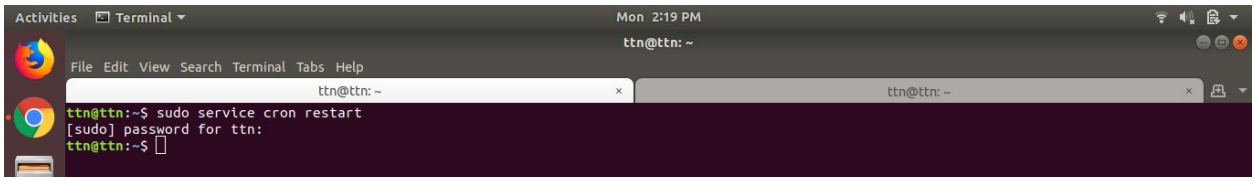
Advance Linux:

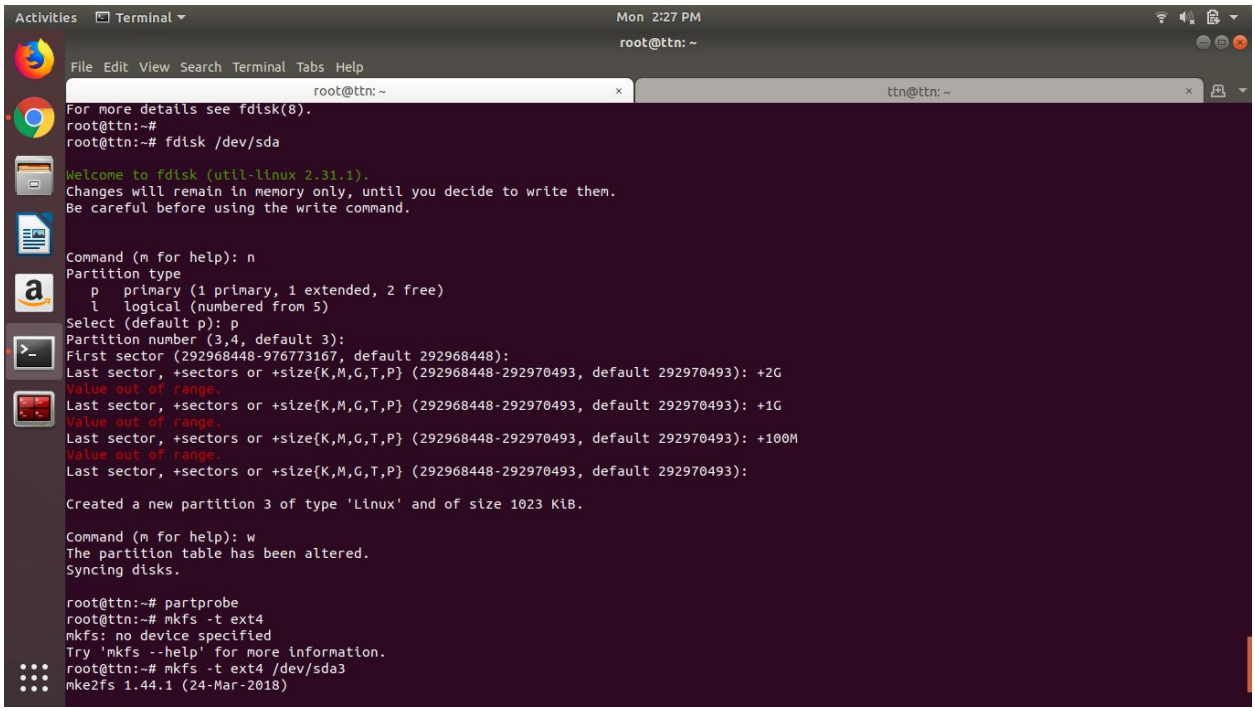
1. What is the size of MBR and what does it contains.
2. In which file you can write commands which you want to run whenever Linux system starts/restarts?

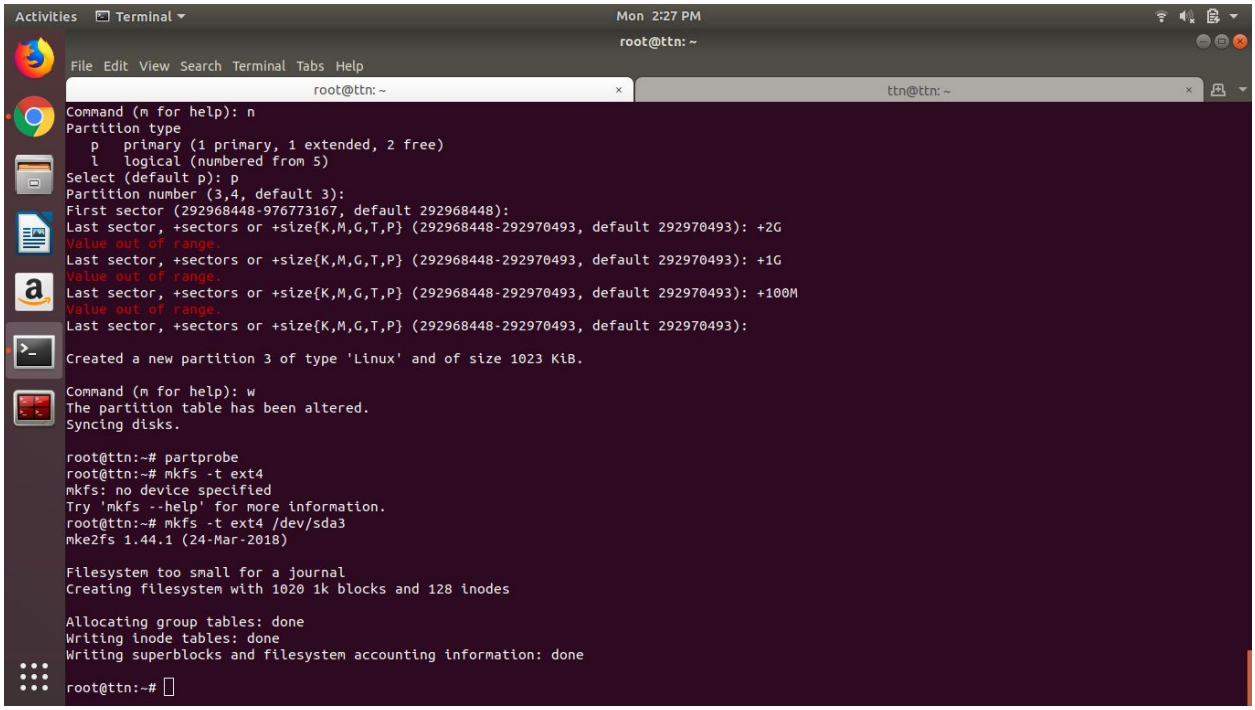
   rc.local

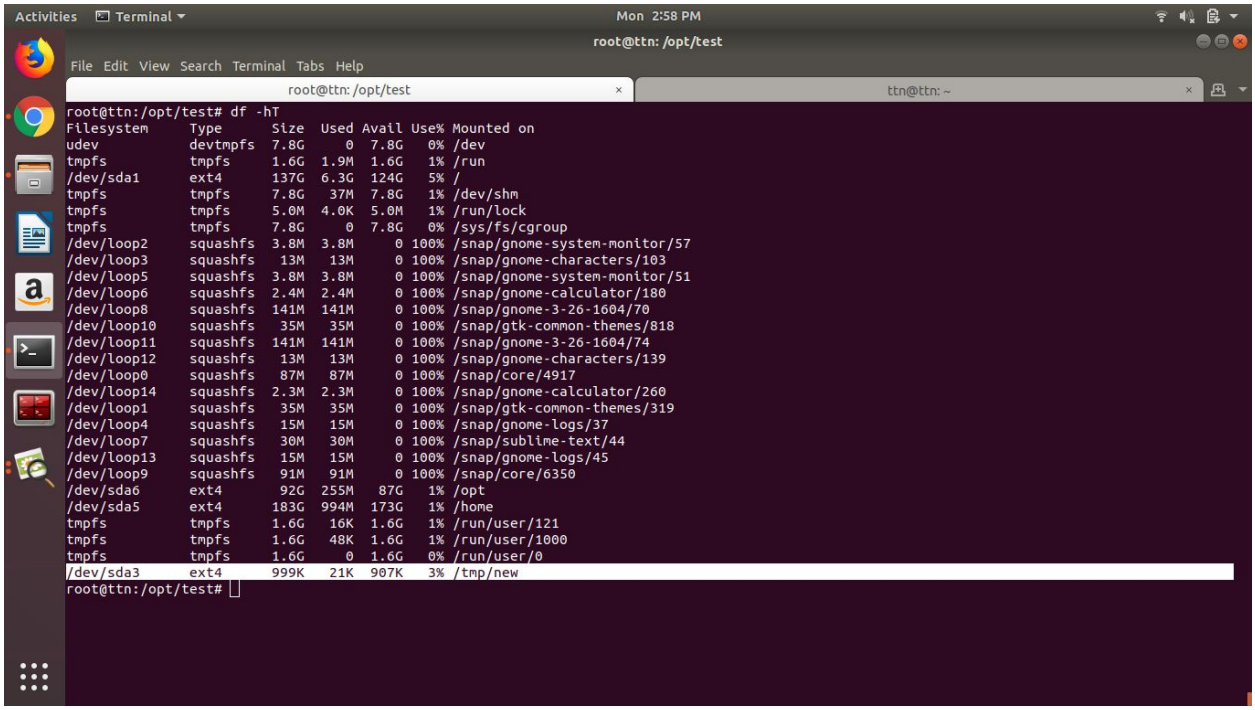
3. Restart cron service.



