

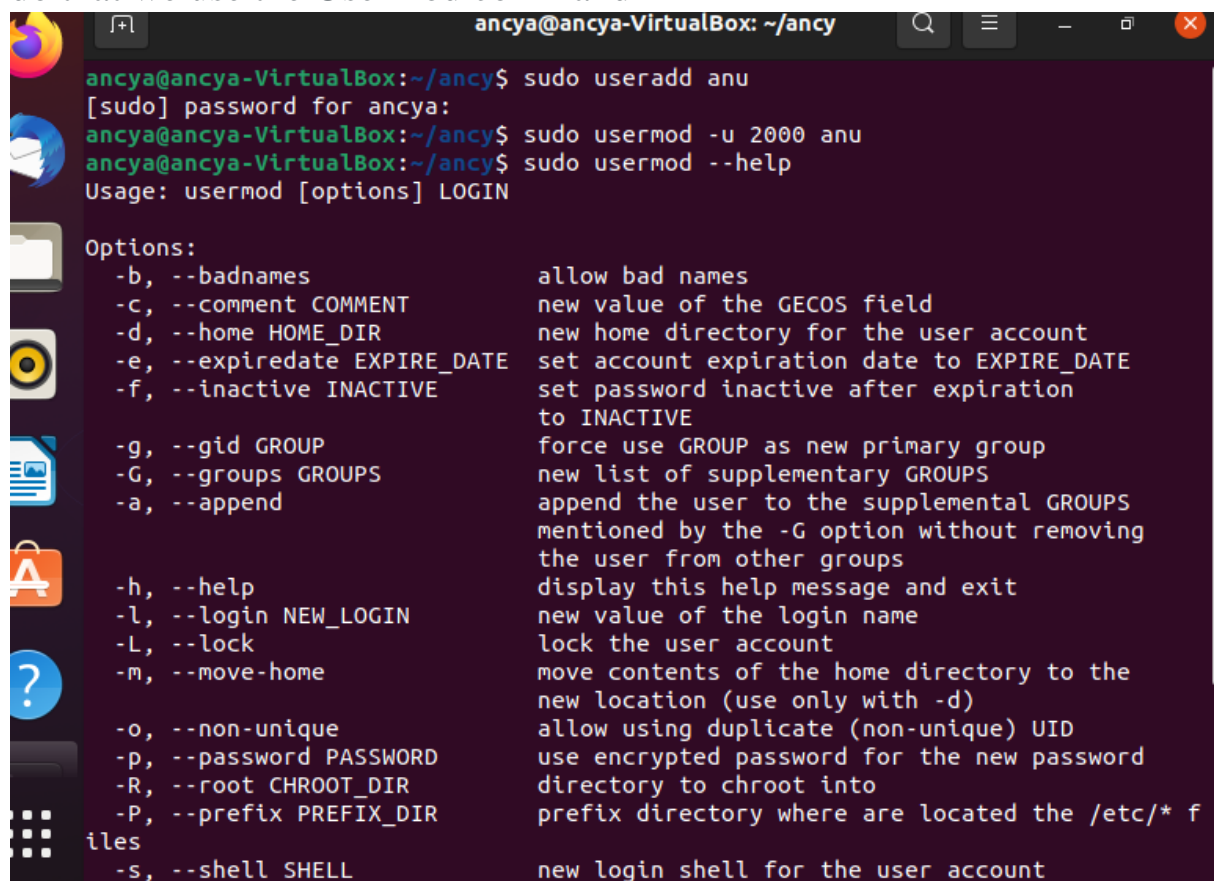
ASSIGNMENT 3
NETWORK & SYSTEM ADMINISTRATION LAB

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BASIC LINUX COMMANDS PART-3

1. usermode

usermod command or modify user is a command in Linux that is used to change the properties of a user in Linux through the command line. After creating a user we have to sometimes change their attributes like password or login directory etc. so in order to do that we use the Usermod command.

A terminal window titled 'ancya@ancya-VirtualBox: ~/ancy' showing a series of commands and their outputs. The commands are: 'sudo useradd anu', '[sudo] password for ancy:', 'sudo usermod -u 2000 anu', and 'sudo usermod --help'. The output of the last command is a detailed list of options for the usermod command, including -b, -c, -d, -e, -f, -g, -G, -a, -h, -l, -L, -m, -o, -p, -R, -P, -s, and their descriptions.

