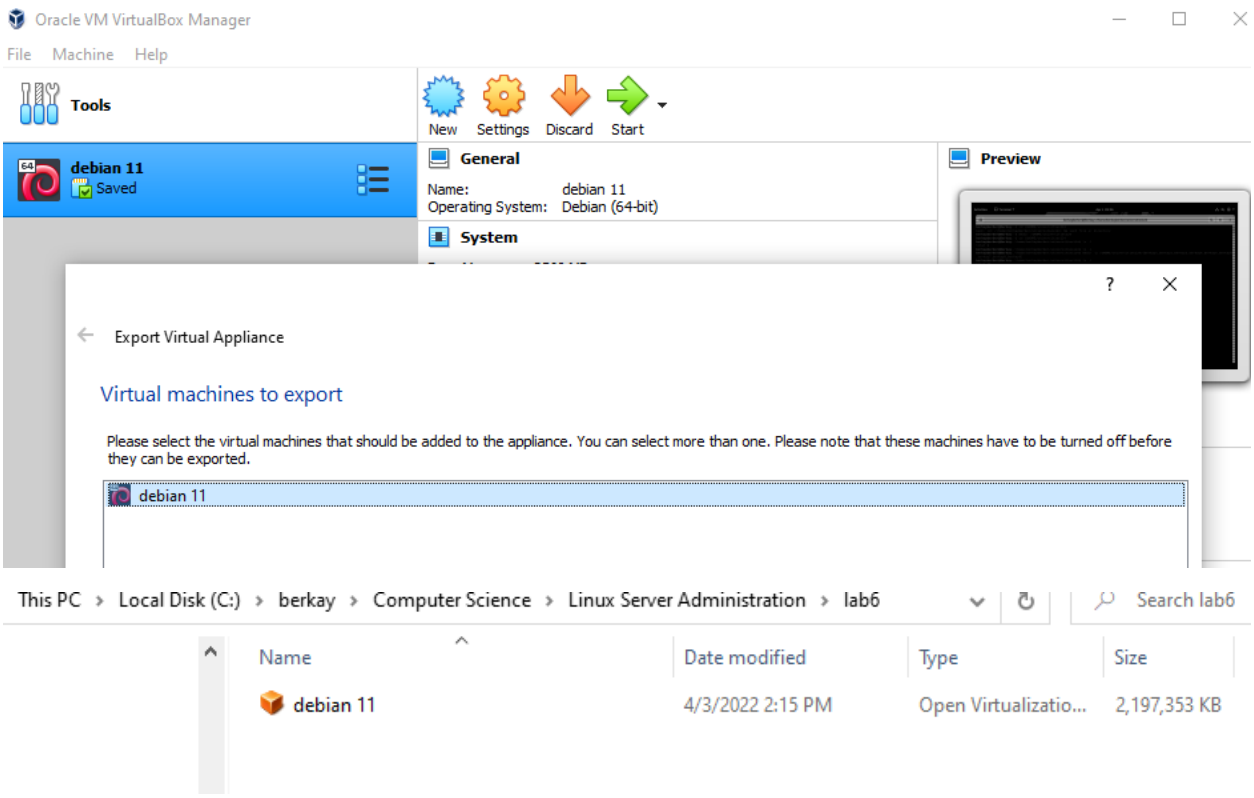
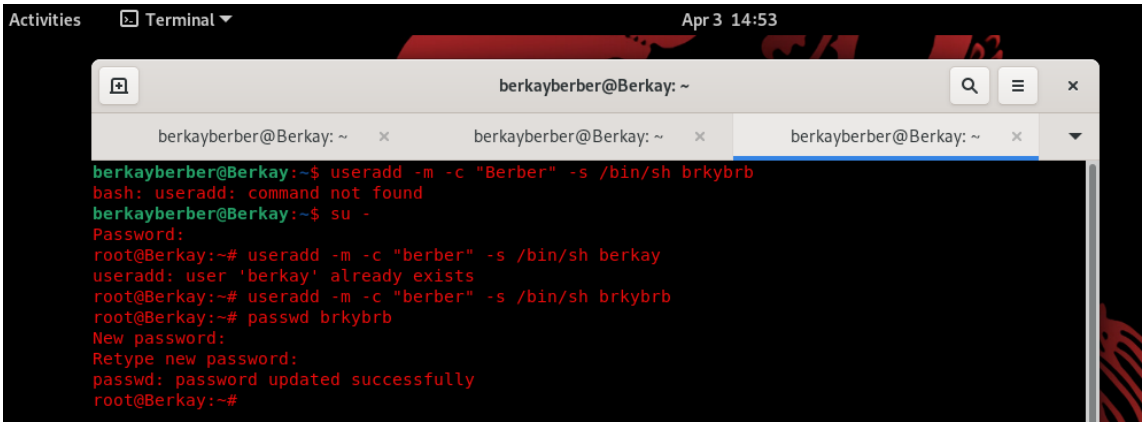
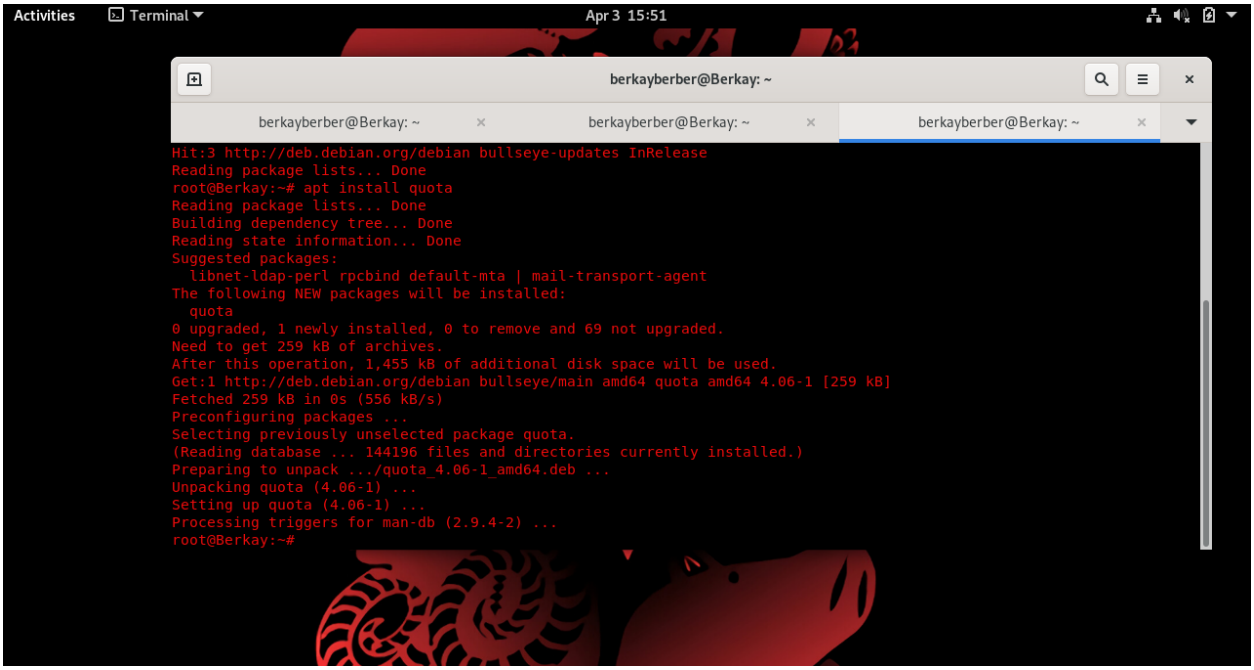
Task1.1) -> Backing up the data exporting from virtual machine to another file In order to keep the virtual machine safe in case of a deletion.



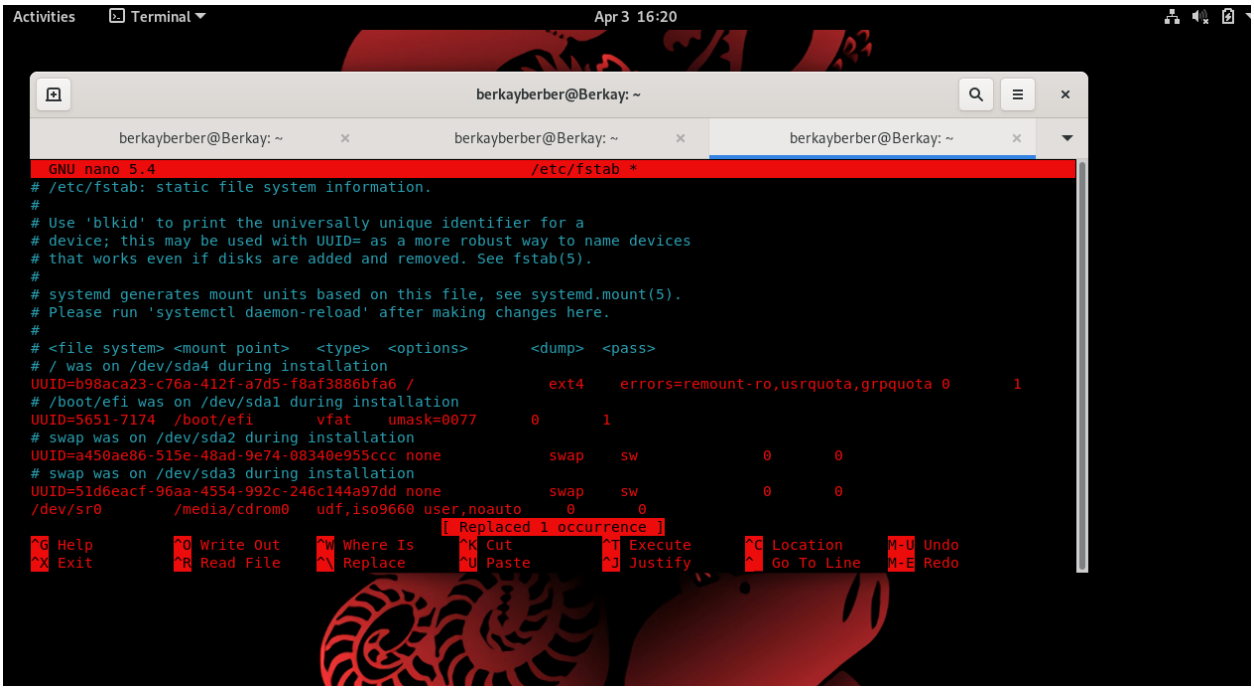
Task 1.2, 1.3) -> Create a new user account and rename with "YourReallyLastName".



