

## DISTRIBUTED SYSTEMS

### ASSIGNMENT 2

Execute all commands on Linux terminal and note down the functionality of each.

1. Basic Unix/Linux commands:

- `ls`: list directory contents.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f2  f4      main.c    main.py    sumthroughpath.py
f1                f3  ls.png   main.cpp  mergesort.c u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ #ls [option] [file]
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls -a
.                f1  f4      main.cpp  sumthroughpath.py
..               f2  ls.png   main.py    u19cs009-ds-assign02.docx
binarysearch.cpp f3  main.c   mergesort.c
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls -l --author
total 144
-rw-rw-r-- 1 brijesh brijesh brijesh 1026 Jan 26 21:29 binarysearch.cpp
drwxrwxr-x 2 brijesh brijesh brijesh   2 Jan 26 21:22 f1
drwxrwxr-x 2 brijesh brijesh brijesh   2 Jan 26 21:22 f2
drwxrwxr-x 2 brijesh brijesh brijesh   2 Jan 26 21:22 f3
drwxrwxr-x 2 brijesh brijesh brijesh   2 Jan 26 21:22 f4
-rw-rw-r-- 1 brijesh brijesh brijesh 45382 Jan 26 21:25 ls.png
-rw-rw-r-- 1 brijesh brijesh brijesh   0 Jan 26 21:23 main.c
-rw-rw-r-- 1 brijesh brijesh brijesh   0 Jan 26 21:23 main.cpp
-rw-rw-r-- 1 brijesh brijesh brijesh   0 Jan 26 21:23 main.py
-rw-rw-r-- 1 brijesh brijesh brijesh 1801 Jan 26 21:29 mergesort.c
-rw-rw-r-- 1 brijesh brijesh brijesh 1461 Jan 26 21:33 sumthroughpath.py
-rw-rw-r-- 1 brijesh brijesh brijesh 71733 Jan 26 21:51 u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `date` :print or set the system date and time.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ date
Wednesday 26 January 2022 10:03:43 PM IST
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ date +"%A"
Wednesday
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `help` : The help command just displays information about shell built-in commands and their patterns.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ help
GNU bash, version 5.1.8(1)-release (x86_64-pc-linux-gnu)
These shell commands are defined internally.  Type `help' to see this list.
Type `help name' to find out more about the function `name'.
Use `info bash' to find out more about the shell in general.
Use `man -k' or `info' to find out more about commands not in this list.

A star (*) next to a name means that the command is disabled.

job_spec [&]
(( expression ))
. filename [arguments]
:
[ arg... ]
[[ expression ]]
alias [-p] [name[=value] ... ]

```

- `info` : The info command is used under Linux or Unix to read multi page documentation and act as help viewer working on a command line interface

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6
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.

```

- **man** : This command in Linux is used to display the user manual of any command that we can run on the terminal.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
MAN(1) Manual pager utility
ls MAN(1)

NAME
man - an interface to the system reference manuals

SYNOPSIS
man [man options] [[section] page ...] ...
man -k [apropos options] regexp ...
man -K [man options] [section] term ...
man -f [whatis options] page ...
man -l [man options] file ...
man -w|-W [man options] page ...

DESCRIPTION
man is the system's manual pager. Each page argument given to man is normally the name of a program, utility or function. The manual page associated with each of these arguments is then found and displayed. A section, if provided, will direct man to look only in that section of the manual. The default action is to search in all of the available sections following a pre-defined order (see DEFAULTS), and to show only the first page found, even if page exists in several sections.
```

- **who** : The Linux "who" command lets you display the users currently logged in to your UNIX or Linux operating system.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ who
brijesh  :0                2022-01-26 18:53 (:0)
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- **pwd** : It prints the path of the working directory, starting from the root.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ who
brijesh  :0                2022-01-26 18:53 (:0)
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ pwd
/home/brijesh/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- **cat** : cat command allows us to create single or multiple files, view content of a file, concatenate files and redirect output in terminal or files.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ who
brijesh  :0                2022-01-26 18:53 (:0)
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ pwd
/home/brijesh/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f1  f3  help.png  ls.png  main.cpp  man.png  pwd.png  u19
date.png          f2  f4  info.png  main.c  main.py  mergesort.c  sumthroughpath.py  who
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat main.cpp
#include<iostream>
using namespace std;

int main (int argc, char const* argv[])
{
    cout << "Hello there, Brijesh here!!\n";
    return 0;
}
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$

