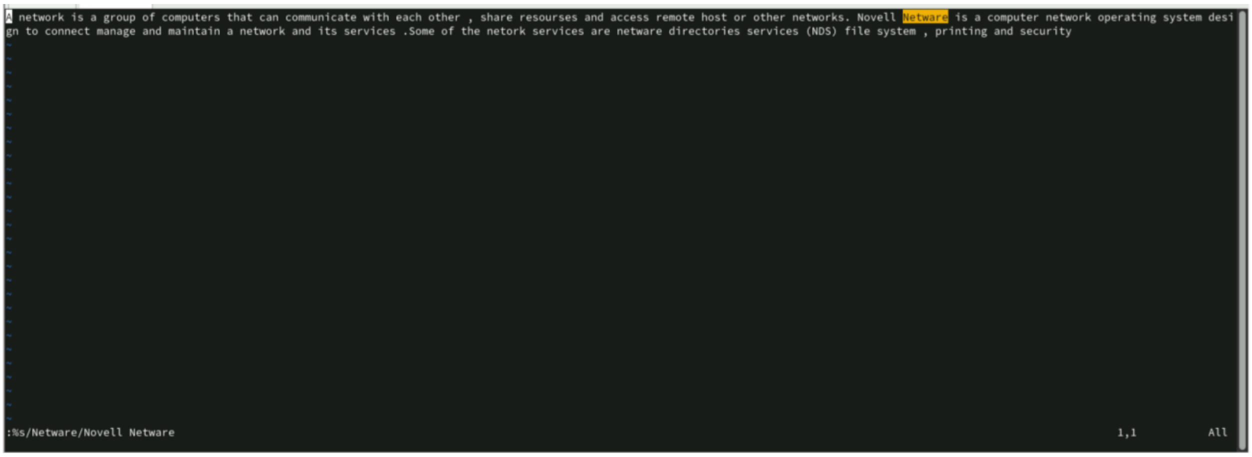
Working with a Vi Editor:

1: Create a file using vi. Enter the following text:

A network is a group of computers that can communicate with each other, share resources, and access remote hosts or other networks. Netware is a computer network operating system designed to connect, manage, and maintain a network and its services. Some of the network services are Netware Directory Services (NDS), file system, printing and security.

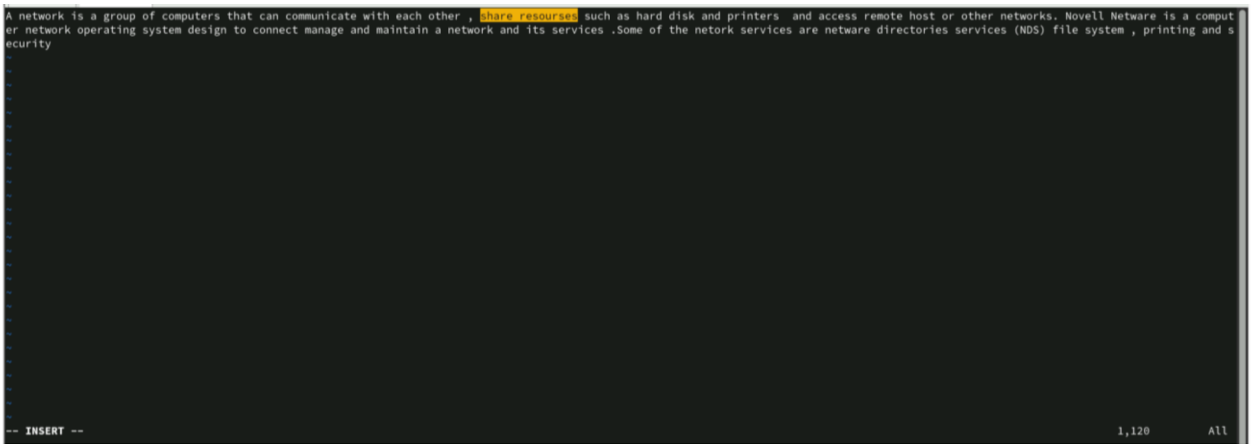
a. Change the word “Netware” in the second line to “Novell Netware”.



```
A network is a group of computers that can communicate with each other , share resourses and access remote host or other networks. Novell Netware is a computer network operating system desi
gn to connect manage and maintain a network and its services .Some of the netork services are netware directories services (NDS) file system , printing and security

:%s/Netware/Novell Netware                                                                                                                                            1,1           All
```

b. Insert the text “(such as hard disks and printers)” after “share resources” in the first line.

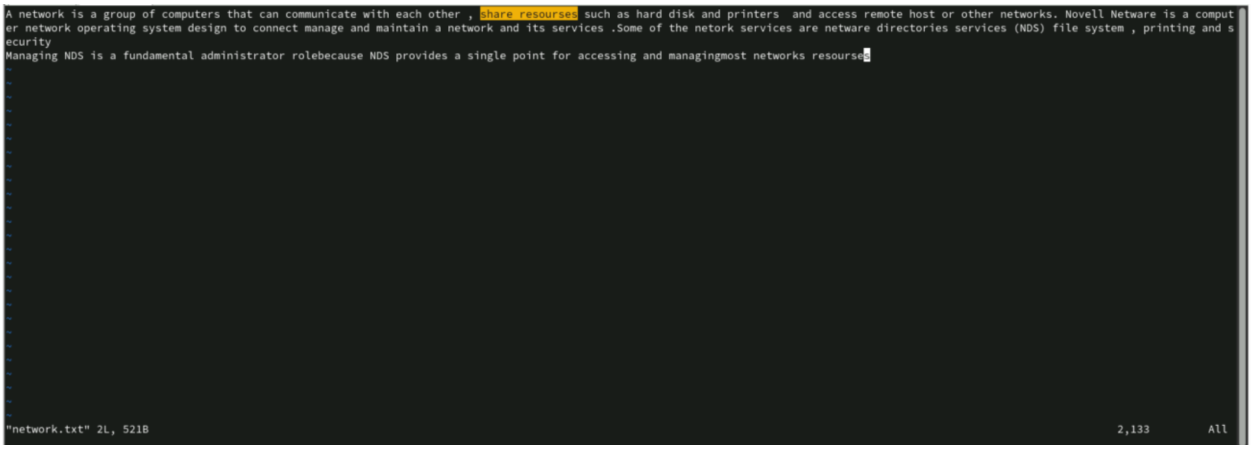


```
A network is a group of computers that can communicate with each other , share resourses such as hard disk and printers  and access remote host or other networks. Novell Netware is a comput
er network operating system design to connect manage and maintain a network and its services .Some of the netork services are netware directories services (NDS) file system , printing and s
ecurity

-- INSERT --                                                                                                                                                          1,120         All
```

c. Append the following text to the file:

“Managing NDS is a fundamental administrator role because NDS provides a single point for accessing and managing most network resources.”



```
A network is a group of computers that can communicate with each other , share resourses such as hard disk and printers  and access remote host or other networks. Novell Netware is a comput
er network operating system design to connect manage and maintain a network and its services .Some of the netork services are netware directories services (NDS) file system , printing and s
ecurity
Managing NDS is a fundamental administrator rolebecause NDS provides a single point for accessing and managingmost networks resourses
~
~
~
~
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~
~
~
~
~
~
~
~
"network.txt" 2L, 521B                                                                                                                         2,133         All
```

Working shell

1. Type some text on the shell separated by space

1: Move cursor one word back : Alt + B

2: Move cursor one word forward : Alt + F

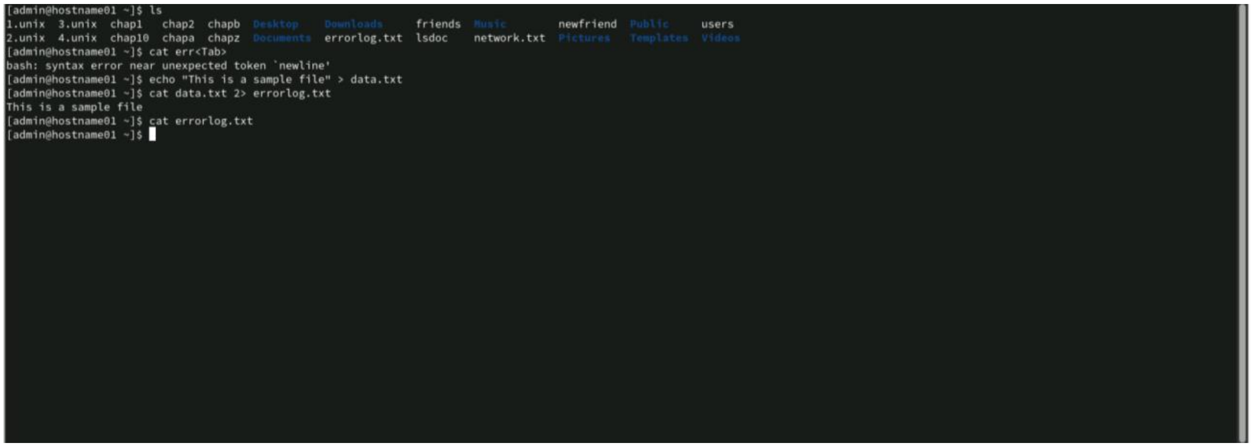
3: Move cursor to the first character : Ctrl + A

4: Move cursor to the end : Ctrl + E

5: Delete test from second word to last character : Alt + F then Ctrl +K

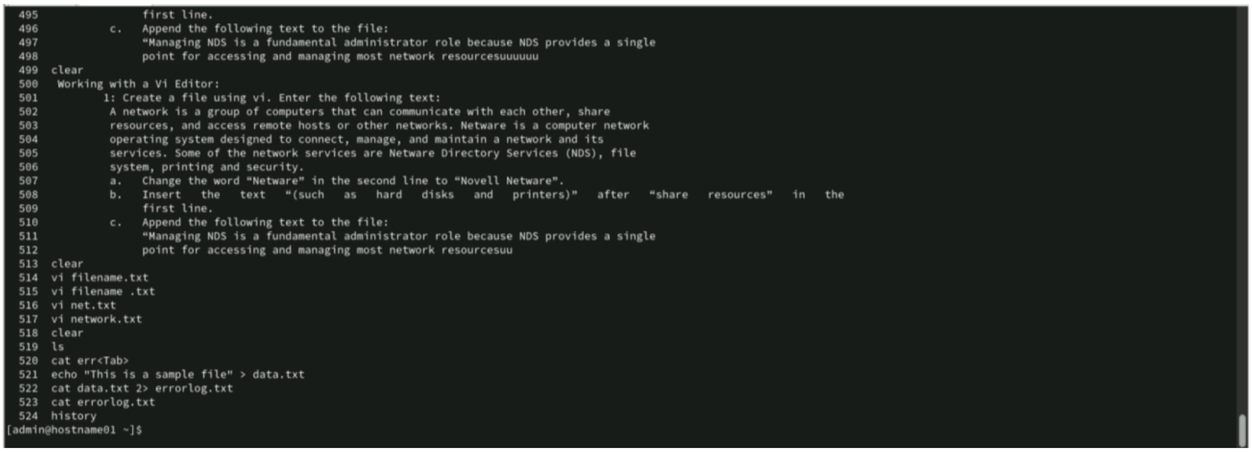
6: Delete the current line : Ctrl +U

2: In lab 4 we have created a file errorlog.txt. Display it using cat command using command completion.



