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LAB REPORT
EMT 2390L – OL76

(OPERATING SYSTEM LAB LABORATORY)

LAB #2

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20 Linux Commands

1. Type Command – The type command is used to find out the information about a Linux command.

2. Which Command – The which command is used to determine and display the exact location of a program's executable.

3. Help command – The help command is used to pick available information about a command from the shell's document and displays information on the terminal.

```
The variable CDPATH defines the search path for the directory containing
DIR.  Alternative directory names in CDPATH are separated by a colon (:).
A null directory name is the same as the current directory.  If DIR begins
with a slash (/), then CDPATH is not used.

If the directory is not found, and the shell option `cdable_vars' is set,
the word is assumed to be  a variable name.  If that variable has a value,
its value is used for DIR.

Options:
  -L        force symbolic links to be followed: resolve symbolic
            links in DIR after processing instances of `..'
  -P        use the physical directory structure without following
            symbolic links: resolve symbolic links in DIR before
            processing instances of `..'
  -e        if the -P option is supplied, and the current working
            directory cannot be determined successfully, exit with
            a non-zero status
  -@        on systems that support it, present a file with extended
            attributes as a directory containing the file attributes

The default is to follow symbolic links, as if `-L' were specified.
`..' is processed by removing the immediately previous pathname component
back to a slash or the beginning of DIR.

Exit Status:
Returns 0 if the directory is changed, and if $PWD is set successfully when
-P is used; non-zero otherwise.
pujaroy@DESKTOP-U16R768:~$
```

4. -- help command – This command is used to display a description of the command's supported syntax and options.

```
pujaroy@DESKTOP-U16R768:~$ mkdir --help
Usage: mkdir [OPTION]... DIRECTORY...
Create the DIRECTORY(ies), if they do not already exist.

Mandatory arguments to long options are mandatory for short options too.
  -m, --mode=MODE   set file mode (as in chmod), not a=rwx - umask
  -p, --parents     no error if existing, make parent directories as needed
  -v, --verbose     print a message for each created directory
  -Z                set SELinux security context of each created directory
                      to the default type
      --context[=CTX]  like -Z, or if CTX is specified then set the SELinux
                      or SMACK security context to CTX
      --help     display this help and exit
      --version  output version information and exit

GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Report mkdir translation bugs to <https://translationproject.org/team/>
Full documentation at: <https://www.gnu.org/software/coreutils/mkdir>
or available locally via: info '(coreutils) mkdir invocation'
pujaroy@DESKTOP-U16R768:~$
```

5. Man command – This command is used to provide a formal piece of documentation called *manuel* or *man page*. They are a reference which indicates a synopsis of a command's syntax, description of a command's purpose, listing and description of each command's options.

```
LS(1)                                 User Commands                                LS(1)

NAME
       ls - list directory contents

SYNOPSIS
       ls [OPTION]... [FILE]...

DESCRIPTION
       List  information  about the FILEs (the current directory by default).  Sort entries alphabetically if none of
       -cftuvSUX nor --sort is specified.

       Mandatory arguments to long options are mandatory for short options too.

       -a, --all
              do not ignore entries starting with .

       -A, --almost-all
              do not list implied . and ..

       --author
              with -l, print the author of each file

       -b, --escape
              print C-style escapes for nongraphic characters

       --block-size=SIZE
              with -l, scale sizes by SIZE when printing them; e.g., '--block-size=M'; see SIZE format below

Manual page ls(1) line 1 (press h for help or q to quit)
```

6. Apropos command – This command is used to search the man pages on a search term.

```
pujaroy@DESKTOP-U16R768:~$ apropos floppy
fdformat (8)            - low-level format a floppy disk
pujaroy@DESKTOP-U16R768:~$
```

7. Whatis command – This command is used to display the name and a one-line description of a man page matching a specified keyword.

```
pujaroy@DESKTOP-U16R768:~$ whatis ls
ls (1)                  - list directory contents
pujaroy@DESKTOP-U16R768:~$
```

