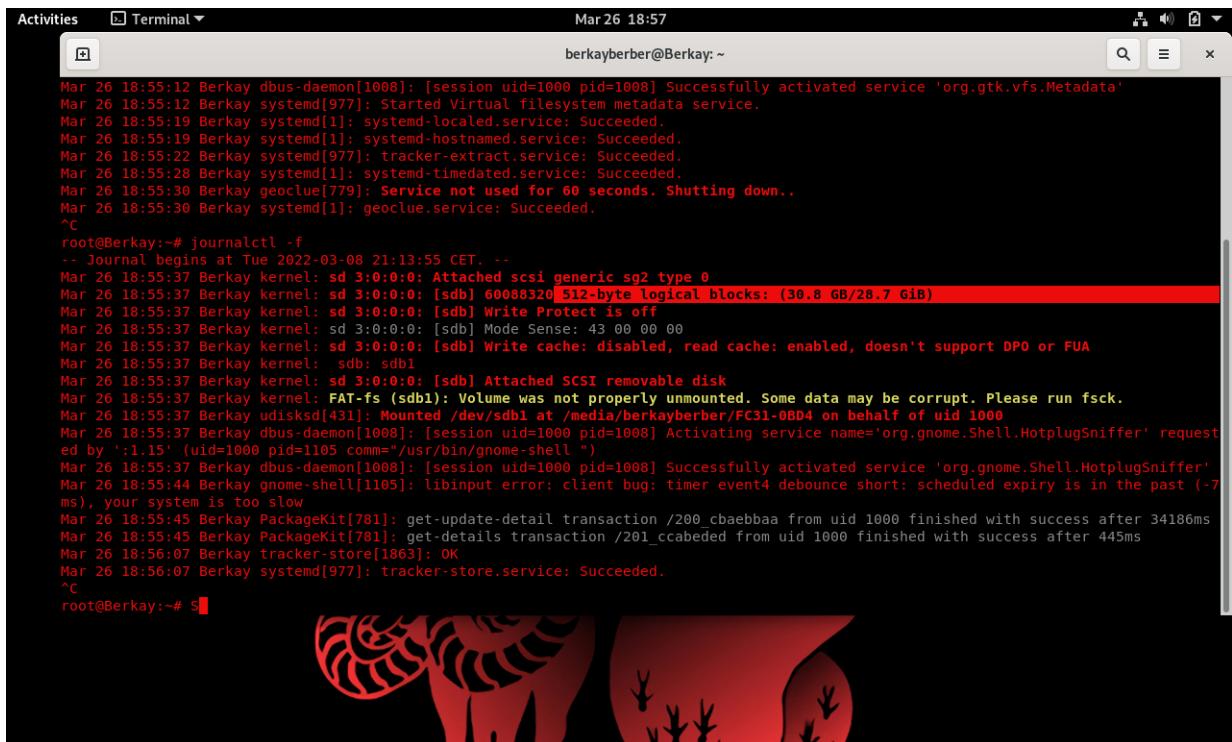


Task1

After spending some time to fix the “Failed attach USB Device” issue by checking extension pack in the virtual box, I believe issue has been fixed and can run “journalctl -f” command after login as a root. So, whenever I plug the USB drive I can see it’s characteristic and what does it contains.



A screenshot of a terminal window titled "Terminal" showing the output of the "journalctl -f" command. The window title bar includes "Activities" and the date "Mar 26 18:57". The terminal prompt is "berkayberber@Berkay: ~". The output shows system logs from March 26, 2022, at 18:55:12, including the activation of various services like dbus-daemon, systemd, and tracker-extract. It also shows the mounting of a SCSI generic disk (sd3) with 30.8 GB/28.7 GiB capacity. A redacted section of the log highlights a warning about Write Protect being off. The log continues with kernel messages about FAT-fs, udisksd, and PackageKit transactions. The terminal ends with a "root@Berkay:~# S" prompt, where "S" is a redacted password. The background of the terminal window features a dark, abstract graphic of a tree or plant.

```
Activities Terminal Mar 26 18:57
berkayberber@Berkay: ~

Mar 26 18:55:12 Berkay dbus-daemon[1008]: [session uid=1000 pid=1008] Successfully activated service 'org.gtk.vfs.Metadata'
Mar 26 18:55:12 Berkay systemd[977]: Started Virtual filesystem metadata service.
Mar 26 18:55:19 Berkay systemd[1]: systemd-located.service: Succeeded.
Mar 26 18:55:19 Berkay systemd[1]: systemd-hostnamed.service: Succeeded.
Mar 26 18:55:22 Berkay systemd[977]: tracker-extract.service: Succeeded.
Mar 26 18:55:28 Berkay systemd[1]: systemd-timedated.service: Succeeded.
Mar 26 18:55:30 Berkay geoclue[779]: Service not used for 60 seconds. Shutting down..
Mar 26 18:55:30 Berkay systemd[1]: geoclue.service: Succeeded.
^C
root@Berkay:~# journalctl -f
-- Journal begins at Tue 2022-03-08 21:13:55 CET. --
Mar 26 18:55:37 Berkay kernel: sd 3:0:0:0: Attached scsi generic sg2 type 0
Mar 26 18:55:37 Berkay kernel: sd 3:0:0:0: [sdb] 60088320 512-byte logical blocks: (30.8 GB/28.7 GiB)
Mar 26 18:55:37 Berkay kernel: sd 3:0:0:0: [sdb] Write Protect is off
Mar 26 18:55:37 Berkay kernel: sd 3:0:0:0: [sdb] Mode Sense: 43 00 00 00
Mar 26 18:55:37 Berkay kernel: sd 3:0:0:0: [sdb] Write cache: disabled, read cache: enabled, doesn't support DPO or FUA
Mar 26 18:55:37 Berkay kernel: sdb: sdb1
Mar 26 18:55:37 Berkay kernel: sd 3:0:0:0: [sdb] Attached SCSI removable disk
Mar 26 18:55:37 Berkay kernel: FAT-fs (sdb1): Volume was not properly unmounted. Some data may be corrupt. Please run fsck.
Mar 26 18:55:37 Berkay udisksd[431]: Mounted /dev/sdb1 at /media/berkayberber/FC31-0B04 on behalf of uid 1000
Mar 26 18:55:37 Berkay dbus-daemon[1008]: [session uid=1000 pid=1008] Activating service name='org.gnome.Shell.HotplugSniffer' requested by ':1.15' (uid=1000 pid=1105 comm="/usr/bin/gnome-shell")
Mar 26 18:55:37 Berkay dbus-daemon[1008]: [session uid=1000 pid=1008] Successfully activated service 'org.gnome.Shell.HotplugSniffer'
Mar 26 18:55:44 Berkay gnome-shell[1105]: libinput error: client bug: timer event4 debounce short: scheduled expiry is in the past (-7 ms), your system is too slow
Mar 26 18:55:45 Berkay PackageKit[781]: get-update-detail transaction /200_cbaebaa from uid 1000 finished with success after 34186ms
Mar 26 18:55:45 Berkay PackageKit[781]: get-details transaction /201_ccabed from uid 1000 finished with success after 445ms
Mar 26 18:56:07 Berkay tracker-store[1863]: OK
Mar 26 18:56:07 Berkay systemd[977]: tracker-store.service: Succeeded.
^C
root@Berkay:~# S
```

Task1.2)

I am adding the “sbin” path then I am listing the partition table of my USB drive using “fdisk” command.

Activities Terminal ▾ Mar 26 19:08

```

Mar 26 18:55:37 Berkay udisksd[431]: Mounted /dev/sdb1 at /media/berkayberber/FC31-0BD4 on behalf of uid 1000
Mar 26 18:55:37 Berkay dbus-daemon[1008]: [session uid=1000 pid=1008] Activating service name='org.gnome.Shell.HotplugSniffer' requested by :1.15 (uid=1000 pid=1105 comm="/usr/bin/gnome-shell")
Mar 26 18:55:37 Berkay dbus-daemon[1008]: [session uid=1000 pid=1008] Successfully activated service 'org.gnome.Shell.HotplugSniffer'
Mar 26 18:55:44 Berkay gnome-shell[1105]: libinput error: client bug: timer event4 debounce short: scheduled expiry is in the past (-7ms), your system is too slow
Mar 26 18:55:45 Berkay PackageKit[781]: get-update-detail transaction /200 cbaebaa from uid 1000 finished with success after 34186ms
Mar 26 18:55:45 Berkay PackageKit[781]: get-details transaction /201_ccabed from uid 1000 finished with success after 445ms
Mar 26 18:56:07 Berkay tracker-store[1863]: OK
Mar 26 18:56:07 Berkay systemd[977]: tracker-store.service: Succeeded.
^C
root@Berkay:~# PATH=/sbin:$PATH"
root@Berkay:~# command -v fdisk
/sbin/fdisk
root@Berkay:~# fdisk -c -u -l /dev/sdb
Disk /dev/sdb: 28.65 GiB, 30765219840 bytes, 60088320 sectors
Disk model: SanDisk 3.2Gen1
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x00000000

Device      Boot Start      End  Sectors  Size Type
/dev/sdb1            32 60088319 60088288 28.7G c W95 FAT32 (LBA)
root@Berkay:~# fdisk -l /dev/sdb
Disk /dev/sdb: 28.65 GiB, 30765219840 bytes, 60088320 sectors
Disk model: SanDisk 3.2Gen1
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x00000000

Device      Boot Start      End  Sectors  Size Type
/dev/sdb1            32 60088319 60088288 28.7G c W95 FAT32 (LBA)
root@Berkay:~#
```

Task 1.3) d : delete, w: save changes and quit, p:verify partition deletion

Activities Terminal ▾ Mar 26 19:30

```

root@Berkay:~# fdisk /dev/sdb
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x00000000
root@Berkay:~# fdisk /dev/sdb

Welcome to fdisk (util-linux 2.36.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help): p
Disk /dev/sdb: 28.65 GiB, 30765219840 bytes, 60088320 sectors
Disk model: SanDisk 3.2Gen1
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x00000000

Command (m for help): w
The partition table has been altered.
Syncing disks.

root@Berkay:~# fdisk -l
Disk /dev/sda: 8 GiB, 8589934592 bytes, 16777216 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: A7032FEA-1812-4442-ACF2-85E3AFC8A1DC

Device      Start      End  Sectors  Size Type
/dev/sda1    2048 1050623 1048576 512M EFI System
/dev/sda2  1050624 3004415 1953792 954M Linux swap
/dev/sda3  14774272 16775167 2000896 977M Linux swap
/dev/sda4  3004416 14774271 11769856 5.6G Linux filesystem
```

Partition table entries are not in disk order.

```

Disk /dev/sdb: 28.65 GiB, 30765219840 bytes, 60088320 sectors
Disk model: SanDisk 3.2Gen1
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x00000000
root@Berkay:~#
```

