Birzeit University

Computer Science Department- Faculty of Engineering and Technology

Linux OS Lab - Comp 311

Due Date: Wednesday 05/06/2024, before 5:00 PM
Submission at Server

Projects 3. All answers must be from Labs (1-11) ONLY.

ANY STUDENT WHO USES A COMMAND NOT IN THE LAB MANUAL OR AI TOOLS WILL NEVER BE GRADED, AND HE OR SHE WILL RECEIVE THE PROPER ACADEMIC PUNISHMENT.

إن استخدامك للمصادر الخارجية من الأدوات المتاحة على الانترنت مثل الذكاء الاصطناعي/ اكواد مكتوبة/ أوامر برمجية خارج دوسية (المختبر او الاستعانة بأي صديق/طالب آخر/ مبرمج من شركات) سيعرضكم للمسؤولية و العقوبات الاكاديمية

YOUR Work must be tested on your machine (Laptop) Before passing the Project.

Under your home directory, create a directory called '**Proj.3_ID_Sec#**' (example ***Proj.3_1230123_sec1***), and underneath it, do the following: Write a shell script called ***myproj*** that, when executed, displays the following four choices:

(Your script should work on your own created files and directories if they are needed)

Welcome Message

Write a shell script that prints a welcome message when the user logs in. It should display "Good morning/Good afternoon/Good evening", depending on when the user logs in.

When the ***myproj script is running, the welcome script displays the message automatically that displays the following Menu, as shown below:***

```
Good afternoon Muard Njoum
```

Please Choose one of the following options:

Directories:

1) ***Change Permission for All Directory.***
2) ***Print all empty directories.***

Files

3) ***Change Permission for All Files***
4) ***Delete Duplicated files***

Report:

5) Count and display all files that contain the same word.

6) Count the number of files that have the same name inside different directories.

Exit 7) Display a Goodbye message to the host

Clarification of ALL Scripts

1. Directories:

1) Change Permission for All Directory.

Write a shell script, chmodAllDirectories, that will change the permissions of all directories inside a given leading directory. The command **chmodAllDirectories** ***newpermission maindirecroty*** should set a new permission to all directories inside a given leading directory. The script should set a new permission for all ***"directories"*** inside the given directory.

If there is no argument or the ***main directory*** is not a directory, the script should print an error message to **stderr** and exit.

Sample

chmodAllDirectories 600 students

2) Print all empty directories.

Write a shell script **printEmptyDirectories** ***maindirectory*** to print all empty directories as a full path. The command **printEmptyDirectories** ***directory*** should only print all empty directories inside the given argument directory.

Note: du command cannot be used in writing this script

If there is no argument or the ***main directory*** is not a directory, the script should print an error message to **stderr** and exit.

Sample

./printEmptyDirectories /home/students/u1200735
/home/students/u1200735/mydir
/home/students/u1200735/dir1
….
/home/students/u1200735/test
…

2. Files:

3) Write a shell script, **removeX,** that will remove ***x*** permission of a given file from a given set of directories. The command **removeX** ***file1 d1 d2 d3 ..dn*** removes the execution property of ***file1*** inside that is laying inside **d1 d2 d3…dn** directories. If there is no argument, or if ***file1*** is not a regular file or directory1 is not a directory, then the script should print an error message to **stderr** and exit.

4) Delete all duplicate files

Write a shell script to **deleteDuplicate** that deletes all files (Keep one and remove the other) that are a copy of a given file. The command deletes replication ***f1 f2 ... fn*** should remove all the files ***f2*** through ***fn*** that are exact copies of ***f1***. Exact means that the file name and size are the same.

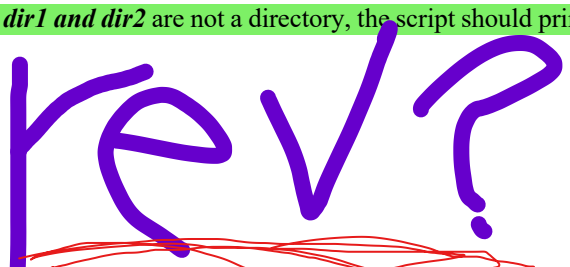
Sample:
(Assume that the midterm file in directory dir1 has another copy inside directory dir2)

./deleteDuplication dir1 dir2

File ***midterm*** *has been deleted from the* ***dir2*** *directory.*

…

If there aren't two arguments or ***dir1 and dir2*** are not a directory, the script should print an appropriate error message to stderr and exit.



3. Report:

5) ***Count and display all files that contain the exact word:***

Write a countWord script that accepts as many arguments as possible (up to 8): the word to search for and a list of directories. The script should display all files with their directories.

Your script should print an error if:

- ***The first argument is not a type of regular file***
- ***The number of arguments is less than two.***

Sample:

```
./countWord  Computer  Comp311 Comp433 Comp438
```

```
The Word "Computer" appears 4 times in the following Files with the
corresponding lines
```

```
/Comp311/midterm.doc       line 10
/Comp311/resume.txt        line 5
/Comp433/technology.txt.   line 3
/Comp438/Myfiles.html      line 25
```

6) ***Count the number of files that have the same name inside different directories.***

Write a countFiles script that accepts two directories as arguments: the script should display all files with the same name.

Your script should print an error if:

- ***the first argument is not a type of directories***
- ***the number of arguments is not equal to two.***

Sample:

```
./countFiles Comp311 Comp2311
```

```
The following files appear in the directories "Comp311" and "Comp2311"
Hello.java
Test.c
Final.html
```

7) ***Exit Script***

Allows the user to stop running the script and exit with "Goodbye." hostname

Sample

```
Goodbye Murad, I hope to see you soon.
```

IF ANYONE USES ANY COMMAND OR SYNTAX NOT MENTIONED IN THE LAB MANUAL, THEN THIS SCRIPT WILL NOT BE GRADED (ZERO GRADE). YOU CAN ONLY USE OPERATIONS LIKE (&&, ||,!) if needed.

```
Operation Explanation: && The logical AND, || The logical OR, ! The logical NOT
(depending on the exit status)

Example:
if [[ ($1 -lt 10) && ($2 -gt 2) ]]
  then
 echo "Approved"
 echo "Quit!"
exit 0
fi
```

No projects will be accepted after the due Date and time (Wednesday 05/06/2024, 5:00 PM). No exceptions.

Good luck