

**Ex 1****ADVANCED LINUX COMMANDS****Date: 18.08.20****Aim:**

To study and implement the linux commands

**Description:**

Sl. No.	Command Name	Description	options
1.	ls	List files and/or directories.	-a, --all do not ignore entries starting with. -A, --almost-all do not list implied. and. --author with -l, print the author of each file -b, --escape print C-style escapes for nongraphic characters  --block-size=SIZE
2.	Who am i	This command reveals the user who is currently logged in.	-a, --all =same as -b -d --login -p -r -t -T -u  -b, --boot time of last system boot  -d, --dead print dead processes -H, --heading print line of column headings  -l, --login

			<p>print system login processes</p> <p>--lookup</p> <p>attempt to canonicalize hostnames via</p>
3.	<b>pwd</b>	prints the absolute path to the current working directory	<p>-L, --logical</p> <p>use PWD from the environment, even if it contains symlinks</p> <p>-P, --physical</p> <p>avoid all symlinks</p>
4.	<b>cal</b>	Displays the calendar of the current month	<p>-1, --one</p> <p>Display single month output. (This is the default.)</p> <p>-3, --three</p> <p>Display previous/current/next month output.</p> <p>-s, --Sunday</p> <p>Display Sunday as the first day of the week.</p> <p>-m, --Monday</p> <p>Display Monday as the first day of the week.</p> <p>-j, --Julian</p> <p>Display Julian dates (days one based, numbered from January 1).</p> <p>-y, --year</p>
5.	<b>echo</b>	This command will echo whatever you provide it.	<p>-n</p> <p>do not output the trailing newline</p>

			<p>-e</p> <p>enable interpretation of backslash escapes</p> <p>-E</p> <p>disable the interpretation of backslash escapes (default)</p>
6.	date	Displays current time and date.	<p>-d, --date=STRING</p> <p>display time described by STRING, not 'now'</p> <p>-f, --file=DATEFILE</p> <p>like --date once for each line of DATEFILE</p>
7.	tty	Displays the current terminal.	
8.	id	This command prints user and groups (UID and GID) of the current user.	<p>-a</p> <p>ignore, for compatibility with other versions</p> <p>-Z, --context</p> <p>print only the security context of the current user</p> <p>-g, --troup</p> <p>print only the effective group ID</p> <p>-G, --groups</p> <p>print all group IDs</p> <p>-n, --name</p> <p>print a name instead of a number, for -ugG</p>
9.	clear	This command clears the screen.	
10.	man	To show manual page	
11.	cd	Change the current working directory to the directory provided as an argument.	

<b>12.</b>	<b>mkdir</b>	To create a directory, the 'mkdir' command is used.	
<b>13.</b>	<b>touch</b>	For creating an empty file, use the touch command.	
<b>14.</b>	<b>cp</b>	Copy files and directories	
<b>15.</b>	<b>mv</b>	Move files or directories. The 'mv' command works like 'cp' command, except that the original file is removed. But, the mv command can be used to rename the files (or directories).	
<b>16.</b>	<b>rmdir</b>	the command removes any empty directories, but cannot delete a directory if a file is present in it.	
<b>17.</b>	<b>file</b>	The file command determines the file type of a given file.	
<b>18.</b>	<b>cat</b>	The 'cat' command is actually a concatenator but can be used to view the contents of a file.	
<b>19.</b>	<b>head</b>	Displays the first few lines of a file. By default, the 'head' command displays the first 10 lines of a file.	
<b>20.</b>	<b>tail</b>	the 'tail' command shows the last 10 lines by default	<p>-c, --bytes=[-]K  print the first K bytes of each file</p> <p>-n, --lines=[-]K  print the first K lines instead of the first 10</p> <p>-q, --quiet, --silent  never print headers giving file names</p>
<b>21.</b>	<b>wc</b>	This command counts lines, words, and letters of the input given to it.	
<b>22.</b>	<b>grep</b>	The 'grep' command searches for a pattern in a file (or standard input).	

