users), and then download the following file into a single folder on your computer:

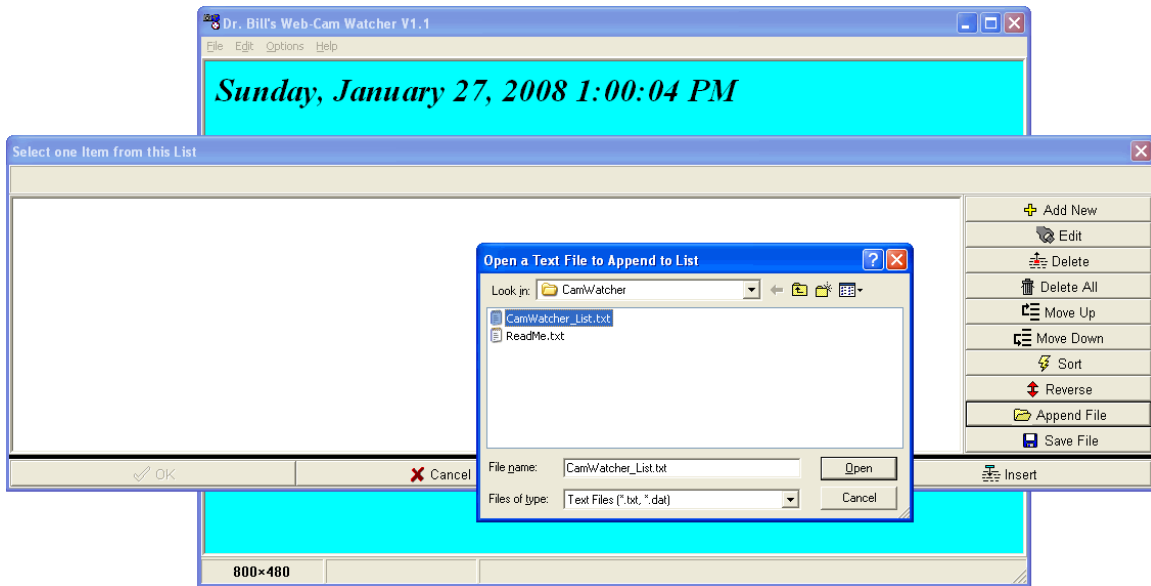
CamWatcher_Distribution_V2_0.zip

Unpack the contents into that same folder. You will have one .EXE file, one .PreINI file, and two .TXT files, totaling about 844 kilobytes in size. Before you run anything downloaded from the Web you should scan it for viruses. The .EXE file is the program file, which will run as-is (there is no lengthy installation process necessary, but there are some configuration options). One of the text files is called `ReadMe.txt`, which contains a summary of the setup process listed on this page. The other text file is called `CamWatcher_List.txt`, which contains a list of known cameras and other Web graphics (some of which may no longer be in service).

The `CamWatcher.PreINI` file must always stay in the same folder as the `CamWatcher.EXE` file, and contains information about where the program is allowed to store its files. The .PreINI file is a text file editable by Notepad. One entry in the .PreINI file is the line `Path=C:\DATA\`, which means that when CamWatcher is run it will automatically create a folder called DATA at the root of the C: drive. (Inside DATA it will create two additional folders, one called INIT, which will contain the initialization files for the program, and one called WEB, which will contain all the images downloaded from the Internet.)

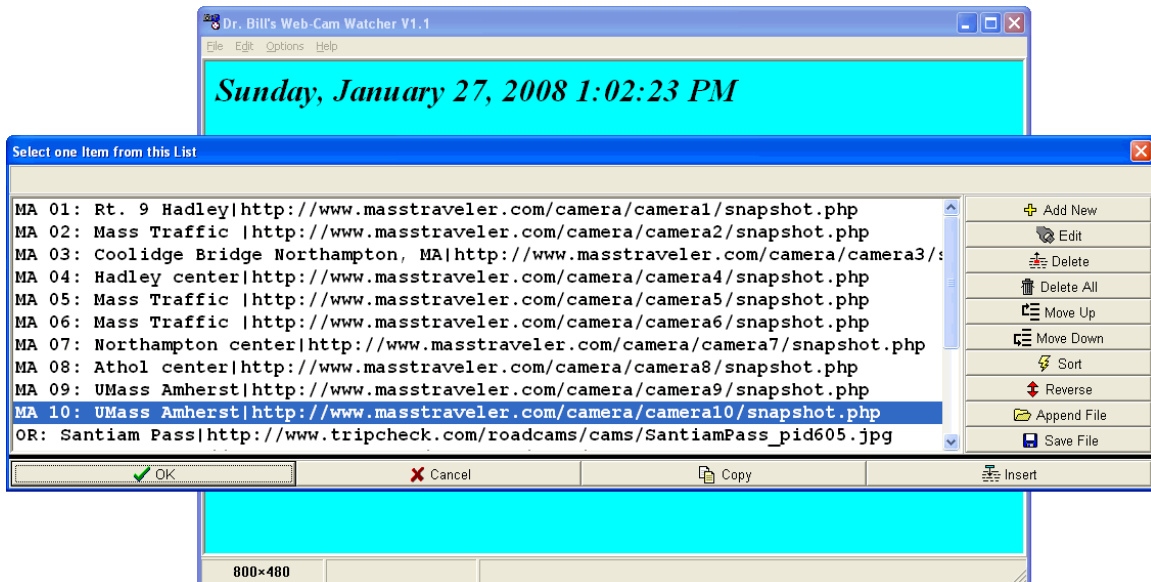
To run this program directly from a flash drive, copy both the .EXE and .PreINI files into the same folder on your flash drive, and edit the .PreINI file to contain the line `Path=\DATA\` (without the C: as part of the string). Do this in any setting where access to the C: drive may be restricted, such as in a public computer lab. You may also edit the .PreINI file to set the default path to any desired folder on your computer; the DATA folder and its subfolders will be placed there.