4. Create an ext4 filesystem

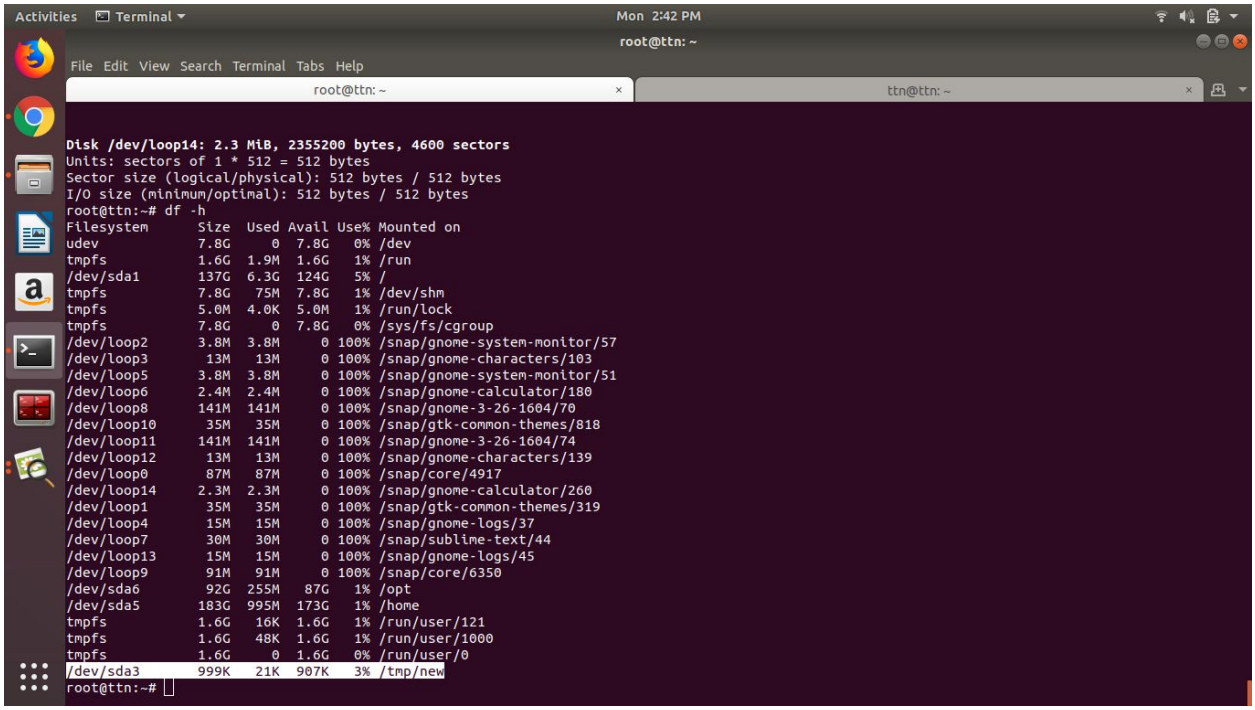



Activities
Terminal
Mon 2:27 PM
root@ttn: ~
File Edit View Search Terminal Tabs Help
root@ttn: ~
ttn@ttn: ~
Command (m for help): n
Partition type
p primary (1 primary, 1 extended, 2 free)
l logical (numbered from 5)
Select (default p): p
Partition number (3,4, default 3):
First sector (292968448-976773167, default 292968448):
Last sector, +sectors or +size{K,M,G,T,P} (292968448-292970493, default 292970493): +2G
Value out of range.
Last sector, +sectors or +size{K,M,G,T,P} (292968448-292970493, default 292970493): +1G
Value out of range.
Last sector, +sectors or +size{K,M,G,T,P} (292968448-292970493, default 292970493): +100M
Value out of range.
Last sector, +sectors or +size{K,M,G,T,P} (292968448-292970493, default 292970493):
Created a new partition 3 of type 'Linux' and of size 1023 KiB.
Command (m for help): w
The partition table has been altered.
Syncing disks.
root@ttn:~# partprobe
root@ttn:~# mkfs -t ext4
mkfs: no device specified
Try 'mkfs --help' for more information.
root@ttn:~# mkfs -t ext4 /dev/sda3
mke2fs 1.44.1 (24-Mar-2018)
Filesystem too small for a journal
Creating filesystem with 1020 1k blocks and 128 inodes
Allocating group tables: done
Writing inode tables: done
Writing superblocks and filesystem accounting information: done
root@ttn:~#

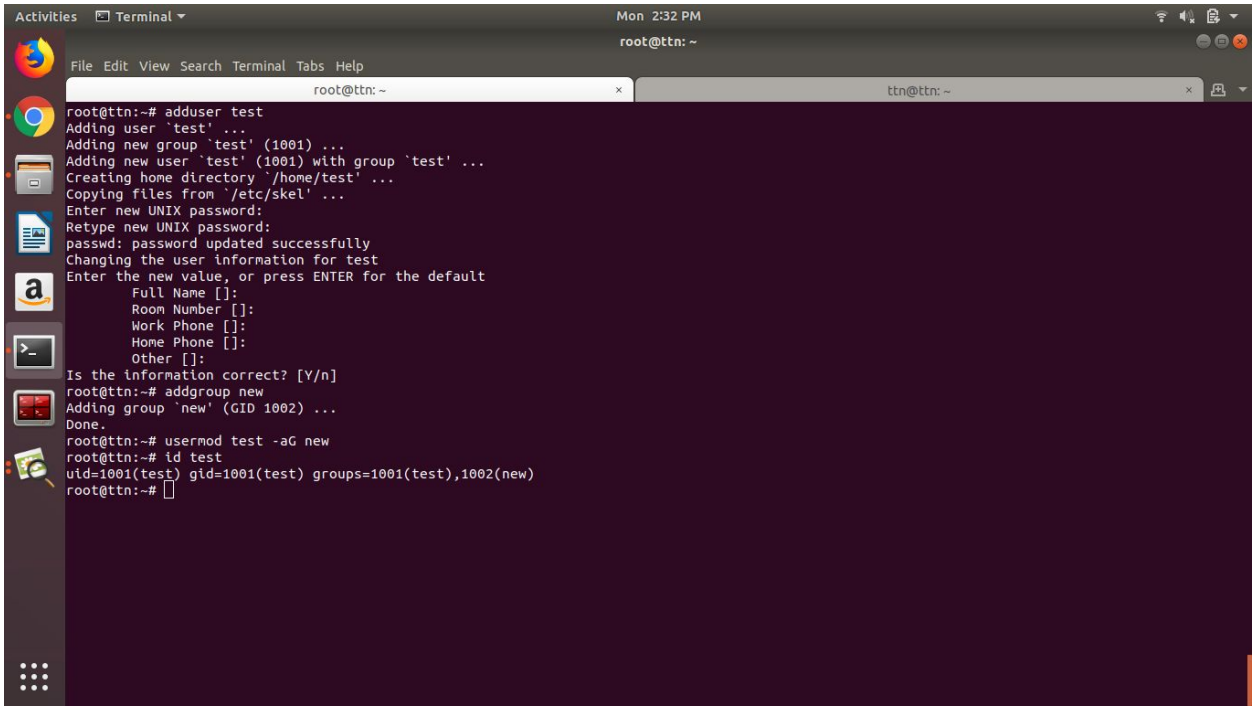

Activities
Terminal
Mon 2:58 PM
root@ttn: /opt/test
File Edit View Search Terminal Tabs Help
root@ttn: /opt/test
ttn@ttn: ~
root@ttn:/opt/test# df -hT
Filesystem Type Size Used Avail Use% Mounted on
udev devtmpfs 7.8G 0 7.8G 0% /dev
tmpfs tmpfs 1.6G 1.9M 1.6G 1% /run
/dev/sda1 ext4 137G 6.3G 124G 5% /
tmpfs tmpfs 7.8G 37M 7.8G 1% /dev/shm
tmpfs tmpfs 5.0M 4.0K 5.0M 1% /run/lock
tmpfs tmpfs 7.8G 0 7.8G 0% /sys/fs/cgroup
/dev/loop2 squashfs 3.8M 3.8M 0 100% /snap/gnome-system-monitor/57
/dev/loop3 squashfs 13M 13M 0 100% /snap/gnome-characters/103
/dev/loop5 squashfs 3.8M 3.8M 0 100% /snap/gnome-system-monitor/51
/dev/loop6 squashfs 2.4M 2.4M 0 100% /snap/gnome-calculator/180
/dev/loop8 squashfs 141M 141M 0 100% /snap/gnome-3-26-1604/70
/dev/loop10 squashfs 35M 35M 0 100% /snap/gtk-common-themes/818
/dev/loop11 squashfs 141M 141M 0 100% /snap/gnome-3-26-1604/74
/dev/loop12 squashfs 13M 13M 0 100% /snap/gnome-characters/139
/dev/loop0 squashfs 87M 87M 0 100% /snap/core/4917
/dev/loop14 squashfs 2.3M 2.3M 0 100% /snap/gnome-calculator/260
/dev/loop1 squashfs 35M 35M 0 100% /snap/gtk-common-themes/319
/dev/loop4 squashfs 15M 15M 0 100% /snap/gnome-logs/37
/dev/loop7 squashfs 30M 30M 0 100% /snap/sublime-text/44
/dev/loop13 squashfs 15M 15M 0 100% /snap/gnome-logs/45
/dev/loop9 squashfs 91M 91M 0 100% /snap/core/6350
/dev/sda6 ext4 92G 255M 87G 1% /opt
/dev/sda5 ext4 183G 994M 173G 1% /home
tmpfs tmpfs 1.6G 16K 1.6G 1% /run/user/121
tmpfs tmpfs 1.6G 48K 1.6G 1% /run/user/1000
tmpfs tmpfs 1.6G 0 1.6G 0% /run/user/0
/dev/sda3 ext4 999K 21K 907K 3% /tmp/new
root@ttn:/opt/test#

5. Mount the created filesystem on /partition directory.

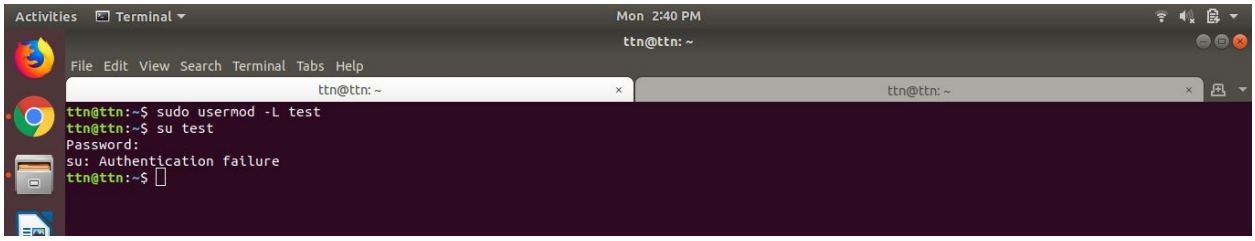
```
root@ttn:~# mkdir /tmp/new
root@ttn:~# mount /dev/sda3 /tmp/new
root@ttn:~#
```



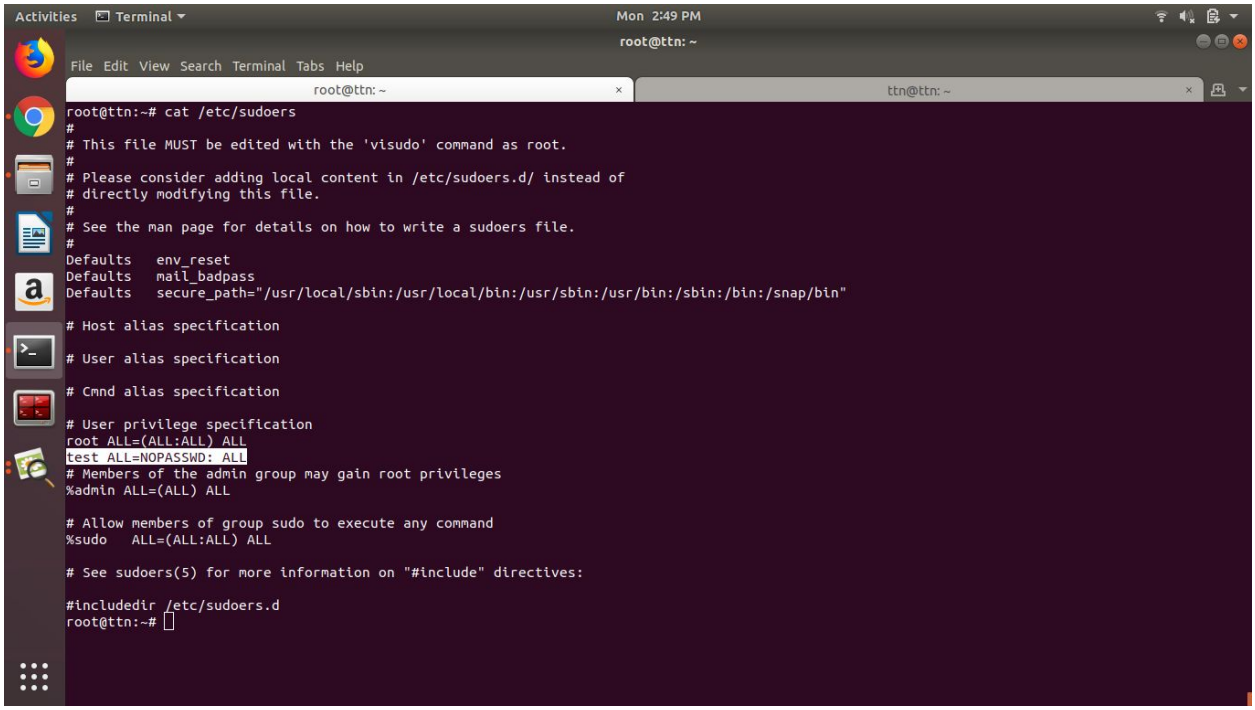
6. Create a user and add it to one secondary group.



