

Ex No: 1b

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BASIC LINUX COMMANDS

1.1 GENERAL PURPOSE COMMANDS

1. The 'date' command:

The date command displays the current date with day of week, month, day, time (24 hours clock) and the year.

SYNTAX: \$ date

The date command can also be used with following format.

Format	Purpose	Example
+ %m	To display only month	\$ date + %m
+ %h	To display month name	\$ date + %h
+ %d	To display day of month	\$ date + %d
+ %y	To display last two digits of the year	\$ date + %y
+ %H	To display Hours	\$ date + %H
+ %M	To display Minutes	\$ date + %M
+ %S	To display Seconds	\$ date + %S

2. The echo'command:

The echo command is used to print the message on the screen. SYNTAX: \$ echo

EXAMPLE: \$ echo "God is Great"

3. The 'cal' command:

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The cal command displays the specified month or year calendar. SYNTAX: \$ cal [month] [year]

EXAMPLE: \$ cal Jan 2012

4. The 'bc' command:

Unix offers an online calculator and can be invoked by the command bc. SYNTAX: \$ bc

EXAMPLE: bc -l 16/4

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1. The 'who' command

The who command is used to display the data about all the users who are currently logged into the system. SYNTAX: \$ who

2. The 'who am i' command

The who am i command displays data about login details of the user. SYNTAX: \$ who am i

3. The 'id' command

The id command displays the numerical value corresponding to your login. SYNTAX: \$ id

4. The 'tty' command

The tty (teletype) command is used to know the terminal name that we are using. SYNTAX: \$ tty

5. The 'clear' command

The clear command is used to clear the screen of your terminal. SYNTAX: \$ clear

6. The 'man' command

The man command gives you complete access to the Unix commands. SYNTAX: \$ man [command]

7. The 'ps' command

The ps command is used to the process currently alive in the machine with the 'ps' (process status) command, which displays information about process that are alive when you run the command. 'ps;' produces a snapshot of machine activity.

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SYNTAX: \$ ps EXAMPLE: \$ ps

\$ ps -e

\$ ps -aux

1. The 'uname' command

The uname command is used to display relevant details about the operating system on the standard output.

-m -> Displays the machine id (i.e., name of the system hardware)

-n -> Displays the name of the network node. (host name)

-r -> Displays the release number of the operating system.

-s -> Displays the name of the operating system (i.e.. system name)

-v -> Displays the version of the operating system.

-a -> Displays the details of all the above five options. SYNTAX: \$ uname [option]

EXAMPLE: \$ uname -a

1.2 DIRECTORY COMMANDS

1. The 'pwd' command:

The pwd (print working directory) command displays the current working directory. SYNTAX: \$ pwd

2. The 'mkdir' command:

The mkdir is used to create an empty directory in a disk. SYNTAX: \$ mkdir dirname

EXAMPLE: \$ mkdir receee

3. The 'rmdir' command:

The rmdir is used to remove a directory from the disk. Before removing a directory, the directory must be empty (no files and directories).

SYNTAX: \$ rmdir dirname EXAMPLE: \$ rmdir receee

4. The 'cd' command:

The cd command is used to move from one directory to another. SYNTAX: \$ cd dirname

EXAMPLE: \$ cd receee

5. The 'ls' command:

The ls command displays the list of files in the current working directory. SYNTAX: \$ ls

EXAMPLE: \$ ls

\$ ls -l

\$ ls -a

1.3 FILE HANDLING COMMANDS

1. The 'cat' command:

The cat command is used to create a file. SYNTAX: \$ cat > filename

EXAMPLE: \$ cat > rec

2. The 'Display contents of a file' command:

The cat command is also used to view the contents of a specified file. SYNTAX: \$ cat filename

3. The 'cp' command:

The cp command is used to copy the contents of one file to another and copies the file from one place to another.

SYNTAX: \$ cp oldfile newfile EXAMPLE: \$ cp cse ece

1. The 'rm' command:

The rm command is used to remove or erase an existing file SYNTAX: \$ rm filename

EXAMPLE: \$ rm rec

\$ rm -f rec

Use option -fr to delete recursively the contents of the directory and its subdirectories.

2. The 'mv' command:

The mv command is used to move a file from one place to another. It removes a specified file from its original location and places it in specified location.

SYNTAX: `$ mv oldfile newfile` EXAMPLE: `$ mv cse eee`

3. The 'file' command:

The file command is used to determine the type of file. SYNTAX: `$ file filename`

EXAMPLE: `$ file receee`

4. The 'wc' command:

The wc command is used to count the number of words, lines and characters in a file. SYNTAX: `$ wc filename`

EXAMPLE: `$ wc receee`

5. The 'Directing output to a file' command:

The ls command lists the files on the terminal (screen). Using the redirection operator '>' we can send the output to file instead of showing it on the screen.

SYNTAX: `$ ls > filename` EXAMPLE: `$ ls > cseeee`

6. The 'pipes' command:

The Unix allows us to connect two commands together using these pipes. A pipe (|) is an mechanism by which the output of one command can be channeled into the input of another command. SYNTAX: `$ command1 | command2`

EXAMPLE: `$ who | wc -l`

7. The 'tee' command:

While using pipes, we have not seen any output from a command that gets piped into another command. To save the output, which is produced in the middle of a pipe, the tee command is very useful. SYNTAX: `$ command | tee filename`

EXAMPLE: `$ who | tee sample | wc -l`

1. The 'Metacharacters of unix' command:

Metacharacters are special characters that are at higher and abstract level compared to most of other characters in Unix. The shell understands and interprets these metacharacters in a special way. * - Specifies number of characters

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?- Specifies a single character

[]- used to match a whole set of file names at a command line.

! – Used to Specify Not EXAMPLE:

\$ ls r** - Displays all the files whose name begins with 'r'

\$ ls ?kkk - Displays the files which are having 'kkk', from the second characters irrespective of the first character.

\$ ls [a-m] – Lists the files whose names begins alphabets from 'a' to 'm'

\$ ls [!a-m] – Lists all files other than files whose names begins alphabets from 'a' to 'm'

2. The 'File permissions' command:

File permission is the way of controlling the accessibility of file for each of three users namely Users, Groups and Others.

There are three types of file permissions are available, they are r-read

w-write

x-execute

The permissions for each file can be divided into three parts of three bits each.

First three bits	Owner of the file
Next three bits	Group to which the owner of the file belongs
Last three bits	Others

EXAMPLE: \$ ls college

-rwxr-xr-- 1 Lak std 1525 jan10 12:10 college Where,

-rwx The file is readable, writable and executable by the owner of the file. Lak Specifies Owner of the file.

r-x Indicates the absence of the write permission by the Group owner of the file. Std Is the Group Owner of the file.

r-- Indicates read permissions for others

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3. The 'chmod' command:

The chmod command is used to set the read, write and execute permissions for all categories of users for file.

SYNTAX: \$ chmod category operation permission file

Category	Operation	permission
u-users	+ assign	r-read
g-group	-Remove	w-write
o-others	= assign absolutely	x-execute
a-all		

EXAMPLE:

```
$ chmod u -wx college
```

Removes write & execute permission for users for 'college' file.

```
$ chmod u +rw, g+rw college
```

Assigns read & write permission for users and groups for 'college' file.

```
$ chmod g=wx college
```

Assigns absolute permission for groups of all read, write and execute permissions for 'college' file.