8. Info command - This command is used to provide detailed information about a command than man pages and it allow navigation and links between pages.

```
pujaroy@DESKTOP-U16R768: ~

File: dir,        Node: Top,        This is the top of the INFO tree.

This is the Info main menu (aka directory node).
A few useful Info commands:

  'q' quits;
  'H' lists all Info commands;
  'h' starts the Info tutorial;
  'mTexinfo RET' visits the Texinfo manual, etc.

* Menu:

Basics
* Common options: (coreutils)Common options.
* Coreutils: (coreutils).        Core GNU (file, text, shell) utilities.
* Date input formats: (coreutils)Date input formats.
* Ed: (ed).                      The GNU line editor
* File permissions: (coreutils)File permissions.
                                 Access modes.
* Finding files: (find).         Operating on files matching certain criteria.

Compression
* Gzip: (gzip).                  General (de)compression of files (lzw).

Editors
* nano: (nano).                  Small and friendly text editor.

General Commands
-----Info: (dir)Top, 180 lines --Top-------------------------------------
Welcome to Info version 6.7.  Type H for help, h for tutorial.
```

```
pujaroy@DESKTOP-U16R768: ~

Next: Stand-alone Info,  Up: (dir)

Stand-alone GNU Info
********************

This documentation describes the stand-alone Info reader which you can
use to read Info documentation.

   If you are new to the Info reader, then you can get started by typing
'H' for a list of basic key bindings.  You can read through the rest of
this manual by typing <SPC> and <DEL> (or <Space> and <Backspace>) to
move forwards and backwards in it.

* Menu:

* Stand-alone Info::             What is Info?
* Invoking Info::                Options you can pass on the command line.
* Cursor Commands::              Commands which move the cursor within a node.
* Scrolling Commands::           Commands for reading the text within a node.
* Node Commands::                Commands for selecting a new node.
* Searching Commands::           Commands for searching an Info file.
* Index Commands::               Commands for looking up in indices.
* Xref Commands::                Commands for selecting cross-references.
* Window Commands::              Commands which manipulate multiple windows.
* Printing Nodes::               How to print out the contents of a node.
* Miscellaneous Commands::       A few commands that defy categorization.
* Variables::                    How to change the default behavior of Info.
* Colors and Styles::            Customize the colors used by Info.
-----Info: (info-stnd)Top, 31 lines --Top-------------------------------
```

9. Cat command – This command is used display files and read one or more files and copies them to standard output.


```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ cat Roy
cat: Roy: Is a directory
pujaroy@DESKTOP-U16R768:~$
```

10. Ls -1 command – This command is used display a list of all the names of files in the current working directory to print files in a long listing format.


```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ ls -l /usr/bin
total 100492
lrwxrwxrwx 1 root   root           4 Feb 17  2020  NF -> col1
-rwxr-xr-x 1 root   root      141696 Mar  9  2020  VGAuthService
lrwxrwxrwx 1 root   root           1 Feb  8  2020  X11 -> .
-rwxr-xr-x 1 root   root       59736 Sep  5  2019  '['
-rwxr-xr-x 1 root   root       31248 May 19  2020  aa-enabled
-rwxr-xr-x 1 root   root       35344 May 19  2020  aa-exec
-rwxr-xr-x 1 root   root        7258 Jun  8  2020  add-apt-repository
-rwxr-xr-x 1 root   root       30952 Apr  2  2020  addpart
-rwxr-xr-x 1 root   root        2558 Dec  4  2019  apport-bug
-rwxr-xr-x 1 root   root       13367 Jul 31  2020  apport-cli
lrwxrwxrwx 1 root   root          10 Jul 31  2020  apport-collect -> apport-bug
-rwxr-xr-x 1 root   root        2068 Jul 31  2020  apport-unpack
-rwxr-xr-x 1 root   root       14648 Feb 29  2020  appres
lrwxrwxrwx 1 root   root           6 Feb 25  2020  apropos -> whatis
-rwxr-xr-x 1 root   root       18824 May 12  2020  apt
lrwxrwxrwx 1 root   root          18 Jun  8  2020  apt-add-repository -> add-apt-repository
-rwxr-xr-x 1 root   root       88536 May 12  2020  apt-cache
-rwxr-xr-x 1 root   root       31192 May 12  2020  apt-cdrom
-rwxr-xr-x 1 root   root       27016 May 12  2020  apt-config
-rwxr-xr-x 1 root   root       27104 May 12  2020  apt-extracttemplates
-rwxr-xr-x 1 root   root      281056 May 12  2020  apt-ftparchive
-rwxr-xr-x 1 root   root       47576 May 12  2020  apt-get
-rwxr-xr-x 1 root   root       27931 May 12  2020  apt-key
-rwxr-xr-x 1 root   root       63960 May 12  2020  apt-mark
-rwxr-xr-x 1 root   root       47504 May 12  2020  apt-sortpkgs
-rwxr-xr-x 1 root   root       39288 Sep  5  2019  arch
-rwsr-sr-x 1 daemon daemon    55560 Nov 12  2018  at
lrwxrwxrwx 1 root   root           2 Nov 12  2018  atq -> at
```