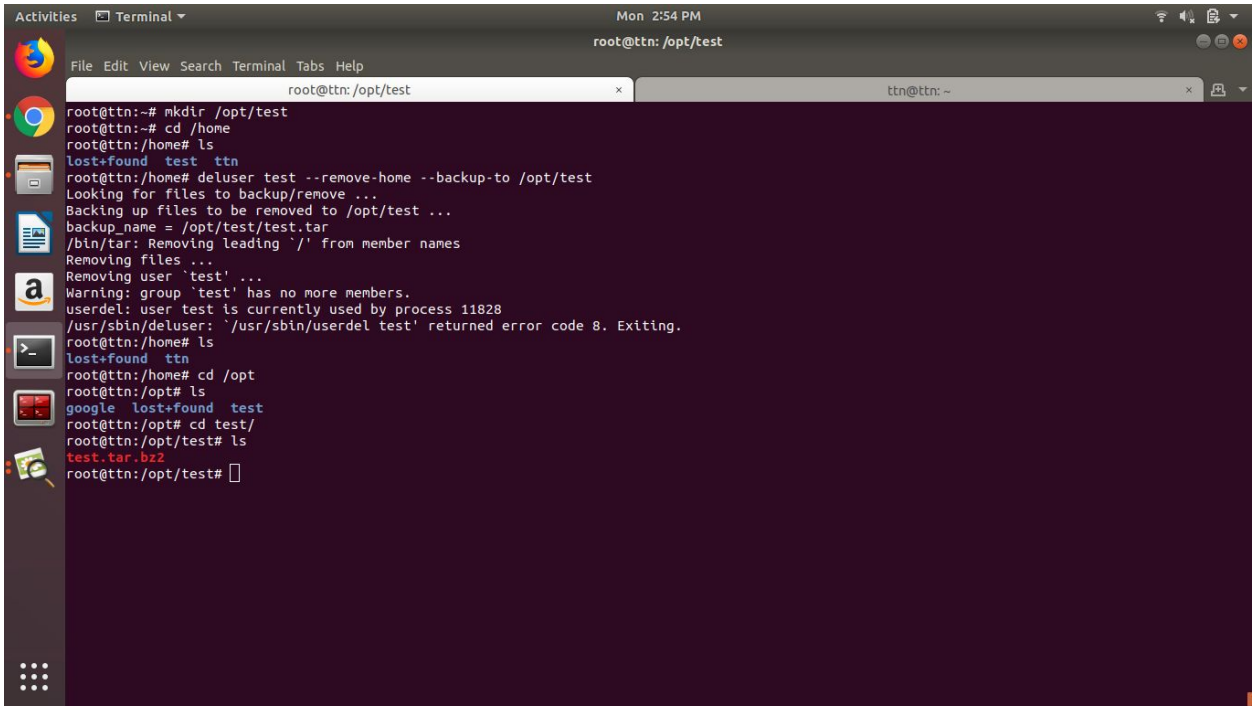
7. Lock this user.



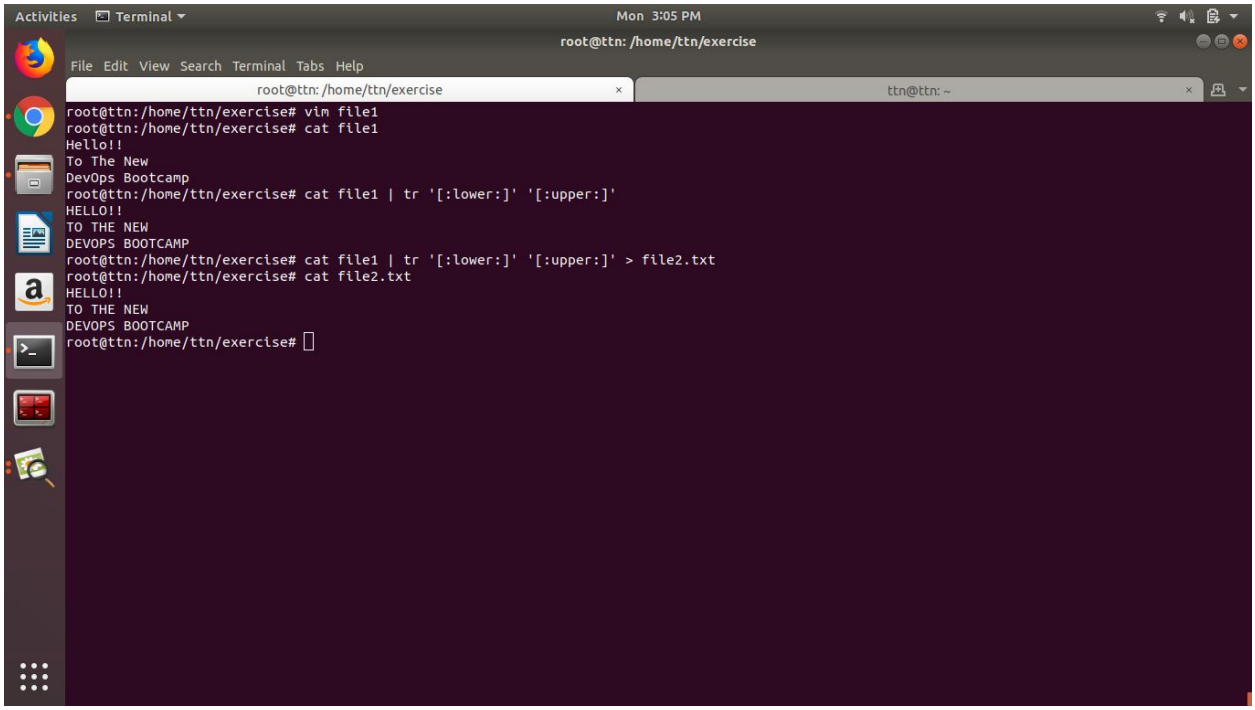
8. Give this user full access (without password).



9. Delete the create user after taking backup of it home directory.

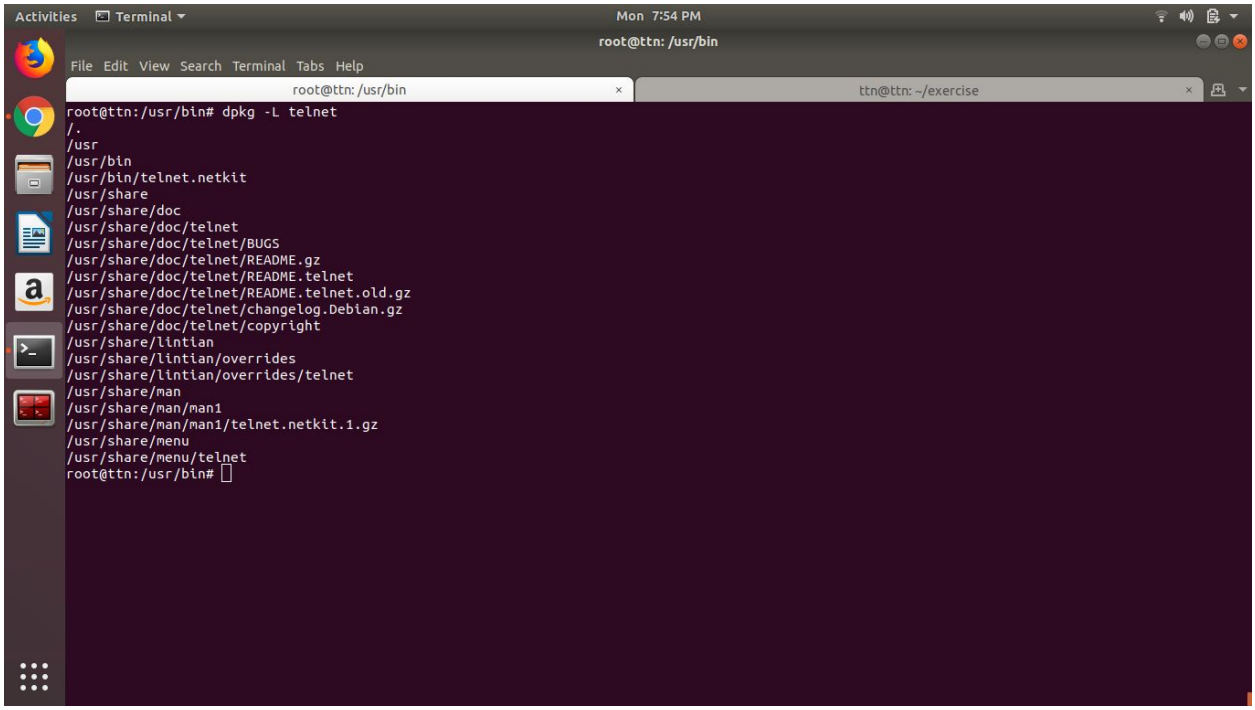


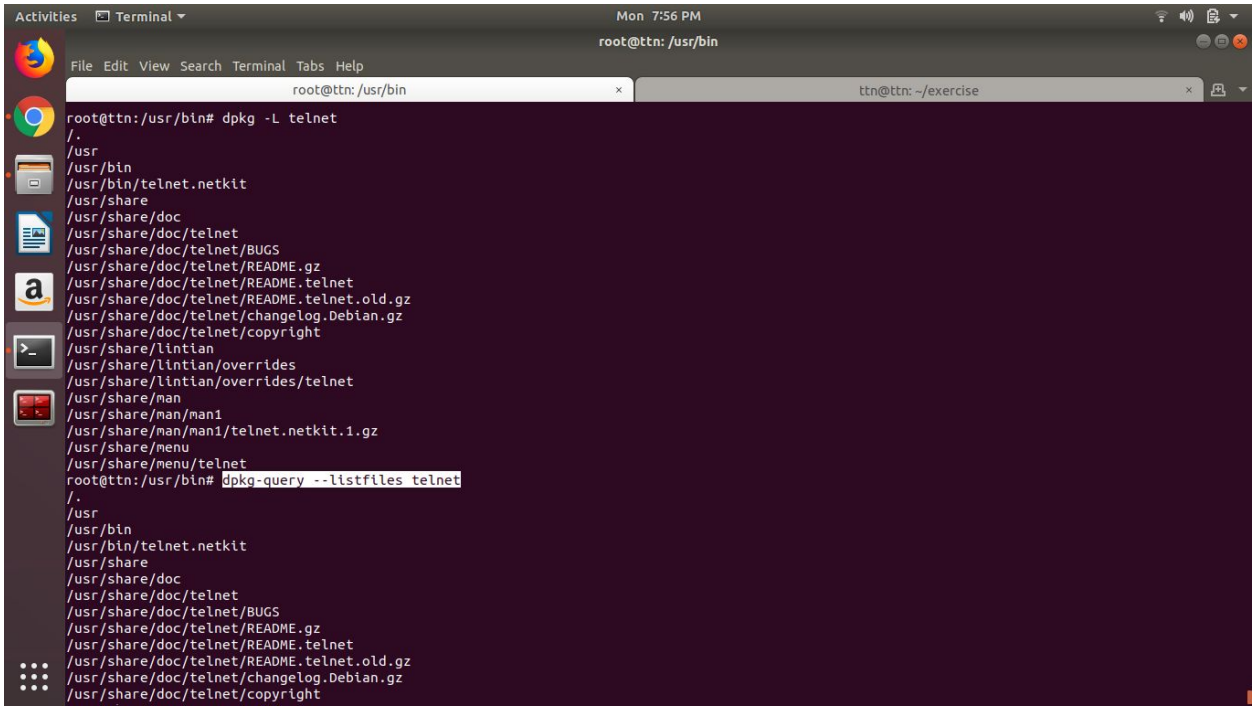
10. Create a file with some content. Change all lower case letter to upper case letter and save output to another file using redirections.