1. The 'Octal Notations' command:

The file permissions can be changed using octal notations also. The octal notations for file permission are

Read permission	4
Write permission	2

EXAMPLE:

\$ chmod 761 college

Execute permission	1
--------------------	---

Assigns all permission to the owner, read and write permissions to the group and only executable permission to the others for 'college' file.

1.4 GROUPING COMMANDS

1. The 'semicolon' command:

The semicolon(;) command is used to separate multiple commands at the command line. SYNTAX: \$

command1;command2;command3... ;commandn

EXAMPLE: \$ who;date

2. The '&&' operator:

The '&&' operator signifies the logical AND operation in between two or more valid Unix commands.It

means that only if the first command is successfully executed, then the next command will be executed. SYNTAX: \$ command1 && command2 && command3.....&&commandn EXAMPLE: \$ who && date.

3. The '||' operator:

The '||' operator signifies the logical OR operation in between two or more valid Unix commands.It means, that only if the first command will happen to be unsuccessful,it will continue to execute next commands. SYNTAX: \$ command1 || command2 || command3... ||commandn

EXAMPLE: \$ who || date

1.5 FILTERS

1. The head filter

It displays the first ten lines of a file. SYNTAX: \$ head filename

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EXAMPLE: \$ head college Display the top ten lines.

\$ head -5 college Display the top five lines.

2. The tail filter

It displays ten lines of a file from the end of the file. SYNTAX: \$ tail filename

EXAMPLE: \$ tail college Display the last ten lines.

\$tail -5 college Display the last five lines.

3. The more filter:

The pg command shows the file page by page. SYNTAX: \$ ls -l | more

4. The 'grep' command:

This command is used to search for a particular pattern from a file or from the standard input and display those lines on the standard output. "Grep" stands for "global search for regular expression."

SYNTAX: \$ grep [pattern] [file_name] EXAMPLE: \$ cat> student

Arun cse Ram ece Kani cse

\$ grep "cse" student

Arun cse Kani c

The 'sort' command:

The sort command is used to sort the contents of a file. The sort command reports only to the screen, the actual file remains unchanged.

SYNTAX: \$ sort filename EXAMPLE: \$ sort college OPTIONS:

Command	Purpose
Sort -r college	Sorts and displays the file contents in reverse order
Sort -c college	Check if the file is sorted

Sort -n college	Sorts numerically
Sort -m college	Sorts numerically in reverse order

Sort -u college	Remove duplicate records
Sort -l college	Skip the column with +1 (one) option.Sorts according to second column

1. The 'nl' command:

The nl filter adds lines numbers to a file and it displays the file and not provides access to edit but simply displays the contents on the screen.

SYNTAX: \$ nl filename EXAMPLE: \$ nl college

2. The 'cut' command:

We can select specified fields from a line of text using cut command. SYNTAX: \$ cut -c filename

EXAMPLE: \$ cut -c college OPTION:

-c – Option cut on the specified character position from each line.

1.5 OTHER ESSENTIAL COMMANDS

1. free

Display amount of free and used physical and swapped memory system. synopsis- free [options] example

[root@localhost ~]# free -t

total used free shared buff/cache available Mem: 4044380 605464 2045080 148820 1393836 3226708 Swap:
2621436 0 2621436

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Total: 6665816 605464 4666516

2. top

It provides a dynamic real-time view of processes in the system. synopsis- top [options]

example [root@localhost ~]# top

top - 08:07:28 up 24 min, 2 users, load average: 0.01, 0.06, 0.23

Tasks: 211 total, 1 running, 210 sleeping, 0 stopped, 0 zombie

%Cpu(s): 0.8 us, 0.3 sy, 0.0 ni, 98.9 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st

KiB Mem : 4044380 total, 2052960 free, 600452 used, 1390968 buff/cache KiB Swap: 2621436 total, 2621436 free, 0 used. 3234820 avail Mem PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND

1105 root 20 0 175008 75700 51264 S 1.7 1.9 0:20.46 Xorg 2529 root 20 0 80444 32640 24796 S 1.0 0.8

0:02.47 gnome-term

3. ps

It reports the snapshot of current processes synopsis- ps [options]

example

[root@localhost ~]# ps -e PID TTY TIME CMD

1 ? 00:00:03 systemd

2 ? 00:00:00 kthreadd

3 ? 00:00:00 ksoftirqd/0

4. vmstat

It reports virtual memory statistics synopsis- vmstat [options] example

[root@localhost ~]# vmstat

procs -----memory----- --swap-- ----io---- -system-- -----cpu r b swpd free buff cache si so bi bo

in cs us sy id wa st 0 0 0 1879368 1604 1487116 0 0 64 7 72 140 1 0 97 1 0

5. df

It displays the amount of disk space available in file-system.

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Synopsis- df [options] example [root@localhost ~]# df

Filesystem 1K-blocks Used Available Use% Mounted on

devtmpfs 2010800 0 2010800 0% /dev tmpfs 2022188 148 2022040 1% /dev/shm tmpfs 2022188 1404
2020784 1% /run /dev/sda6 487652 168276 289680 37% /boot

1. ping

It is used verify that a device can communicate with another on network. PING stands for Packet Internet Groper.

synopsis- ping [options] [root@localhost ~]# ping 172.16.4.1

PING 172.16.4.1 (172.16.4.1) 56(84) bytes of data.

64 bytes from 172.16.4.1: icmp_seq=1 ttl=64 time=0.328 ms 64 bytes from 172.16.4.1: icmp_seq=2 ttl=64
time=0.228 ms

64 bytes from 172.16.4.1: icmp_seq=3 ttl=64 time=0.264 ms 64 bytes from 172.16.4.1: icmp_seq=4 ttl=64
time=0.312 ms

--- 172.16.4.1 ping statistics ---

4 packets transmitted, 4 received, 0% packet loss, time 3000ms rtt min/avg/max/mdev = 0.228/0.283/0.328/0.039
ms

2. ifconfig

It is used configure network interface. synopsis- ifconfig [options]

example

root@localhost ~]# ifconfig

enp2s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500 inet 172.16.6.102 netmask

255.255.252.0 broadcast 172.16.7.255 inet6 fe80::4a0f:cfff:fe6d:6057 prefixlen 64 scopeid 0x20<link> ether
48:0f:cf:6d:60:57 txqueuelen 1000 (Ethernet)

RX packets 23216 bytes 2483338 (2.3 MiB)

RX errors 0 dropped 5 overruns 0 frame 0

TX packets 1077 bytes 107740 (105.2 KiB)

TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 8. traceroute

It tracks the route the packet takes to reach the destination. synopsis- traceroute [options] example

[root@localhost ~]# traceroute www.rajalakshmi.org

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tracert to www.rajalakshmi.org (220.227.30.51), 30 hops max, 60 byte packets 1 gateway (172.16.4.1)
0.299 ms 0.297 ms 0.327 ms 2

220.225.219.38 (220.225.219.38) 6.185 ms 6.203 ms 6.189 ms

Synopsis- df [options] example [root@localhost ~]# df

Filesystem 1K-blocks Used Available Use% Mounted on

devtmpfs 2010800 0 2010800 0% /dev tmpfs 2022188 148 2022040 1% /dev/shm tmpfs 2022188 1404

