

1. List the user commands and redirect the output to /tmp/commands.list

```
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ ls /usr/bin > /tmp/commands.list
```

2. Count the number of user commands

```
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ wc -c /tmp/commands.list
15247 /tmp/commands.list
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$
```

3. Get all the users names whose first character in their login is 'g'.

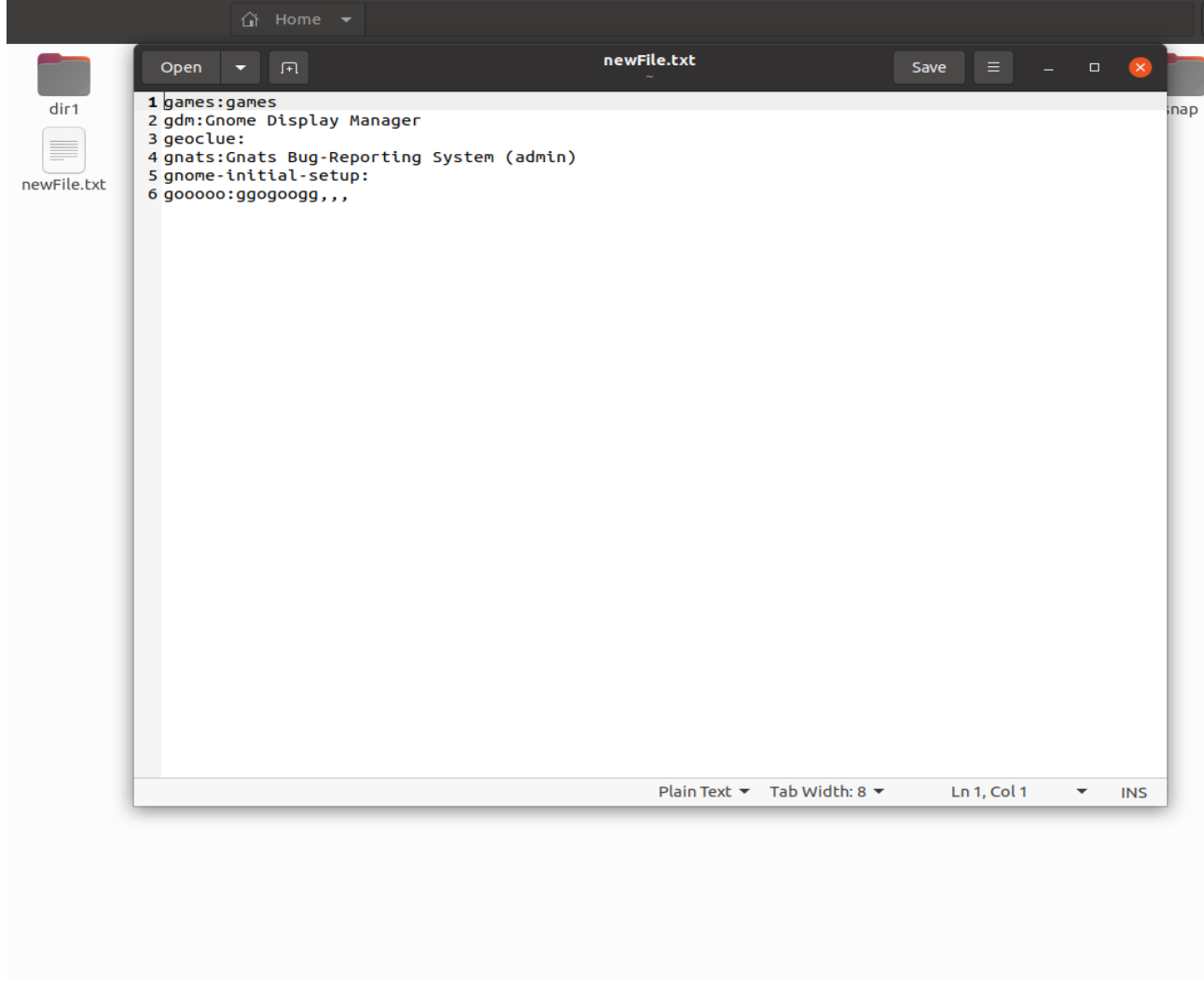
```
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ grep "^g" /etc/passwd | cut -d: -f1
games
gnats
geoclue
gnome-initial-setup
gdm
gooooo
```

4. Get the logins name and full names (comment) of logins starts with "g".

```
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ grep "^g" /etc/passwd | cut -d: -f1,5
games:games
gnats:Gnats Bug-Reporting System (admin)
geoclue:
gnome-initial-setup:
gdm:Gnome Display Manager
gooooo:ggogoogg,,,
```