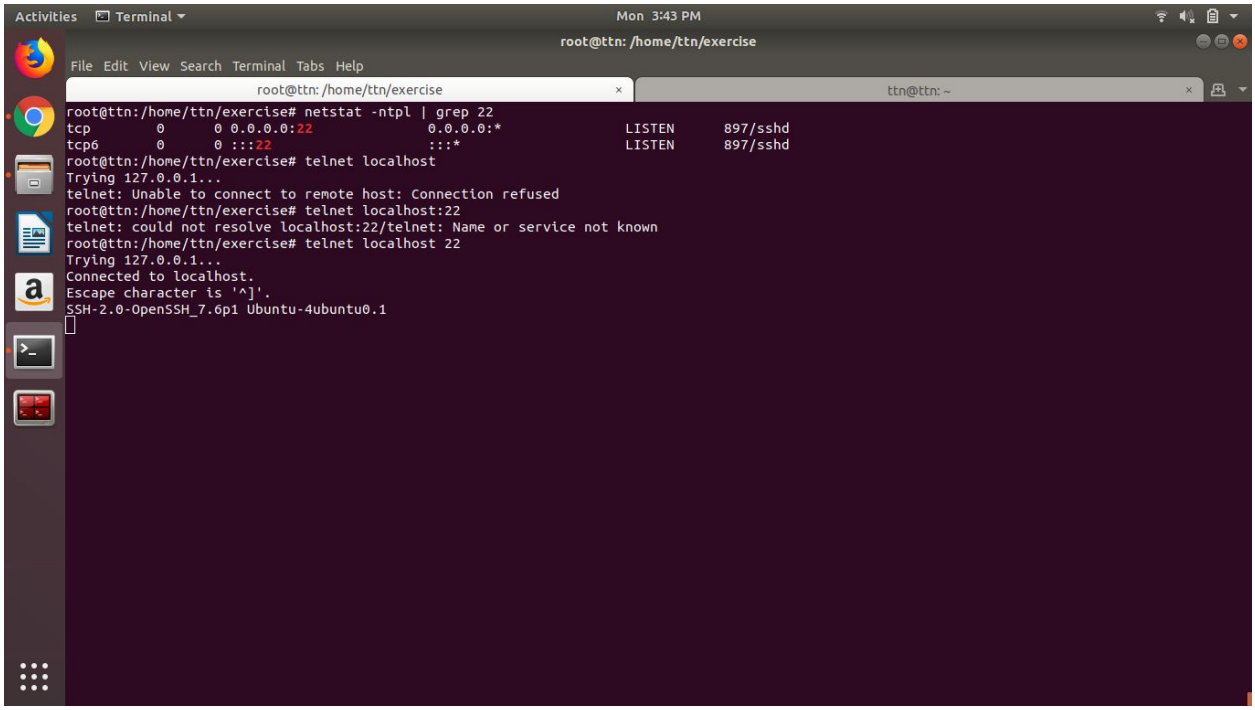
11. Set nice value of a process to -1.

12. Get list of all files used by “telnet”.

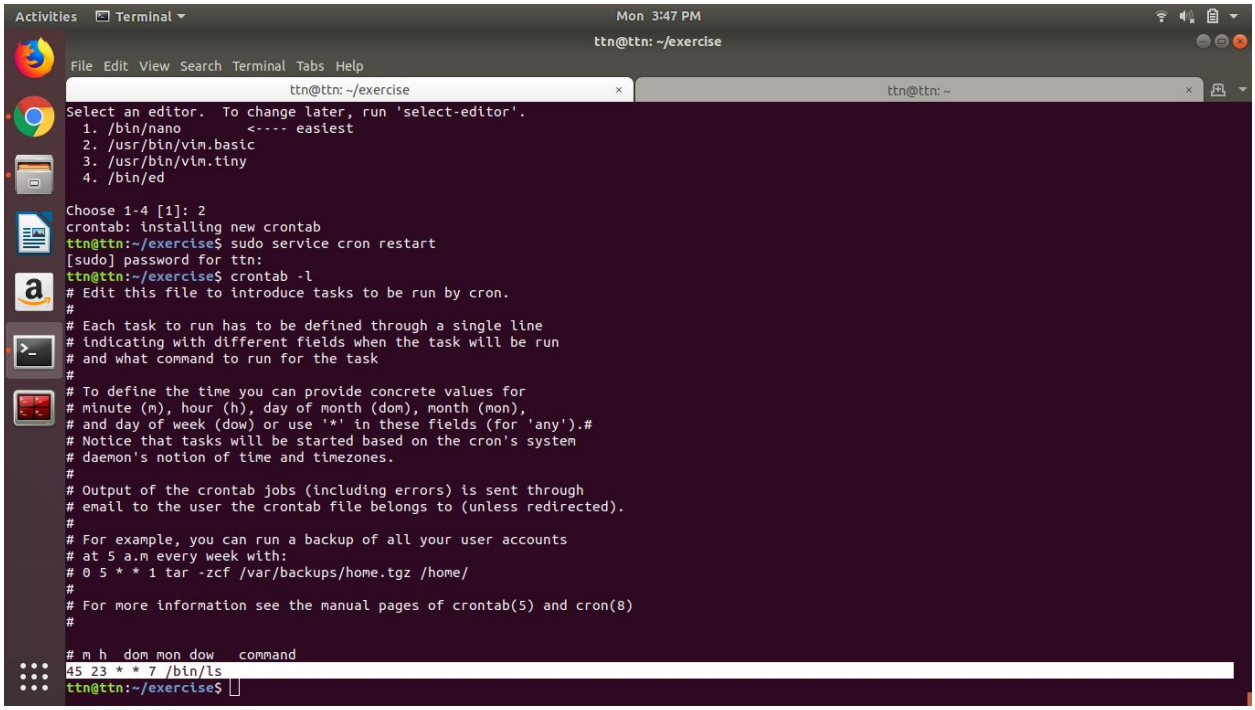




13. Check if port 22 is listening using netstat and telnet command.



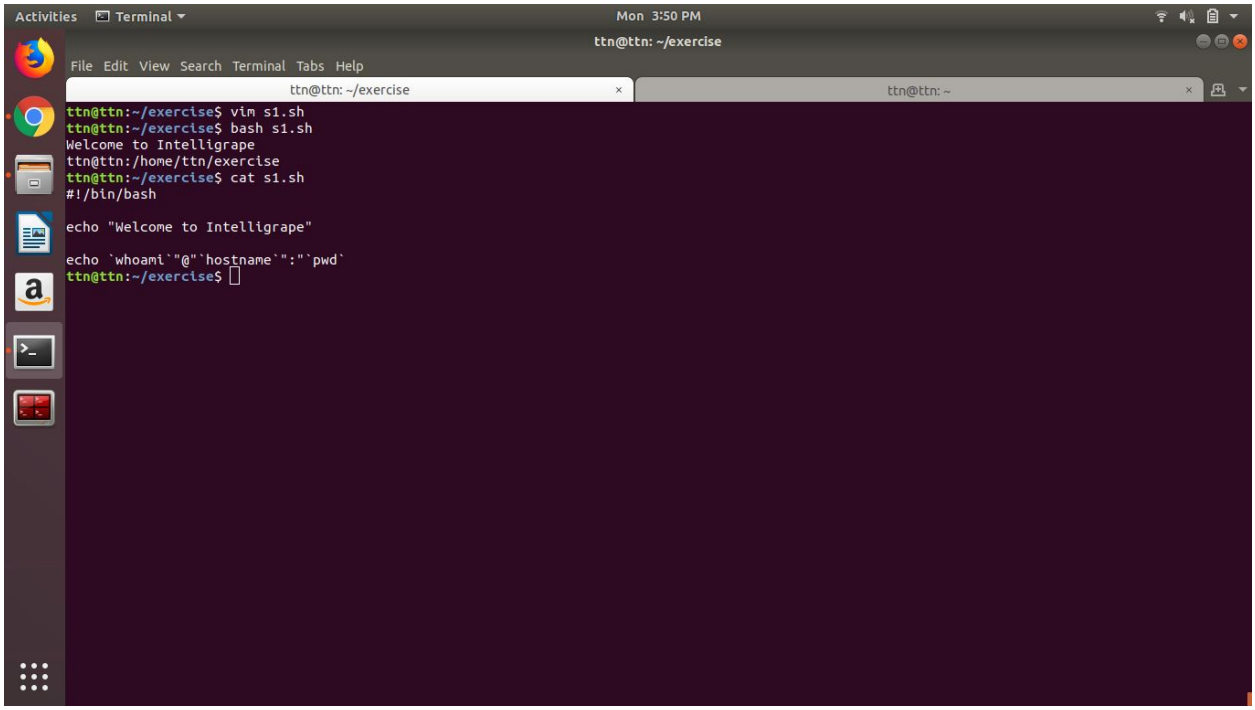
14. Create a cron job which runs once in a week at 23:45.



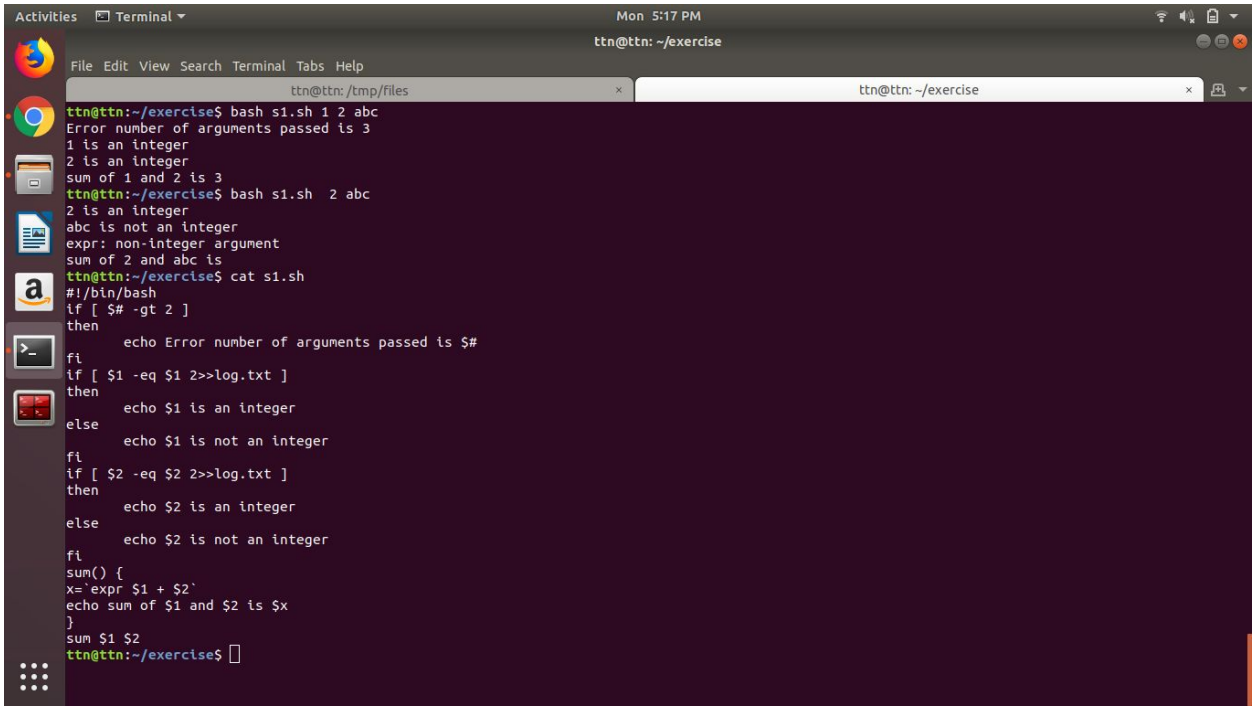
Shell Script:

15. 1. (output to terminal)Write a script to print:
16. a. “Welcome to Intelligrape”