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255.255.252.0 broadcast 172.16.7.255 inet6 fe80::4a0f:cfff:fe6d:6057 prefixlen 64 scopeid 0x20<link> ether 48:0f:cf:6d:60:57 txqueuelen 1000 (Ethernet)

RX packets 23216 bytes 2483338 (2.3 MiB)

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0.299 ms 0.297 ms 0.327 ms 2

220.225.219.38 (220.225.219.38) 6.185 ms 6.203 ms 6.189 ms

OUTPUT:

```
[student@localhost ~]$ date +%m
01
[student@localhost ~]$ date +%h
20n
[student@localhost ~]$ date +%d
25
[student@localhost ~]$ date +%y
25
[student@localhost ~]$ date +%M
09
[student@localhost ~]$ date +%n
21
[student@localhost ~]$ date +%s
26
[student@localhost ~]$ echo "Hello World"
Hello World
[student@localhost ~]$ echo "Hi"
Hi
[student@localhost ~]$ bc
bc 1.06.95
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006 Free Software Foundation, Inc.
This is free software with ABSOLUTELY NO WARRANTY.
For details type 'warranty'.
15*25
375
528*660
348680
quit
[student@localhost ~]$ who
student pts/0      2025-01-25 08:12 (i0)
student pts/1      2025-01-25 09:20 (i0)
[student@localhost ~]$ who am i
student pts/1      2025-01-25 09:20 (i0)
[student@localhost ~]$ id
uid=1000(student) gid=1000(student) groups=1000(student) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
[student@localhost ~]$ tty
/dev/pts/1
[student@localhost ~]$ man
What manual page do you want?
[student@localhost ~]$ ps
PID TTY          TIME CMD
2125 pts/1      00:00:00 bash
2161 pts/1      00:00:00 ps
```

```

[student@localhost ~]$ ps
  PID TTY          TIME CMD
 2125 pts/1    00:00:00 bash
 2161 pts/1    00:00:00 ps
[student@localhost ~]$ ps -e
  PID TTY          TIME CMD
    1 ?        00:00:01 systemd
    2 ?        00:00:00 kthreadd
    4 ?        00:00:00 kworker/0:0H
    6 ?        00:00:00 mm_percpu_wq
    7 ?        00:00:00 ksoftirqd/0
    8 ?        00:00:00 rcu_sched
    9 ?        00:00:00 rcu_bh
   10 ?        00:00:00 migration/0
   11 ?        00:00:00 watchdog/0
   12 ?        00:00:00 cpuhp/0
   13 ?        00:00:00 cpuhp/1
   14 ?        00:00:00 watchdog/1
   15 ?        00:00:00 migration/1
   16 ?        00:00:00 ksoftirqd/1
   18 ?        00:00:00 kworker/1:0H
   19 ?        00:00:00 cpuhp/2
   20 ?        00:00:00 watchdog/2
   21 ?        00:00:00 migration/2
   22 ?        00:00:00 ksoftirqd/2
   24 ?        00:00:00 kworker/2:0H
   25 ?        00:00:00 cpuhp/3
   26 ?        00:00:00 watchdog/3
   27 ?        00:00:00 migration/3
   28 ?        00:00:00 ksoftirqd/3
   30 ?        00:00:00 kworker/3:0H
   31 ?        00:00:00 kdevtmpfs
   32 ?        00:00:00 nfsd
   34 ?        00:00:01 kworker/2:1
   35 ?        00:00:00 oom_reaper
   36 ?        00:00:00 writeback
   37 ?        00:00:00 kcompactd0
   38 ?        00:00:00 ksm
   39 ?        00:00:00 crypto
   60 ?        00:00:00 kintegrityd
   41 ?        00:00:00 bioset
   42 ?        00:00:00 kblockd
   44 ?        00:00:01 kworker/0:1
  44  ?        00:00:00 ps -e

```

```

44 ? 00:00:01 kworker/0:1
45 ? 00:00:00 ata_sff
46 ? 00:00:00 md
47 ? 00:00:00 devfreq_wq
48 ? 00:00:00 watchdogd
49 ? 00:00:00 kauditd
50 ? 00:00:00 kswapd0
51 ? 00:00:00 bioset
52 ? 00:00:00 bioset
99 ? 00:00:00 kthrotld
100 ? 00:00:00 acpi_thermal_pm
101 ? 00:00:00 scsi_ch_0
102 ? 00:00:00 scsi_tmf_0
103 ? 00:00:00 scsi_ch_1
104 ? 00:00:00 scsi_tmf_1
105 ? 00:00:00 scsi_ch_2
106 ? 00:00:00 scsi_tmf_2
107 ? 00:00:00 scsi_ch_3
108 ? 00:00:00 scsi_tmf_3
109 ? 00:00:00 scsi_ch_4
110 ? 00:00:00 scsi_tmf_4
115 ? 00:00:00 dm_bufio_cache
116 ? 00:00:00 ip66_addrconf
150 ? 00:00:00 bioset
151 ? 00:00:00 bioset
209 ? 00:00:01 kworker/1:2
355 ? 00:00:00 kworker/0:1H
357 ? 00:00:00 kworker/1:1H
363 ? 00:00:00 kworker/3:1H
366 ? 00:00:00 i915/signal:0
367 ? 00:00:00 i915/signal:1
368 ? 00:00:00 i915/signal:2
369 ? 00:00:00 i915/signal:4
391 ? 00:00:00 kworker/2:1H
428 ? 00:00:00 kdeflsh
429 ? 00:00:00 bioset
441 ? 00:00:00 kdeflsh
442 ? 00:00:00 bioset
459 ? 00:00:00 jbd2/dm-0-8
460 ? 00:00:00 ext4-rsv-conver
544 ? 00:00:00 systemd-journal
573 ? 00:00:00 systemd-udev
612 ? 00:00:00 irq/32-mei_me
652 ? 00:00:00 jbd2/sda6-8
653 ? 00:00:00 ext4-rsv-conver
656 ? 00:00:00 kdeflsh
658 ? 00:00:00 bioset
668 ? 00:00:00 jbd2/dm-3-8
669 ? 00:00:00 ext4-rsv-conver
692 ? 00:00:00 rpliod
693 ? 00:00:00 xprtioid
695 ? 00:00:00 auditd
714 ? 00:00:00 alsactl
715 ? 00:00:00 mcslog
716 ? 00:00:00 Modemanager
718 ? 00:00:00 sssd
719 ? 00:03:15 avahi-daemon
720 ? 00:00:00 irqbalance
721 ? 00:00:00 dbus-daemon
723 ? 00:00:00 avahi-daemon
727 ? 00:00:00 gssproxy
735 ? 00:00:00 rsyslogd
736 ? 00:00:00 smartd
738 ? 00:00:00 firewalld
743 ? 00:00:00 rtkit-daemon
748 ? 00:00:00 abrtcd
753 ? 00:00:00 chronyd
764 ? 00:00:00 sssd-be
768 ? 00:00:00 abrt-dump-journ
769 ? 00:00:00 abrt-dump-journ
770 ? 00:00:00 abrt-dump-journ
771 ? 00:00:00 sssd-nss
772 ? 00:00:00 accounts-daemon
773 ? 00:00:00 systemd-logind
788 ? 00:00:00 NetworkManager
789 ? 00:00:00 polkitd
820 ? 00:00:00 crond
821 ? 00:00:00 atd
823 ? 00:00:00 sddm
884 tty1 00:00:13 Xorg
1011 ? 00:00:01 udiskd
1019 ? 00:00:00 upowerd
1080 ? 00:00:00 sdie-balanc