Installation of quota software;



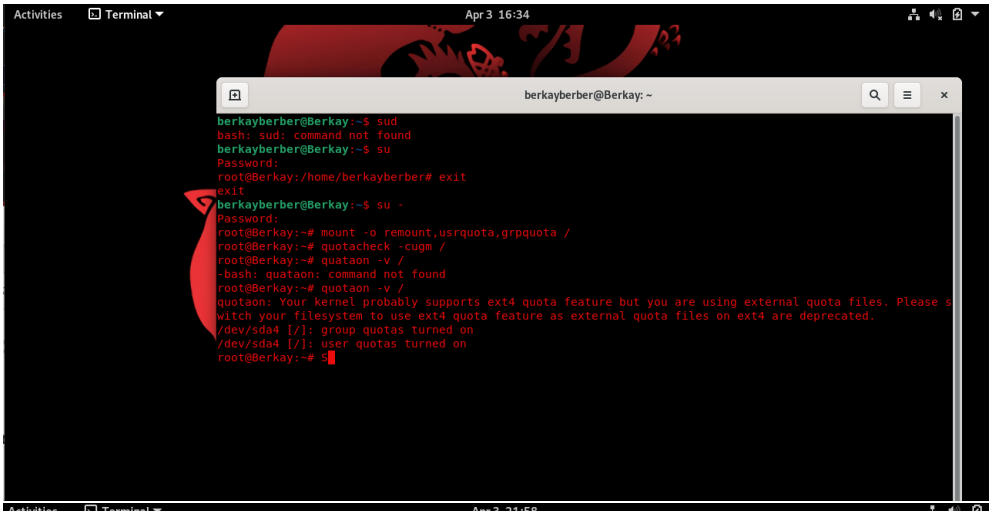
Added usrquota and groquota options to /etc/fstab before reboot to enable quota in it.

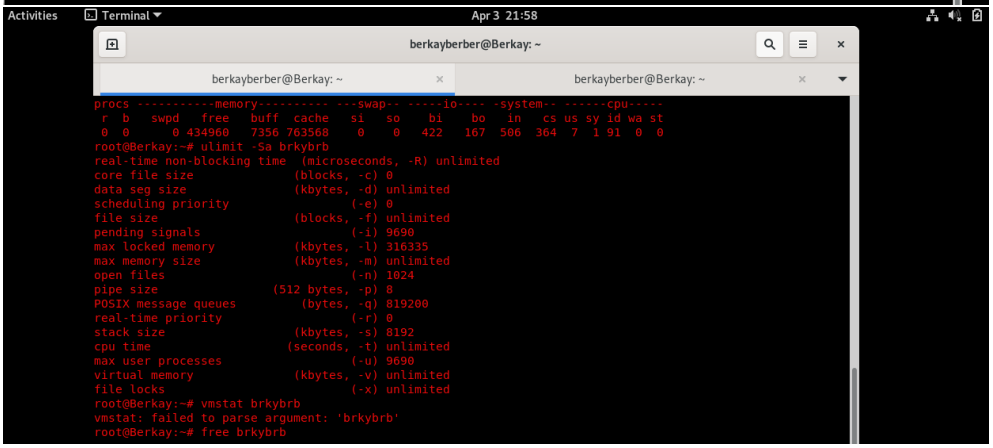


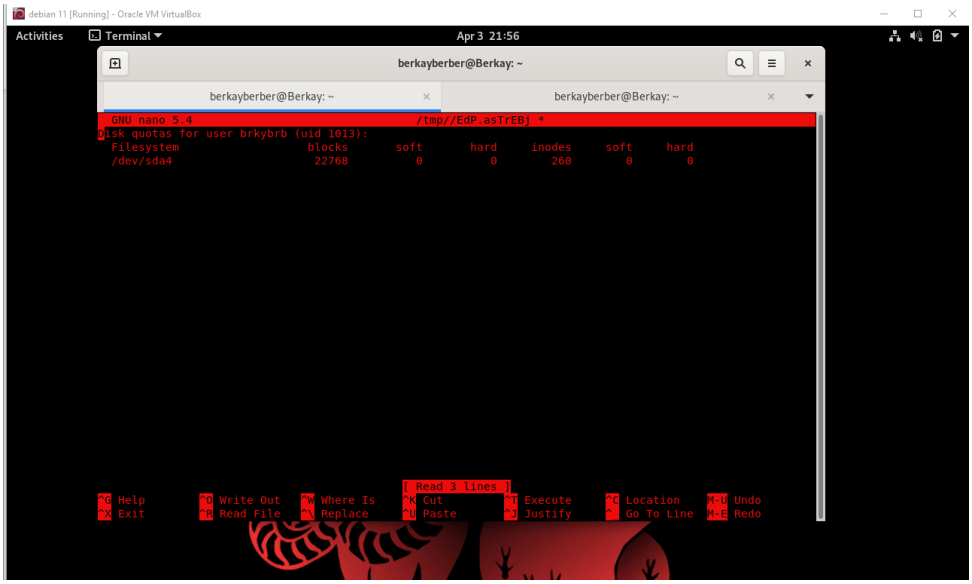
mount -o remount,usrquota,grpquota / -> To temporarily enable quota on the root filesystem

Quotacheck -cugm /   -> To use both user and group quota

quotaon -v /   -> turn on quota on the root (/) filesystem





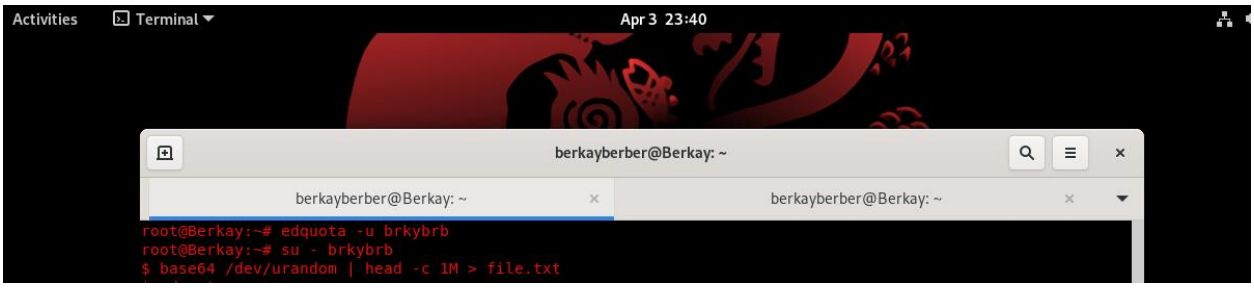


edquota -u brkybrb command used to edit user/group quotas

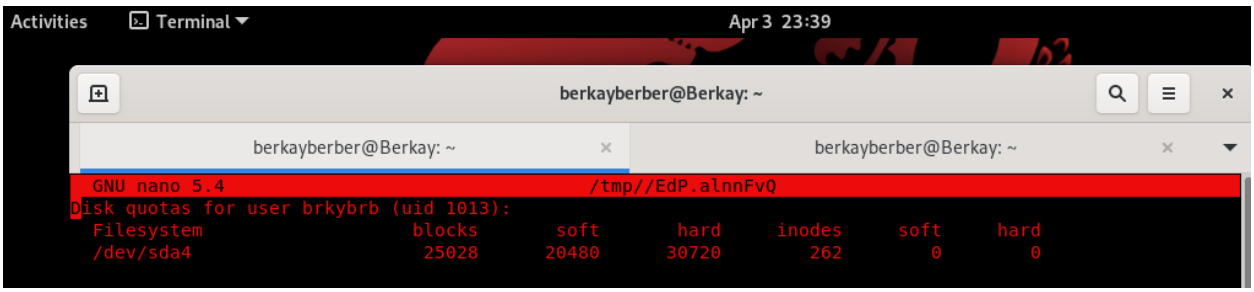
As presented at the below picture, soft set as 20M and hard is: 30M using command:

setquota -u brkybrb 20M 30M 0 0 /

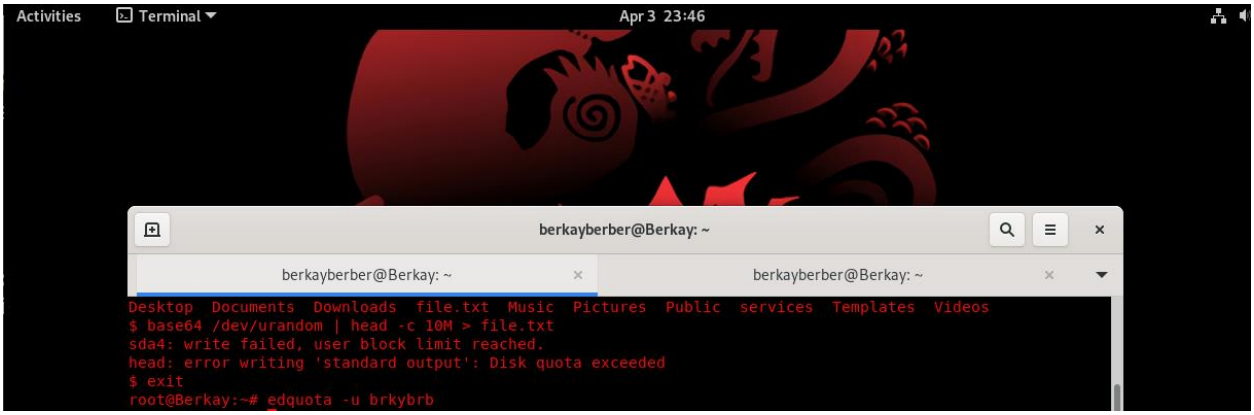
The command in order to set soft and hard limit is:

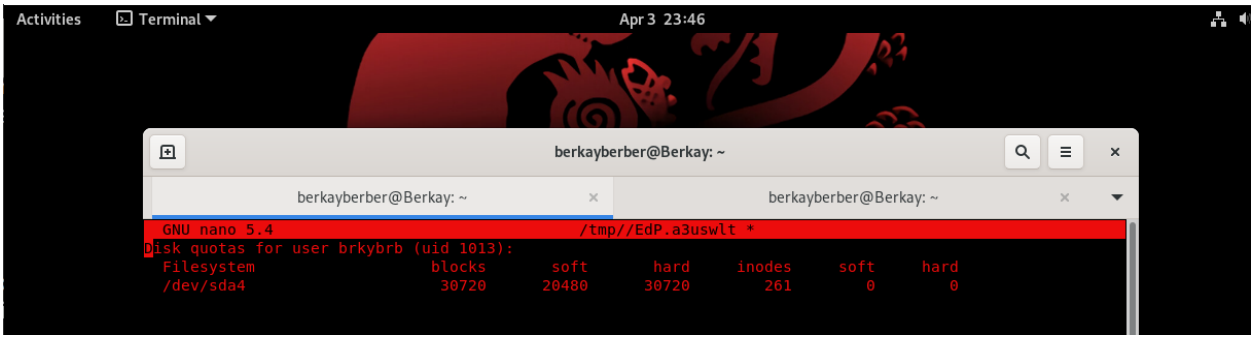


base64 /dev/urandom | head -c 1M > file.txt'



After Base64 /dev/urandom | head -c 10M > file.txt command:

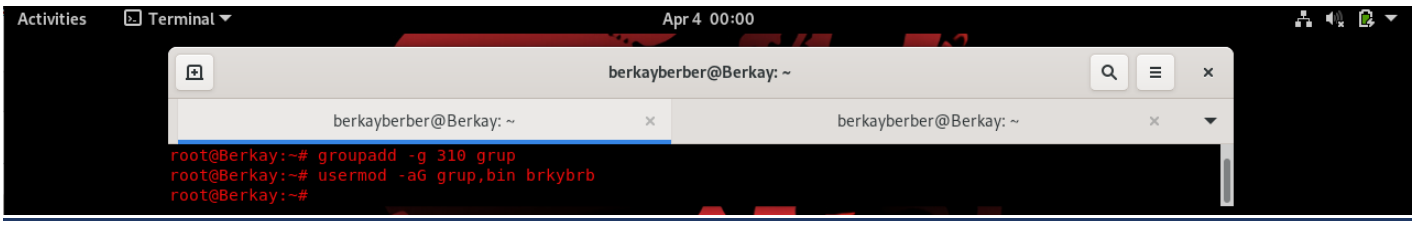




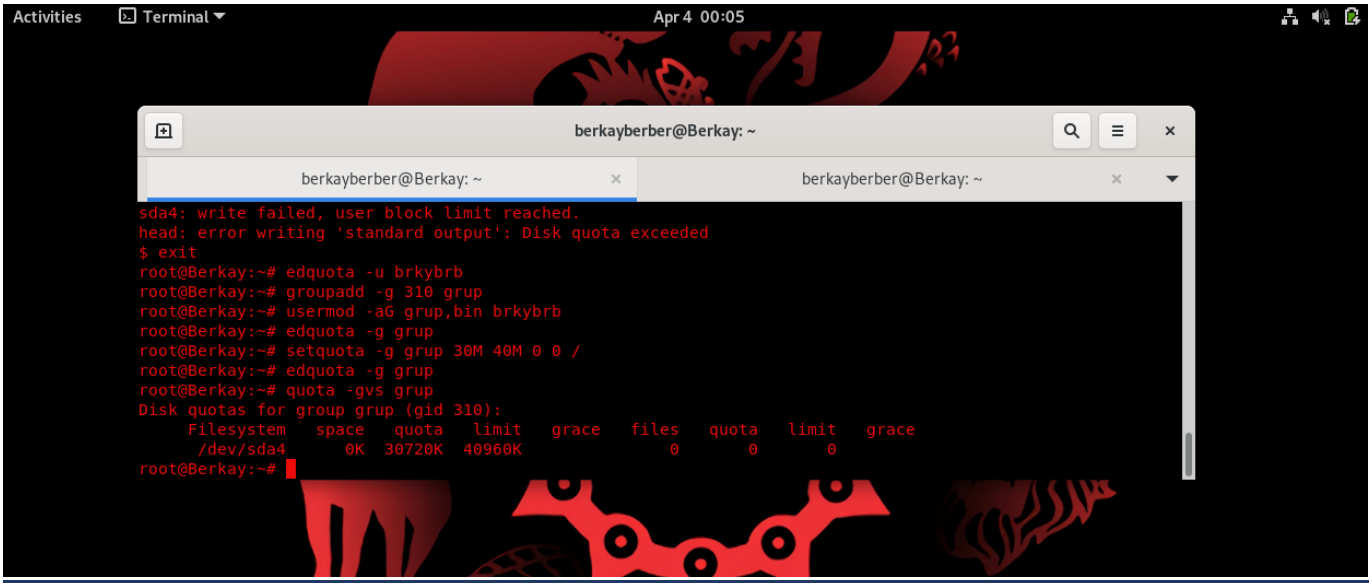
According to my observations, blocks and inodes has increased. As far as I understood inodes allocates an index node(inodes) for files and directories so that after we created file.txt in it, inodes has increased 1. And due to stored data Block storage increased accordingly.

1.3

Results after the adding group of a user.

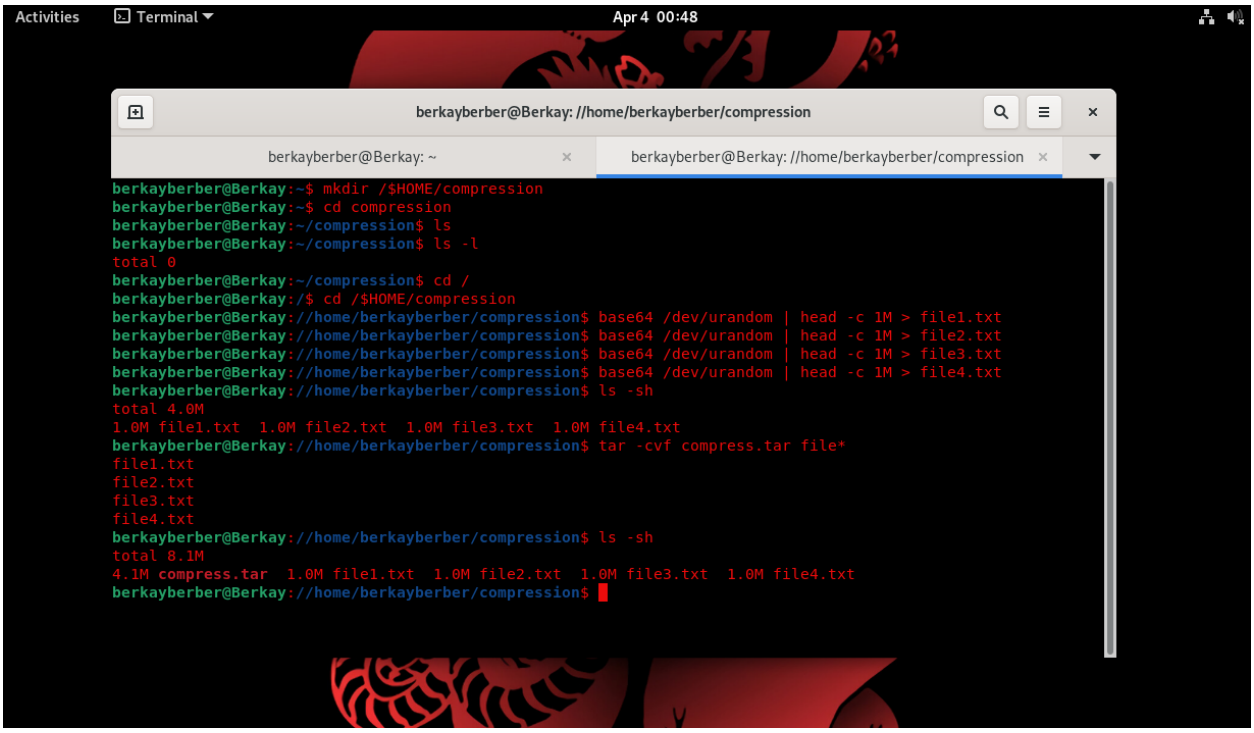



Activities
Terminal
Apr 4 00:03
berkayberber@Berkay: ~
berkayberber@Berkay: ~
berkayberber@Berkay: ~
GNU nano 5.4 /tmp//EdP.akM0VZ2
Disk quotas for group grup (gid 310):
Filesystem blocks soft hard inodes soft hard
/dev/sda4 0 0 0 0 0 0
[Read 3 lines]
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^_ Go To Line M-E Redo


Activities
Terminal
Apr 4 00:05
berkayberber@Berkay: ~
berkayberber@Berkay: ~
berkayberber@Berkay: ~
sda4: write failed, user block limit reached.
head: error writing 'standard output': Disk quota exceeded
$ exit
root@Berkay:~# edquota -u brkybrb
root@Berkay:~# groupadd -g 310 grup
root@Berkay:~# usermod -aG grup,bin brkybrb
root@Berkay:~# edquota -g grup
root@Berkay:~# setquota -g grup 30M 40M 0 0 /
root@Berkay:~# edquota -g grup
root@Berkay:~# quota -gvs grup
Disk quotas for group grup (gid 310):
Filesystem space quota limit grace files quota limit grace
/dev/sda4 0K 30720K 40960K 0 0 0
root@Berkay:~#

Task2

Task 2.4



What is the size of that archive? Why? -> *The total size of the directory is 8.1M as presented above. After adding the created 4 file with 1m size into the created archieve, it supposed to become an 8M total however, as we observed at the above result that size of the archives is 8.1M and as far as I understood, the reason is that a tar file overhead because it also includes information on how to recreate the files. If the content, we added to the tar file itself is already compressed we can end up with a bigger file than all the Mibs of all the files together. An archieve is also special file made of headers that may take a substantial amount of space.*