```

- **more** : more command is used to view the text files in the command prompt, displaying one screen at a time in case the file is large.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
/* C program for Merge Sort */
#include <stdio.h>
#include <stdlib.h>

// Merges two subarrays of arr[].
// First subarray is arr[l..m]
// Second subarray is arr[m+1..r]
void merge(int arr[], int l, int m, int r)
{
    int i, j, k;
    int n1 = m - l + 1;
    int n2 = r - m;

    /* create temp arrays */
    int L[n1], R[n2];

    /* Copy data to temp arrays L[] and R[] */
    for (i = 0; i < n1; i++)
        L[i] = arr[l + i];
    for (j = 0; j < n2; j++)
        R[j] = arr[m + 1 + j];

    /* Merge the temp arrays back into arr[l..r]*/
    i = 0; // Initial index of first subarray
    j = 0; // Initial index of second subarray
    k = l; // Initial index of merged subarray
--More--(35%)

```

- `mv` : mv stands for move. mv is used to move one or more files or directories from one place to another in a file system like UNIX.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f3          main.c      more.png    u19cs009-ds-assign02.docx
cat.png           f4          main.cpp    mv.png      who.png
date.png          help.png    main.py     pwd.png
f1               info.png   man.png     rm.png
f2               ls.png     mergesort.c sumthroughpath.py
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls ../../ppl/ppl-as
sign01
u19cs009-ppl-assign01-a.out      u19cs009-ppl-assign1q3.cpp
u19cs009-ppl-assign01.docx      u19cs009-ppl-assign1q3output.html
u19cs009-ppl-assign01.zip       u19cs009-ppl-assign1q4.cpp
u19cs009-ppl-assign1q1.cpp      u19cs009-ppl-assign1q4output.html
u19cs009-ppl-assign1q1output.html u19cs009-ppl-outputq1.png
u19cs009-ppl-assign1q2.txt
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ mv ../../ppl/ppl-as
sign01/u19cs009-ppl-assign01-a.out movedfile.out
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f3          main.c      more.png    sumthroughpath.py
cat.png           f4          main.cpp    movedfile.out u19cs009-ds-assign02.docx
date.png          help.png    main.py     mv.png      who.png
f1               info.png   man.png     pwd.png
f2               ls.png     mergesort.c rm.png
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `rm` : rm command is used to remove objects such as files, directories, symbolic links and so on from the file system like UNIX.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f3          main.c      more.png    u19cs009-ds-assign02.docx
cat.png           f4          main.cpp    movedfile.out who.png
date.png          help.png    main.py     mv.png
f1               info.png   man.png     pwd.png
f2               ls.png     mergesort.c sumthroughpath.py
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ rm movedfile.out
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f2          info.png    main.py     mv.png      who.png
cat.png           f3          ls.png     man.png     pwd.png
date.png          f4          main.c     mergesort.c sumthroughpath.py
f1               help.png   main.cpp   more.png    u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```



- `chmod` : the `chmod` command is used to change the access mode of a file.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls -l | head -6
total 1323
-rw-rw-r-- 1 brijesh brijesh 1026 Jan 26 21:29 binarysearch.cpp
-rw-rw-r-- 1 brijesh brijesh 104871 Jan 26 22:19 cat.png
-rw-rw-r-- 1 brijesh brijesh 48513 Jan 26 22:04 date.png
drwxrwxr-x 2 brijesh brijesh 2 Jan 26 21:22 f1
drwxrwxr-x 2 brijesh brijesh 2 Jan 26 21:22 f2
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ chmod +x binarysearch.cpp
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls -l | head -6
total 1323
-rwxrwxr-x 1 brijesh brijesh 1026 Jan 26 21:29 binarysearch.cpp
-rw-rw-r-- 1 brijesh brijesh 104871 Jan 26 22:19 cat.png
-rw-rw-r-- 1 brijesh brijesh 48513 Jan 26 22:04 date.png
drwxrwxr-x 2 brijesh brijesh 2 Jan 26 21:22 f1
drwxrwxr-x 2 brijesh brijesh 2 Jan 26 21:22 f2
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `whoami` : It displays the username of the current user when this command is invoked.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ whoami
brijesh
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ whoami --version
whoami (GNU coreutils) 8.32
Copyright (C) 2020 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

Written by Richard Mlynarik.
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ whoami --help
```