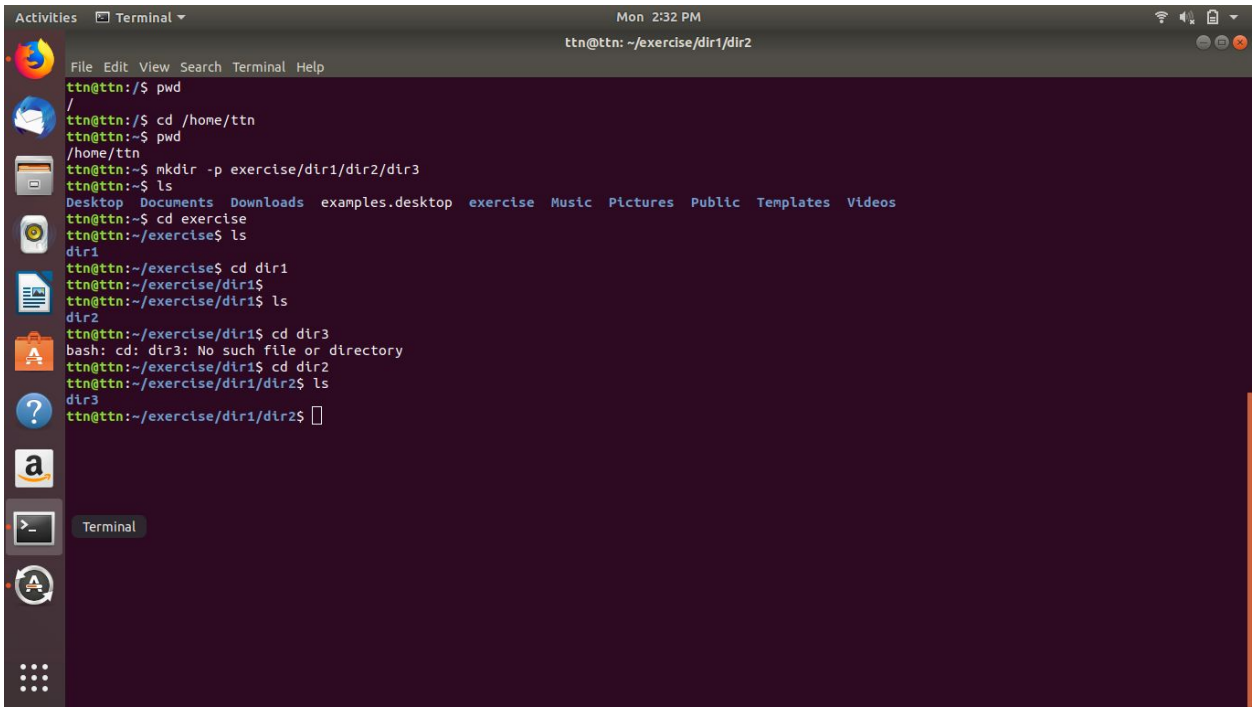
17. b. <username>@<hostname>:<your present wowrking directory>

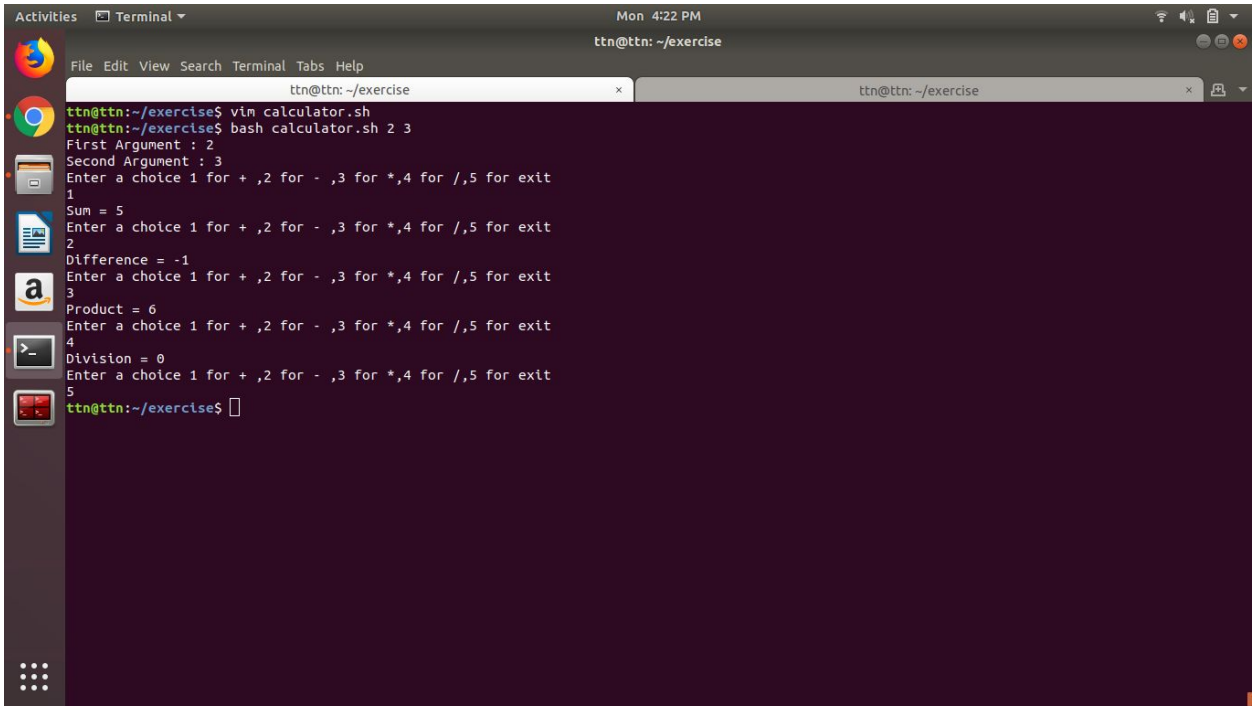


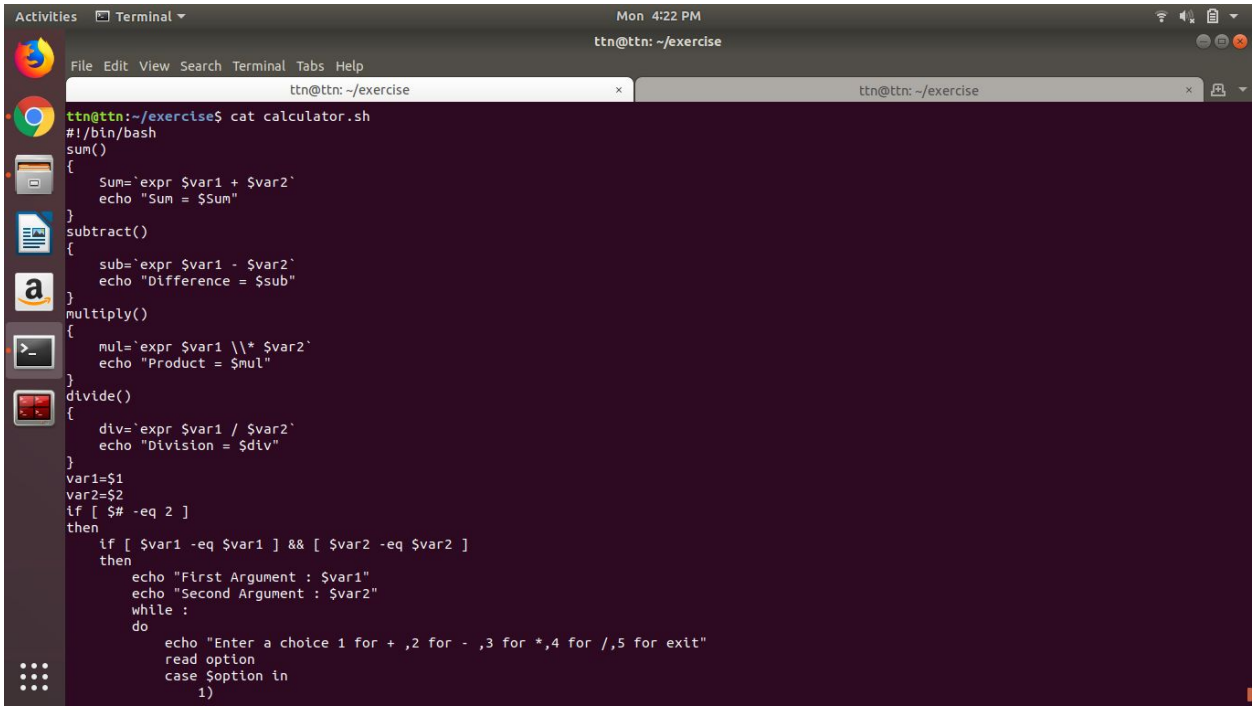
18. 2 (arguments)Write a script
19. a. which takes in two arguments and print those arguments.
20. b. which checks the number of arguments passed and if the number is greater than two print ERROR message along with printing the number of arguments.
21. 3. Continue with the above script
22. a. check the two arguments are only integer values and if these are not integers print the proper error on terminal and also log it into a file.
23. b. perform addition on the two arguments and print result on screen. Use function for this.

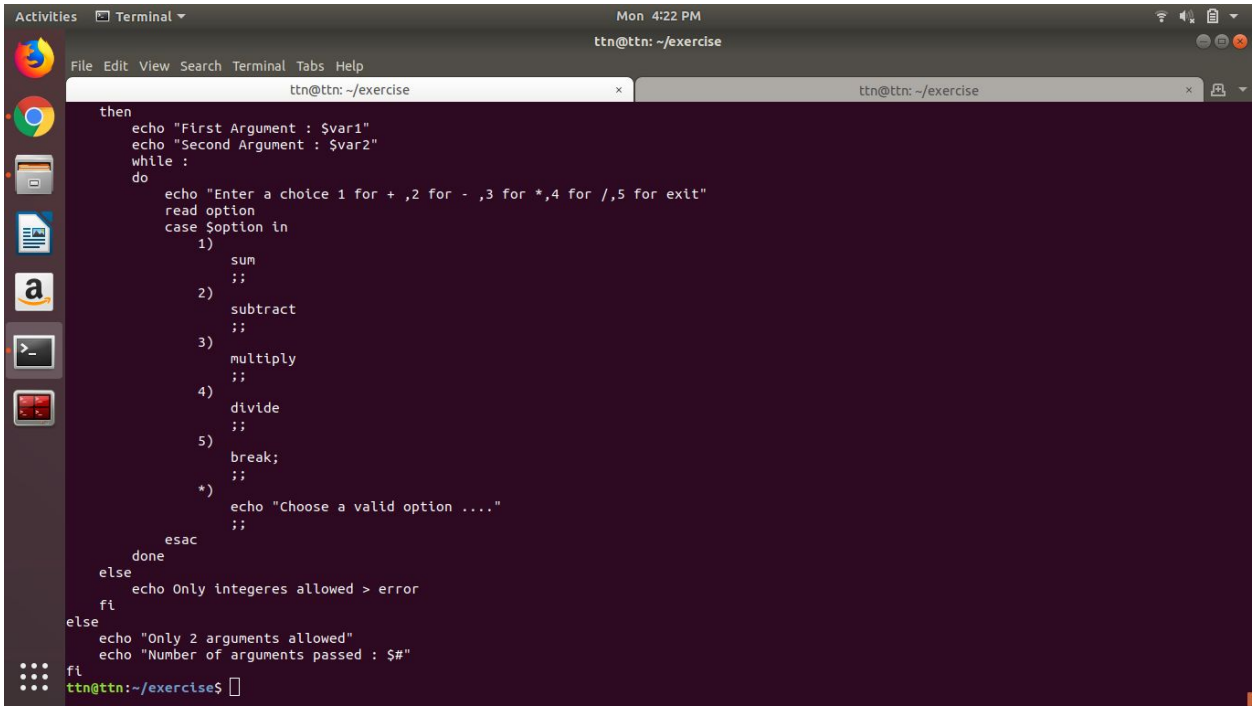


24. 4. Create a calculator using the above script which would perform addition,subtraction,division and multliplication.
25. a. the script should ask user which operation the user wants to perform:+,-,*,/
26. b. if user enters other than “+.-,*,/”, print proper message on terminal and keeps on asking for correct input(use while loop to accomplish this).
27. c. Use case statement instead of if.

