PAULINA CZARNOTA

C21365726

Operating Systems 1: Assignment 1

Question 1

(a)

Bash Script

```
#!/bin/bash


echo ‘Done!!’


select option in List_Files Show_free_disk_Space Show_system_path
Display_command_history Backup_Files Exit

do

case $option in

List_Files) echo ‘ 1. List Files. ’

ls -l

;;

Show_free_disk_Space) echo ‘ 2. Free Space Inside Disk. ’

df

;;

Show_system_path) echo ‘ 3. Current Path. ’

pwd

;;

Display_command_history)

history 20

echo ‘ 4. Command history Up to Now. ’

;;
```

```
Backup_Files) echo ‘ 5. Backing Up All Files. ’
destination=‘/home/paulina/Scripts’
for file in $(pwd)/*; do
        if [[ -f ‘$file’ && -x ‘$file’ ]];then
                cp ‘$file’ ‘$destination’
                echo ‘Done!!!’
        fi
done
;;
Exit) echo ‘Bye!! ’
break
;;
*) echo ‘Invalid Entry’
./menu.sh
;;
esac
done
```

Screengrabs

```
paulina@c21365726:~$ mkdir Assignment
paulina@c21365726:~$ touch menu.sh
paulina@c21365726:~$ nano menu.sh
paulina@c21365726:~$ bash menu.sh
Done!!
1) List_Files                4) Display_command_history
2) Show_free_disk_Space      5) Backup_Files
3) Show_system_path          6) Exit
#? 1
 1. List Files.
Assignment
Desktop
Documents
Downloads
menu.sh
Music
Pictures
Public
snap
Templates
Videos
#? 2
 2. Free Space Indide Disk.
Filesystem     1K-blocks      Used Available Use% Mounted on
udev              464224         0    464224   0% /dev
tmpfs              99484      1452     98032   2% /run
/dev/sda5       30313412  10455560  18294972  37% /
tmpfs             497404         0    497404   0% /dev/shm
tmpfs               5120         4      5116   1% /run/lock
tmpfs             497404         0    497404   0% /sys/fs/cgroup
/dev/loop0           128       128         0 100% /snap/bare/5
/dev/loop1         56960     56960         0 100% /snap/core18/2284
/dev/loop2         56960     56960         0 100% /snap/core18/2344
/dev/loop3         63488     63488         0 100% /snap/core20/1405
/dev/loop4        224256    224256         0 100% /snap/gnome-3-34-1804/72
/dev/loop5        224256    224256         0 100% /snap/gnome-3-34-1804/77
/dev/loop6         63488     63488         0 100% /snap/core20/1434
/dev/loop7         55552     55552         0 100% /snap/snap-store/558
/dev/loop8         44800     44800         0 100% /snap/snapd/15177
/dev/loop9        254848    254848         0 100% /snap/gnome-3-38-2004/99
/dev/loop10        45824     45824         0 100% /snap/snapd/15534
/dev/loop11        66688     66688         0 100% /snap/gtk-common-themes/1515
/dev/loop12        52224     52224         0 100% /snap/snap-store/547
/dev/loop13        66816     66816         0 100% /snap/gtk-common-themes/1519
/dev/sda1         523248         4    523244   1% /boot/efi
tmpfs              99480        28     99452   1% /run/user/1000
#? 3
 3. Current Path.
/home/paulina
#? 4
 4. Command history Up to Now.
#? 5
 5. Backing Up All Files.
#? 6
Bye!!
```

```
paulina@c21365726:~$ ls -l
total 44
drwxrwxr-x 2 paulina paulina 4096 May  6 19:47 Assignment
drwxr-xr-x 2 paulina paulina 4096 Feb  6 22:10 Desktop
drwxr-xr-x 2 paulina paulina 4096 May  5 19:36 Documents
drwxr-xr-x 2 paulina paulina 4096 Apr 13 22:00 Downloads
-rw-rw-r-- 1 paulina paulina  675 May  6 19:56 menu.sh
drwxr-xr-x 2 paulina paulina 4096 Feb  6 22:10 Music
drwxr-xr-x 2 paulina paulina 4096 Feb  6 22:10 Pictures
drwxr-xr-x 2 paulina paulina 4096 Feb  6 22:10 Public
drwx------ 3 paulina paulina 4096 Mar  1 20:10 snap
drwxr-xr-x 2 paulina paulina 4096 Feb  6 22:10 Templates
drwxr-xr-x 2 paulina paulina 4096 Feb  6 22:10 Videos
```

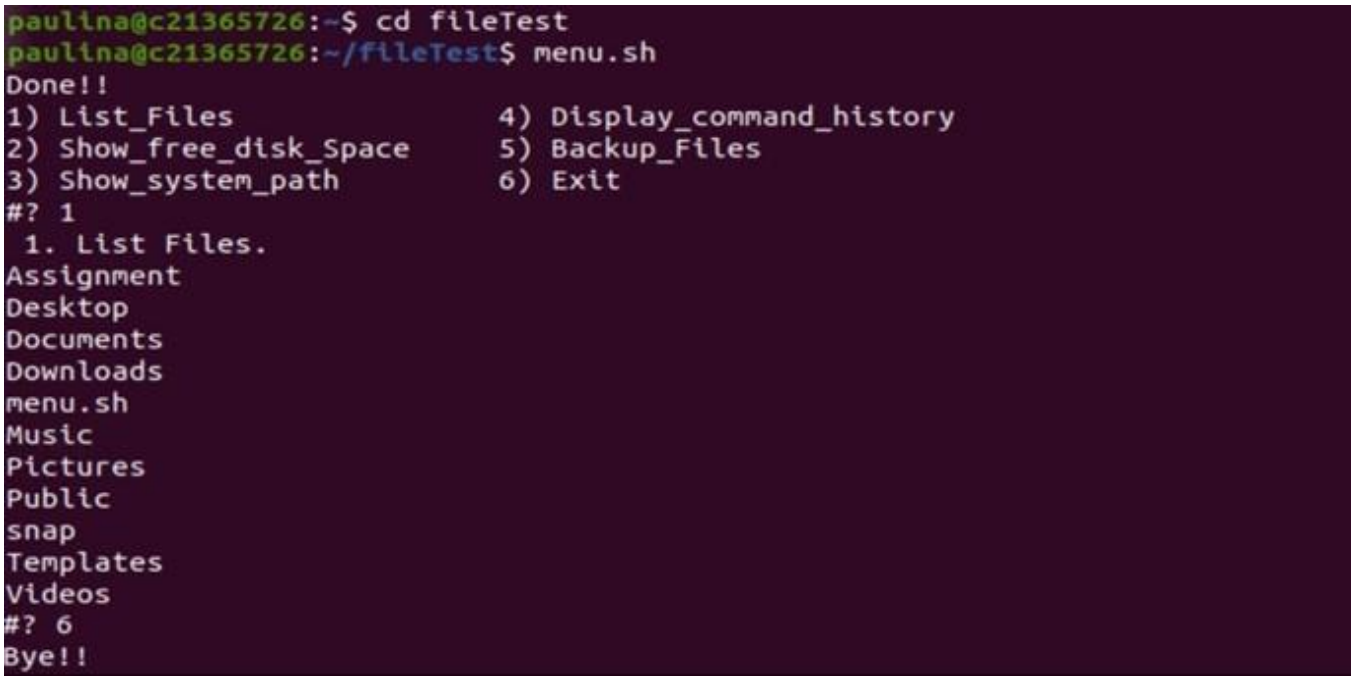
```
paulina@c21365726: ~
  GNU nano 4.8                          menu.sh
#!/bin/bash

echo 'Done!!'
  Rhythmbox
select option in List_Files Show_free_disk_Space Show_system_path Display_comm>
do
case $option in
List_Files) echo ' 1. List Files. '
ls -1
;;
Show_free_disk_Space) echo ' 2. Free Space Indide Disk. '
df
;;
Show_system_path) echo ' 3. Current Path. '
pwd
;;
Display_command_history)
history 20
echo ' 4. Command history Up to Now. '
;;
Backup_Files) echo ' 5. Backing Up All Files. '
destination='/home/paulina/Scripts'
for file in $(pwd)/*; do
        if [[ -f '$file' && -x '$file' ]]; then
                cp '$file' '$destination'
                                [ Read 38 lines ]
```

