

## PROGRAM 4: reverse\_copy.c

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The goal of this project is to introduce you to the concepts of file I/O in UNIX. In this project you will implement a program that reads in the content of one file and outputs the content in reverse to another file. The program must run on your assigned VM.

### PROBLEM DESCRIPTION:

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Write a program that creates a copy of a binary file with its contents written in reverse, that is with the bytes in reverse order. Consider your design carefully to find a reasonably efficient way to solve this problem. This will be a factor (5 points) in grading this program. One inefficient solution is to read one byte at a time from the end of the file forward and while functional would only award you 95 points.

### INPUT/COMMAND LINE:

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Your program should take two command line parameters, where each parameter is the name of a file. The first parameter is the name of the input file and the second parameter is the name of the output file.

Example Command Line:

```
{vm05} reverse_cp fileToReverse fileInReverse
```

### REQUIREMENTS:

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- o All file I/O must be done using the routines described in class. e.g. you should only use open(), read(), write(), lseek(), close(). NOT fopen, fread, fwrite etc !

- o The programs should be robust and include appropriate error checks and should not crash if given bad input.

o You must submit at least the following files (i.e., all the files necessary to compile your program):

README.txt  
reverse\_copy.c  
Makefile

o You will need to submit a copy of your project to eLC before the deadline date. You will also need to keep a copy on your VM. Please follow these instructions. If you do not put your project in the correct folder with the correct name, you may receive a 0 for your grade.

- Navigate to your home directory: `cd ~/`
- Create a folder named "project4": `mkdir project4`
- Place all your source code, including a readme and a Makefile, in the project4 folder

o In the first line in reverse\_copy.c be sure to include your full name as it appears in newELC as a comment.

#### Rubric

submit valid readme file 5 points.  
submit valid makefile 10 points.  
test case 1 20 points.  
test case 2 20 points.  
test case 3 20 points.  
test case 4 20 points.  
program efficiency 5 points.

Note that assignment that can not be compiled or found will be graded ZERO.