11. Pwd command – This command is used to print the name of the current working directory of the Linux File System.


```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ pwd
/home/pujaroy
pujaroy@DESKTOP-U16R768:~$
```

12. Wc command – This command is used to display the number of lines, words and bytes contained in files.


```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ wc Roy
wc: Roy: Is a directory
        0        0        0 Roy
pujaroy@DESKTOP-U16R768:~$
```

13. Grep command – This command is used to find text patterns within a file in which this program prints out the lines containing it.

```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ ls /bin/ /usr/bin | sort | uniq | grep zip
bunzip2
bzip2
bzip2recover
gpg-zip
gunzip
gzip
zipdetails
pujaroy@DESKTOP-U16R768:~$
```

14. Tail command – This command is used to display the last part (10 lines by default) of one or more files or piped data and it is also used to monitor the file changes.

```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ ls /usr/bin | tail -n 5
zgrep
zipdetails
zless
zmore
znew
pujaroy@DESKTOP-U16R768:~$
```

15. Tee command – This command is used to capture the entire directory listing to the file ls.txt before grep filters the pipeline's contents.

```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ ls /usr/bin | tee ls.txt | grep zip
bunzip2
bzip2
bzip2recover
gpg-zip
gunzip
gzip
zipdetails
pujaroy@DESKTOP-U16R768:~$
```

16. Echo command – This command is used to display a line of text.

```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ echo this is a test
this is a test
pujaroy@DESKTOP-U16R768:~$
```

17. Find command – This command is used to search a folder to find a file or directory.

```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ find Roy
Roy
Roy/myfile
Roy/secondfile
pujaroy@DESKTOP-U16R768:~$
```

18. Uname command – This command is used to print all the information about the Linux system.


```
pujaroy@DESKTOP-U16R768: ~                                              —    □    ×
pujaroy@DESKTOP-U16R768:~$ uname -a
Linux DESKTOP-U16R768 4.4.0-18362-Microsoft #1049-Microsoft Thu Aug 14 12:01:00 PST 2020 x86_64 x86_64 x86_64 GNU/Linux
pujaroy@DESKTOP-U16R768:~$
```

19. Hostname command – This command is to print or set the hostname of the machine.


```
pujaroy@DESKTOP-U16R768: ~
    dnsdomainname                       display dns domain name

    hostname -V|--version|-h|--help     print info and exit

Program name:
    {yp,nis,}domainname=hostname -y
    dnsdomainname=hostname -d

Program options:
  -a, --alias            alias names
  -A, --all-fqdns        all long host names (FQDNs)
  -b, --boot             set default hostname if none available
  -d, --domain           DNS domain name
  -f, --fqdn, --long     long host name (FQDN)
  -F, --file             read host name or NIS domain name from given file
  -i, --ip-address       addresses for the host name
  -I, --all-ip-addresses all addresses for the host
  -s, --short            short host name
  -y, --yp, --nis        NIS/YP domain name

Description:
   This command can get or set the host name or the NIS domain name. You can
   also get the DNS domain or the FQDN (fully qualified domain name).
   Unless you are using bind or NIS for host lookups you can change the
   FQDN (Fully Qualified Domain Name) and the DNS domain name (which is
   part of the FQDN) in the /etc/hosts file.
pujaroy@DESKTOP-U16R768:~$
```

20. Df command - This command is used to report file system disk space usage.


```
pujaroy@DESKTOP-U16R768: ~
pujaroy@DESKTOP-U16R768:~$ df
Filesystem     1K-blocks      Used Available Use% Mounted on
rootfs         232328188 116427520 115900668  51% /
none           232328188 116427520 115900668  51% /dev
none           232328188 116427520 115900668  51% /run
none           232328188 116427520 115900668  51% /run/lock
none           232328188 116427520 115900668  51% /run/shm
none           232328188 116427520 115900668  51% /run/user
tmpfs          232328188 116427520 115900668  51% /sys/fs/cgroup
C:\            232328188 116427520 115900668  51% /mnt/c
D:\             16437244  14499824   1937420  89% /mnt/d
pujaroy@DESKTOP-U16R768:~$
```