Task 1.4) I had trouble although I created sdb2 and sdb3 I wasn't seeing the m when using the grep command. But than after created partitions 2-3 with "d" command for help, I manage to recreate and saw them. Last version presented below at the last picture

```
Activities Terminal Mar 26 19:41
berkayberber@Berkay:~  
  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disklabel type: dos  
Disk identifier: 0x00000000  
root@Berkay:~# fdisk /dev/sdb  
  
Welcome to fdisk (util-linux 2.36.1).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Command (m for help): n  
Partition type  
  p  primary (0 primary, 0 extended, 4 free)  
  e  extended (container for logical partitions)  
Select (default p): p  
Partition number (1-4, default 1): 1  
First sector (2048-60088319, default 2048):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-60088319, default 60088319): +100M  
  
Created a new partition 1 of type 'Linux' and of size 100 MiB.  
  
Command (m for help): n  
Partition type  
  p  primary (1 primary, 0 extended, 3 free)  
  e  extended (container for logical partitions)  
Select (default p): p  
Partition number (2-4, default 2): 2  
First sector (206848-60088319, default 206848):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (206848-60088319, default 60088319): +200M  
  
Created a new partition 2 of type 'Linux' and of size 200 MiB.  
  
Command (m for help): n  
Partition type  
  p  primary (2 primary, 0 extended, 2 free)  
  e  extended (container for logical partitions)  
Select (default p): p
```

```
Activities Terminal Mar 26 19:42
berkayberber@Berkay:~  
  
Select (default p): p  
Partition number (3..4, default 3): 3  
First sector (616448-60088319, default 616448):  
Last sector, +/-sectors or +/-size{K,M,G,T,P} (616448-60088319, default 60088319): +500M  
  
Created a new partition 3 of type 'Linux' and of size 500 MiB.  
  
Command (m for help): t  
Partition number (1-3, default 3): 2  
Hex code or alias (type L to list all): 82  
  
Changed type of partition 'Linux' to 'Linux swap / Solaris'.  
  
Command (m for help): t  
Partition number (1-3, default 3): 3  
Hex code or alias (type L to list all): 8e  
  
Changed type of partition 'Linux' to 'Linux LVM'.  
  
Command (m for help): w  
The partition table has been altered.  
Failed to add partition 1 to system: Device or resource busy  
Failed to add partition 2 to system: Device or resource busy  
Failed to add partition 3 to system: Device or resource busy  
  
The kernel still uses the old partitions. The new table will be used at the next reboot.  
Syncing disks.  
root@Berkay:~#
```

Activities Terminal ▾ Mar 26 20:15

```
Welcome to fdisk (util-linux 2.36.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help): d
Partition number (1-4, default 4): 4

Partition 4 has been deleted.

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

root@Berkay:~# grep sdb /proc/partitions
 8       16    30044160  sdb
 8       17    102400  sdb1
 8       18    204800  sdb2
 8       19    512000  sdb3
root@Berkay:~# ls /dev/sdb*
/dev/sdb  /dev/sdb1  /dev/sdb2  /dev/sdb3
root@Berkay:~#
```

Activities Terminal ▾ Mar 26 20:18

```
root@Berkay:~# fdisk -l
Disk /dev/sda: 8 GiB, 8589934592 bytes, 16777216 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: A7D32FEA-1812-4442-ACF2-85E3AFC8A1DC

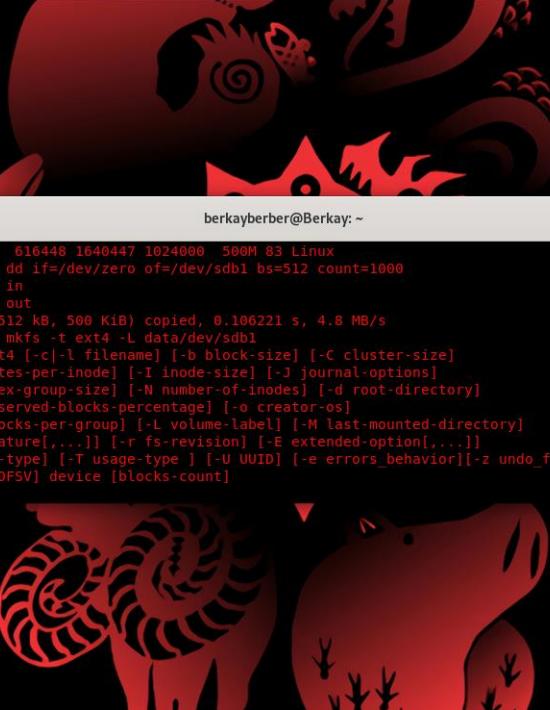
Device      Start      End  Sectors  Size Type
/dev/sda1     2048  1050623   1048576   512M EFI System
/dev/sda2  1050624  3004415   1953792   954M Linux swap
/dev/sda3 14774272 16775167   2000896   977M Linux swap
/dev/sda4  3004416 14774271 11769856  5.6G Linux filesystem

Partition table entries are not in disk order.

Disk /dev/sdb: 28.65 GiB, 30765219840 bytes, 60088320 sectors
Disk model: Sandisk 3.2Gen1
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x00000000

Device      Boot  Start      End  Sectors  Size Id Type
/dev/sdb1        2048  206847   204800   100M 83 Linux
/dev/sdb2     206848  616447   409600   200M 83 Linux
/dev/sdb3     616448 1640447 1024000   500M 83 Linux
root@Berkay:~#
```

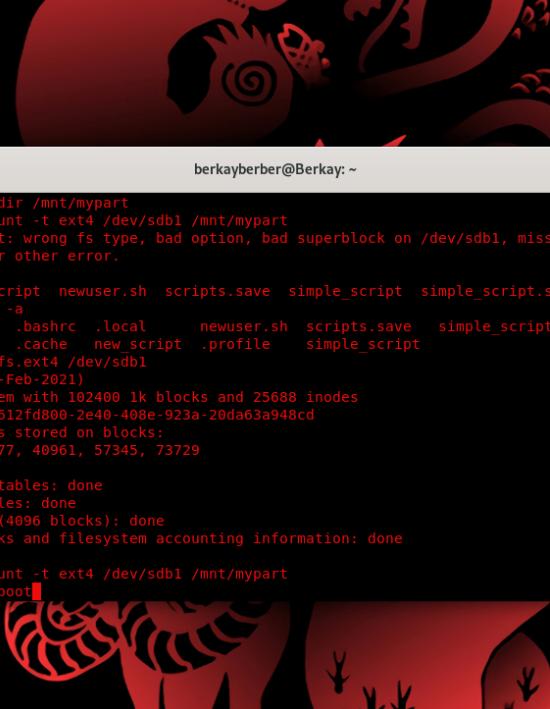
Task 1.5) Put an ext4 file system on the Linux partition



A screenshot of a terminal window titled "Terminal" showing a root shell session. The background of the window features a stylized red lion silhouette against a dark background. The terminal output shows the creation of a new ext4 file system on /dev/sdb1:

```
root@Berkay:~# dd if=/dev/zero of=/dev/sdb1 bs=512 count=1000
1000+0 records in
1000+0 records out
512000 bytes (512 kB, 500 KiB) copied, 0.106221 s, 4.8 MB/s
root@Berkay:~# mkfs -t ext4 -L data /dev/sdb1
Usage: mkfs.ext4 [-c|-l filename] [-b block-size] [-C cluster-size]
                [-i bytes-per-inode] [-I inode-size] [-J journal-options]
                [-G flex-group-size] [-N number-of-inodes] [-d root-directory]
                [-m reserved-blocks-percentage] [-o creator-os]
                [-g blocks-per-group] [-L volume-label] [-M last-mounted-directory]
                [-O feature[,...]] [-r fs-revision] [-E extended-option[,...]]
                [-t fs-type] [-T usage-type] [-U UUID] [-e errors_behavior][-z undo_file]
                [-jnqvDFSV] device [blocks-count]
root@Berkay:~#
```

Task 1.6) Create a mount point called /mnt/mypart and mount the Linux partition on it.



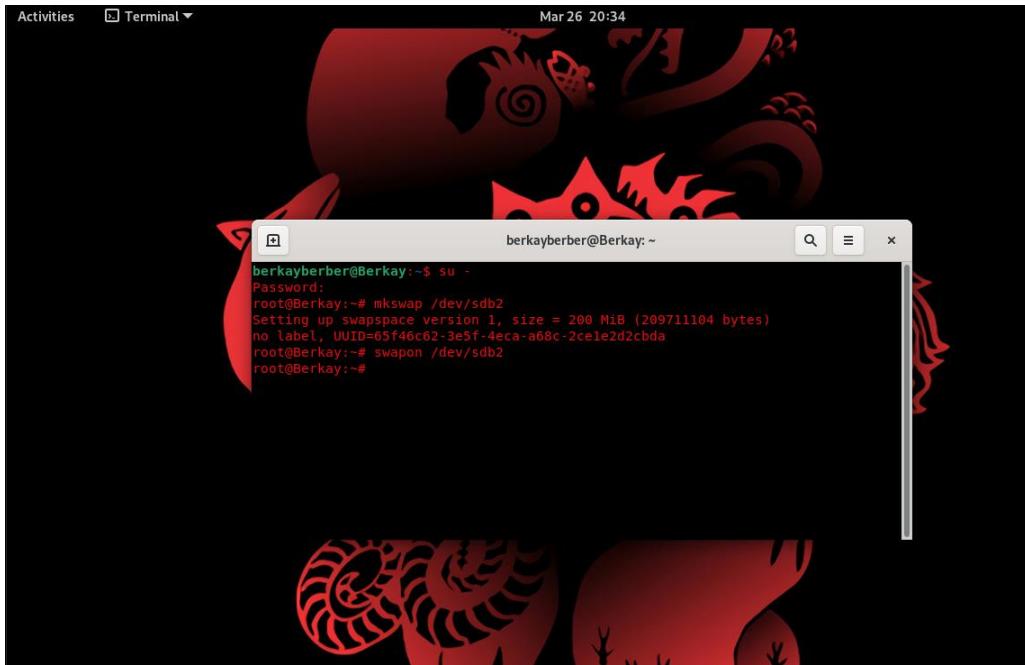
A screenshot of a terminal window titled "Terminal" showing a root shell session. The background of the window features a stylized red lion silhouette against a dark background. The terminal output shows the creation of a mount point and the mounting of the newly created ext4 file system:

```
root@Berkay:~# mkdir /mnt/mypart
root@Berkay:~# mount -t ext4 /dev/sdb1 /mnt/mypart
mount: /mnt/mypart: wrong fs type, bad option, bad superblock on /dev/sdb1, missing codepage or
helper program, or other error.
root@Berkay:~# ls
adduser.sh  new_script  newuser.sh  scripts.save  simple_script  simple_script.save
root@Berkay:~# ls -a
.  adduser.sh  .bashrc  .local  newuser.sh  scripts.save  simple_script  simple_script.save
..  .bash_history  .cache  new_script  .profile  simple_script
root@Berkay:~# mkfs.ext4 /dev/sdb1
mke2fs 1.46.2 (28-Feb-2021)
Creating filesystem with 102400 1k blocks and 25688 inodes
Filesystem UUID: 612fd800-2e40-408e-923a-20da63a948cd
Superblock backups stored on blocks:
            8193, 24577, 40961, 57345, 73729

Allocating group tables: done
Writing inode tables: done
Creating journal (4096 blocks): done
Writing superblocks and filesystem accounting information: done

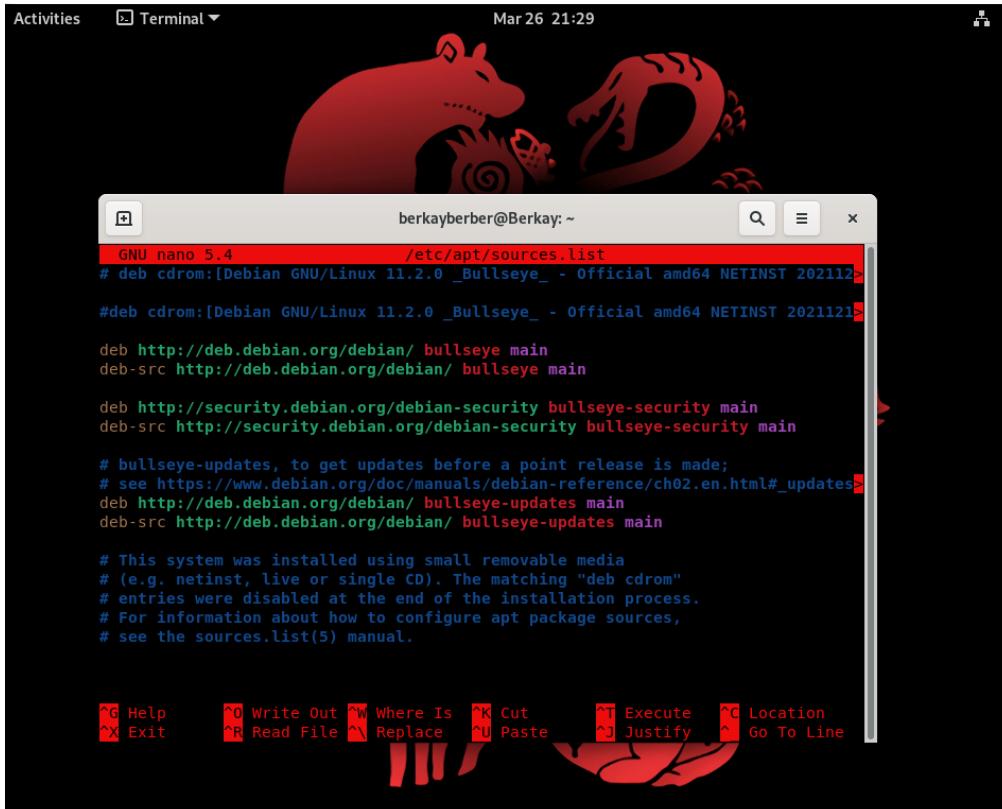
root@Berkay:~# mount -t ext4 /dev/sdb1 /mnt/mypart
root@Berkay:~# reboot
```

