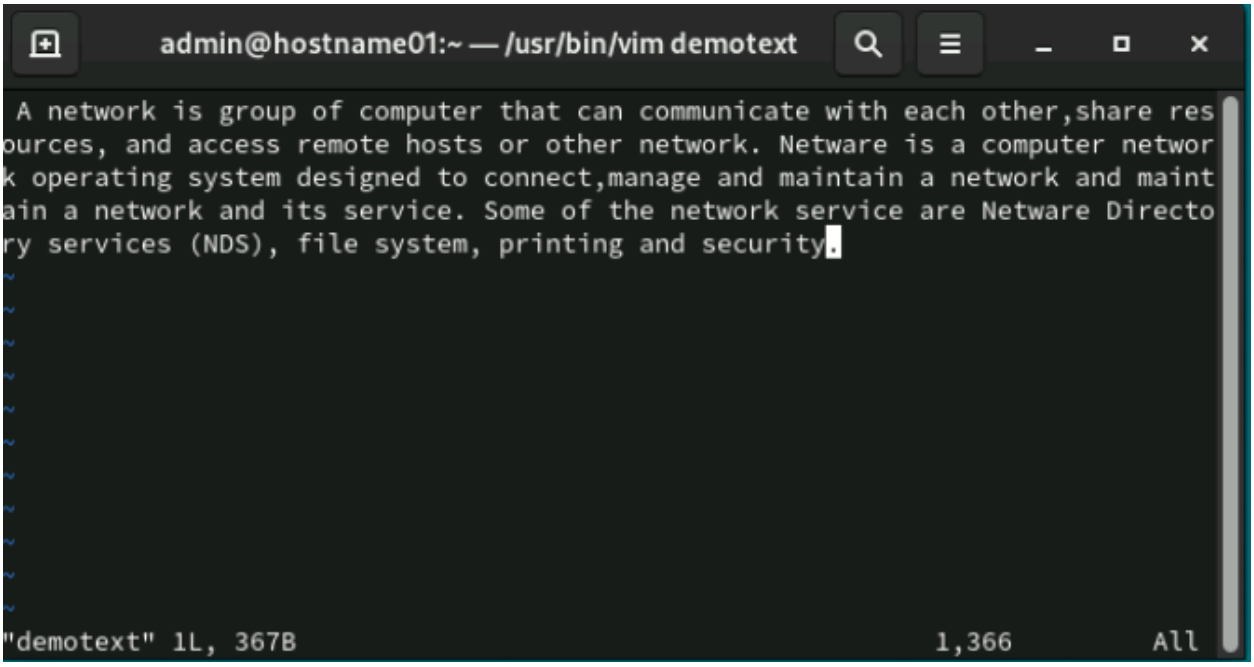
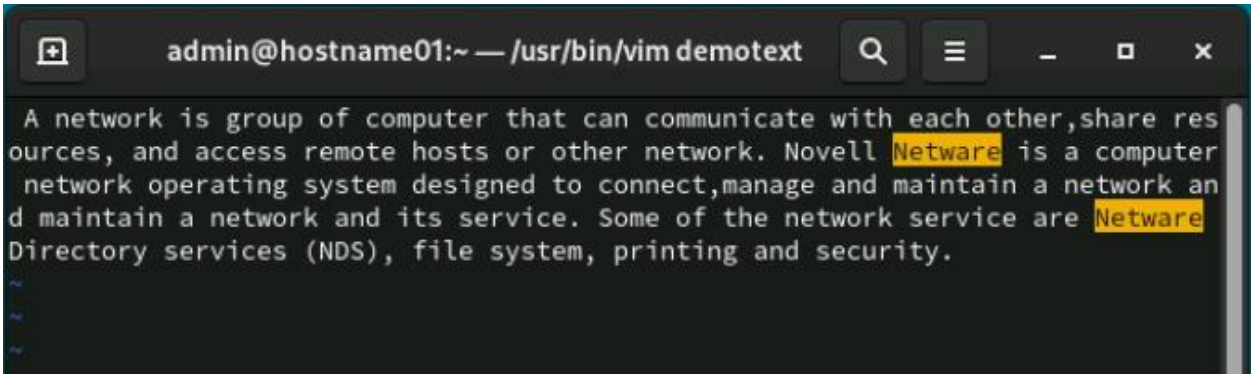
Working with a Vi Editor:

