

Appendix A: The Windiff Utility

Just as we have the **diff** utility under UNIX, we have the **windiff** utility under the Microsoft suite of tools. You will typically find this under **Microsoft Visual Studio 6.0 Tools** on the Windows **Start** menu. We will use it for the same purpose as **diff**, to see if our program generates the same output as an example output file.

There is a zip file named **aa.zip** at the anonymous FTP server **ftp.cs.umd.edu** in the **/pub/egolub/VC.workbook** directory. Downloaded this file and extract the files which it contains to a temporary directory on your machine. We will use these to demonstrate the windiff utility. Copy or move the files named **out1**, **out2**, **out3**, **out4** and **out5** as well as the file named **aa.in** to your **C:\IOfiles** directory.

Go to the Windows **Start** menu and select **windiff**. After doing this, you should see a blank window with a menu bar.

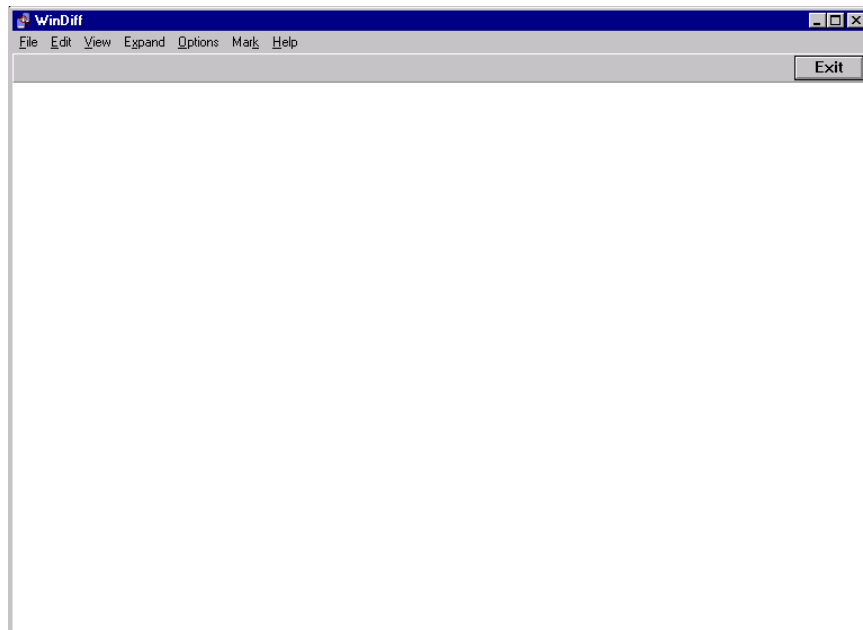


Figure A.1

In our first task, we will compare several existing files to each other. First, we will compare the files **out1** and **out2** for differences. Go under the **FILE** menu and select **Compare Files....** Use the directory browser to find the first of two files you wish to compare (**out1**) and select it by *double clicking* on it. Next, use the directory browser to find the second of the two files that you wish to compare (**out2**) and select it. Figure A.2 shows how some versions of **windiff** indicate that the files are the same - no listings or other indicators are displayed. In other versions, a message might appear that says the files are identical.

