

Operating System Lab Manual.

Linux:

Video Lecture 4:

Key terms: Shell, Using man, Apropos, Whatis, Using --help option

- 1) Commands are actually files containing programs, often written in C. How will you find out in which directory does the file corresponding to the man command resides?
- 2) How will you find out what is the use of the ps command.

Video Lecture 5:

Key terms: echo, uname, who, passwd, date, cal, Brief overview on Files and directories, pwd, ls, cat

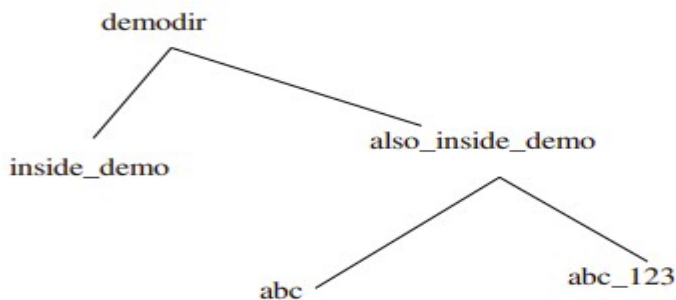
- 1) List all the files and directories of the directory /usr/lib on the terminal. Now put the same information in a file named results.
Display the contents of the file results now.

Video Lecture 6:

Key terms:File, Directory, File Inode, Types of Files, Home directory and Current directory, Change Directory(cd), mkdir,rmdir

File Systems

1) Make a directory structure like this in your home directory



2) Remove the also_inside_demo directory

Video Lecture 7:

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Key terms: cat,rm,cp,mv,cmp,wc

Video Lecture 8:

Key terms: chown, chmod, chmod -R, displaying files with ls -l, chmod u+, chmod a-w, chmod g+w, chmod -r, chgrp, inode, hard link, symbolic link

1. Create a file abc.txt and change the ownership of this file to some other user on your machine, and also change the group to family.
2. Create a file exercise.txt and make it executable.
3. Create a file test.txt on your desktop and identify its inode number, also create a softlink for test.txt in your home.

Video Lecture 9:

Key terms: Input, output and error stream

Redirection : > and >>

Pipes : |

Redirection of Pipes

1. Create a file named error_log in your current directory. Suppose you do not have any file named aa11 in your current directory.
How can you redirect the error message to the file error_log when we apply the command "wc -l aa11" ?
How can you ensure that all the error logs are appended to the error_log file?
2. Create files named test1, test2, testa, testb
How can you count the number of files starting with test and then having only one digit in their name using only a single line command ?

Video Lecture 10:

Key terms: Process

Shell process

Process spawning - parent and child process

Process attributes - pid, ppid

Init Process

User process & System process

ps with options

1. Open a terminal. Now spawn three shell processes one after another i.e. first spawn one shell, then from the spawned shell, spawn one new shell and so on. Now,
how can you see the PID of the current shell ? How can you see the PID of the shell which is the grandparent of the current shell?

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2. How can you see all the processes (both system & user processes) in your computer?
The output can be quite large. How can you view the output as multipage output ?
How can you store the output in a file named process_info?

Video Lecture 11:

Key terms: Environment variable vs Local variables, set command, env command, SHELL, HOME, PATH, LOGNAME, PS1, PS2, history, ! And ~, alias

1. How can you know what is the secondary command prompt set your system ?
How can you change the secondary command prompt from the default to your username ?
2. How can you ensure that the mv command (used for renaming a file) always asks for permission before overwriting an existing destination file ?
[Hint : use alias command]

Video Lecture 12:

Key terms:Root login-su, User management - UID, GID, useradd, usermod, userdel, Discs – Du, df

- 1) Create a new user account and home directory called "Duck"
- 2) Set the user account "Duck's" expiry date as 07 - 01 - 2015
- 3) find the id of the user account "Duck"
- 4) Type df and du commands and see the output on your terminal.
- 5) Type this command on the terminal and see the output :
du -ch *.txt
- 6) Delete the user account "Duck" permanently along with its home folder.

Video Lecture 13:

Key terms: Head, tail, sort, cut, paste

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Title of script: Simple Filters's Assignment

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Keywords: Simple Filter's Assignment

All the solutions are present in Italics.

Assignment For Topic	Questions
Head	
Assignment i	Try what is shown on the video
Assignment ii	1. Try to get the first 10 lines from /etc/passwd 2. try to get just the first 3 lines from /etc/passwd
Tail	
Assignment i	Try what is shown on the video
Assignment ii	1. Try to get the Last 10 lines from /etc/passwd 2. Try to get just the Last 3 lines from /etc/passwd 3. Try to follow the log file /var/log/auth.log
Sort	
Assignment i	Try what is shown on the video
Assignment ii	1. Try to sort the file /etc/passwd in assending order. 2. Try to sort the file /etc/passwd in decending order. 3. Try to sort the file /etc/passwd in assending order based on the 3 rd column. 4. Try to sort the file /etc/passwd in assending order based on the 3 rd column and ask sort to look at the thrid column as a whole number.
Cut	
Assignment i	Try what is shown on the video
Assignment ii	1. Try to cut just the usernames from the file /etc/passwd
Paste	
Assignment i	Try what is shown on the video
Assignment ii	1. Create a file alphabets.txt and key in all the 26 alphabets each one in a new line. 2. Create a file number.txt and key in 1 to 26 each one in a new line. 3. Try to paste those two files, to see which letter appears at what number. <i>Paste alphabets.txt numbers.txt</i>

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Video Lecture 14:

Key terms:

The grep command

To see the content of a file

To list the entries of a particular stream

To ignore cases

Lines that do not match the pattern

To list the line numbers with the entries

To store the result in another file

To know the count

1) Explore some other commands like -E, + and ?

Video Lecture 15:

Key terms:

More on grep command

Search using grep

To match more than one pattern

To check a word that has different spelling

Character class

The use of *

To match any one character using dot

To match a pattern at the beginning of the file

To match a pattern at the end of the file

Video Lecture 16:

Key terms:

The sed command

sed

To print using sed

Line Addressing

Context Addressing

1) Use the same text file seddemo.txt

2) Try to print records from 6th to 12th line.

Video Lecture 17:

Key terms:

Some more on sed command

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substitute
insert
delete

- 1) Use the same text file seddemo.txt
- 2) Try to replace or substitute name Ankit with Ashish