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

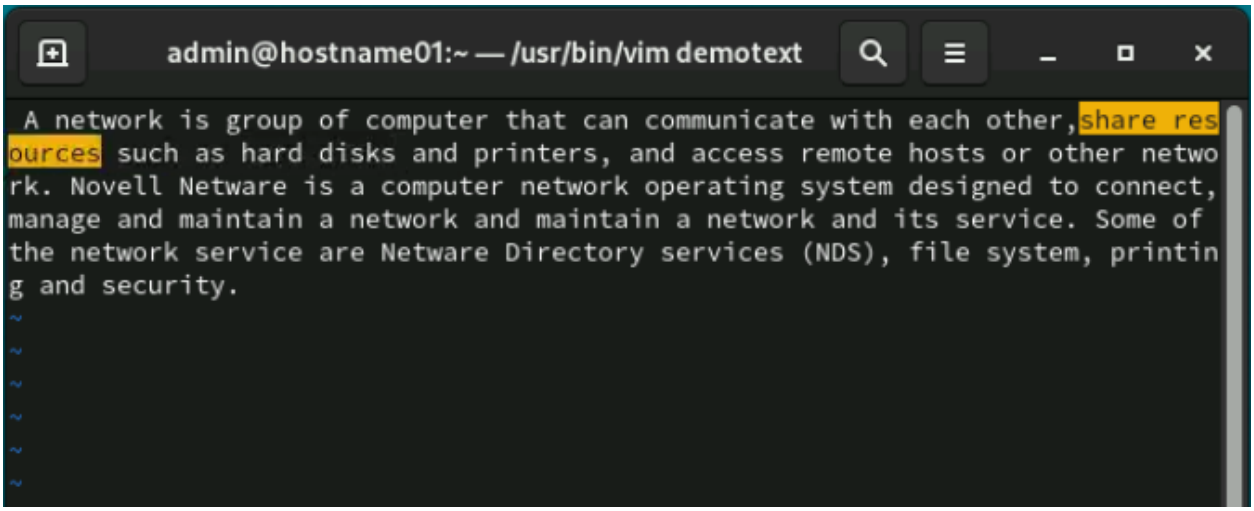
A network is a group of computers that can communicate with each other, share resources, and access remote hosts or other networks. Netware is a computer network operating system designed to connect, manage, and maintain a network and its services. Some of the network services are Netware Directory Services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



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

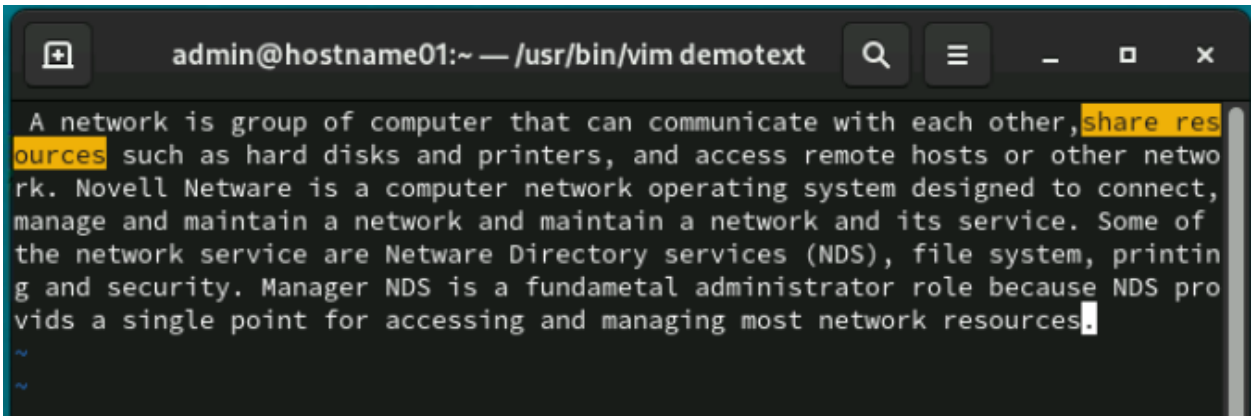


b. Insert the text “(such as hard disks and printers)” after “share resources” in the first line.