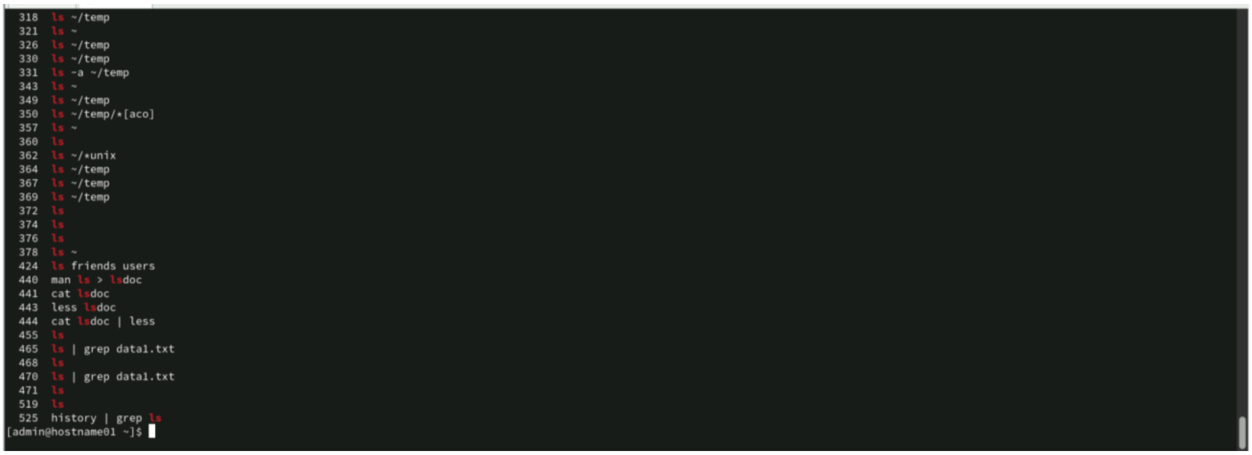
```
[admin@hostname01 ~]$ ls
1.unix  3.unix  chap1   chap2  chapb  Desktop    Downloads     friends  Music        newfriend  Public     users
2.unix  4.unix  chap10  chapa  chapz  Documents  errorlog.txt  lsdoc    network.txt  Pictures   Templates  Videos
[admin@hostname01 ~]$ cat err<Tab>
bash: syntax error near unexpected token `newline'
[admin@hostname01 ~]$ echo "This is a sample file" > data.txt
[admin@hostname01 ~]$ cat data.txt 2> errorlog.txt
This is a sample file
[admin@hostname01 ~]$ cat errorlog.txt
[admin@hostname01 ~]$ █
```

3: Display history of command used so far.



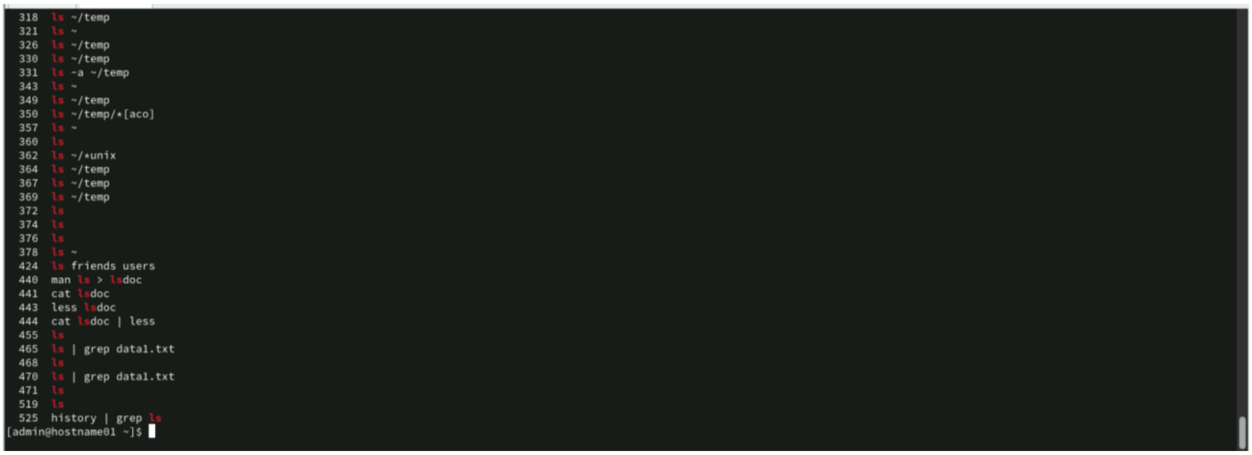
```
  495               first line.
  496          c.   Append the following text to the file:
  497               “Managing NDS is a fundamental administrator role because NDS provides a single
  498               point for accessing and managing most network resourcesuuuuuu
  499  clear
  500   Working with a Vi Editor:
  501         1: Create a file using vi. Enter the following text:
  502          A network is a group of computers that can communicate with each other, share
  503          resources, and access remote hosts or other networks. Netware is a computer network
  504          operating system designed to connect, manage, and maintain a network and its
  505          services. Some of the network services are Netware Directory Services (NDS), file
  506          system, printing and security.
  507          a.   Change the word “Netware” in the second line to “Novell Netware”.
  508          b.   Insert   the   text   “(such   as   hard   disks   and   printers)”   after   “share   resources”   in   the
  509               first line.
  510          c.   Append the following text to the file:
  511               “Managing NDS is a fundamental administrator role because NDS provides a single
  512               point for accessing and managing most network resourcesuu
  513  clear
  514  vi filename.txt
  515  vi filename .txt
  516  vi net.txt
  517  vi network.txt
  518  clear
  519  ls
  520  cat err<Tab>
  521  echo "This is a sample file" > data.txt
  522  cat data.txt 2> errorlog.txt
  523  cat errorlog.txt
  524  history
[admin@hostname01 ~]$
```

4: Search ls command in history file



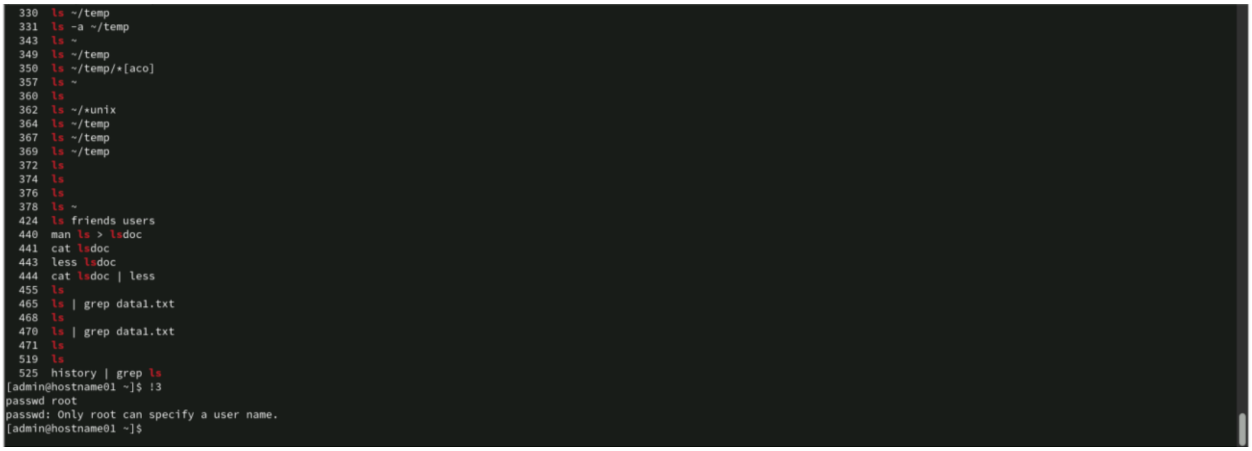
```
  318  ls ~/temp
  321  ls ~
  326  ls ~/temp
  330  ls ~/temp
  331  ls -a ~/temp
  343  ls ~
  349  ls ~/temp
  350  ls ~/temp/*[aco]
  357  ls ~
  360  ls
  362  ls ~/*unix
  364  ls ~/temp
  367  ls ~/temp
  369  ls ~/temp
  372  ls
  374  ls
  376  ls
  378  ls ~
  424  ls friends users
  440  man ls > lsdoc
  441  cat lsdoc
  443  less lsdoc
  444  cat lsdoc | less
  455  ls
  465  ls | grep data1.txt
  468  ls
  470  ls | grep data1.txt
  471  ls
  519  ls
  525  history | grep ls
[admin@hostname01 ~]$ █
```

5: Repeat the last command rd (!!)