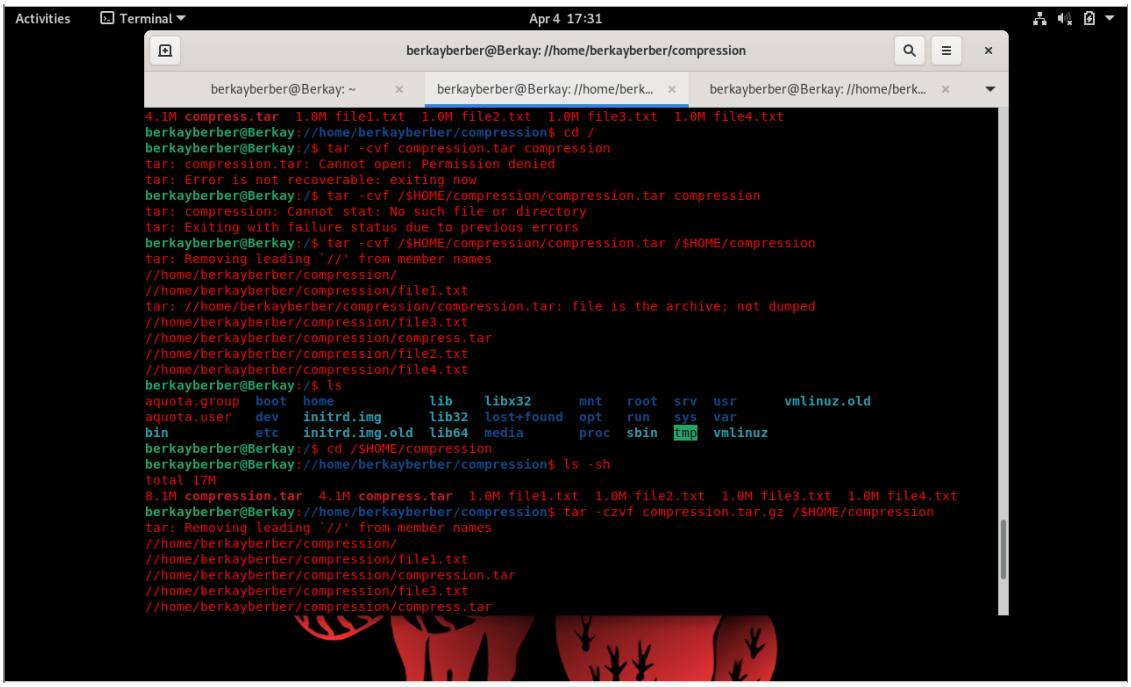
Task2.5

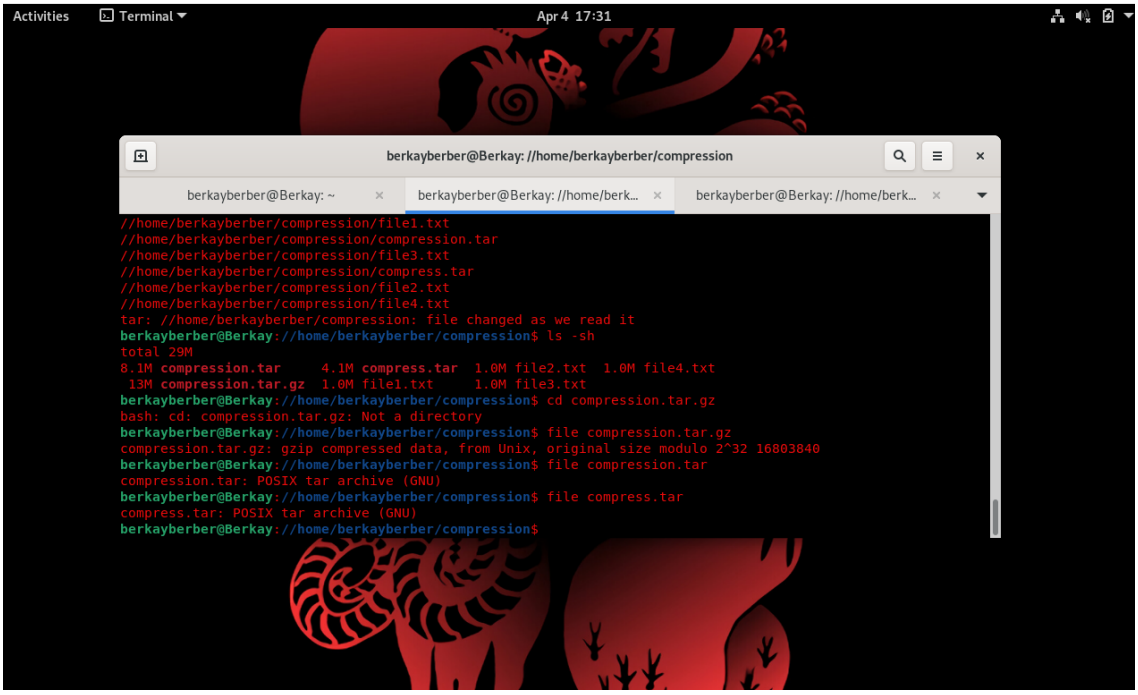
-c - > Create an archieve

-z - > Compress the archieve with gzip

*-v -> Display progress in the terminal while creating the archive, also known as "**v**erbose" mode. The v is always optional in these commands, but it's helpful.*

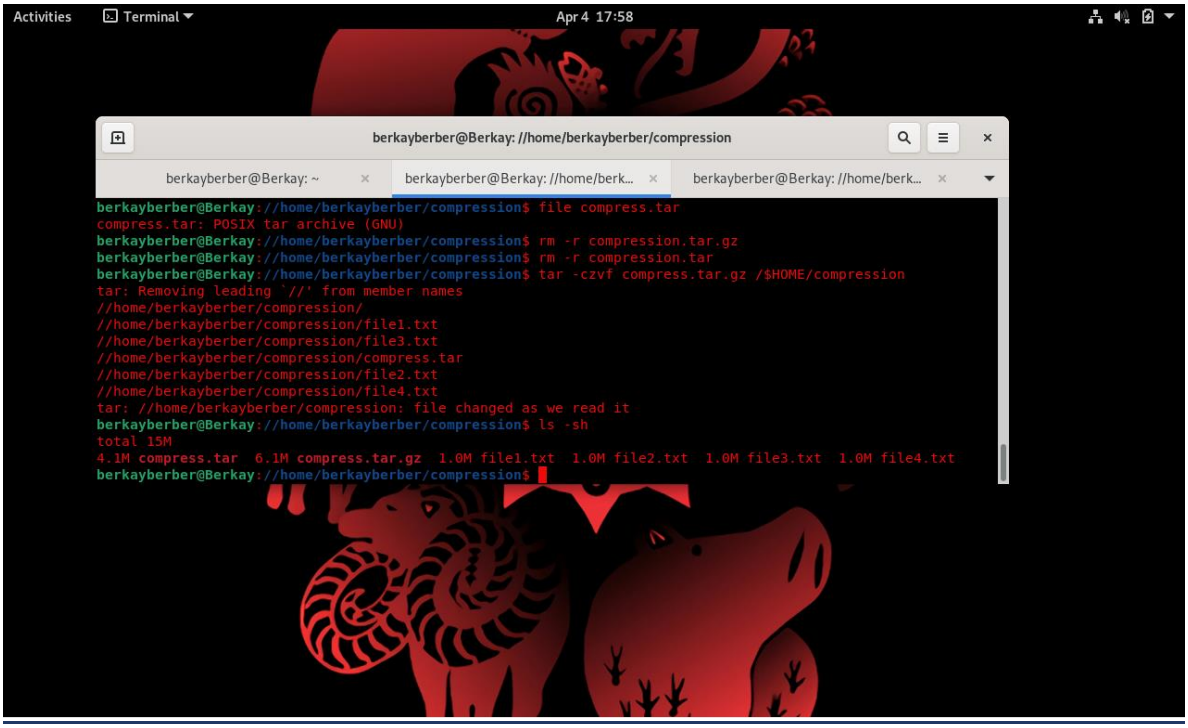
*-f -> Allows you to specify the **f**ilename of the archive*



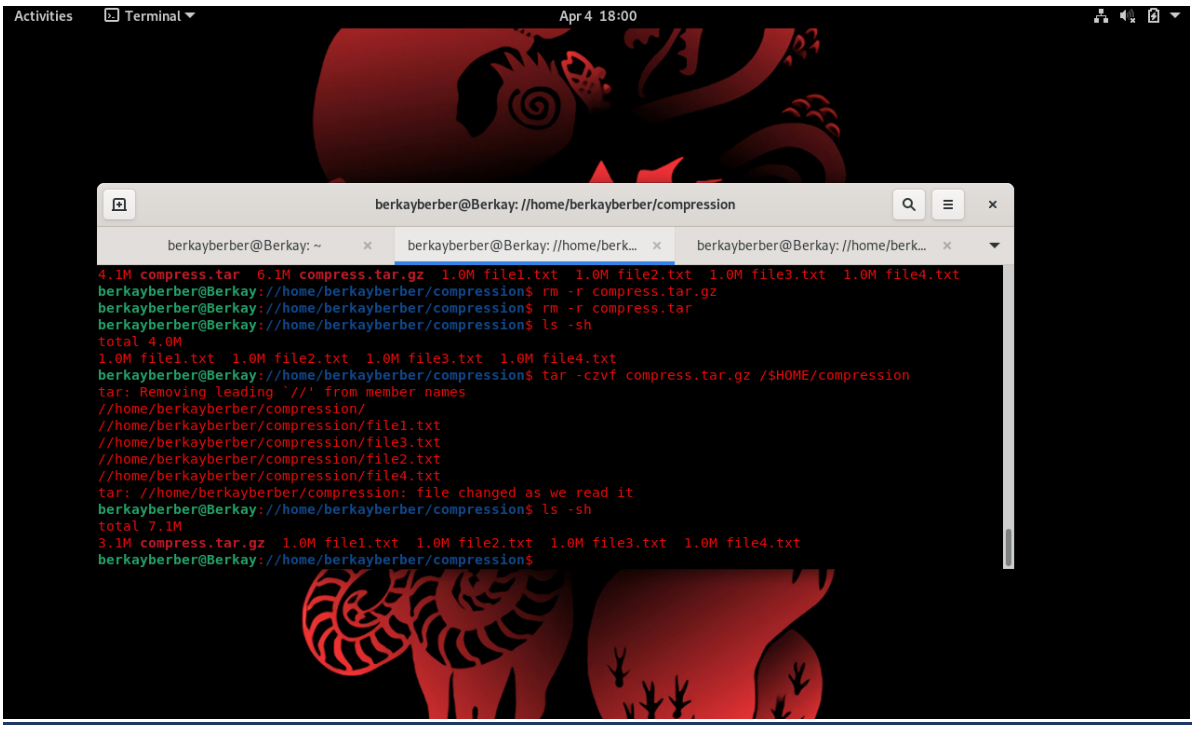


In above compression.tar.gz is have a all the archieves and files in it which compression.tar(8.1M), compress.tar(4.1M), 4 file.txt(4M) -> So as a result I observed is size is of using with gzep, become even less then only using tar which is 13M. It supposed to be around 16.2 or due to overhead of the archieve it could be even bigger.

There will be below the result of only the size of compress.tar (4.1M) and Files(4M) Lets see the results ->

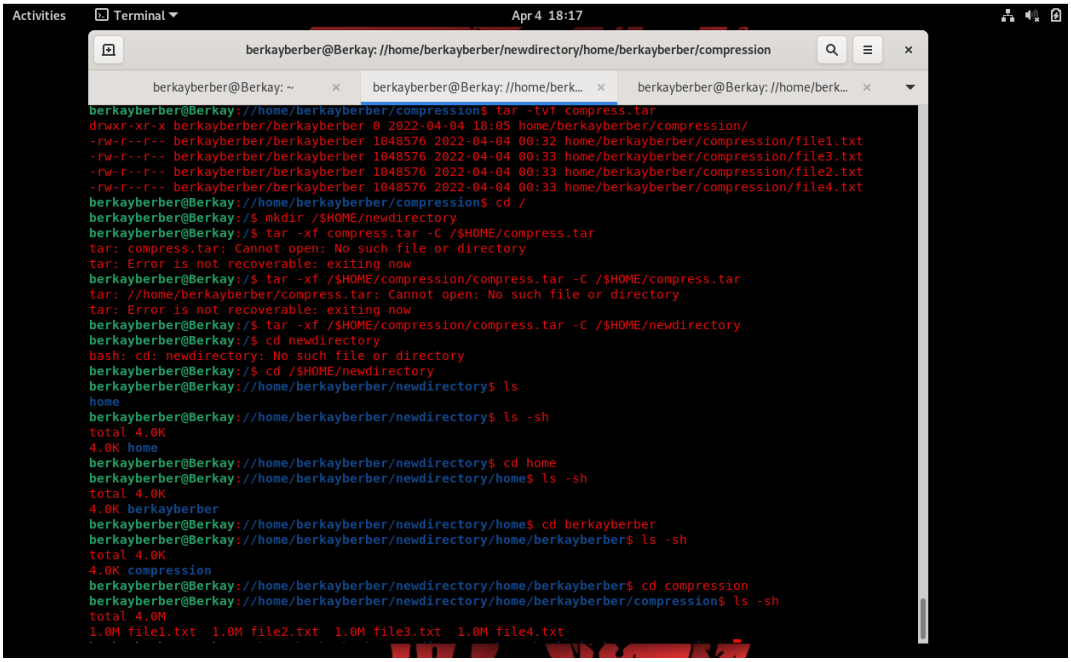


There is below the size result of using gzep command with including 4files with (1M) size in it . And the output is became less than only using tar command as expected which is 3.1M.



