

COMP 2560 Winter 2024—Assignment 2

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Due: 11: 59 PM, Feb. 16

Question 1

Study the Linux/Unix command “cat” to understand its basic functionality. Then study the attached source code “mycat.c” which implements the “cat” command using standard I/O functions. One can see that this program used “getc(..)” function to read the content from a file. Rewrite the attached “mycat.c” program so that it now uses the “fgetc(..)” function to read the content from a file.

Question 2

Still on the “mycat.c” file, but this time, rewrite the posted “mycat.c” program so that it now uses the “fread(..)” function to read the content from a file.

Question 3

Still on the “mycat.c” file, but this time, rewrite the posted “mycat.c” program using the system I/O functions (open, close, read, write, etc.).

Question 4

Using only standard I/O functions (like fopen(), fseek(), ftell(), fgetc(), etc.), write a C program to reverse the order of the lines in a text file. That is the first line becomes the last, the second line becomes the one before the last one, and so on.

Note: your program should have two arguments, the input file name and the output file name.

Call model:

reverseFile inputFileName outputFileName

Example:

Input file:

Hello

I am happy to see you

Output file:

I am happy to see you

Hello

Question 5

Using the standard I/O functions to write a C program to combine multiple text files into a single file and display the content of the combined file.

Assume we call this program “append”, the way to use it is as follows:

shell prompt > ./append file1 file2 file3 combinedfile

In the above, file1 to file3 are existing text files, and combinedfile is a newly created file whose contents is the concatenation of file1 followed by file2 followed by file3. Your program should display the content of the combinedfile in terminal window before it terminates. Your program should work on any number of input files. The example usage given above shows 3 input files (file1, file2, and file3), and your program should also work, for example, say, 30 inputs files (file1, . . . , file30) as well.

Submission Requirement

Please make sure all your code works properly on the CS Linux server.

For all questions, you need to submit your source code.

Record one video with audio showing your source code, you compile and run each program, and explain how each of the underlined items in each question’s description is implemented in your code.

For the convenience of marking your video submission, please add chapters to your video so that markers can easily jump to the start of each question in your video. If you do not know how to add chapters to your video, please watch this short video to learn how for YouTube video.

<https://www.youtube.com/watch?v=d5uSWaCPLj4>

If you are using Microsoft Stream, this link shows how to add chapters.

<https://support.microsoft.com/en-us/office/using-manual-chapters-with-videos-on-stream-on-sharepoint-8bbf61eb-coob-42b5-a514-cce2e45eb6ea>

Please properly name all your files so that markers can easily identify which file is for which question.

Please note the late assignment submission policy stated in the course outline.

Submit the source code for each question and any accompanying files (if applicable) needed for that question. Submit the link to the video.