Task 1.7) Enable the swap partition and turn it on so that additional swap space is immediately available.



Task1.8)

Using “nano /etc/apt/sources.list” command checked if the lines are commented. There is below.



Then following commands:

```
Activities Terminal Mar 26 21:34
berkayberber@Berkay:~ no label, UUID=65f46c62-3e5f-4eca-a68c-2ce1e2d2cbda
root@Berkay:~# swapon /dev/sdb2
root@Berkay:~# nano /etc/apt/sources.list
root@Berkay:~# apt-get update
Hit:1 http://security.debian.org/debian-security bullseye-security InRelease
Hit:2 http://deb.debian.org/debian bullseye InRelease
Hit:3 http://deb.debian.org/debian bullseye-updates InRelease
Reading package lists... Done
root@Berkay:~# apt-get install -y lvm2
E: Invalid operation install-y
root@Berkay:~# apt-get install -y lvm2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  dmeventd liblai1 libdevmapper-event1.02.1 liblvm2cmd2.03
  thin-provisioning-tools
The following NEW packages will be installed:
  dmeventd liblai1 libdevmapper-event1.02.1 liblvm2cmd2.03 lvm2
  thin-provisioning-tools
0 upgraded, 6 newly installed, 0 to remove and 67 not upgraded.
Need to get 2,403 kB of archives.
After this operation, 8,760 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bullseye/main amd64 liblai1 amd64 0.3.112-9 [12.5 kB]
Get:2 http://deb.debian.org/debian bullseye/main amd64 libdevmapper-event1.02.1
  amd64 2:1.02.175-2.1 [23.2 kB]
Get:3 http://deb.debian.org/debian bullseye/main amd64 liblvm2cmd2.03 amd64 2.03
  .11-2.1 [711 kB]
Get:4 http://deb.debian.org/debian bullseye/main amd64 dmeventd amd64 2:1.02.175
  -2.1 [69.4 kB]
Get:5 http://deb.debian.org/debian bullseye/main amd64 lvm2 amd64 2.03.11-2.1 [1
  ,194 kB]
Get:6 http://deb.debian.org/debian bullseye/main amd64 thin-provisioning-tools a
  md64 0.9.0-1 [393 kB]
Fetched 2,403 kB in 1s (2,230 kB/s)
```

```
Activities Terminal Mar 26 21:34
berkayberber@Berkay:~ Preparing to unpack .../1-libdevmapper-event1.02.1.2%3a1.02.175-2.1_amd64.deb ...
.
Unpacking libdevmapper-event1.02.1:amd64 (2:1.02.175-2.1) ...
Selecting previously unselected package liblvm2cmd2.03:amd64.
Preparing to unpack .../2-liblvm2cmd2.03_2.03.11-2.1_amd64.deb ...
Unpacking liblvm2cmd2.03:amd64 (2.03.11-2.1) ...
Selecting previously unselected package dmeventd.
Preparing to unpack .../3-dmeventd_2%3a1.02.175-2.1_amd64.deb ...
Unpacking dmeventd (2:1.02.175-2.1) ...
Selecting previously unselected package lvm2.
Preparing to unpack .../4-lvm2_2.03.11-2.1_amd64.deb ...
Unpacking lvm2 (2.03.11-2.1) ...
Selecting previously unselected package thin-provisioning-tools.
Preparing to unpack .../5-thin-provisioning-tools_0.9.0-1_amd64.deb ...
Unpacking thin-provisioning-tools (0.9.0-1) ...
Setting up libdevmapper-event1.02.1:amd64 (2:1.02.175-2.1) ...
Setting up liblai1:amd64 (0.3.112-9) ...
Setting up thin-provisioning-tools (0.9.0-1) ...
Setting up liblvm2cmd2.03:amd64 (2.03.11-2.1) ...
Setting up dmeventd (2:1.02.175-2.1) ...
Created symlink /etc/systemd/system/sockets.target.wants/dm-event.socket → /lib/
systemd/system/dm-event.socket.
dm-event.service is a disabled or a static unit, not starting it.
Setting up lvm2 (2.03.11-2.1) ...
update-initramfs: deferring update (trigger activated)
Created symlink /etc/systemd/system/sysinit.target.wants/blk-availability.servic
e → /lib/systemd/system/blk-availability.service.
Created symlink /etc/systemd/system/sysinit.target.wants/lvm2-monitor.service →
/lib/systemd/system/lvm2-monitor.service.
Created symlink /etc/systemd/system/sysinit.target.wants/lvm2-lvmpolld.socket →
/lib/systemd/system/lvm2-lvmpolld.socket.
Processing triggers for initramfs-tools (0.140) ...
update-initramfs: Generating /boot/initrd.img-5.10.0-11-amd64
Processing triggers for libc-bin (2.31-13+deb11u2) ...
Processing triggers for man-db (2.9.4-2) ...
root@Berkay:~#
```

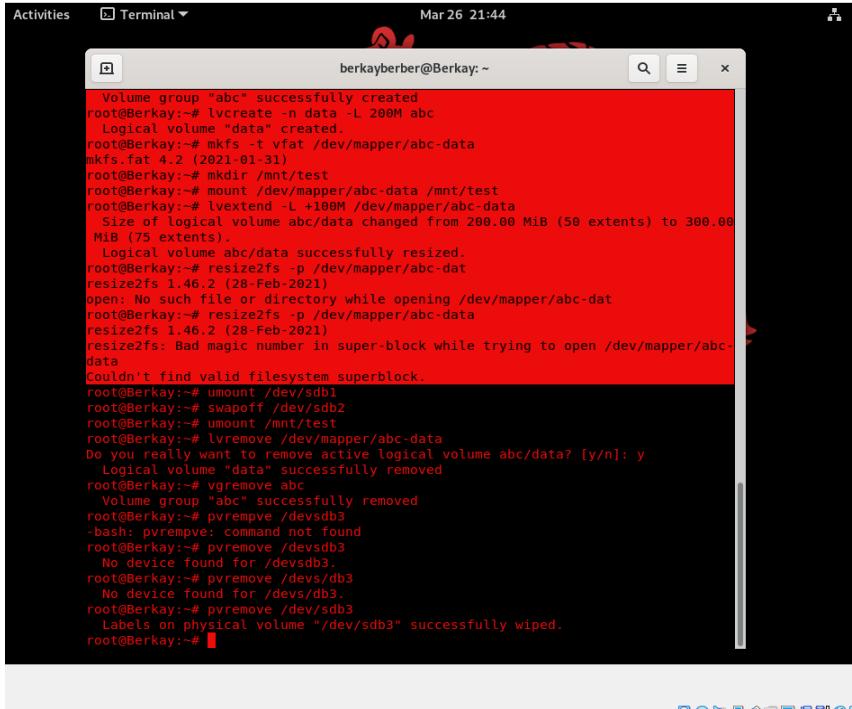
To create a volume group called *abc* from the LVM partition, create a 200MB logical volume from that group called *data*, create a VFAT filesystem on it, temporarily mount the logical volume on a new directory named */mnt/test*, and then check that it was successfully mounted:

```
Preparing to unpack .../4-lvm2_2.03.11-2.1_amd64.deb ...
Unpacking lvm2 (2.03.11-2.1) ...
Selecting previously unselected package thin-provisioning-tools.
Preparing to unpack .../5-thin-provisioning-tools_0.9.0-1_amd64.deb ...
Unpacking thin-provisioning-tools (0.9.0-1) ...
Setting up libdevmapper-event1:amd64 (2:1.02.175-2.1) ...
Setting up libaio1:amd64 (0.3.112-9) ...
Setting up thin-provisioning-tools (0.9.0-1) ...
Setting up liblvm2cmd2:03:amd64 (2.03.11-2.1) ...
Setting up dmeventd (2:1.02.175-2.1) ...
Created symlink /etc/systemd/system/sockets.target.wants/dm-event.socket -> /lib/
systemd/system/dm-event.socket.
dm-event.service is a disabled or a static unit, not starting it.
Setting up lvm2 (2.03.11-2.1) ...
update-initramfs: deferring update (trigger activated)
Created symlink /etc/systemd/system/sysinit.target.wants/blk-availability.servic
e -> /lib/systemd/system/blk-availability.service.
Created symlink /etc/systemd/system/sysinit.target.wants/lvm2-monitor.service ->
/lib/systemd/system/lvm2-monitor.service.
Created symlink /etc/systemd/system/sysinit.target.wants/lvm2-lvmpolld.socket ->
/lib/systemd/system/lvm2-lvmpolld.socket.
Processing triggers for initramfs-tools (0.140) ...
update-initramfs: Generating /boot/initrd.img-5.10.0-11-amd64
Processing triggers for libc-bin (2.31-13+deb11u2) ...
Processing triggers for man-db (2.9.4-2) ...
root@Berkay:~# pvcreate /dev/sdb3
  Physical volume "/dev/sdb3" successfully created.
root@Berkay:~# vgcreate abc /dev/sdb3
  Volume group "abc" successfully created
root@Berkay:~# lvcreate -n data -L 200M abc
  Logical volume "data" created.
root@Berkay:~# mkfs -t vfat /dev/mapper/abc-data
mkfs.fat 4.2 (2021-01-31)
root@Berkay:~# mkdir /mnt/test
root@Berkay:~# mount /dev/mapper/abc-data /mnt/test
root@Berkay:~#
```