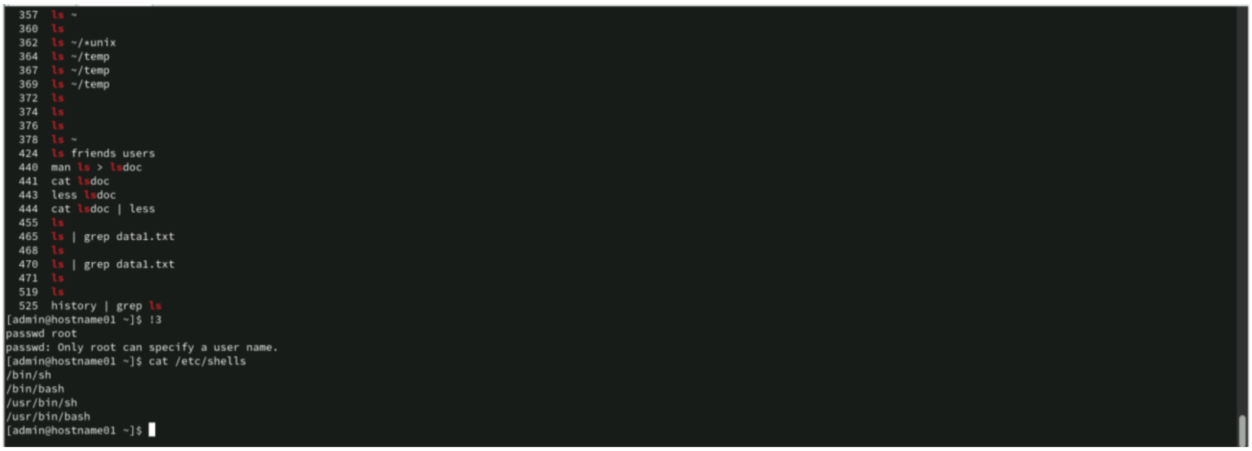
```
  318  ls ~/temp
  321  ls ~
  326  ls ~/temp
  330  ls ~/temp
  331  ls -a ~/temp
  343  ls ~
  349  ls ~/temp
  350  ls ~/temp/*[aco]
  357  ls ~
  360  ls
  362  ls ~/*unix
  364  ls ~/temp
  367  ls ~/temp
  369  ls ~/temp
  372  ls
  374  ls
  376  ls
  378  ls ~
  424  ls friends users
  440  man ls > lsdoc
  441  cat lsdoc
  443  less lsdoc
  444  cat lsdoc | less
  455  ls
  465  ls | grep data1.txt
  468  ls
  470  ls | grep data1.txt
  471  ls
  519  ls
  525  history | grep ls
[admin@hostname01 ~]$ 
```

6: Execute 3   command from history file.



```
  330  ls ~/temp
  331  ls -a ~/temp
  343  ls ~
  349  ls ~/temp
  350  ls ~/temp/*[aco]
  357  ls ~
  360  ls
  362  ls ~/*unix
  364  ls ~/temp
  367  ls ~/temp
  369  ls ~/temp
  372  ls
  374  ls
  376  ls
  378  ls ~
  424  ls friends users
  440  man ls > lsdoc
  441  cat lsdoc
  443  less lsdoc
  444  cat lsdoc | less
  455  ls
  465  ls | grep data1.txt
  468  ls
  470  ls | grep data1.txt
  471  ls
  519  ls
  525  history | grep ls
[admin@hostname01 ~]$ !3
passwd root
passwd: Only root can specify a user name.
[admin@hostname01 ~]$
```

7: What are the different shells available.

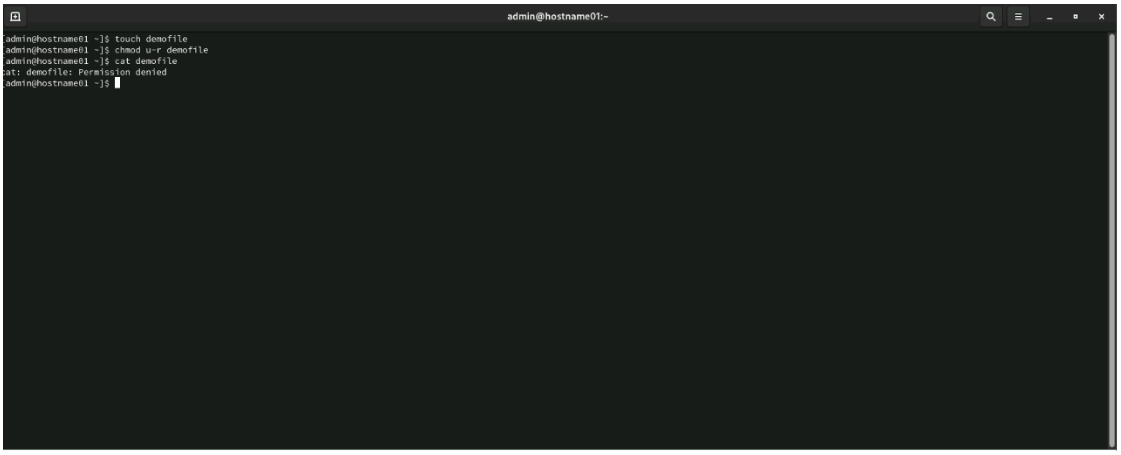


```
  357  ls ~
  360  ls
  362  ls ~/*unix
  364  ls ~/temp
  367  ls ~/temp
  369  ls ~/temp
  372  ls
  374  ls
  376  ls
  378  ls ~
  424  ls friends users
  440  man ls > lsdoc
  441  cat lsdoc
  443  less lsdoc
  444  cat lsdoc | less
  455  ls
  465  ls | grep data1.txt
  468  ls
  470  ls | grep data1.txt
  471  ls
  519  ls
  525  history | grep ls
[admin@hostname01 ~]$ !3
passwd root
passwd: Only root can specify a user name.
[admin@hostname01 ~]$ cat /etc/shells
/bin/sh
/bin/bash
/usr/bin/sh
/usr/bin/bash
[admin@hostname01 ~]$ 
```

Understanding access permissions

7.1: Create an empty file “demofile” and perform following instruction

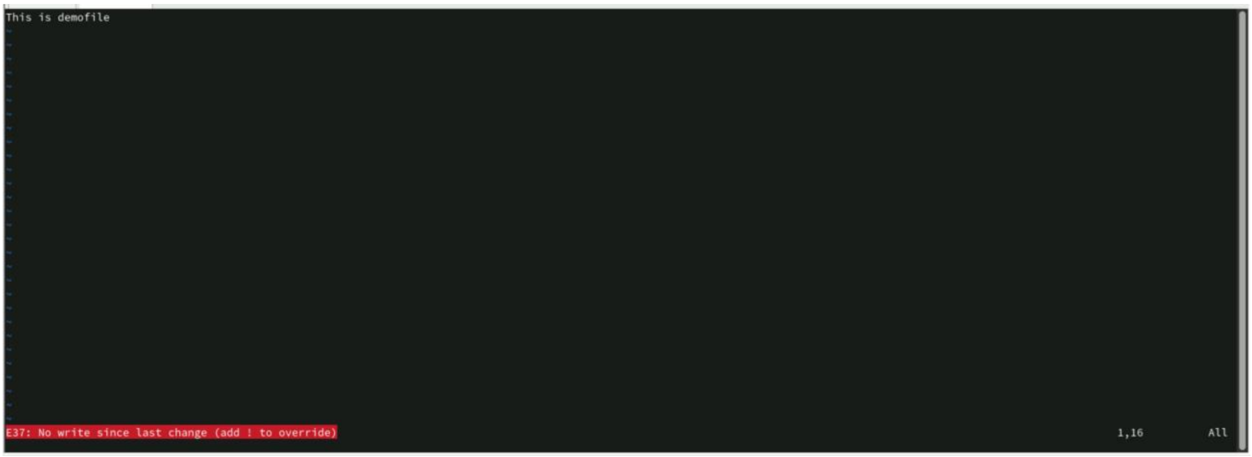
1. Revoke read permission from owner and use cat command.



```
[admin@hostname01 ~]$ touch demofile
[admin@hostname01 ~]$ chmod u-r demofile
[admin@hostname01 ~]$ cat demofile
cat: demofile: Permission denied
[admin@hostname01 ~]$ 
```

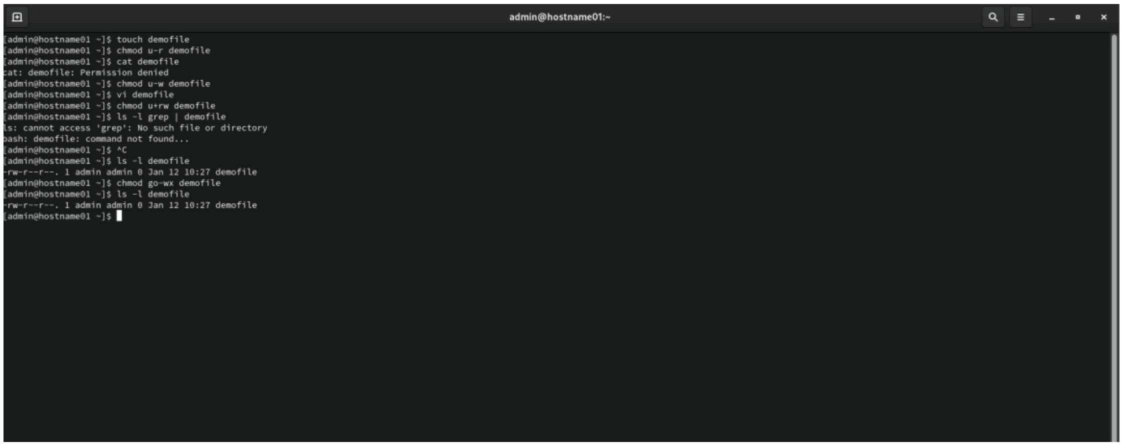
2. Revoke write permission from owner and open using vi

   editor and add some contain in it.



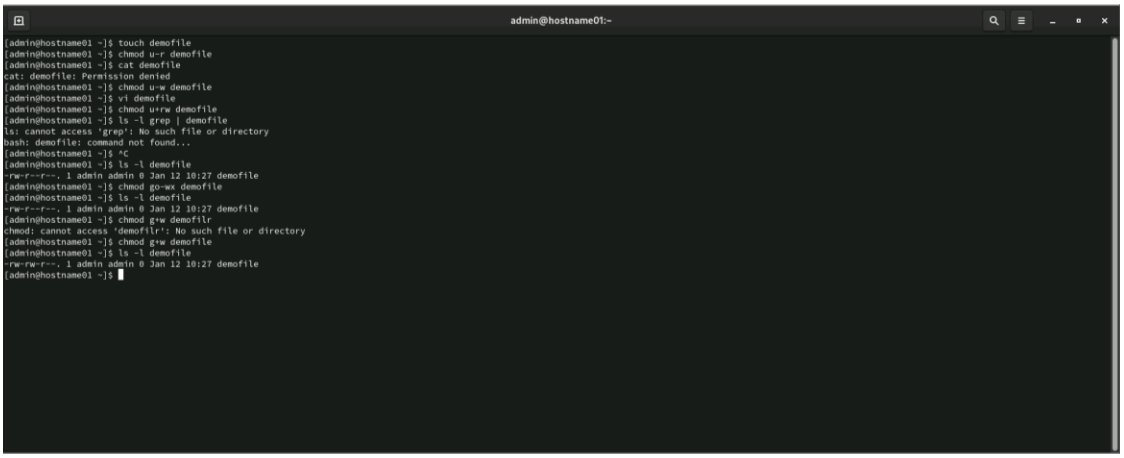
```
This is demofile
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
E37: No write since last change (add ! to override)                        1,16          All
```

3.Add read and write permission to owner.