5. Save the output of the last command sorted by their full names in a file.

```
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ grep "^g" /etc/passwd | cut -d: -f1,5 | sort -k5 >newFile.txt
```



6. Write two commands: first: to search for all files on the system that named .bash_profile. Second: sorts the output of ls command on / recursively, Saving their output and error in 2 different files and sending them to the background.

```
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ find / -name ".bash_profile" | ls -R / > output.txt 2> error.txt &
[2] 13023

[1]+  Stopped                  sort > filename1,filename2
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ find: '/var/spool/cron/crontabs': Permission denied
find: '/var/spool/cups': Permission denied
find: '/var/spool/rsyslog': Permission denied
find: '/var/cache/apparmor/08ba9d86.0': Permission denied
find: '/var/cache/apparmor/7bd83036.0': Permission denied
find: '/var/cache/private': Permission denied
find: '/var/cache/cups': Permission denied
find: '/var/cache/apt/archives/partial': Permission denied
find: '/var/cache/ldconfig': Permission denied
find: '/var/log/private': Permission denied
find: '/var/log/gdm3': Permission denied
find: '/var/log/speech-dispatcher': Permission denied
find: '/var/tmp/systemd-private-e976c84ec43546949ccb33afea010892-ModemManager.service-EelJgh': Permission denied
find: '/var/tmp/systemd-private-e976c84ec43546949ccb33afea010892-switcheroo-control.service-zcScJg': Permission denied
find: '/var/tmp/systemd-private-e976c84ec43546949ccb33afea010892-systemd-resolved.service-f9w5il': Permission denied
find: '/var/tmp/systemd-private-e976c84ec43546949ccb33afea010892-systemd-timesyncd.service-95saZi': Permission denied
find: '/var/tmp/systemd-private-e976c84ec43546949ccb33afea010892-colord.service-HpPBti': Permission denied
find: '/var/tmp/systemd-private-e976c84ec43546949ccb33afea010892-upower.service-zaUrUf': Permission denied
find: '/var/tmp/systemd-private-e976c84ec43546949ccb33afea010892-systemd-logind.service-is79Uh': Permission denied
find: '/var/lib/bluetooth/14:13:33:E8:33:8C': Permission denied
find: '/var/lib/udisks2': Permission denied
find: '/var/lib/private': Permission denied
find: '/var/lib/gdm3/.local/share/gnome-shell': Permission denied
find: '/var/lib/gdm3/.local/share/gvfs-metadata': Permission denied
find: '/var/lib/gdm3/.local/share/sounds': Permission denied
find: '/var/lib/gdm3/.config/gnome-session': Permission denied
find: '/var/lib/gdm3/.config/pulse': Permission denied
find: '/var/lib/gdm3/.config/ibus': Permission denied
find: '/var/lib/gdm3/.cache/libgweather': Permission denied
find: '/var/lib/polkit-1': Permission denied
find: '/var/lib/colord/.cache': Permission denied
find: '/var/lib/AccountsService/users': Permission denied
find: '/var/lib/fwupd/gnupg': Permission denied
find: '/var/lib/apt/lists/partial': Permission denied
find: '/var/lib/snapd/cookie': Permission denied
find: '/var/lib/snapd/cache': Permission denied
find: '/var/lib/snapd/void': Permission denied
find: '/var/lib/update-notifier/package-data-downloads/partial': Permission denied
find: '/var/lib/NetworkManager': Permission denied
find: '/var/lib/ubuntu-advantage/private': Permission denied
find: '/var/lib/ubiquiti': Permission denied
```



```
Open  Save  -  +  x
1 ls: cannot open directory '/boot/efi': Permission denied
2 ls: cannot open directory '/etc/cups/ssl': Permission denied
3 ls: cannot open directory '/etc/polkit-1/localauthority': Permission denied
4 ls: cannot open directory '/etc/ssl/private': Permission denied
5 ls: cannot open directory '/home/jhned/myfiles': Permission denied
6 ls: cannot open directory '/lost+found': Permission denied
7 ls: cannot open directory '/proc/1/fd': Permission denied
8 ls: cannot open directory '/proc/1/map_files': Permission denied
9 ls: cannot open directory '/proc/1/ns': Permission denied
10 ls: cannot open directory '/proc/1/task/1/fd': Permission denied
11 ls: cannot open directory '/proc/1/task/1/ns': Permission denied
12 ls: cannot open directory '/proc/10/fd': Permission denied
13 ls: cannot open directory '/proc/10/map_files': Permission denied
14 ls: cannot open directory '/proc/10/ns': Permission denied
15 ls: cannot open directory '/proc/10/task/10/fd': Permission denied
16 ls: cannot open directory '/proc/10/task/10/ns': Permission denied
17 ls: cannot open directory '/proc/1029/fd': Permission denied