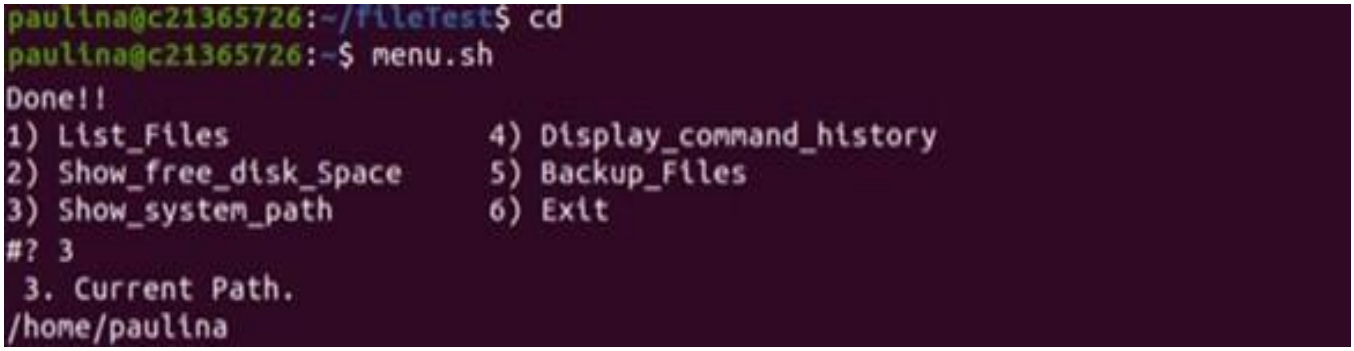
```
                echo 'Done!!'
        fi
done
;;
Exit) echo 'Bye!!'
break
;;
*) echo 'Invalid Entry'
./menu.sh
;;
esac
done
```

The menu.sh is originally located at /home/paulina/Assignment. However, after using the export PATH='PATH:/home/paulina/Assignment', the file is then executable everywhere.

This image below shows how it is executed from /home/paulina/fileTest.



On the other hand, this image shows the same file executed from /home/paulina.



Discussion

First of all, I created a folder called Assignment with the $ mkdir Assignment command in the Terminal. Then I created a bash file with the $ nano menu.sh command and gave the file the execute permissions to read and write by using the chmod command, and also cross-checked it with the $ ls -l command.

After that I typed the required menu operations in the menu.sh using the GNU nano 4.8 editor. I used Scripts folder as a backup folder. I've put everything I use into my bash script (menu.sh) to make the scripts match the request. Finally, to make my script executable from anywhere, I used the export command.

Question 2

(a)

First-fit algorithm :

212K process in the memory partition of 500K (288K left)
417K process in the memory partition 600K (183K left)
122K process in the memory partition 288K (leftover of the first process 500K ? 212K fit.)
426K process cannot be allocated in the memory because of external fragmentation.

Best-fit algorithm:

212K process in the memory partition of 300K.
417K process in the memory partition of 500K.
122K process in the memory partition of 200K.
426K process in the memory partition of 600K.

Since only the Best-fit can allocate all processes in the memory, it is the best algorithm to make the most efficient use of memory.

(b)

(a) Priority Scheduling:

1-6 = B

7-14 = E

15-25 = A

26-27 = C

28-31 = D

Average turnaround = (6 + 14 + 25 + 27 + 31)/5 = 103/5 = 20.6 minutes

(c) First Come, First Served:

1-11 = A

12-17 = B

18-19 = C

20-23 = D

24-31 = E

Average turnaround = (11 + 17 + 19 + 23 + 31)/5 = 101/5 = 20.2 minutes

(d) Shortest Job Runs First:

1-2 = C
3-6 = D

7-12 = B

13-20 = E

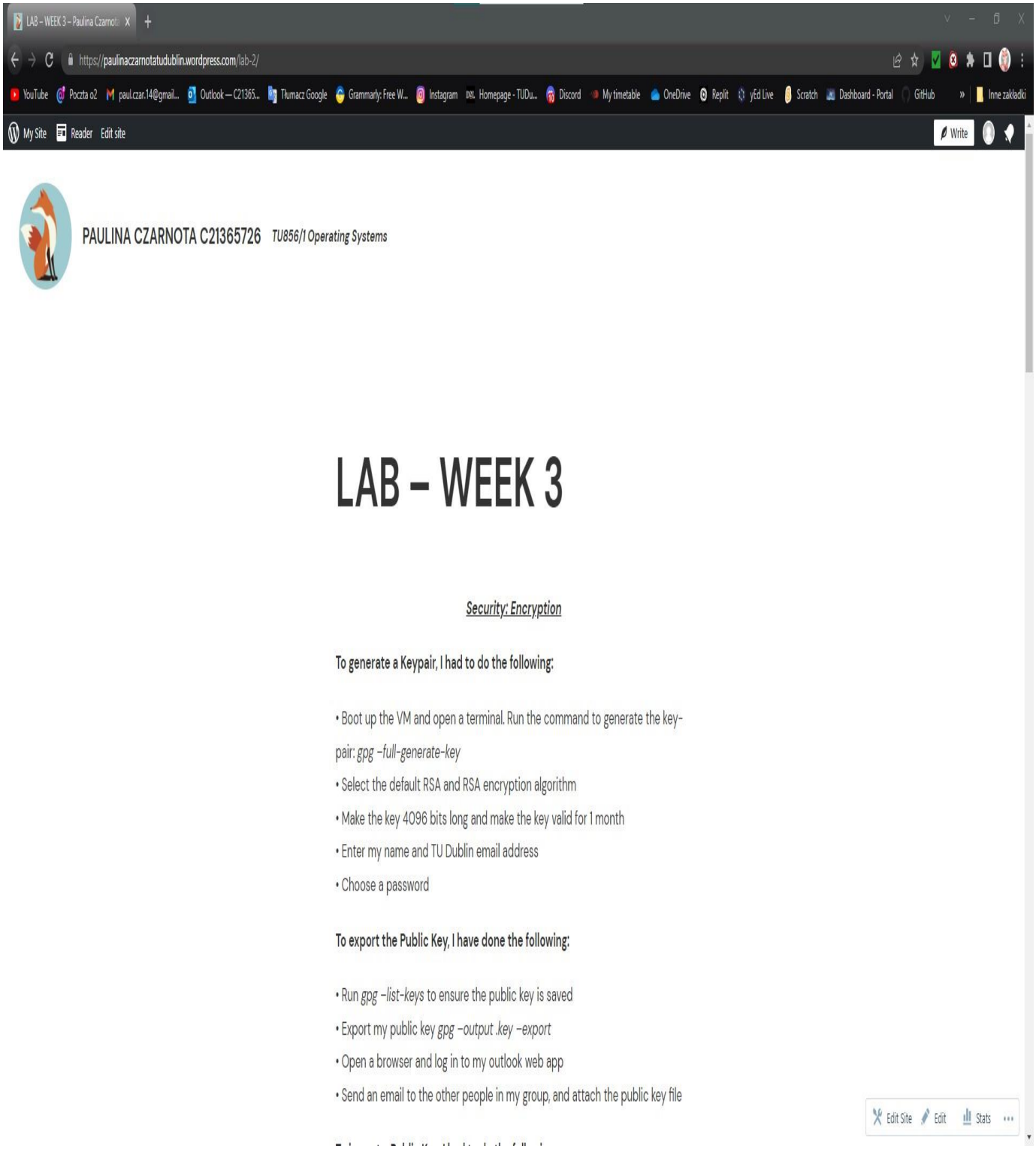
21-31 = A

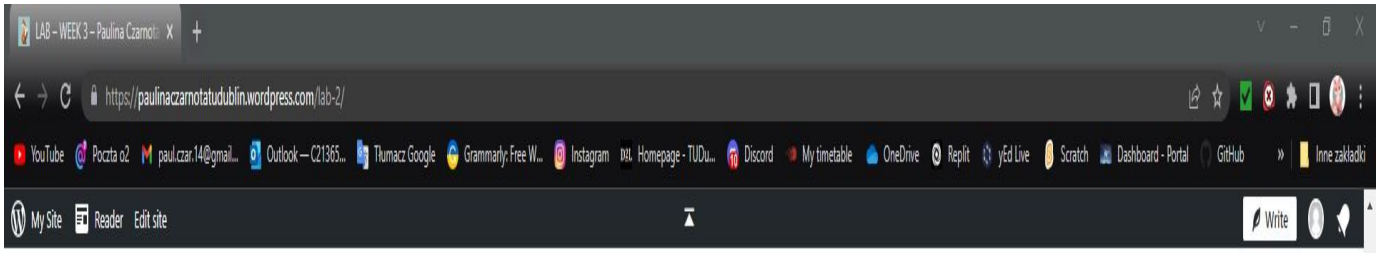
Average turnaround = (2 + 6 + 12 + 20 + 31)/5 = 71/5 = 14.2 minutes

Question 3

(a)

i) Week 3 Security: Encryption.





