

Lab 1

Csc 33200 (H-63858)

Instructor: Sujoy Debnath

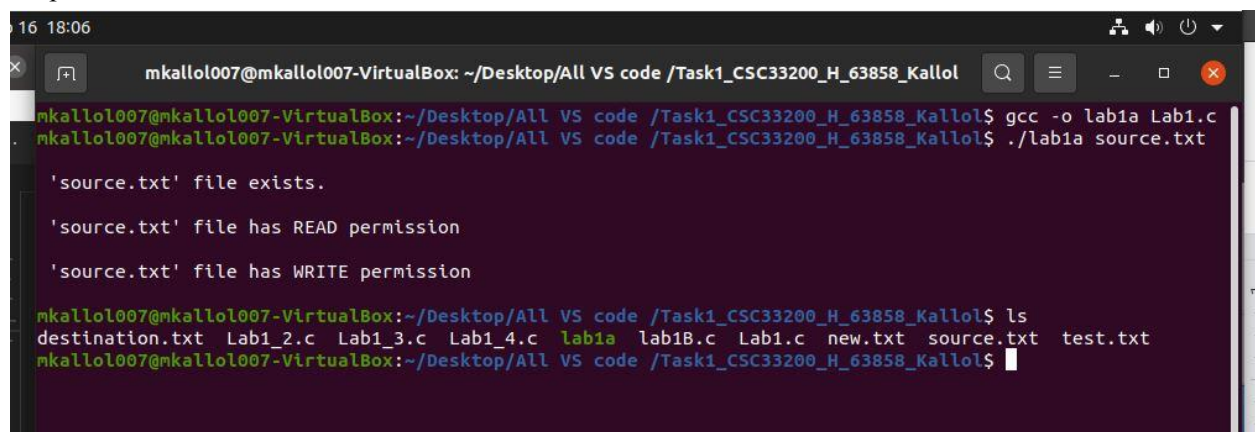
Name: Moshahid Kallol

This lab briefly shows us how linux system calls work with the device and the user. For Lab 1, we are specifically working with *File Management System Calls*. Here, I am attaching the codes and outputs for the given tasks.

Task 1_A : We are asked to extend the given code snippet to check read and write permission.

Code: attached in the zip folder

Output:



```
mkallol007@mkallol007-VirtualBox: ~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ gcc -o lab1a Lab1.c
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ ./lab1a source.txt

'source.txt' file exists.

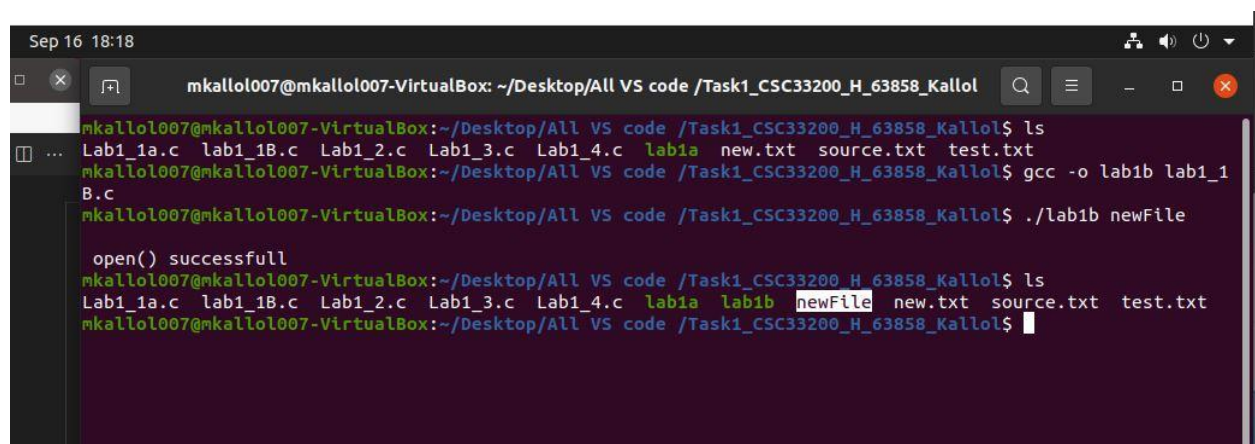
'source.txt' file has READ permission

'source.txt' file has WRITE permission

mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ ls
destination.txt Lab1_2.c Lab1_3.c Lab1_4.c lab1a lab1B.c Lab1.c new.txt source.txt test.txt
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$
```

Task 1_B: Write a C program to create a new file using open system call.