Task 1.9) Grow the logical volume from 200MB to 300MB

```
dm-event.service is a disabled or a static unit, not starting it.
Setting up lvm2 (2.03.11-2.1) ...
update-initramfs: deferring update (trigger activated)
Created symlink /etc/systemd/system/sysinit.target.wants/blk-availability.servic
e -> /lib/systemd/system/blk-availability.service.
Created symlink /etc/systemd/system/sysinit.target.wants/lvm2-monitor.service ->
/lib/systemd/system/lvm2-monitor.service.
Created symlink /etc/systemd/system/sysinit.target.wants/lvm2-lvmpolld.socket ->
/lib/systemd/system/lvm2-lvmpolld.socket.
Processing triggers for initramfs-tools (0.140) ...
update-initramfs: Generating /boot/initrd.img-5.10.0-11-amd64
Processing triggers for libc-bin (2.31-13+deb11u2) ...
Processing triggers for man-db (2.9.4-2) ...
root@Berkay:~# pvcreate /dev/sdb3
  Physical volume "/dev/sdb3" successfully created.
root@Berkay:~# vgcreate abc /dev/sdb3
  Volume group "abc" successfully created
root@Berkay:~# lvcreate -n data -L 200M abc
  Logical volume "data" created.
root@Berkay:~# mkfs -t vfat /dev/mapper/abc-data
mkfs.fat 4.2 (2021-01-31)
root@Berkay:~# mkdir /mnt/test
root@Berkay:~# mount /dev/mapper/abc-data /mnt/test
root@Berkay:~# lvextend -L +100M /dev/mapper/abc-data
  Size of logical volume abc/data changed from 200.00 MiB (50 extents) to 300.00
MiB (75 extents).
  Logical volume abc/data successfully resized.
root@Berkay:~# resize2fs -p /dev/mapper/abc-dat
resize2fs 1.46.2 (28-Feb-2021)
open: No such file or directory while opening /dev/mapper/abc-
data
root@Berkay:~# resize2fs -p /dev/mapper/abc-data
resize2fs 1.46.2 (28-Feb-2021)
resize2fs: Bad magic number in super-block while trying to open /dev/mapper/abc-
data
Couldn't find valid filesystem superblock.
root@Berkay:~#
```

Task 1.10) Do what you need to do to remove the USB flash drive safely from the computer: unmount the Linux partition, turn off the swap partition, unmount the logical volume, and delete the volume group from the USB flash drive

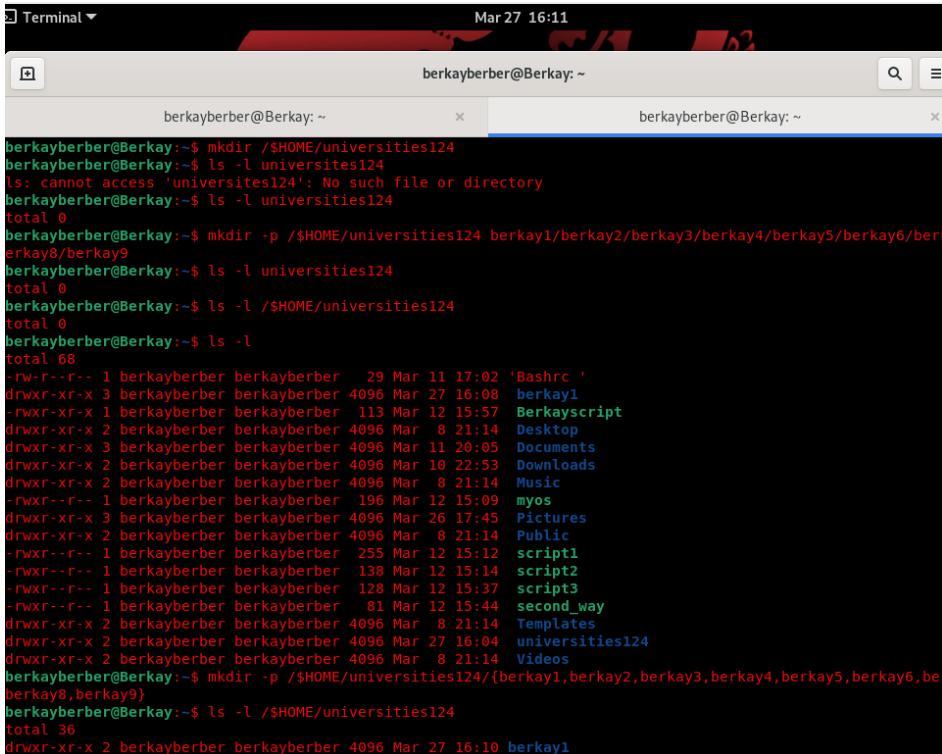


```

Activities Terminal Mar 26 21:44
berkayberber@Berkay: ~
Volume group "abc" successfully created
root@Berkay:~# lvcreate -n data -L 200M abc
Logical volume "data" created.
root@Berkay:~# mkfs -t vfat /dev/mapper/abc-data
mkfs.fat 4.2 (2021-01-31)
root@Berkay:~# mkdir /mnt/test
root@Berkay:~# mount /dev/mapper/abc-data /mnt/test
root@Berkay:~# lvextend -L +100M /dev/mapper/abc-data
  Size of logical volume abc/data changed from 200.00 MiB (50 extents) to 300.00
  MiB (75 extents).
  Logical volume abc/data successfully resized.
root@Berkay:~# resize2fs -p /dev/mapper/abc-data
resize2fs 1.46.2 (28-Feb-2021)
open: No such file or directory while opening /dev/mapper/abc-data
root@Berkay:~# resize2fs -p /dev/mapper/abc-data
resize2fs 1.46.2 (28-Feb-2021)
resize2fs: Bad magic number in super-block while trying to open /dev/mapper/abc-data
Couldn't find valid filesystem superblock.
root@Berkay:~# umount /dev/sdb1
root@Berkay:~# swapoff /dev/sdb2
root@Berkay:~# umount /mnt/test
root@Berkay:~# lvremove /dev/mapper/abc-data
Do you really want to remove active logical volume abc/data? [y/n]: y
  Logical volume "data" successfully removed
root@Berkay:~# vgremove abc
  Volume group "abc" successfully removed
root@Berkay:~# pvrmpv /dev/sdb3
-bash: pvrmpv: command not found
root@Berkay:~# pvrmove /dev/sdb3
  No device found for /dev/sdb3.
root@Berkay:~# pvrmove /dev/sdb3
  Labels on physical volume "/dev/sdb3" successfully wiped.
root@Berkay:~#

```

Task2.1) Create a directory in your home directory called universities with last 3 digit ID, and 9empty directory with my firstname

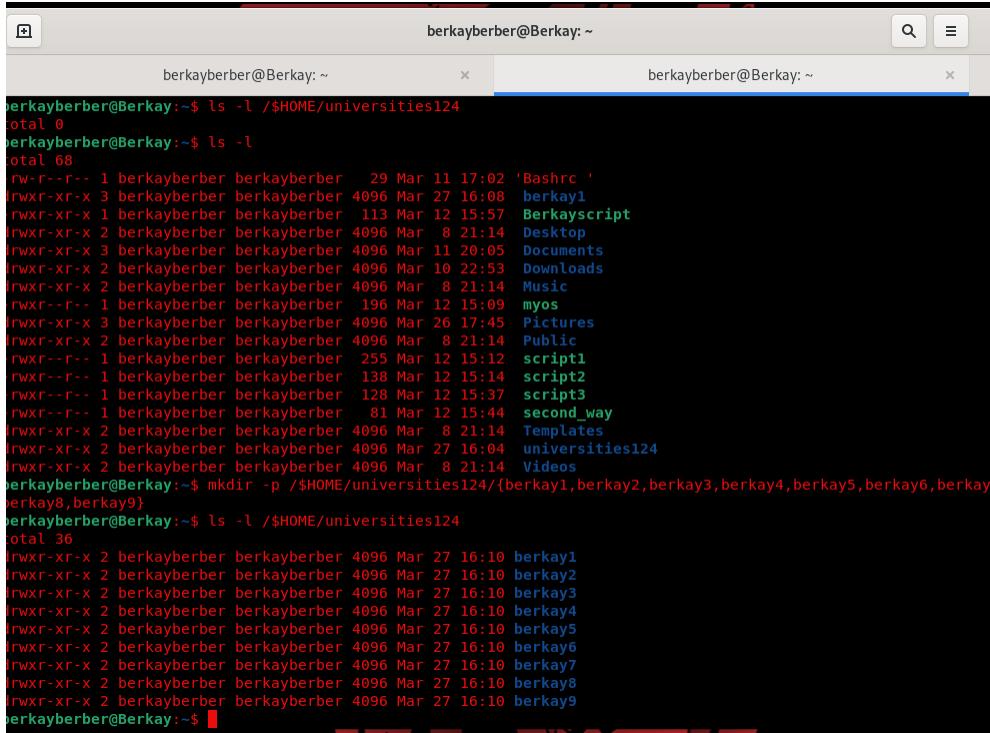


```

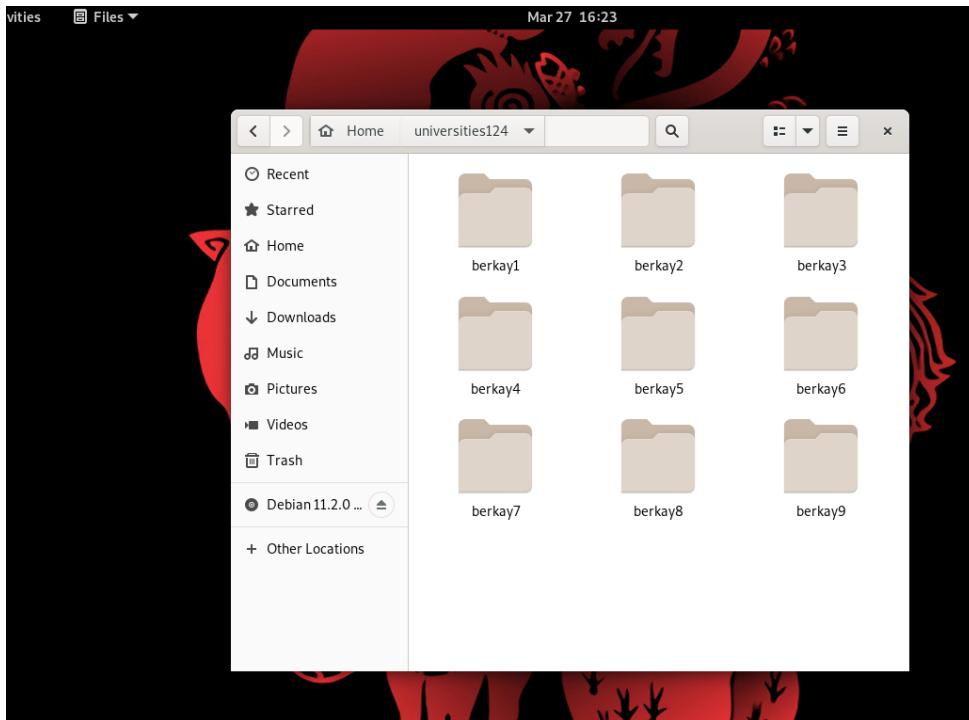
Terminal Mar 27 16:11
berkayberber@Berkay: ~
berkayberber@Berkay:~$ mkdir /$HOME/universities124
berkayberber@Berkay:~$ ls -l universities124
ls: cannot access 'universities124': No such file or directory
berkayberber@Berkay:~$ ls -l universities124
total 0
berkayberber@Berkay:~$ mkdir -p /$HOME/universities124 berkay1/berkay2/berkay3/berkay4/berkay5/berkay6/berkay7/berkay8/berkay9
berkayberber@Berkay:~$ ls -l universities124
total 0
berkayberber@Berkay:~$ ls -l /$HOME/universities124
total 0
berkayberber@Berkay:~$ ls -l
total 68
-rw-r--r-- 1 berkayberber berkayberber 29 Mar 11 17:02 'Bashrc '
drwxr-xr-x 3 berkayberber berkayberber 4096 Mar 27 16:08 berkay1
-rwxr-xr-x 1 berkayberber berkayberber 113 Mar 12 15:57 Berkayscript
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Desktop
drwxr-xr-x 3 berkayberber berkayberber 4096 Mar 11 20:05 Documents
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 10 22:53 Downloads
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Music
-rwxr--r-- 1 berkayberber berkayberber 196 Mar 12 15:09 myos
drwxr-xr-x 3 berkayberber berkayberber 4096 Mar 26 17:45 Pictures
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Public
-rwxr--r-- 1 berkayberber berkayberber 255 Mar 12 15:12 script1
-rwxr--r-- 1 berkayberber berkayberber 138 Mar 12 15:14 script2
-rwxr--r-- 1 berkayberber berkayberber 128 Mar 12 15:37 script3
-rwxr--r-- 1 berkayberber berkayberber 81 Mar 12 15:44 second_way
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Templates
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:04 universities124
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Videos
berkayberber@Berkay:~$ mkdir -p /$HOME/universities124/{berkay1,berkay2,berkay3,berkay4,berkay5,berkay6,berkay7,berkay8,berkay9}
berkayberber@Berkay:~$ ls -l /$HOME/universities124
total 36
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay1

