Ex. No. 4	LINUX COMMANDS

Objective:

To practice various basic Linux commands.

a) Basics Commands

1. echo SRM → to display the string SRM
2. clear → to clear the screen
3. date → to display the current date and time
4. cal 2003 → to display the calendar for the year 2003
   cal 6 2003 → to display the calendar for the June-2003
5. passwd → to change password
6. free –m → to view the size of RAM in MB
   free –g → to view the size of RAM in GB
7. df –h → to view the disk space available and used.
8. uptime → to view the system up time
9. bc → to open a basic calculator
10. ps → to view the current terminal running processes
11. history → to get the history of all the past commands
12. whoami → to know which user i am

b) Working with Files

1. ls → list files in the present working directory
   ls –l → list files with detailed information (long list)
   ls –a → list all files including the hidden files
   ls –r root → list the directory recursively
   ls –lh → list the current location content in human redable format
   ls –lt → to list the files based on modification time
   ls –li → to view the inode number of files and directories
   lscpu → to view the system specifications
2. cat > f1 → to create a file (Press ^d to finish typing)
3. cat f1 → display the content of the file f1
4. wc f1 → list no. of characters, words & lines of a file f1
   wc –c f1 → list only no. of characters of file f1
   wc –w f1 → list only no. of words of file f1

wc –l f1 → list only no. of lines of file f1

5. cp f1 f2 → copy file f1 into f2

6. mv f1 f2 → rename file f1 as f2

7. rm f1 → remove the file f1

8. head –5 f1 → list first 5 lines of the file f1
   tail –5 f1 → list last 5 lines of the file f1

c) Working with Directories

1. mkdir elias → to create the directory elias
2. cd elias → to change the directory as elias
3. rmdir elias → to remove the directory elias

4. pwd → to display the path of the present working directory

5. cd → to go to the home directory
   cd .. → to go to the parent directory
   cd - → to go to the previous working directory
   cd / → to go to the root directory

d) File name substitution

1. ls f? → list files start with 'f' and followed by any one character
2. ls *.c → list files with extension 'c'
3. ls [gpy]et → list files whose first letter is any one of the character g, p or y and followed by the word et
4. ls [a-d,l-m]ring → list files whose first letter is any one of the character from a to d and l to m and followed by the word ring.

e) I/O Redirection

1. Input redirection

   wc –l < ex1 → To find the number of lines of the file 'ex1'

2. Output redirection

   who > f2 → the output of 'who' will be redirected to file f2

3. cat >> f1 → to append more into the file f1

f) Piping

Syntax : Command1 | command2

Output of the command1 is transferred to the command2 as input. Finally output of the command2 will be displayed on the monitor.

ex. cat f1 | more → list the contents of file f1 screen by screen

head –6 f1 |tail –2 → prints the 5^{th} & 6^{th} lines of the file f1.

g) Environment variables

1. echo $HOME → display the path of the home directory
2. echo $PS1 → display the prompt string $
3. echo $PS2 → display the second prompt string (> symbol by default)
4. echo $LOGNAME → login name
5. echo $PATH → list of pathname where the OS searches for an executable file

h) File Permission

-- chmod command is used to change the access permission of a file.

Method-1

Syntax : chmod [ugo] [+/-] [rwxa] filename

u : user, g : group, o : others
+ : Add permission - : Remove the permission r : read, w : write, x : execute, a : all permissions

ex. chmod ug+rw f1
adding 'read & write' permissions of file f1 to both user and group members.

Method-2

Syntax : chmod octnum file1

The 3 digit octal number represents as follows

- first digit -- file permissions for the user
- second digit -- file permissions for the group
- third digit -- file permissions for others

Each digit is specified as the sum of following
4 – read permission, 2 – write permission, 1 – execute

permission ex. chmod 754 f1

it change the file permission for the file as follows

- read, write & execute permissions for the user ie; 4+2+1 = 7
- read, & execute permissions for the group members ie; 4+0+1 = 5
- only read permission for others ie; 4+0+0 = 4

QUESTIONS FOR PRACTICE:

Q1. Write a command to cut 5 to 8 characters of the file *f1*.

$

Q2. Write a command to display user-id of all the users in your system.

$

Q3. Write a command to paste all the lines of the file *f1* into single line

$

Q4. Write a command to cut the first field of file *f1* and second field of file *f2* and paste intothe file *f3*.

$

Q5. Write a command to change all small case letters to capitals of file *f2*.

$

Q6. Write a command to replace all *tab* character in the file *f2* by **:**

$

Q7. Write a command to check whether the user j*udith* is available in your system or not.(use grep)

$

Q8. Write a command to display the lines of the file *f1* starts with SRM.

$

Q9. Write a command to display the name of the files in the directory */etc/init.d* thatcontains the pattern *grep*.

$

Q10. Write a command to display the names of nologin users. (Hint: the command *nologin* is specified in the last filed of the file /etc/passwd for nologin users)

$

Q11. Write a command to sort the file /etc/passwd in descending order

$

Q12. Write a command to sort the file /etc/passwd by user-id numerically. (Hint : user-id isin 3rd field)

$

Q13. Write a command to sort the file *f2* and write the output into the file *f22*. Alsoeliminate duplicate lines.

$

Q14. Write a command to display the unique lines of the sorted file *f21*. Also display thenumber of occurrences of each line.

$

Q15. Write a command to display the lines that are common to the files *f1* and *f2*.

$

Outcome:

Various basic Linux commands are learned and executed.