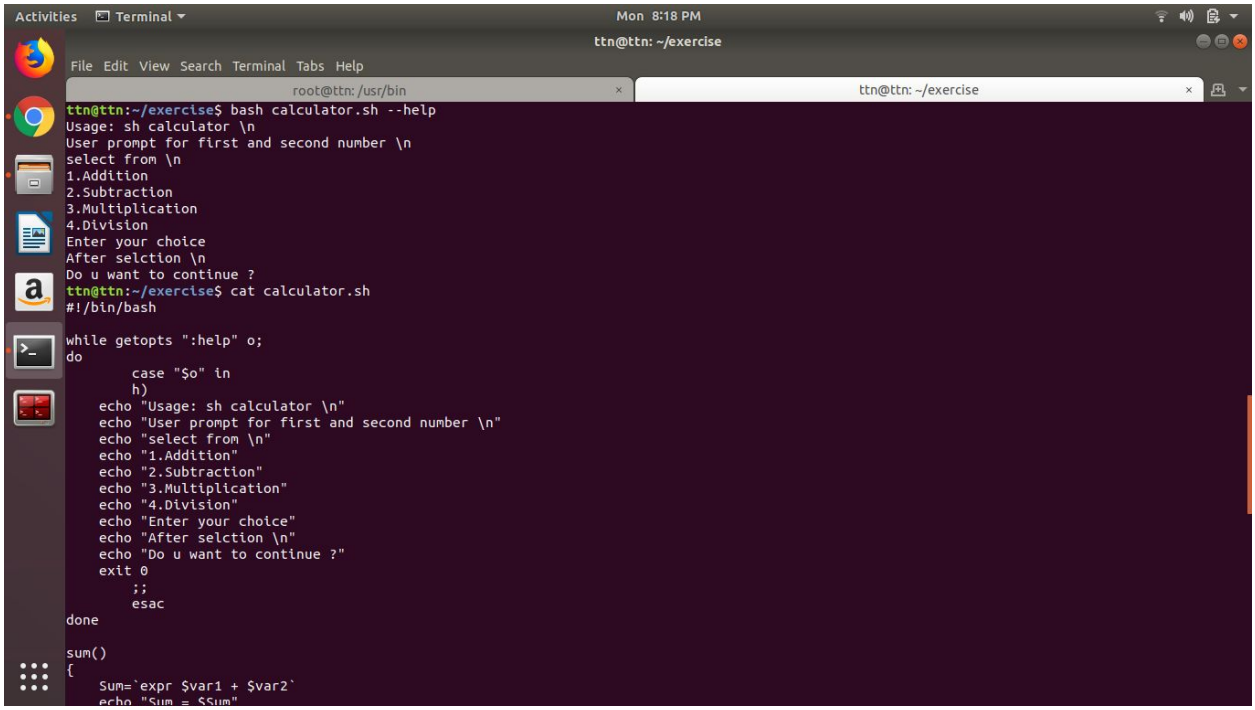



Activities
Terminal
Mon 4:22 PM
ttn@ttn: ~/exercise
File Edit View Search Terminal Tabs Help
ttn@ttn: ~/exercise
ttn@ttn: ~/exercise
ttn@ttn:~/exercise$ vim calculator.sh
ttn@ttn:~/exercise$ bash calculator.sh 2 3
First Argument : 2
Second Argument : 3
Enter a choice 1 for + ,2 for - ,3 for *,4 for /,5 for exit
1
Sum = 5
Enter a choice 1 for + ,2 for - ,3 for *,4 for /,5 for exit
2
Difference = -1
Enter a choice 1 for + ,2 for - ,3 for *,4 for /,5 for exit
3
Product = 6
Enter a choice 1 for + ,2 for - ,3 for *,4 for /,5 for exit
4
Division = 0
Enter a choice 1 for + ,2 for - ,3 for *,4 for /,5 for exit
5
ttn@ttn:~/exercise$

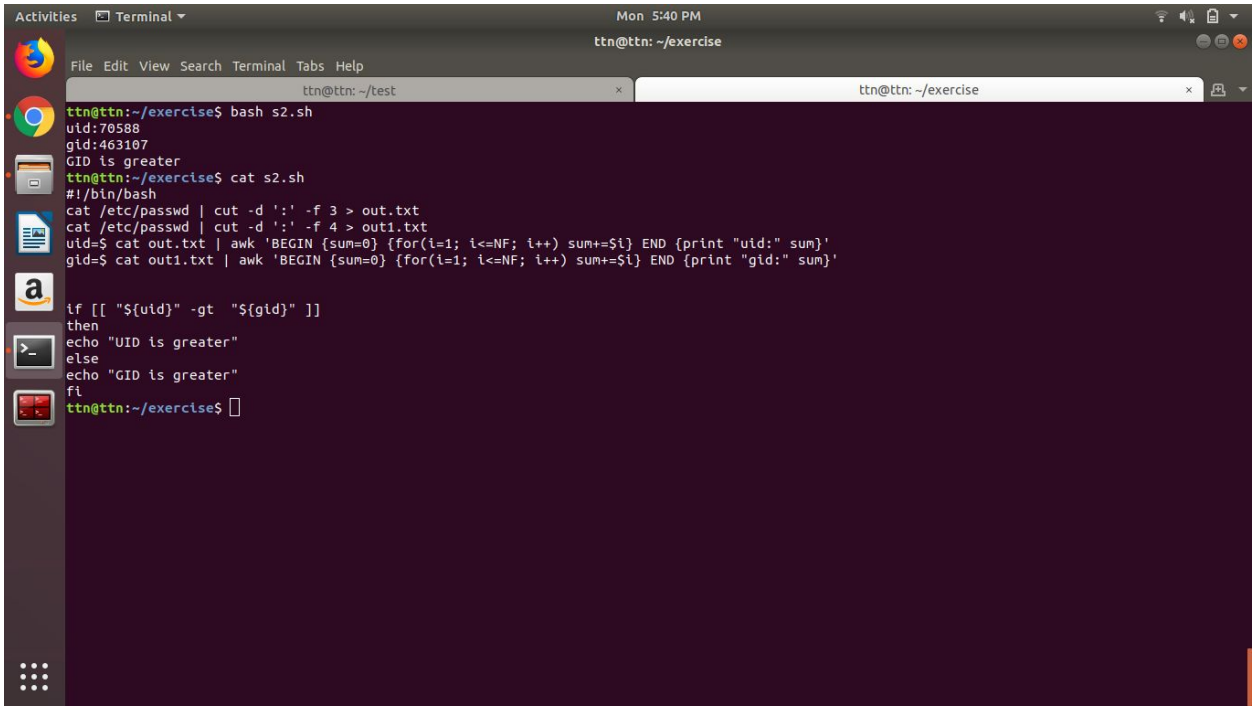

Activities
Terminal
Mon 4:22 PM
ttn@ttn: ~/exercise
File Edit View Search Terminal Tabs Help
ttn@ttn: ~/exercise
ttn@ttn: ~/exercise
ttn@ttn:~/exercise$ cat calculator.sh
#!/bin/bash
sum()
{
Sum=`expr $var1 + $var2`
echo "Sum = $Sum"
}
subtract()
{
sub=`expr $var1 - $var2`
echo "Difference = $sub"
}
multiply()
{
mul=`expr $var1 \\* $var2`
echo "Product = $mul"
}
divide()
{
div=`expr $var1 / $var2`
echo "Division = $div"
}
var1=$1
var2=$2
if [$# -eq 2]
then
if [$var1 -eq $var1] && [$var2 -eq $var2]
then
echo "First Argument : $var1"
echo "Second Argument : $var2"
while :
do
echo "Enter a choice 1 for + ,2 for - ,3 for *,4 for /,5 for exit"
read option
case $option in
1)


Activities
Terminal
Mon 4:22 PM
ttn@ttn: ~/exercise
File Edit View Search Terminal Tabs Help
ttn@ttn: ~/exercise
ttn@ttn: ~/exercise
then
echo "First Argument : $var1"
echo "Second Argument : $var2"
while :
do
echo "Enter a choice 1 for + ,2 for - ,3 for *,4 for /,5 for exit"
read option
case $option in
1)
sum
;;
2)
subtract
;;
3)
multiply
;;
4)
divide
;;
5)
break;
;;
*)
echo "Choose a valid option ...."
;;
esac
done
else
echo Only integeres allowed > error
fi
else
echo "Only 2 arguments allowed"
echo "Number of arguments passed : $#"
fi
ttn@ttn:~/exercise$

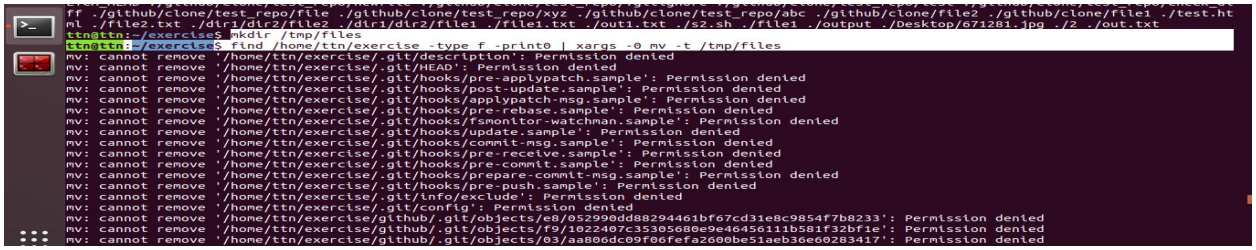
28. 5. Write proper help documentation and print it with -h for above script.

