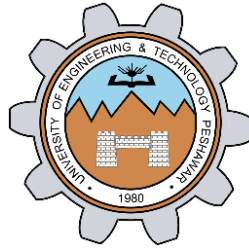


Unix Commands Overview

LAB # 01



Fall 2024

CSE-302L

Systems Programming Lab

Submitted by: **AIMAL KHAN**

Registration No.: **21PWCSE1996**

Class Section: **A**

“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Student Signature: _____

Submitted to:

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Department of Computer Systems Engineering
University of Engineering and Technology, Peshawar

CSE 302L: SYSTEMS PROGRAMMING LAB

LAB ASSESSMENT RUBRICS

Criteria & Point Assigned	Outstanding 2	Acceptable 1.5	Considerable 1	Below Expectations 0.5	Score
Attendance and Attentiveness in Lab PLO08	Attended in proper Time and attentive in Lab	Attended in proper Time but not attentive in Lab	Attended late but attentive in Lab	Attended late not attentive in Lab	
Capability of writing Program/Algorithm/Drawing Flow Chart PLO1, PLO2, PLO3, PLO5	Right attempt/ no errors and well formatted	Right attempt/ no errors but not well formatted	Right attempt/ minor errors and not well formatted	Wrong attempt	
Result or Output/ Completion of target in Lab PLO9	100% target has been completed and well formatted.	75% target has been completed and well formatted.	50% target has been completed but not well formatted.	None of the outputs are correct.	
Overall, Knowledge PLO10,	Demonstrates excellent knowledge of lab	Demonstrates good knowledge of lab	Has partial idea about the Lab and procedure followed	Has poor idea about the Lab and procedure followed	
Attention to Lab Report PLO4,	Submission of Lab Report in Proper Time i.e., in next day of lab, with proper documentation.	Submission of Lab Report in proper time but not with proper documentation.	Late Submission with proper documentation.	Late Submission very poor documentation	

Instructor:

Name: _____	Signature: _____
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Unix Commands Overview

Objectives:

We will learn about different commands of Linux for personal use. Editing, compiling, and executing the C programs.

Tasks:

Task 1: . In your home directory create the subdirectory ~/cse302/labs/lab1 . (Use multiple mkdir commands or consult the -p option for mkdir in the man page for mkdir).

1. cd ~/cse302/labs/lab1
2. Copy or create a file named myfile into ~/cse302/labs/lab1 (if you create it, type something into it). For information on how to create a quick empty file, man touch.
3. Create a soft link soft_link and a hard link hard_link to that file.
4. Based on the output returned by stat and ls commands (using all relevant options), explain in detail (but briefly) the differences between the three files.

Output:

```

sarwat@DESKTOP-VG976N9:~/DCSE$ stat slink
  File: slink -> first.txt
  Size: 9          Blocks: 0          IO Block: 4096   symbolic link
Device: 820h/2080d Inode: 34023         Links: 1
Access: (0777/lrwxrwxrwx)  Uid: ( 1000/  sarwat)   Gid: ( 1000/  sarwat)
Access: 2024-01-30 00:22:53.664352750 +0500
Modify: 2023-10-05 09:25:28.693472033 +0500
Change: 2023-10-05 09:25:28.693472033 +0500
 Birth: 2023-10-05 09:25:28.693472033 +0500
sarwat@DESKTOP-VG976N9:~/DCSE$ stat hlink
  File: hlink
  Size: 18          Blocks: 8          IO Block: 4096   regular file
Device: 820h/2080d Inode: 6426         Links: 1
Access: (0644/-rw-r--r--)  Uid: ( 1000/  sarwat)   Gid: ( 1000/  sarwat)
Access: 2023-10-05 09:20:20.303470214 +0500
Modify: 2023-10-05 09:19:41.643470480 +0500
Change: 2023-10-05 20:39:34.778610167 +0500
 Birth: 2023-10-05 09:19:41.643470480 +0500
sarwat@DESKTOP-VG976N9:~/DCSE$ ls -li
total 20
 5922 -rw-r--r--  1 sarwat sarwat  0 Oct  5 21:12  f1.txt
 5976 -rw-r--r--  2 sarwat sarwat  0 Oct  5 21:33  f2.txt
 5976 -rw-r--r--  2 sarwat sarwat  0 Oct  5 21:33  f2_hl.txt
34722 -rw-r--r--  1 sarwat sarwat 64 Oct  5 22:38  f3.txt
34720 -rw-r--r--  1 sarwat sarwat 48 Oct  5 21:48  'f3.txtC^C'
34049 -rw-r--r--  1 sarwat sarwat 18 Oct  5 09:21  'first.txt^C'
 6426 -rw-r--r--  1 sarwat sarwat 18 Oct  5 09:19  hlink
34703 -rwxr-xr-x  1 sarwat sarwat 60 Oct  5 20:42  script_1.sh
34023 lrwxrwxrwx  1 sarwat sarwat  9 Oct  5 09:25  slink -> first.txt
sarwat@DESKTOP-VG976N9:~/DCSE$
```

Discussion and conclusion:

hard links are multiple references to the same file with shared data blocks, while soft links are separate files that point to other files or directories by their paths.