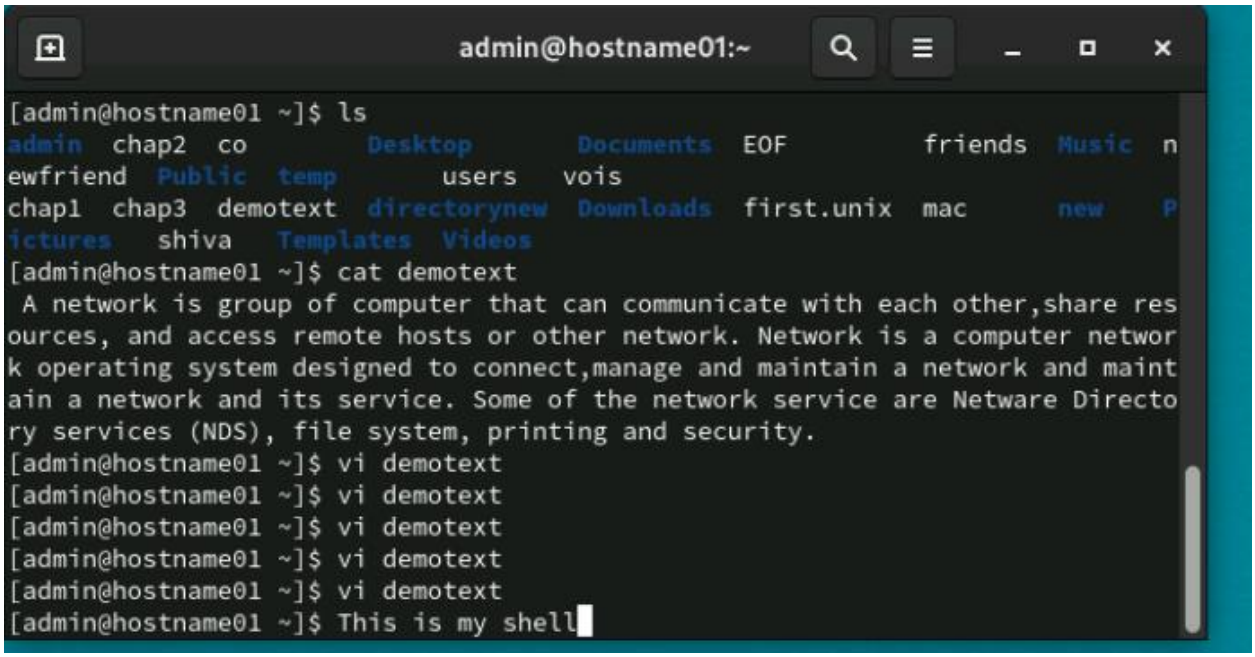
c. Append the following text to the file:

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



Working shell

1. Type some text on the shell separated by space

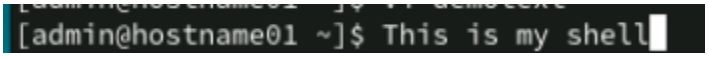


1: Move cursor one word back for one character: ctrl b for one word : alt b

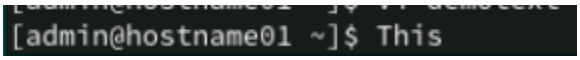
2: Move cursor one word forward : ctrl f || ALT + F

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 : CTRL+K || for one word at a time: CTRL+W



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 ~]$ cat errorlog.txt
 hi this is a demo new file for operations
```

3: Display history of command used so far.

