

## Lab Experiment 1:

### Shell programming

a. command syntax (DATE, CAL, ECHO, CLEAR, WHO, CAT, PWD, MKDIR, CD, LS, RM, TR, HEAD, MORE, SORT, GREP, etc..)

1. echo: just blank line
2. echo "write string"

#### Options:

3. -e: enables the interpretation of backslash escape
  - \b→removes all spaces between the text
  - \c→supress trailing new line
  - ignores the string next to \c
  - \n→ create new line
  - \t→horizontal tab space
  - \v→ vertical tab space
  - \r→carriage return with backspace
  - text before \r will be ignored
  - \a→ alert sound

4. \*: echo \*

5. -n: omit echoing the trailing new line

### echo Command

used to display line of text  
built-in command.

syntax: echo [options] [string]

### grep command

grep-Global Regular Expression Pattern

this command is used to search a file for a particular pattern of characters and display all the lines that contain the pattern used a filter.

Syntax: 1. grep [option] pattern [filename]  
2. cat filename | grep pattern

#### Options:

1. -h: display all the matching lines
2. -c: number of lines having the pattern(count)
3. -n: display all the matching lines with line numbers
4. -v: display all the "non" matching lines
5. -l:display all the file names in directory with this pattern
6. -o: display all the matching word
7. -e: used for multiple search patterns simultaneously.  
grep -e "UNIX" -e "Linux" filename

8. -F: multiple patterns

grep -F "UNIX  
> to" grepcheck.txt

fgrep "UNIX  
> to" grepcheck.txt

9. -i : ignores case

10. ^: displays lines starts with given patterns  
grep ^hello filename

11. \$: displays lines ends with given pattern  
grep hello\$ filename

egrep "(UNIX|Linux)" filename

### In Command

to create a link between files

two types:

1. hard Link:

In old new

2. Soft Link:

In -s old new

### chmod Command

used to change the permissions of file

default for grepfile

rw- --owner

rw- ---group

r-- ---others

r-read

w-write

x-execute

syntax: chmod [references] [operator] [mode] file

references: owner(u), group(g), others(o),all(a)

operators: +,-,=

mode: read, write, execute

read--4

write--2

## ls Command

ls command is used to list out all the files present in a directory

Syntax: ls directory name  
ls

3. ls -l: long listing
4. ls -t: most recently on the top
5. ls -ltr: least recently used on the top
6. ls -a: all, means including hidden files
7. ls -A: almost all, except . and ..
8. ls -F: list of files by type
9. ls -f: no color representation
10. ls -li: inode number—address  
file attributes will be stores  
size of file  
number of links to file  
owner name  
created time, last modified time
11. ls -R: subdirectory files
12. ls -s: size : the number of blocks(1 block=1KB)
13. ls -h: memory size in human readable form

NOTE:

1. ls -l | head: display only top 10
2. ls -l | head -5: only top 5
3. ls -l | tail: last 10
4. ls -l | tail -3: last 3
5. ls -l /etc | more: page by page: forward
6. ls -l /etc | less: page by page: forward and backward

## mkdir and rm commands

mkdir command:

- make directory
- create a directory(folder)
- 1 or more than 1 dir can be created at once
- set permissions

Syntax: mkdir [option] [directories]

Options for mkdir:

1. mkdir --version
2. mkdir --help
3. -v or -verbose
4. mkdir dirname
5. -p: Create subdirectories
6. -m: set the permission:
  - w--write
  - r--read
  - x--execute
  - rw--User
  - rw--Group
  - r-x--Others

rm command:

- by default used to remove files, but not directory
- be careful.

Syntax: rm [option] filename

1. rm filename
2. rm file1 file2
3. -i : ask for confirmation
4. -r:

### who Commands:

To know information about currently logged in user on to system

Syntax: who [options] [filename]

1. who: login name, login time.
2. who -H: heading
3. who -q: total number of logged on users
4. who -b: last boot time

### pwd command:

--Print Working Directory

--path starts from root

---\$PWD- environment variable- stores path of current working directory

Syntax: pwd

### cat command:

To create, read, and write into files

1. cat filename:--display the contents
2. cat file name1 filename2-
3. cat -n filename: line numbers are added
4. cat filename\_source > filename\_target
5. cat > filename: writing into file
6. cat >>filename: appending
7. tac filename: reverse the contents

## cal Command

to view the calender in the terminal  
by default current month calender

Syntax: cal [ [month] year]

1. cal : current month calander
2. cal -y: complete year calander
3. cal month year: specific month year calander
4. cal year: calnder of specified year
5. cal year | more: page by page
6. cal -3: display current, orevious, next month calender
7. cal -j: julian cal

## date Command

2. -u: display time in GMT/UTC
3. -d or --date: past and future info
4. -s or --set: sytem date and time
5. -f or --file: to print the date string present in each line of file
6. -r: displays last modified timestamp of a file

To display Sytem Date and Time  
Syntax: date [option] [+format]

formats:

- %D---Only date: mm/dd/yy
- %d---only the day
- %a---abbrevated names for weekdays...Sun, Mon
- %A---full week days
- %h or %b---abbrevated month
- %B---full month name
- %m---month in numbers
- %y--2 digit year
- %Y--4 digit year
- %T---time--hh:mm:ss
- %M---display in minutes
- %H---display in hours
- %S--seconds