Output:



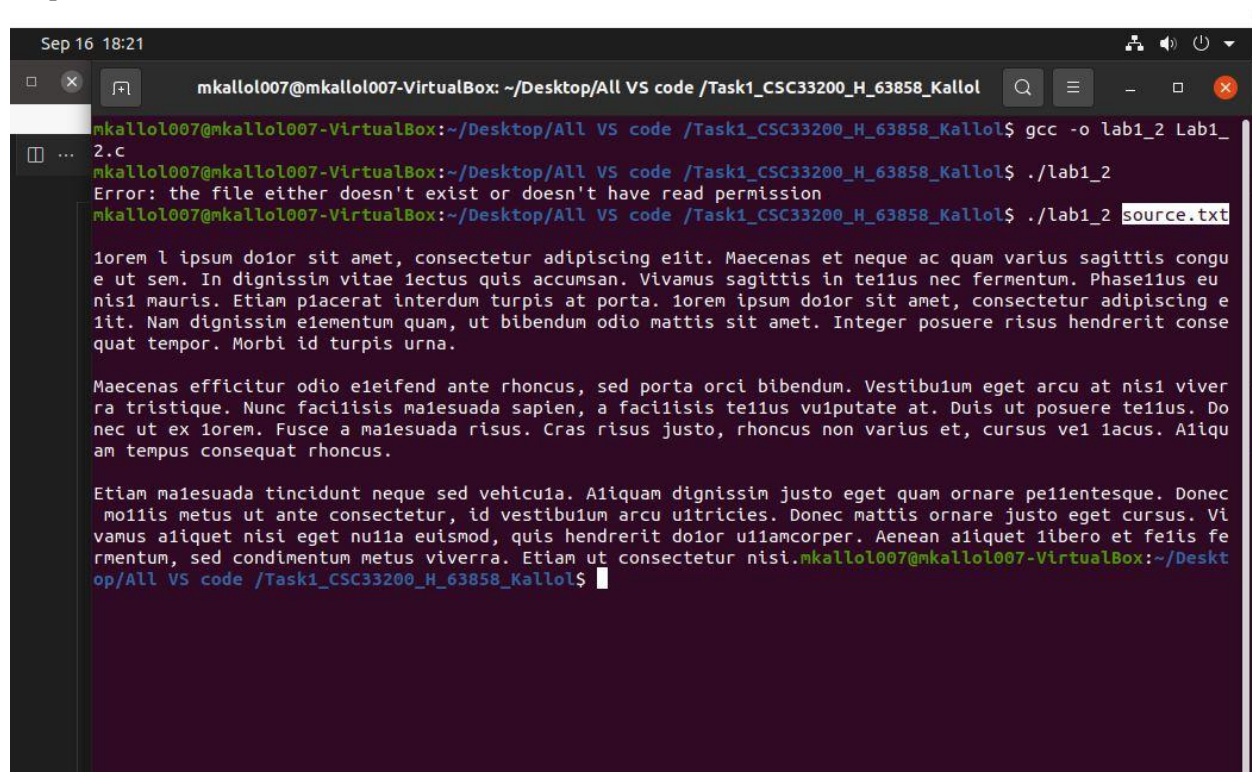
```
Sep 16 18:18
mkallol007@mkallol007-VirtualBox: ~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ ls
Lab1_1a.c Lab1_1B.c Lab1_2.c Lab1_3.c Lab1_4.c lab1a new.txt source.txt test.txt
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ gcc -o lab1b lab1_1B.c
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ ./lab1b newFile

open() successfull

mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ ls
Lab1_1a.c Lab1_1B.c Lab1_2.c Lab1_3.c Lab1_4.c lab1a lab1b newFile new.txt source.txt test.txt
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$
```

Task 2: Write a C program to implement a command called *displaycontent* that takes a (text) file name as argument and displays its contents.