Run the `CamWatcher.exe` program. The window will come up full-screen, in a light cyan color. Click on File-Add Camera, and in the dialog box click the Append File button. Select `CamWatcher_List.txt` from your folder, as shown in the following image, and then click the Open button.



The list of cameras will be populated from the text file, and initially will contain around twenty cameras or other frequently updated web graphics such as weather maps. This step needs to be done only once, as the camera list will be “remembered” the next time the program is run. Any additional cameras may be added to the list from other external text files in the same way.

Using the buttons at the right side of the dialog box, as shown below, the camera list may be sorted, the order of items in the list may be changed, items may be deleted or edited, new items can be added, and the list saved to a text file.

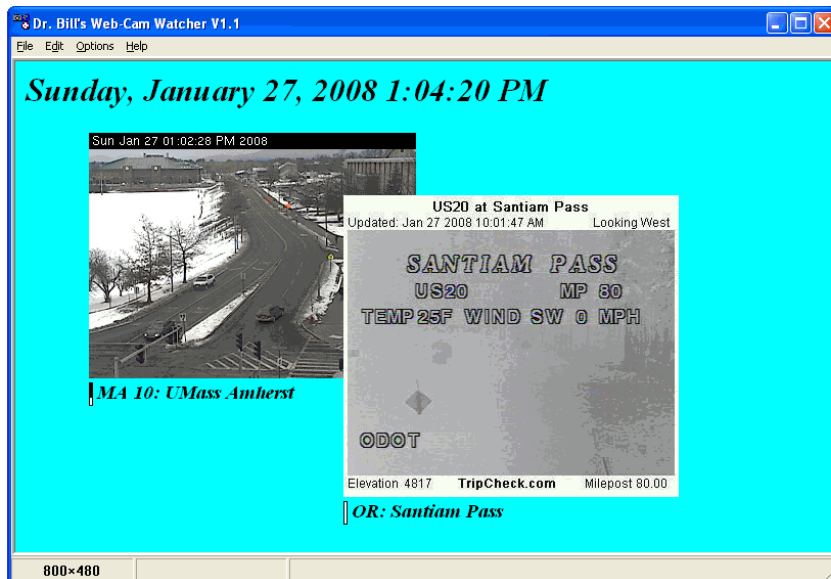


Pick a camera from the list and click OK. The dialog will disappear, the camera view will be fetched from the Web, and its image will appear on screen in the upper left corner of the program window. Click on File-Add Camera again to load another camera view.

You may ***left-click-drag an image*** to drag the camera view to any location on the screen. Alternatively, you may ***right-click the image*** to popup a menu that allows you to set properties such as refresh time (the default is 60 seconds), image size, its relative position in a stack of multiple cameras, see its current settings, copy it to the clipboard, or delete it entirely. You may also ***right-click a blank region*** of the screen to popup a menu that allows you to add a camera (a shortcut for File-Add Camera) or set the background color.

By default, the name of the camera will appear under the image as a caption along with a timer progress bar that shows the remaining portion of the interval before the camera will be refreshed. The Options menu contains settings for showing or not showing the progress bar, the caption, or the current time and date, for sounding or not sounding a tone on a fetch from the Web, and for setting the background color. All of these settings will be saved in the CamWatcher.INI file stored in the \DATA\INIT folder on program exit, and will be restored the next time the program is run. The current set of camera views will be saved in Default.wcm, also in \DATA\INIT, or may be saved manually to another .wcm (webcam) file. Deleting the CamWatcher.INI and Default.wcm files from the \DATA\INIT folder forces all options back to their default settings on the next run. The images fetched from the Web will be stored in subfolders of the \DATA\WEB folder.

The image below shows the views from two cameras, one from Massachusetts and one from Oregon. The Oregon camera is on top because it was added after the Massachusetts camera. It was also dragged to a location on screen where both it and the Massachusetts camera are visible. The Massachusetts camera is about $\frac{2}{3}$ of the way through its interval before refreshing, and the Oregon camera has just started its timing interval.



Play with the program to familiarize yourself with its functions. Note that ***the program may stall*** if a camera takes a long time to load. Use of broadband is recommended; use of a dial-up connection to the Internet is not.