To import a Public Key, I had to do the following:

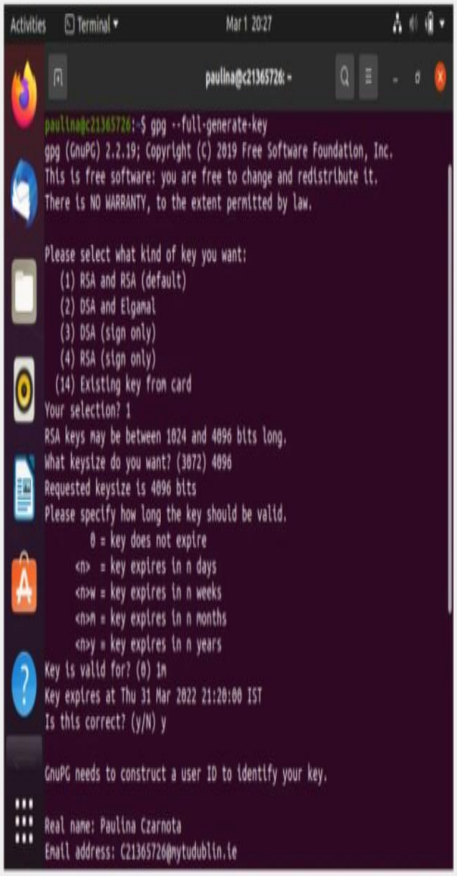
- Import the downloaded keys by running *gpg –import* for each file through the Downloads folder
- Ensure the files have been added correctly by running *gpg –list-keys*

To decrypt a message, I have done the following:

- Decrypt the file and save it to the downloads folder: *gpg –output .txt –decrypt*

To share my Public Key, I had to:

- Use the following command: *gpg –armor –export*



PGP PUBLIC KEY

--BEGIN PGP PUBLIC KEY BLOCK--

mQINBGlek2EBEADOtDMVeM2zYnxupwlGGilC2Q4jp+3W2gIR03zDDHLUQGsJozRd
6xNXhw8HrlQpNeW4JyhltM21TSUj7QuMMVCNlhWiS5yNA7Ee4endBgZC2FAql15q
uLQ+RTXees7bk8uLuxlncZ5qPEEGj4RGY41slDY8vk4seVmubmaHD6HZqcWotJgE
+g6AX5OLqc/K8ZxR7vCQ2KesmOs9wSPhNKJG5x5FlRDaoDZWVV3aGESS41WicZQG
YoxQYdm5+ByfyHJJQBEEd294q5MPTa2gJsM7mzO5wHaliyhyrvB0Ap/Bcc+ZvRWp
jnxo7pJUKo8udDDGkVSoHdeVZEeP+QHKgSJHOrl19KUvUz/KFll7oD4uRjQnJ6Tz
GPY2tBsPBO+crp17YDAjoD2143304PHeZgo2koS4gJ5EAHI7Wj2kaoca7jWzsoTa
XNDhErVAQLVGnmY5O23je3O6pQHpUmhkTSrdGkUXncJyZpsp9dvb4F6ipn2fKP9t
NcvyOTelzU5VGj3H8VfLMtP/p6YOV25jy/5hTFObjFvF1dYQWo9LU9yZdzPSOHOF
v6j8Za+violRhD/+bfnllVsn5JgzBjvCk9dVSnx498SHGU9H5BA555VHyqJGu4QT
5obBOEyIlpHQGcryuqjY3vEHH9VpfyzM66nnpyn+u72a8hBwMrXOusQ1RwARAQAB
tCpQYXVsaW5hIEN6YXJub3RhIDxDMjEzNjU3MjZAbXlOdWR1Ymxpbi5pZT6JAlME
EwEKAD4WIQQk4fg5KXi4h8n/QEmtSQnf3H/xNQUCYh6TYQIbAwUJACeNAAULCQgH
AgYVCgkICwIEFgIDAQIeAQIXgAAKCRCtSQnf3H/xNRl3D/d4a/MbqBl8rdMHFK7f
vOhOCGttOhbmOFii4DI4QaXKRUtK2Mrkz9njwPMVumZyJg0FI8qGYcGPfmNQRJYI
yUbmfSWWWmFpc6kb8IZ+OcpYk7XRTHfUNRumB5Gkx3QNSs15twBTC+/UpyXE/vte
e2RsF9LY5Q1Tba+r2ntRHNfxWOJr/hmjc8RuR+em42QEGK6OVtiZcecwdd8qbBaO
KJzPWOW3kwkpUwI8B+WbbpZM+X/nhyOzivhQ74bOF4O/rSe2lFrXRokmDBUpKJAK
7ue61tP5mD7pIkRtIdbXSQCb2yosPUlGbixp5XpLOxzH5sgySRdFCKedCIRGzcIr
o1vwORcj3ATjlN1qIPVEW4URyXS928R5DXqTCpNdkUyvOQCCJwikDGkIv+tElFrv
2McZegbdVQaoUyPd/WVhz39nWTBYoz3f3nNfKNGsDvfB/CTKRrdxP/TYZSqlRcI/
Al63fbfICODogib61d2NxpzdOL/MSeoFn5wPK4EJqfOXZeOkoRuPM1ccH8lYmKvR
21aDevybXEIS8Ew7EansNisWHALCBc13zdMff8t9BpWx3PoJdn4Uj6RHoSDiXBOf
LvokSF4moKN+by8Z5LTueZKOh3faC5ypjGlgLmk8X5o2T3+C7MYQbMdcOcob7KXJ
NqABUNRhCJWBeOWeuvdUOoHOuQINBGlek2EBEADiAjX/mMP7TLsHgNmG1+qjWqQQ
DtmvUqA2Mes6kACwJRKP5AyS/fCdcMYXclu2vVoF1p4cOqH5DyjpTOxyKayTSXSX
DGMEOXX/Nb5xwEfoSMDO6kC4SLGB/KRKM/CcOwdF5RaiCbC+OHX4kiagersJ3bGb