```
[admin@hostname01 ~]$ history
    1  ifconfig
    2  exit
    3  passwd root
    4  cd /root/
    5  exit
    6  hostname host01
    7  su - root
    8  yum update -y
    9  su root
   10  su -
   11  cd
   12  poweroff
   13  ifconfig
   14  exit
```

4: Search ls command in history file

```
[admin@hostname01 ~]$ history | grep ls
   20  ls
   28  ls
   37  ls
   47  ls
   50  ls
   59  ls -a
   60  ls
   64  ls
   66  ls
   68  ls
   70  ls
   72  ls
   78  ls
   81  history | grep ls
```

5: Repeat the last command rd

```
[admin@hostname01 ~]$ ls
admin   co            Documents     first.unix  new        shiva      Videos
chap1   demotext      Downloads     friends     newfriend  temp       vois
chap2   Desktop       EOF           mac         Pictures   Templates
chap3   directorynew  errorlog.txt  Music       Public     users
[admin@hostname01 ~]$ !!
ls
admin   co            Documents     first.unix  new        shiva      Videos
chap1   demotext      Downloads     friends     newfriend  temp       vois
chap2   Desktop       EOF           mac         Pictures   Templates
chap3   directorynew  errorlog.txt  Music       Public     users
```

6: Execute 3 command from history file.

```
[admin@hostname01 ~]$ !3
passwd root
passwd: Only root can specify a user name.
[admin@hostname01 ~]$
```

7: What are the different shells available.

```
bash: cat/etc/shells: No such file or directory
[admin@hostname01 /]$ cat /etc/shells
/bin/sh
/bin/bash
/usr/bin/sh
/usr/bin/bash
[admin@hostname01 /]$
```

Understanding access permissions

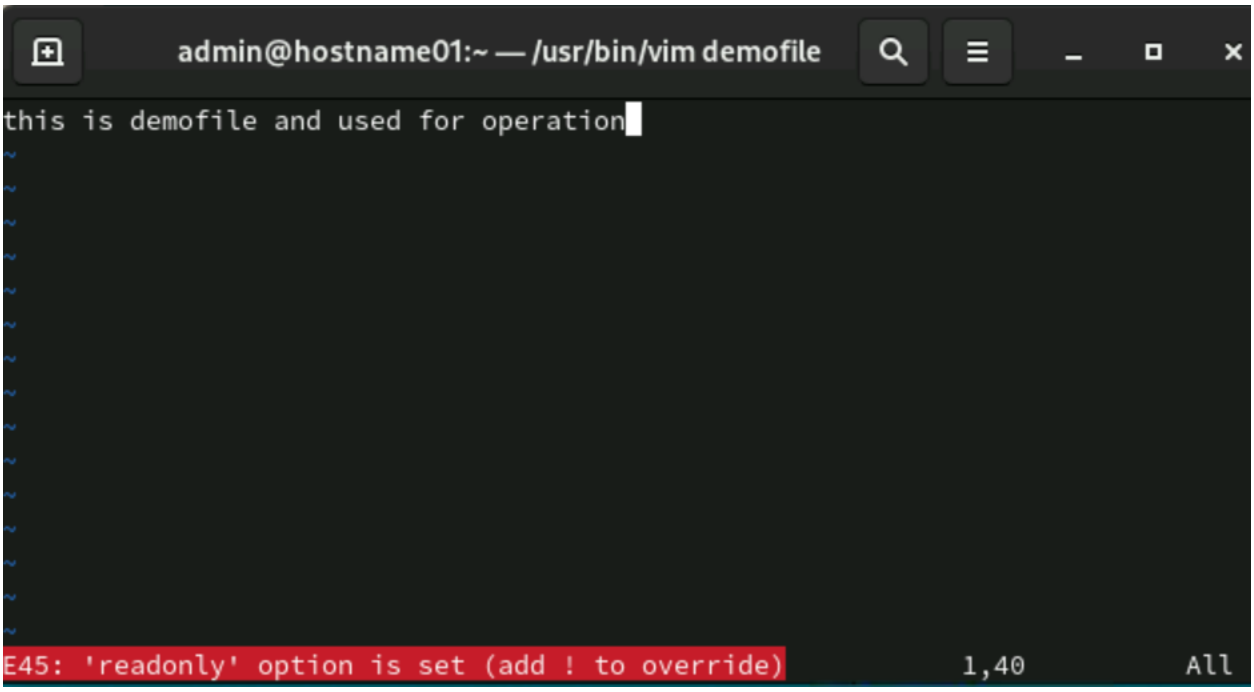
7.1: Create an empty file “demofile” and perform following instruction

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

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

2. Revoke write permission from owner and open using vi editor and add some contain in it.