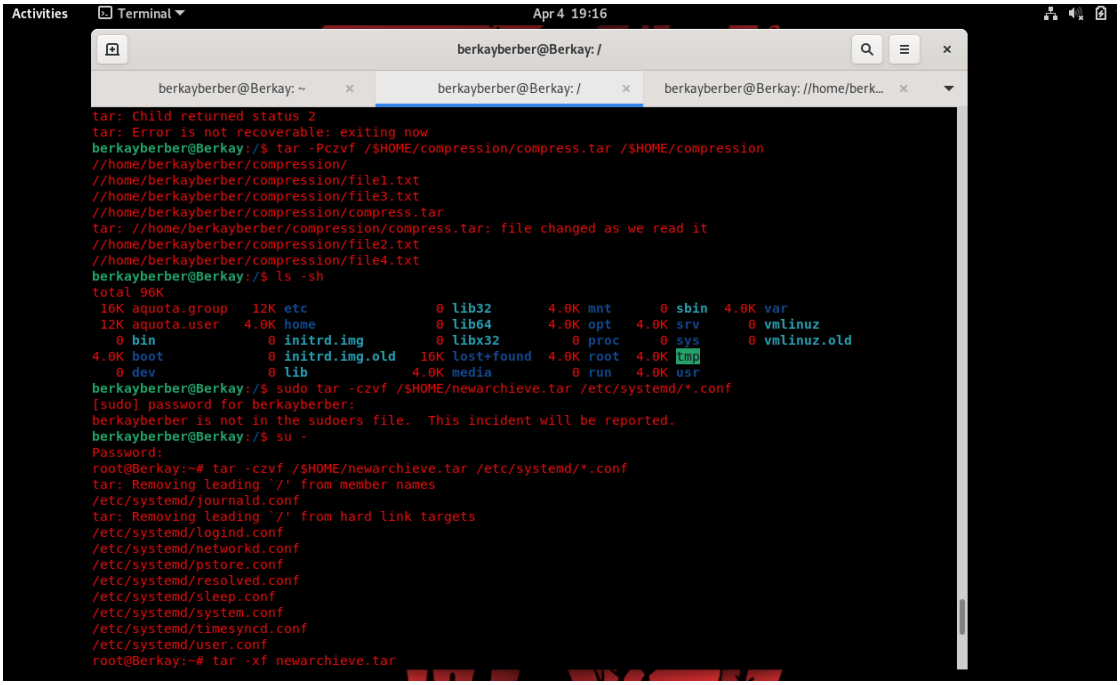
Task 2.6 ->"tar -tvf __tar" command is used to list the content of the tar file as presented below.

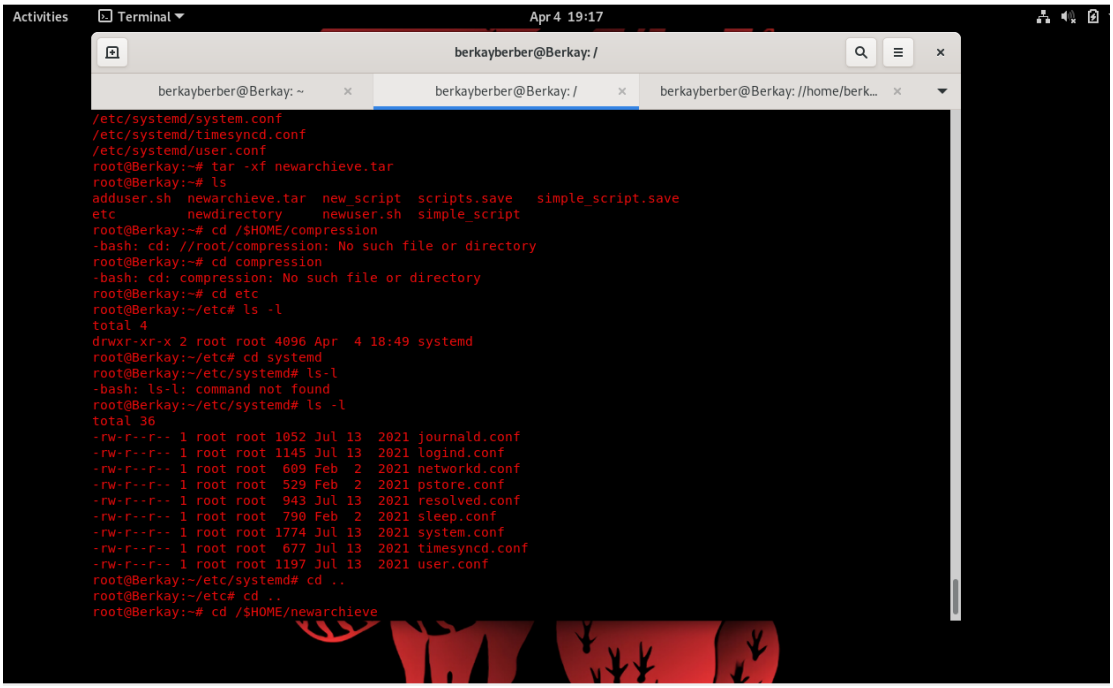
Created called newdirectory into $HOME and than using tar -xf ____ -C command files are extracted.



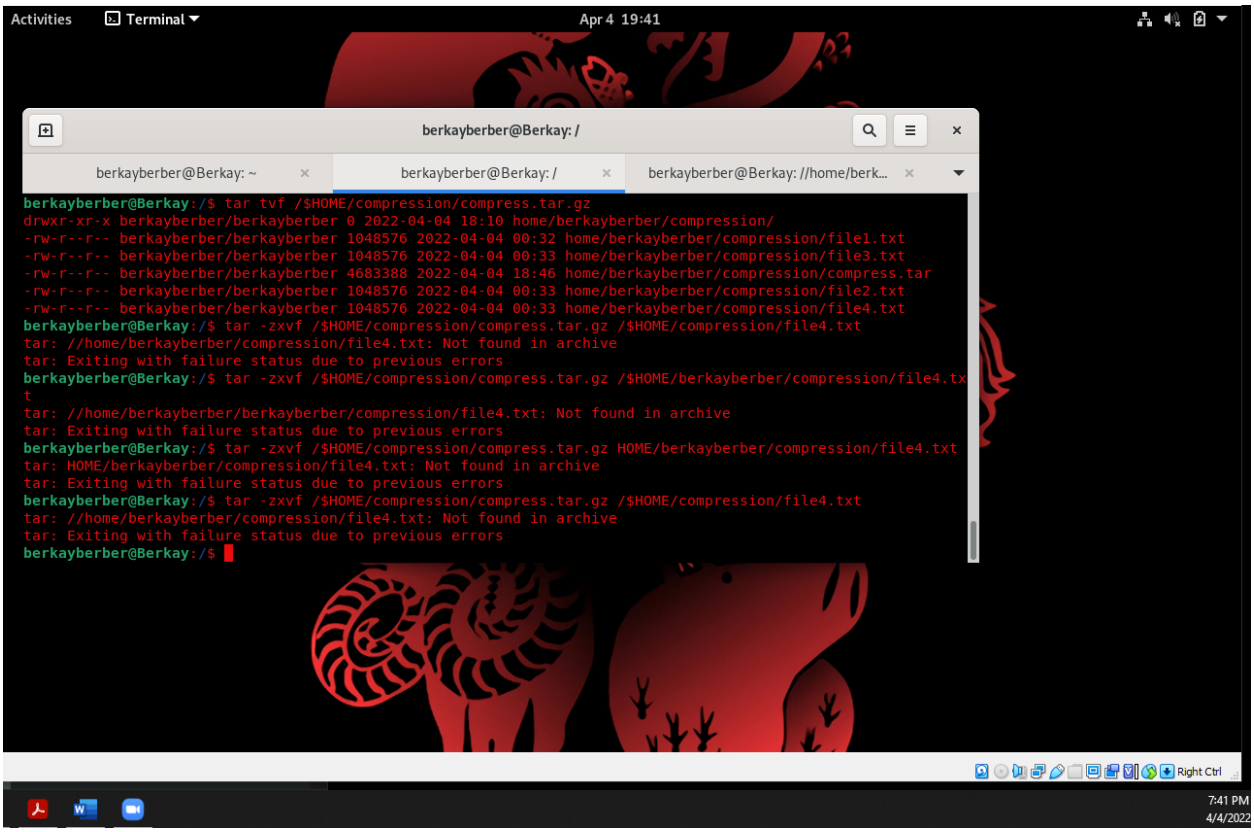
Task 2.7, 2.8

I used absolute path in thee previous exercise because absolute path contains the root element and the complete directory list.cd

