

Familiarization of Linux Commands

Aim

To familiarize and understand basic linux commands and their uses.

1 Commands

1.1 touch

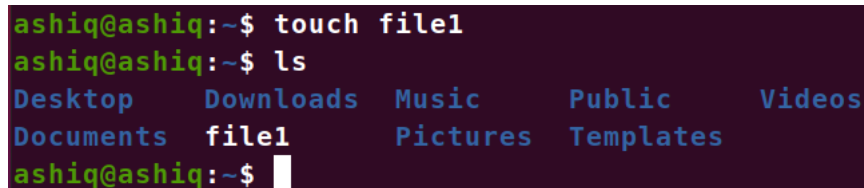
1.1.1 Description

Used to make a new file in current directory.

1.1.2 Syntax

```
touch filename
```

1.1.3 Sample Input and Output



```
ashiq@ashiq:~$ touch file1
ashiq@ashiq:~$ ls
Desktop    Downloads  Music      Public     Videos
Documents  file1      Pictures   Templates
```

Figure 1.1: Output

1.2 mkdir

1.2.1 Description

Used to make a new directory in current directory.

1.2.2 Syntax

```
mkdir directory_name
```

1.2.3 Sample Input and Output

```
ashiq@ashiq:~$ mkdir dir1
ashiq@ashiq:~$ ls
Desktop  Documents  file1  Pictures  Templates
dir1     Downloads  Music  Public    Videos
ashiq@ashiq:~$
```

Figure 1.2: Output

1.3 pwd

1.3.1 Description

Prints the present working directory

1.3.2 Syntax

```
pwd
```

1.3.3 Sample Input and Output

```
ashiq@ashiq:~$ pwd
/home/ashiq
ashiq@ashiq:~$
```

Figure 1.3: Output

1.4 cd

1.4.1 Description

Used to change directory

1.4.2 Syntax

```
cd directory_name
```

1.4.3 Sample Input and Output

```
ashiq@ashiq:~$ cd dir1
ashiq@ashiq:~/dir1$
```

Figure 1.4: Output

1.5 cat

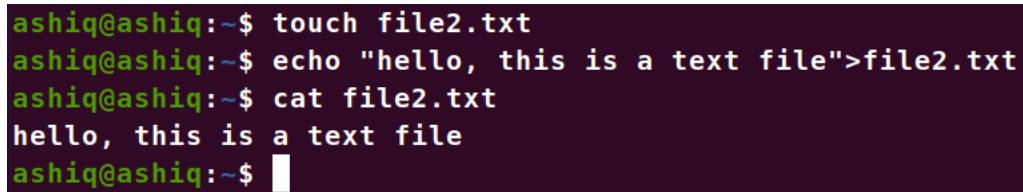
1.5.1 Description

Views the content of a file

1.5.2 Syntax

```
cat filename
```

1.5.3 Sample Input and Output



```
ashiq@ashiq:~$ touch file2.txt
ashiq@ashiq:~$ echo "hello, this is a text file">file2.txt
ashiq@ashiq:~$ cat file2.txt
hello, this is a text file
ashiq@ashiq:~$
```

Figure 1.5: Output

1.6 more

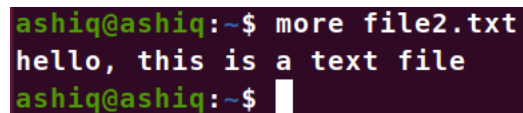
1.6.1 Description

Views the content of a file one screenful at a time

1.6.2 Syntax

```
more filename
```

1.6.3 Sample Input and Output



```
ashiq@ashiq:~$ more file2.txt
hello, this is a text file
ashiq@ashiq:~$
```

Figure 1.6: Output

1.7 ls

1.7.1 Description

List files in a directory.

1.7.2 Syntax

```
ls
```

1.7.3 Sample Input and Output

```
ashiq@ashiq:~$ ls
Desktop  Documents  file1      Music      Public      Videos
dir1     Downloads  file2.txt  Pictures   Templates
```

Figure 1.7: Output

1.8 `ls -l`

1.8.1 Description

Provides long listing of files.

1.8.2 Syntax

```
ls -l
```

1.8.3 Sample Input and Output

```
ashiq@ashiq:~$ ls -l
total 40
drwxr-xr-x 3 ashiq ashiq 4096 May  8 09:06 Desktop
drwxrwxr-x 2 ashiq ashiq 4096 May  8 09:14 dir1
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Documents
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Downloads
-rw-rw-r-- 1 ashiq ashiq   0 May  8 08:56 file1
-rw-rw-r-- 1 ashiq ashiq  27 May  8 09:41 file2.txt
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Music
drwxr-xr-x 2 ashiq ashiq 4096 May  8 09:07 Pictures
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Public
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Templates
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Videos
ashiq@ashiq:~$
```

Figure 1.8: Output

1.9 `ls -l -h`

1.9.1 Description

Provides size of files in human readable form.

1.9.2 Syntax

```
ls -l -h
```

1.9.3 Sample Input and Output

```
ashiq@ashiq:~$ ls -l -h
total 40K
drwxr-xr-x 3 ashiq ashiq 4.0K May  8 09:06 Desktop
drwxrwxr-x 2 ashiq ashiq 4.0K May  8 09:14 dir1
drwxr-xr-x 2 ashiq ashiq 4.0K May  8 08:26 Documents
drwxr-xr-x 2 ashiq ashiq 4.0K May  8 08:26 Downloads
-rw-rw-r-- 1 ashiq ashiq   0 May  8 08:56 file1
-rw-rw-r-- 1 ashiq ashiq  27 May  8 09:41 file2.txt
drwxr-xr-x 2 ashiq ashiq 4.0K May  8 08:26 Music
drwxr-xr-x 2 ashiq ashiq 4.0K May  8 09:07 Pictures
drwxr-xr-x 2 ashiq ashiq 4.0K May  8 08:26 Public
drwxr-xr-x 2 ashiq ashiq 4.0K May  8 08:26 Templates
drwxr-xr-x 2 ashiq ashiq 4.0K May  8 08:26 Videos
ashiq@ashiq:~$
```