18 ls: cannot open directory '/proc/1029/map_files': Permission denied
19 ls: cannot open directory '/proc/1029/ns': Permission denied
20 ls: cannot open directory '/proc/1029/task/1029/fd': Permission denied
21 ls: cannot open directory '/proc/1029/task/1029/ns': Permission denied
22 ls: cannot open directory '/proc/1029/task/1031/fd': Permission denied
23 ls: cannot open directory '/proc/1029/task/1031/ns': Permission denied
24 ls: cannot open directory '/proc/1029/task/1034/fd': Permission denied
25 ls: cannot open directory '/proc/1029/task/1034/ns': Permission denied
26 ls: cannot open directory '/proc/1033/fd': Permission denied
27 ls: cannot open directory '/proc/1033/map_files': Permission denied
28 ls: cannot open directory '/proc/1033/ns': Permission denied
29 ls: cannot open directory '/proc/1033/task/1033/fd': Permission denied
30 ls: cannot open directory '/proc/1033/task/1033/ns': Permission denied
31 ls: cannot open directory '/proc/1033/task/1036/fd': Permission denied
32 ls: cannot open directory '/proc/1033/task/1036/ns': Permission denied
33 ls: cannot open directory '/proc/1033/task/1038/fd': Permission denied
34 ls: cannot open directory '/proc/1033/task/1038/ns': Permission denied
35 ls: cannot open directory '/proc/1039/fd': Permission denied
36 ls: cannot open directory '/proc/1039/map_files': Permission denied
37 ls: cannot open directory '/proc/1039/ns': Permission denied
38 ls: cannot open directory '/proc/1039/task/1039/fd': Permission denied
39 ls: cannot open directory '/proc/1039/task/1039/ns': Permission denied
40 ls: cannot open directory '/proc/1039/task/1040/fd': Permission denied
41 ls: cannot open directory '/proc/1039/task/1040/ns': Permission denied
42 ls: cannot open directory '/proc/1039/task/1041/fd': Permission denied
43 ls: cannot open directory '/proc/1039/task/1041/ns': Permission denied
44 ls: cannot open directory '/proc/1039/task/1043/fd': Permission denied
45 ls: cannot open directory '/proc/1039/task/1043/ns': Permission denied
46 ls: cannot open directory '/proc/1047/fd': Permission denied
47 ls: cannot open directory '/proc/1047/map_files': Permission denied
48 ls: cannot open directory '/proc/1047/ns': Permission denied
49 ls: cannot open directory '/proc/1047/task/1047/fd': Permission denied
50 ls: cannot open directory '/proc/1047/task/1047/ns': Permission denied
51 ls: cannot open directory '/proc/1048/fd': Permission denied
52 ls: cannot open directory '/proc/1048/map_files': Permission denied
53 ls: cannot open directory '/proc/1048/ns': Permission denied
54 ls: cannot open directory '/proc/1048/task/1048/fd': Permission denied
55 ls: cannot open directory '/proc/1048/task/1048/ns': Permission denied

Plain Text  Tab Width: 8  Ln 1, Col 1  INS
```

```
1 /:
2 bin
3 boot
4 cdrom
5 dev
6 etc
7 home
8 lib
9 lib32
10 lib64
11 libx32
12 lost+found
13 media
14 mnt
15 NVIDIA-Linux
16 opt
17 proc
18 root
19 run
20/sbin
21 snap
22 srv
23 sys
24 tmp
25 usr
26 var
27
28 /boot:
29 config-5.15.0-46-generic
30 efi
31 grub
32 initrd.img
33 initrd.img-5.15.0-46-generic
34 initrd.img.old
35 memtest86+.bin
36 memtest86+.elf
37 memtest86+_multiboot.bin
38 System.map-5.15.0-46-generic
39 vmlinuz
40 vmlinuz-5.15.0-46-generic
41
42 /boot/grub:
43 fonts
44 grublacklist.txt
45 grub.cfg
46 grubenv
47 unicode.pf2
48 x86_64-efi
49
50 /boot/grub/fonts:
51 unicode.pf2
```

7. Display the number of users who is logged now to the system.

```
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ who | wc -l  
1
```

8. Display lines 7 to line 10 of /etc/passwd file

```
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ sudo sed -n '7,10p' /etc/passwd  
[sudo] password for ahmed:  
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin  
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin  
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin  
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin  
ahmed@ahmed-VivoBook-ASUSLaptop-X515JP-X515JP:~$ more +7 -4 /etc/passwd  
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin  
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin  
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin  
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin  
--More-- (14%)
```

9. What happens if you execute:

⌚ cat filename1 | cat filename2

send the output of filename 1 as input to filename 2

⌚ ls | rm

missing operand

⌚ ls /etc/passwd | wc -l

count the number of lines in directory '/etc/passwd'