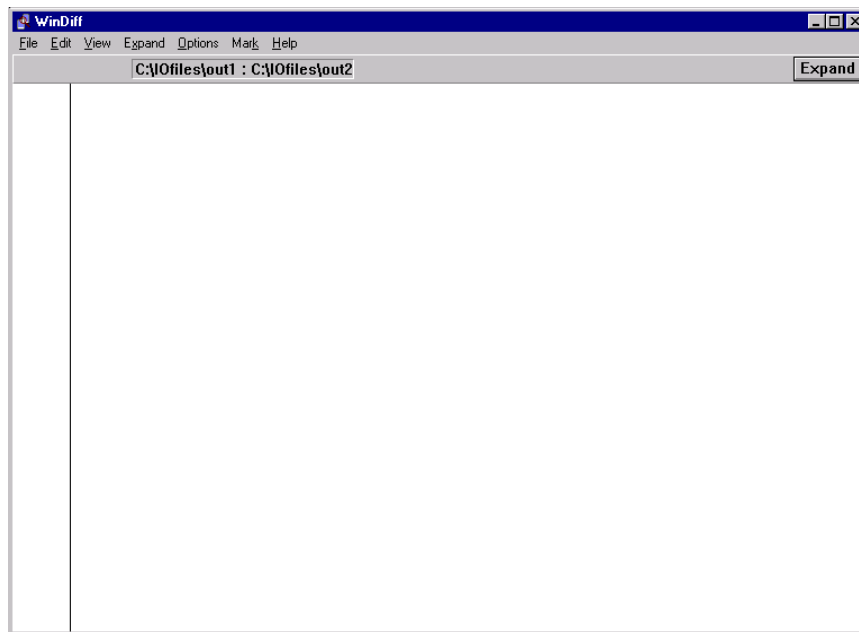


Figure A.2

Next, follow the procedure you just used with out1 and out2 to compare the files **out1** and **out3**. Since there is a difference, you will then see an information line identifying the names of the two files and that they are different.

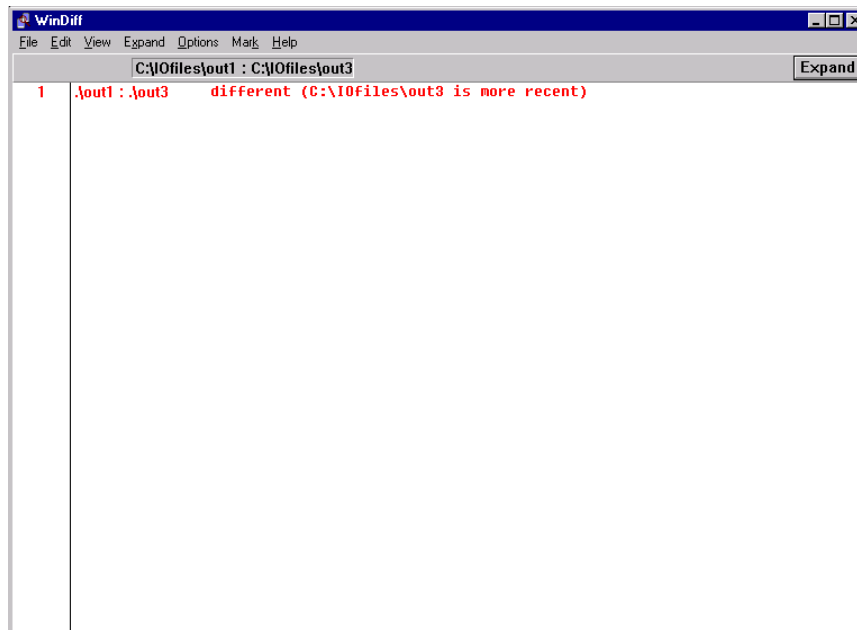


Figure A.3

To see the actual differences either *single click* on that line and then click on the button which says **Expand**, or simply *double click* on the line. The differences will be

identified along the left-hand side of the screen in a graphical representation of the two files.

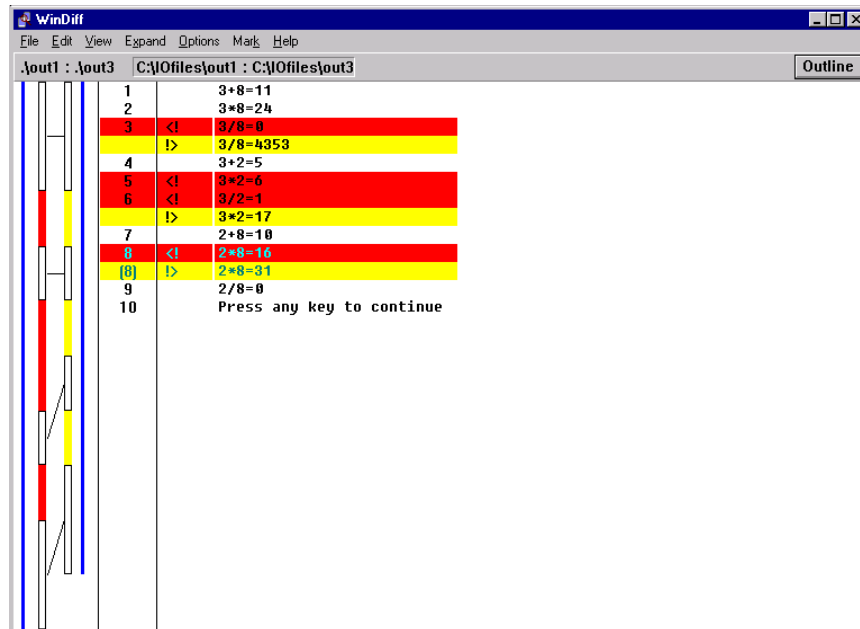


Figure A.4

The blue sliding bars represent what portion of the files you are currently viewing on screen. In this example, the entire files fit on screen, so they do not serve any useful purpose here. To see them in use, use **windiff** to compare out4 and out5 to one another.