```

```

460 ? 00:00:00 ext4-rsv-conver
544 ? 00:00:00 systemd-journal
573 ? 00:00:00 systemd-udev
612 ? 00:00:00 irq/32-mei_me
652 ? 00:00:00 jbd2/sda6-8
653 ? 00:00:00 ext4-rsv-conver
656 ? 00:00:00 kdeflsh
658 ? 00:00:00 bioset
668 ? 00:00:00 jbd2/dm-3-8
669 ? 00:00:00 ext4-rsv-conver
692 ? 00:00:00 rpliod
693 ? 00:00:00 xprtioid
695 ? 00:00:00 auditd
714 ? 00:00:00 alsactl
715 ? 00:00:00 mcslog
716 ? 00:00:00 Modemanager
718 ? 00:00:00 sssd
719 ? 00:03:15 avahi-daemon
720 ? 00:00:00 irqbalance
721 ? 00:00:00 dbus-daemon
723 ? 00:00:00 avahi-daemon
727 ? 00:00:00 gssproxy
735 ? 00:00:00 rsyslogd
736 ? 00:00:00 smartd
738 ? 00:00:00 firewalld
743 ? 00:00:00 rtkit-daemon
748 ? 00:00:00 abrtcd
753 ? 00:00:00 chronyd
764 ? 00:00:00 sssd-be
768 ? 00:00:00 abrt-dump-journ
769 ? 00:00:00 abrt-dump-journ
770 ? 00:00:00 abrt-dump-journ
771 ? 00:00:00 sssd-nss
772 ? 00:00:00 accounts-daemon
773 ? 00:00:00 systemd-logind
788 ? 00:00:00 NetworkManager
789 ? 00:00:00 polkitd
820 ? 00:00:00 crond
821 ? 00:00:00 atd
823 ? 00:00:00 sddm
884 tty1 00:00:13 Xorg
1011 ? 00:00:01 udiskd
1019 ? 00:00:00 upowerd
1080 ? 00:00:00 sdie-balanc

```



```

1011 ? 00:00:01 odisksd
1010 ? 00:00:00 upowerd
1058 ? 00:00:00 sddm-helper
1062 ? 00:00:00 system
1064 ? 00:00:00 (sd-pam)
1075 ? 00:00:00 ksm11td5
1078 ? 00:00:00 startkde
1077 ? 00:00:00 dbus-daemon
1102 ? 00:00:00 ssh-agent
1143 ? 00:00:00 start_kdeinit
1144 ? 00:00:00 kdeinit5
1145 ? 00:00:00 klauncher
1148 ? 00:00:01 kded5
1161 ? 00:00:00 kaccess
1166 ? 00:00:00 kwarppers
1171 ? 00:00:00 dconf-service
1173 ? 00:00:00 ksserver
1178 ? 00:00:00 kglobalaccel5
1181 ? 00:00:00 mission-control
1185 ? 00:00:00 colord
1191 ? 00:00:13 kwin_x11
1205 ? 00:00:00 kscreen backend
1210 ? 00:00:00 baloo_file
1212 ? 00:00:00 kdeconnectd
1214 ? 00:00:01 krunner
1216 ? 00:00:15 plasma-shell
1217 ? 00:00:00 polkit-kde-auth
1218 ? 00:00:00 xembedsniproxy
1269 ? 00:00:01 kwarker/3:0
1279 ? 00:00:00 pulseaudio
1286 ? 00:00:00 abrt-spi1et
1288 ? 00:00:00 korgac
1289 ? 00:00:00 org_kde_powerde
1328 ? 00:00:00 kactivitymanage
1371 ? 00:00:00 at-spi-bus-laun
1381 ? 00:00:00 dbus-daemon
1386 ? 00:00:00 at-spi2-registr
1446 ? 00:00:00 abrt-dbus
1452 ? 00:00:00 akonadi-control
1456 ? 00:00:00 akonadi-server
1459 ? 00:00:02 mysqld
1499 ? 00:00:00 akonadi_akonote
1500 ? 00:00:00 akonadi_archive

```

```

1499 ? 00:00:00 akonadi_akonote
1500 ? 00:00:00 akonadi_archive
1501 ? 00:00:00 akonadi_birthda
1502 ? 00:00:00 akonadi_contact
1503 ? 00:00:00 akonadi_followu
1504 ? 00:00:00 akonadi_ical_re
1507 ? 00:00:00 akonadi_indexin
1510 ? 00:00:00 akonadi_maildir
1529 ? 00:00:00 akonadi_maildis
1530 ? 00:00:00 akonadi_mailfil
1531 ? 00:00:00 akonadi_migrati
1532 ? 00:00:00 akonadi_newsmail
1533 ? 00:00:00 akonadi_sendlat
1601 ? 00:00:00 kuiserver5
1605 ? 00:00:00 cupsd
1607 ? 00:00:00 packageseltd
1610 ? 00:00:00 kwarker/3:1
1665 ? 00:00:00 kwarker/2:2
1939 ? 00:00:00 kwarker/0:0
1942 ? 00:00:00 kwarker/0:1
1952 ? 00:00:00 kwarker/0:2
1960 ? 00:00:00 kwarker/0:1
2004 ? 00:00:13 amavisd
2009 ? 00:00:00 kdeinit5
2010 ? 00:00:00 klauncher
2012 ? 00:00:00 kded4
2014 ? 00:00:00 gas_server
2057 ? 00:00:00 notifyd
2067 ? 00:00:00 kio_http_cache_
2114 ? 00:00:00 kwarker/1:0
2121 ? 00:00:00 konsole
2125 pts/1 00:00:00 bash
2158 ? 00:00:00 kwarker/1:1
2162 pts/1 00:00:00 ps
[student@localhost ~]$ ps -aux
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.2 22200 10376 ?        Ss   08:01   0:01 /usr/lib/systemd/systemd --switched-root --system --deserialize 20
root         2  0.0  0.0      0   0 ?        S    08:01   0:00 [kthreadd]
root         4  0.0  0.0      0   0 ?        Ss   08:01   0:00 [kworker/u6:0]
root         6  0.0  0.0      0   0 ?        Ss   08:01   0:00 [mm_percpu_wq]
root         7  0.0  0.0      0   0 ?        S    08:01   0:00 [ksoftirqd/0]
root         8  0.0  0.0      0   0 ?        S    08:01   0:00 [rcu_sched]
root         9  0.0  0.0      0   0 ?        S    08:01   0:00 [rcu_bh]