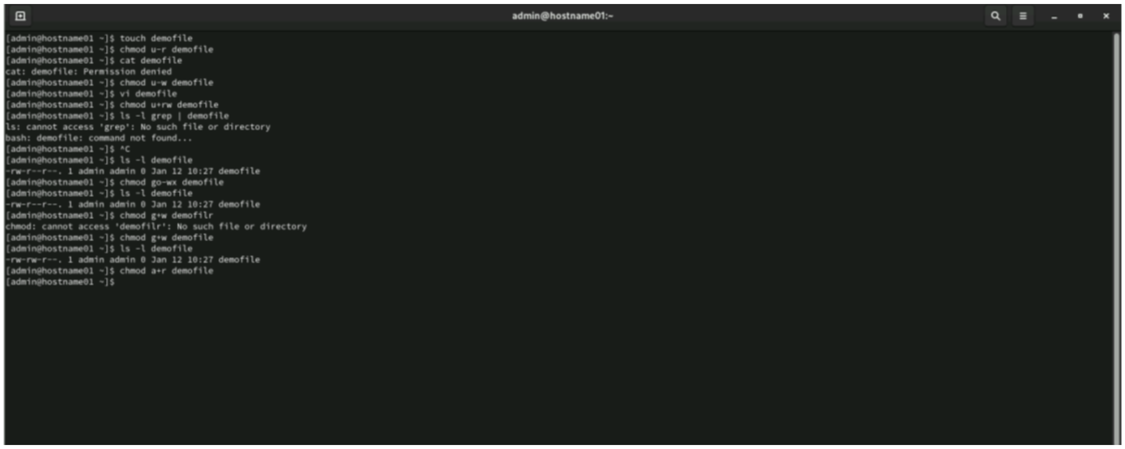
```
[admin@hostname01 ~]$ touch demofile
[admin@hostname01 ~]$ chmod u-r demofile
[admin@hostname01 ~]$ cat demofile
cat: demofile: Permission denied
[admin@hostname01 ~]$ chmod u-w demofile
[admin@hostname01 ~]$ vi demofile
[admin@hostname01 ~]$ chmod u+rw demofile
[admin@hostname01 ~]$ ls -l grep | demofile
ls: cannot access 'grep': No such file or directory
bash: demofile: command not found...
[admin@hostname01 ~]$ ^C
[admin@hostname01 ~]$ ls -l demofile
-rw-r--r--. 1 admin admin 0 Jan 12 10:27 demofile
[admin@hostname01 ~]$ chmod go-wx demofile
[admin@hostname01 ~]$ ls -l demofile
-rw-r--r--. 1 admin admin 0 Jan 12 10:27 demofile
[admin@hostname01 ~]$
```

4. Revoke write and execute from other and group



```
[admin@hostname01 ~]$ touch demofile
[admin@hostname01 ~]$ chmod u-r demofile
[admin@hostname01 ~]$ cat demofile
cat: demofile: Permission denied
[admin@hostname01 ~]$ chmod u-w demofile
[admin@hostname01 ~]$ vi demofile
[admin@hostname01 ~]$ chmod u+rw demofile
[admin@hostname01 ~]$ ls -l grep | demofile
ls: cannot access 'grep': No such file or directory
bash: demofile: command not found...
[admin@hostname01 ~]$ ^C
[admin@hostname01 ~]$ ls -l demofile
-rw-r--r--. 1 admin admin 0 Jan 12 10:27 demofile
[admin@hostname01 ~]$ chmod go-wx demofile
[admin@hostname01 ~]$ ls -l demofile
-rw-r--r--. 1 admin admin 0 Jan 12 10:27 demofile
[admin@hostname01 ~]$ chmod g+w demofilr
chmod: cannot access 'demofilr': No such file or directory
[admin@hostname01 ~]$ chmod g+w demofile
[admin@hostname01 ~]$ ls -l demofile
-rw-rw-r--. 1 admin admin 0 Jan 12 10:27 demofile
[admin@hostname01 ~]$
```

5. Add write permission to group only



```
[admin@hostname01 ~]$ touch demofile
[admin@hostname01 ~]$ chmod u-r demofile
[admin@hostname01 ~]$ cat demofile
cat: demofile: Permission denied
[admin@hostname01 ~]$ chmod u-w demofile
[admin@hostname01 ~]$ vi demofile
[admin@hostname01 ~]$ chmod u+rw demofile
[admin@hostname01 ~]$ ls -l grep | demofile
ls: cannot access 'grep': No such file or directory
bash: demofile: command not found...
[admin@hostname01 ~]$ ^C
[admin@hostname01 ~]$ ls -l demofile
-rw-r--r--. 1 admin admin 0 Jan 12 10:27 demofile
[admin@hostname01 ~]$ chmod go-wx demofile
[admin@hostname01 ~]$ ls -l demofile
-rw-r--r--. 1 admin admin 0 Jan 12 10:27 demofile
[admin@hostname01 ~]$ chmod g+w demofilr
chmod: cannot access 'demofilr': No such file or directory
[admin@hostname01 ~]$ chmod g+w demofile
[admin@hostname01 ~]$ ls -l demofile
-rw-rw-r--. 1 admin admin 0 Jan 12 10:27 demofile
[admin@hostname01 ~]$ chmod a+r demofile
[admin@hostname01 ~]$
```

6. Assign read permission to all

chmod o-r demofile

7. Revoke read permission from others

chmod u+x chap1

8. Give the execute permission for the user for a file chap1

chmod + chap1

9. Give the execute permission for user, group and others for a file add.c

touch add.c

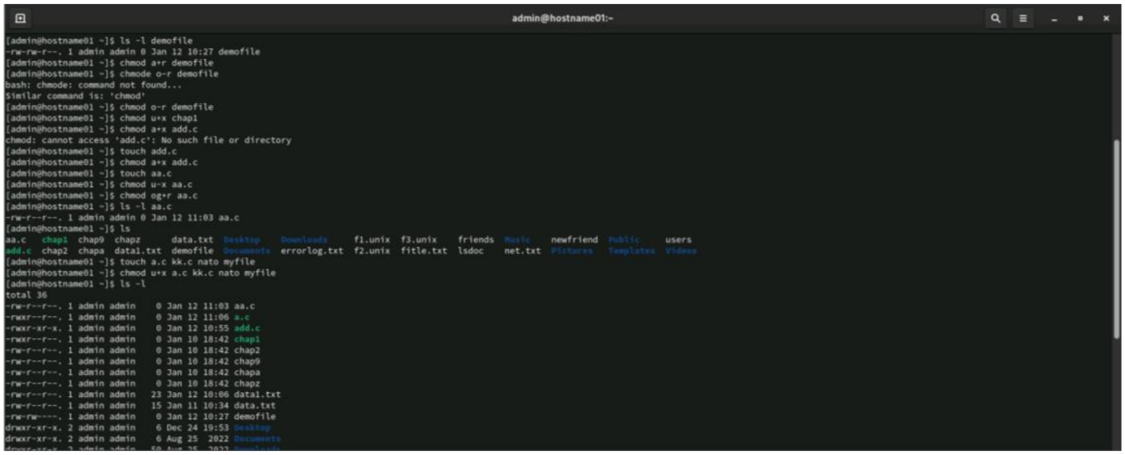
chmod a+x add.c

10. Remove the execute permission from user, give read permission to group and others for a file aa.c

```
[admin@hostname01 ~]$ chmod u-x aa.c
[admin@hostname01 ~]$ chmod og+r aa.c
[admin@hostname01 ~]$ ls -l aa.c
-rw-r--r--. 1 admin admin 0 Jan 12 11:03 aa.c
```

11. Give execute permission for users for a.c, kk.c, nato and myfile using single command

chmod u+x a.c kk.c nato myfile



```
[admin@hostname01 ~]$ ls -l demofile
-rw-rw-r--. 1 admin admin 0 Jan 12 10:27 demofile
[admin@hostname01 ~]$ chmod a+r demofile
[admin@hostname01 ~]$ chmode o-r demofile
bash: chmode: command not found...
Similar command is: 'chmod'
[admin@hostname01 ~]$ chmod o-r demofile
[admin@hostname01 ~]$ chmod u+x chap1
[admin@hostname01 ~]$ chmod a+x add.c
chmod: cannot access 'add.c': No such file or directory
[admin@hostname01 ~]$ touch add.c
[admin@hostname01 ~]$ chmod a+x add.c
[admin@hostname01 ~]$ touch aa.c
[admin@hostname01 ~]$ chmod u-x aa.c
[admin@hostname01 ~]$ chmod og+r aa.c
[admin@hostname01 ~]$ ls -l aa.c
-rw-r--r--. 1 admin admin 0 Jan 12 11:03 aa.c
[admin@hostname01 ~]$ ls
aa.c   chap1  chap9  chapz      data.txt  Desktop    Downloads     f1.unix  f3.unix    friends  Music    newfriend  Public     users
add.c  chap2  chapa  data1.txt  demofile  Documents  errorlog.txt  f2.unix  fitle.txt  lsdoc    net.txt  Pictures   Templates  Videos
[admin@hostname01 ~]$ touch a.c kk.c nato myfile
[admin@hostname01 ~]$ chmod u+x a.c kk.c nato myfile
[admin@hostname01 ~]$ ls -l
total 36
-rw-r--r--. 1 admin admin    0 Jan 12 11:03 aa.c
-rwxr--r--. 1 admin admin    0 Jan 12 11:06 a.c
-rwxr-xr-x. 1 admin admin    0 Jan 12 10:55 add.c
-rwxr--r--. 1 admin admin    0 Jan 10 18:42 chap1
-rw-r--r--. 1 admin admin    0 Jan 10 18:42 chap2
-rw-r--r--. 1 admin admin    0 Jan 10 18:42 chap9
-rw-r--r--. 1 admin admin    0 Jan 10 18:42 chapa
-rw-r--r--. 1 admin admin    0 Jan 10 18:42 chapz
-rw-r--r--. 1 admin admin   23 Jan 12 10:06 data1.txt
-rw-r--r--. 1 admin admin   15 Jan 11 10:34 data.txt
-rw-rw----. 1 admin admin    0 Jan 12 10:27 demofile
drwxr-xr-x. 2 admin admin    6 Dec 24 19:53 Desktop
drwxr-xr-x. 2 admin admin    6 Aug 25  2022 Documents
drwxr-xr-x. 2 admin admin   50 Aug 25  2022 Downloads
```