<b>23.</b>	<b>vi</b>	Visual editor	
<b>24.</b>	<b>alias</b>	The 'alias' is another name for a command.	
<b>25.</b>	<b>history</b>	shows the commands you have entered on your terminal so far.	
<b>26.</b>	<b>passwd</b>	To change your password	
<b>27.</b>	<b>help</b>	With almost every command, '--help' option shows usage summary for that command.	
<b>28.</b>	<b>chmod</b>	The chmod command lets you change access permissions for a file.	
<b>29.</b>	<b>stat</b>	To check the status of a file. This provides more detailed information about a file than 'ls -l' output.	-L, --dereference follow links -f, --file-system display file system status instead of file status -c --format=FORMAT use the specified FORMAT instead of the default; output a newline after each use of FORMAT --printf=FORMAT
<b>30.</b>	<b>ln</b>	The ln command is used in Linux to create links.	

**Exercise:****1. List the contents of user's home directory including the hidden files**

```
[urk17cs055@code ~]$ ls -a
.          a2          classname      dayscorrect.cpp  glo.c          marks2.cpp
..         a3          compilerLab1.cpp days.cpp          glocric.cpp     marks.cpp
10first.cpp amount.cpp    compilerLab1.cpp.save .days.cpp.swp   glogracemarks.cpp matrix.cpp
10second.cpp amt.cpp      compilerLab.cpp.save .emacs          glob.c          matrixmulti.c
10third.cpp  a.out       conditional.c   evenoddarray.cpp glot.c          matrixmulti.c\
10three.cpp  armstrong.c .config        fibonacci.c      glotollbooth.cpp menu.c
11first.cpp  array.c     criccorrect.cpp filename.cpp     gloz.c          message.cpp
11second.cpp .bash_history .criccorrect.cpp.swo first.c         gracemark.cpp   .mozilla
5ascending.cpp .bash_logout .criccorrect.cpp.swp friend         .gracemark.cpp.swp ncr.c
9fourb.cpp   .bash_profile cric.cpp       friendfun8.cpp  gracemarkscorrect.cpp palindrome.c
9four.cpp    .bashrc      .cric.cpp.swp  friendfunction1.cpp gracemarks.cpp  phoneclass.cpp
.9four.cpp.swp bitwiseglo.c cricket        funcpow.c       .hello.cpp.swp  .phoneclass.cpp.swp
9six2.cpp    bmi.c        cricketcorrectglo.cpp .gitconfig     incredecre.c    phoneclass.cppvi
9six.cpp     calculator.cpp cricket.cpp     glo11first.cpp  .k5login        phoneclass.cppwq
9two.cpp     class2.cpp   data.c         glo11second2.cpp labpracbinary.cpp phoneclassglo.c
a1           class.cpp   dayscorrect2.cpp glo11second.cpp labpracticetest.cpp posneg.c
```

**2. List the content of /var directory?**

```
[urk17cs055@code ~]$ cd /var
[urk17cs055@code var]$ ls
adm  cache  centrifyda  centrifydc  crash  db  empty  games  gopher  kerberos  lib  local  lock  log  mail
nis  opt  preserve  run  spool  tmp  yp
[urk17cs055@code var]$
```

**3. Create two directories named dir1 & dir2**

```
[urk17cs055@code ~]$ mkdir dir1
[urk17cs055@code ~]$ mkdir dir2
[urk17cs055@code ~]$ cat dir1 dir2
cat: dir1: Is a directory
cat: dir2: Is a directory
```

**4. Create a hidden directory with your name?**

```
[urk17cs055@code ~]$ mkdir .saju
[urk17cs055@code ~]$ ls -a
.          72.sh          calc.sh          evenoddarray.cpp  incredecre.c    .
..         81.c           calculator.cpp   exp.txt           .k5login        RBI.cpp
10first.cpp .81.c.swp      call.txt        f1.txt           labpracbinary.cpp RBI.cpp.swp
10second.cpp 8a.c          cal.sh          f2.txt           labpracticetest.cpp RBIglo.cpp
10third.cpp  8b.c          class2.cpp      f3.txt           lex.yy.c         RBIglo.cpp.
10three.cpp  8c            class.cpp       fact.sh          marks2.cpp       .saju
11first.cpp  8c.c          classname      fibonacci.c      marks.cpp        sample1
```

