S.Y.B.Tech
Computer Engineering
Lab. : CE 2207 Operating Systems Laboratory (OSL)

Assignment #1: (Group-'A2')

Title: Exploration of Unix/Linux Commands (File, Directory and Process commands).

Objective: Implementation of Unix/Linux Commands.

Theory:

Use following Online Linux terminal (for Shell commands):
https://bellard.org/jslinux/vm.html?url=alpine-x86.cfg&mem=192

List of Commands: (*Note: Linux is case-sensitive.*)

1. **File commands :**

Sr.No.	Command	Use and Syntax
1.	**ls OR ls – a**	listing of all files and directories
2.	**ls -l**	long listing of files and directories
3.	**ls -al**	long listing of all files and directories
4.	**cat**	to open a file (syntax: cat <file name>)
5.	**cat**	to create a file (syntax: cat > file-name) After writing the contents..you can come out from writing by 'ctrl+d' of that file.
6.	**cat**	to concatenate two files (syntax: cat file1 >> file2) in this case o/p will be concatenated in file2. Check it by cat file2.
7.	**cp**	to copy contents of one file in other file (syntax: cp file1 file2) Contents of file1 are copied in file2. It creates file2 also if it is not created.
8.	**mv**	to rename/move a file1 to file2 (syntax: mv file1 file2) It is used for both rename and move a file. Contents of file1 are moved in file2 and file2 is removed. It creates file2 also if it is not created.

9.	**rm**	Remove/delete a file (syntax: rm > file-name>) After using this command , check using ls.
10.	**chmod**	Used to change access modes of file. (syntax: chmod permission-bits file-name) (eg: chmod 646 abc.c) check the new permission bits are set or not using ls - l. **Note:** For this command, you need to become super-user. In BASH, instead of '$', symbol '#'indicates you are super-user.

2. Directory commands :

Sr.No.	Command	Use and Syntax
1.	**cd**	change directory (syntax: cd <directory name>)
2.	**cd **	change to root directory
3.	**cd ..**	come out of current directory or come out of parent directory.
4.	**pwd**	present or parent working directory
5.	**mkdir**	create a directory. (syntax: mkdir <directory-name>)
6.	**rmdir**	remove a directory
7.	**rm and rmdir**	rm is used to remove a file , rmdir is used to delete an empty directory. But 'rm –r <file-name>' is used to delete a filled directory. '-r' option of rm is used for recursively deleting files and subdirectories within that directory and lastly that directory is also deleted as directory is also a file in Unix/linux.
8.	**uname**	name of OS will get displayed (o/p: Linux)

3. Process Commands:

Sr.No.	Command	Use and Syntax
1.	**ps**	This command is short form for 'Process Status'. It displays the currently-running processes. Output show following things: **PID** process ID

<table>
<tr><td></td><td></td><td><table>
<tr><td>TTY</td><td>terminal type</td></tr>
<tr><td>TIME</td><td>total time the process has been running</td></tr>
<tr><td>CMD</td><td>name of the command that launches the process</td></tr>
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<tr><td>2.</td><td>ps - A <u>OR</u> ps -e</td><td>This command lists even those processes that are currently not running.</td></tr>
<tr><td>3.</td><td>top</td><td>To track the running processes on your machine. Top command displays a list of processes that are running in real-time along with their memory and CPU usage. Output of top command shows below things:

• PID: Unique Process ID given to each process.
• PPID: Parent Process ID.
• User: Username of the process owner.
• STAT: represents process state
o ‘D’ = uninterruptible sleep
o ‘R’ = running
o ‘S’ = sleeping
o ‘T’ = traced or stopped
o ‘Z’ = zombie
• VSZ: size of virtual memory used by a process.
• %VSZ: Amount of physical memory used by a process.
• CPU: CPU utilization by that process.
• %CPU: Percentage of CPU used by the process.
• Command: Command used to activate the process.</td></tr>
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