```

USER	PID	SCPU	SMEM	VSZ	RSS	TTY	STAT	START	TIME	COMMAND
root	1	0.0	0.1	32260	10376	?	Ss	00:01	0:01	/usr/lib/systemd/systemd --switched-root --system --deserialize 20
root	2	0.0	0.0	0	0	?	S	00:01	0:00	[kthreadd]
root	4	0.0	0.0	0	0	?	Ss	00:01	0:00	[kworker/0:0H]
root	6	0.0	0.0	0	0	?	Ss	00:01	0:00	[mm_percpu_wq]
root	7	0.0	0.0	0	0	?	S	00:01	0:00	[ksoftirqd/0]
root	8	0.0	0.0	0	0	?	S	00:01	0:00	[rcu_sched]
root	9	0.0	0.0	0	0	?	S	00:01	0:00	[rcu_bh]
root	10	0.0	0.0	0	0	?	S	00:01	0:00	[migration/0]
root	11	0.0	0.0	0	0	?	S	00:01	0:00	[watchdog/0]
root	12	0.0	0.0	0	0	?	S	00:01	0:00	[cpuhp/0]
root	13	0.0	0.0	0	0	?	S	00:01	0:00	[cpuhp/1]
root	14	0.0	0.0	0	0	?	S	00:01	0:00	[watchdog/1]
root	15	0.0	0.0	0	0	?	S	00:01	0:00	[migration/1]
root	16	0.0	0.0	0	0	?	S	00:01	0:00	[ksoftirqd/1]
root	18	0.0	0.0	0	0	?	Ss	00:01	0:00	[kworker/1:0H]
root	19	0.0	0.0	0	0	?	S	00:01	0:00	[cpuhp/2]
root	20	0.0	0.0	0	0	?	S	00:01	0:00	[watchdog/2]
root	21	0.0	0.0	0	0	?	S	00:01	0:00	[migration/2]
root	22	0.0	0.0	0	0	?	S	00:01	0:00	[ksoftirqd/2]
root	24	0.0	0.0	0	0	?	Ss	00:01	0:00	[kworker/2:0H]
root	25	0.0	0.0	0	0	?	S	00:01	0:00	[cpuhp/3]
root	26	0.0	0.0	0	0	?	S	00:01	0:00	[watchdog/3]
root	27	0.0	0.0	0	0	?	S	00:01	0:00	[migration/3]
root	28	0.0	0.0	0	0	?	S	00:01	0:00	[ksoftirqd/3]
root	30	0.0	0.0	0	0	?	Ss	00:01	0:00	[kworker/3:0H]
root	31	0.0	0.0	0	0	?	S	00:01	0:00	[kswapd0]
root	32	0.0	0.0	0	0	?	Ss	00:01	0:00	[netns]
root	34	0.0	0.0	0	0	?	S	00:01	0:01	[kworker/2:1]
root	35	0.0	0.0	0	0	?	S	00:01	0:00	[oom_reaper]
root	36	0.0	0.0	0	0	?	Ss	00:01	0:00	[writeback]
root	37	0.0	0.0	0	0	?	S	00:01	0:00	[kcompactd0]
root	38	0.0	0.0	0	0	?	Ss	00:01	0:00	[ksm]
root	39	0.0	0.0	0	0	?	Ss	00:01	0:00	[cryptd]
root	40	0.0	0.0	0	0	?	Ss	00:01	0:00	[kintegrityd]
root	41	0.0	0.0	0	0	?	Ss	00:01	0:00	[bioset]
root	42	0.0	0.0	0	0	?	Ss	00:01	0:00	[kblockd]
root	44	0.0	0.0	0	0	?	S	00:01	0:01	[kworker/0:1]
root	45	0.0	0.0	0	0	?	Ss	00:01	0:00	[ata_sff]
root	46	0.0	0.0	0	0	?	Ss	00:01	0:00	[md]
root	47	0.0	0.0	0	0	?	Ss	00:01	0:00	[dmefree_wq]
root	48	0.0	0.0	0	0	?	Ss	00:01	0:00	[watchdog]
root	50	0.0	0.0	0	0	?	S	00:01	0:00	[kauditd]