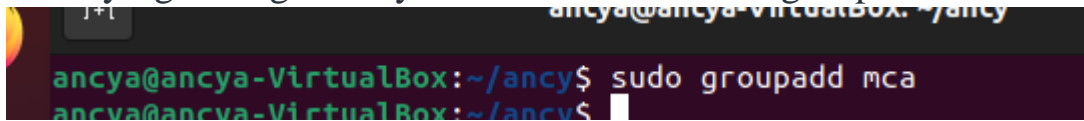
```
ancya@ancya-VirtualBox: ~/ancy$ sudo useradd anu
[sudo] password for ancy:
ancya@ancya-VirtualBox: ~/ancy$ sudo usermod -u 2000 anu
ancya@ancya-VirtualBox: ~/ancy$ sudo usermod --help
Usage: usermod [options] LOGIN

Options:
  -b, --badnames          allow bad names
  -c, --comment COMMENT   new value of the GECOS field
  -d, --home HOME_DIR     new home directory for the user account
  -e, --expiredate EXPIRE_DATE set account expiration date to EXPIRE_DATE
  -f, --inactive INACTIVE set password inactive after expiration
                           to INACTIVE
  -g, --gid GROUP          force use GROUP as new primary group
  -G, --groups GROUPS      new list of supplementary GROUPS
  -a, --append             append the user to the supplemental GROUPS
                           mentioned by the -G option without removing
                           the user from other groups
  -h, --help              display this help message and exit
  -l, --login NEW_LOGIN    new value of the login name
  -L, --lock               lock the user account
  -m, --move-home          move contents of the home directory to the
                           new location (use only with -d)
  -o, --non-unique         allow using duplicate (non-unique) UID
  -p, --password PASSWORD use encrypted password for the new password
  -R, --root CHROOT_DIR    directory to chroot into
  -P, --prefix PREFIX_DIR  prefix directory where are located the /etc/* f
                           iles
  -s, --shell SHELL        new login shell for the user account
```

2. groupadd

groupmod command in Linux is used to modify or change the existing group on Linux system. It can be handled by superuser or

root user. Basically, it modifies a group definition on the system by modifying the right entry in the database of the group.



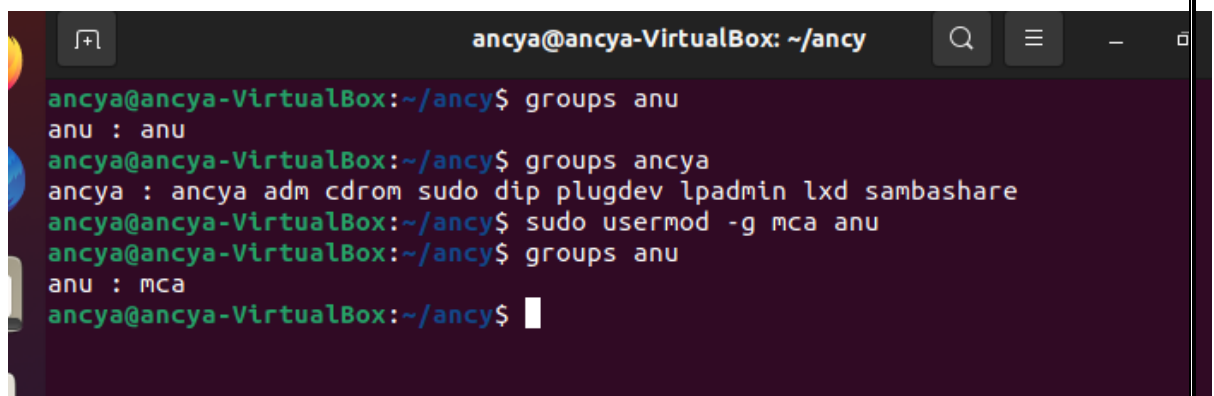
```
ancya@ancya-VirtualBox:~/ancy$ sudo groupadd mca
```

3. groups

In linux, there can be multiple users(those who use/operate the system), and groups are nothing but the collection of users. Groups make it easy to manage users with the same security and access privileges. A user can be part of different groups.

