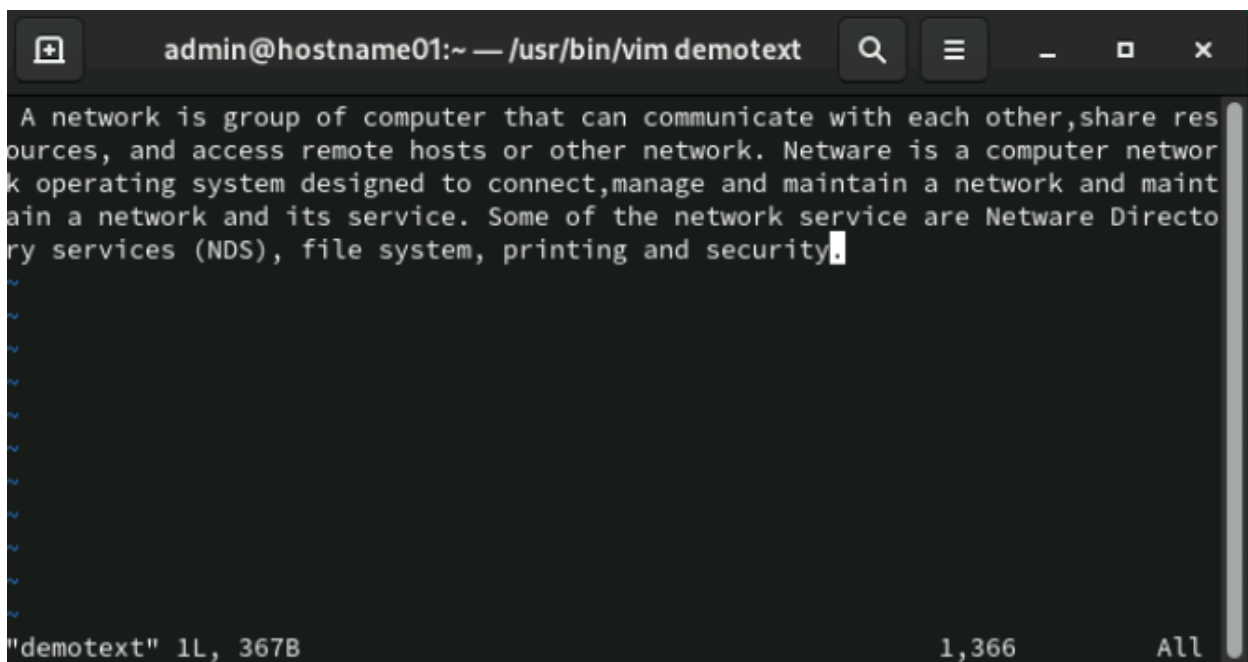


Working with a Vi Editor:

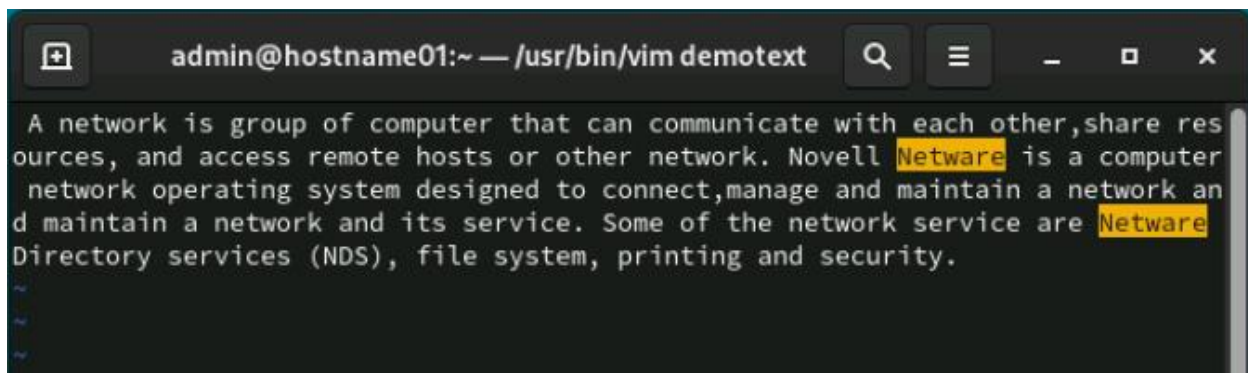
1: Create a file using vi. Enter the following text:

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.



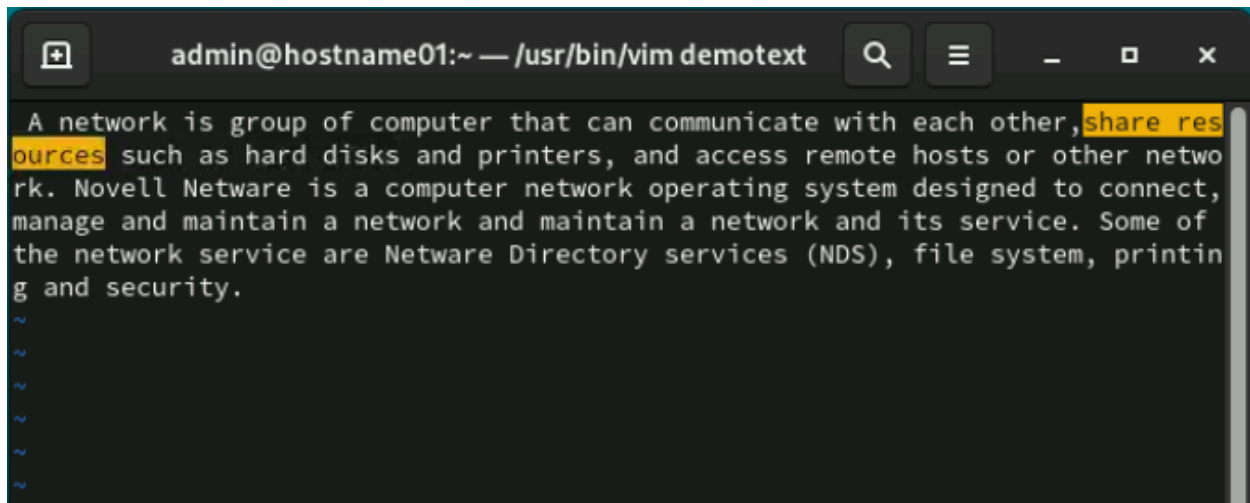
The screenshot shows a terminal window with the title bar "admin@hostname01:~ — /usr/bin/vim demotext". The text inside the editor is: "A network is group of computer that can communicate with each other,share res
ources, and access remote hosts or other network. Netware is a computer networ
k operating system designed to connect,manage and maintain a network and maint
ain a network and its service. Some of the network service are Netware Directo
ry services (NDS), file system, printing and security." The status bar at the bottom shows "demotext" 1L, 367B, 1,366, and All.