**5. Display the content of a hidden directory.**

```
[urk17cs055@code ~]$ cd .saju
[urk17cs055@code .saju]$ touch saju
[urk17cs055@code .saju]$ ls
saju
[urk17cs055@code .saju]$
```

## 6. Display the calendar of 2020.

```
[urk17cs055@code .saju]$ cal 2020
                2020

    January          February          March
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
   1  2  3  4           1             1  2  3  4  5  6  7
  5  6  7  8  9 10 11   2  3  4  5  6  7  8   8  9 10 11 12 13 14
12 13 14 15 16 17 18   9 10 11 12 13 14 15  15 16 17 18 19 20 21
19 20 21 22 23 24 25  16 17 18 19 20 21 22  22 23 24 25 26 27 28
26 27 28 29 30 31     23 24 25 26 27 28 29  29 30 31

    April           May           June
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
   1  2  3  4           1  2           1  2  3  4  5  6
  5  6  7  8  9 10 11   3  4  5  6  7  8  9   7  8  9 10 11 12 13
12 13 14 15 16 17 18  10 11 12 13 14 15 16  14 15 16 17 18 19 20
19 20 21 22 23 24 25  17 18 19 20 21 22 23  21 22 23 24 25 26 27
26 27 28 29 30       24 25 26 27 28 29 30  28 29 30
                   31

    July           August           September
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
   1  2  3  4           1             1  2  3  4  5
  5  6  7  8  9 10 11   2  3  4  5  6  7  8   6  7  8  9 10 11 12
12 13 14 15 16 17 18   9 10 11 12 13 14 15  13 14 15 16 17 18 19
19 20 21 22 23 24 25  16 17 18 19 20 21 22  20 21 22 23 24 25 26
26 27 28 29 30 31     23 24 25 26 27 28 29  27 28 29 30
                   30 31

    October          November          December
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
   1  2  3           1  2  3  4  5  6  7           1  2  3  4  5
  4  5  6  7  8  9 10   8  9 10 11 12 13 14   6  7  8  9 10 11 12
11 12 13 14 15 16 17  15 16 17 18 19 20 21  13 14 15 16 17 18 19
18 19 20 21 22 23 24  22 23 24 25 26 27 28  20 21 22 23 24 25 26
25 26 27 28 29 30 31  29 30                27 28 29 30 31
```

## 7. Copy the file /etc/passwd file to current directory with sample.txt as the filename

```
[urk17cs055@code dir1]$ cat /etc/passwd > sample.txt
[urk17cs055@code dir1]$ cat sample.txt
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:99:99:Nobody:/:/sbin/nologin
systemd-network:x:192:192:systemd Network Management:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
polkitd:x:999:998:User for polkitd:/:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/var/empty/sshd:/sbin/nologin
postfix:x:89:89:/:/var/spool/postfix:/sbin/nologin
chrony:x:998:996:/:/var/lib/chrony:/sbin/nologin
ntp:x:38:38:/:etc/ntp:/sbin/nologin
```

8. Create a file test1.txt using Vim editor with the following contents to it

```
Name      RegNo      ResearchInterest
Melvin    07af501    GridComputing
Mithin    07af502    ClusterComputing
James     07af503    ImageProcessing
Jane      07af504    Networking
Caroline          07af505    ClusterComputing
Binu      07af506    GridComputing
Aaron     07af507    ImageProcessing
Selvin    07af508    Networking
Jerwin    07af509    WirelessNetworks
Arun      07af510    GridComputing
```

a) Display the student names who are having Research Interest as Grid Computing

```
[urk17cs055@code ~]$ grep GridComputing test1.txt
Melvin    07af501    GridComputing
Binu      07af506    GridComputing
Arun      07af510    GridComputing
[urk17cs055@code ~]$
```