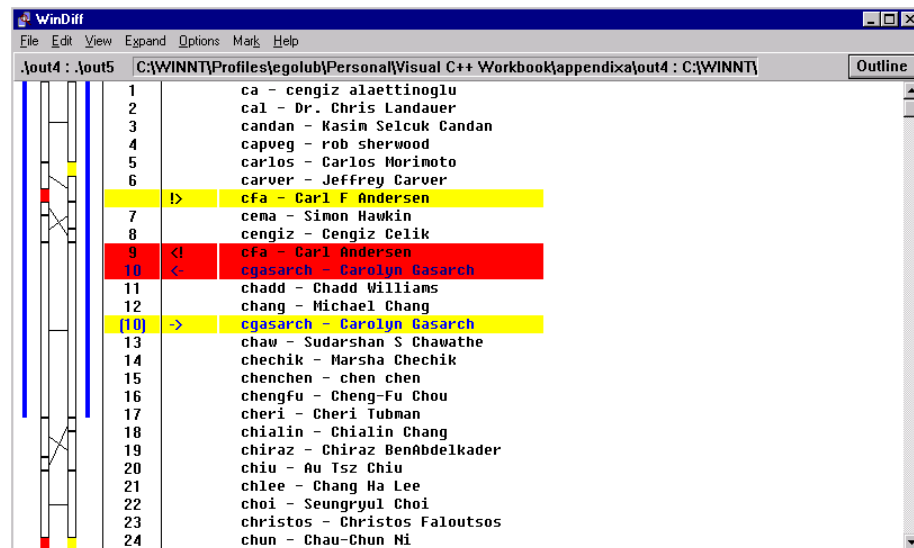


Figure A.5

Figure A.5 shows the differences between **out4** and **out5**. Notice that in this figure, the full files do not fit onscreen, so a scroll bar has been created. The blue bars along the left side represent the range of lines within each of the files currently displayed. If you click

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on one of the columns representing a file, the blue bars (and the viewing window) will jump to that position in the differences report. The red and yellow markers denote where the files differ. There are also lines crossing between the two columns where the information is the same, but the relative position is different. You can tell which file is the first one that was specified and which one was the second that was specified by either the color of the bar or the >! or <! that precedes the line. If the files are large, you might want to click on the places where they differ in that graphical representation to eliminate the need to scroll down through all of the parts that are not different.

Our second task will be to take the program that was in aa.zip and compare its output to the posted output. If there are differences (and there will be) you will then need to correct the program until your program's output matches the output in the file **out1**.

First, launch Visual C++ and create a new, empty Win32 Console Application project named **appendixa**. Next, copy or move the file `appendixa.cpp` from the temporary location in which you placed it earlier into the `appendixa` project directory. Add this file to the project and set the file redirection as `< C:\IOfiles\aa.in > C:\IOfiles\aa.out`. Now, compile and run the program.

Launch **windiff** and compare **out1** to **aa.out**. You will see that there are differences. When you switch back to Visual C++ to modify your program, you will probably want to leave **windiff** open so that you can just switch back to it after you have run your modified program to see if the differences have been remedied. To do this, after re-running the program, switch back to **windiff**. First, click on the button that says **Outline**. Next, go to the **VIEW** menu and select **Rescan selected file**. Finally, click on the button that says **Expand**.

Now, look through the code to find the errors. Fix one at a time, and after each modification, run the program and then switch back to **windiff** to confirm that you have corrected that error.

Congratulations! You have now completed your introduction to the **windiff** utility.

To leave the Visual C++ environment, go to the **FILE** menu and select **Exit**.

To leave the **windiff** utility, go to the **FILE** menu and select **Exit**.