CS5243 Advanced UNIX Programming

Assignment 12 (5 pts)

Due: Oct 14, 2023, at 23:59:59

**Notice**

1. Please name your file properly; 2 pts will be taken out for incorrectly-named files.
2. Late submission is not allowed. You will receive 0 point in that case.
3. Plagiarism is not allowed. We will pass your source codes through a tool called “moss”, which is an anti-plagiarism service provided by Stanford University to determine the similarity of programs. If your program has > 20% similarity with your classmates, you will receive 0 point; no exception will be made. (Hint: Please do not share your code with fellow students. Discuss with them instead.)

**What to hand in**

1. Your implementation code. You should name it “**assignment12.c**”.
2. A makefile that can compile your code. You should name it “**Makefile**”.
3. A report that contains explanations of how you implemented your code. You should name it “***Group\_id*.pdf**”.
4. Please upload all the code files separately and the pdf (do not zip them) to eeclass.

**Specifications**

**Memory-mapped I/O** is a technique to map a file on disk into a buffer in memory so that, when we fetch or store data in the buffer, the corresponding data of the file are read or written.

In this assignment, you need to complete the code in **template.c** to copy the file like in assignment 2, but with memory-mapped I/O (you can use a library called **mmap)**. The following is the grading policy:

1. **(2 pt)** Complete the code and function correctly to copy a file, you can use **source.txt** to test it.
2. **(2 pt)** Try to **close** the input file after calling **mmap** and answer the following question in the report: **Will closing the file descriptor invalidate the memory-mapped I/O?**
3. **(1 pt)** Describe your implementation in the report.

**Additional Notes**

1. All of your code should be implemented within one .c file.
2. **The output file should be identical to the source file.** (We will compare your results with the source file.)

**Sample Command**

./assignment2 <source\_file> <dest\_file>