Figure 1.9: Output

1.10 `ls -F`

1.10.1 Description

Make all the executable with `*` and directories with `/`

1.10.2 Syntax

```
ls -F
```

1.10.3 Sample Input and Output

```
ashiq@ashiq:~$ ls -F
Desktop/  Documents/  file1      Music/     Public/    Videos/
dir1/     Downloads/  file2.txt  Pictures/  Templates/
ashiq@ashiq:~$
```

Figure 1.10: Output

1.11 *ls -a*

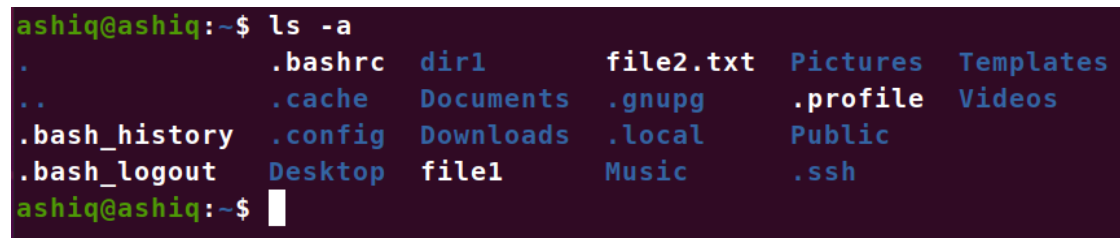
1.11.1 Description

Show all the file in the present directory with special dot files.

1.11.2 Syntax

```
ls -a
```

1.11.3 Sample Input and Output



```
ashiq@ashiq:~$ ls -a
.      .bashrc  dir1      file2.txt  Pictures  Templates
..     .cache   Documents .gnupg     .profile  Videos
.bash_history .config  Downloads .local     Public
.bash_logout Desktop  file1     Music      .ssh
ashiq@ashiq:~$
```

Figure 1.11: Output

1.12 *cp*

1.12.1 Description

Used to copy files and directories

1.12.2 Syntax

```
cp file1 file2
cp dir1 dir2
```

1.12.3 Sample Input and Output

```
ashiq@ashiq:~$ cp file2.txt file1.txt
ashiq@ashiq:~$ cat file2.txt
hello, this is a text file
ashiq@ashiq:~$ cat file1.txt
hello, this is a text file
ashiq@ashiq:~$ █

ashiq@ashiq:~$ ls dir1
file1  file1.txt  file2.txt
ashiq@ashiq:~$ cp dir1 dir2
cp: -r not specified; omitting directory 'dir1'
ashiq@ashiq:~$ ls dir1
file1  file1.txt  file2.txt
ashiq@ashiq:~$ cp -r dir1 dir2
ashiq@ashiq:~$ ls dir2
file1  file1.txt  file2.txt
ashiq@ashiq:~$ █
```

Figure 1.12: Output

1.13 rm

1.13.1 Description

Remove a file.

1.13.2 Syntax

```
rm filename
```

1.13.3 Sample Input and Output

```
ashiq@ashiq:~$ ls
Desktop  dir2      Downloads  file1.txt  Music     Public    Videos
dir1     Documents file1      file2.txt  Pictures  Templates
ashiq@ashiq:~$ rm file2.txt
ashiq@ashiq:~$ ls
Desktop  dir2      Downloads  file1.txt  Pictures  Templates
dir1     Documents file1      Music      Public    Videos
ashiq@ashiq:~$
```

Figure 1.13: Output

1.14 *rmdir*

1.14.1 Description

Used to remove directory.

1.14.2 Syntax

```
rmdir directory_name
```

1.14.3 Sample Input and Output

```
ashiq@ashiq:~/dir2$ ls
dir1  file1  file1.txt  file2.txt
ashiq@ashiq:~/dir2$ rmdir dir1
ashiq@ashiq:~/dir2$ ls
file1  file1.txt  file2.txt
ashiq@ashiq:~/dir2$
```

Figure 1.14: Output

1.15 *clear*

1.15.1 Description

Used to clear the contents of the terminal.

1.15.2 Syntax

```
clear
```


1.15.3 Sample Input and Output

```
ashiq@ashiq:~/dir2$ ls
file1  file1.txt  file2.txt
ashiq@ashiq:~/dir2$ mkdir dir1
ashiq@ashiq:~/dir2$ ls
dir1  file1  file1.txt  file2.txt
ashiq@ashiq:~/dir2$ rmdir dir1
ashiq@ashiq:~/dir2$ ls
file1  file1.txt  file2.txt
ashiq@ashiq:~/dir2$ clear
ashiq@ashiq:~/dir2$
```

Figure 1.15: Output

1.16 *man*

1.16.1 Description

View help of the specific command name.

1.16.2 Syntax

```
man command_name
```

1.16.3 Sample Input and Output

```

ashiq@ashiq:~/dir2$ man touch
ashiq@ashiq:~/dir2$

```

TOUCH(1)	User Commands	TOUCH(1)
NAME		
touch - change file timestamps		
SYNOPSIS		
touch [OPTION]... FILE...		
DESCRIPTION		
Update the access and modification times of each FILE to the current time.		
A FILE argument that does not exist is created empty, unless -c or -h is supplied.		
A FILE argument string of - is handled specially and causes touch to change the times of the file associated with standard output.		
Mandatory arguments to long options are mandatory for short options too.		
-a change only the access time		
Manual page touch(1) line 1 (press h for help or q to quit)		

Figure 1.16: Output

1.17 tree

1.17.1 Description

Used to list or display the contents of a directory in a tree like format.