7.2: Create an directory “demo” and copy /etc/passwd file in it

[admin@hostname01 ~]$ mkdir demo

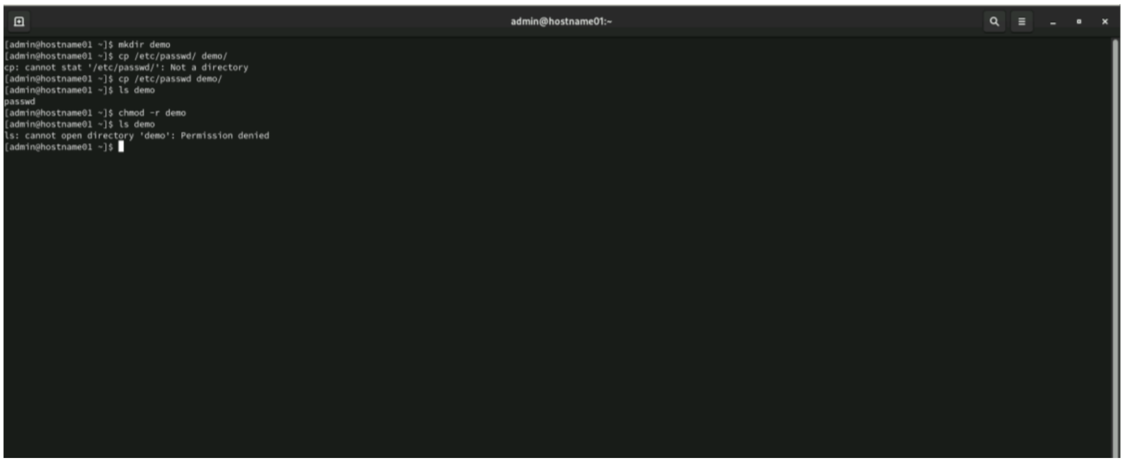
[admin@hostname01 ~]$ cp /etc/passwd demo/

1. Display contents of demo
   ls demo

2. Revoke read permission from demo directory and use ls command on it

[admin@hostname01 ~]$ chmod -r demo

[admin@hostname01 ~]$ ls demo



```
[admin@hostname01 ~]$ mkdir demo
[admin@hostname01 ~]$ cp /etc/passwd/ demo/
cp: cannot stat '/etc/passwd/': Not a directory
[admin@hostname01 ~]$ cp /etc/passwd demo/
[admin@hostname01 ~]$ ls demo
passwd
[admin@hostname01 ~]$ chmod -r demo
[admin@hostname01 ~]$ ls demo
ls: cannot open directory 'demo': Permission denied
[admin@hostname01 ~]$ 
```

3. Revoke write permission from demo directory and try to copy /etc/profile file in it

[admin@hostname01 ~]$ chmod -w demo

[admin@hostname01 ~]$ cp /etc/profile demo/

cp: cannot create regular file 'demo/profile': Permission denied

4. Delete passwd file from demo directory

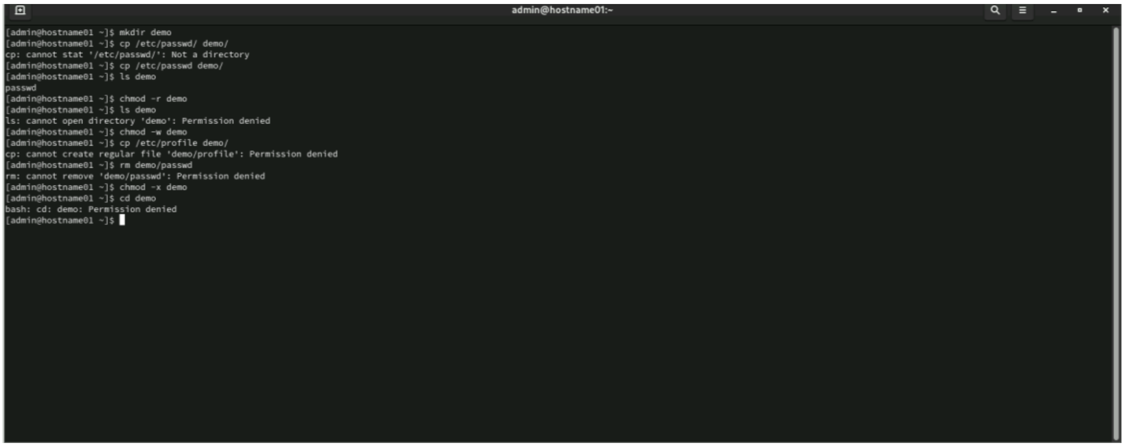
[admin@hostname01 ~]$ rm demo/passwd

rm: cannot remove 'demo/passwd': Permission denied

5. Revoke execute permission from demo directory and try cd command on demo.

[admin@hostname01 ~]$ chmod -x demo

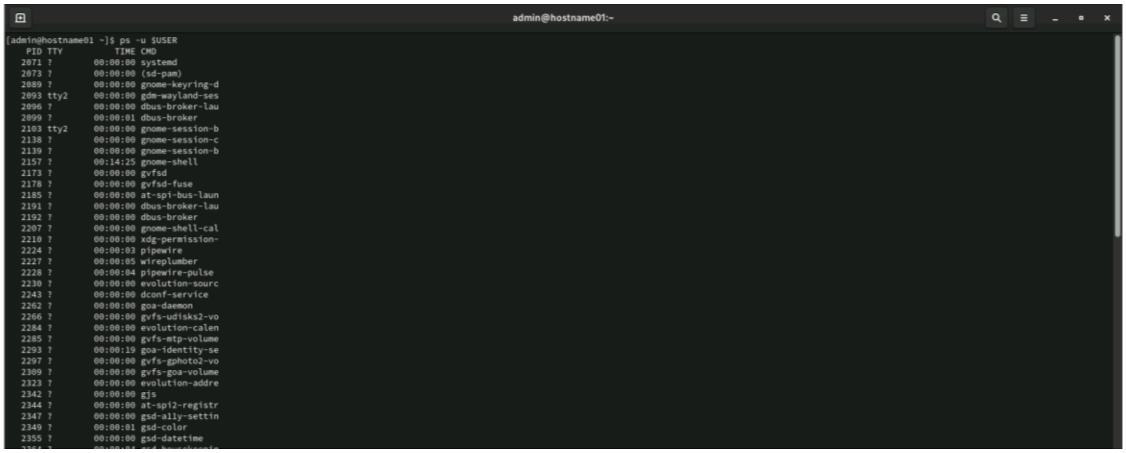
[admin@hostname01 ~]$ cd demo



```
[admin@hostname01 ~]$ mkdir demo
[admin@hostname01 ~]$ cp /etc/passwd/ demo/
cp: cannot stat '/etc/passwd/': Not a directory
[admin@hostname01 ~]$ cp /etc/passwd demo/
[admin@hostname01 ~]$ ls demo
passwd
[admin@hostname01 ~]$ chmod -r demo
[admin@hostname01 ~]$ ls demo
ls: cannot open directory 'demo': Permission denied
[admin@hostname01 ~]$ chmod -w demo
[admin@hostname01 ~]$ cp /etc/profile demo/
cp: cannot create regular file 'demo/profile': Permission denied
[admin@hostname01 ~]$ rm demo/passwd
rm: cannot remove 'demo/passwd': Permission denied
[admin@hostname01 ~]$ chmod -x demo
[admin@hostname01 ~]$ cd demo
bash: cd: demo: Permission denied
[admin@hostname01 ~]$ 
```