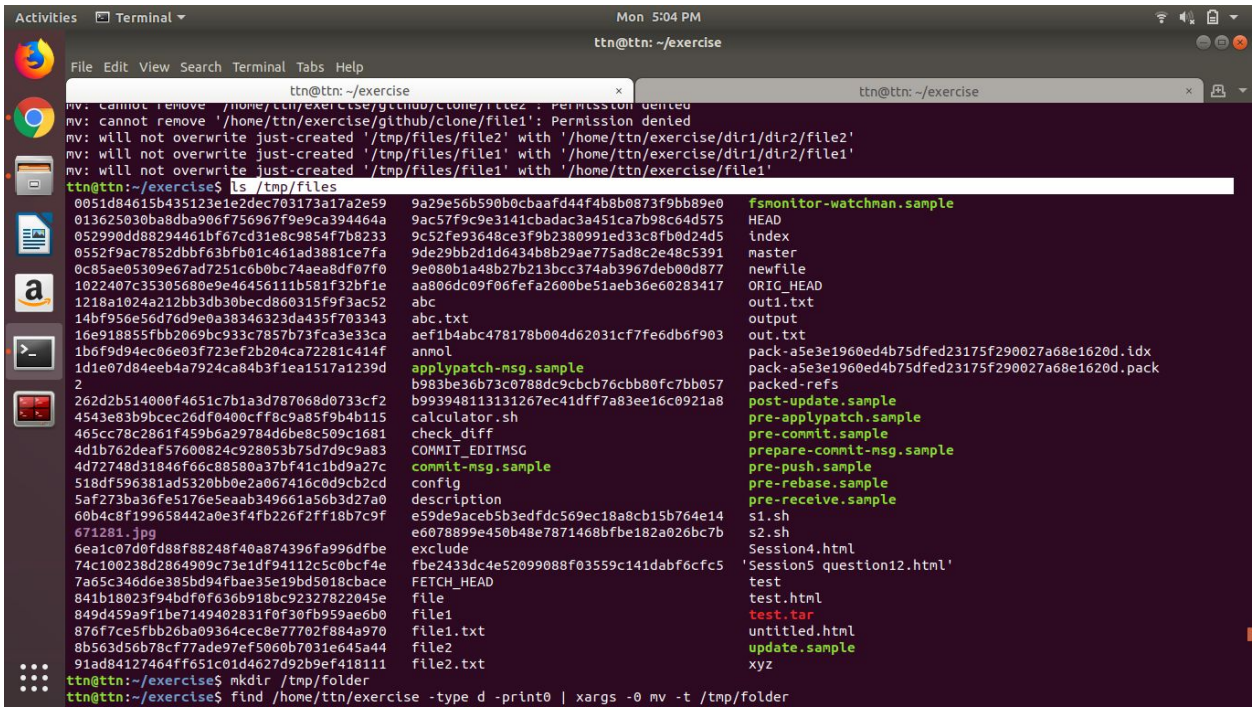


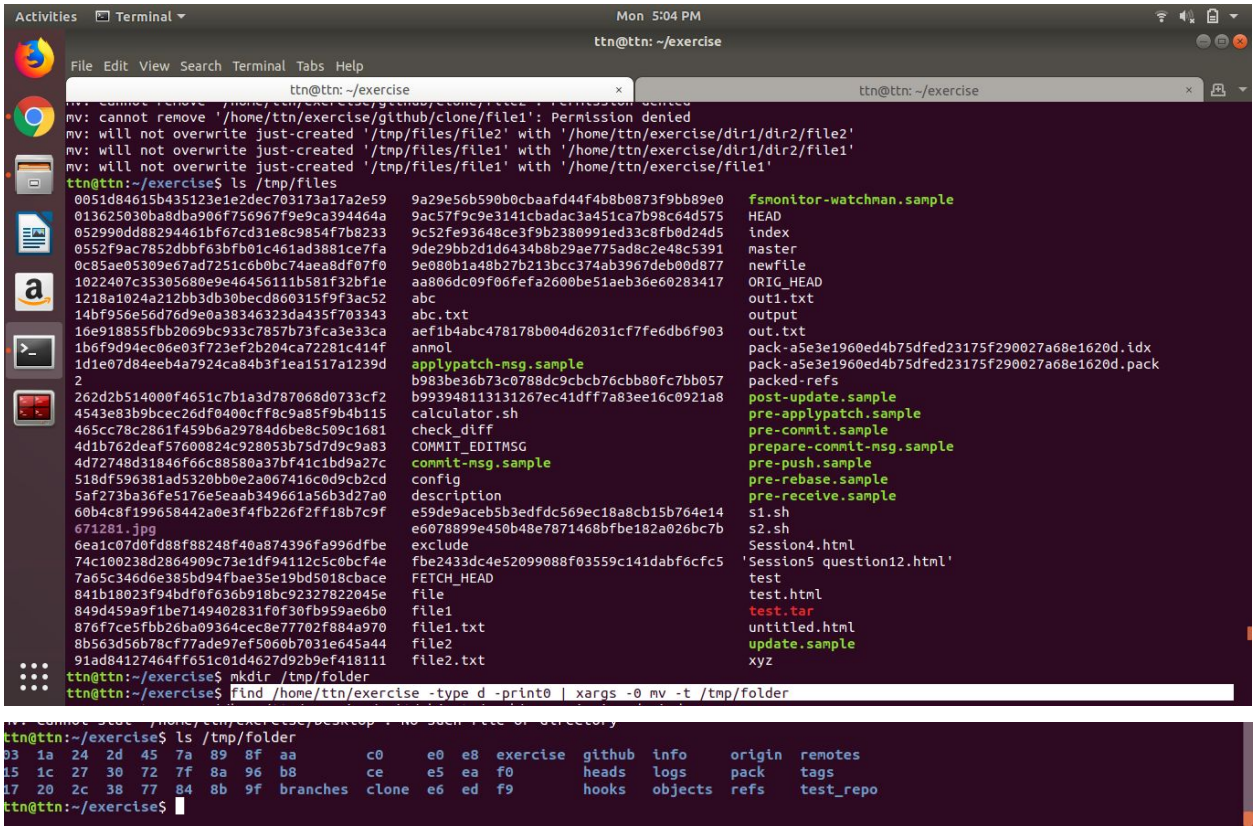
29. 6. Create a script which takes input of "/etc/passwd" file and find out and print the sum of uids and gids. The script should tell which sum of greater.



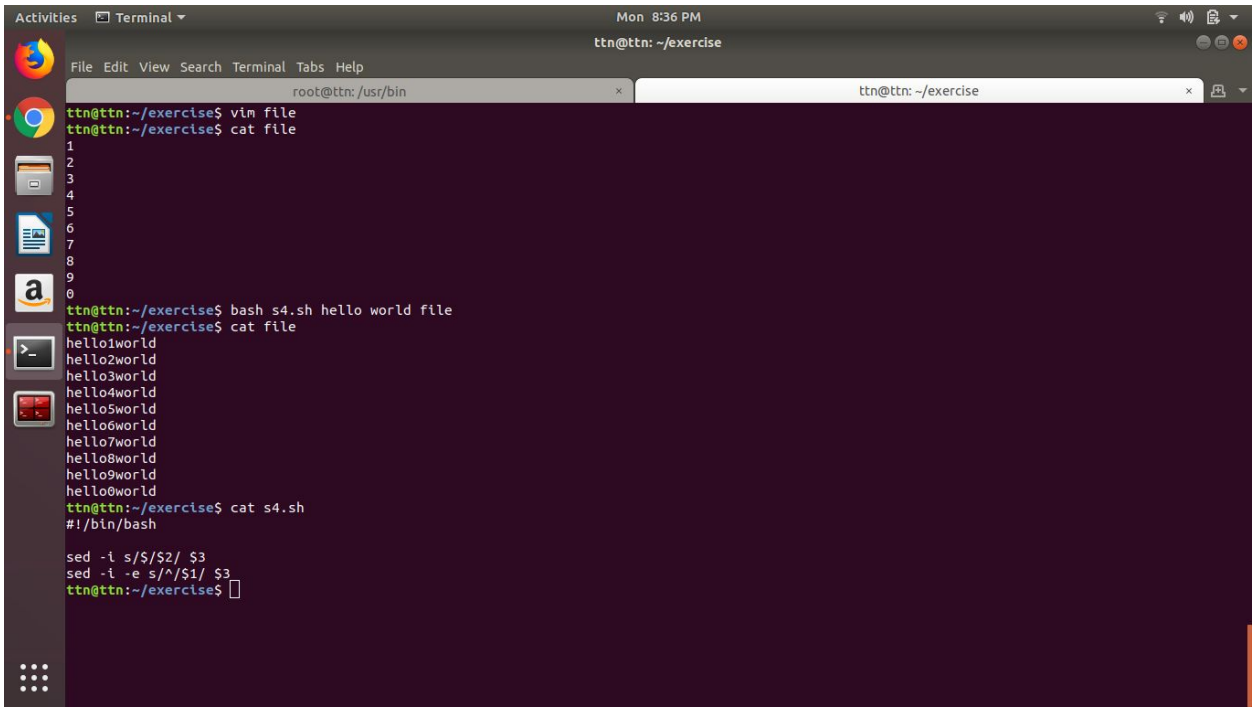
30. 7. A directory contains files and sub-directories. Move files to destination1 and directories to destination2


ff ./github/clone/test_repo/file ./github/clone/test_repo/xyz ./github/clone/test_repo/abc ./github/clone/file2 ./github/clone/file1 ./test.ht
ml ./file2.txt ./dir1/dir2/file2 ./dir1/dir2/file1 ./file1.txt ./out1.txt ./s2.sh ./file1 ./output ./Desktop/671281.jpg ./2 ./out.txt
ttn@ttn:~/exercise$ mkdir /tmp/files
ttn@ttn:~/exercise$ find /home/ttn/exercise -type f -print0 | xargs -0 mv -t /tmp/files
mv: cannot remove '/home/ttn/exercise/.git/description': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/HEAD': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/pre-applypatch.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/post-update.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/applypatch-msg.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/pre-rebase.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/fsmonitor-watchman.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/update.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/commit-msg.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/pre-receive.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/pre-commit.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/prepare-commit-msg.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/hooks/pre-push.sample': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/info/exclude': Permission denied
mv: cannot remove '/home/ttn/exercise/.git/config': Permission denied
mv: cannot remove '/home/ttn/exercise/github/.git/objects/e8/052990dd88294461bf67cd31e8c9854f7b8233': Permission denied
mv: cannot remove '/home/ttn/exercise/github/.git/objects/f9/1022407c35305680e9e46456111b581f32bf1e': Permission denied
mv: cannot remove '/home/ttn/exercise/github/.git/objects/03/aa806dc09f0defa2600be51aeb36e60283417': Permission denied