- `logout` : `logout` command allows you to programmatically logout from your session. causes the session manager to take the requested action immediately.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ #as I'm not in a session, or login to server, I can't logout of session, instead I'll use exit from brijesh as user. Logout works as same as exit when executed in session.
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ sudo su
root@brijesh-GF75-Thin-9SCSR:/home/brijesh/sem6/distributed systems/assign02# logout
bash: logout: not login shell: use `exit'
root@brijesh-GF75-Thin-9SCSR:/home/brijesh/sem6/distributed systems/assign02# exit
exit
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- **wc** : The wc command in UNIX is a command line utility for printing newline, word and byte counts for files

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ #I cannot go to next line without new command line. So for this we can use wc as shown below.
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wc
#As you can see I'm here on new line without new command line.
#We can also jump to new line without new command line.
Also we can type without commenting
. But we cannot jump back to previous line, as I forgot the ".".
WC also helps to count words and byte count of a file, as shown below.
#We can exit after cancelling the current process done using "Ctrl"+"C".
^C
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f3          main.c      movedfile.out  whoami.png
cat.png           f4          main.cpp    mv.png         who.png
chmod.png         help.png    main.py     pwd.png
date.png          info.png    man.png     rm.png
f1                logout.png  mergesort.c sumthroughpath.py
f2                ls.png     more.png    u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wc mergesort.c
98  363 1801 mergesort.c

```

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wc
wc -l : prints number of lines
wc -w : prints number of words
wc -c : prints number of bytes
wc -m : prints number of characters^C
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f4          main.py     rm.png
cat.png           help.png    man.png     sumthroughpath.py
chmod.png         info.png    mergesort.c u19cs009-ds-assign02.docx
date.png          logout.png  more.png    wc1.png
f1                ls.png     movedfile.out whoami.png
f2                main.c     mv.png      who.png
f3                main.cpp   pwd.png
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wc -l mergesort.c
98 mergesort.c
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wc -w mergesort.c
363 mergesort.c
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wc -c mergesort.c
1801 mergesort.c
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wc -m mergesort.c
1801 mergesort.c
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wc mergesort.c
98  363 1801 mergesort.c
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$

```

- `grep` : The `grep` filter searches a file for a particular pattern of characters, and displays all lines that contain that pattern.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f3          main.c          movedfile.out    wc1.png
cat.png           f4          main.cpp        mv.png           wc2.png
chmod.png         help.png    main.py         pwd.png          whoami.png
date.png          info.png   man.png         rm.png           who.png
f1                logout.png mergesort.c      sumthroughpath.py
f2                ls.png     more.png        u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat main.c
#include<stdio.h>

int main (int argc, char *argv[])
{
    printf("Hello there, Brijesh here!!\n");
    return 0;
}
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ grep "main" main.c
int main (int argc, char *argv[])
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ grep "main" main.cpp
int main (int argc, char const* argv[])
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ grep "main" main.py
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat main.py
print("Hello there, Brijesh here!!")
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat main.cpp
#include<iostream>
using namespace std;

