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Problem Statement: Execution of Basic Linux commands.

➤ General Purpose Commands:

1. **date:** The [date](#) command is used to display date, time, time zone, and more.

```
vboxuseoni@LIGHT:~$ date
Saturday 22 July 2023 04:21:46 PM IST
vboxuseoni@LIGHT:~$ date +%A %d-%m-%y
Saturday 22-07-23
vboxuseoni@LIGHT:~$ date +%b %d-%m-%y
Jul 22-07-23
vboxuseoni@LIGHT:~$ date +%B %d-%m-%y
July 22-07-23
vboxuseoni@LIGHT:~$ date +%C %d-%m-%y
20 22-07-23
vboxuseoni@LIGHT:~$ date -d "2023-05-07 11:12:34"
Sunday 07 May 2023 11:12:34 AM IST
vboxuseoni@LIGHT:~$ date -d now
Saturday 22 July 2023 04:26:07 PM IST
vboxuseoni@LIGHT:~$ date -d yesterday
Friday 21 July 2023 04:26:17 PM IST
vboxuseoni@LIGHT:~$ date -d tomorrow
Sunday 23 July 2023 04:26:30 PM IST
vboxuseoni@LIGHT:~$ date -d "next monday"
Monday 24 July 2023 12:00:00 AM IST
```

```
vboxuseoni@LIGHT:~$ date -d "next monday"
Monday 24 July 2023 12:00:00 AM IST
vboxuseoni@LIGHT:~$ date -d "last sunday"
Sunday 16 July 2023 12:00:00 AM IST
vboxuseoni@LIGHT:~$ TZ='Australia/Melbourne' date
Saturday 22 July 2023 08:57:55 PM AEST
vboxuseoni@LIGHT:~$ TZ=+5:20 date
Saturday 22 July 2023 10:58:50 AM
```

2. **whoami:** Report what user you are logged on as.

```
vboxuseoni@LIGHT:~$ whoami
vboxuser
```

3. **who:** List who is currently logged on to the system.

```
vboxuseoni@LIGHT:~$ who
vboxuser tty2          2023-07-22 16:07 (tty2)
```

4. **echo:** Echo a string (or list of arguments) to the terminal.

5. **bc:** To perform mathematical operations.

```
vboxuseoni@LIGHT:~$ echo "4+2"|bc
6
```

6. **alias:** used to tailor commands.

```
vboxuseomi@LIGHT:~$ alias
alias alert='notify-send --urgency=low -i "${[ $? = 0 ]}&& echo terminal || echo error" "$(history|tail -n1|sed -e '\''s/^\s*[0-9]\+\s*//;s/[:;&]\s*alert$//'\''\''"'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -aLF'
alias ls='ls --color=auto'
```

7. **clear:** To clear the screen.

```
vboxuseomi@LIGHT:~$ clear
```

8. **passwd:** The [passwd](#) command is used to create and change the password for a user.

```
vboxuseomi@LIGHT:~$ passwd
Changing password for vboxuser.
Current password:
New password:
BAD PASSWORD: The password is the same as the old one
New password:
BAD PASSWORD: The password is shorter than 8 characters
New password:
```

1. **exit:** To exit the screen.

```
vboxuseomi@LIGHT:~$ exit
```

2. **man:** To get help for any command.

```
vboxuseomi@LIGHT:~$ man printf
```

```
PRINTF(1)                                User Commands                                PRINTF(1)

NAME
    printf - format and print data

SYNOPSIS
    printf FORMAT [ARGUMENT]...
    printf OPTION

DESCRIPTION
    Print ARGUMENT(s) according to FORMAT, or execute according to OPTION:

    --help display this help and exit

    --version
        output version information and exit

    FORMAT controls the output as in C printf. Interpreted sequences are:

    \"    double quote
    \\    backslash
    \a    alert (BEL)
    \b    backspace
    \c    produce no further output

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

```
vboxuseomi@LIGHT:~$ man 2 intro
```

```
NAME
    intro - introduction to system calls

DESCRIPTION
    Section 2 of the manual describes the Linux system calls. A system
    call is an entry point into the Linux kernel. Usually, system calls
    are not invoked directly; instead, most system calls have correspond-
    ing C library wrapper functions which perform the steps required
    (e.g., trapping to kernel mode) in order to invoke the system call.
    Thus, making a system call looks the same as invoking a normal library
    function.