b) List all the student names & RegNo in the class

```
[urk17cs055@code ~]$ cut -f 1,2 test1.txt
Name      RegNo
Melvin    07af501
Mithin    07af502
James     07af503
Jane      07af504
Caroline          07af505
Binu      07af506
Aaron     07af507
Selvin    07af508
Jerwin    07af509
Arun      07af510
[urk17cs055@code ~]$
```

c) List the count of students who have interest as Image Processing and store the result in another file.

```
[urk17cs055@code ~]$ grep ImageProcessing test1.txt|wc -l > test
[urk17cs055@code ~]$ cat test
2
[urk17cs055@code ~]$
```

d) Display the first two rows and last two and store into another file

```
[urk17cs055@code ~]$ head -3 test1.txt >> display.txt | tail -2 test1.txt >> display.txt
[urk17cs055@code ~]$ vi display.txt
Jerwin    07af509    WirelessNetworks
Arun      07af510    GridComputing
Name      RegNo      ResearchInterest
Melvin    07af501    GridComputing
Mithin    07af502    ClusterComputing
```



**9. Display the contents of the file test1.txt without any blank lines**

```
[urk17cs055@code ~]$ grep -v '^$' test1.txt
Name      RegNo      ResearchInterest
Melvin    07af501    GridComputing
Mithin    07af502    ClusterComputing
James     07af503    ImageProcessing
Jane      07af504    Networking
Caroline           07af505    ClusterComputing
Binu      07af506    GridComputing
Aaron     07af507    ImageProcessing
Selvin    07af508    Networking
Jerwin    07af509    WirelessNetworks
Arun      07af510    GridComputing
```

**10. Move the file sample.txt from dir1 directory to dir2 directory**

```
[urk17cs055@code dir2]$ cd ..
[urk17cs055@code ~]$ cd dir1
[urk17cs055@code dir1]$ cat sample.txt
hello this is gloria
[urk17cs055@code dir1]$ mv sample1.txt /data/urk17cs055/dir2
mv: cannot stat 'sample1.txt': No such file or directory
[urk17cs055@code dir1]$ mv sample.txt /data/urk17cs055/dir2
[urk17cs055@code dir1]$ cd ..
[urk17cs055@code ~]$ cd dir2
[urk17cs055@code dir2]$ ls
new.txt  sample1.txt  sample.txt
[urk17cs055@code dir2]$ cat sample.txt
hello this is gloria
[urk17cs055@code dir2]$
```

**11. Change directory into dir2 directory**

```
[urk17cs055@code ~]$ cd dir2
[urk17cs055@code dir2]$
```

**12. Check whether the file sample.txt is present their**

```
[urk17cs055@code ~]$ cd dir2
[urk17cs055@code dir2]$ ls
new.txt  sample1.txt  sample.txt
[urk17cs055@code dir2]$ cat sample.txt
hello this is gloria
[urk17cs055@code dir2]$
```

**13. Rename the file sample.txt to new.txt and check whether sample.txt is there or not?**

```
[urk17cs055@code dir2]$ ls
new.txt  sample1.txt  sample.txt
[urk17cs055@code dir2]$ mv sample.txt new.txt
[urk17cs055@code dir2]$ ls
new.txt  sample1.txt
[urk17cs055@code dir2]$
```

**14. Remove the directory dir1**

```
[urk17cs055@code ~]$ rm -r dir1
[urk17cs055@code ~]$ cd dir1
-bash: cd: dir1: No such file or directory
[urk17cs055@code ~]$
```

**15. Display last 3 lines of the file test1.txt**

```
[urk17cs055@code ~]$ tail -3 test1.txt
Selvin 07af508 Networking
Jerwin 07af509 WirelessNetworks
Arun 07af510 GridComputing
[urk17cs055@code ~]$
```

**16. Display all the commands you have executed so far and save the list into a file named todayshistory.txt**

```
[urk17cs055@code ~]$ touch todayshistory.txt
[urk17cs055@code ~]$ history > todayshistory.txt
[urk17cs055@code ~]$ cat todayshistory.txt
```

```
1010 cat sample1.txt
1011 cat new.txt
1012 cd ..
1013 touch todayshistory.txt
1014 history > todayshistory.txt
[urk17cs055@code ~]$
```