int main (int argc, char const* argv[])
{
    cout << "Hello there, Brijesh here!!\n";
    return 0;
}

```

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f3          ls.png          more.png          u19cs009-ds-assign02.docx
cat.png           f4          main.c          movedfile.out     wc1.png
chmod.png         grep1.png   main.cpp        mv.png            wc2.png
date.png          help.png    main.py         pwd.png           whoami.png
f1                info.png   man.png         rm.png            who.png
f2                logout.png mergesort.c      sumthroughpath.py
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ grep -l "main" *
binarysearch.cpp
grep: f1: Is a directory
grep: f2: Is a directory
grep: f3: Is a directory
grep: f4: Is a directory
main.c
main.cpp
mergesort.c
u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wc
The above command lists the files with main pattern in it and folder.

```



- `sort` : `sort` command is used to sort a file, arranging the records in a particular order.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f4          main.c      mv.png      wc2.png
cat.png           grep1.png   main.cpp    pwd.png     whoami.png
chmod.png         grep2.png   main.py     rm.png      who.png
date.png          help.png    man.png     sort.txt
f1                info.png    mergesort.c sumthroughpath.py
f2                logout.png  more.png    u19cs009-ds-assign02.docx
f3                ls.png      movedfile.out wc1.png
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat sort.txt
Brijesh
@
+
rohit
brijesh
himanshu
aman
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ sort sort.txt
+
@
aman
brijesh
Brijesh
himanshu
rohit
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `mkdir` : `mkdir` command in Linux allows the user to create directories.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  help.png   main.py     pwd.png      wc1.png
cat.png           info.png   man.png     rm.png       wc2.png
chmod.png         logout.png mergesort.c  sort.png     whoami.png
date.png          ls.png     more.png    sort.txt     who.png
grep1.png         main.c     movedfile.out sumthroughpath.py
grep2.png         main.cpp   mv.png      u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ mkdir f1 f2 f3 f4
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f4          main.c      mv.png      wc1.png
cat.png           grep1.png   main.cpp    pwd.png     wc2.png
chmod.png         grep2.png   main.py     rm.png      whoami.png
date.png          help.png    man.png     sort.png    who.png
f1                info.png    mergesort.c sort.txt
f2                logout.png  more.png    sumthroughpath.py
f3                ls.png      movedfile.out u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `rmdir` : `rmdir` command in Linux allows the user to delete directories present in the filesystem.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  f4          main.c      movedfile.out  u19cs009-ds-assign02.docx
cat.png           grep1.png   main.cpp    mv.png          wc1.png
chmod.png         grep2.png   main.py     pwd.png         wc2.png
date.png         help.png    man.png     rm.png          whoami.png
f1               info.png    mergesort.c sort.png         who.png
f2               logout.png  mkdir.png   sort.txt
f3               ls.png      more.png    sumthroughpath.py
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ rmdir f1 f2 f3 f4
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  logout.png   more.png    u19cs009-ds-assign02.docx
cat.png           ls.png      movedfile.out  wc1.png
chmod.png         main.c      mv.png        wc2.png
date.png         main.cpp    pwd.png       whoami.png
grep1.png        main.py     rm.png        who.png
grep2.png        man.png     sort.png
help.png         mergesort.c sort.txt
info.png         mkdir.png   sumthroughpath.py
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `cd` : This command in linux is used to change current working directory.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cd ../../ppl
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/ppl$ cd ../'distributed systems'/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ pwd
/home/brijesh/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cd ../../ppl
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/ppl$ pwd
/home/brijesh/sem6/ppl
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/ppl$ cd ../'distributed systems'/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ pwd
/home/brijesh/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `tail` : The tail command, as the name implies, print the last N number of data of the given input.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat sort.txt
Brijesh
@
+
rohit
brijesh
himanshu
aman
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ tail -n 3 sort.txt
brijesh
himanshu
aman
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `cmp` : `cmp` command in Linux/UNIX is used to compare the two files byte by byte and helps you to find out whether the two files are identical or not.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat sort.txt
Brijesh
@
+
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat sort1.txt
Brijesh
@
+
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cmp sort.txt sort1.
txt
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat sort2.txt
t
neha
aman
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cmp sort.txt sort2.
txt
sort.txt sort2.txt differ: byte 1, line 1
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `diff` : `diff` stands for difference. This command is used to display the differences in the files by comparing the files line by line.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat sort.txt
Brijesh
@
+
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat sort1.txt
Brijesh
@
+
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ diff sort.txt sort1
.txt
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cat sort2.txt
Brijesh
@
neha
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ diff sort.txt sort2
.txt
3c3
< +
---
> neha
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$

```

- `cp` : This command is used to copy files or group of files or directory.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  grep2.png  man.png  rm.png  wc1.png
cat.png           help.png   mergesort.c  sort1.txt  wc2.png
cd.png           info.png   mkdir.png   sort2.txt  whoami.png
chmod.png        logout.png more.png    sort.png   who.png
cmp.png          ls.png     movedfile.out  sort.txt
date.png         main.c     mv.png       sumthroughpath.py
diff.png         main.cpp   pwd.png      tail.png
grep1.png        main.py    rmdir.png    u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cp sort.txt sortcopy.txt
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  info.png   movedfile.out  sumthroughpath.py
cat.png           logout.png mv.png         tail.png
cd.png           ls.png     pwd.png        u19cs009-ds-assign02.docx
chmod.png        main.c     rmdir.png      wc1.png
cmp.png          main.cpp   rm.png         wc2.png
date.png         main.py    sort1.txt      whoami.png
diff.png         man.png    sort2.txt      who.png
grep1.png        mergesort.c  sortcopy.txt
grep2.png        mkdir.png   sort.png
help.png         more.png    sort.txt
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$