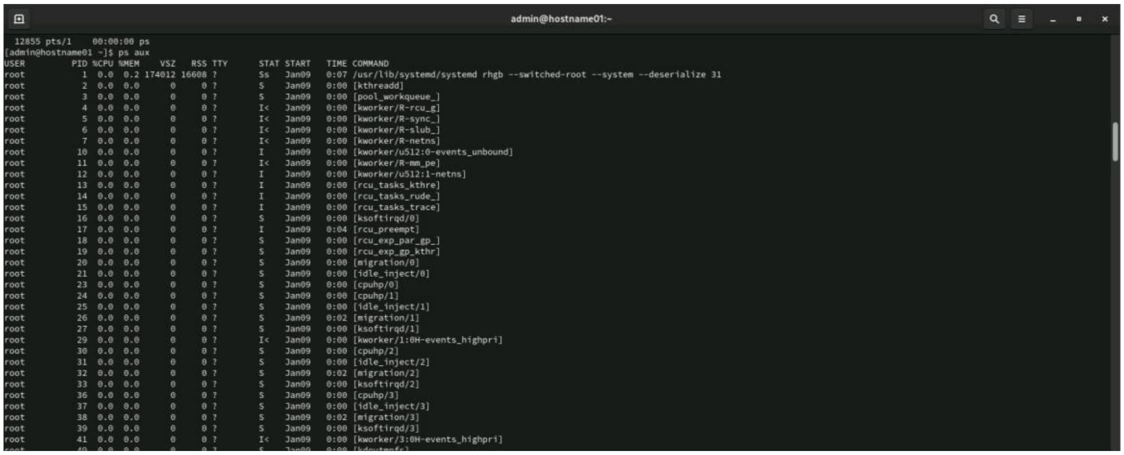
Using Process-Related Commands

1. Find out the PID of the processes that are activated by you



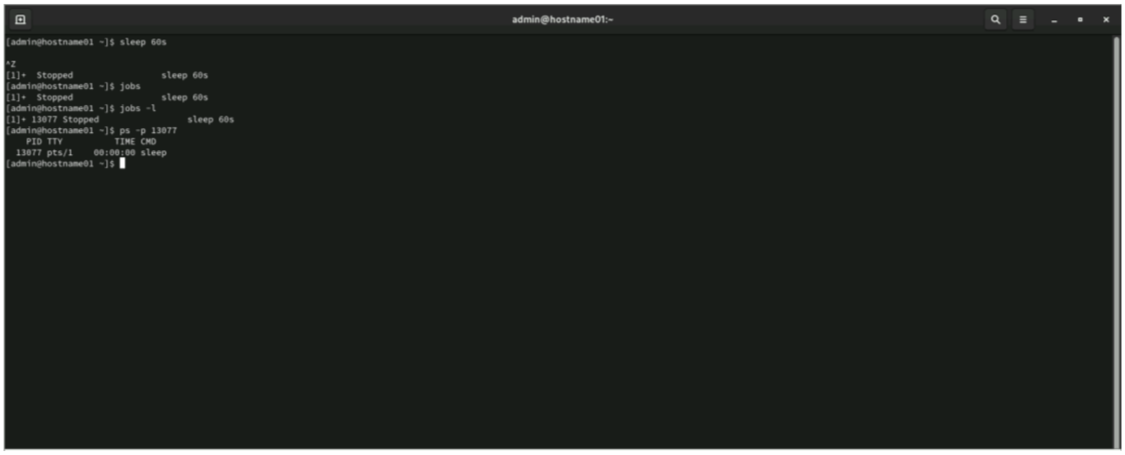
```
[admin@hostname01 ~]$ ps -u $USER
    PID TTY          TIME CMD
   2071 ?        00:00:00 systemd
   2073 ?        00:00:00 (sd-pam)
   2089 ?        00:00:00 gnome-keyring-d
   2093 tty2     00:00:00 gdm-wayland-ses
   2096 ?        00:00:00 dbus-broker-lau
   2099 ?        00:00:01 dbus-broker
   2103 tty2     00:00:00 gnome-session-b
   2138 ?        00:00:00 gnome-session-c
   2139 ?        00:00:00 gnome-session-b
   2157 ?        00:14:25 gnome-shell
   2173 ?        00:00:00 gvfsd
   2178 ?        00:00:00 gvfsd-fuse
   2185 ?        00:00:00 at-spi-bus-laun
   2191 ?        00:00:00 dbus-broker-lau
   2192 ?        00:00:00 dbus-broker
   2207 ?        00:00:00 gnome-shell-cal
   2210 ?        00:00:00 xdg-permission-
   2224 ?        00:00:03 pipewire
   2227 ?        00:00:05 wireplumber
   2228 ?        00:00:04 pipewire-pulse
   2230 ?        00:00:00 evolution-sourc
   2243 ?        00:00:00 dconf-service
   2262 ?        00:00:00 goa-daemon
   2266 ?        00:00:00 gvfs-udisks2-vo
   2284 ?        00:00:00 evolution-calen
   2285 ?        00:00:00 gvfs-mtp-volume
   2293 ?        00:00:19 goa-identity-se
   2297 ?        00:00:00 gvfs-gphoto2-vo
   2309 ?        00:00:00 gvfs-goa-volume
   2323 ?        00:00:00 evolution-addre
   2342 ?        00:00:00 gjs
   2344 ?        00:00:00 at-spi2-registr
   2347 ?        00:00:00 gsd-a11y-settin
   2349 ?        00:00:01 gsd-color
   2355 ?        00:00:00 gsd-datetime
```

2. Find out the information about all the processes that are currently active



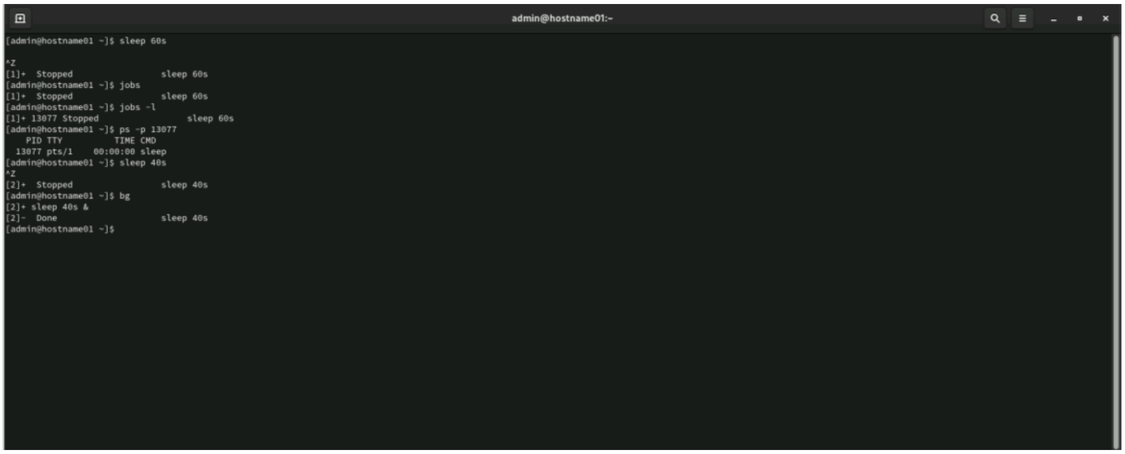
```
  12855 pts/1    00:00:00 ps
[admin@hostname01 ~]$ ps aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.0  0.2 174012 16608 ?       Ss   Jan09   0:07 /usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
root           2  0.0  0.0      0     0 ?       S    Jan09   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?       S    Jan09   0:00 [pool_workqueue_]
root           4  0.0  0.0      0     0 ?       I<   Jan09   0:00 [kworker/R-rcu_g]
root           5  0.0  0.0      0     0 ?       I<   Jan09   0:00 [kworker/R-sync_]
root           6  0.0  0.0      0     0 ?       I<   Jan09   0:00 [kworker/R-slub_]
root           7  0.0  0.0      0     0 ?       I<   Jan09   0:00 [kworker/R-netns]
root          10  0.0  0.0      0     0 ?       I    Jan09   0:00 [kworker/u512:0-events_unbound]
root          11  0.0  0.0      0     0 ?       I<   Jan09   0:00 [kworker/R-mm_pe]
root          12  0.0  0.0      0     0 ?       I    Jan09   0:00 [kworker/u512:1-netns]
root          13  0.0  0.0      0     0 ?       I    Jan09   0:00 [rcu_tasks_kthre]
root          14  0.0  0.0      0     0 ?       I    Jan09   0:00 [rcu_tasks_rude_]
root          15  0.0  0.0      0     0 ?       I    Jan09   0:00 [rcu_tasks_trace]
root          16  0.0  0.0      0     0 ?       S    Jan09   0:00 [ksoftirqd/0]
root          17  0.0  0.0      0     0 ?       I    Jan09   0:04 [rcu_preempt]
root          18  0.0  0.0      0     0 ?       S    Jan09   0:00 [rcu_exp_par_gp_]
root          19  0.0  0.0      0     0 ?       S    Jan09   0:00 [rcu_exp_gp_kthr]
root          20  0.0  0.0      0     0 ?       S    Jan09   0:00 [migration/0]
root          21  0.0  0.0      0     0 ?       S    Jan09   0:00 [idle_inject/0]
root          23  0.0  0.0      0     0 ?       S    Jan09   0:00 [cpuhp/0]
root          24  0.0  0.0      0     0 ?       S    Jan09   0:00 [cpuhp/1]
root          25  0.0  0.0      0     0 ?       S    Jan09   0:00 [idle_inject/1]
root          26  0.0  0.0      0     0 ?       S    Jan09   0:02 [migration/1]
root          27  0.0  0.0      0     0 ?       S    Jan09   0:00 [ksoftirqd/1]
root          29  0.0  0.0      0     0 ?       I<   Jan09   0:00 [kworker/1:0H-events_highpri]
root          30  0.0  0.0      0     0 ?       S    Jan09   0:00 [cpuhp/2]
root          31  0.0  0.0      0     0 ?       S    Jan09   0:00 [idle_inject/2]
root          32  0.0  0.0      0     0 ?       S    Jan09   0:02 [migration/2]
root          33  0.0  0.0      0     0 ?       S    Jan09   0:00 [ksoftirqd/2]
root          36  0.0  0.0      0     0 ?       S    Jan09   0:00 [cpuhp/3]
root          37  0.0  0.0      0     0 ?       S    Jan09   0:00 [idle_inject/3]
root          38  0.0  0.0      0     0 ?       S    Jan09   0:02 [migration/3]
root          39  0.0  0.0      0     0 ?       S    Jan09   0:00 [ksoftirqd/3]
root          41  0.0  0.0      0     0 ?       I<   Jan09   0:00 [kworker/3:0H-events_highpri]
root          40  0.0  0.0      0     0 ?       S    Jan09   0:00 [kdevtmpfs]
```

3. Start a different process in the background. Find out the status of the background process using the PID of the same.



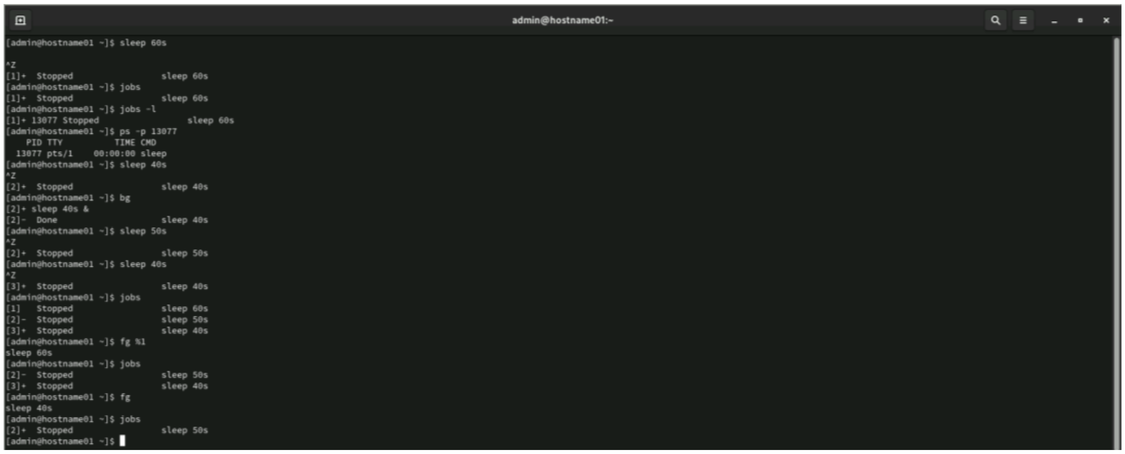
```
[admin@hostname01 ~]$ sleep 60s

^Z
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs -l
[1]+ 13077 Stopped                 sleep 60s
[admin@hostname01 ~]$ ps -p 13077
    PID TTY          TIME CMD
  13077 pts/1    00:00:00 sleep
[admin@hostname01 ~]$ 
```