    In many cases, the C library wrapper function does nothing more than:

    * copying arguments and the unique system call number to the regis-
      ters where the kernel expects them;

    * trapping to kernel mode, at which point the kernel does the real
      work of the system call;

    * setting errno if the system call returns an error number when the
      kernel returns the CPU to user mode.

    However, in a few cases, a wrapper function may do rather more than
    this, for example, performing some preprocessing of the arguments be-
    fore trapping to kernel mode, or postprocessing of values returned by
    the system call. Where this is the case, the manual pages in Section
    2 generally try to note the details of both the (usually GNU) C li-
    brary API interface and the raw system call. Most commonly, the main
    DESCRIPTION will focus on the C library interface, and differences for
```

3. **pwd**: The [pwd](#) command is used to display the location of the current working directory.

```
vboxuseomi@LIGHT:~/nested$ pwd
/home/vboxuser/nested
```

➤ File & Directory Related Commands:

4. **mkdir**: The [mkdir](#) command is used to create a new directory under any directory.
5. **cd** : The [cd](#) command is used to change the current directory.
6. **touch** : The [touch](#) command is used to create empty files. We can create multiple empty files by executing it once.
7. **ls**: The [ls](#) command is used to display a list of content of a directory.
8. **head**: The [head](#) command is used to display the content of a file. It displays the first 10 lines of a file.
9. **tail**: The [tail](#) command is similar to the head command. The difference between both commands is that it displays the last ten lines of the file content. It is useful for reading the error message.
10. **wc**: Used for word count.

```
vboxuseomi@LIGHT:~$ mkdir asawaridoc
vboxuseomi@LIGHT:~$ ls
asawaridoc  Documents  Music      Public  Templates
Desktop     Downloads  Pictures   snap    Videos
vboxuseomi@LIGHT:~$ mkdir nested/asawaridoc1/example
mkdir: cannot create directory 'nested/asawaridoc1/example': No such file or di
rectory
vboxuseomi@LIGHT:~$ mkdir -p nested/asawaridoc1/example
vboxuseomi@LIGHT:~$ ls
asawaridoc  Documents  Music      Pictures  snap      Videos
Desktop     Downloads  nested     Public    Templates
vboxuseomi@LIGHT:~$ cd nested
vboxuseomi@LIGHT:~/nested$ cd asawaridoc1
vboxuseomi@LIGHT:~/nested/asawaridoc1$ cd nested
bash: cd: nested: No such file or directory
vboxuseomi@LIGHT:~/nested/asawaridoc1$ cd nested/
bash: cd: nested/: No such file or directory
vboxuseomi@LIGHT:~/nested/asawaridoc1$ ls
example
vboxuseomi@LIGHT:~/nested/asawaridoc1$ cd ..
vboxuseomi@LIGHT:~/nested$ cd ..
vboxuseomi@LIGHT:~$ cd asawaridoc/
vboxuseomi@LIGHT:~/asawaridoc$ ls
vboxuseomi@LIGHT:~/asawaridoc$ touch hello.txt
vboxuseomi@LIGHT:~/asawaridoc$ touch file1.txt
vboxuseomi@LIGHT:~/asawaridoc$ ls
file1.txt  hello.txt
```

```
vboxuseomi@LIGHT:~/nested$ ls -l
total 4
drwxrwxr-x 3 vboxuser vboxuser 4096 Jul 23 10:22 asawaridoc1
-rw-rw-r-- 1 vboxuser vboxuser  0 Jul 23 10:29 example.txt
vboxuseomi@LIGHT:~/nested$ touch example.txt
vboxuseomi@LIGHT:~/nested$ ls -l
total 4
drwxrwxr-x 3 vboxuser vboxuser 4096 Jul 23 10:22 asawaridoc1
-rw-rw-r-- 1 vboxuser vboxuser  0 Jul 23 11:01 example.txt
vboxuseomi@LIGHT:~/nested$ touch example.txt
vboxuseomi@LIGHT:~/nested$ ls -l
total 4
drwxrwxr-x 3 vboxuser vboxuser 4096 Jul 23 10:22 asawaridoc1
-rw-rw-r-- 1 vboxuser vboxuser  0 Jul 23 11:02 example.txt
vboxuseomi@LIGHT:~/nested$ gedit example.txt
vboxuseomi@LIGHT:~/nested$ cat example.txt
apple
Terminal
cat
rat
mat
mango
grapes
map
tap
wibe
vboxuseomi@LIGHT:~/nested$ head
```