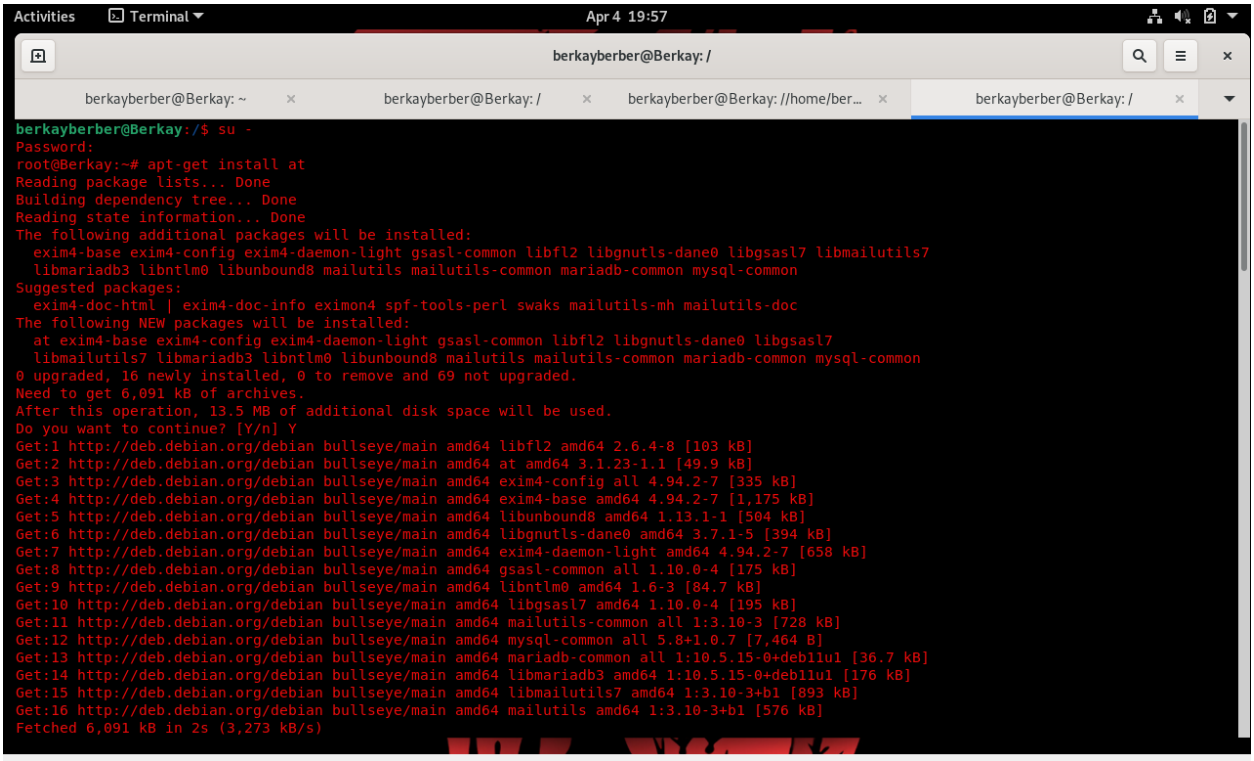


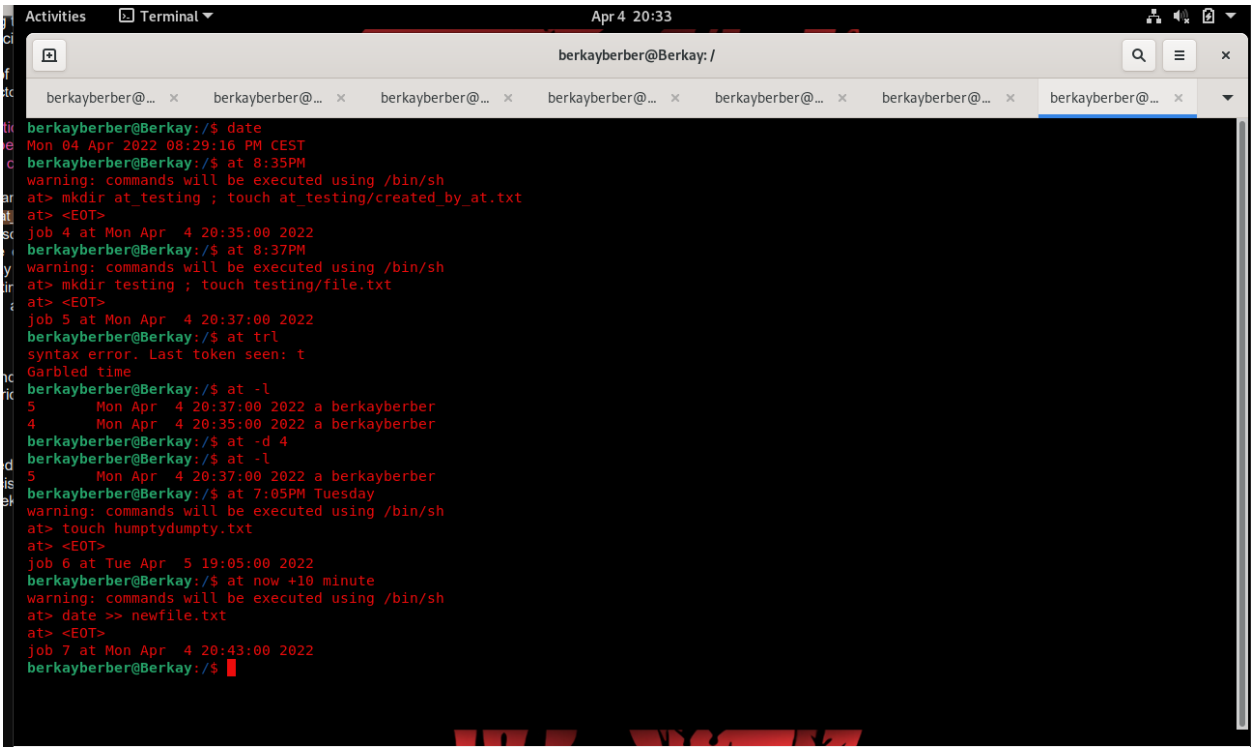

Activities
Terminal
Apr 4 19:17
berkayberber@Berkay: /
berkayberber@Berkay: ~
berkayberber@Berkay: /
berkayberber@Berkay: //home/berk...
/etc/systemd/system.conf
/etc/systemd/timesyncd.conf
/etc/systemd/user.conf
root@Berkay:~# tar -xf newarchieve.tar
root@Berkay:~# ls
adduser.sh newarchieve.tar new_script scripts.save simple_script.save
etc newdirectory newuser.sh simple_script
root@Berkay:~# cd /$HOME/compression
-bash: cd: //root/compression: No such file or directory
root@Berkay:~# cd compression
-bash: cd: compression: No such file or directory
root@Berkay:~# cd etc
root@Berkay:~/etc# ls -l
total 4
drwxr-xr-x 2 root root 4096 Apr 4 18:49 systemd
root@Berkay:~/etc# cd systemd
root@Berkay:~/etc/systemd# ls-l
-bash: ls-l: command not found
root@Berkay:~/etc/systemd# ls -l
total 36
-rw-r--r-- 1 root root 1052 Jul 13 2021 journald.conf
-rw-r--r-- 1 root root 1145 Jul 13 2021 logind.conf
-rw-r--r-- 1 root root 609 Feb 2 2021 networkd.conf
-rw-r--r-- 1 root root 529 Feb 2 2021 pstore.conf
-rw-r--r-- 1 root root 943 Jul 13 2021 resolved.conf
-rw-r--r-- 1 root root 790 Feb 2 2021 sleep.conf
-rw-r--r-- 1 root root 1774 Jul 13 2021 system.conf
-rw-r--r-- 1 root root 677 Jul 13 2021 timesyncd.conf
-rw-r--r-- 1 root root 1197 Jul 13 2021 user.conf
root@Berkay:~/etc/systemd# cd ..
root@Berkay:~/etc# cd ..
root@Berkay:~# cd /$HOME/newarchieve

Task2.9

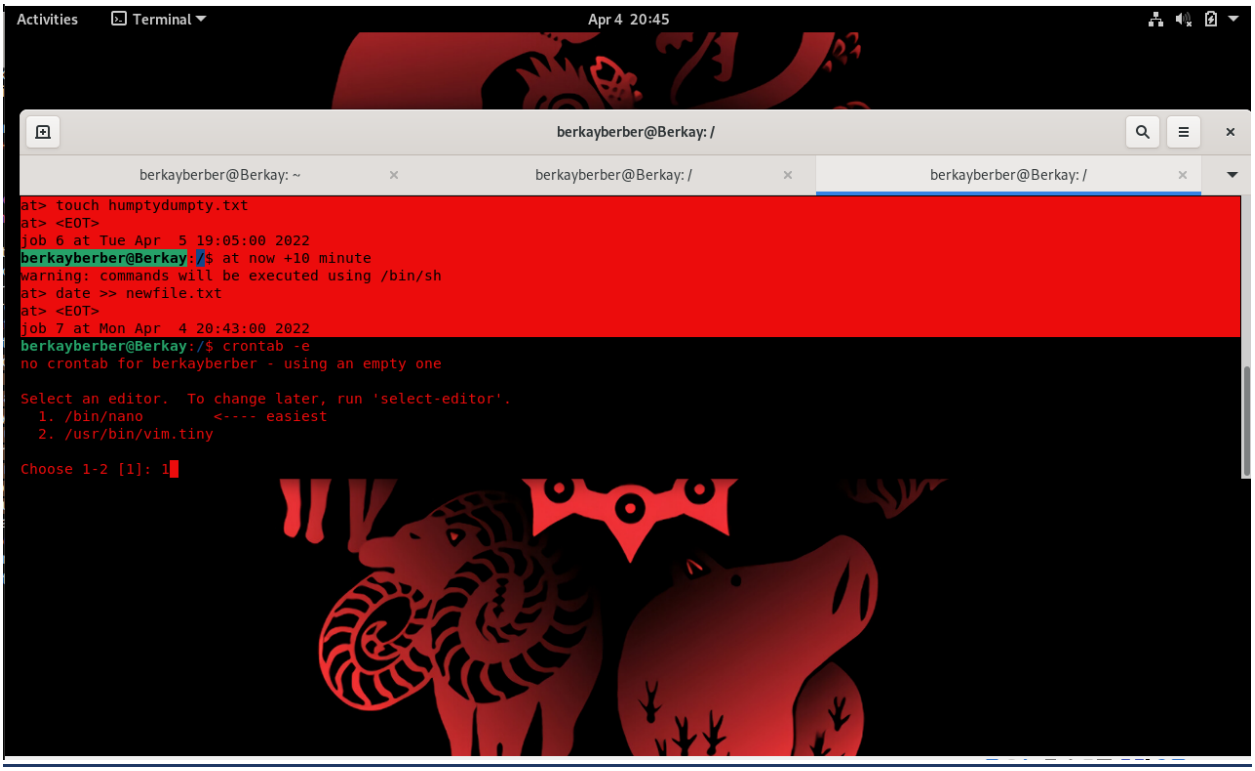

Activities
Terminal
Apr 4 19:41
berkayberber@Berkay: /
berkayberber@Berkay: ~
berkayberber@Berkay: /
berkayberber@Berkay: //home/berk...
berkayberber@Berkay:/$ tar tvf /$HOME/compression/compress.tar.gz
drwxr-xr-x berkayberber/berkayberber 0 2022-04-04 18:10 home/berkayberber/compression/
-rw-r--r-- berkayberber/berkayberber 1048576 2022-04-04 00:32 home/berkayberber/compression/file1.txt
-rw-r--r-- berkayberber/berkayberber 1048576 2022-04-04 00:33 home/berkayberber/compression/file3.txt
-rw-r--r-- berkayberber/berkayberber 4683388 2022-04-04 18:46 home/berkayberber/compression/compress.tar
-rw-r--r-- berkayberber/berkayberber 1048576 2022-04-04 00:33 home/berkayberber/compression/file2.txt
-rw-r--r-- berkayberber/berkayberber 1048576 2022-04-04 00:33 home/berkayberber/compression/file4.txt
berkayberber@Berkay:/$ tar -zxvf /$HOME/compression/compress.tar.gz /$HOME/compression/file4.txt
tar: //home/berkayberber/compression/file4.txt: Not found in archive
tar: Exiting with failure status due to previous errors
berkayberber@Berkay:/$ tar -zxvf /$HOME/compression/compress.tar.gz /$HOME/berkayberber/compression/file4.tx
t
tar: //home/berkayberber/berkayberber/compression/file4.txt: Not found in archive
tar: Exiting with failure status due to previous errors
berkayberber@Berkay:/$ tar -zxvf /$HOME/compression/compress.tar.gz HOME/berkayberber/compression/file4.txt
tar: HOME/berkayberber/compression/file4.txt: Not found in archive
tar: Exiting with failure status due to previous errors
berkayberber@Berkay:/$ tar -zxvf /$HOME/compression/compress.tar.gz /$HOME/compression/file4.txt
tar: //home/berkayberber/compression/file4.txt: Not found in archive
tar: Exiting with failure status due to previous errors
berkayberber@Berkay:/$
Right Ctrl
7:41 PM
4/4/2022