```
[admin@hostname01 ~]$ chmod u-r demofile
[admin@hostname01 ~]$ vi demofile
```



3. Add read and write permission to owner.

```
[admin@hostname01 ~]$ chmod u+rw demofile
```

4. Revoke write and execute from other and group

```
[admin@hostname01 ~]$ chmod o-wx,g-wx demofile
```

5. Add write permission to group only

```
[admin@hostname01 ~]$ chmod g+w demofile
```

6. Assign read permission to all

```
[admin@hostname01 ~]$ chmod u+r,g+r,o+r demofile
```

7. Revoke read permission from others

```
[admin@hostname01 ~]$ chmod o-r demofile
```

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

```
[admin@hostname01 ~]$ chmod u+x chap1
```

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

```
[admin@hostname01 ~]$ chmod u+x,g+x,o+x add.c
[admin@hostname01 ~]$ ls -l
total 28
-rwxr-xr-x. 1 admin admin   0 Jan 12 18:13 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,o+r,g+r aa.c
[admin@hostname01 ~]$ ls-l
bash: ls-l: command not found...
[admin@hostname01 ~]$ ls -l
total 28
-rw-r--r--. 1 admin admin   0 Jan 12 18:19 aa.c
```

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

```
[admin@hostname01 ~]$ touch a.c kk.c nato myfile
[admin@hostname01 ~]$ chmod u+x a.c kk.c nato myfile
```

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

1. Display contents of demo

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

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

```
[admin@hostname01 ~]$ chmod u-r demo
```

```
[admin@hostname01 demo]$ ls
ls: cannot open directory '.': Permission denied
```

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

```
[admin@hostname01 ~]$ chmod u-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 u-x demo
[admin@hostname01 ~]$ cd demo
bash: cd: demo: Permission denied
```

Using Process-Related Commands

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

```
[admin@hostname01 ~]$ ps -u $user
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
admin       2254  0.0  0.0 374144  7776 tty2     Ssl+ 11:18   0:00 /usr/libexec/gdm
admin       2263  0.0  0.2 513020 19104 tty2     Sl+  11:18   0:00 /usr/libexec/gno
admin       3042  0.0  0.0 224112  5248 pts/0    Ss   11:29   0:00 bash
admin       4671  0.0  0.0 224120  5248 pts/0    S    17:56   0:00 bash
admin       4758  0.0  0.1 229316  8832 pts/0    S+   18:02   0:00 /usr/bin/vim dem
admin       4791  0.0  0.0 224112  5248 pts/1    Ss   18:05   0:00 bash
admin       5106  0.0  0.0 225368  3456 pts/1    R+   18:37   0:00 ps -u
[admin@hostname01 ~]$ ps -u $USER
    PID TTY          TIME CMD
   2233 ?        00:00:00 systemd
   2235 ?        00:00:00 (sd-pam)
   2250 ?        00:00:00 gnome-keyring-d
   2254 tty2     00:00:00 gdm-wayland-ses
   2257 ?        00:00:00 dbus-broker-lau
   2260 ?        00:00:00 dbus-broker
   2263 tty2     00:00:00 gnome-session-b
   2298 ?        00:00:00 gnome-session-c
```

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