1.17.2 Syntax

```
tree directory_name
```

1.17.3 Sample Input and Output

```
ashiq@ashiq:~$ tree dir1
dir1
├── file1
├── file1.txt
└── file2.txt

0 directories, 3 files
ashiq@ashiq:~$
```

Figure 1.17: Output

1.18 locate

1.18.1 Description

Used to find files using filename.

1.18.2 Syntax

```
locate [options] file_name
```

1.18.3 Sample Input and Output

```
ashiq@ashiq:~$ locate -b file1.txt
/home/ashiq/file1.txt
/home/ashiq/dir1/file1.txt
/home/ashiq/dir2/file1.txt
ashiq@ashiq:~$
```

Figure 1.18: Output

1.19 kill

1.19.1 Description

kill command is used to terminate the process manually.

1.19.2 Syntax

```
kill [options] pid
```

1.19.3 Sample Input and Output

```

ashiq@ashiq:~$ ps
  PID TTY          TIME CMD
 2399 pts/0    00:00:00 bash
 7064 pts/0    00:00:00 ps
ashiq@ashiq:~$ kill 2399
ashiq@ashiq:~$ kill -l
 1) SIGHUP       2) SIGINT       3) SIGQUIT      4) SIGILL       5) SIGTRAP
 6) SIGABRT      7) SIGBUS      8) SIGFPE       9) SIGKILL      10) SIGUSR1
11) SIGSEGV     12) SIGUSR2    13) SIGPIPE     14) SIGALRM     15) SIGTERM
16) SIGSTKFLT   17) SIGCHLD    18) SIGCONT     19) SIGSTOP     20) SIGTSTP
21) SIGTTIN     22) SIGTTOU    23) SIGURG      24) SIGXCPU     25) SIGXFSZ
26) SIGVTALRM   27) SIGPROF    28) SIGWINCH    29) SIGIO        30) SIGPWR
31) SIGSYS      34) SIGRTMIN   35) SIGRTMIN+1  36) SIGRTMIN+2  37) SIGRTMIN+3
38) SIGRTMIN+4  39) SIGRTMIN+5 40) SIGRTMIN+6  41) SIGRTMIN+7  42) SIGRTMIN+8
43) SIGRTMIN+9  44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13 52) SIGRTMAX-12
53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9  56) SIGRTMAX-8  57) SIGRTMAX-7
58) SIGRTMAX-6  59) SIGRTMAX-5 60) SIGRTMAX-4  61) SIGRTMAX-3  62) SIGRTMAX-2
63) SIGRTMAX-1  64) SIGRTMAX
ashiq@ashiq:~$

```

Figure 1.19: Output

1.20 less

1.20.1 Description

Views content of a file one screenful at a time. less command is similar to the more command but faster than more.

1.20.2 Syntax

```
less filename
```

1.20.3 Sample Input and Output

```
hello, this is a text file
abc
def
alls
fie
nms
mndska
  odsjao
  jsdodjo
  sfk
  aofo
  dsaj
~
~
~
```

Figure 1.20: Output

1.21 who

1.21.1 Description

Used to display who is logged in.

1.21.2 Syntax

```
who
```

1.21.3 Sample Input and Output

```
ashiq@ashiq:~$ who
ashiq      :0                2022-05-08 08:38 (:0)
ashiq@ashiq:~$
```

Figure 1.21: Output

1.22 top

1.22.1 Description

Used to display resource being used in the system.

1.22.2 Syntax

```
top
```

1.22.3 Sample Input and Output

```

top - 10:48:22 up 2:09, 1 user, load average: 0.13, 0.17, 0.11
Tasks: 185 total, 1 running, 184 sleeping, 0 stopped, 0 zombie
%Cpu(s): 3.0 us, 0.8 sy, 0.0 ni, 96.0 id, 0.0 wa, 0.0 hi, 0.2 si, 0.0 st
MiB Mem : 3925.7 total, 1881.8 free, 941.2 used, 1102.7 buff/cache
MiB Swap: 923.3 total, 923.3 free, 0.0 used, 2708.4 avail Mem

  PID USER   PR  NI  VIRT  RES  SHR S %CPU  %MEM    TIME+  COMMAND
 1427 ashiq   20    0 5003468 537444 153836 S   6.0  13.4   5:54.90 gnome-shell
 1244 ashiq   20    0 1062380 143640 64580 S   3.6   3.6   2:33.90 Xorg
 7592 ashiq   20    0 735948 45048 34092 S   3.3   1.1   0:00.59 gnome-screensho
 1566 ashiq   20    0 1166016 34604 23224 S   0.3   0.9   0:00.59 gsd-media-keys
 2610 ashiq   20    0 1070760 80628 48644 S   0.3   2.0   0:08.98 nautilus
 7589 ashiq   20    0 11856 3952 3304 R   0.3   0.1   0:00.03 top
    1 root    20    0 168844 12844 8372 S   0.0   0.3   0:02.01 systemd
    2 root    20    0      0      0      0 S   0.0   0.0   0:00.00 kthreadd
    3 root    0 -20      0      0      0 I   0.0   0.0   0:00.00 rcu_gp
    4 root    0 -20      0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
    6 root    0 -20      0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
    9 root    0 -20      0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
   10 root    20    0      0      0      0 S   0.0   0.0   0:00.00 rcu_tasks_rude
   11 root    20    0      0      0      0 S   0.0   0.0   0:00.00 rcu_tasks_trace
   12 root    20    0      0      0      0 S   0.0   0.0   0:00.32 ksoftirqd/0
   13 root    20    0      0      0      0 I   0.0   0.0   0:00.58 rcu_sched
   14 root    rt    0      0      0      0 S   0.0   0.0   0:00.05 migration/0
   15 root   -51    0      0      0      0 S   0.0   0.0   0:00.00 idle_inject/0
   16 root    20    0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
   17 root    20    0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/1
   18 root   -51    0      0      0      0 S   0.0   0.0   0:00.00 idle_inject/1
   19 root    rt    0      0      0      0 S   0.0   0.0   0:00.37 migration/1
   20 root    20    0      0      0      0 S   0.0   0.0   0:00.15 ksoftirqd/1
   22 root    0 -20      0      0      0 I   0.0   0.0   0:00.00 kworker/1:0H-events_highpri
   23 root    20    0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/2
   24 root   -51    0      0      0      0 S   0.0   0.0   0:00.00 idle_inject/2
   25 root    rt    0      0      0      0 S   0.0   0.0   0:00.35 migration/2
   26 root    20    0      0      0      0 S   0.0   0.0   0:00.06 ksoftirqd/2

```

Figure 1.22: Output

1.23 chmod

1.23.1 Description

Used to modify file access right.