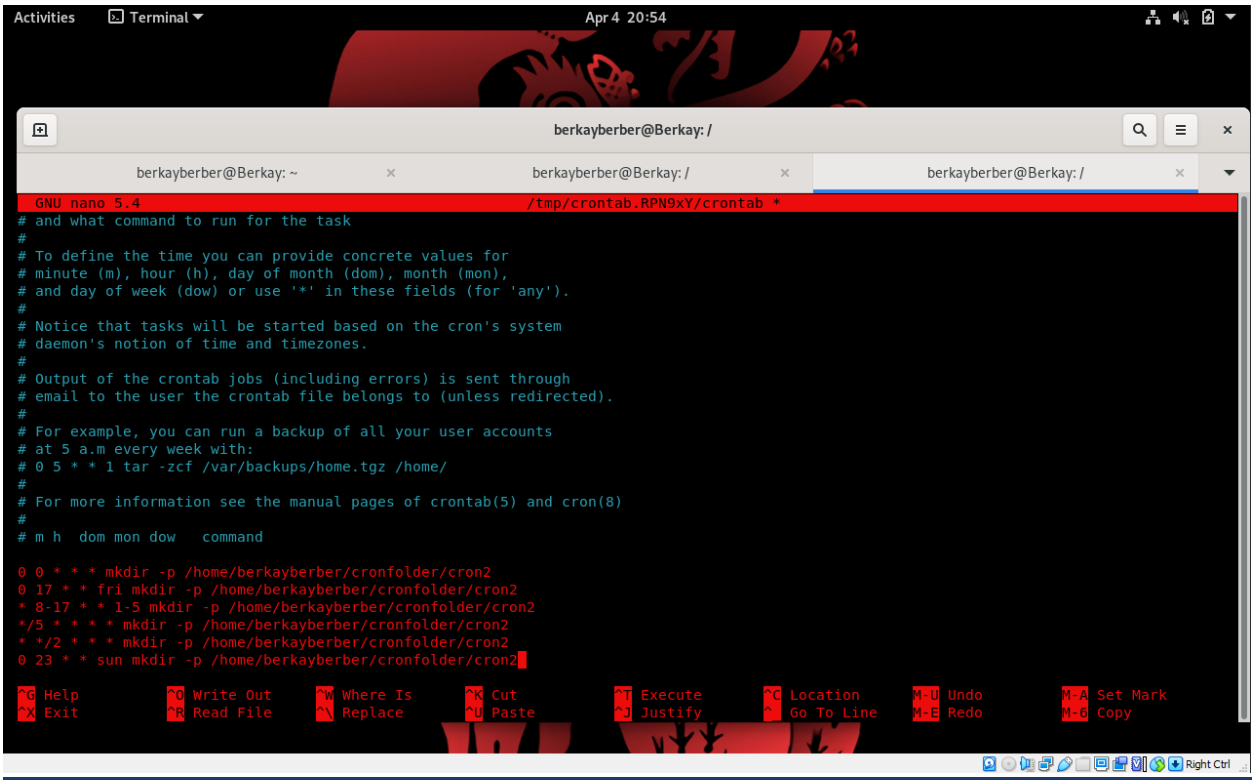
Task3.10

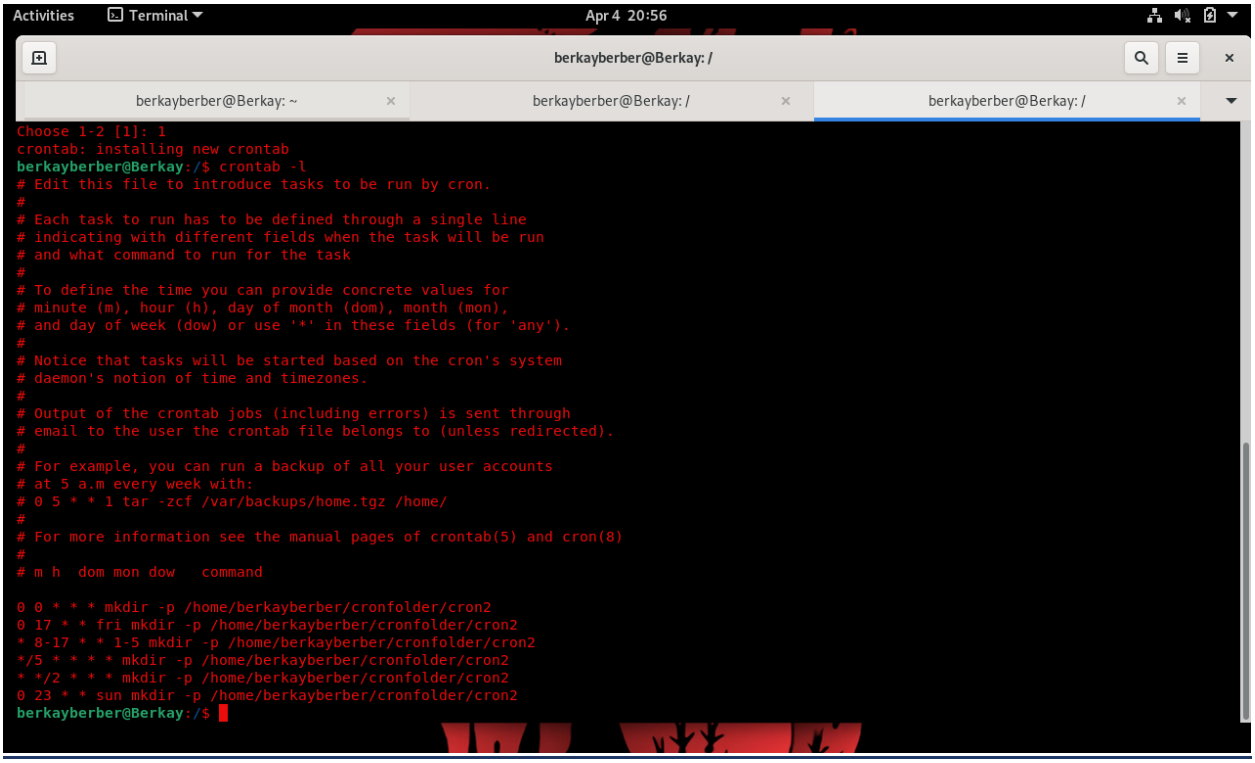

Activities
Terminal
Apr 4 19:57
berkayberber@Berkay: /
berkayberber@Berkay: ~
berkayberber@Berkay: /
berkayberber@Berkay: //home/ber...
berkayberber@Berkay: /
berkayberber@Berkay:/$ su -
Password:
root@Berkay:~# apt-get install at
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
exim4-base exim4-config exim4-daemon-light gsasl-common libfl2 libgnutls-dane0 libgsasl7 libmailutils7
libmariadb3 libntlm0 libunbound8 mailutils mailutils-common mariadb-common mysql-common
Suggested packages:
exim4-doc-html | exim4-doc-info eximon4 spf-tools-perl swaks mailutils-mh mailutils-doc
The following NEW packages will be installed:
at exim4-base exim4-config exim4-daemon-light gsasl-common libfl2 libgnutls-dane0 libgsasl7
libmailutils7 libmariadb3 libntlm0 libunbound8 mailutils mailutils-common mariadb-common mysql-common
0 upgraded, 16 newly installed, 0 to remove and 69 not upgraded.
Need to get 6,091 kB of archives.
After this operation, 13.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://deb.debian.org/debian bullseye/main amd64 libfl2 amd64 2.6.4-8 [103 kB]
Get:2 http://deb.debian.org/debian bullseye/main amd64 at amd64 3.1.23-1.1 [49.9 kB]
Get:3 http://deb.debian.org/debian bullseye/main amd64 exim4-config all 4.94.2-7 [335 kB]
Get:4 http://deb.debian.org/debian bullseye/main amd64 exim4-base amd64 4.94.2-7 [1,175 kB]
Get:5 http://deb.debian.org/debian bullseye/main amd64 libunbound8 amd64 1.13.1-1 [504 kB]
Get:6 http://deb.debian.org/debian bullseye/main amd64 libgnutls-dane0 amd64 3.7.1-5 [394 kB]
Get:7 http://deb.debian.org/debian bullseye/main amd64 exim4-daemon-light amd64 4.94.2-7 [658 kB]
Get:8 http://deb.debian.org/debian bullseye/main amd64 gsasl-common all 1.10.0-4 [175 kB]
Get:9 http://deb.debian.org/debian bullseye/main amd64 libntlm0 amd64 1.6-3 [84.7 kB]
Get:10 http://deb.debian.org/debian bullseye/main amd64 libgsasl7 amd64 1.10.0-4 [195 kB]
Get:11 http://deb.debian.org/debian bullseye/main amd64 mailutils-common all 1:3.10-3 [728 kB]
Get:12 http://deb.debian.org/debian bullseye/main amd64 mysql-common all 5.8+1.0.7 [7,464 B]
Get:13 http://deb.debian.org/debian bullseye/main amd64 mariadb-common all 1:10.5.15-0+deb11u1 [36.7 kB]
Get:14 http://deb.debian.org/debian bullseye/main amd64 libmariadb3 amd64 1:10.5.15-0+deb11u1 [176 kB]
Get:15 http://deb.debian.org/debian bullseye/main amd64 libmailutils7 amd64 1:3.10-3+b1 [893 kB]
Get:16 http://deb.debian.org/debian bullseye/main amd64 mailutils amd64 1:3.10-3+b1 [576 kB]
Fetched 6,091 kB in 2s (3,273 kB/s)