```

- `clear` : This command is used to clear the contents of terminal.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  grep2.png  man.png  rm.png  wc1.png
cat.png           help.png   mergesort.c  sort1.txt  wc2.png
cd.png           info.png   mkdir.png  sort2.txt  whoami.png
chmod.png        logout.png more.png    sort.png   who.png
cmp.png          ls.png     movedfile.out  sort.txt
date.png         main.c     mv.png      sumthroughpath.py
diff.png         main.cpp   pwd.png     tail.png
grep1.png        main.py    rmdir.png   u19cs009-ds-assign02.docx
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ cp sort.txt sortcopy.txt
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
binarysearch.cpp  info.png  movedfile.out  sumthroughpath.py
cat.png           logout.png mv.png         tail.png
cd.png           ls.png    pwd.png        u19cs009-ds-assign02.docx
chmod.png        main.c    rmdir.png      wc1.png
cmp.png          main.cpp  rm.png         wc2.png
date.png         main.py   sort1.txt      whoami.png
diff.png         man.png   sort2.txt      who.png
grep1.png        mergesort.c  sortcopy.txt
grep2.png        mkdir.png   sort.png
help.png         more.png    sort.txt
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ clear

```

- `df` : The `df` command (short for disk free), is used to display information related to file systems about total space and available space.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ df
Filesystem            1K-blocks    Used Available Use% Mounted on
tmpfs                  1622044      2776   1619268    1% /run
rpool/ROOT/ubuntu_8h5c9x 210446720 7794688 202652032    4% /
tmpfs                  8110208    124192   7986016    2% /dev/shm
tmpfs                   5120         4      5116    1% /run/lock
rpool/USERDATA/root_q46yw2 202652800    768 202652032    1% /root
rpool/USERDATA/brijesh_q46yw2 211217920 8565888 202652032    5% /home/brijesh
rpool/ROOT/ubuntu_8h5c9x/srv 202652160    128 202652032    1% /srv
rpool/ROOT/ubuntu_8h5c9x/usr/local 202672000   19968 202652032    1% /usr/local
rpool/ROOT/ubuntu_8h5c9x/var/log 202679808   27776 202652032    1% /var/log
rpool/ROOT/ubuntu_8h5c9x/var/lib 207430528 4778496 202652032    3% /var/lib
rpool/ROOT/ubuntu_8h5c9x/var/games 202652160    128 202652032    1% /var/games
rpool/ROOT/ubuntu_8h5c9x/var/mail 202652160    128 202652032    1% /var/mail
rpool/ROOT/ubuntu_8h5c9x/var/spool 202652160    128 202652032    1% /var/spool
rpool/ROOT/ubuntu_8h5c9x/var/www 202652160    128 202652032    1% /var/www
rpool/ROOT/ubuntu_8h5c9x/var/snap 202655488   3456 202652032    1% /var/snap
rpool/ROOT/ubuntu_8h5c9x/var/lib/NetworkManager 202652288    256 202652032    1% /var/lib/NetworkManager
rpool/ROOT/ubuntu_8h5c9x/var/lib/apt 202777984  125952 202652032    1% /var/lib/apt
rpool/ROOT/ubuntu_8h5c9x/var/lib/dpkg 202705664   53632 202652032    1% /var/lib/dpkg
rpool/ROOT/ubuntu_8h5c9x/var/lib/AccountsService 202652160    128 202652032    1% /var/lib/AccountsService
bpool/B00T/ubuntu_8h5c9x 1643008    242944  1400064   15% /boot
/dev/nvme0n1p1         523248    13512   509736    3% /boot/efi
tmpfs                  1622040      2788   1619252    1% /run/user/1000
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$