```

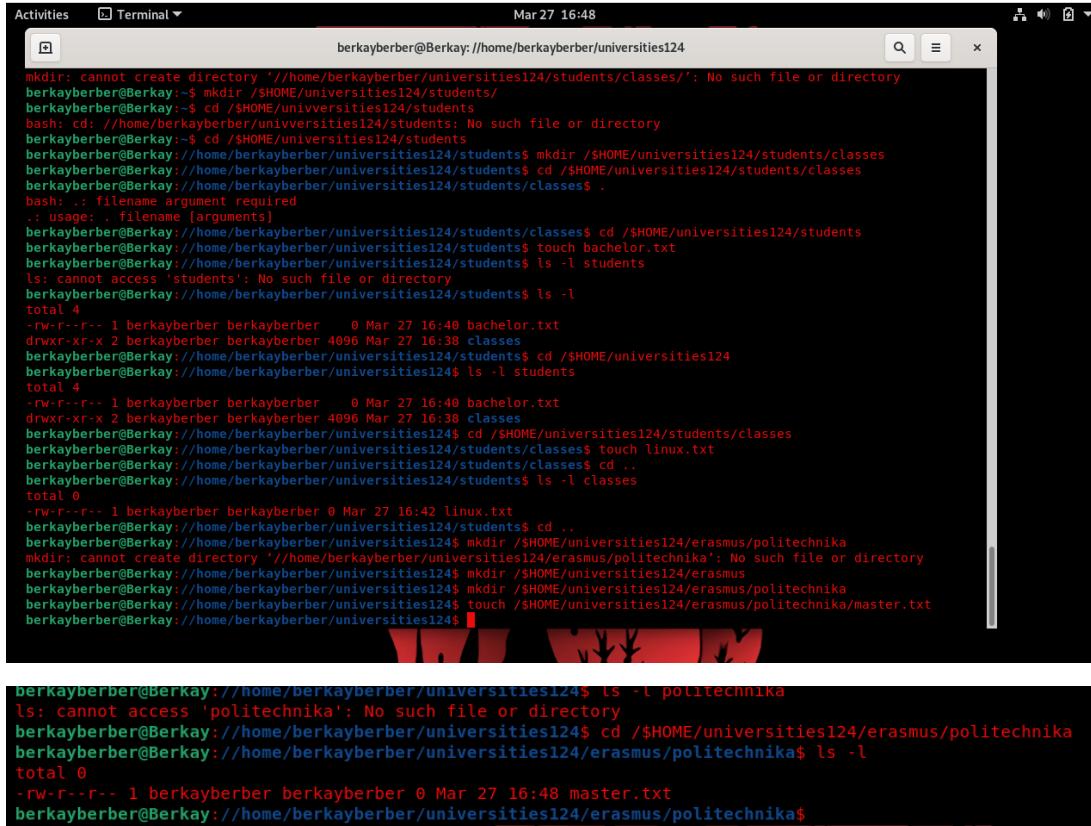
At the beginning I had trouble to add empty file in creatd directory.Although I created an directory in home, I couldn't create empty file in directory it was showing it total value:0 than manage to do it as prsented below.



```
berkayberber@Berkay:~$ ls -l /$HOME/universities124
total 0
berkayberber@Berkay:~$ ls -l
total 68
-rw-r--r-- 1 berkayberber berkayberber 29 Mar 11 17:02 'Bashrc '
-rwxr-xr-x 3 berkayberber berkayberber 4096 Mar 27 16:08 berkay1
-rwxr-xr-x 1 berkayberber berkayberber 113 Mar 12 15:57 Berkayscript
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Desktop
-rwxr-xr-x 3 berkayberber berkayberber 4096 Mar 11 20:05 Documents
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 10 22:53 Downloads
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Music
-rwxr--r-- 1 berkayberber berkayberber 196 Mar 12 15:09 myos
-rwxr-xr-x 3 berkayberber berkayberber 4096 Mar 26 17:45 Pictures
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Public
-rwxr--r-- 1 berkayberber berkayberber 255 Mar 12 15:12 script1
-rwxr--r-- 1 berkayberber berkayberber 138 Mar 12 15:14 script2
-rwxr--r-- 1 berkayberber berkayberber 128 Mar 12 15:37 script3
-rwxr--r-- 1 berkayberber berkayberber 81 Mar 12 15:44 second_way
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Templates
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:04 universities124
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 8 21:14 Videos
berkayberber@Berkay:~$ mkdir -p /$HOME/universities124/{berkay1,berkay2,berkay3,berkay4,berkay5,berkay6,berkay7,berkay8,berkay9}
berkayberber@Berkay:~$ ls -l /$HOME/universities124
total 36
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay1
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay2
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay3
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay4
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay5
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay6
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay7
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay8
-rwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay9
berkayberber@Berkay:~$
```



Task2.2a,b) Create the \$HOME/universities/students/classes/ directory path There are several way to do this. b. Create the following empty files within this directory path(try using absolute and relative paths from your home directory

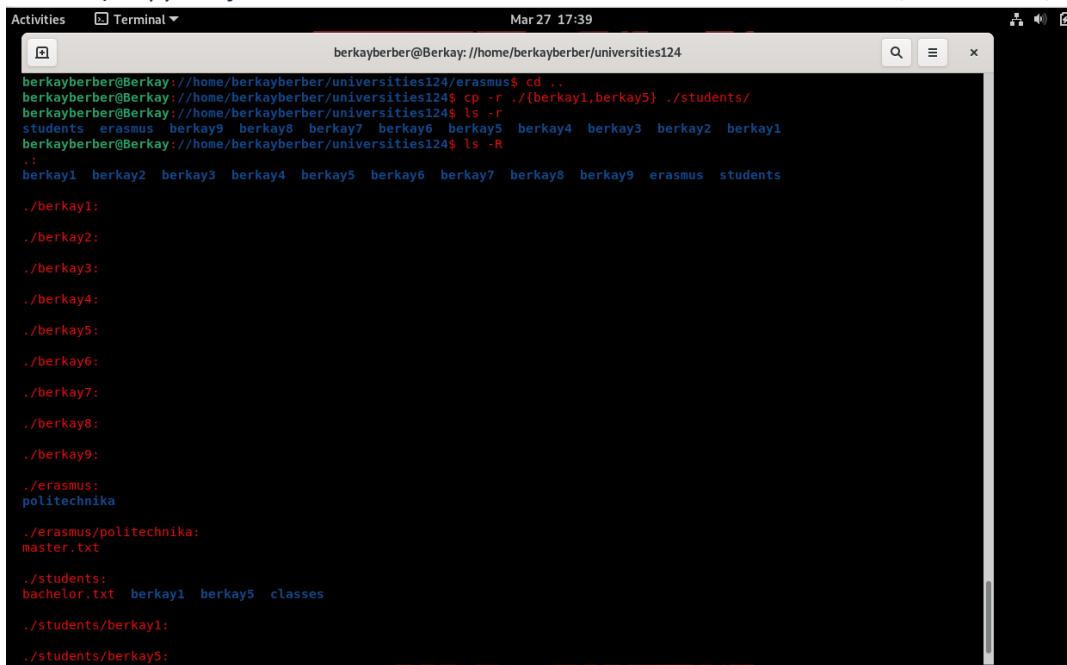


```

Activities Terminal Mar 27 16:48
berkayberber@Berkay:~$ cd /$HOME/universities124/students/
berkayberber@Berkay:~$ mkdir /$HOME/universities124/students/classes/
berkayberber@Berkay:~$ cd /$HOME/universities124/students/classes/
berkayberber@Berkay:~$ touch bachelor.txt
berkayberber@Berkay:~$ ls -l students
ls: cannot access 'students': No such file or directory
berkayberber@Berkay:~$ ls -l
total 4
-rw-r--r-- 1 berkayberber berkayberber 0 Mar 27 16:40 bachelor.txt
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:38 classes
berkayberber@Berkay:~$ cd /$HOME/universities124
berkayberber@Berkay:~$ ls -l students
total 4
-rw-r--r-- 1 berkayberber berkayberber 0 Mar 27 16:40 bachelor.txt
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:38 classes
berkayberber@Berkay:~$ cd /$HOME/universities124/students/classes/
berkayberber@Berkay:~$ touch linux.txt
berkayberber@Berkay:~$ cd ..
berkayberber@Berkay:~$ cd /$HOME/universities124/students/classes/
berkayberber@Berkay:~$ touch master.txt
berkayberber@Berkay:~$ ls -l classes
total 0
berkayberber@Berkay:~$ ls -l politechnika
ls: cannot access 'politechnika': No such file or directory
berkayberber@Berkay:~$ cd /$HOME/universities124/erasmus/politechnika
berkayberber@Berkay:~$ ls -l
total 0
berkayberber@Berkay:~$ touch master.txt
berkayberber@Berkay:~$ ls -l
total 0
berkayberber@Berkay:~$ ls -l

```

Task 2.3) Copy the files YourFirstName1 and YourFirstName5 to the \$HOME/universities/students/