root	50	0.0	0.0	0	0	?	S	00:01	0:00	[kauditd]
root	51	0.0	0.0	0	0	?	S	00:01	0:00	[ksm]
root	52	0.0	0.0	0	0	?	Ss	00:01	0:00	[bioset]
root	90	0.0	0.0	0	0	?	Ss	00:01	0:00	[kthreadd]
root	100	0.0	0.0	0	0	?	Ss	00:01	0:00	[acpi_thermal_pm]
root	101	0.0	0.0	0	0	?	S	00:01	0:00	[scsi_eh_0]
root	102	0.0	0.0	0	0	?	Ss	00:01	0:00	[scsi_tf_0]
root	103	0.0	0.0	0	0	?	S	00:01	0:00	[scsi_eh_1]
root	104	0.0	0.0	0	0	?	Ss	00:01	0:00	[scsi_tf_1]
root	105	0.0	0.0	0	0	?	S	00:01	0:00	[scsi_eh_2]
root	106	0.0	0.0	0	0	?	Ss	00:01	0:00	[scsi_tf_2]
root	107	0.0	0.0	0	0	?	S	00:01	0:00	[scsi_eh_3]
root	108	0.0	0.0	0	0	?	Ss	00:01	0:00	[scsi_tf_3]
root	109	0.0	0.0	0	0	?	S	00:01	0:00	[scsi_eh_4]
root	110	0.0	0.0	0	0	?	Ss	00:01	0:00	[scsi_tf_4]
root	115	0.0	0.0	0	0	?	Ss	00:01	0:00	[dm_bufio_cache]
root	116	0.0	0.0	0	0	?	Ss	00:01	0:00	[ipw_addrconf]
root	150	0.0	0.0	0	0	?	Ss	00:01	0:00	[bioset]
root	151	0.0	0.0	0	0	?	Ss	00:01	0:00	[bioset]
root	200	0.0	0.0	0	0	?	S	00:01	0:01	[kworker/1:2]
root	355	0.0	0.0	0	0	?	Ss	00:01	0:00	[kworker/0:10]
root	357	0.0	0.0	0	0	?	Ss	00:01	0:00	[kworker/1:10]
root	361	0.0	0.0	0	0	?	Ss	00:01	0:00	[kworker/1:10]
root	366	0.0	0.0	0	0	?	S	00:01	0:00	[io15/signal:0]
root	367	0.0	0.0	0	0	?	S	00:01	0:00	[io15/signal:1]
root	368	0.0	0.0	0	0	?	S	00:01	0:00	[io15/signal:2]
root	369	0.0	0.0	0	0	?	S	00:01	0:00	[io15/signal:4]
root	391	0.0	0.0	0	0	?	Ss	00:01	0:00	[kworker/2:10]
root	428	0.0	0.0	0	0	?	Ss	00:01	0:00	[kdmflush]
root	429	0.0	0.0	0	0	?	Ss	00:01	0:00	[bioset]
root	441	0.0	0.0	0	0	?	Ss	00:01	0:00	[kdmflush]
root	442	0.0	0.0	0	0	?	Ss	00:01	0:00	[bioset]
root	459	0.0	0.0	0	0	?	S	00:01	0:00	[jbd2/dm-0-R]
root	460	0.0	0.0	0	0	?	Ss	00:01	0:00	[ext4-rsv-conver]
root	544	0.0	0.1	42756	9240	?	Ss	00:01	0:00	/usr/lib/systemd/systemd-journald
root	571	0.0	0.0	23956	8020	?	Ss	00:01	0:00	/usr/lib/systemd/systemd-udev
root	612	0.0	0.0	0	0	?	S	00:01	0:00	[irq/32-mei_me]
root	652	0.0	0.0	0	0	?	S	00:01	0:00	[jbd2/sda6-R]
root	653	0.0	0.0	0	0	?	Ss	00:01	0:00	[ext4-rsv-conver]
root	656	0.0	0.0	0	0	?	Ss	00:01	0:00	[kdmflush]
root	658	0.0	0.0	0	0	?	Ss	00:01	0:00	[bioset]
root	668	0.0	0.0	0	0	?	S	00:01	0:00	[jbd2/dm-2-R]
root	669	0.0	0.0	0	0	?	Ss	00:01	0:00	[ext4-rsv-conver]

```

root 693 0.0 0.0 0 0 ? 5c 00:01 0:00 /usr/sbin/iptables
root 695 0.0 0.0 20388 1908 ? 5c:1 00:01 0:00 /sbin/auditd
root 714 0.0 0.0 0 412 1384 ? 5m: 00:01 0:00 /usr/sbin/alsactl -s -n 10 -c -F ALSA_CONFIG_PATH=/etc/alsa/alsactl.conf --initfile=/lib/alsa/init/00main rdemo
root 715 0.0 0.0 11100 2080 ? 5s 00:01 0:00 /usr/sbin/mcelog --ignoreudev --daemon --foreground
root 716 0.0 0.1 50848 8302 ? 5s:1 00:01 0:00 /usr/sbin/xdmcpmanager
root 718 0.0 0.1 38854 8480 ? 5s 00:01 0:00 /usr/sbin/sssd -i -f
root 719 0.0 0.0 14632 7480 ? 5s 00:01 0:15 avahi-daemon: running [linux-3.local]
root 720 0.0 0.0 14192 1384 ? 5s:1 00:01 0:00 /usr/sbin/irqbalance --foreground
dbus 721 0.0 0.0 40312 5520 ? 5s:1 00:01 0:00 /usr/bin/dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
avahi 723 0.0 0.0 31204 276 ? 5 00:01 0:00 avahi-daemon: chroot helper
root 727 0.0 0.0 48856 3352 ? 5s:1 00:01 0:00 /usr/sbin/gssproxy -D
root 735 0.0 0.0 66848 5008 ? 5s:1 00:01 0:00 /usr/sbin/rsyslogd -n
root 736 0.0 0.0 5972 3096 ? 5s 00:01 0:00 /usr/sbin/nmtui -n -q never
root 738 0.0 0.7 43212 26520 ? 5s:1 00:01 0:00 /usr/bin/python3 -Es /usr/sbin/firewalld --nofork --nopid
rtkit 743 0.0 0.0 24164 3300 ? 5m:1 00:01 0:00 /usr/libexec/rtkit-daemon
root 748 0.0 0.1 63192 8468 ? 5s:1 00:01 0:00 /usr/sbin/abrt-d -d -s
chrony 753 0.0 0.0 22396 3356 ? 5 00:01 0:00 /usr/sbin/chronyd
root 764 0.0 0.1 38936 9236 ? 5 00:01 0:00 /usr/libexec/sss/sss_be --domain-implicit-files --uid 0 --gid 0 --debug-to-files
root 768 0.0 0.1 70260 9576 ? 5s 00:01 0:00 /usr/bin/abrt-dump-journal-ops -fxt
root 769 0.0 0.1 70274 8068 ? 5s 00:01 0:00 /usr/bin/abrt-dump-journal-xorg -fxt
root 770 0.0 0.1 70224 9412 ? 5s 00:01 0:00 /usr/bin/abrt-dump-journal-core -D -f -e
root 771 0.0 0.3 44304 32760 ? 5 00:01 0:00 /usr/libexec/sss/sss_nss --uid 0 --gid 0 --debug-to-files
root 772 0.0 0.1 66456 8548 ? 5s:1 00:01 0:00 /usr/libexec/accounts-daemon
root 773 0.0 0.0 20680 8196 ? 5s 00:01 0:00 /usr/lib/systemd/systemd-logind
root 780 0.0 0.2 83628 17480 ? 5s:1 00:01 0:00 /usr/sbin/networkmanager --no-daemon
root 789 0.0 0.1 18460 15380 ? 5s:1 00:01 0:00 /usr/lib/polkit-1/polkitd --no-debug
root 820 0.0 0.0 14776 3388 ? 5s 00:01 0:00 /usr/sbin/round -n
root 821 0.0 0.0 18184 2368 ? 5s 00:01 0:00 /usr/sbin/atd -f
root 823 0.0 0.1 73100 13760 ? 5s:1 00:01 0:00 /usr/bin/sddm
root 884 0.2 0.6 103248 56960 tty1 5s:1 00:01 0:13 /usr/libexec/xorg -nolisten tcp -auth /var/run/sddm/{28a38881-c890-485f-a7f8-244d759185bf} -backlog none -noroot
root 1013 0.0 0.1 68208 10052 ? 5s:1 00:01 0:01 /usr/libexec/udisks2/udisksd
root 1019 0.0 0.0 46296 6272 ? 5s:1 00:01 0:00 /usr/libexec/upowerd
root 1060 0.0 0.1 14492 14976 ? 5s 00:01 0:00 /usr/libexec/sdcm-helper --socket /tmp/sdcm-auth56c3439-ee0d-4e78-a091-1f03713d942 --id 1 --start /usr/bin/sta
student 1062 0.0 0.0 30164 7616 ? 5s 00:12 0:00 /usr/lib/systemd/systemd --user
student 1064 0.0 0.0 51804 2404 ? 5 00:12 0:00 (sd-pam)
student 1075 0.0 0.4 139196 33828 ? 5:1 00:12 0:00 /usr/bin/kwalletd5 --pam-login 4 17
student 1078 0.0 0.0 5704 3092 ? 5 00:12 0:00 /bin/sh /usr/bin/startkde
student 1097 0.0 0.0 33988 5988 ? 5s:1 00:12 0:00 /usr/bin/dbus-daemon --session --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
student 1102 0.0 0.0 10644 528 ? 5s 00:12 0:00 /usr/bin/ssh-agent /bin/sh -c exec -i /bin/bash -c "/usr/bin/startkde"
student 1141 0.0 0.0 4468 120 ? 5s 00:12 0:00 /usr/libexec/kf5/start_kdeinit -kded -kdeinit_startup
student 1144 0.0 0.1 64524 8732 ? 5s 00:12 0:00 kdeinit5: Running...
student 1145 0.0 0.3 128600 32528 ? 5:1 00:12 0:00 /usr/libexec/kf5/klauncher --fd=9
student 1148 0.0 0.7 277396 58832 ? 5:1 00:12 0:01 kded5 [kdeinit5]
student 1163 0.0 0.1 324144 31440 ? 5:1 00:13 0:00 /usr/bin/kaddress

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student 1173 0.0 0.4 186560 38380 ? 5:1 00:12 0:00 /usr/bin/kmservice
student 1178 0.0 0.3 128464 31444 ? 5:1 00:12 0:00 /usr/bin/kgloballaccels
student 1183 0.0 0.1 58076 11780 ? 5:1 00:12 0:00 /usr/libexec/mmission-control-5
student 1188 0.0 0.1 33116 12064 ? 5s:1 00:12 0:00 /usr/libexec/colord
student 1191 0.1 0.5 316792 79436 ? 5:1 00:12 0:13 kdeinit5
student 1205 0.0 0.2 80824 17476 ? 5:1 00:12 0:00 /usr/libexec/kf5/kscreen_backend_launcher
student 1210 0.0 0.2 112556 17784 ? 5m:1 00:12 0:00 /usr/bin/baloo_file
student 1212 0.0 0.4 151940 40124 ? 5:1 00:12 0:00 /usr/libexec/kdeconnectd
student 1214 0.0 1.2 138528 96480 ? 5:1 00:12 0:01 /usr/bin/krunner
student 1216 0.2 2.5 1818156 210240 ? 5:1 00:12 0:15 /usr/bin/plasmashell
student 1217 0.0 0.4 175786 35264 ? 5:1 00:12 0:00 /usr/libexec/kf5/polkit-kde-authentication-agent-1
student 1218 0.0 0.3 129832 30440 ? 5:1 00:12 0:00 /usr/bin/xembedsniproxy
root 1269 0.0 0.0 0 0 ? 5 00:12 0:01 [kworker/3:0]
student 1279 0.0 0.1 1404256 10852 ? 5c:1 00:12 0:00 /usr/bin/pulseaudio --start --log-target=syslog
student 1296 0.0 0.2 78068 23864 ? 5:1 00:12 0:00 /usr/bin/abrt-applet
student 1298 0.0 0.7 369124 65560 ? 5:1 00:12 0:00 /usr/bin/korgc
student 1299 0.0 0.4 151080 35040 ? 5:1 00:12 0:00 /usr/libexec/org.kde.powerdevil
student 1328 0.0 0.4 193268 35960 ? 5:1 00:12 0:00 /usr/bin/kactivitymanagerd start-daemon
student 1371 0.0 0.0 48172 7160 ? 5s:1 00:12 0:00 /usr/libexec/at-spi-bus-launcher
student 1381 0.0 0.0 33240 4660 ? 5:1 00:12 0:00 /bin/dbus-daemon --config-file=/usr/share/defaults/at-spi2/accessibility.conf --nofork --print-address 3
student 1386 0.0 0.0 38076 6560 ? 5:1 00:12 0:00 /usr/libexec/at-spi2-registrd --use-gnome-session
root 1446 0.0 0.0 35408 8116 ? 5:1 00:12 0:00 /usr/bin/abrt-dbus -t13
student 1452 0.0 0.2 130748 21020 ? 5:1 00:12 0:00 /usr/bin/akonadi_control
student 1456 0.0 0.3 344108 28148 ? 5:1 00:12 0:00 akonadi-server
student 1459 0.0 0.6 526992 55256 ? 5:1 00:12 0:02 /usr/libexec/mysqld --defaults-file=/home/student/.local/share/akonadi/mysql.conf --datadir=/home/student/.local
student 1499 0.0 0.4 145168 36248 ? 5:1 00:12 0:00 /usr/bin/akonadi_akonotes_resource --identifier akonadi_akonotes_resource 0
student 1500 0.0 0.7 345544 64860 ? 5:1 00:12 0:00 /usr/bin/akonadi_archivemail_agent --identifier akonadi_archivemail_agent
student 1501 0.0 0.4 150196 36864 ? 5:1 00:12 0:00 /usr/bin/akonadi_birthdays_resource --identifier akonadi_birthdays_resource
student 1502 0.0 0.4 144012 36284 ? 5:1 00:12 0:00 /usr/bin/akonadi_contacts_resource --identifier akonadi_contacts_resource 0
student 1503 0.0 0.4 160046 39700 ? 5:1 00:12 0:00 /usr/bin/akonadi_followupreminder_agent --identifier akonadi_followupreminder_agent
student 1504 0.0 0.4 151472 38064 ? 5:1 00:12 0:00 /usr/bin/akonadi_ical_resource --identifier akonadi_ical_resource 0
student 1507 0.0 0.4 154560 40440 ? 5m:1 00:12 0:00 /usr/bin/akonadi_indexing_agent --identifier akonadi_indexing_agent
student 1510 0.0 0.4 145168 35732 ? 5:1 00:12 0:00 /usr/bin/akonadi_maildir_resource --identifier akonadi_maildir_resource 0
student 1529 0.0 0.4 153648 37248 ? 5:1 00:12 0:00 /usr/bin/akonadi_maildispatcher_agent --identifier akonadi_maildispatcher_agent
student 1530 0.0 0.8 351476 67084 ? 5:1 00:12 0:00 /usr/bin/akonadi_mailfilter_agent --identifier akonadi_mailfilter_agent
student 1531 0.0 0.4 144376 36524 ? 5:1 00:12 0:00 /usr/bin/akonadi_migration_agent --identifier akonadi_migration_agent
student 1532 0.0 0.7 317728 58360 ? 5:1 00:12 0:00 /usr/bin/akonadi_newmailnotifier_agent --identifier akonadi_newmailnotifier_agent
student 1533 0.0 0.7 343160 63856 ? 5:1 00:12 0:00 /usr/bin/akonadi_sendlater_agent --identifier akonadi_sendlater_agent
student 1601 0.0 0.3 130584 32776 ? 5:1 00:12 0:00 /usr/bin/kuiserver5
root 1605 0.0 0.0 31532 7176 ? 5s 00:12 0:00 /usr/bin/cupsd -l
root 1607 0.1 1.0 172776 88596 ? 5s:1 00:12 0:00 /usr/libexec/packageltd
root 1830 0.0 0.0 0 0 ? 5 00:49 0:00 [kworker/3:1]
root 1845 0.0 0.0 0 0 ? 5 00:50 0:00 [kworker/2:2]
root 1870 0.0 0.0 0 0 ? 5 00:50 0:00 [kworker/0:0]