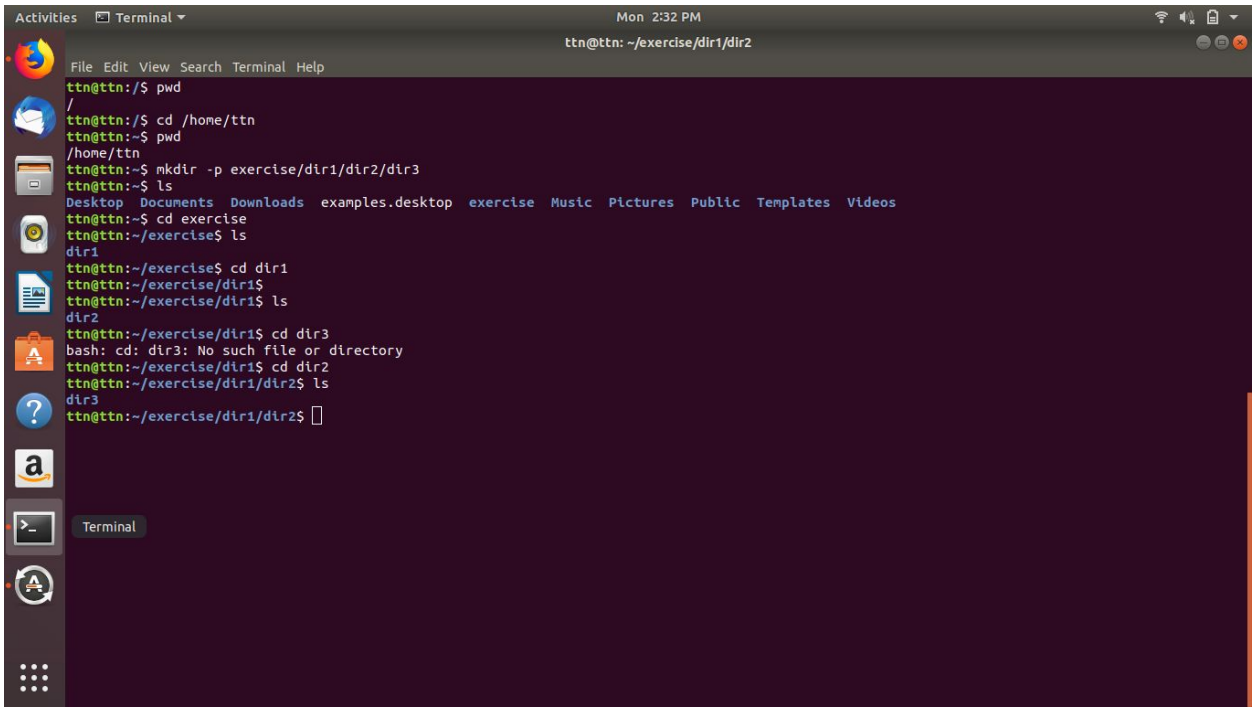

Activities
Terminal
Mon 5:04 PM
ttn@ttn: ~/exercise
File Edit View Search Terminal Tabs Help
ttn@ttn: ~/exercise
ttn@ttn: ~/exercise
mv: cannot remove '/home/ttn/exercise/github/clone/file1': Permission denied
mv: will not overwrite just-created '/tmp/files/file2' with '/home/ttn/exercise/dir1/dir2/file2'
mv: will not overwrite just-created '/tmp/files/file1' with '/home/ttn/exercise/dir1/dir2/file1'
mv: will not overwrite just-created '/tmp/files/file1' with '/home/ttn/exercise/file1'
ttn@ttn:~/exercise$ ls /tmp/files
0051d84615b435123e1e2dec703173a17a2e59
013625030ba8dba906f756967f9e9ca394464a
052990dd88294461bf67cd31e8c9854f7b8233
0552f9ac7852dbbf63bfb01c461ad3881ce7fa
0c85ae05309e67ad7251c6b0bc74aea8df07f0
1022407c35305680e9e46456111b581f32bf1e
1218a1024a212bb3db30becd860315f9f3ac52
14bf956e56d76d9e0a38346323da435f703343
16e918855fbb2069bc933c7857b73fca3e33ca
1b6f9d94ec06e03f723ef2b204ca72281c414f
1d1e07d84eeb4a7924ca84b3f1ea1517a1239d
2
262d2b514000f4651c7b1a3d787068d0733cf2
4543e83b9bcec26df0400cff8c9a85f9b4b115
465cc78c2861f459b6a29784d6be8c509c1681
4d1b762deaf57600824c928053b75d7d9c9a83
4d72748d31846f66c88580a37bf41c1bd9a27c
518df596381ad5320bb0e2a067416c0d9cb2cd
5af273ba36fe5176e5eaab349661a56b3d27a0
60b4c8f199658442a0e3f4fb226f2ff18b7c9f
671281.jpg
6ea1c07d0fd88f88248f40a874396fa996dfbe
74c100238d2864909c73e1df94112c5c0bcf4e
7a65c346d6e385bd94fbae35e19bd5018cbace
841b18023f94bdf0f636b918bc92327822045e
849d459a9f1be7149402831f0f30fb959ae6b0
876f7ce5fbb26ba09364cec8e77702f884a970
8b563d56b78cf77ade97ef5060b7031e645a44
91ad84127464ff651c01d4627d92b9ef418111
9a29e56b590b0cbaafd44f4b8b0873f9bb89e0
9ac57f9c9e3141cbadac3a451ca7b98c64d575
9c52fe93648ce3f9b2380991ed33c8fb0d24d5
9de29bb2d1d6434b8b29ae775ad8c2e48c5391
9e080b1a48b27b213bcc374ab3967deb00d877
aa806dc09f06fefa2600be51aeb36e60283417
abc
abc.txt
aef1b4abc478178b004d62031cf7fe6db6f903
anmol
applypatch-msg.sample
b983be36b73c0788dc9cbcb76cbb80fc7bb057
b9939481131312 67ec41dff7a83ee16c0921a8
calculator.sh
check_diff
COMMIT_EDITMSG
commit-msg.sample
config
description
e59de9acebb5b3edfdc569ec18a8cb15b764e14
e6078899e450b48e7871468bfbe182a026bc7b
exclude
fbe2433dc4e52099088f03559c141dabf6cfc5
FETCH_HEAD
file
file1
file1.txt
file2
file2.txt
fsmonitor-watchman.sample
HEAD
index
master
newfile
ORIG_HEAD
out1.txt
output
out.txt
pack-a5e3e1960ed4b75dfed23175f290027a68e1620d.idx
pack-a5e3e1960ed4b75dfed23175f290027a68e1620d.pack
packed-refs
post-update.sample
pre-applypatch.sample
pre-commit.sample
prepare-commit-msg.sample
pre-push.sample
pre-rebase.sample
pre-receive.sample
s1.sh
s2.sh
Session4.html
'Session5 question12.html'
test
test.html
test.tar
untitled.html
update.sample
xyz
ttn@ttn:~/exercise$ mkdir /tmp/folder
ttn@ttn:~/exercise$ find /home/ttn/exercise -type d -print0 | xargs -0 mv -t /tmp/folder

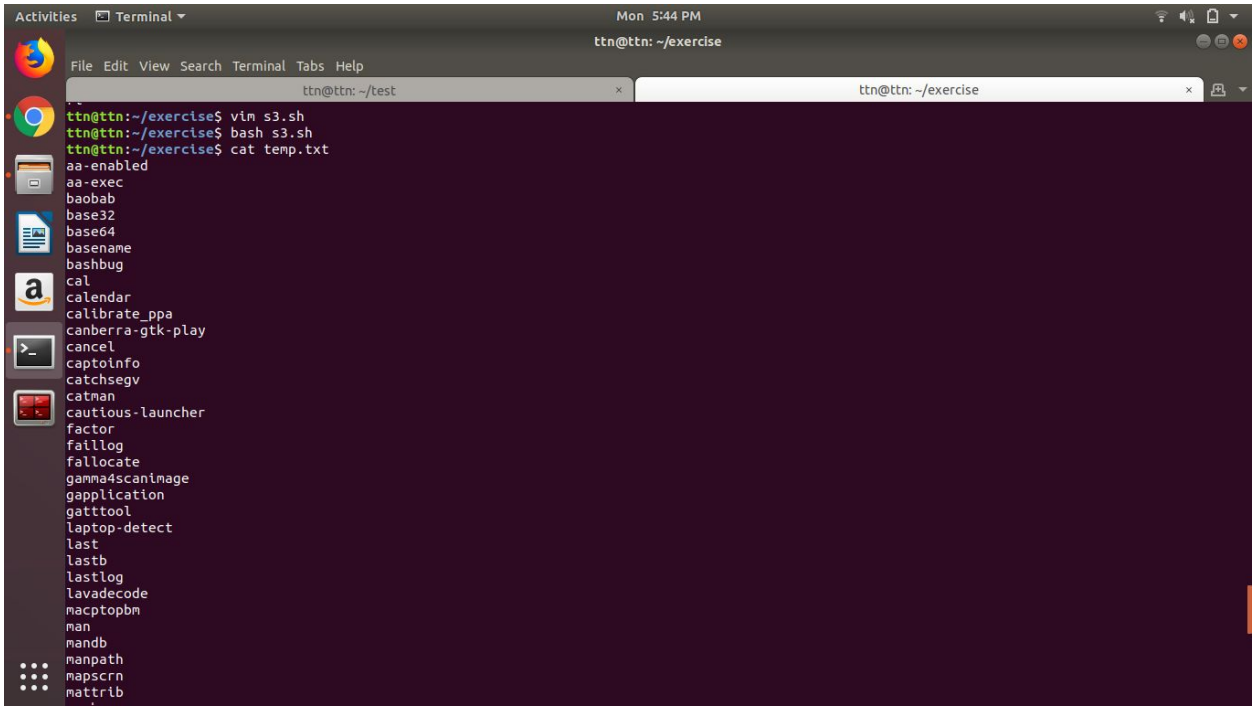


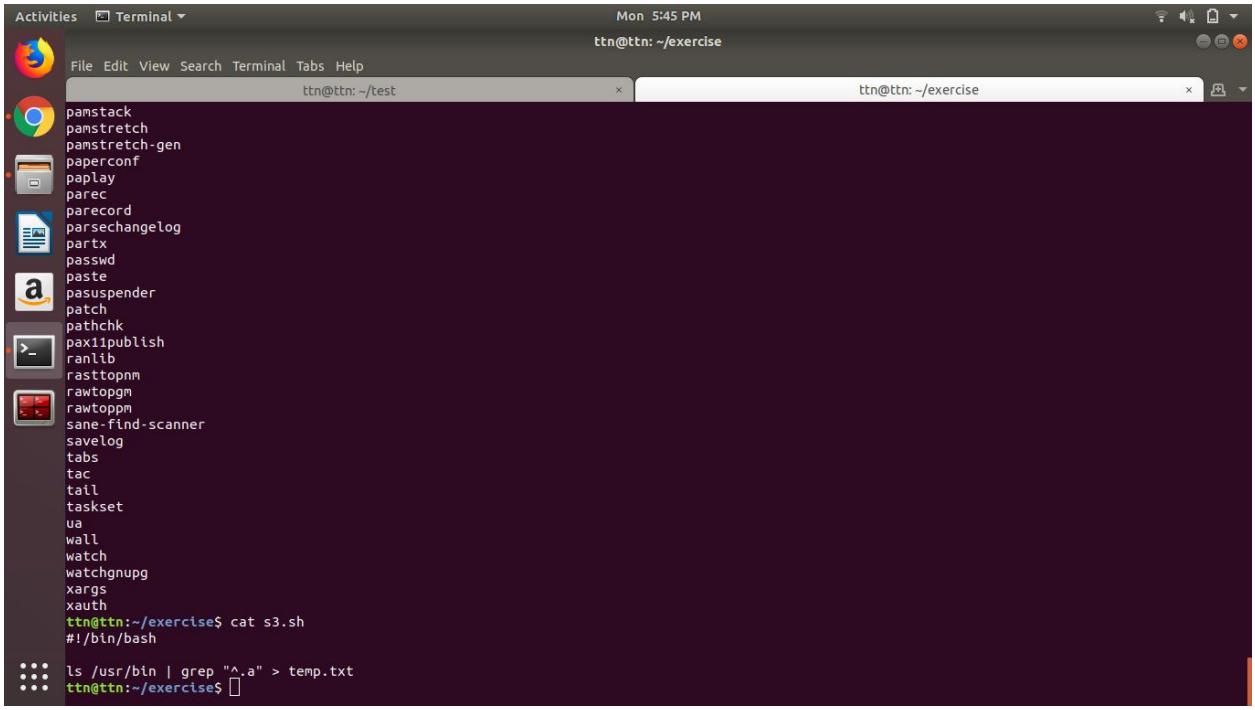
31. 8. Create a script which take three arguments, append first argument to every line in a file and second argument to the end of every line of the same file.



32. 9. Make a list of files in /usr/bin that have the letter "a" as the second character. Put the result in a temporary file.




Activities
Terminal
Mon 5:44 PM
ttn@ttn: ~/exercise
File Edit View Search Terminal Tabs Help
ttn@ttn: ~/test
ttn@ttn: ~/exercise
ttn@ttn:~/exercise$ vim s3.sh
ttn@ttn:~/exercise$ bash s3.sh
ttn@ttn:~/exercise$ cat temp.txt
aa-enabled
aa-exec
baobab
base32
base64
basename
bashbug
cal
calendar
calibrate_ppa
canberra-gtk-play
cancel
captoinfo
catchsegv
catman
cautious-launcher
factor
faillog
fallocate
gamma4scanimage
gapplication
gatttool
laptop-detect
last
lastb
lastlog
lavadecode
macptopbm
man
mandb
manpath
mapscrn
mattrib


Activities
Terminal
Mon 5:45 PM
ttn@ttn: ~/exercise
File Edit View Search Terminal Tabs Help
ttn@ttn: ~/test
ttn@ttn: ~/exercise
pamstack
pamstretch
pamstretch-gen
paperconf
paplay
parec
parecord
parsechangelog
partx
passwd
paste
pasuspender
patch
pathchk
pax11publish
ranlib
rasttopnm
rawtopgm
rawtoppm
sane-find-scanner
savelog
tabs
tac
tail
taskset
ua
wall
watch
watchgnupg
xargs
xauth
ttn@ttn:~/exercise$ cat s3.sh
#!/bin/bash
ls /usr/bin | grep "^.a" > temp.txt
ttn@ttn:~/exercise$

33. 10. List all files in your home directory and print name and size in a table format.