1.23.2 Syntax

```
chmod options permissions filename
```

1.23.3 Sample Input and Output

```
ashiq@ashiq:~$ chmod 765 file1.txt
ashiq@ashiq:~$ ls -l
total 48
drwxr-xr-x 3 ashiq ashiq 4096 May  8 09:06 Desktop
drwxrwxr-x 2 ashiq ashiq 4096 May  8 09:50 dir1
drwxrwxr-x 2 ashiq ashiq 4096 May  8 09:58 dir2
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Documents
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Downloads
-rwxrw-r-x 1 ashiq ashiq   89 May  8 10:45 file1.txt
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Music
drwxr-xr-x 2 ashiq ashiq 4096 May  8 09:07 Pictures
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Public
drwxr-xr-x 3 ashiq ashiq 4096 May  8 10:03 snap
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Templates
drwxr-xr-x 2 ashiq ashiq 4096 May  8 08:26 Videos
ashiq@ashiq:~$
```

Figure 1.23: Output

1.24 chown

1.24.1 Description

It is used to change the user and/ or group ownership of a given file, directory or symbolic link.

1.24.2 Syntax

```
chown [options] user [:group] file(s)
```

1.24.3 Sample Input and Output

A terminal window with a dark purple background and light green text. The user 'ashiq@s2014' is in their home directory. They run 'ls -l file' and see the file owned by 'ashiq'. Then they run 'sudo chown guest file'. A prompt '[sudo] password for ashq:' appears. After the password is entered, they run 'ls -l file' again and see the file now owned by 'guest'.

```
ashiq@s2014:~$ ls -l file
-rw-rw-r-- 1 ashq ashq 0 May  8 10:52 file
ashiq@s2014:~$ sudo chown guest file
[sudo] password for ashq:
ashiq@s2014:~$ ls -l file
-rw-rw-r-- 1 guest ashq 0 May  8 10:52 file
ashiq@s2014:~$
```

Figure 1.24: Output

1.25 redirection (>)

1.25.1 Description

Overwrites the file with output of the command.

1.25.2 Syntax

Command > filename

1.25.3 Sample Input and Output

```
ashiq@s2014:~$ ls
Desktop  dir2      Downloads  file1.txt  Pictures  snap      Videos
dir1     Documents file       Music      Public    Templates
ashiq@s2014:~$ ls>file
ashiq@s2014:~$ cat file
Desktop
dir1
dir2
Documents
Downloads
file
file1.txt
Music
Pictures
Public
snap
Templates
Videos
ashiq@s2014:~$
```

Figure 1.25: Output

1.26 redirection (»)

1.26.1 Description

Appends the file with output of the command.

1.26.2 Syntax

Command >> filename

1.26.3 Sample Input and Output

```
ashiq@s2014:~$ cat file
Desktop
dir1
dir2
Documents
Downloads
file
file1.txt
Music
Pictures
Public
snap
Templates
Videos
ashiq@s2014:~$ echo "hello world" >> file
ashiq@s2014:~$ cat file
Desktop
dir1
dir2
Documents
Downloads
file
file1.txt
Music
Pictures
Public
snap
Templates
Videos
hello world
ashiq@s2014:~$
```

Figure 1.26: Output

1.27 redirection (<)

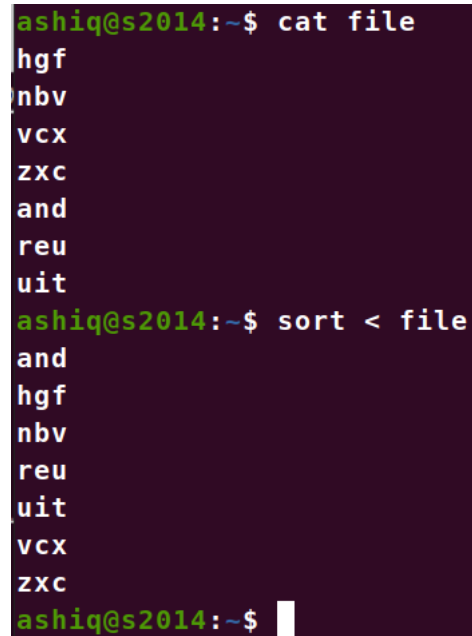
1.27.1 Description

Used to redirect standard input to a file.

1.27.2 Syntax

```
command < filename
```

1.27.3 Sample Input and Output

A terminal window with a dark purple background. The prompt is 'ashiq@s2014:~\$'. The first command is 'cat file', which outputs the following text: 'hgf', 'nbv', 'vcx', 'zxc', 'and', 'reu', 'uit'. The second command is 'sort < file', which outputs the following text: 'and', 'hgf', 'nbv', 'reu', 'uit', 'vcx', 'zxc'. The prompt 'ashiq@s2014:~\$' is shown again at the bottom with a white cursor.

```
ashiq@s2014:~$ cat file
hgf
nbv
vcx
zxc
and
reu
uit
ashiq@s2014:~$ sort < file
and
hgf
nbv
reu
uit
vcx
zxc
ashiq@s2014:~$
```

Figure 1.27: Output

1.28 *pip*ing (|)

1.28.1 Description

Used to redirect standard output of one command to the standard input of another command.

