Operating System Lab

Fall 2024

Lab 04 Task

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Batch: BSCS 5th semester

Lab Instructor:

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Lab Task

Q1. You are tasked with changing the access permissions of file name **LINUXOS** according to the following requirements by using **both methods.**
User (Owner): Full permissions (read, write, and execute).
Group: Read and write permissions.
Others: Read permission only. (02 Marks)
Note: Include screenshots, where required to illustrate your explanation

```
Loading...

Welcome to Fedora 33 (riscv64)

[root@localhost ~]# cat > LINUXOS
I'm Samreen Bibi. This is my file of OS lab.^C
[root@localhost ~]# ls
bench.py  hello.c  LINUXOS
[root@localhost ~]# chmod u+rwx LINUXOS
[root@localhost ~]# chmod g+rw LINUXOS
[root@localhost ~]# chmod o+r LINUXOS
[root@localhost ~]# ls -l LINUXOS
-rwxrw-r-- 1 root root 44 Sep  9 10:04 LINUXOS
[root@localhost ~]# chmod 764 LINUXOS
[root@localhost ~]# ls -l LINUXOS
-rwxrw-r-- 1 root root 44 Sep  9 10:04 LINUXOS
[root@localhost ~]#
```

Q2. Create a directory called lab4 and create three files say quiz, report and cprogram inside the directory. Now try to set the following rights;
-rw-r- - r- - quiz
-rw-rw - r- - report
-rwx rwx x cprogram
(02 Marks)
Note: Include screenshots, where required to illustrate your explanation.

```
[root@localhost ~]# mkdir Lab4
[root@localhost ~]# ls
bench.py  hello.c  Lab4  LINUXOS
[root@localhost ~]# cd Lab4
[root@localhost Lab4]# touch quiz
tou[root@localhost Lab4]# touch program
[root@localhost Lab4]# touch report
[root@localhost Lab4]# ls
program  quiz  report
[root@localhost Lab4]# chmod 644 quiz
[root@localhost Lab4]# chmod 771 program
[root@localhost Lab4]# chmod 664 report
[root@localhost Lab4]# ls -l
total 0
-rwxrwx--x 1 root root 0 Sep  9 10:09 program
-rw-r--r-- 1 root root 0 Sep  9 10:09 quiz
-rw-rw-r-- 1 root root 0 Sep  9 10:09 report
[root@localhost Lab4]#
```

Q3. You are managing a project where you need to organize and summarize information for a class assignment. On your Linux system, you have two directories named OSLAB and OSTheory. In the OSLAB directory, your task is to create three text files: overview.txt with the text "Overview of Operating Systems," details.txt with the text "Detailed study of key OS concepts," and applications.txt with the text "Applications and examples of OS concepts." Once these files are created and populated, you need to combine their contents into a single file named Combinedtext. Now display the data in a Combinedtext.