```

```

root      1002  0.1  1.0 122724 88596 ?        Ssl  00:12  0:00 /usr/libexec/packagekitd
root      1030  0.0  0.0   0   0 ?        S    00:10  0:00 [worker/3:1]
root      1045  0.0  0.0   0   0 ?        S    00:10  0:00 [worker/2:2]
root      1039  0.0  0.0   0   0 ?        S    00:09  0:00 [worker/0:0]
root      1042  0.0  0.0   0   0 ?        S    00:10  0:00 [worker/0:3]
root      1052  0.0  0.0   0   0 ?        S    00:11  0:00 [worker/0:2]
root      1060  0.0  0.0   0   0 ?        S    00:13  0:00 [worker/0:1]
student   2004  3.6  2.1 132190 193748 ?        Sl   00:16  0:13 /usr/bin/naarok
student   2008  0.0  0.1  83100 15240 ?        Ss   00:16  0:00 kdeinit4: kdeinit4 Running...
student   2010  0.0  0.2  89312 19168 ?        S    00:16  0:00 kdeinit4: klauncher [kdeinit] --fd=9
student   2012  0.0  0.3 108896 27292 ?        S    00:16  0:00 kdeinit4: kded4 [kdeinit]
student   2014  0.0  0.0  12508 2708 ?        S    00:16  0:00 /usr/libexec/gan_server
student   2052  0.0  0.5 436824 45472 ?        Sl   00:17  0:00 /usr/bin/kmotify2
student   2087  0.0  0.2  88256 22272 ?        S    00:17  0:00 /usr/libexec/kde4/kio_http_cache_cleaner
root      2114  0.0  0.0   0   0 ?        S    00:17  0:00 [worker/1:0]
student   2121  0.3  0.6 172348 56072 ?        Rl   00:20  0:00 /usr/bin/konsole
student   2125  0.0  0.0  14500 3096 pts/1    Ss   00:20  0:00 /bin/bash
root      2158  0.0  0.0   0   0 ?        S    00:22  0:00 [worker/1:1]
student   2163  0.0  0.0 16672 3616 pts/1    R+   00:23  0:00 ps -aux

[student@localhost ~]$ uname -n
localhost
[student@localhost ~]$ uname -r
4.11.8-300.fc26.i686PAE
[student@localhost ~]$ uname -s
linux
[student@localhost ~]$ uname -v
#1 SMP Thu Jun 29 20:38:21 UTC 2017
[student@localhost ~]$ uname -a
Linux localhost.localdomain 4.11.8-300.fc26.i686PAE #1 SMP Thu Jun 29 20:38:21 UTC 2017 i686 i686 i386 GNU/Linux
[student@localhost ~]$ pwd
/home/student
[student@localhost ~]$ ls
Desktop  Documents  Downloads  filename.sh  gowtham  karthi79  'lab 2 05.txt'  Music  os.txt  Pictures  Public  stu  Templates  Videos  wx  wxcollege
[student@localhost ~]$ mv os.txt karthi79
[student@localhost ~]$ cat karthi79
cat: karthi79: Is a directory
[student@localhost ~]$ ls karthi79
os.txt
[student@localhost ~]$ cat os.txt
cat: os.txt: No such file or directory
[student@localhost ~]$ cd karthi79
[student@localhost karthi79]$ cat os.txt