1.28.2 Syntax

```
command1 | command2
```

1.28.3 Sample Input and Output

```
ashiq@s2014:~$ ls
Desktop  dir2      Downloads  file1.txt  Pictures  snap      Videos
dir1     Documents file       Music     Public   Templates
ashiq@s2014:~$ ls | head -3
Desktop
dir1
dir2
ashiq@s2014:~$
```

Figure 1.28: Output

1.29 Filters (sort)

1.29.1 Description

Sorts the standard input and sends the output to standard output.

1.29.2 Syntax

```
sort filename
```

1.29.3 Sample Input and Output

```
ashiq@s2014:~$ cat file
hgf
nbv
vcx
zxc
and
reu
uit
ashiq@s2014:~$ sort < file
and
hgf
nbv
reu
uit
vcx
zxc
ashiq@s2014:~$
```

Figure 1.29: Output

1.30 Filters (uniq)

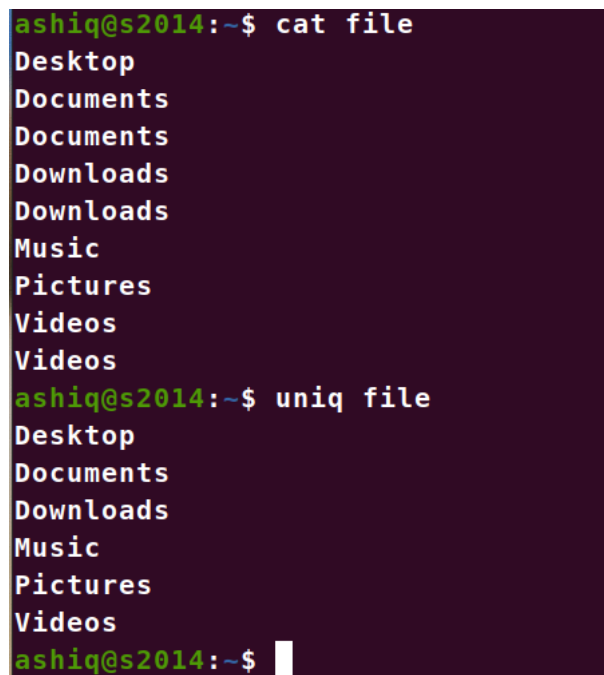
1.30.1 Description

Given a sorted stream of data from standard input, it removes the duplicate lines of data and return the result to the standard output.

1.30.2 Syntax

```
uniq filename
```

1.30.3 Sample Input and Output

A terminal window with a dark purple background. The prompt is 'ashiq@s2014:~\$'. The first command is 'cat file', which outputs a list of folders: Desktop, Documents, Documents, Downloads, Downloads, Music, Pictures, Videos, Videos. The second command is 'uniq file', which outputs the same list but with the duplicate 'Documents' and 'Videos' entries removed, resulting in: Desktop, Documents, Downloads, Music, Pictures, Videos. The prompt returns to 'ashiq@s2014:~\$' with a cursor at the end.

```
ashiq@s2014:~$ cat file
Desktop
Documents
Documents
Downloads
Downloads
Music
Pictures
Videos
Videos
ashiq@s2014:~$ uniq file
Desktop
Documents
Downloads
Music
Pictures
Videos
ashiq@s2014:~$
```

Figure 1.30: Output

1.31 Filters (grep)

1.31.1 Description

Examines each line of data it receives from standard input and outputs all lines that contains a specific pattern of characters.

1.31.2 Syntax

```
grep "string" filename
```

1.31.3 Sample Input and Output

```
ashiq@s2014:~$ cat file
Desktop
Documents
Documents
Downloads
Downloads
Music
Pictures
Videos
Videos
ashiq@s2014:~$ grep "Do" file
Documents
Documents
Downloads
Downloads
ashiq@s2014:~$
```

Figure 1.31: Output

1.32 Filters (*fmt*)

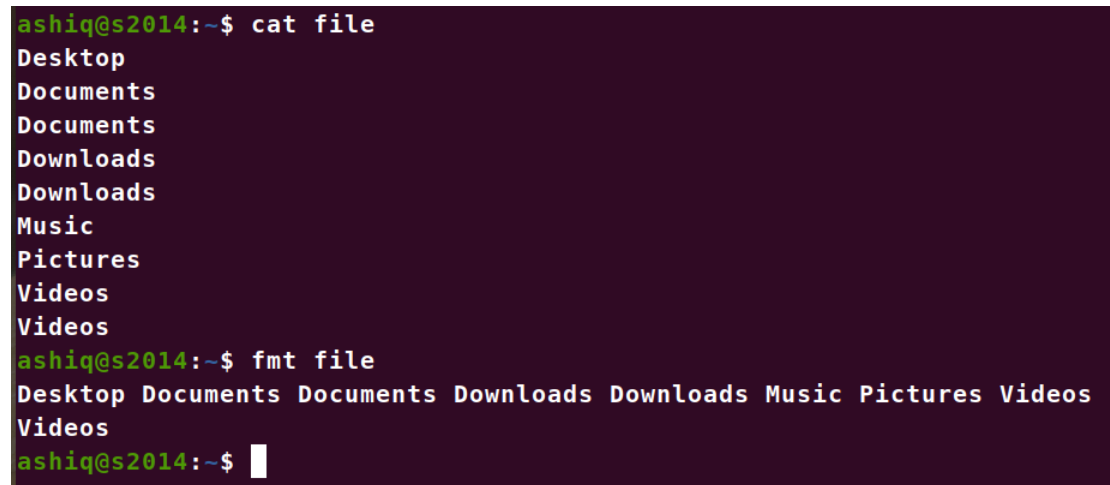
1.32.1 Description

Reads the text from standard input and output formatted text to standard output.

