Operating Systems

University at Albany
Department of Computer Science
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ICSI 412

Assignment-1
Assigned: Saturday, March 3rd, 2025.
     Due Date: To be determined by your co-instructor.

Student Name:

OBJECTIVES

To help students become familiar with Linux command-line environment. This exercise serves as a platform for the subsequent assignments related to system calls, process management, file management, and memory management.

LINUX DISTRIBUTION

You may select any Linux distribution you feel it is adequate for your work. However, Linux Ubuntu is recommended because of the large amount of documentation you may find about it on the Web. The link www.distrowatch.com contains a list of the most popular distributions. You may also install a virtual machine such as Oracle VM VirtualBox or have a dual boot configured on your personal computer. If you are not familiar with Linux at all and you are not sure you need any Linux distribution installed on your machine you first may try a USB live distribution.

UBUNTU LIVE USB DRIVE

A live USB flash memory device can be used for a quick demo or for testing Ubuntu. By the help of a USB flash memory device you can try Ubuntu without any changes to your machine. Microsoft Windows or any other operating system you have on your machine will be unaffected after trying this and then rebooting your system. The Ubuntu USB can also be used as a Live USB as well as an installer. Live USBs are designed for people who need to use Ubuntu on a computer for a few hours.

USING YOUR LIVE USB

Inset the USB drive into the USB slot and reboot your computer. You need to make sure your machine is configured to boot from USB. You should then see a menu with "Try Ubuntu" or "Install Ubuntu". Choose "Try Ubuntu" option. You should get a desktop which we call a "Live session".

BASIC LINUX COMMANDS

> **Study the following commands. You may search the Web to understand the meaning of each command.**

COMMANDS:

cat --- for creating and displaying short files

chmod --- change permissions

cd --- change directory

cp --- for copying files

date --- display date

echo --- echo argument

grep --- search file

head --- display first part of file

ls --- see what files you have

more --- use to read files

mkdir --- create directory

mv --- for moving and renaming files

pwd --- find out what directory you are in

rm --- remove a file

rmdir --- remove directory

setenv --- set an environment variable

sort --- sort file

tail --- display last part of file

tar --- create an archive, add or extract files

wc --- count characters, words, lines

> **Try the following commands by typing each command on a terminal window.**

1.To create a file

Syntax: $ cat>filename

Example: $ cat>ex1

2. To view the content of the file.

Syntax: $ cat filename

Example: $ cat ex1

3. To append some details with the existing details in the file To view the content of the file.

Syntax: $ cat>>filename

Example: $ cat>>ex1

4. To concatenate multiple files

Syntax: $ cat file1 file2 > file3

Example: $ cat computer compiler>world

5. To know the list of all files in directory

Syntax: $ ls

6. To copy the file to another file

Syntax: $ cp source destination

Example: $ cp ex1 ex2

7. To rename the file

Syntax: $ mv oldfile newfile

Example: $ mv ex1 ex3

8. To delete a file

Syntax: $ rm filename

Example: $ rm ex1

9. To delete all files

Syntax: $ rm *

10. To create a directory

Syntax: $ mkdir dirname

11. To change to a different directory

Syntax: $ cd dirname

12. To remove the directory

Syntax: $ rmdir dirname

Example: $ rmdir flower

13. Present Working Directory

i. To display the present working directory

Syntax: $ pwd

14. Word Count

i. To display the number of words in a file

Syntax: $ wc filename

Example: $ wc ex1

ii. To display the number of characters in a file

Syntax: $ wc –c filename

Example: $ wc –c ex1

iii. To display the number of lines

Syntax: $ wc –l filename

Example: $ wc –l ex3

15. Sort

i. To reverse and sort the content of file

        Syntax: $ sort –r filename

        Example: $ sort –r ex1

ii. To sort the content of the file

        Syntax: $ sort filename

        Example: $ sort ex1

<u>16. man</u>

i. It is used to view more details of all the commands

        Syntax: $ man command_name

        Example: $ man date

WHAT TO SUBMIT

Use the following table to indicate you are familiar with the set of commands included in this exercise. You need to either place a check mark or a yes/no on the second column of the table. You are to follow the instructions provided by your co-instructor for the submission of your work.

Student Name:	ID:	
Command		Yes/No
1) create a file		
2) view the contents of file		
3) append		
4) concatenate		
5) list of all files in directory		
6) copy a file to another		
7) file rename		
8) delete a file		
9) delete all files		
10) create a directory		
11) change to a different directory		
12) remove a directory		
13(i) display the present working directory		
14(i) display the number of words in a file		
14(ii) display the number of characters in a file		
14(iii) display the number of lines		
15(i) reverse and sort the contents of file		
15(ii) sort the contents of a file		
16) display manual pages		