Discussion

PGP PUBLIC KEY

—–BEGIN PGP PUBLIC KEY BLOCK—–

mQINBGIek2EBEADOtDMVeM2zYnxupwlGGilC2Q4jp+3W2glR03zDDHLUQGsJozRd
6xNXhw8HrIQpNeW4JyhltM21TSUj7QuMMVCNIhWiS5yNA7Ee4endBgZC2FAqI15
q
uLQ+RTXees7bk8uLuxIncZ5qPEEGj4RGY41sIDY8vk4seVmubmaHD6HZqcWotJgE
+g6AX5OLqc/K8ZxR7vCQ2KesmOs9wSPhNKJG5x5FIRDaoDZWVV3aGESS41WicZQ
G
YoxQYdm5+ByfyHJJQBEEd294q5MPTa2gJsM7mzO5wHaliyhyrvB0Ap/Bcc+ZvRWp
jnxo7pJUKo8udDDGkVSoHdeVZEeP+QHKgSJH0rI19KUvUz/KFll7oD4uRjQnJ6Tz
GPY2tBsPB0+crp17YDAjoD2143304PHeZgo2koS4gJ5EAHI7Wj2kaoca7jWzsoTa
XNDhErVAQLVGnmY5O23je306pQHpUmhkTSrdGkUXncJyZpsp9dvb4F6ipn2fKP9t
Ncvy0TeIzU5VGj3H8VfLMtP/p6Y0V25jy/5hTF0bjFvF1dYQWo9LU9yZdzPS0H0F
v6j8Za+violRhD/+bfnIIVsn5JgzBjvCk9dVSnx498SHGU9H5BA555VHyqJGu4QT
5obBOEyIlpHQGcryuqjY3vEHH9VpfyzM66nnpyn+u72a8hBwMrXOusQ1RwARAQA
B
tCpQYXVsaW5hIEN6YXJub3RhIDxDMjEzNjU3MjZAbXl0dWR1Ymxpbi5pZT6JAlME
EwEKAD4WIQQk4fg5KXi4h8n/QEmtSQnf3H/xNQUCYh6TYQIbAwUJACeNAAULCQg
H
AgYVCgkICwIEFgIDAQIeAQIXgAAKCRCtSQnf3H/xNRl3D/d4a/MbqBl8rdMHFK7f
vOh0CGttOhbmOFii4DI4QaXKRUtK2Mrkz9njwPMVumZyJg0FI8qGYcGPfmNQRJYI
yUbmfSWWWmFpc6kb8IZ+OcpYk7XRTHfUNRumB5Gkx3QNSs15twBTC+/UpyXE/v
te
e2RsF9LY5Q1Tba+r2ntRHNfxWOJr/hmjc8RuR+em42QEGK60VtiZcecwdd8qbBaO
KJzPW0W3kwkpUwl8B+WbbpZM+X/nhy0zivhQ74b0F4O/rSe2lFrXRokmDBUpKJAK
7ue61tP5mD7pIkRtIdbXSQCb2yosPUIGbixp5XpLOxzH5sgySRdFCKedCIRGzc1r
o1vwORcj3ATj1N1qIPVEW4URyXS928R5DXqTCpNdkUyv0QCCJwikDGk1v+tEIFrv
2McZegbdVQaoUyPd/WVhz39nWTBYoz3f3nNfKNGsDvfB/CTKRrdxP/TYZSqlRcI/
Al63fbfICODogib61d2Nxpzd0L/MSeoFn5wPK4EJqf0XZeOkoRuPM1ccH8lYmKvR
21aDevybXElS8Ew7EansNisWHALCBc13zdMff8t9BpWx3PoJdn4Uj6RHoSDiXBOf
LvokSF4moKN+by8Z5LTueZK0h3faC5ypjGlgLmk8X5o2T3+C7MYQbMdc0cob7KXJ
NqABUNRhCJWBeOWeuvdU0oHOuQINBGIek2EBEADiAjX/mMP7TLsHgNmG1+qjW
qQQ
DtmvUqA2Mes6kACwJRKP5AyS/fCdcMYXclu2vVoF1p4c0qH5DyjpTOxyKayTSXSX
DGMEOXX/Nb5xwEfoSMDO6kC4SLGB/KRKM/Cc0wdF5RqiCbC+OHX4kjqpgrsJ3bG
b
dFKBBPkAKgaji4t7rgD6NCwQ1Jq1ce1SR8qgYjcL7tyxOLYuFLUYtZVkziKhLNSY

oOoonmLM86LI/xCfAhMPKrgrYsBiL1c+JciirCTuHYB4COiurLh0ZGQ0tO5DV13W
zumW6SPwDCKkKBVMQaFu3P9dagNbK6DyR6rm9goWLpOIpvsONQDNBbf37FCXD
jNp
5howA6H0wBQZrJo0QKUi21PwA8VJ10wceC1KSIWTnKQM8EPQNBrLIahksa6l+iMC
fn48QDXaA1OWJtkNOMiZbEowWtcxUr7OVeTWxXne5paGXT7yArq11LpbMLFDK0
pa
9+mj+2SHwJeTIzc6HfGb6jnuV+lHjah4Tmeh8/R0Wr6Jord35zU3MFt4JEK512xX
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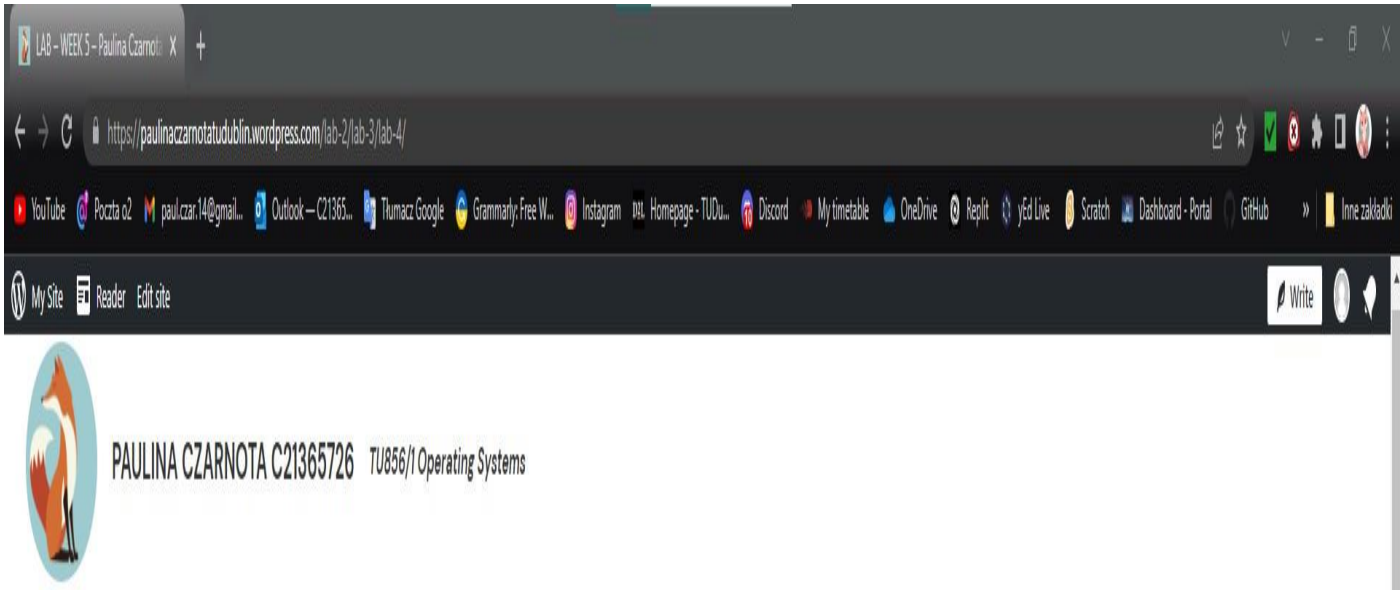
kdc4yEiAn9ZJ1wBZ9p90rdR5lrkUSMC1PEh+w3hmgoW8SzGtmPDG1+9xIAE86PhK
GSpgIV7pDS6z92DQQwARAQABiQI8BBgBCgAmFiEEJOH4OSl4uIfJ/0BJrUkJ39x/
8TUFAmIek2ECGwwFCQAnjQAACgkQrUkJ39x/8TXXmRAAj9UoQbVsDKvh0rN+8nn
x
/gVePvo0fndil7yRPHd2OZ7/9MjzPhLI9Pisjx4wpVpQbAjh1fXefVTEvCBAsJHb
ElGkhi5I8aT53LZmm5WaNz58TlBGvWmfmQ5qHIJkhcbwEhHNaDbOcaiQgGwLJdb7
1M0NK4ALSoMmH0KR5gJkIkFTcduXdme9OzLJ88Ke75A6C4dw8O+2u8ZnGXePc4C
V
/gmOf7499a0FiyaFfkZBMxrZNmfjlv9QrFER4EzSi883D4a2RZ8G3CA7pWz6IGVC
FtW3SchmbANWnz3EUKbU83wKG+EbVGS0i2+yU60/K3n95TJyYSp0zH3u+J2Ujcle
jomo3UhSmbzyuREr6SUNQiMHuYySQJnYi/hm+GjBBJpBcjJxd8GuqSF8DnRWgEVn
elPa1qd7XqQ6zlFWFcgomp9J7QzgvJB1N8lrYxrcg6NVTWjORMqSaZKbd2Ioxb7U
z4w9EM7DGAhsHCpUkwcihlrg988RmLTGXmzOeUzH/aXW0DgKakEpuVXUkUtVFa
Ok
l09v/mh/cin6d2U0d38NA0sEc4dlIMYaxzvk/dHleOMyLOyKLU537D7XAtm71IYo
fB08+eZGbOEn9gh50NDf7Rego4r6rQ5A21jJrHr+mrzOt9VUCbud5TuhR44fwaWE
kn4prAN2wCKhQnb4D2rQ0/k=
=Txqh
—–END PGP PUBLIC KEY BLOCK—–

ii) Week 5 File Management.