1.32.2 Syntax

```
fmt filename
```

1.32.3 Sample Input and Output

A terminal window with a dark purple background. The prompt is 'ashiq@s2014:~\$'. The first command is 'cat file', which outputs a list of directory names: Desktop, Documents, Documents, Downloads, Downloads, Music, Pictures, Videos, Videos. The second command is 'fmt file', which outputs the same list of directory names formatted into a single line: 'Desktop Documents Documents Downloads Downloads Music Pictures Videos Videos'. The prompt is 'ashiq@s2014:~\$' followed by a cursor.

```
ashiq@s2014:~$ cat file
Desktop
Documents
Documents
Downloads
Downloads
Music
Pictures
Videos
Videos
ashiq@s2014:~$ fmt file
Desktop Documents Documents Downloads Downloads Music Pictures Videos
Videos
ashiq@s2014:~$
```

Figure 1.32: Output

1.33 Filters (*pr*)

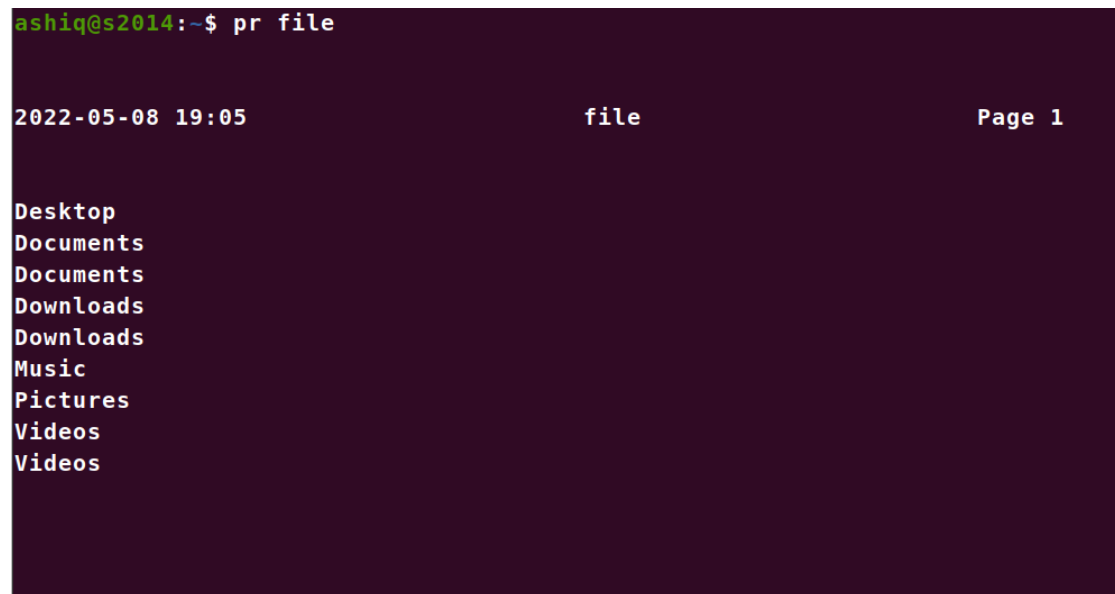
1.33.1 Description

Takes the data from the standard input and splits data into pages with page breaks, footers and headers in preparation for printing.

1.33.2 Syntax

```
pr filename
```

1.33.3 Sample Input and Output



```
ashiq@s2014:~$ pr file

2022-05-08 19:05                file                Page 1

Desktop
Documents
Documents
Downloads
Downloads
Music
Pictures
Videos
Videos
```

Figure 1.33: Output

1.34 Filters (*head*)

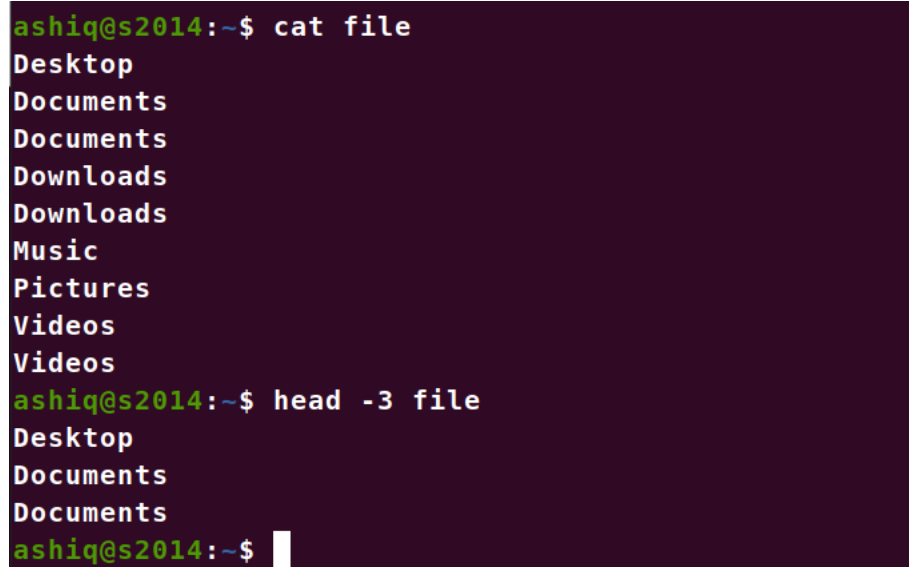
1.34.1 Description

Outputs the first few lines of a file and returns it to the standard output.

1.34.2 Syntax

```
head -n filename
(n - number of lines to be printed, default value = 10)
```


1.34.3 Sample Input and Output

A terminal window with a dark purple background. The prompt is 'ashiq@s2014:~\$'. The first command is 'cat file', which outputs a list of directory names: Desktop, Documents, Documents, Downloads, Downloads, Music, Pictures, Videos, and Videos. The second command is 'head -3 file', which outputs the first three lines of the file: Desktop, Documents, and Documents. The prompt is now 'ashiq@s2014:~\$' with a cursor.

```
ashiq@s2014:~$ cat file
Desktop
Documents
Documents
Downloads
Downloads
Music
Pictures
Videos
Videos
ashiq@s2014:~$ head -3 file
Desktop
Documents
Documents
ashiq@s2014:~$
```

Figure 1.34: Output

1.35 Filters (tail)

1.35.1 Description

Outputs the last few lines of a file and returns it to the standard output.