A “dead” camera will show up as a small red square box (the program may stall for a few seconds); if that happens then ***right-click*** the red box and select Edit-Delete from the pop-up menu. Any camera that shows up as a large white rectangle just needs to be reloaded; hitting **(Ctrl)R** will force a reload of all cameras. Occasionally a working camera will time-out and show a red box the same size as the expected image; if that happens try refreshing the camera to force a new fetch.

The Assignment

Using your favorite Web browser, look for remote cameras or regularly updated graphics (such as weather maps) somewhere out on the ‘Net, ***not*** including those in the default list provided with the CamWatcher program. Acceptable image file types are .BMP, .GIF, and .JPG files, but not .PNG or .TIFF files. Occasionally you will find a page containing an image with a file name that ends in .PHP – this is not an image type, but instead indicates a server-side program which will *return* an image (usually in the .JPG format). Some of these will work just fine, while others do not. You’ll have to experiment with these on a case-by-case basis. So-called “streaming” Web cams are not suitable: CamWatcher only works with *static* graphic images, not movies.

When you find a suitable candidate, ***right-click*** the image and select View Image from the popup menu. The image will appear on its own, with the location of that image appearing in the address bar. Harvest the complete URL. I recommend that you save these candidate addresses in Notepad temporarily while you are searching (and also to have an emergency backup copy of the camera addresses just in case something goes Horribly Wrong with CamWatcher).

Alternatively, when you find a page containing a candidate image you can tell the Web browser to show you the underlying HTML source code of the Web page (click on View-Page Source in Mozilla Firefox or View-Source in Microsoft Internet Explorer). You then must examine the HTML source code to see if the images are identifiable as .BMP, .GIF or .JPG files, with easily extractable Web addresses. A good (but by no means perfect or complete) source for cameras is Google Maps with the “Webcams” option turned on.

In CamWatcher, click on **File-New** to delete any currently running cameras that you may have loaded from the default list. Also, make certain that Options-Show Time on Screen, Options-Show Caption Under Image, and Options-Show Timer Under Image, are all checked (✓). Set the background color to something light with Options-Pick Background-Color, or leave it set to light cyan.

For each of the candidates you found in your search, click on **File-Add Camera**, and in the popup dialog click the Add New button. In the little popup, type in a short description of the camera, a vertical bar character, and the complete URL of the camera (for example: My Camera|http://www.jpg), and then click OK to add it to the list. If you mess up this step, you may select and edit the description of this or any other camera in the list. Select the newly added camera and click OK. The camera view should appear on screen at its full size, updated once every 60 seconds.

Adjust the size, position, and refresh interval appropriately. Some camera views are very large, and take up too much real estate on screen; if so, then right-click the image and set the Zoom to something smaller than 100%. Do not use any cameras that require a refresh interval of longer than once per minute.

If the Web address is to a “dead camera” (bad Web address, failed server, etc.) the image will appear as a small square dot with the caption underneath. To delete a camera, dead or otherwise, right-click the image or square dot and select Edit-Delete from the popup.

Find at least five unique working Web images (no porn!) that update the image with a new view at least once per minute. Arrange them on the screen so that all the images and all the captions can be seen. Delete any and all dead cameras from your list. I strongly recommend that you find two or three extra cameras in case some cameras fail between the time you turn in your answers and the time we grade your submission.

Click on File-Save to save your definitions as a file which is your last name, an underscore, the first letter of your first name, and the extension .wcm (for example, I would save the file as `verts_w.wcm`).

Create a .zip archive with your last name, the first letter of your first name, an underscore, the number 2, a second underscore, and the extension .zip (I would create `verts_w_2.zip`). The easiest way to create a .zip archive is to right-click on the Windows desktop and pick New-Compressed (zipped) folder from the popup menu. Windows will create the .zip folder and allow you to change its name at that time. Note that many Windows systems are configured to hide file extensions; if that is the case you need not enter the .zip as part of the file name (if you do, the file will end in `.zip.zip`).

Drag the .wcm file onto the icon for the .zip folder to add it to the archive. Open the .zip file to make sure the .wcm file is inside, and then close it again. Email the .zip archive as an attachment to **literacy@cs.umass.edu** (the class mail drop). The subject line of the email must say **CMPSCI 120 Assignment #2**. Empty .zip files will be rejected!

Scoring

The assignment will be scored out of 100 points. You will be graded on several things:

1. 50 Points: Did you find five working cameras? Ten points will be available for each unique working camera, up to the limit of five. No extra credit, although including seven to eight cameras is recommended in case one or more of them fail. No credit for any camera from the list provided with the program. No credit for any “dead” camera. Five points will be removed if a camera does not update at least once per minute. Three points will be removed if a camera does not have a proper description (i.e., blank or just the URL under the camera image).
2. 10 Points: Did you save your list to the `.wcm` file correctly? Ten points for following the naming instructions.
3. 20 Points: Did you create the `.zip` archive correctly? Ten points for following the naming instructions, ten points for properly storing the `.wcm` file inside.
4. 20 Points: Did you email it correctly? Ten points for sending it to the correct address, ten points for using the specified subject line on the email.