PAULINA CZARNOTA C21365726 *TU856/1 Operating Systems*

LAB - WEEK 5

File Management

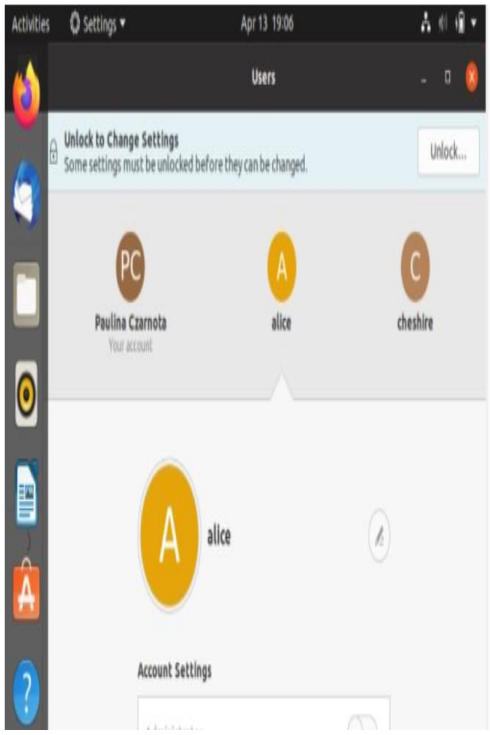
1. I updated the system via the terminal using the following commands:

sudo apt update

sudo apt-get install -reinstall gnome-control-center

2. I opened settings and created two users named alice and cheshire.


```
paulina@c21365726:~$ sudo apt update
[sudo] password for paulina:
Get:1 http://ie.archive.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:2 http://ie.archive.ubuntu.com/ubuntu focal InRelease
Hit:3 http://ie.archive.ubuntu.com/ubuntu focal-updates InRelease
Get:4 http://ie.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Fetched 222 kB in 1s (288 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
44 packages can be upgraded. Run 'apt list --upgradable' to see them.
paulina@c21365726:~$ sudo apt-get install --reinstall gnome-control-center
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-5.11.0-27-generic linux-hwe-5.11-headers-5.11.0-27
  linux-image-5.11.0-27-generic linux-modules-5.11.0-27-generic
  linux-modules-extra-5.11.0-27-generic
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 1 reinstalled, 0 to remove and 44 not upgraded.
Need to get 0 B/1,716 kB of archives.
After this operation, 0 B of additional disk space will be used.
(Reading database ... 218788 files and directories currently installed.)
Preparing to unpack .../gnome-control-center_1%3a3.36.5-0ubuntu3_amd64.deb ...
Unpacking gnome-control-center (1:3.36.5-0ubuntu3) over (1:3.36.5-0ubuntu3) ...
Setting up gnome-control-center (1:3.36.5-0ubuntu3) ...
Processing triggers for mime-support (3.64ubuntu1) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu1) ...
```



3. I ran a command to see what group they belong to:

groups alice

groups cheshire

4. I added these users to a new group called Wonderland. I ran this command and entered the password.

sudo groupadd Wonderland

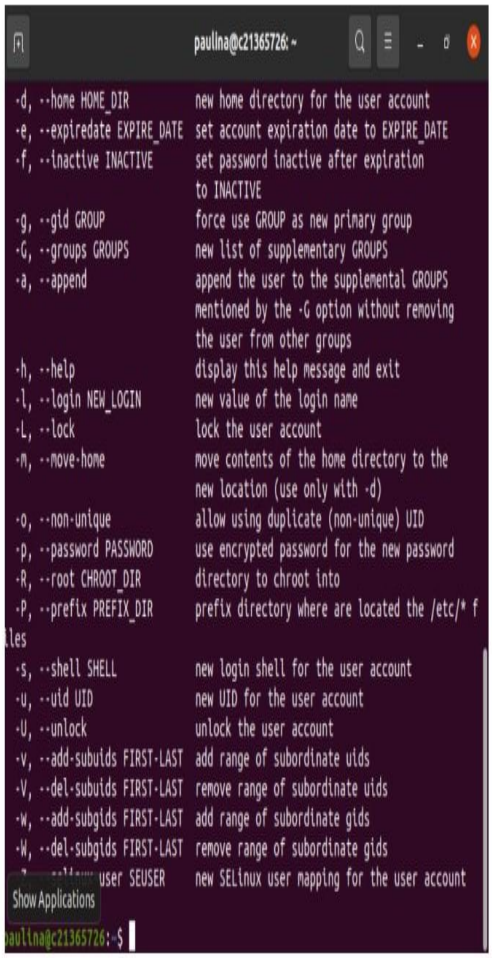
5. *I added the two users to the group:*

usermod -a -G Wonderland alice

usermod -a -G Wonderland chesire

```
paulina@c21365726:~$ groups alice
alice : alice
paulina@c21365726:~$ groups cheshire
cheshire : cheshire
paulina@c21365726:~$ sudo groupadd Wonderland
paulina@c21365726:~$ usermod -a -G Wonderland alice
usermod: Permission denied.
usermod: cannot lock /etc/passwd; try again later.
paulina@c21365726:~$ usermod -a -G Wonderland cheshire
usermod: Permission denied.
usermod: cannot lock /etc/passwd; try again later.
paulina@c21365726:~$ groups alice
alice : alice
paulina@c21365726:~$ groups cheshire
cheshire : cheshire
paulina@c21365726:~$ usermod -a -G Wonderland alice cheshire
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
```

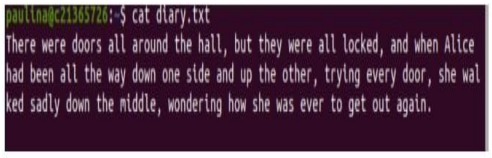


6. As primary user, I created a folder in the home directory and made it readable and writable by everyone:

mkdir fileTest

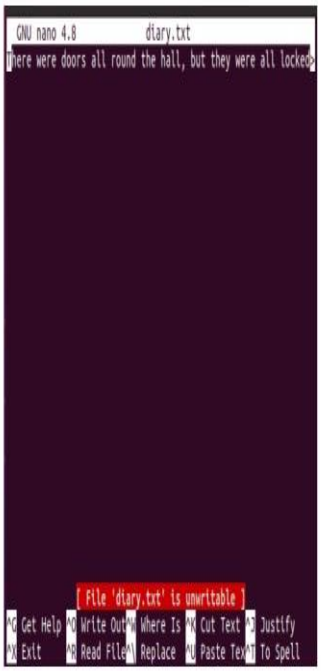
chmod 755 fileTest

nano diary.txt



7. I tried to read the contents of the file as alice using the cat command.

8. I tried to edit the file, but that did not work.

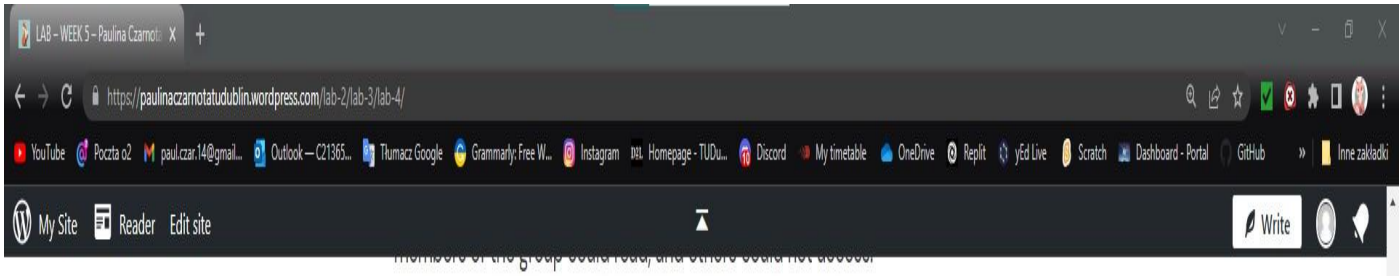


9. As the primary user, I had to follow commands so that no one could read or write to the diary:

chmod 700 log.txt

10. As alice, I had to create a file called alice.txt containing a short excerpt from the alice in Wonderland book and change the owner of the file so that it belongs to the Wonderland group, not the alice group.