```



- `du` : `du` command, short for disk usage, is used to estimate file space usage.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ du ../../
39375  ../../system software
19818  ../../cv
207    ../../ppl/ppl-assign01
22695  ../../ppl
15046  ../../ai
3534   ../../distributed systems/assign02
11044  ../../distributed systems
1      ../../cloud
108004 ../../
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ du
3534   .
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `uname` : The command `uname` displays the information about the system.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ uname
Linux
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `apt-get` : `apt-get` is a command-line tool which helps in handling packages in Linux.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ sudo apt-get install gedit
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
gedit is already the newest version (40.1-1).
gedit set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 6 not upgraded.
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- `find` : It can be used to find files and directories and perform subsequent operations on them.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls
apt-get.png      date.png        ls.png          mv.png          sumthrougpath.py
binarysearch.cpp df.png          main.c          pwd.png          tail.png
cat.png          diff.png        main.cpp        rmdir.png       u19cs009-ds-assign02.docx
cd.png           du.png          main.py         rm.png           uname.png
chmod.png        grep1.png       man.png         sort1.txt        wc1.png
clear1.png       grep2.png       mergesort.c     sort2.txt        wc2.png
clear.png        help.png        mkdir.png       sortcopy.txt     whoami.png
cmp.png          info.png        more.png        sort.png         who.png
cp.png           logout.png      movedfile.out   sort.txt
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ find ls.png
ls.png
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ find ls1.png
find: 'ls1.png': No such file or directory
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- **wget** : Wget is the non-interactive network downloader which is used to download files from the server even when the user has not logged on to the system and it can work in the background without hindering the current process.

```
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ wget https://learningcontainer.com/sample-textfile/
--2022-01-26 23:36:59-- https://learningcontainer.com/sample-textfile/
Resolving learningcontainer.com (learningcontainer.com)... 2606:4700:3033::ac43:bca4, 2606:4700:3037::6815:544a, 172.67.188.164, ...
Connecting to learningcontainer.com (learningcontainer.com)|2606:4700:3033::ac43:bca4|:443... failed: Connection timed out.
Connecting to learningcontainer.com (learningcontainer.com)|2606:4700:3037::6815:544a|:443... failed: Connection timed out.
Connecting to learningcontainer.com (learningcontainer.com)|172.67.188.164|:443... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://www.learningcontainer.com/sample-textfile/ [following]
--2022-01-26 23:41:22-- https://www.learningcontainer.com/sample-textfile/
Resolving www.learningcontainer.com (www.learningcontainer.com)... 2606:4700:3037::6815:544a, 2606:4700:3033::ac43:bca4, 172.67.188.164, ...
Connecting to www.learningcontainer.com (www.learningcontainer.com)|2606:4700:3037::6815:
```

