11210CS 543200 Advanced UNIX Programming

Assignment 1 (5 pts)

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

**What to hand in**

1. Your implementation code. You should name it “**assignment1.c**”.
2. A makefile that can compile your code. You should name it “**Makefile**”.
3. A report that contains the answer to the questions, screenshots of your results, and 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.

**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.)

**Specifications**

This assignment will help you get familiar with lseek, read, and write operations.

Write a program to verify if you can open a file with the append flag to:

1. Read from the specific place in the file using lseek.
2. Write data at the specific place in the file using lseek.

**(2 pts) Answer the above questions in your report.**

We provide a **sample.txt** which includes the sentence below:

*Hello, I am a student.*

In your implementation, you should:

1. **(1 pt)** Use lseek and read to **print** “*student.*” in the command line.
2. **(1 pt)** Use lseek and write to replace “*student.*” with “*NTHU student.*” and **print** the whole sentence in the file in the command line.
3. **(1 pt)** If the append flag cannot support you to do so, please **replace it with the right one and explain your implementation in your report**.

**Additional Notes**

1. You can only use open, lseek, read, and write operations to handle the **sample.txt**. **Printing the words directly is forbidden**! We will check your source codes.
2. All of your code should be implemented within one .c file.
3. **Every output of your codes should follow the same format as the sample outputs** given below, otherwise, you will not get the points.

(We will compare your print results with the sample output.)

1. We provide a sample Makefile for Assignment 1. You can implement your own version if you have any special requirements.

**Sample Output**

student.

Hello, I am a NTHU student.