11. I had to change the permissions on this file so that I could read and write in it, members of the group could read, and others could not access.



12. I tested the permissions as cheshire and root user trying to read and write to the file.

13. As primary user, I used the *chown* command to take ownership of the *alice.txt* file and make sure that alice cannot read it.

Discussion

1. I updated the system via the terminal using the following commands:
sudo apt update
sudo apt-get install –reinstall gnome-control-center

2. I opened settings and created two users named alice and cheshire.

3. I ran a command to see what group they belong to:
groups alice
groups cheshire

4. I added these users to a new group called Wonderland. I ran this command and entered the password.
sudo groupadd Wonderland

5. I added the two users to the group:
usermod -a -G Wonderland alice
usermod -a -G Wonderland chesire

6. As primary user, I created a folder in the home directory and made it readable and writable by everyone:

mkdir fileTest

chmod 755 fileTest

nano diary.txt

7. I tried to read the contents of the file as alice using the cat command.

8. I tried to edit the file, but that did not work.

9. As the primary user, I had to follow commands so that no one could read or write to the diary:
chmod 700 log.txt

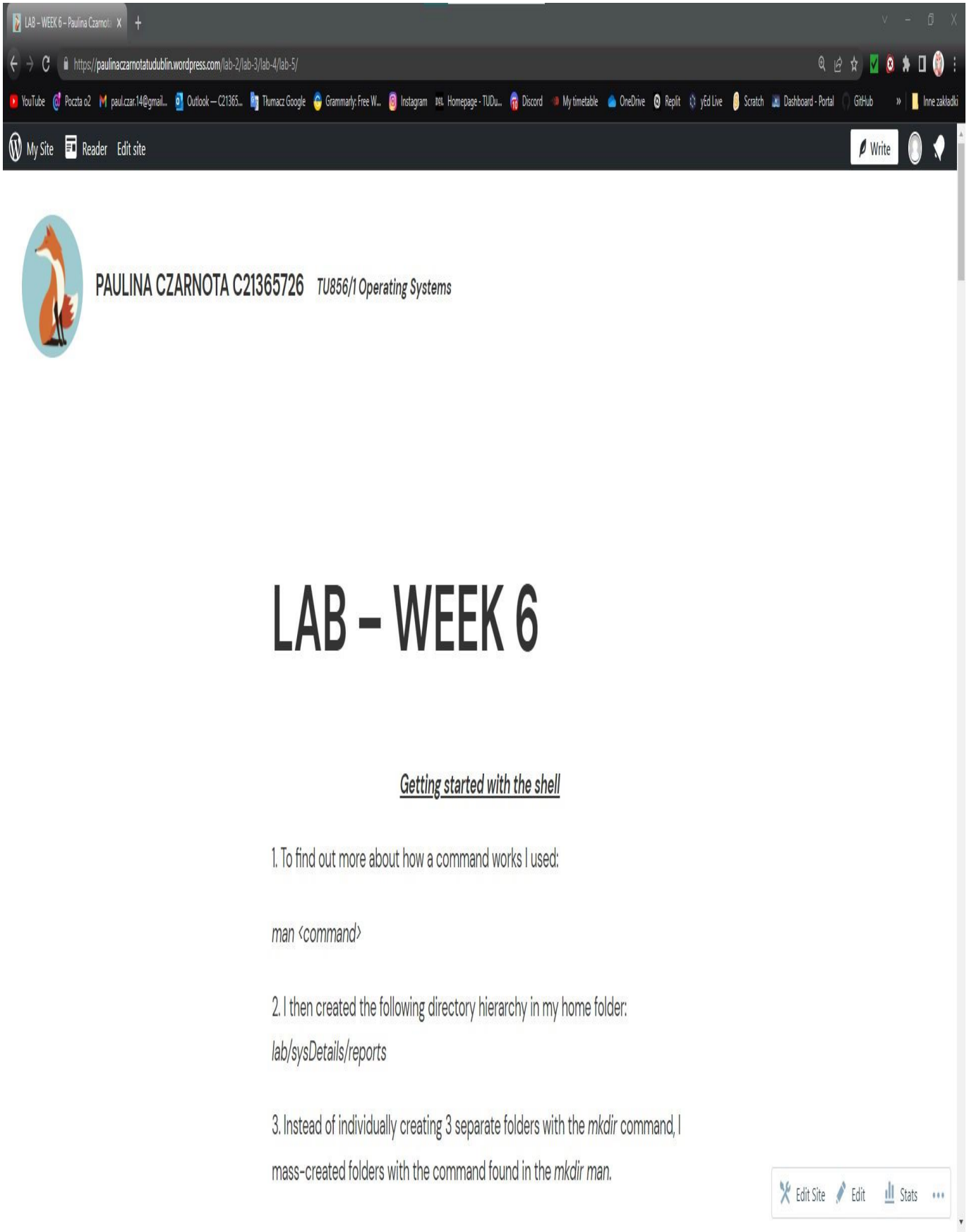
10. As alice, I had to create a file called alice.txt containing a short excerpt from the alice in Wonderland book and change the owner of the file so that it belongs to the Wonderland group, not the alice group.

11. I had to change the permissions on this file so that I could read and write in it, members of the group could read, and others could not access.

12. I tested the permissions as cheshire and root user trying to read and write to the file.

13. As primary user, I used the *chown* command to take ownership of the *alice.txt* file and make sure that alice cannot read it.

iii) Week 6 Getting started with the shell.



4. To create all the directories in one go I used the following command:

sudo mkdir -p lab/sysDetails/reports

5. I used the echo command for displaying basic information about the system. I used echo to show the operating system version.

$ echo $OSTYPE

6. I also used echo to show the bash shell version that I'm running.

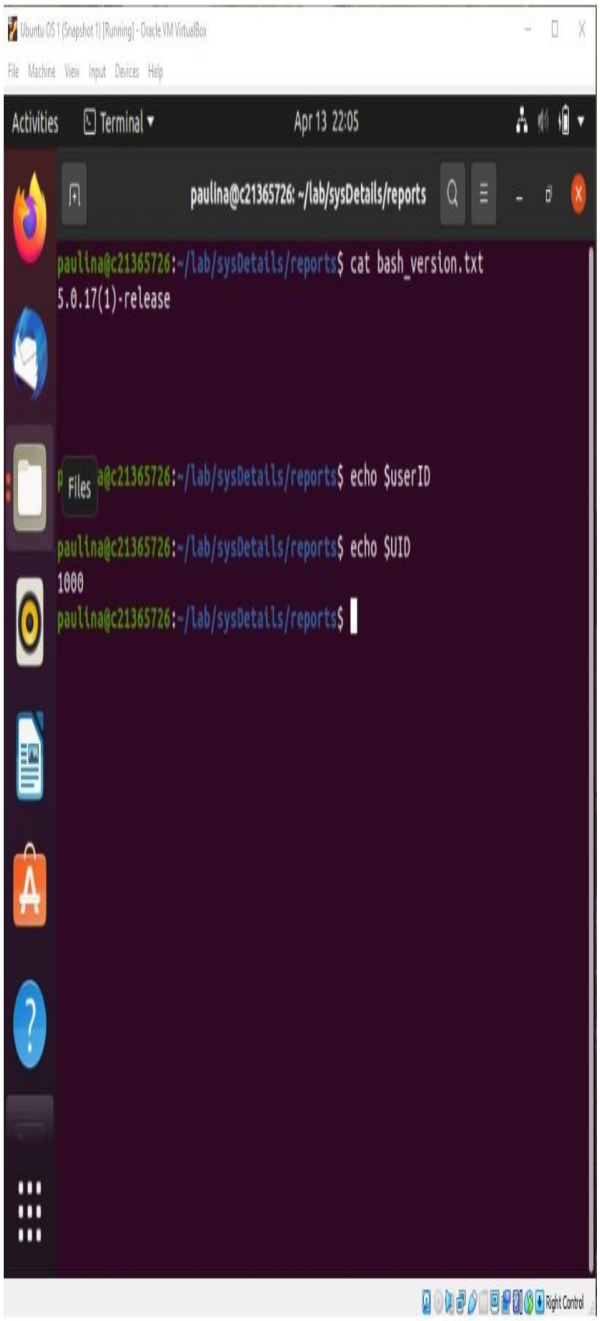
$ echo $BASH_VERSION

7. I used echo to show the user using the command and then I can see the user ID (UID) of the user using.

echo $USER

echo $UID

8. I used nano to create a new file in the new directory called *bash_version.txt* and then added the bash version to the file.