- **top** :top command is used to show the Linux processes. It provides a dynamic real-time view of the running system:

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/dist... x brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/dist... x
top - 23:37:38 up 4:43, 1 user, load average: 1.15, 1.36, 1.10
Tasks: 569 total, 2 running, 567 sleeping, 0 stopped, 0 zombie
%Cpu(s): 9.1 us, 1.9 sy, 0.0 ni, 88.9 id, 0.0 wa, 0.0 hi, 0.1 si, 0.0 st
MiB Mem : 15840.3 total, 7003.9 free, 6737.6 used, 2098.8 buff/cache
MiB Swap: 2048.0 total, 2048.0 free, 0.0 used. 8284.4 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM     TIME+ COMMAND
 125605 brijesh    20   0   24.5g 122452 71464 R   60.7   0.8   23:02.91 brave
    4068 brijesh    20   0 4803624 307656 76104 S   25.4   1.9   17:08.22 gnome-shell
   69853 brijesh    20   0   13.1g 378264 122992 S   14.2   2.3   23:38.92 editors_helper
   69926 brijesh    20   0   13.0g 266352 98416 S   13.2   1.6   19:41.50 editors_helper
    3345 brijesh    20   0   24.7g 124792 71616 S   10.9   0.8   16:11.10 Xorg
  125226 brijesh    20   0   16.6g  95116 57576 S    6.6   0.6    3:18.66 brave
   69548 brijesh    20   0 3284464 208968 153764 S    4.3   1.3    6:38.99 DesktopEditors
   69731 brijesh    20   0  750100 160920 108468 S    3.3   1.0    5:21.12 editors_helper
    318 root      -51   0      0      0      0 S    3.0   0.0    1:36.32 irq/137-CUST000
  125191 brijesh    20   0   16.5g 241100 107564 S    1.3   1.5    0:52.39 brave
  118731 root       0 -20      0      0      0 I    1.0   0.0    0:07.21 kworker/u25:2-i+
  153738 brijesh    20   0    22084   3436   2392 R    1.0   0.0    0:00.23 top
  128713 root       0   0      0      0      0 I    0.7   0.0    0:04.12 kworker/1:2-eyet
```

- **mpstat** : mpstat is a command that is used to report processor related statistics. It accurately displays the statistics of the CPU usage of the system.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02$ mpstat
Linux 5.13.0-28-generic (brijesh-GF75-Thin-9SCSR) 26/01/22 _x86_64_ (12 CPU)

11:38:59 PM IST CPU %usr %nice %sys %iowait %irq %soft %steal %guest %gnice %idle
11:38:59 PM IST all 6.81 0.01 1.93 0.07 0.00 0.04 0.00 0.00 0.00 91.15
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- **netstat** : Netstat command displays various network related information such as

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ mpstat
Linux 5.13.0-28-generic (brijesh-GF75-Thin-9SCSR)      26/01/22      _x86_64_      (1
11:38:59 PM IST  CPU      %usr      %nice      %sys %iowait      %irq      %soft      %steal      %guest      %gn
11:38:59 PM IST  all      6.81      0.01      1.93      0.07      0.00      0.04      0.00      0.00      0
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address          State
tcp      0      0 brijesh-GF75-Thin:54704 bom12s15-in-f4.1e:https TIME_WAIT
tcp      0      0 brijesh-GF75-Thin:59200 hkg12s10-in-f1.1e:https TIME_WAIT
tcp      0      0 brijesh-GF75-Thin:41040 bom12s18-in-f2.1e:https TIME_WAIT
tcp      0      0 localhost:40994        localhost:9614           ESTABLISHED
tcp      0      0 brijesh-GF75-Thin:37982 bom07s32-in-f14.1:https TIME_WAIT
tcp      0      0 brijesh-GF75-Thin:34458 bom07s24-in-f14.1:https TIME_WAIT
```

network connections, routing tables, interface statistics, masquerade connections, multicast memberships etc.,

- sar : It can be used to monitor Linux system's resources like CPU usage, Memory utilization, I/O devices consumption, Network monitoring, Disk usage, process and thread allocation, battery performance, Plug and play devices, processor performance, file system and more.