**17. How many files are present under your home directory?**

```
[urk17cs055@code ~]$ ls -a | wc -l
210
[urk17cs055@code ~]$
```

**18. Perform sorting of three files and store the sorted file in the fourth file**

```
[urk17cs055@code ~]$ cat f1.txt
first file

[urk17cs055@code ~]$ cat f2.txt
second file

[urk17cs055@code ~]$ cat f3.txt
third file

[urk17cs055@code ~]$ sort f1.txt f2.txt f3.txt > file4.txt
[urk17cs055@code ~]$ cat file4.txt

first file
second file
third file
[urk17cs055@code ~]$
```

19. Change the permission of your newly created file such that the group users and others don't access any type of access.

```
[urk17cs055@code ~]$ chmod 700 file4.txt
[urk17cs055@code ~]$ ls -l file4.txt
-rwx----- 1 urk17cs055 urk17cs055 36 Dec 16 2019 file4.txt
[urk17cs055@code ~]$
```

20. Display the network status on the shell.

```
[urk17cs055@code ~]$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address          Foreign Address         State
tcp        0      0 code.karunya.edu:53648 code.karunya.edu:hbc1   ESTABLISHED
tcp        0      0 code.karunya.edu:https 162.158.50.199:42986    ESTABLISHED
tcp        0      0 code.karunya.edu:nfs    192.168.0.32:ftps-data ESTABLISHED
tcp        0      0 code.karunya.edu:hbc1   code.karunya.edu:53948 TIME_WAIT
tcp        0      0 code.karunya.edu:53892  code.karunya.edu:hbc1   ESTABLISHED
tcp        0      0 code.karunya.edu:hbc1   code.karunya.edu:53588 ESTABLISHED
tcp        0      0 code.karunya.edu:53816  code.karunya.edu:hbc1   ESTABLISHED
tcp        0      0 code.karunya.edu:nfs    192.168.0.34:790       ESTABLISHED
tcp        0      0 code.karunya.edu:53984  code.karunya.edu:hbc1   TIME_WAIT
tcp        0      0 code.karunya.edu:https 162.158.158.192:56662   ESTABLISHED
tcp        0      0 code.karunya.edu:53800  code.karunya.edu:hbc1   ESTABLISHED
tcp        0      0 code.karunya.edu:hbc1   code.karunya.edu:53982 ESTABLISHED
tcp        0      0 code.karunya.edu:53198  code.karunya.edu:hbc1   ESTABLISHED
tcp        0      0 code.karunya.edu:https 141.101.107.59:55706    ESTABLISHED
tcp        0      0 code.karunya.edu:hbc1   code.karunya.edu:53892 ESTABLISHED
tcp        0      0 code.karunya.edu:https 141.101.98.13:26462     ESTABLISHED
tcp        0      0 code.karunya.edu:53986  code.karunya.edu:hbc1   TIME_WAIT
tcp        0      0 code.karunya.edu:53988  code.karunya.edu:hbc1   TIME_WAIT
tcp        0      0 code.karunya.edu:hbc1   code.karunya.edu:53648 ESTABLISHED
tcp        0      0 code.karunya.edu:59644  192.168.2.27:msft-gc    ESTABLISHED
tcp        0      0 code.karunya.edu:https 162.158.198.178:10680   ESTABLISHED
tcp        0      0 code.karunya.edu:https 162.158.165.57:50492    ESTABLISHED
tcp        0      0 code.karunya.edu:https 162.158.50.246:27662    ESTABLISHED
tcp        0      0 code.karunya.edu:53978  code.karunya.edu:hbc1   TIME_WAIT
tcp        0      0 code.karunya.edu:53990  code.karunya.edu:hbc1   TIME_WAIT
tcp        0      0 code.karunya.edu:hbc1   code.karunya.edu:53198 ESTABLISHED
tcp        0      0 code.karunya.edu:https 172.69.135.227:9438     ESTABLISHED
tcp        0      0 code.karunya.edu:hbc1   code.karunya.edu:53388 ESTABLISHED
tcp        0      0 code.karunya.edu:https 162.158.155.237:21044   ESTABLISHED
tcp        0      0 code.karunya.edu:41606  192.168.2.27:ldap       ESTABLISHED
```