```
vboxuseomi@LIGHT:~/nested$ head example.txt
apple
ball
cat
rat
mat
mango
grapes
map
tap
wibe
vboxuseomi@LIGHT:~/nested$ tail example.txt
apple
ball
cat
rat
mat
mango
grapes
map
tap
wibe
vboxuseomi@LIGHT:~/nested$ wc example.txt
10 10 49 example.txt
vboxuseomi@LIGHT:~/nested$
```

19.cat, cat>>, cat>: The [cat](#) command is a multi-purpose utility in the Linux system. It can be used to create a file, display content of the file, copy the content of one file to another file, and more.

```
vboxuseomi@LIGHT:~$ pwd
/home/vboxuser
vboxuseomi@LIGHT:~$ cd Desktop
vboxuseomi@LIGHT:~/Desktop$ ls
vboxuseomi@LIGHT:~/Desktop$ touch file
vboxuseomi@LIGHT:~/Desktop$ cat> file2
Hello!
^Z
[1]+  Stopped                  cat > file2
vboxuseomi@LIGHT:~/Desktop$ cat file2
Hello!
vboxuseomi@LIGHT:~/Desktop$ cat>> file2
Asawari
^Z
[2]+  Stopped                  cat >> file2
vboxuseomi@LIGHT:~/Desktop$ cat>> file2
Jadhav
^Z
[3]+  Stopped                  cat >> file2
vboxuseomi@LIGHT:~/Desktop$ cat file2
Hello!
Asawari
Jadhav
vboxuseomi@LIGHT:~/Desktop$ mkdir new folder
vboxuseomi@LIGHT:~/Desktop$ mkdir asawari
vboxuseomi@LIGHT:~/Desktop$ ls
asawari  file  file2  folder  new
vboxuseomi@LIGHT:~/Desktop$
```

22. mv: The [mv](#) command is used to move a file or a directory from one location to another location.

```

vboxuseoni@LIGHT:~$ touch file1
vboxuseoni@LIGHT:~$ ls
asawaridoc  Documents  file1  nested  Public  Templates
Desktop    Downloads  Music  Pictures  snap    Videos
vboxuseoni@LIGHT:~$ mv file1 filex
vboxuseoni@LIGHT:~$ ls
asawaridoc  Documents  filex  nested  Public  Templates
Desktop    Downloads  Music  Pictures  snap    Videos
vboxuseoni@LIGHT:~$ mkdir folder
vboxuseoni@LIGHT:~$ ls
asawaridoc  Documents  filex  Music  Pictures  snap    Videos
Desktop    Downloads  folder  nested  Public  Templates
vboxuseoni@LIGHT:~$ mv folder folderx
vboxuseoni@LIGHT:~$ ls
asawaridoc  Documents  filex  Music  Pictures  snap    Videos
Desktop    Downloads  folderx  nested  Public  Templates
vboxuseoni@LIGHT:~$

```

23.diff: Convert the file.

24.gzip: To zip the file.

25. gunzip: To unzip the file.

26. ls: List all files in the current directory.

```

vboxuseoni@LIGHT:~/new$ cat capitals1
vboxuseoni@LIGHT:~/new$ cat >> capitals1
delhi^Z
[2]+  Stopped                  cat >> capitals1
vboxuseoni@LIGHT:~/new$ cat Capitals1
vboxuseoni@LIGHT:~/new$ gzip new/Capitals1
gzip: new/Capitals1: No such file or directory
vboxuseoni@LIGHT:~/new$ gzip Capitals1
vboxuseoni@LIGHT:~/new$ gunzip Capitals1
vboxuseoni@LIGHT:~/new$ touch file3 file4
vboxuseoni@LIGHT:~/new$ diff file3 file4
vboxuseoni@LIGHT:~/new$ ls new
ls: cannot access 'new': No such file or directory
vboxuseoni@LIGHT:~/new$ ls
capitals1  Capitals1  file3  file4
vboxuseoni@LIGHT:~/new$ cd ..
vboxuseoni@LIGHT:~$ ls
asawaridoc  Documents  filex  Music  new  Public  Templates
Desktop    Downloads  folderx  nested  Pictures  snap    Videos
vboxuseoni@LIGHT:~$ ls new
capitals1  Capitals1  file3  file4
vboxuseoni@LIGHT:~$

```