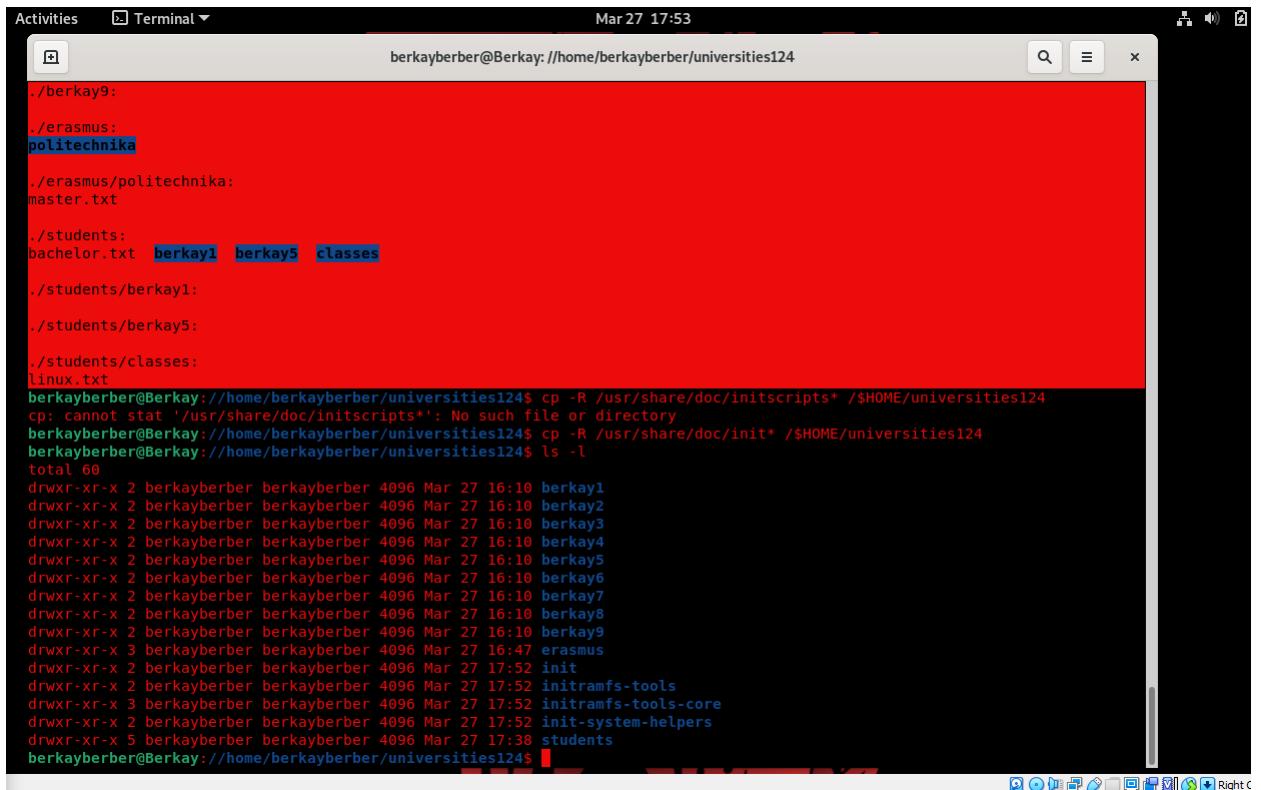


```

Activities Terminal Mar 27 17:39
berkayberber@Berkay:~$ cd /$HOME/universities124/erasmus/
berkayberber@Berkay:~/erasmus$ cp -r ./(berkay1,berkay5) ./students/
berkayberber@Berkay:~/erasmus$ ls -R
students erasmus berkay9 berkay8 berkay7 berkay6 berkay5 berkay4 berkay3 berkay2 berkay1
berkayberber@Berkay:~/erasmus$ ls -R
.:
berkay1 Berkay2 Berkay3 Berkay4 Berkay5 Berkay6 Berkay7 Berkay8 Berkay9 erasmus students
./berkay1:
./berkay2:
./berkay3:
./berkay4:
./berkay5:
./berkay6:
./berkay7:
./berkay8:
./berkay9:
./erasmus:
politechnika
./erasmus/politechnika:
master.txt
./students:
bachelor.txt Berkay1 Berkay5 classes
./students/berkay1:
./students/berkay5:

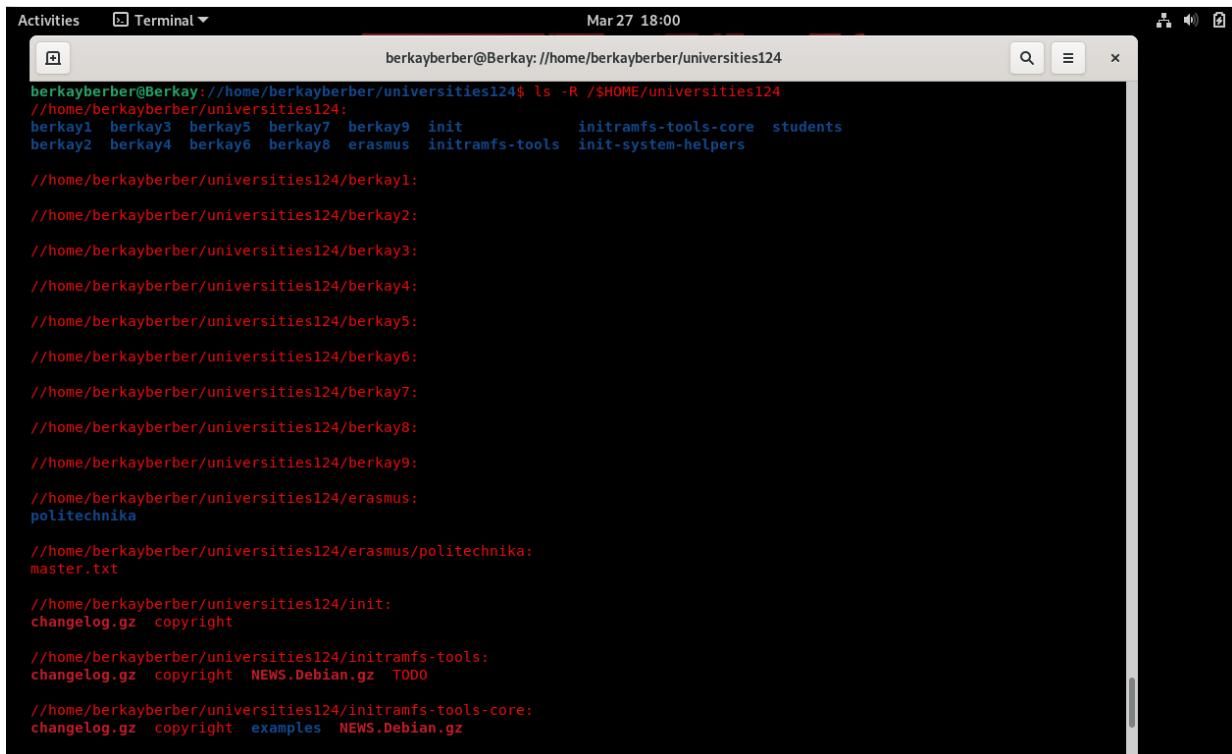
```

Task 2.4) Recursively copy the /usr/share/doc/initscripts directory to the \$HOME/universities*



```
Activities Terminal Mar 27 17:53
berkayberber@Berkay: //home/berkayberber/universities124
./berkay9:
./erasmus:
politechnika
./erasmus/politechnika:
master.txt
./students:
bachelor.txt  berkay1  berkay5  classes
./students/berkay1:
./students/berkay5:
./students/classes:
linux.txt
berkayberber@Berkay://home/berkayberber/universities124$ cp -R /usr/share/doc/initscripts* /$HOME/universities124
cp: cannot stat '/usr/share/doc/initscripts*': No such file or directory
berkayberber@Berkay://home/berkayberber/universities124$ cp -R /usr/share/doc/init* /$HOME/universities124
berkayberber@Berkay://home/berkayberber/universities124$ ls -l
total 60
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay1
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay2
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay3
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay4
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay5
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay6
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay7
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay8
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 16:10 berkay9
drwxr-xr-x 3 berkayberber berkayberber 4096 Mar 27 16:47 erasmus
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 17:52 init
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 17:52 initramfs-tools
drwxr-xr-x 3 berkayberber berkayberber 4096 Mar 27 17:52 initramfs-tools-core
drwxr-xr-x 2 berkayberber berkayberber 4096 Mar 27 17:52 init-system-helpers
drwxr-xr-x 5 berkayberber berkayberber 4096 Mar 27 17:38 students
berkayberber@Berkay://home/berkayberber/universities124$
```

Task 2.5) Recursively list the contents of the \$HOME/universities+3last IDdigits/ directory.