21. Compare any two files and search for both common and exclusive features

```
[urk17cs055@code ~]$ diff f1.txt f2.txt
1,2c1
< first file
<
---
> second file
[urk17cs055@code ~]$
```

22. Display the user ID, process ID and parent process ID.

```
[urk17cs055@code ~]$ ps -f
UID          PID  PPID  C STIME TTY          TIME CMD
urk17cs+  24552 24540   0 15:25 pts/3    00:00:00 -bash
urk17cs+  29188 24552   0 16:20 pts/3    00:00:00 ps -f
[urk17cs055@code ~]$
```

### 23. Report disk usages of file system.

```
[urk17cs055@code ~]$ df
filesystem            1K-blocks    Used Available Use% Mounted on
devtmpfs              3992636      0   3992636  0% /dev
tmpfs                 4004520      0   4004520  0% /dev/shm
tmpfs                 4004520  427216   3577304 11% /run
tmpfs                 4004520      0   4004520  0% /sys/fs/cgroup
/dev/mapper/centos_kitscode-root 68066844 3014192 65052652  5% /
/dev/sdal              1942528   334256  1608272 18% /boot
/dev/mapper/centos_kitscode-home 24404336   32992  24371344  1% /home
/dev/mapper/centos_kitscode-data 97609148 26097556 71511592 27% /data
/dev/mapper/centos_kitscode-var 10004480 9312784   691696 94% /var
tmpfs                  800908      0    800908  0% /run/user/1010884188
tmpfs                  800908      0    800908  0% /run/user/1010883060
tmpfs                  800908      0    800908  0% /run/user/1010875258
tmpfs                  800908      0    800908  0% /run/user/1010883054
tmpfs                  800908      0    800908  0% /run/user/1010882169
tmpfs                  800908      0    800908  0% /run/user/1010875242
[urk17cs055@code ~]$
```

