National University of Computer & Emerging Sciences
Department of Computer

Science

Operating Systems Lab

Lab # 2

Instructions:

- Make a word document with the convention "SECTION_ROLLNO_LAB-NO". In addition, paste all of your work done at the LINUX prompt.
- You have to submit a Word File.
- Plagiarism is strictly prohibited; negative marks would be given to students who cheat.

Submission Date: 1-02-23 (Before 12:00 pm)
Note: Understanding the assignment is part of the assignment.

Command Line Arguments
It is possible to pass some values from the command line to your C/C++ programs when they are executed. These values are called command line arguments and many times they are important for your program specially when you want to control your program from outside instead of hard coding those values inside the code. The command line arguments are handled using main () function arguments using argc and argv[].

Task 01:
You are required to create a program, which will receive the name of a text file via command line arguments, and it will read that file and print the contents of the file on console. You can assume that the text file to be read is placed in the same folder as your executable program. Program should be able to process multiple file name given to it by command line and read+print its contents.

Task 02:
To simulate grep command using UNIX system call.

ALGORITHM:

1. Get filename and search string as command-line argument.
2. Open the file in read-only mode using open system call.
3. If file does not exist, then stop.
4. Let length of the search string be n.
5. Read line-by-line until end-of-file
   a. Check to find out the occurrence of the search string in a line by examining characters.
   b. If search string exists, then print the line.
6. Close the file using close system call.
7. Stop.

Task 03:
You are required to help a new Ubuntu user in performing Ubuntu commands.

Mr. Tom is a new Ubuntu user. He want guidance regarding basic Ubuntu utilities to perform following tasks:

1. Create a file named "19f-XXXX.txt". File must contain at least 10 lines.
2. Create another file named "your name.txt". File must contain at least 10 lines.
3. Merge the data of both files.
4. Redirect the output to a new file.
5. Display the first two lines of the first file.
6. Display the last two lines of the second file.
7. Finds the string (your roll#) from the first file.
8. Grant the execute permission of the second file to the group.
9. Remove the write permission for the owner.
10. Now Mr. Tom suddenly lost track of his current location. Help him find his location.
11. He wants the list of all files present in the Desktop directory.
12. Now he wanted to create a folder of his personal files and pictures named as your roll#.
13. Display the current time.
14. He is done with the task and he is happy with your work. He want to display a thankyou message.

Task 04:

1. Create a file named "19f-XXXX_OS-lab_rules.txt" using linux commands. The file must contain all lab rules covered in the first lab.
2. You want to set the rights of the created file to this (- rwx r-x r--). For these rights, you are required to convert the given rights in numeric format using binary number system procedure covered in lecture. Show complete working.
3. Now use the derived number to change the permission of a file using the chmod command.
4. Append the output of ls command to the created file.