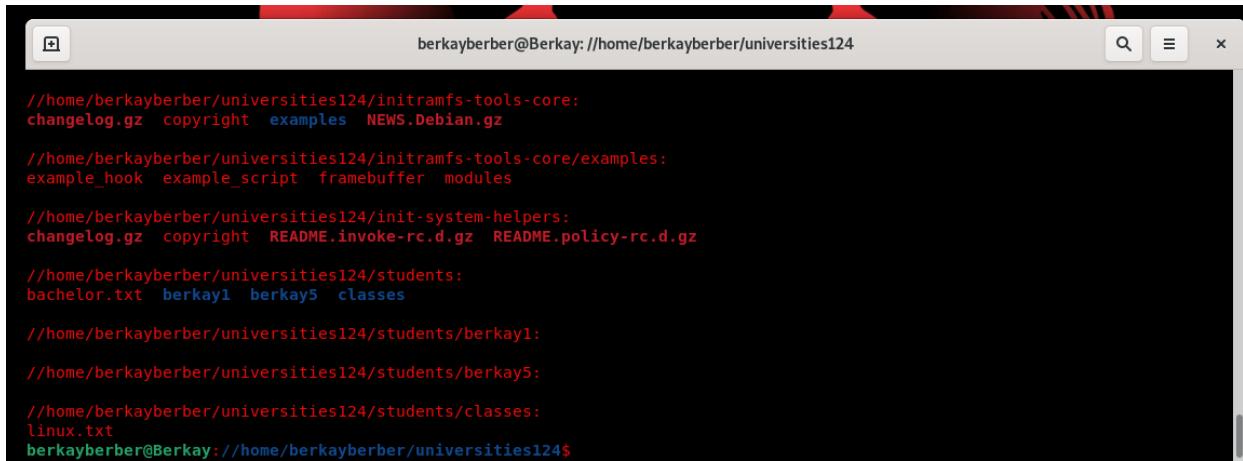
```
Activities Terminal Mar 27 18:00
berkayberber@Berkay: //home/berkayberber/universities124
berkayberber@Berkay://home/berkayberber/universities124$ ls -R /$HOME/universities124
//home/berkayberber/universities124:
berkay1  berkay3  berkay5  berkay9  init      initramfs-tools-core  students
berkay2  berkay4  berkay6  berkay8  erasmus  initramfs-tools  init-system-helpers

//home/berkayberber/universities124/berkay1:
//home/berkayberber/universities124/berkay2:
//home/berkayberber/universities124/berkay3:
//home/berkayberber/universities124/berkay4:
//home/berkayberber/universities124/berkay5:
//home/berkayberber/universities124/berkay6:
//home/berkayberber/universities124/berkay7:
//home/berkayberber/universities124/berkay8:
//home/berkayberber/universities124/berkay9:
//home/berkayberber/universities124/erasmus:
politechnika
//home/berkayberber/universities124/erasmus/politechnika:
master.txt

//home/berkayberber/universities124/init:
changelog.gz  copyright

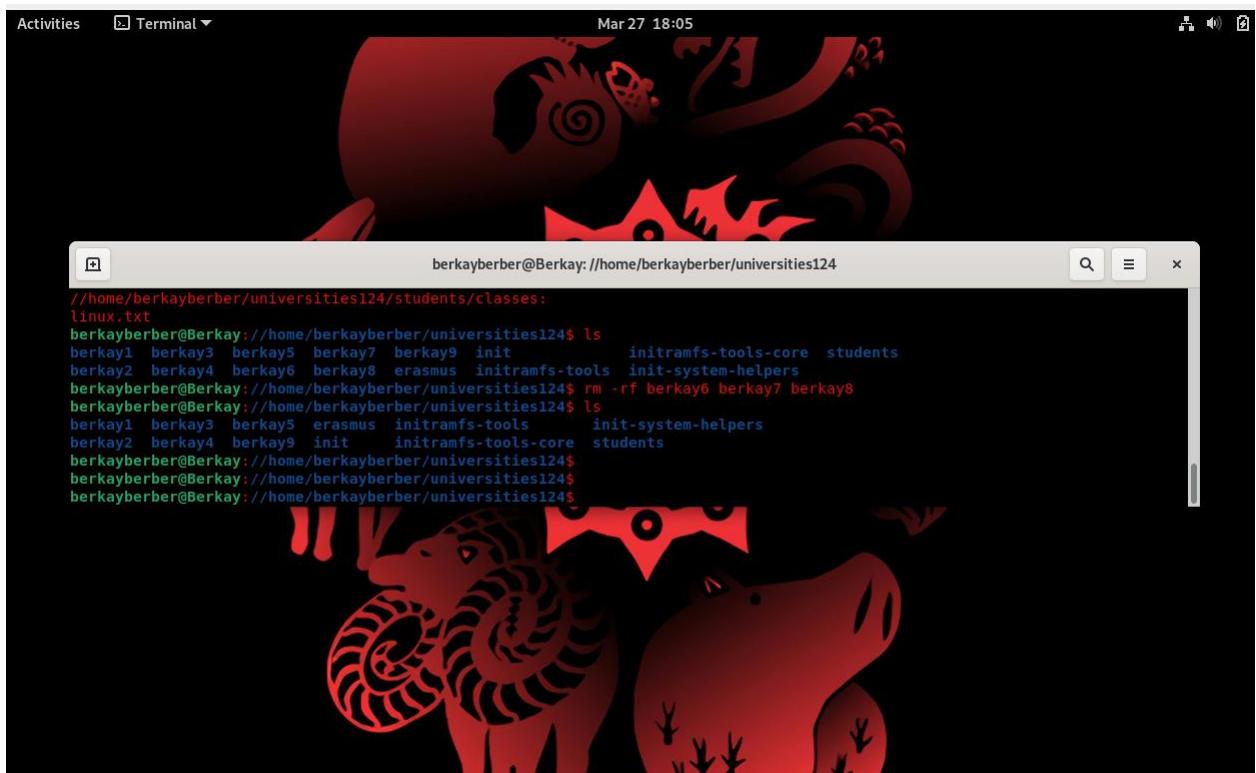
//home/berkayberber/universities124/initramfs-tools:
changelog.gz  copyright  NEWS.Debian.gz  TODO

//home/berkayberber/universities124/initramfs-tools-core:
changelog.gz  copyright  examples  NEWS.Debian.gz
```



```
berkayberber@Berkay: //home/berkayberber/universities124
//home/berkayberber/universities124/initramfs-tools-core:
changelog.gz copyright examples NEWS.Debian.gz
//home/berkayberber/universities124/initramfs-tools-core/examples:
example_hook example_script framebuffer modules
//home/berkayberber/universities124/init-system Helpers:
changelog.gz copyright README.invoke-rc.d.gz README.policy-rc.d.gz
//home/berkayberber/universities124/students:
bachelor.txt berkay1 berkay5 classes
//home/berkayberber/universities124/students/berkay1:
//home/berkayberber/universities124/students/berkay5:
//home/berkayberber/universities124/students/classes:
linux.txt
berkayberber@Berkay: //home/berkayberber/universities124$
```

Task 2.6) . Remove the files with YourFirstName6, YourFirstName7, and YourFirstName8 without being prompted



```
Activities Terminal Mar 27 18:05
berkayberber@Berkay: //home/berkayberber/universities124
//home/berkayberber/universities124/students/classes:
linux.txt
berkayberber@Berkay: //home/berkayberber/universities124$ ls
berkay1 berkay3 berkay5 berkay7 berkay9 init initramfs-tools-core students
berkay2 berkay4 berkay6 berkay8 erasmus initramfs-tools init-system-helpers
berkayberber@Berkay: //home/berkayberber/universities124$ rm -rf berkay6 berkay7 berkay8
berkayberber@Berkay: //home/berkayberber/universities124$ ls
berkay1 berkay3 berkay5 erasmus initramfs-tools init-system-helpers
berkay2 berkay4 berkay9 init initramfs-tools-core students
berkayberber@Berkay: //home/berkayberber/universities124$
```

Task 2.7) Move the files with YourFirstName6 and YourFirstName4 to the \$HOME/universities+/students/classes/ directory.

"Yourfirstname6" file has been removed at the previous exercise this is why I used berkay3 and berkay4

Activities Terminal Mar 27 18:12

```
berkayberber@Berkay://home/berkayberber/universities124$ mv berkay6 berkay7 /$HOME/universities124/students/classes
mv: cannot stat 'berkay6': No such file or directory
mv: cannot stat 'berkay7': No such file or directory
berkayberber@Berkay://home/berkayberber/universities124$ mv berkay3 berkay4 /$HOME/universities124/students/classes
berkayberber@Berkay://home/berkayberber/universities124$ ls -R
.:
berkay1 Berkay2 Berkay5 Berkay9 erasmus init initramfs-tools initramfs-tools-core init-system-helpers students
./berkay1:
./berkay2:
./berkay5:
./berkay9:
./erasmus:
politechnika
./erasmus/politechnika:
master.txt
./init:
changelog.gz copyright
./initramfs-tools:
changelog.gz copyright NEWS.Debian.gz TODO
./initramfs-tools-core:
changelog.gz copyright examples NEWS.Debian.gz
./initramfs-tools-core/examples:
example_hook example_script framebuffer modules
./init-system-helpers:
```

Activities Terminal Mar 27 18:13

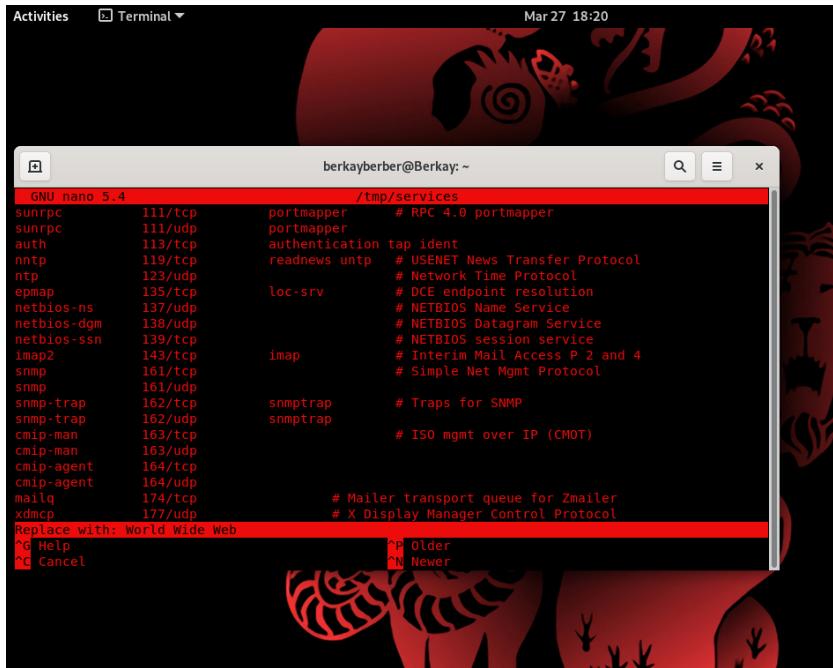
```
berkayberber@Berkay://home/berkayberber/universities124$ ./init-system-helpers:
changelog.gz copyright README.invoke-rc.d.gz README.policy-rc.d.gz
./students:
bachelor.txt Berkay1 Berkay5 classes
./students/Berkay1:
./students/Berkay5:
./students/classes:
Berkay3 Berkay4 linux.txt
./students/classes/Berkay3:
./students/classes/Berkay4:
berkayberber@Berkay://home/berkayberber/universities124$
```

Task3) cp /etc/services /tmp to copy the services directory into tmp

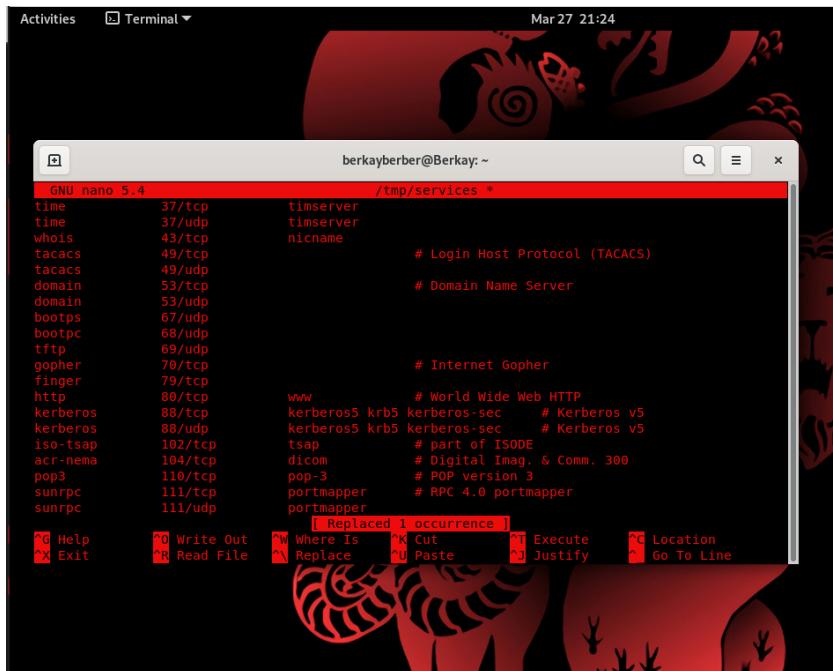
I was having Permission denied error to save after the replace. I tried several way to do it.