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ sar -u 2 5
Linux 5.13.0-28-generic (brijesh-GF75-Thin-9SCSR)      26/01/22      _x86_64_      (12 CPU)
11:41:25 PM IST      CPU      %user      %nice      %system      %iowait      %steal      %idle
11:41:27 PM IST      all      7.82      0.00      1.47      0.00      0.00      90.70
11:41:29 PM IST      all      9.35      0.00      2.69      0.00      0.00      87.96
11:41:31 PM IST      all      7.21      0.00      1.47      0.00      0.00      91.33
11:41:33 PM IST      all      6.97      0.00      0.97      0.00      0.00      92.06
11:41:35 PM IST      all      6.85      0.00      1.05      0.55      0.00      91.55
Average:      all      7.64      0.00      1.53      0.11      0.00      90.72
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```

- **chown** : It is used to change the owner and group of the file specified by the file descriptor or path.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls -l | head -5
total 4456
-rw-rw-r-- 1 brijesh brijesh 113341 Jan 26 23:38 apt-get1.png
-rw-rw-r-- 1 brijesh brijesh 62407 Jan 26 23:34 apt-get.png
-rwxrwxr-x 1 brijesh brijesh 1026 Jan 26 21:29 binarysearch.cpp
-rw-rw-r-- 1 brijesh brijesh 104871 Jan 26 22:19 cat.png
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ sudo chown root bin
arysearch.cpp
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls -l | head -5
total 4456
-rw-rw-r-- 1 brijesh brijesh 113341 Jan 26 23:38 apt-get1.png
-rw-rw-r-- 1 brijesh brijesh 62407 Jan 26 23:34 apt-get.png
-rwxrwxr-x 1 root brijesh 1026 Jan 26 21:29 binarysearch.cpp
-rw-rw-r-- 1 brijesh brijesh 104871 Jan 26 22:19 cat.png
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ sudo chown brijesh
binarysearch.cpp
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ls -l | head -5
total 4456
-rw-rw-r-- 1 brijesh brijesh 113341 Jan 26 23:38 apt-get1.png
-rw-rw-r-- 1 brijesh brijesh 62407 Jan 26 23:34 apt-get.png
-rwxrwxr-x 1 brijesh brijesh 1026 Jan 26 21:29 binarysearch.cpp
-rw-rw-r-- 1 brijesh brijesh 104871 Jan 26 22:19 cat.png
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$

```

## 2. Linux commands related with process:

- **ps** : ps command is used to list the currently running processes and their PIDs along with some other information depends on different options.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ps
  PID TTY          TIME CMD
 69395 pts/0    00:00:01 bash
 166575 pts/0    00:00:00 ps
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$

```

- **kill** : kill command in Linux (located in /bin/kill), is a built-in command which is used to terminate processes manually.

```

brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ps
  PID TTY          TIME CMD
 69395 pts/0    00:00:01 bash
 166756 pts/0    00:00:00 ps
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ kill 166756
bash: kill: (166756) - No such process
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$

```



- Background processing with &. : To run a command in the background, add the ampersand symbol (&) at the end of the command: The shell job ID (surrounded with brackets) and process ID will be printed on the terminal:

```
brijesh@brijesh-GF75-Thin-9SCSR: ~/sem6/distributed systems/assign02
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ ps
  PID TTY          TIME CMD
 69395 pts/0    00:00:01 bash
 166756 pts/0    00:00:00 ps
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ kill 166756
bash: kill: (166756) - No such process
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$ command &
[1] 167144
brijesh@brijesh-GF75-Thin-9SCSR:~/sem6/distributed systems/assign02$
```