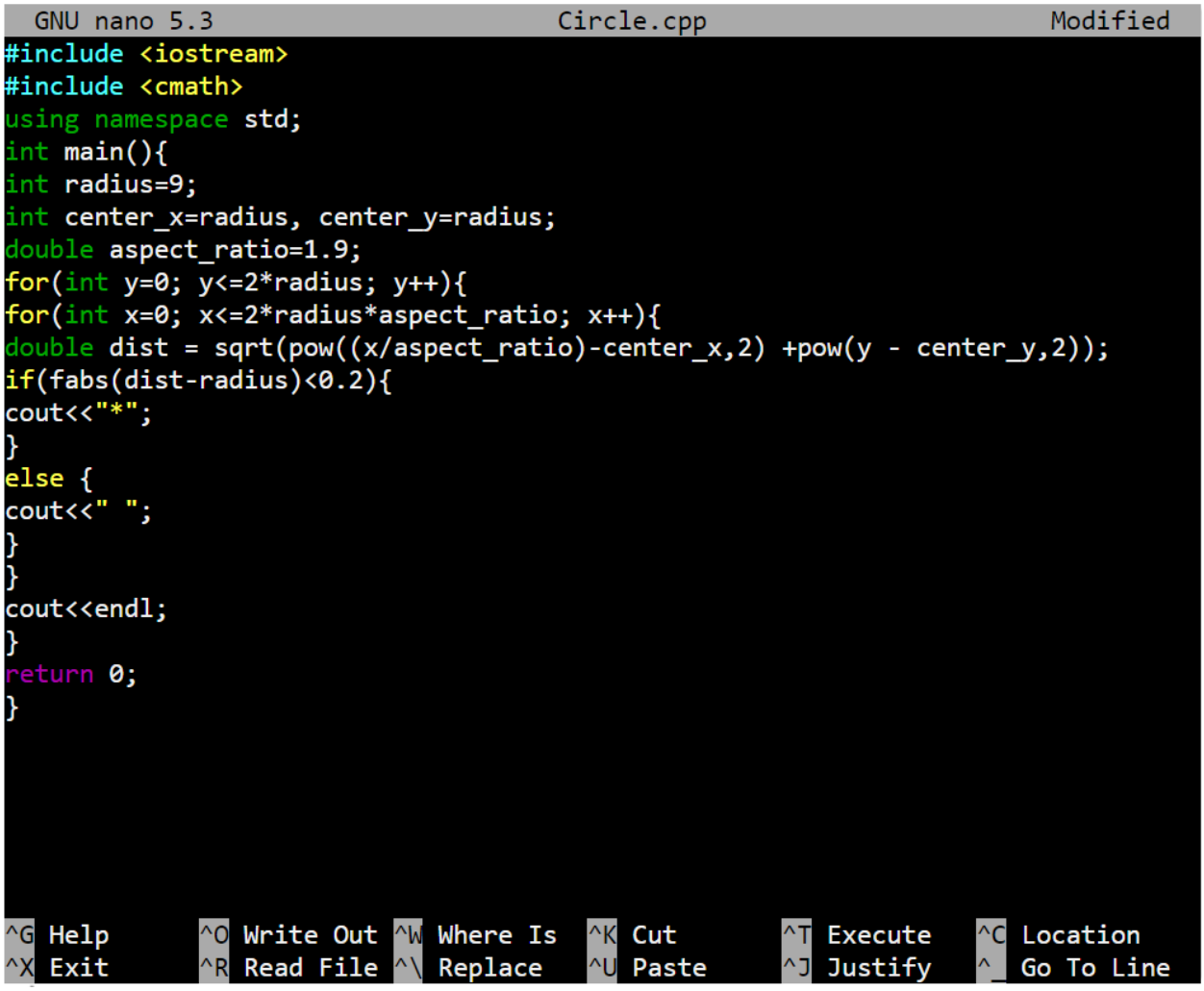
Note: Include screenshots, where required to illustrate your explanation. (02 Marks)

```
[root@localhost Lab4]# mkdir OSLAB
[root@localhost Lab4]# mkdir OSTheory
[root@localhost Lab4]# ls
OSLAB  OSTheory  program  quiz  report
[root@localhost Lab4]# cd OSLAB
[root@localhost OSLAB]# cat > overview.txt
Overview of Operating System.^C
[root@localhost OSLAB]# cat > details.txt
Detailed study of key OS concepts.^C
[root@localhost OSLAB]# cat > applications.txt
Applications and examples of OS concepts.^C
[root@localhost OSLAB]# ls
applications.txt  details.txt  overview.txt
[root@localhost OSLAB]# cat overview.txt details.txt applications.txt > Combined
text
[root@localhost OSLAB]# cat Combinedtext
Overview of Operating System.Detailed study of key OS concepts.Applications and
examples of OS concepts.[root@localhost OSLAB]#
```

Q4: Directory A contains at least two files named "FinalTerm" and "MidTerm". Directory B contains at least two files named "OSTheory" and "OSLAB".
Your task involves the following steps:
Move the "MidTerm" file from the existing Directory to the Directory where the OSLAB file exists and Rename it with TASK.
Note: Include screenshots, where required to illustrate your explanation. (02 Marks)

```
[root@localhost ~]# mkdir A
[root@localhost ~]# mkdir B
[root@localhost ~]# ls
A  B  bench.py  hello.c  Lab4  LINUXOS
[root@localhost ~]# cd A
[root@localhost A]# touch FinalTerm MidTerm
[root@localhost A]# ls
FinalTerm  MidTerm
[root@localhost A]# cd ..
[root@localhost ~]# cd B
[root@localhost B]# touch OSTheory OSLAB
[root@localhost B]# ls
OSLAB  OSTheory
[root@localhost B]# cd
[root@localhost ~]# mv /root/A/MidTerm /root/B/Task
[root@localhost ~]# cd B
[root@localhost B]# ls
OSLAB  OSTheory  Task
[root@localhost B]# cd ..
[root@localhost ~]# cd A
[root@localhost A]# ls
FinalTerm
[root@localhost A]#
```

Q5: As part of your coursework, you have been assigned a project to develop a simple application on a Linux system. Your task is to write a C++ program that draws a circle on the screen. Describe the steps you would follow to complete this task, including the setup of the necessary library, writing the C++ code, compiling the program, and running it to display the circle. What commands and procedures would you use to accomplish this?
Note: Include screenshots, where required to illustrate your explanation. (02 Marks)


GNU nano 5.3 Circle.cpp Modified
#include <iostream>
#include <cmath>
using namespace std;
int main(){
int radius=9;
int center_x=radius, center_y=radius;
double aspect_ratio=1.9;
for(int y=0; y<=2*radius; y++){
for(int x=0; x<=2*radius*aspect_ratio; x++){
double dist = sqrt(pow((x/aspect_ratio)-center_x,2) +pow(y - center_y,2));
if(fabs(dist-radius)<0.2){
cout<<"*";
}
else {
cout<<" ";
}
}
cout<<endl;
}
return 0;
}
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^_ Go To Line


[root@localhost ~]# g++ Circle.cpp -o Circle
[root@localhost ~]# ./Circle
[root@localhost ~]#