IMPORTANT POINTS:

- Groups command prints the names of the primary and any supplementary groups for each given username, or the current process if no names are given.
- If more than one name is given, the name of each user is printed before the list of that user's groups and the username is separated from the group list by a colon.



```
ancya@ancya-VirtualBox: ~/ancy
ancya@ancya-VirtualBox:~/ancy$ groups anu
anu : anu
ancya@ancya-VirtualBox:~/ancy$ groups ancy
ancya : ancy adm cdrom sudo dip plugdev lpadmin lxd sambashare
ancya@ancya-VirtualBox:~/ancy$ sudo usermod -g mca anu
ancya@ancya-VirtualBox:~/ancy$ groups anu
anu : mca
ancya@ancya-VirtualBox:~/ancy$
```

4. groupdel

groupdel command is used to delete a existing group. It will delete all entry that refers to the group, modifies the system account files, and it is handled by superuser or root user.

```
aneya@aneya-VirtualBox: ~/aneya
aneya@aneya-VirtualBox:~/aneya$ sudo groupadd flower
aneya@aneya-VirtualBox:~/aneya$ sudo groupadd house
aneya@aneya-VirtualBox:~/aneya$ sudo groupadd travel
aneya@aneya-VirtualBox:~/aneya$ sudo usermod -G flower,house,travel anu
aneya@aneya-VirtualBox:~/aneya$ groups anu
anu : mca flower house travel
aneya@aneya-VirtualBox:~/aneya$ sudo groupdel flower
aneya@aneya-VirtualBox:~/aneya$ groups anu
anu : mca house travel
aneya@aneya-VirtualBox:~/aneya$
```

5. groupmod

groupmod command in Linux is used to modify or change the existing group on Linux system. It can be handled by superuser or root user. Basically, it modifies a group definition on the system by modifying the right entry in the database of the group.

```
aneya@aneya-VirtualBox: ~/aneya
aneya@aneya-VirtualBox:~/aneya$ sudo groupmod -n flower house
aneya@aneya-VirtualBox:~/aneya$ groups anu
anu : mca travel flower
aneya@aneya-VirtualBox:~/aneya$ sudo groupmod -n AJCE flower
aneya@aneya-VirtualBox:~/aneya$ groups anu
anu : mca travel AJCE
aneya@aneya-VirtualBox:~/aneya$
```

6. chmod

In Unix-like operating systems, the **chmod** command is used to change the access mode of a file.

The name is an abbreviation of **change mode**.

```
ancya@ancya-VirtualBox: ~  
ancya@ancya-VirtualBox:~$ ls  
abc.txt  archive.tar  Documents  Extracted  Music      Public      Videos  
ancy     Desktop     Downloads  file2.txt  Pictures   Templates  
ancya@ancya-VirtualBox:~$ ls -ld ancy/  
drwxrwxr-x 4 ancy ancy 4096 Aug 13 20:56 ancy/  
ancya@ancya-VirtualBox:~$ chmod -rwx ancy/  
ancya@ancya-VirtualBox:~$ ls -ld ancy/  
d----- 4 ancy ancy 4096 Aug 13 20:56 ancy/  
ancya@ancya-VirtualBox:~$ ls ancy/  
ls: cannot open directory 'ancy/': Permission denied  
ancya@ancya-VirtualBox:~$ chmod +rwx ancy/  
ancya@ancya-VirtualBox:~$ ls -ld ancy/  
drwxrwxr-x 4 ancy ancy 4096 Aug 13 20:56 ancy/  
ancya@ancya-VirtualBox:~$ ls ancy/
```

7. chown

chown command is used to change the file Owner or group. Whenever you want to change ownership you can use chown command.

```
Activities Terminal Aug 13 21:04  
ancya@ancya-VirtualBox: ~  
ancya@ancya-VirtualBox:~$ ls -ld ancy/  
drwxrwxr-x 4 ancy ancy 4096 Aug 13 20:56 ancy/  
ancya@ancya-VirtualBox:~$ sudo chown anu ancy  
ancya@ancya-VirtualBox:~$ ls -ld ancy/  
drwxrwxr-x 4 anu ancy 4096 Aug 13 20:56 ancy/  
ancya@ancya-VirtualBox:~$
```