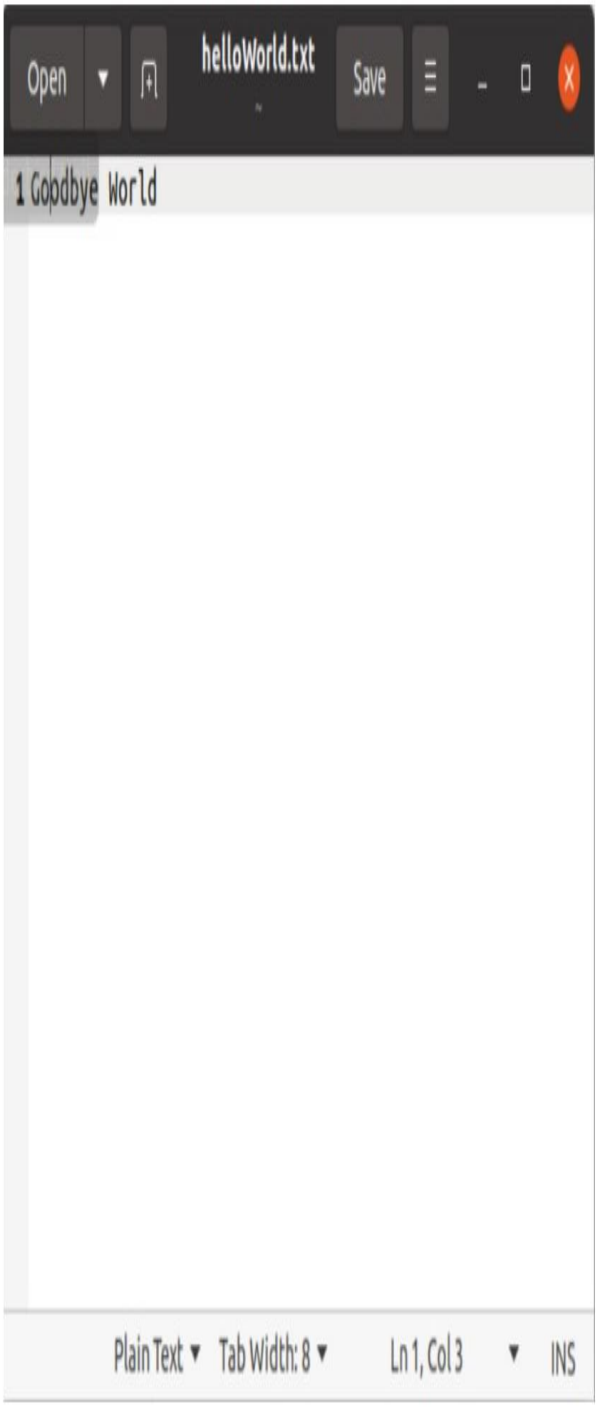
10. To monitor ongoing memory usage, I used this command which updates every 2 seconds.

watch -option1 -option2 <command>

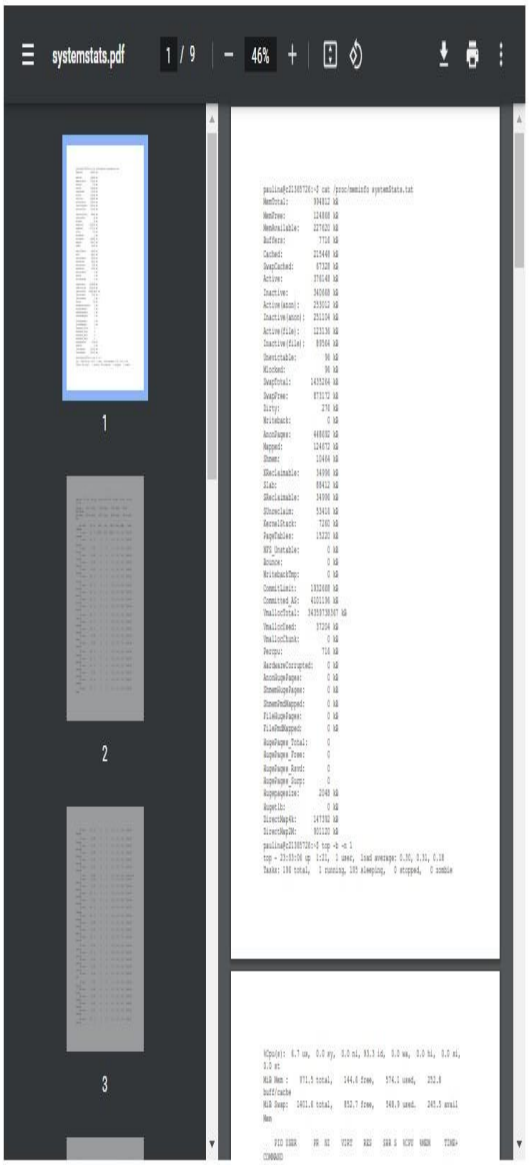
11. The command below generates a 1GB file which consists of random bytes.

```
paulina@c21365726:~/lab/sysDetails/reports$ dd if=/dev/urandom of=random.bytes
bs=1M count=1000
1000+0 records in
1000+0 records out
1048576000 bytes (1.0 GB, 1000 MiB) copied, 8.29635 s, 126 MB/s
paulina@c21365726:~/lab/sysDetails/reports$
```


LAB – WEEK 6 – Paulina Czarnot
https://paulinaczarnotatudublin.wordpress.com/lab-2/lab-3/lab-4/lab-5/
YouTube
Poczta o2
paul.czar.14@gmail...
Outlook – C21365...
Tłumacz Google
Grammarly: Free W...
Instagram
Homepage - TUDu...
Discord
My timetable
OneDrive
Replit
y£d Live
Scratch
Dashboard - Portal
GitHub
Inne zakładki
My Site
Reader
Edit site
Write


Open
helloWorld.txt
Save
1 Goodbye World
Plain Text
Tab Width: 8
Ln 1, Col 3
INS

13. The pdf file below displays a single system report containing information about the memory and CPU usage at any given time.