1.35.2 Syntax

```
tail -n filename
(n - number of lines to be printed, default value = 10)
```

1.35.3 Sample Input and Output

```
ashiq@s2014:~$ cat file
Desktop
Documents
Documents
Downloads
Downloads
Music
Pictures
Videos
Videos
ashiq@s2014:~$ tail -3 file
Pictures
Videos
Videos
ashiq@s2014:~$
```

Figure 1.35: Output

1.36 Filters (tr)

1.36.1 Description

Translates characters, can be used to perform tasks such as uppercase to lowercase conversions.

1.36.2 Syntax

```
tr [:lower:] [:upper:]
```

1.36.3 Sample Input and Output

```
ashiq@s2014:~$ tr [:lower:] [:upper:] < file
DESKTOP
DOCUMENTS
DOCUMENTS
DOWNLOADS
DOWNLOADS
MUSIC
PICTURES
VIDEOS
VIDEOS
```

Figure 1.36: Output

1.37 Job control (*ps*)

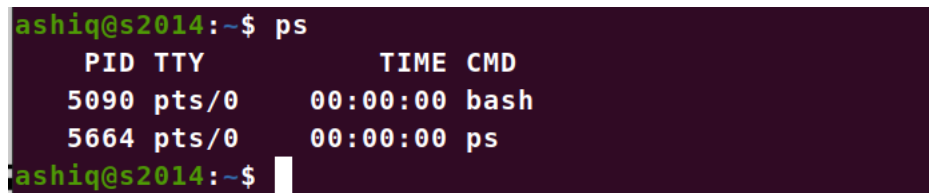
1.37.1 Description

List the processes running in the system.

1.37.2 Syntax

```
ps
```

1.37.3 Sample Input and Output



```
ashiq@s2014:~$ ps
  PID TTY          TIME CMD
 5090 pts/0    00:00:00 bash
 5664 pts/0    00:00:00 ps
ashiq@s2014:~$
```

Figure 1.37: Output

1.38 su

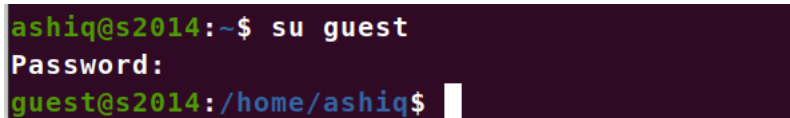
1.38.1 Description

Temporarily become super user. It is used to switch from one user to another.

1.38.2 Syntax

```
su username
```

1.38.3 Sample Input and Output



```
ashiq@s2014:~$ su guest
Password:
guest@s2014:/home/ashiq$
```

Figure 1.38: Output

1.39 alias

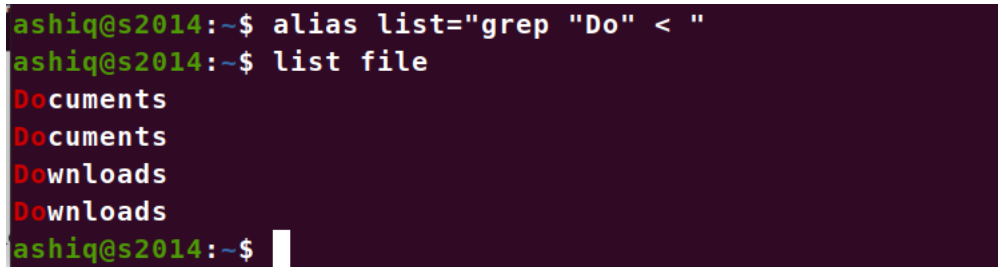
1.39.1 Description

It lets the user to give names of his/her choice to a command or sequence of commands.

1.39.2 Syntax

```
alias alternatename=command
```

1.39.3 Sample Input and Output

A terminal window with a dark purple background. The prompt is 'ashiq@s2014:~\$'. The user enters 'alias list="grep "Do" < "'. The prompt changes to 'ashiq@s2014:~\$'. The user enters 'list file'. The output shows 'Documents' on two lines and 'Downloads' on two lines, all in red text. The prompt returns to 'ashiq@s2014:~\$' with a cursor.

```
ashiq@s2014:~$ alias list="grep "Do" < "  
ashiq@s2014:~$ list file  
Documents  
Documents  
Downloads  
Downloads  
ashiq@s2014:~$
```

Figure 1.39: Output

1.40 df

1.40.1 Description

The df command shows the size used and available space on the mounted file system of your computer. Human readable (-h) option displays the sizes in mb or gb instead of bytes. The exclude (-x) option allows you to tell df to discount filesystems you are not interested in.

1.40.2 Syntax

```
df [options] filename
```

1.40.3 Sample Input and Output

```

ashiq@s2014:~$ df -h file
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda5        20G   8.4G   9.7G  47% /
ashiq@s2014:~$ df -h -x file
Filesystem      Size  Used Avail Use% Mounted on
udev            1.9G     0   1.9G   0% /dev
tmpfs           393M   1.5M  392M   1% /run
/dev/sda5        20G   8.4G   9.7G  47% /
tmpfs           2.0G     0   2.0G   0% /dev/shm
tmpfs           5.0M   4.0K   5.0M   1% /run/lock
tmpfs           2.0G     0   2.0G   0% /sys/fs/cgroup
/dev/loop0       128K  128K     0 100% /snap/bare/5
/dev/loop1       111M  111M     0 100% /snap/core/12834
/dev/loop3       249M  249M     0 100% /snap/gnome-3-38-2004/99
/dev/loop2       219M  219M     0 100% /snap/gnome-3-34-1804/66
/dev/loop4        56M   56M     0 100% /snap/core18/1988
/dev/loop6       219M  219M     0 100% /snap/gnome-3-34-1804/77
/dev/loop5        45M   45M     0 100% /snap/snapd/15534
/dev/loop7        56M   56M     0 100% /snap/core18/2344
/dev/loop8        65M   65M     0 100% /snap/gtk-common-themes/1514
/dev/loop9        55M   55M     0 100% /snap/snap-store/558
/dev/loop10       66M   66M     0 100% /snap/gtk-common-themes/1519
/dev/loop11       52M   52M     0 100% /snap/snap-store/518
/dev/loop12       62M   62M     0 100% /snap/core20/1434
/dev/sda1        511M   4.0K  511M   1% /boot/efi
SharedFolder     326G   50G  276G  16% /media/sf_SharedFolder
tmpfs           393M   36K  393M   1% /run/user/1000
tmpfs           393M   20K  393M   1% /run/user/125
ashiq@s2014:~$