Output:



```
Sep 16 18:21
mkallol007@mkallol007-VirtualBox: ~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ gcc -o lab1_2 Lab1_2.c
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ ./lab1_2
Error: the file either doesn't exist or doesn't have read permission
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ ./lab1_2 source.txt

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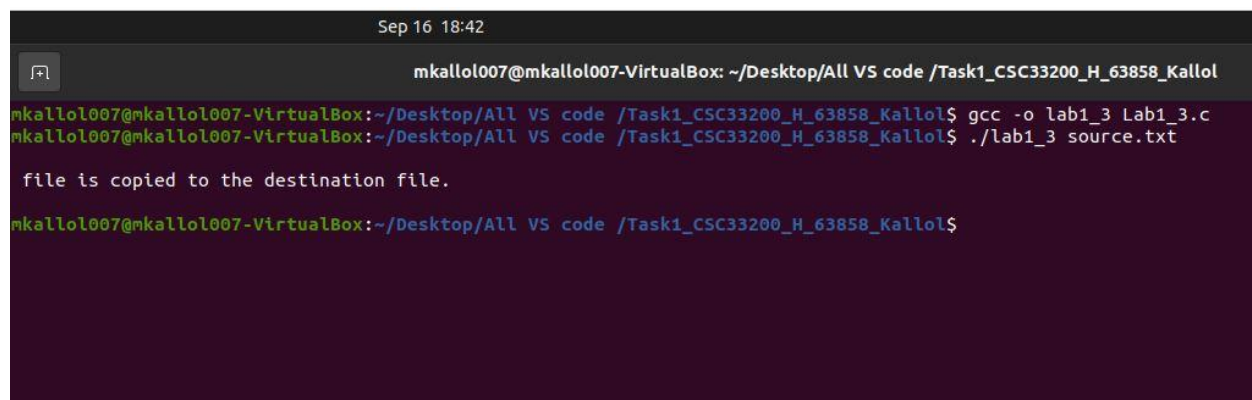
Maecenas efficitur odio eleifend ante rhoncus, sed porta orci bibendum. Vestibulum eget arcu at nisi viver
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am tempus consequat rhoncus.

Etiam maiesuada tincidunt neque sed vehicula. Aliquam dignissim justo eget quam ornare pellentesque. Donec
mollis metus ut ante consectetur, id vestibulum arcu ut tricies. Donec mattis ornare justo eget cursus. Vi
vamus aliquet nisi eget nulla euismod, quis hendrerit doior ullamcorper. Aenean aliquet libero et feis fe
rmentum, sed condimentum metus viverra. Etiam ut consectetur nisi. mkallol007@mkallol007-VirtualBox:~/Deskt
op/All VS code /Task1_CSC33200_H_63858_Kallol$
```

Task 3: Write a C program that mimics the cp command.

Code: file is attached.