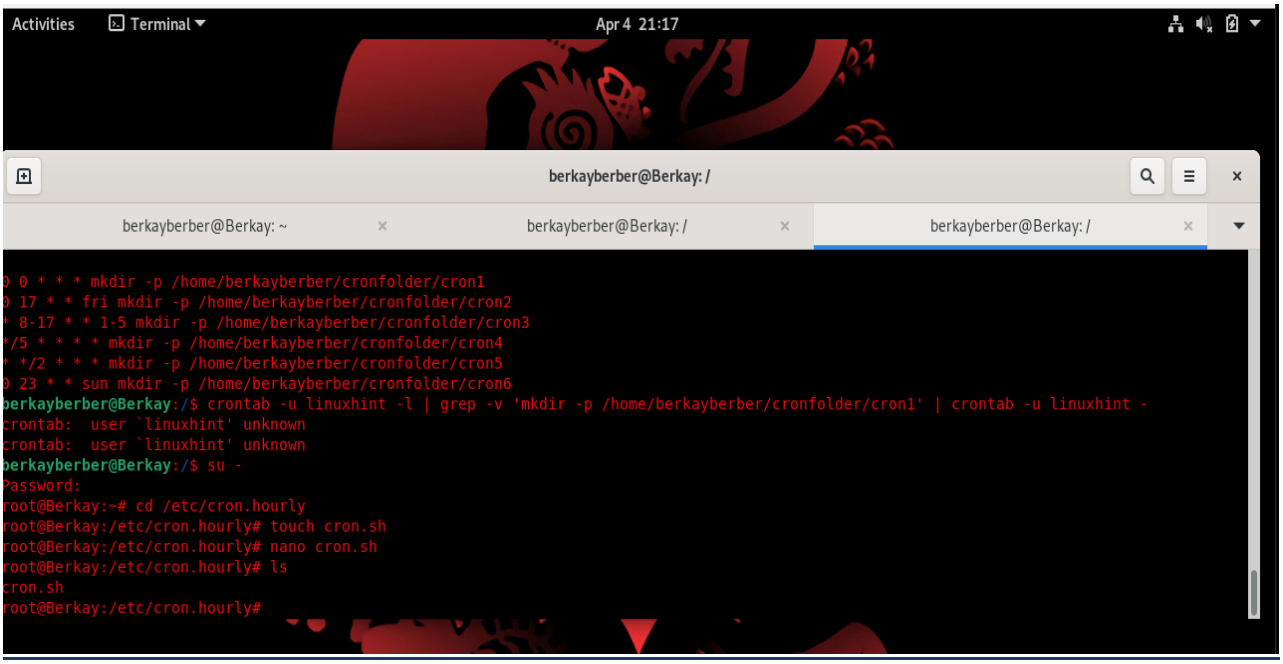

Activities
Terminal
Apr 4 20:33
berkayberber@Berkay: /
berkayberber@Berkay:/$ date
Mon 04 Apr 2022 08:29:16 PM CEST
berkayberber@Berkay:/$ at 8:35PM
warning: commands will be executed using /bin/sh
at> mkdir at_testing ; touch at_testing/created_by_at.txt
at> <EOT>
job 4 at Mon Apr 4 20:35:00 2022
berkayberber@Berkay:/$ at 8:37PM
warning: commands will be executed using /bin/sh
at> mkdir testing ; touch testing/file.txt
at> <EOT>
job 5 at Mon Apr 4 20:37:00 2022
berkayberber@Berkay:/$ at trl
syntax error. Last token seen: t
Garbled time
berkayberber@Berkay:/$ at -l
5 Mon Apr 4 20:37:00 2022 a berkayberber
4 Mon Apr 4 20:35:00 2022 a berkayberber
berkayberber@Berkay:/$ at -d 4
berkayberber@Berkay:/$ at -l
5 Mon Apr 4 20:37:00 2022 a berkayberber
berkayberber@Berkay:/$ at 7:05PM Tuesday
warning: commands will be executed using /bin/sh
at> touch humptydumpty.txt
at> <EOT>
job 6 at Tue Apr 5 19:05:00 2022
berkayberber@Berkay:/$ at now +10 minute
warning: commands will be executed using /bin/sh
at> date >> newfile.txt
at> <EOT>
job 7 at Mon Apr 4 20:43:00 2022
berkayberber@Berkay:/$

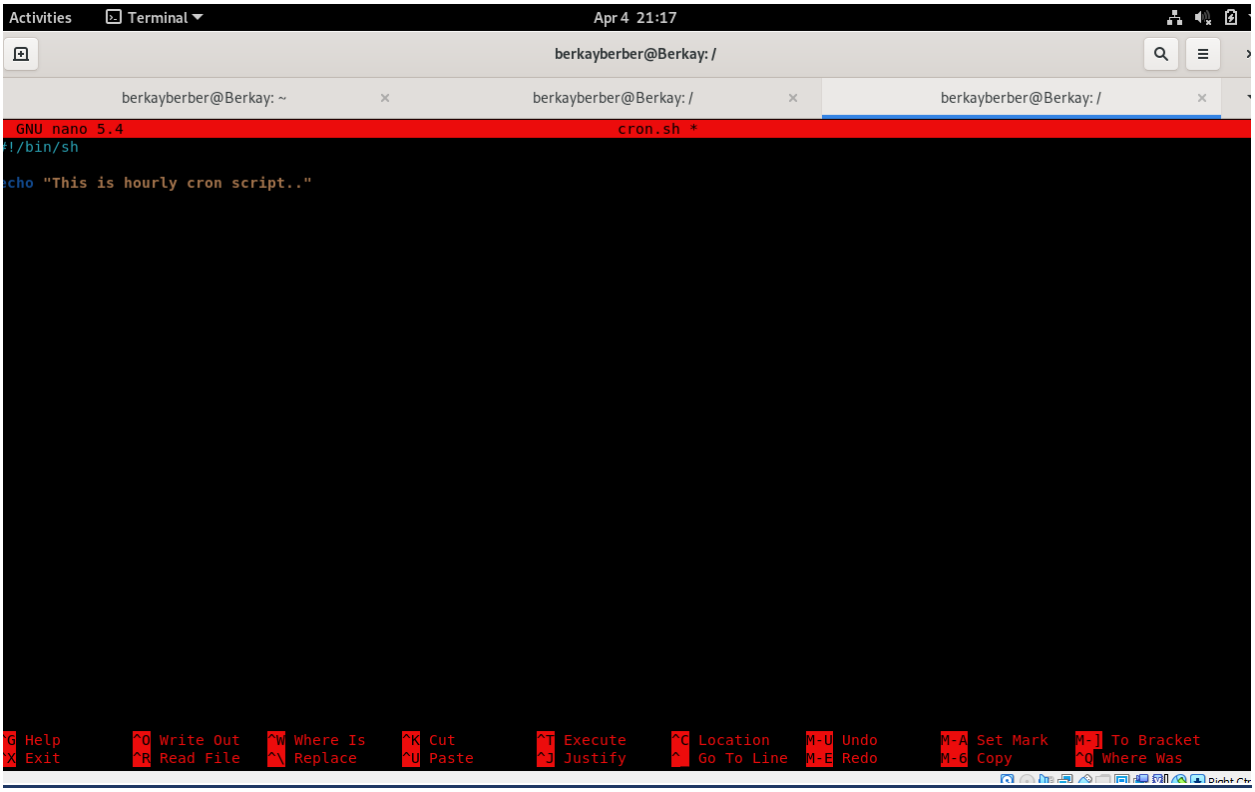
Task3.11


Activities
Terminal
Apr 4 20:45
berkayberber@Berkay: /
berkayberber@Berkay: ~
berkayberber@Berkay: /
berkayberber@Berkay: /
at> touch humptydumpty.txt
at> <EOT>
job 6 at Tue Apr 5 19:05:00 2022
berkayberber@Berkay:/$ at now +10 minute
warning: commands will be executed using /bin/sh
at> date >> newfile.txt
at> <EOT>
job 7 at Mon Apr 4 20:43:00 2022
berkayberber@Berkay:/$ crontab -e
no crontab for berkayberber - using an empty one
Select an editor. To change later, run 'select-editor'.
1. /bin/nano <---- easiest
2. /usr/bin/vim.tiny
Choose 1-2 [1]: 1


Activities
Terminal
Apr 4 20:54
berkayberber@Berkay: /
berkayberber@Berkay: ~
berkayberber@Berkay: /
berkayberber@Berkay: /
GNU nano 5.4 /tmp/crontab.RPN9xY/crontab *
and what command to run for the task
To define the time you can provide concrete values for
minute (m), hour (h), day of month (dom), month (mon),
and day of week (dow) or use '*' in these fields (for 'any').
Notice that tasks will be started based on the cron's system
daemon's notion of time and timezones.
Output of the crontab jobs (including errors) is sent through
email to the user the crontab file belongs to (unless redirected).
For example, you can run a backup of all your user accounts
at 5 a.m every week with:
0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
For more information see the manual pages of crontab(5) and cron(8)
m h dom mon dow command
0 0 * * * mkdir -p /home/berkayberber/cronfolder/cron2
0 17 * * fri mkdir -p /home/berkayberber/cronfolder/cron2
* 8-17 * * 1-5 mkdir -p /home/berkayberber/cronfolder/cron2
*/5 * * * * mkdir -p /home/berkayberber/cronfolder/cron2
* */2 * * * mkdir -p /home/berkayberber/cronfolder/cron2
0 23 * * sun mkdir -p /home/berkayberber/cronfolder/cron2
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo M-A Set Mark
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^ Go To Line M-E Redo M-6 Copy
Right Ctrl


Activities
Terminal
Apr 4 20:56
berkayberber@Berkay: /
berkayberber@Berkay: ~
berkayberber@Berkay: /
berkayberber@Berkay: /
Choose 1-2 [1]: 1
crontab: installing new crontab
berkayberber@Berkay:/$ crontab -l
Edit this file to introduce tasks to be run by cron.
#
Each task to run has to be defined through a single line
indicating with different fields when the task will be run
and what command to run for the task
#
To define the time you can provide concrete values for
minute (m), hour (h), day of month (dom), month (mon),
and day of week (dow) or use '*' in these fields (for 'any').
#
Notice that tasks will be started based on the cron's system
daemon's notion of time and timezones.
#
Output of the crontab jobs (including errors) is sent through
email to the user the crontab file belongs to (unless redirected).
#
For example, you can run a backup of all your user accounts
at 5 a.m every week with:
0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
For more information see the manual pages of crontab(5) and cron(8)
#
m h dom mon dow   command
0 0 * * * mkdir -p /home/berkayberber/cronfolder/cron2
0 17 * * fri mkdir -p /home/berkayberber/cronfolder/cron2
* 8-17 * * 1-5 mkdir -p /home/berkayberber/cronfolder/cron2
*/5 * * * * mkdir -p /home/berkayberber/cronfolder/cron2
* */2 * * * mkdir -p /home/berkayberber/cronfolder/cron2
0 23 * * sun mkdir -p /home/berkayberber/cronfolder/cron2
berkayberber@Berkay:/$


Activities
Terminal
Apr 4 21:17
berkayberber@Berkay: /
berkayberber@Berkay: ~
berkayberber@Berkay: /
berkayberber@Berkay: /
0 0 * * * mkdir -p /home/berkayberber/cronfolder/cron1
0 17 * * fri mkdir -p /home/berkayberber/cronfolder/cron2
* 8-17 * * 1-5 mkdir -p /home/berkayberber/cronfolder/cron3
*/5 * * * * mkdir -p /home/berkayberber/cronfolder/cron4
* */2 * * * mkdir -p /home/berkayberber/cronfolder/cron5
0 23 * * sun mkdir -p /home/berkayberber/cronfolder/cron6
berkayberber@Berkay:/$ crontab -u linuxhint -l | grep -v 'mkdir -p /home/berkayberber/cronfolder/cron1' | crontab -u linuxhint -
crontab: user `linuxhint' unknown
crontab: user `linuxhint' unknown
berkayberber@Berkay:/$ su -
Password:
root@Berkay:~# cd /etc/cron.hourly
root@Berkay:/etc/cron.hourly# touch cron.sh
root@Berkay:/etc/cron.hourly# nano cron.sh
root@Berkay:/etc/cron.hourly# ls
cron.sh
root@Berkay:/etc/cron.hourly#


Activities
Terminal
Apr 4 21:17
berkayberber@Berkay: /
berkayberber@Berkay: ~
berkayberber@Berkay: /
berkayberber@Berkay: /
GNU nano 5.4
cron.sh *
#!/bin/sh
echo "This is hourly cron script.."
^G Help
^X Exit
^O Write Out
^R Read File
^W Where Is
^\ Replace
^K Cut
^U Paste
^T Execute
^J Justify
^C Location
^ Go To Line
M-U Undo
M-E Redo
M-A Set Mark
M-6 Copy
M-] To Bracket
^Q Where Was