```

Figure 1.40: Output

1.41 diff

1.41.1 Description

Compares two text files and shows the difference between them. The `-y` (side by side) option shows the line differences side by side. The `-w` (width) option lets you specify the maximum line width to use to avoid wraparound lines. The `suppress-common-lines` prevents `diff` from listing the matching lines, letting you focus on the lines which have differences.

1.41.2 Syntax

```
diff [options] filename1 filename2
```

1.41.3 Sample Input and Output

```
ashiq@s2014:~/dir1$ cat file1
hfh
xas
wer
try
uit
hel
ashiq@s2014:~/dir1$ cat file2
uyt
ert
wet
ght
mnk
ashiq@s2014:~/dir1$ diff -y file1 file2
hfh | uyt
xas | ert
wer | wet
try | ght
uit | mnk
hel <
```

Figure 1.41: Output

1.42 echo

1.42.1 Description

It prints the string of text to the terminal window.

1.42.2 Syntax

```
echo "string of text"
```

1.42.3 Sample Input and Output

```
ashiq@s2014:~/dir1$ echo "HELLO WORLD"
HELLO WORLD
ashiq@s2014:~/dir1$
```

Figure 1.42: Output

1.43 find

1.43.1 Description

Used to track down files that the user know exists but forgot its path.

1.43.2 Syntax

```
find startlocation -name *filename*
```

1.43.3 Sample Input and Output

```
ashiq@s2014:~$ find . -name *file*
./file
./dir1/file
ashiq@s2014:~$
```

Figure 1.43: Output

1.44 free

1.44.1 Description

Gives a summary of memory usage with computer. -h option provides human friendly numbers and units.

1.44.2 Syntax

```
free option
```

1.44.3 Sample Input and Output

```
ashiq@s2014:~$ free
      total        used        free      shared  buff/cache   available
Mem:    4019948    1219228    1468320        57580     1332400     2515208
Swap:    945416           0     945416
ashiq@s2014:~$ free -h
      total        used        free      shared  buff/cache   available
Mem:    3.8Gi     1.2Gi     1.4Gi        56Mi     1.3Gi     2.4Gi
Swap:    923Mi          0B     923Mi
```

Figure 1.44: Output

1.45 groups

1.45.1 Description

It tells which group the user is a member of

1.45.2 Syntax

`groups username`

1.45.3 Sample Input and Output

```
ashiq@s2014:~$ groups guest
guest : guest
ashiq@s2014:~$ groups ashiq
ashiq : ashiq adm cdrom sudo dip plugdev lpadmin lxd sambashare vboxsf
```

Figure 1.45: Output

1.46 *gzip*

1.46.1 Description

Used to compress the files. By default, it removes the original file and leaves you with the compressed version. To retain both, use `-k` (keep) option.

1.46.2 Syntax

`gzip option filename`

1.46.3 Sample Input and Output

```
ashiq@s2014:~/dir1$ ls
file file1 file2
ashiq@s2014:~/dir1$ gzip -k file
ashiq@s2014:~/dir1$ ls
file file1 file2 file.gz
ashiq@s2014:~/dir1$
```

Figure 1.46: Output

1.47 *history*

1.47.1 Description

The `history` command lists the commands you have previously issued on the command line. You repeat any of the command from history list by typing an exclamation mark(!) and the number of the command from the history list.

1.47.2 Syntax

`history`

1.47.3 Sample Input and Output

```
ashiq@s2014:~/dir1$ ls
file  file1  file2  file.gz
ashiq@s2014:~/dir1$ history
 1  ls
 2  cleat
 3  clear
 4  ls
 5  clear
 6  touch file1
 7  ls
 8  mkdir dir1
 9  ls
```

Figure 1.47: Output

1.48 mv

1.48.1 Description

Used to move files and directories from directory to directory.

1.48.2 Syntax

```
mv dir/file dirname
```

1.48.3 Sample Input and Output

```
ashiq@s2014:~/dir1$ ls
file  file1  file2  file.gz
ashiq@s2014:~/dir1$ rm file
ashiq@s2014:~/dir1$ ls
file1  file2  file.gz
ashiq@s2014:~/dir1$ cd ..
ashiq@s2014:~$ ls
Desktop  Documents  file  Pictures  snap  Videos
dir1     Downloads  Music  Public    Templates
ashiq@s2014:~$ mv file dir1
ashiq@s2014:~$ cd dir1
ashiq@s2014:~/dir1$ ls
file  file1  file2  file.gz
ashiq@s2014:~/dir1$
```

Figure 1.48: Output

1.49 shutdown

1.49.1 Description

Using shutdown with no parameters will shutdown the computer in one minute, shutdown now command will shutdown computer immediately.

1.49.2 Syntax

shutdown option

1.49.3 Sample Input and Output

```
ashiq@s2014:~/dir1$ shutdown 23:00
Shutdown scheduled for Sun 2022-05-08 23:00:00 IST, use 'shutdown -c' to cancel.
ashiq@s2014:~/dir1$ shutdown -c
ashiq@s2014:~/dir1$
```

Figure 1.49: Output