4. Run a job in background



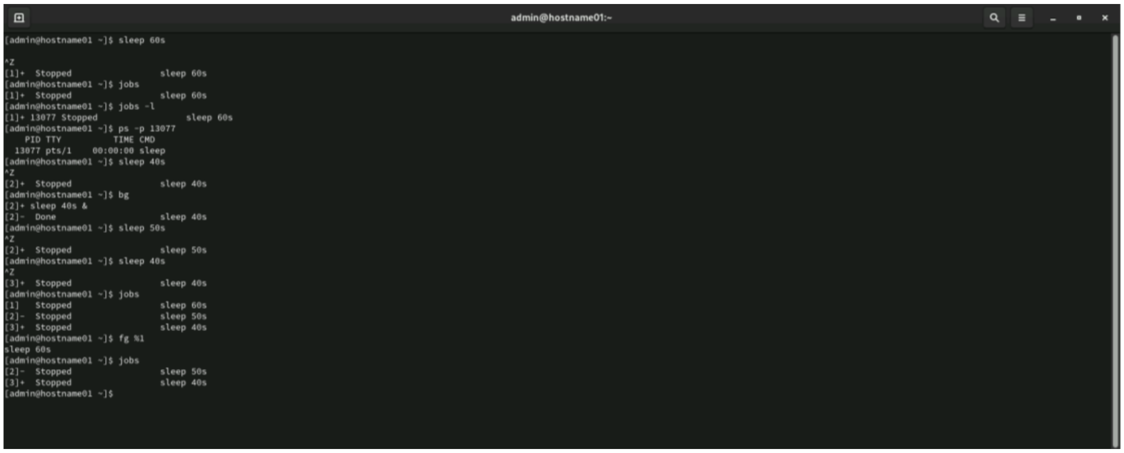
```
[admin@hostname01 ~]$ sleep 60s

^Z
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs -l
[1]+ 13077 Stopped                 sleep 60s
[admin@hostname01 ~]$ ps -p 13077
    PID TTY          TIME CMD
  13077 pts/1    00:00:00 sleep
[admin@hostname01 ~]$ sleep 40s
^Z
[2]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ bg
[2]+ sleep 40s &
[2]-  Done                    sleep 40s
[admin@hostname01 ~]$
```

5. Bring a last background job in fore ground



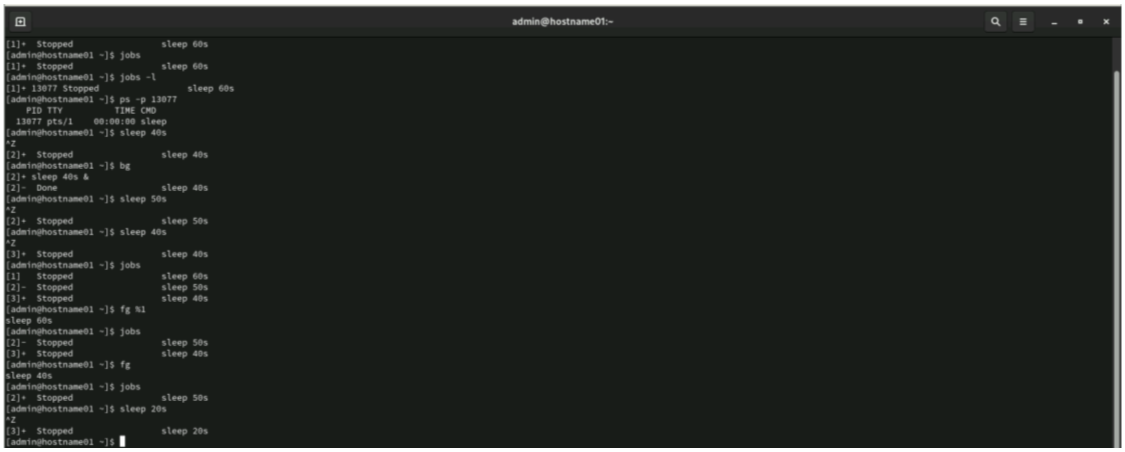
```
[admin@hostname01 ~]$ sleep 60s

^Z
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs -l
[1]+ 13077 Stopped                 sleep 60s
[admin@hostname01 ~]$ ps -p 13077
    PID TTY          TIME CMD
  13077 pts/1    00:00:00 sleep
[admin@hostname01 ~]$ sleep 40s
^Z
[2]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ bg
[2]+ sleep 40s &
[2]-  Done                    sleep 40s
[admin@hostname01 ~]$ sleep 50s
^Z
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ sleep 40s
^Z
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ jobs
[1]   Stopped                 sleep 60s
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ fg %1
sleep 60s
[admin@hostname01 ~]$ jobs
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ fg
sleep 40s
[admin@hostname01 ~]$ jobs
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ 
```

6. Run 3 jobs in background and bring first job in foreground



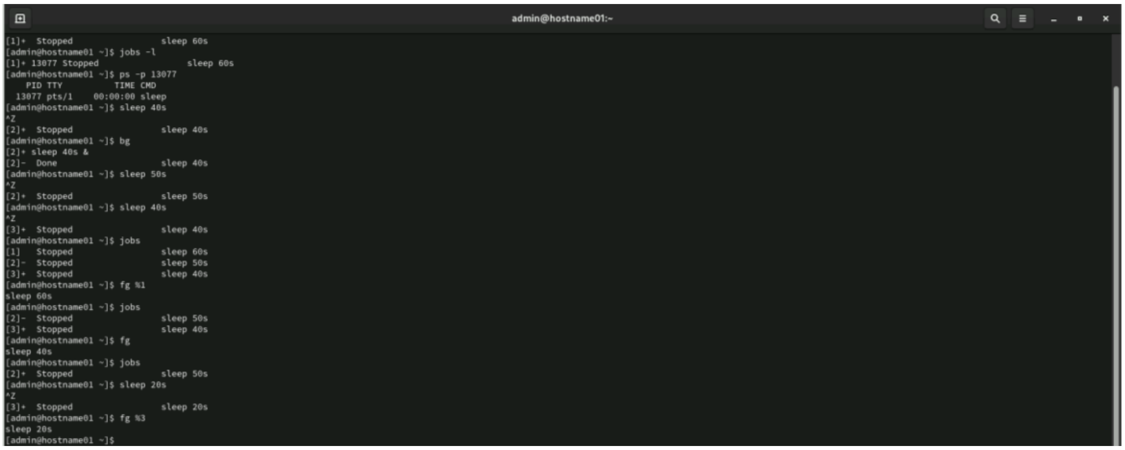
```
[admin@hostname01 ~]$ sleep 60s

^Z
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs -l
[1]+ 13077 Stopped                 sleep 60s
[admin@hostname01 ~]$ ps -p 13077
    PID TTY          TIME CMD
  13077 pts/1    00:00:00 sleep
[admin@hostname01 ~]$ sleep 40s
^Z
[2]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ bg
[2]+ sleep 40s &
[2]-  Done                    sleep 40s
[admin@hostname01 ~]$ sleep 50s
^Z
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ sleep 40s
^Z
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ jobs
[1]   Stopped                 sleep 60s
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ fg %1
sleep 60s
[admin@hostname01 ~]$ jobs
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$
```

7. Stop current job



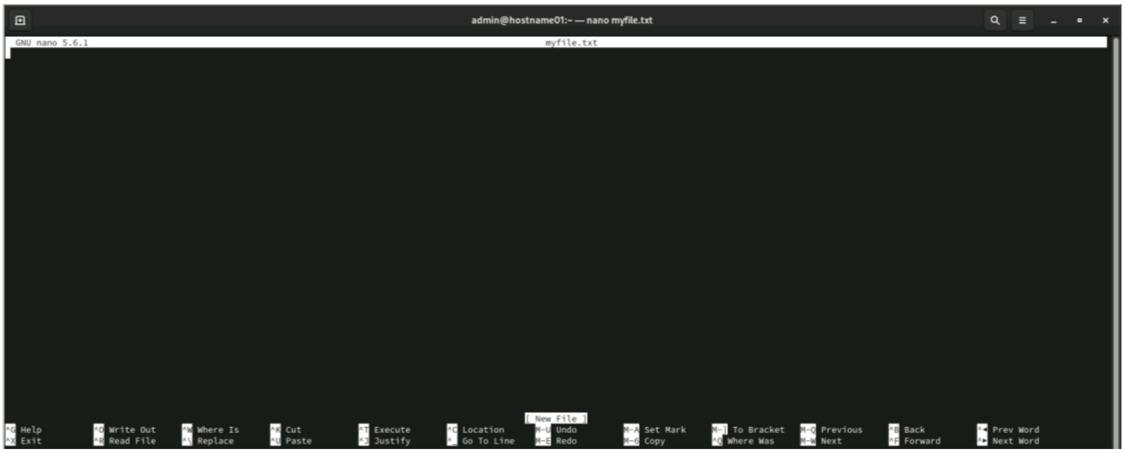
```
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs -l
[1]+ 13077 Stopped                 sleep 60s
[admin@hostname01 ~]$ ps -p 13077
    PID TTY          TIME CMD
  13077 pts/1    00:00:00 sleep
[admin@hostname01 ~]$ sleep 40s
^Z
[2]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ bg
[2]+ sleep 40s &
[2]-  Done                    sleep 40s
[admin@hostname01 ~]$ sleep 50s
^Z
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ sleep 40s
^Z
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ jobs
[1]   Stopped                 sleep 60s
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ fg %1
sleep 60s
[admin@hostname01 ~]$ jobs
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ fg
sleep 40s
[admin@hostname01 ~]$ jobs
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ sleep 20s
^Z
[3]+  Stopped                 sleep 20s
[admin@hostname01 ~]$ 
```