Task 2: List the usernames and names of the people logged on the list returned should be sorted and should have the following format: 1 2 3 ... Hint: use the "nl" command to number lines

```
sarwat@DESKTOP-VG976N9:~/DCSE$ vi script_1.sh
sarwat@DESKTOP-VG976N9:~/DCSE$ stat script_1.sh
  File: script_1.sh
  Size: 60          Blocks: 8          IO Block: 4096   regular file
Device: 820h/2080d Inode: 35683       Links: 1
Access: (0755/-rwxr-xr-x)  Uid: ( 1000/  sarwat)   Gid: ( 1000/  sarwat)
Access: 2024-01-31 01:49:52.537562533 +0500
Modify: 2024-01-31 01:49:52.537562533 +0500
Change: 2024-01-31 01:49:52.547562533 +0500
 Birth: 2024-01-31 01:49:52.537562533 +0500
sarwat@DESKTOP-VG976N9:~/DCSE$ |
```

Task3:

Create a script and show how many usernames have logged in use pipelining, grep and who command also investigate wc in man.

```
sarwat@DESKTOP-VG976N9: x + v
sarwat@DESKTOP-VG976N9:~/DCSE$ script transcript.txt
Script started, output log file is 'transcript.txt'.
sarwat@DESKTOP-VG976N9:~/DCSE$ who -u |grep john | wc -l
0
sarwat@DESKTOP-VG976N9:~/DCSE$ umask
0022
sarwat@DESKTOP-VG976N9:~/DCSE$ ls -l
total 20
-rw-r--r-- 1 sarwat sarwat 0 Oct 5 21:12 f1.txt
-rw-r--r-- 2 sarwat sarwat 0 Oct 5 21:33 f2.txt
-rw-r--r-- 2 sarwat sarwat 0 Oct 5 21:33 f2_hl.txt
-rw-r--r-- 1 sarwat sarwat 64 Oct 5 22:38 f3.txt
-rw-r--r-- 1 sarwat sarwat 48 Oct 5 21:48 'f3.txtC^C'
-rw-r--r-- 1 sarwat sarwat 18 Oct 5 09:21 'first.txt^C'
-rw-r--r-- 1 sarwat sarwat 18 Oct 5 09:19 hlink
-rwxr-xr-x 1 sarwat sarwat 60 Jan 31 01:49 script_1.sh
-rw-r--r-- 1 sarwat sarwat 0 Jan 31 01:49 script_l.sh
lrwxrwxrwx 1 sarwat sarwat 9 Oct 5 09:25 slink -> first.txt
-rw-r--r-- 1 sarwat sarwat 0 Jan 31 09:14 transcript.txt
sarwat@DESKTOP-VG976N9:~/DCSE$ umask g-r
sarwat@DESKTOP-VG976N9:~/DCSE$ touch newfile.txt
sarwat@DESKTOP-VG976N9:~/DCSE$ ls -l
total 20
-rw-r--r-- 1 sarwat sarwat 0 Oct 5 21:12 f1.txt
-rw-r--r-- 2 sarwat sarwat 0 Oct 5 21:33 f2.txt
-rw-r--r-- 2 sarwat sarwat 0 Oct 5 21:33 f2_hl.txt
-rw-r--r-- 1 sarwat sarwat 64 Oct 5 22:38 f3.txt
-rw-r--r-- 1 sarwat sarwat 48 Oct 5 21:48 'f3.txtC^C'
-rw-r--r-- 1 sarwat sarwat 18 Oct 5 09:21 'first.txt^C'
```

```
sarwat@DESKTOP-VG976N9: ~/DCSE$ man ps
sarwat@DESKTOP-VG976N9:~/DCSE$ ps -ax -o pid | tr -s [:space:]","|tr -d "PID"

1
4
8
9
10
23
24
53
54
55
sarwat@DESKTOP-VG976N9:~/DCSE$ AC
```

Conclusion:

In conclusion, I have learned about different linux commands its excuting and compiling.

The End.