```
[admin@hostname01 ~]$ ps -aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.0  0.2 173884 16328 ?        Ss   11:17   0:04 /usr/lib/systemd
root           2  0.0  0.0      0     0 ?        S    11:17   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        S    11:17   0:00 [pool_workqueue_
root           4  0.0  0.0      0     0 ?        I<   11:17   0:00 [kworker/R-rcu_g
root           5  0.0  0.0      0     0 ?        I<   11:17   0:00 [kworker/R-sync_
root           6  0.0  0.0      0     0 ?        I<   11:17   0:00 [kworker/R-slub_
root           7  0.0  0.0      0     0 ?        I<   11:17   0:00 [kworker/R-netns
root           9  0.0  0.0      0     0 ?        I<   11:17   0:00 [kworker/0:0H-ev
root          10  0.0  0.0      0     0 ?        I    11:17   0:00 [kworker/u512:0-
root          11  0.0  0.0      0     0 ?        I<   11:17   0:00 [kworker/R-mm_pe
root          12  0.0  0.0      0     0 ?        I    11:17   0:00 [kworker/u512:1-
root          13  0.0  0.0      0     0 ?        I    11:17   0:00 [rcu_tasks_kthre
root          14  0.0  0.0      0     0 ?        I    11:17   0:00 [rcu_tasks_rude_
root          15  0.0  0.0      0     0 ?        I    11:17   0:00 [rcu_tasks_trace
```

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 100 &
[1] 5124
[admin@hostname01 ~]$ ps -p 5124
    PID TTY          TIME CMD
   5124 pts/1    00:00:00 sleep
[admin@hostname01 ~]$
```

4. Run a job in background

```
[admin@hostname01 ~]$ sleep 100 &
[1] 5300
[admin@hostname01 ~]$ jobs
[1]+  Running                 sleep 100 &
[admin@hostname01 ~]$
```

5. Bring a last background job in fore ground

```
[admin@hostname01 ~]$ fg
sleep 100
[admin@hostname01 ~]$ sleep 100



^C
```

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

```
[admin@hostname01 ~]$ sleep 100 & ping vodafone.com & top &
[1] 5323
[2] 5324
[3] 5325

[3]+  Stopped                 top
```

7. Stop current job

CTRL +Z

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

^Z
[1]+  Stopped                 sleep 60
[admin@hostname01 ~]$
```

8. Start stopped job

```
[admin@hostname01 ~]$ jobs
[1]-  Stopped                 sleep 60
[2]+  Stopped                 ping vodafone.com
[admin@hostname01 ~]$ bg %2
[2]+ ping vodafone.com &
[admin@hostname01 ~]$ 64 bytes from 147.75.40.150 (147.75.40.150): icmp_seq=3 ttl=128 time=71.3 ms
64 bytes from 147.75.40.150 (147.75.40.150): icmp_seq=4 ttl=128 time=71.3 ms
64 bytes from 147.75.40.150 (147.75.40.150): icmp_seq=5 ttl=128 time=66.6 ms
64 bytes from 147.75.40.150 (147.75.40.150): icmp_seq=6 ttl=128 time=72.6 ms
```

9. Run a job

```
[admin@hostname01 ~]$ sleep 60 &
[1] 14066
[admin@hostname01 ~]$
```

10. Kill last job

```
[admin@hostname01 ~]$ kill %%
[1]+  Terminated              sleep 60
[admin@hostname01 ~]$
```

11. Kill your shell using process id

Kill<PID>

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

```
[admin@hostname01 ~]$ nice -n 10 ls
aa.c   chap2     demotext      EOF          lsdoc   new        temp
a.c    chap3     Desktop       errorlog.txt mac     newfriend  Templates
add.c  co        directorynew  first.unix   Music   Pictures   users
admin  demo      Documents     friends      myfile  Public     Videos
chap1  demofile  Downloads     kk.c         nato    shiva      vois
[admin@hostname01 ~]$
```

13. Display a date on every hour using cron tab

0**** date