8. Start stopped job



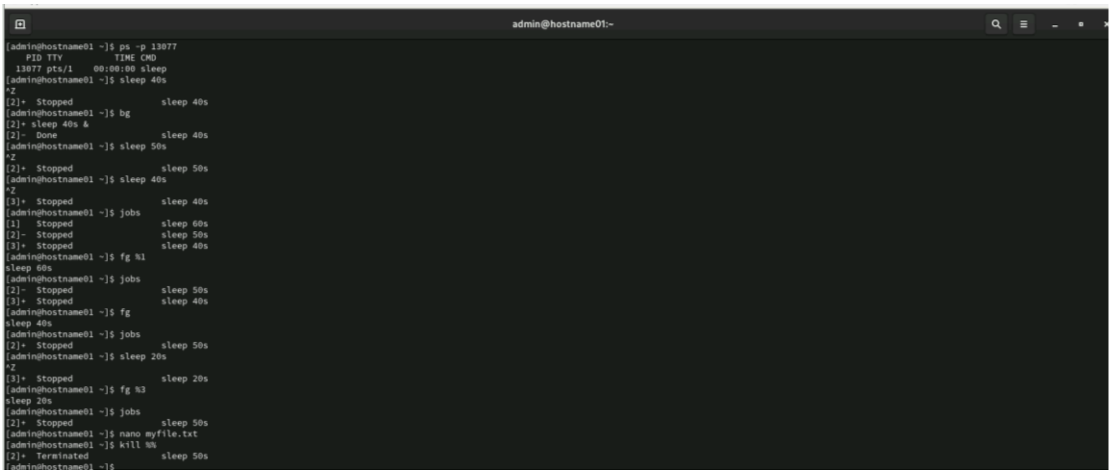
```
[1]+  Stopped                 sleep 60s
[admin@hostname01 ~]$ jobs -l
[1]+ 13077 Stopped                 sleep 60s
[admin@hostname01 ~]$ ps -p 13077
    PID TTY          TIME CMD
  13077 pts/1    00:00:00 sleep
[admin@hostname01 ~]$ sleep 40s
^Z
[2]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ bg
[2]+ sleep 40s &
[2]-  Done                    sleep 40s
[admin@hostname01 ~]$ sleep 50s
^Z
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ sleep 40s
^Z
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ jobs
[1]   Stopped                 sleep 60s
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ fg %1
sleep 60s
[admin@hostname01 ~]$ jobs
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ fg
sleep 40s
[admin@hostname01 ~]$ jobs
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ sleep 20s
^Z
[3]+  Stopped                 sleep 20s
[admin@hostname01 ~]$ fg %3
sleep 20s
[admin@hostname01 ~]$
```

9. Run a job



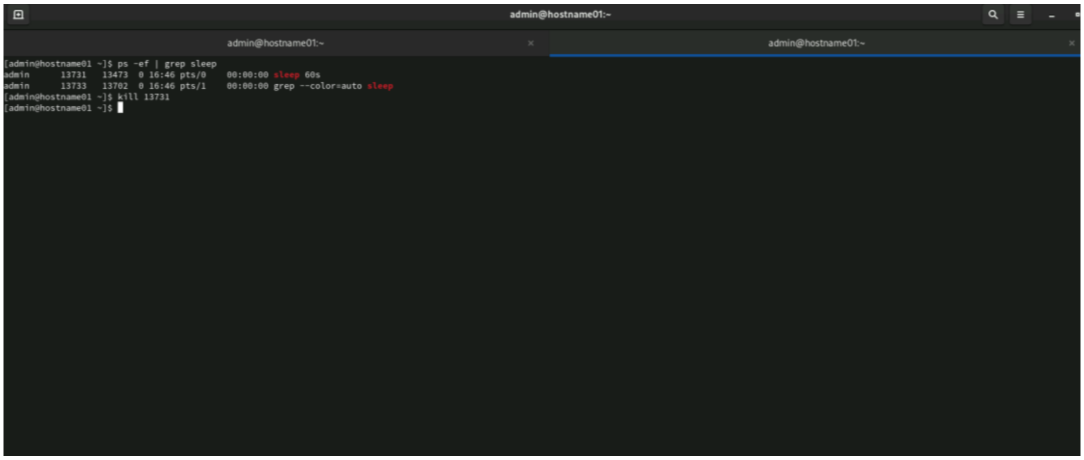
```
  GNU nano 5.6.1                                   myfile.txt





                                                   [ New File ]
^G Help        ^O Write Out   ^W Where Is    ^K Cut         ^T Execute     ^C Location    M-U Undo       M-A Set Mark   M-] To Bracket M-Q Previous   ^B Back        ^◂ Prev Word
^X Exit        ^R Read File   ^\ Replace     ^U Paste       ^J Justify     ^_ Go To Line  M-E Redo       M-6 Copy       ^Q Where Was   M-W Next       ^F Forward     ^▸ Next Word
```

10. Kill last job



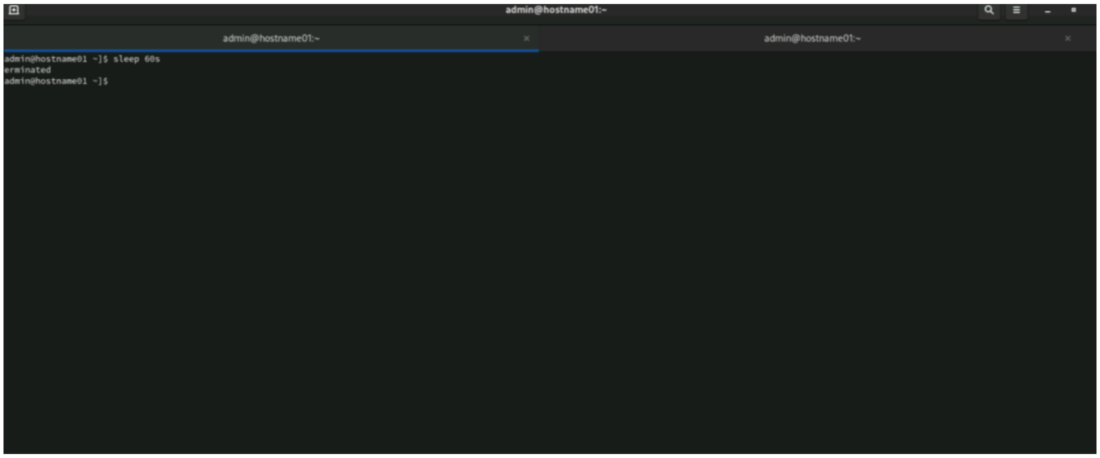
```
[admin@hostname01 ~]$ ps -p 13077
    PID TTY          TIME CMD
  13077 pts/1    00:00:00 sleep
[admin@hostname01 ~]$ sleep 40s
^Z
[2]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ bg
[2]+ sleep 40s &
[2]-  Done                    sleep 40s
[admin@hostname01 ~]$ sleep 50s
^Z
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ sleep 40s
^Z
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ jobs
[1]   Stopped                 sleep 60s
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ fg %1
sleep 60s
[admin@hostname01 ~]$ jobs
[2]-  Stopped                 sleep 50s
[3]+  Stopped                 sleep 40s
[admin@hostname01 ~]$ fg
sleep 40s
[admin@hostname01 ~]$ jobs
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ sleep 20s
^Z
[3]+  Stopped                 sleep 20s
[admin@hostname01 ~]$ fg %3
sleep 20s
[admin@hostname01 ~]$ jobs
[2]+  Stopped                 sleep 50s
[admin@hostname01 ~]$ nano myfile.txt
[admin@hostname01 ~]$ kill %%
[2]+  Terminated              sleep 50s
[admin@hostname01 ~]$
```

11. Kill your shell using process id



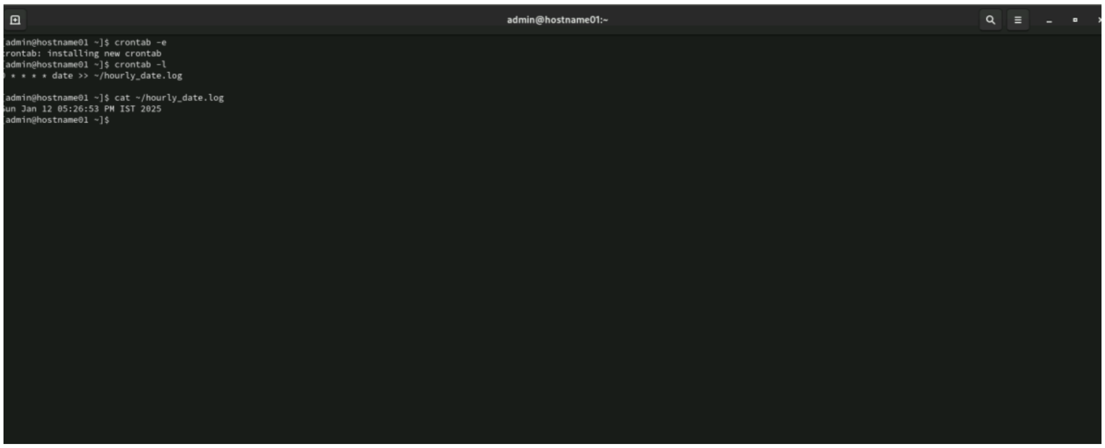
```
[admin@hostname01 ~]$ ps -ef | grep sleep
admin      13731   13473  0 16:46 pts/0    00:00:00 sleep 60s
admin      13733   13702  0 16:46 pts/1    00:00:00 grep --color=auto sleep
[admin@hostname01 ~]$ kill 13731
[admin@hostname01 ~]$ 
```

12. Execute a ls command by setting priority as -10 using nice command



```
admin@hostname01 ~]$ sleep 60s
erminated
admin@hostname01 ~]$
```

13. Display a date on every hour using cron tab



```
admin@hostname01 ~]$ crontab -e
rontab: installing new crontab
admin@hostname01 ~]$ crontab -l
 * * * * date >> ~/hourly_date.log

admin@hostname01 ~]$ cat ~/hourly_date.log
un Jan 12 05:26:53 PM IST 2025
admin@hostname01 ~]$
```