Output: For this task I have tried getting the size of the file and using it as a buffer. It was not working correctly for me. So I specified the buffer implicitly. It copies the source file. But in the destination file, it also writes some garbage after the file is fully copied.



```
Sep 16 18:42
mkallol007@mkallol007-VirtualBox: ~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ gcc -o lab1_3 Lab1_3.c
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ ./lab1_3 source.txt

file is copied to the destination file.

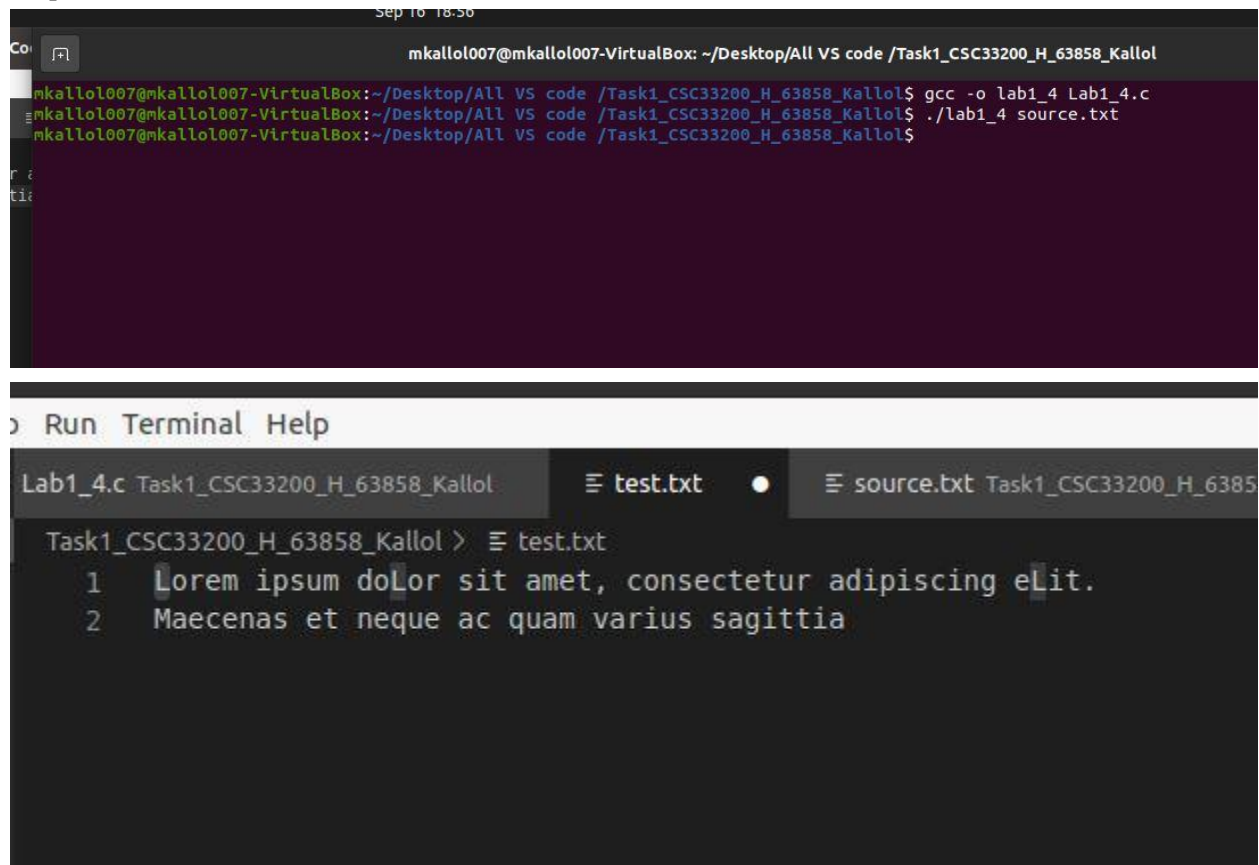
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$
```

Task 4:

- (a) Read the next 100 characters from source.txt, and among characters read, replace each character 'l' with character 'L' and all characters are then written in destination.txt
- (b) Write characters "XYZ" into file destination.txt
- (c) Repeat the previous steps until the end of file source.txt. The last read step may not have 100 characters.

Code: I tried copying 100 chars at a time using a specified scope. Then find 'l' and replace it.

Output:



```
Sep 16 18:56
mkallol007@mkallol007-VirtualBox: ~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ gcc -o lab1_4 Lab1_4.c
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$ ./lab1_4 source.txt
mkallol007@mkallol007-VirtualBox:~/Desktop/All VS code /Task1_CSC33200_H_63858_Kallol$

Run Terminal Help
Lab1_4.c Task1_CSC33200_H_63858_Kallol test.txt source.txt Task1_CSC33200_H_6385
Task1_CSC33200_H_63858_Kallol > test.txt
1 Lorem ipsum doLor sit amet, consectetur adipiscing eLit.
2 Maecenas et neque ac quam varius sagittia
```