```

```

Linux localhost.localdomain 4.11.8-300.fc26.i686PAE #1 SMP Thu Jun 29 20:38:21 UTC 2017 i686 i686 i386 GNU/Linux
[student@localhost ~]$ pwd
/home/student
[student@localhost ~]$ ls
Desktop  Documents  Downloads  filename.sh  gowtham  karthi79  'lab 2 05.txt'  Music  os.txt  Pictures  Public  stu  Templates  Videos  wx  wxcollege
[student@localhost ~]$ mv os.txt karthi79
[student@localhost ~]$ cat karthi79
cat: karthi79: Is a directory
[student@localhost ~]$ ls karthi79
os.txt
[student@localhost ~]$ cat os.txt
cat: os.txt: No such file or directory
[student@localhost ~]$ cd karthi79
[student@localhost karthi79]$ cat os.txt
Hi hello, how are you?
Good Bye
[student@localhost karthi79]$ cd -
/home/student
[student@localhost ~]$ cat os.txt
cat: os.txt: No such file or directory
[student@localhost ~]$ cd karthi79
[student@localhost karthi79]$ wc os.txt
2  9 32 os.txt
[student@localhost karthi79]$ cd -
/home/student
[student@localhost ~]$ top gowtham
top: unknown option 'g'
Usage:
top -hw [-bchioss] -d secs -n max -u[u] user -p pid(s) -o field -w [cols]
[student@localhost ~]$ head gowtham
r
e
c
c
o
l
e
g
e
[student@localhost ~]$ tail gowtham
e
t

```

```

o
l
l
o
o
o
[student@localhost ~]$ tail gowham
e
t
h
a
n
o
a
l
a
n
[student@localhost ~]$ ping gowham
ping: gowham: Name or service not known
[student@localhost ~]$ cd karthi79
[student@localhost karthi79]$ ping os.txt
ping: os.txt: Name or service not known
[student@localhost karthi79]$ cd -
/home/student
[student@localhost ~]$ ifconfig
enp2s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 172.16.0.29 netmask 255.255.252.0 broadcast 172.16.11.255
    inet6 fe80::354c:b27:ebcc:5d62 prefixlen 64 scopeid 0x20<link>
    ether f8:b6:12:90:45:7e txqueuelen 1000 (Ethernet)
    RX packets 406135 bytes 342188533 (326.3 MiB)
    RX errors 0 dropped 109 overruns 0 frame 0
    TX packets 7802 bytes 474073 (462.9 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (local loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
[student@localhost ~]$ cd karthi79

```

```

[student@localhost karthi79]$ cd -
/home/student
[student@localhost ~]$ ifconfig
enp2s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 172.16.0.29 netmask 255.255.252.0 broadcast 172.16.11.255
    inet6 fe80::354c:b27:ebcc:5d62 prefixlen 64 scopeid 0x20<link>
    ether f8:b6:12:90:45:7e txqueuelen 1000 (Ethernet)
    RX packets 406135 bytes 342188533 (326.3 MiB)
    RX errors 0 dropped 109 overruns 0 frame 0
    TX packets 7802 bytes 474073 (462.9 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (local loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[student@localhost ~]$ cd karthi79
[student@localhost karthi79]$ sort -r os.txt
Hi hello, how are you?
Good Bye
[student@localhost karthi79]$ sort -n os.txt
Good Bye
Hi hello, how are you?
[student@localhost karthi79]$ sort -m os.txt
Hi hello, how are you?
Good Bye
[student@localhost karthi79]$ grep "h" os.txt
bash: grep: command not found
[student@localhost karthi79]$ grep "h" os.txt
Hi hello, how are you?
[student@localhost karthi79]$ tail os.txt
Hi hello, how are you?
Good Bye
[student@localhost karthi79]$ who;date
student pts/0      2025-01-25 00:12 (i0)
student pts/1      2025-01-25 00:20 (i0)
Sat Jan 25 09:11:14 IST 2025
[student@localhost karthi79]$ who&&date

```

```

inet 172.16.0.20 netmask 255.255.252.0 broadcast 172.16.11.255
inet6 fe80::354c:b27:ebcc:5d62 prefixlen 64 scopeid 0x20<link>
ether fa:bc:12:98:45:7e txqueuelen 1000 (Ethernet)
RX packets 409155 bytes 342188533 (326.3 MiB)
RX errors 0 dropped 109 overruns 0 frame 0
TX packets 789 bytes 47407 (462.9 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (local loopback)
RX packets 0 bytes 0 (0.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 0 bytes 0 (0.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[student@localhost ~]$ cd karthi79
[student@localhost karthi79]$ sort -r os.txt
Hi hello, how are you?
Good Bye
[student@localhost karthi79]$ sort -n os.txt
Good Bye
Hi hello, how are you?
[student@localhost karthi79]$ sort -n os.txt
Hi hello, how are you?
Good Bye
[student@localhost karthi79]$ grep "h" os.txt
bash: grep: command not found
[student@localhost karthi79]$ grep "h" os.txt
Hi hello, how are you?
[student@localhost karthi79]$ tail os.txt
Hi hello, how are you?
Good Bye
[student@localhost karthi79]$ who;date
student pts/0 2025-01-25 08:12 (:0)
student pts/1 2025-01-25 09:20 (:0)
Sat Jan 25 09:21:14 IST 2025
[student@localhost karthi79]$ who&&date
student pts/0 2025-01-25 08:12 (:0)
student pts/1 2025-01-25 09:20 (:0)
Sat Jan 25 09:31:33 IST 2025
[student@localhost karthi79]$

```

RESULT:

Thus, the program of basic Linux commands has been executed and the output has been verified.

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