### 24. Display the statistics of all ports connected to a network.

```
[urk17cs055@code ~]$ netstat -l
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp      0      0 0.0.0.0:nfs              0.0.0.0:*               LISTEN
tcp      0      0 0.0.0.0:46053            0.0.0.0:*               LISTEN
tcp      0      0 0.0.0.0:sunrpc           0.0.0.0:*               LISTEN
tcp      0      0 0.0.0.0:http             0.0.0.0:*               LISTEN
tcp      0      0 0.0.0.0:mountd            0.0.0.0:*               LISTEN
tcp      0      0 0.0.0.0:34067             0.0.0.0:*               LISTEN
tcp      0      0 0.0.0.0:ssh              0.0.0.0:*               LISTEN
tcp      0      0 0.0.0.0:hbc1             0.0.0.0:*               LISTEN
tcp      0      0 localhost:smtp           0.0.0.0:*               LISTEN
tcp      0      0 0.0.0.0:https            0.0.0.0:*               LISTEN
tcp6     0      0 [::]:nfs                 [::]:*                  LISTEN
tcp6     0      0 [::]:sunrpc              [::]:*                  LISTEN
tcp6     0      0 [::]:http                [::]:*                  LISTEN
tcp6     0      0 [::]:mountd              [::]:*                  LISTEN
tcp6     0      0 [::]:ssh                 [::]:*                  LISTEN
tcp6     0      0 [::]:57431               [::]:*                  LISTEN
tcp6     0      0 localhost:smtp           [::]:*                  LISTEN
tcp6     0      0 [::]:https               [::]:*                  LISTEN
tcp6     0      0 [::]:39228               [::]:*                  LISTEN
udp      0      0 0.0.0.0:39547            0.0.0.0:*               LISTEN
udp      0      0 0.0.0.0:mountd            0.0.0.0:*               LISTEN
udp      0      0 0.0.0.0:sunrpc           0.0.0.0:*               LISTEN
udp      0      0 0.0.0.0:49440            0.0.0.0:*               LISTEN
udp      0      0 localhost:323            0.0.0.0:*               LISTEN
udp      0      0 localhost:863            0.0.0.0:*               LISTEN
udp      0      0 0.0.0.0:xact-backup      0.0.0.0:*               LISTEN
```

```
unix 2      [ ACC ]     STREAM     LISTENING   603      /run/systemd/private
unix 2      [ ACC ]     STREAM     LISTENING   22164     private/virtual
unix 2      [ ACC ]     STREAM     LISTENING   22167     private/lmtp
unix 2      [ ACC ]     STREAM     LISTENING   22170     private/envil
unix 2      [ ACC ]     STREAM     LISTENING   22173     private/scache
unix 2      [ ACC ]     STREAM     LISTENING   17534     /run/gssproxy.sock
unix 2      [ ACC ]     STREAM     LISTENING   20918     /var/centrifysda/audit
unix 2      [ ACC ]     SEQPACKET  LISTENING   650      /run/udev/control
unix 2      [ ACC ]     STREAM     LISTENING   22105     public/pickup
unix 2      [ ACC ]     STREAM     LISTENING   22109     public/cleanup
unix 2      [ ACC ]     STREAM     LISTENING   22112     public/qmgr
unix 2      [ ACC ]     STREAM     LISTENING   22134     public/flush
unix 2      [ ACC ]     STREAM     LISTENING   22149     public/showq
unix 2      [ ACC ]     STREAM     LISTENING   667      /run/lvm/lvmetad.socket
unix 2      [ ACC ]     STREAM     LISTENING   680      /run/lvm/lvmpolld.socket
unix 2      [ ACC ]     STREAM     LISTENING   17533     /var/lib/gssproxy/default.sock
unix 2      [ ACC ]     STREAM     LISTENING   22891     /var/centrifysdc/daemon
unix 2      [ ACC ]     STREAM     LISTENING   22892     /var/centrifysdc/daemon2
```



**25. Display the uptime.**

```
[urk17cs055@code ~]$ uptime
16:24:01 up 10 days,  4:43, 140 users,  load average: 0.00, 0.02, 0.05
[urk17cs055@code ~]$
```

**26. Display the Julian day.**

```
[urk17cs055@code ~]$ date %
date: invalid date '%'
[urk17cs055@code ~]$ date
Sat Aug 22 16:24:46 IST 2020
[urk17cs055@code ~]$ date +%j
235
[urk17cs055@code ~]$
```

**27. Check the IP information.**

```
[urk17cs055@code ~]$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: ens32: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 00:50:56:93:66:93 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.29/24 brd 192.168.0.255 scope global noprefixroute ens32
        valid_lft forever preferred_lft forever
    inet6 fe80::1450:18ba:187f:1f02/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
[urk17cs055@code ~]$
```

**28. Display only the free space in the system.**

```
[urk17cs055@code ~]$ df -h --output=source,avail
Filesystem                Avail
devtmpfs                   3.9G
tmpfs                      3.9G
tmpfs                      3.5G
tmpfs                      3.9G
/dev/mapper/centos_kitscode-root 63G
/dev/sda1                  1.6G
/dev/mapper/centos_kitscode-home 24G
/dev/mapper/centos_kitscode-data 69G
/dev/mapper/centos_kitscode-var 676M
tmpfs                      783M
tmpfs                      783M
tmpfs                      783M
tmpfs                      783M
tmpfs                      783M
[urk17cs055@code ~]$
```

**29. Display the configuration information of your network.**

```
[urk17cs055@code ~]$ netstat -nr
Kernel IP routing table
Destination      Gateway         Genmask         Flags   MSS Window  irtt Iface
0.0.0.0          192.168.0.254  0.0.0.0         UG      0 0        0 ens32
192.168.0.0      0.0.0.0        255.255.255.0   U       0 0        0 ens32
[urk17cs055@code ~]$
```

**Results:**

The linux commands are studied and executed.

**Video Link:** <https://youtu.be/fH2W0hk3Tb0>