systemstats **Download**

Discussion

paulina@c21365726:~$ cat /proc/meminfo systemStats.txt

MemTotal: 994812 kB

MemFree: 124868 kB

MemAvailable: 227620 kB

Buffers: 7716 kB

Cached: 215448 kB

SwapCached: 67328 kB

Active: 376148 kB

Inactive: 340668 kB

Active(anon): 253012 kB

Inactive(anon): 251104 kB

Active(file): 123136 kB

Inactive(file): 89564 kB

Unevictable: 96 kB

Mlocked: 96 kB

SwapTotal: 1435264 kB

SwapFree: 873172 kB

Dirty: 276 kB

Writeback: 0 kB

AnonPages: 448692 kB

Mapped: 124672 kB

Shmem: 10464 kB

KReclaimable: 34996 kB

Slab: 88412 kB

SReclaimable: 34996 kB

SUnreclaim: 53416 kB

KernelStack: 7260 kB

PageTables: 15220 kB

NFS_Unstable: 0 kB

Bounce: 0 kB

WritebackTmp: 0 kB

CommitLimit: 1932668 kB

Committed_AS: 4101196 kB

VmallocTotal: 34359738367 kB

VmallocUsed: 37204 kB

VmallocChunk: 0 kB

Percpu: 716 kB

HardwareCorrupted: 0 kB

AnonHugePages: 0 kB

ShmemHugePages: 0 kB

ShmemPmdMapped: 0 kB

FileHugePages: 0 kB

FilePmdMapped: 0 kB

HugePages_Total: 0

HugePages_Free: 0

HugePages_Rsvd: 0

HugePages_Surp: 0

Hugepagesize: 2048 kB

Hugetlb: 0 kB

DirectMap4k: 147392 kB

DirectMap2M: 901120 kB

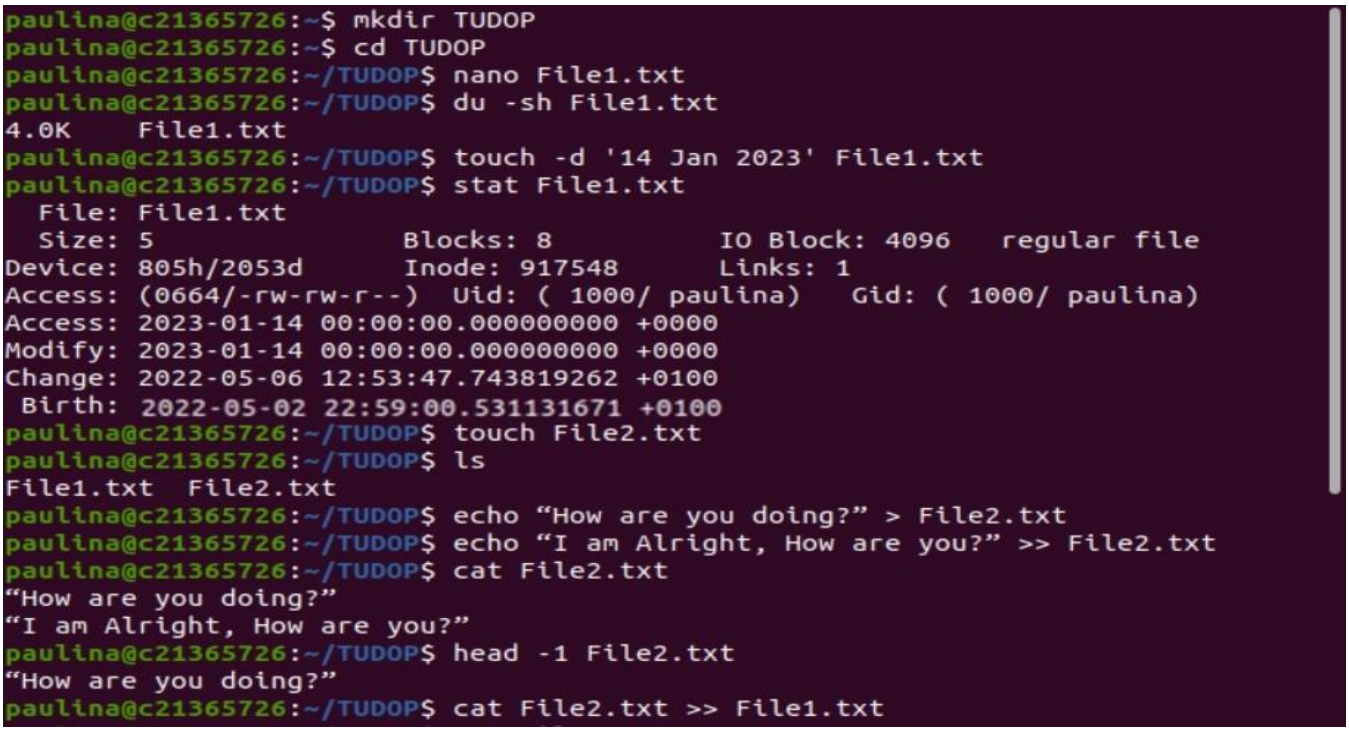
paulina@c21365726:~$ top -b -n 1

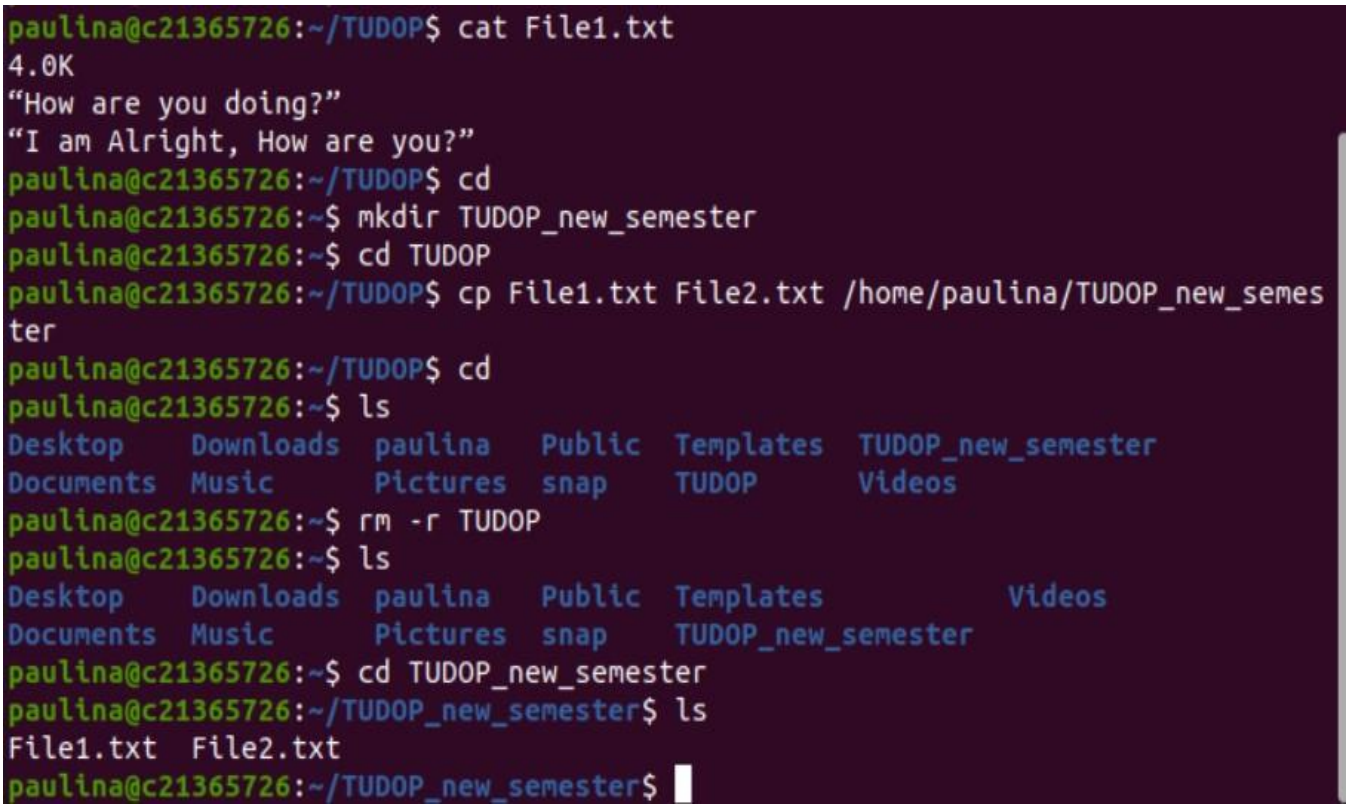
top - 23:03:06 up 1:21, 1 user, load average: 0.30, 0.31, 0.18

Tasks: 196 total, 1 running, 195 sleeping, 0 stopped, 0 zombie

Question 4

Screengrab





Discussion

Firstly, I created a folder called TUDOP in Home with the $ mkdir TUDOP command in the Terminal. Afterwards, I created a file called File1.txt by using $ nano File1.txt command. Then I checked the file size with $ du -sh File1.txt command.

Next, I used the $ touch ‘14 Jan 2023’ File1.txt command to change the modification date to my DOB and then I checked it with the $ stat command.

Subsequently, I created another file called File2.txt with the $ touch File2.txt command. Now, File1.txt and File2.txt are both present in the TUDOP folder.

To type in File2.txt without using editors like nano, I used two echo commands to enter two lines, i.e, $ echo “How are you doing?” > File2.txt and $ echo “I am Alright, How are you?” >> File2.txt.

Then I used $ head -1 File2.txt to print only one line. I appended all the data from File2.txt to File1.txt by $ cat File2.txt >> File1.txt. After that, I created a new directory and copied both the files to the new directory. Ultimately, I removed the previous one.

Finally, I created a new directory in Home with the $ mkdir TUDOP_new_semester command. I used then $ cp File1.txt File2.txt /home/paulina/TUDOP_new_semester to copy the files. Lastly, I used $ rm -r TUDOP to remove the previous TUDOP directory.