8. id

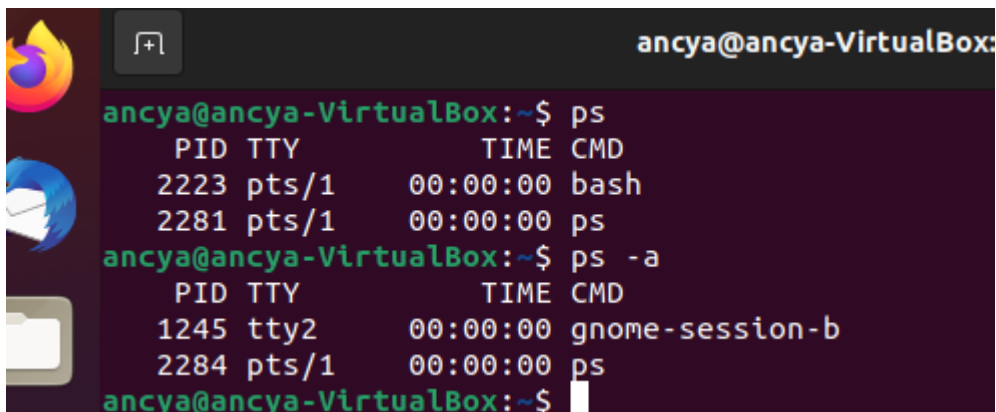
id command in Linux is used to find out user and group names and numeric ID's (UID or group ID) of the current user or any other user in the server.

```
Activities Terminal Aug 13 21:05  
ancya@ancya-VirtualBox: ~  
ancya@ancya-VirtualBox:~$ id anu  
uid=2000(anu) gid=1002(mca) groups=1002(mca),1007(travel),1006(AJCE)  
ancya@ancya-VirtualBox:~$
```

9. ps

Abbreviation for “**Process Status**”. ps command is used to list the currently running processes and their PIDs along with some other information depends on different options. It reads the process information from the virtual files in **/proc** file-system. /proc

contains virtual files, this is the reason it's referred as a virtual file system.

A terminal window titled 'ancya@ancya-VirtualBox' with a dark purple background. The prompt is 'ancya@ancya-VirtualBox:~\$'. The first command is 'ps', which outputs a table with columns PID, TTY, TIME, and CMD. The second command is 'ps -a', which outputs a similar table including system processes. The prompt is at the end of the last line.

```
ancya@ancya-VirtualBox:~$ ps
  PID TTY          TIME CMD
 2223 pts/1        00:00:00 bash
 2281 pts/1        00:00:00 ps
ancya@ancya-VirtualBox:~$ ps -a
  PID TTY          TIME CMD
 1245 tty2        00:00:00 gnome-session-b
 2284 pts/1        00:00:00 ps
ancya@ancya-VirtualBox:~$
```

10. top

top command is used to show the Linux processes. It provides a dynamic real-time view of the running system. Usually, this command shows the summary information of the system and the list of processes or threads which are currently managed by the Linux Kernel.

```
File Machine View Input Devices Help
Activities Terminal Aug 13 21:10
ancya@ancya-VirtualBox: ~

top - 21:10:02 up 1:32, 2 users, load average: 0.48, 0.16, 0.09
Tasks: 184 total, 1 running, 182 sleeping, 0 stopped, 1 zombie
%Cpu(s): 1.4 us, 0.3 sy, 0.0 ni, 98.3 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 972.2 total, 83.6 free, 529.5 used, 359.1 buff/cache
MiB Swap: 448.4 total, 204.5 free, 244.0 used. 285.4 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM    TIME+  COMMAND
 2053 ancya      20   0  250476  10888  6512 S   0.3   1.1   0:12.09 ibus-d+
 2131 ancya      20   0  172800   7252  6416 S   0.3   0.7   0:04.52 ibus-e+
 2433 ancya      20   0  488820  40500 28168 S   0.3   4.1   0:16.97 gnome-+
17776 ancya      20   0   23244   6068  5364 S   0.3   0.6   0:00.36 ssh
18268 ancya      20   0  21440  3892  3360 R   0.3   0.4   0:00.47 top
    1 root       20   0  247764  10616  6500 S   0.0   1.1   0:06.25 systemd
    2 root       20   0         0         0      0 S   0.0   0.0   0:00.00 kthrea+
    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_pa+
    6 root        0 -20         0         0      0 I   0.0   0.0   0:00.00 kworker+
    9 root        0 -20         0         0      0 I   0.0   0.0   0:00.00 mm_per+
   10 root       20   0         0         0      0 S   0.0   0.0   0:00.00 rcu_ta+
   11 root       20   0         0         0      0 S   0.0   0.0   0:00.00 rcu_ta+
   12 root       20   0         0         0      0 S   0.0   0.0   0:00.52 ksofti+
   13 root       20   0         0         0      0 I   0.0   0.0   0:01.37 rcu_sc+
   14 root        rt    0         0         0      0 S   0.0   0.0   0:00.12 migrat+
   15 root      -51   0         0         0      0 S   0.0   0.0   0:00.00 idle_i+
   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 kdevtm+
   18 root        0 -20         0         0      0 I   0.0   0.0   0:00.00 netns
   19 root        0 -20         0         0      0 I   0.0   0.0   0:00.00 inet_f+
   20 root       20   0         0         0      0 S   0.0   0.0   0:00.00 kauditd
```