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



The screenshot shows the same terminal window after the first edit. The text is: "A network is group of computer that can communicate with each other,share res
ources, and access remote hosts or other network. Novell Netware is a computer
network operating system designed to connect,manage and maintain a network an
d maintain a network and its service. Some of the network service are Netware
Directory services (NDS), file system, printing and security." The words "Netware" in the second and third lines are highlighted in yellow. The status bar remains the same.

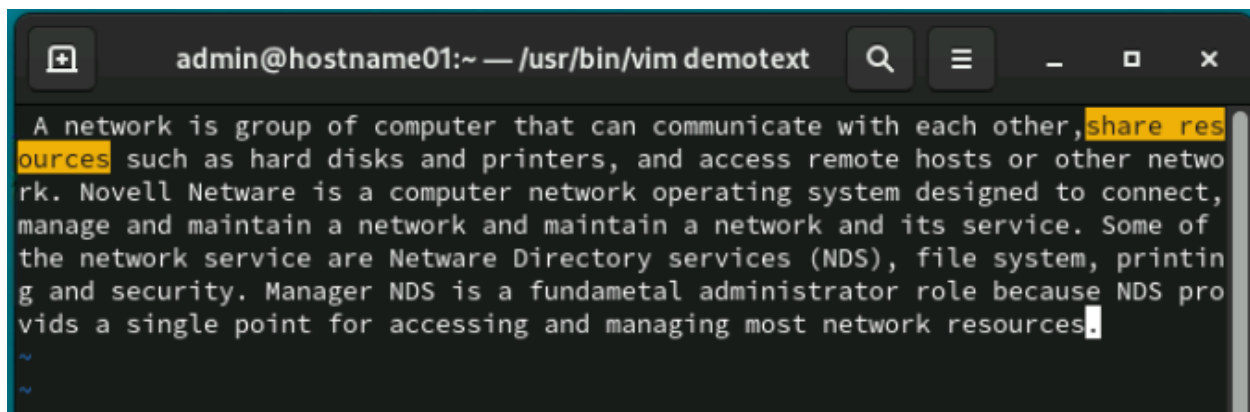
b. Insert the text “(such as hard disks and printers)” after “share resources” in the first line.



```
admin@hostname01:~ — /usr/bin/vim demotext
A network is group of computer that can communicate with each other, share resources such as hard disks and printers, and access remote hosts or other network. Novell Netware is a computer network operating system designed to connect, manage and maintain a network and maintain a network and its service. Some of the network service are Netware Directory services (NDS), file system, printing and security.
~
~
~
~
~
```

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.”



```
admin@hostname01:~ — /usr/bin/vim demotext
A network is group of computer that can communicate with each other, share resources such as hard disks and printers, and access remote hosts or other network. Novell Netware is a computer network operating system designed to connect, manage and maintain a network and maintain a network and its service. Some of the network service are Netware Directory services (NDS), file system, printing and security. Manager 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

```
admin@hostname01:~$ ls
admin  chap2  co      Desktop  Documents  EOF      friends  Music  n
ewfriend  Public  temp    users    vois
chap1  chap3  demotext  directorynew  Downloads  first.unix  mac      new  P
ictures  shiva  Templates  Videos
[admin@hostname01 ~]$ cat demotext
A network is group of computer that can communicate with each other,share res
ources, and access remote hosts or other network. Network is a computer networ
k operating system designed to connect,manage and maintain a network and maint
ain a network and its service. Some of the network service are Netware Directo
ry services (NDS), file system, printing and security.
[admin@hostname01 ~]$ vi demotext
[admin@hostname01 ~]$ vi demotext
[admin@hostname01 ~]$ vi demotext
[admin@hostname01 ~]$ vi demotext
[admin@hostname01 ~]$ vi demotext
[admin@hostname01 ~]$ This is my shell
```

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

```
[admin@hostname01 ~]$ vi demotext
[admin@hostname01 ~]$ This is my shell
```

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

```
[admin@hostname01 ~]$ vi demotext
[admin@hostname01 ~]$ This is my shell
```

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

```
[admin@hostname01 ~]$ This is my shell
```

4: Move cursor to the end :CTRL+E

```
[admin@hostname01 ~]$ This is my shell
```

5: Delete text from second word to last character : CTRL+K || for one word at a time: CTRL+W

```
[admin@hostname01 ~]$ vi demotext
[admin@hostname01 ~]$ This
```

6: Delete the current line CTRL U

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

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 content in it.

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



```
[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
8. Start stopped job
9. Run a job
10. Kill last job
11. Kill your shell using process id
12. Execute a ls command by setting priority as -10 using nice command
13. Display a date on every hour using cron tab