The command the helped me to work is: chmod 777 /tmp

And than I could go in the directory using nano /tmp/services than change and save it.



```
GNU nano 5.4          /tmp/services
sunrpc   111/tcp    portmapper      # RPC 4.0 portmapper
sunrpc   111/udp    portmapper      # RPC 4.0 portmapper
auth     113/tcp    authentication  # authentication tap ident
ntp      119/tcp    readnews untp   # USENET News Transfer Protocol
ntp      123/udp    loc-srv       # DCE endpoint resolution
epmap    135/tcp    loc-srv       # NETBIOS Name Service
netbios-ns 137/udp   netbios-ns   # NETBIOS Datagram Service
netbios-dgm 138/udp   netbios-dgm  # NETBIOS session service
netbios-ssn 139/tcp   netbios-ssn  # NETBIOS session service
imap2    143/tcp    imap          # Interim Mail Access P 2 and 4
snmp    161/tcp    snmp          # Simple Net Mgmt Protocol
snmp    161/udp   snmptrap      # Traps for SNMP
snmp-trap 162/tcp   snmptrap      # Traps for SNMP
snmp-trap 162/udp   snmptrap      # Traps for SNMP
cmip-man 163/tcp   cmip          # ISO mgmt over IP (CMOT)
cmip-man 163/udp   cmip          # ISO mgmt over IP (CMOT)
cmip-agent 164/tcp   cmip          # ISO mgmt over IP (CMOT)
cmip-agent 164/udp   cmip          # ISO mgmt over IP (CMOT)
mailq    174/tcp   mailq         # Mailer transport queue for Zmailer
xdmcp   177/udp   xdmcp         # X Display Manager Control Protocol
Replace with: World Wide Web
```



```
GNU nano 5.4          /tmp/services
time     37/tcp     timserver
time     37/udp     timserver
whois    43/tcp     nickname
tacacs   49/tcp     # Login Host Protocol (TACACS)
tacacs   49/udp
domain   53/tcp     # Domain Name Server
domain   53/udp
bootps   67/udp
bootpc   68/udp
tftp     69/udp
gopher   70/tcp     # Internet Gopher
finger   79/tcp
http     80/tcp     www          # World Wide Web HTTP
kerberos 88/tcp     kerberos5 krb5 kerberos-sec # Kerberos v5
kerberos 88/udp
iso-tsap 102/tcp    tsap         # part of ISODE
acr-nema 104/tcp    dicom        # Digital Imag. & Comm. 300
pop3     110/tcp    pop-3       # POP version 3
sunrpc   111/tcp    portmapper  # RPC 4.0 portmapper
sunrpc   111/udp   portmapper  # RPC 4.0 portmapper
[ Replaced 1 occurrence ]
G Help   F0 Write Out  W Where Is  CK Cut  ET Execute  LC Location
X Exit   FR Read File  R Replace  CP Paste  CJ Justify  GL Go To Line
```

At the above screen system shows in any case that the replaced 1 occurrence but wasn't allowing to save after all without the chmod 777 /tmp command.

There is below the prove of screenshot that I successfully changed.

```
GNU nano 5.4          /tmp/services
ssh      22/tcp      # SSH Remote Login Protocol
telnet   23/tcp
smtp    25/tcp      mail
time    37/tcp      timserver
time    37/udp      timserver
whois   43/tcp      nickname
tacacs  49/tcp      # Login Host Protocol (TACACS)
tacacs  49/udp
domain  53/tcp      # Domain Name Server
domain  53/udp
bootps  67/udp
bootpc  68/udp
tftp    69/udp
gopher  70/tcp      # Internet Gopher
finger  79/tcp
http    80/tcp      www # World Wide Web HTTP
kerberos 88/tcp      kerberos5 krb5 kerberos-sec # Kerberos V5
kerberos 88/udp
iso-tsap 1027/tcp    tlap # part of ISO9660
iso-tsap 1027/udp
pop3    110/tcp      pop-3 # POP version 3
sunrpc  111/tcp      portmapper # RPC 4.0 portmapper
sunrpc  111/udp
auth    113/tcp      authentication tap ident
nntp    119/tcp      readnews untp # USENET News Transfer Protocol
ntp     123/udp
```

```
berkayberber@berkay:~$ sudo nano /tmp/services
[sudo] password for berkayberber:
berkayberber is not in the sudoers file. This incident will be reported.
berkayberber@berkay:~$ su -
Password:
root@Berkay:~# sudo nano /tmp/services
root@Berkay:~# sudo su
root@Berkay:~# nano /tmp/services
root@Berkay:~# chmod 777 /tmp
root@Berkay:~# nano /tmp/services
root@Berkay:~# nano /tmp/services
root@Berkay:~#
```

There were a lot command but I didn't take their screenshots to make the photo look complex.

Simply chmod 777 /tmp command and than nano /tmp/services to show it changed.

Task 3.2) vi /tmp/services

/Text (Network services, Internet style) <Enter>

7dd (delete seven lines)

G (Go to the end of file)

P (and put it in the text)

Picture presented below.

```
Activities Terminal Mar 28, 16:28
You have the Auto capture keyboard option turned on. This will cause the Virtual Machine to automatically capture the keyboard every time the VM window is activated and make it unavailable to other applications running on your host machine.
berkayberber@Berkay:~
```

berkayberber@Berkay:/

berkayberber@Berkay://

```
zope-ftp      8021/tcp      # zope management by ftp
tproxy        8081/tcp      # Transparent Proxy
omniorb       8088/tcp      # OmniORB
clc-build-daemon 8990/tcp   # Common lisp build daemon
xinetd        9098/tcp
git           9418/tcp      # Git Version Control System
zope          9673/tcp      # zope server
webmin        10000/tcp
kamanda       10081/tcp     # amanda backup services (Kerberos)
amandalidx    10082/tcp     # amanda backup services
amidxtape     10083/tcp     # amanda backup services
sgi-cmsd      17001/udp    # Cluster membership services daemon
sgi-crsd      17002/udp
sgi-gcd       17003/udp    # SGI Group membership daemon
sgi-cad       17004/tcp    # Cluster Admin daemon
binkp         24554/tcp    # binkp fidonet protocol
asp           27374/tcp    # Address Search Protocol
asp           27374/udp
csync2        30865/tcp    # cluster synchronization tool
ircproxy      57000/tcp    # Detachable IRC Proxy
tfido         60177/tcp    # fidonet EMSI over telnet
fido         60179/tcp    # fidonet EMSI over TCP

# Network services, Internet style
#
# Updated from https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xhtml .
#
# New ports will be added on request if they have been officially assigned
# by IANA and used in the real-world or are needed by a debian package.
# If you need a huge list of used numbers please install the nmap package.
S
```

7dd long paragraph has been replaced to the end of the that file.

Task3.3)

I used “vi /tmp/services” to go into directory and than:

`:g/tcp/s//WHATEVER/g` command to change with WHATEVER

Activities Terminal ▾ Mar 27 22:22

```
berkayberber@Berkay: ~
```

```
nsca      5667/WHATEVER      # Nagios Agent - NSCA
canna     5680/WHATEVER      # cannaserver
syslog-tls 6514/WHATEVER      # Syslog over TLS [RFC5425]
sane-port 6566/WHATEVER      sane saned
ircd      6667/WHATEVER      # Internet Relay Chat
zope-ftp   8021/WHATEVER      # zope management by ftp
tproxy     8081/WHATEVER      # Transparent Proxy
omniORB    8088/WHATEVER      # OmniORB
clc-build-daemon 8990/WHATEVER # Common lisp build daemon
xinetd    9098/WHATEVER      #
git       9418/WHATEVER      # Git Version Control System
zope      9673/WHATEVER      # zope server
webmin    10000/WHATEVER      #
kamanda   10081/WHATEVER      # amanda backup services (Kerberos)
amandaidx 10082/WHATEVER      # amanda backup services
amioxtape 10083/WHATEVER      # amanda backup services
sgi-cmsd  17001/udp         # Cluster membership services daemon
sgi-crsd  17002/udp         #
sgi-gcd   17003/udp         # SGI Group membership daemon
sgi-cad   17004/WHATEVER      # Cluster Admin daemon
binkp     24554/WHATEVER      # binkp fidonet protocol
asp       27374/WHATEVER      # Address Search Protocol
asp       27374/udp          #
csync2    30865/WHATEVER      # cluster synchronization tool
ircproxy  57000/WHATEVER      # Detachable IRC Proxy
tfido     60177/WHATEVER      # fidonet EMSI over telnet
fido     60179/WHATEVER      # fidonet EMSI over TCP

# Local services
222 substitutions on 218 lines
```

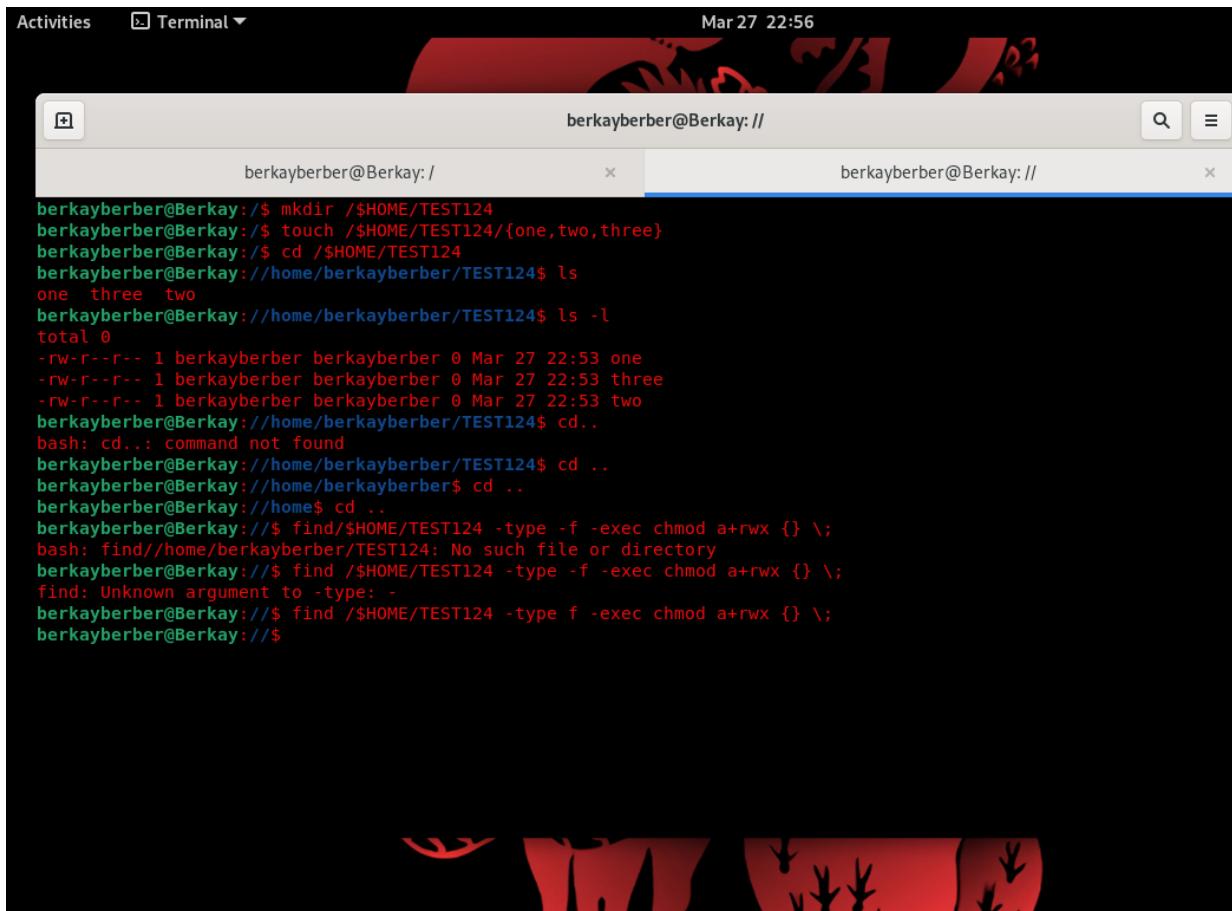
Task 3.4)

Activities Terminal ▾ Mar 27 22:43

```
berkayberber@Berkay: ~
```

```
berkayberber@Berkay:~$ find /etc -name passwd 2> /dev/null
/etc/passwd
/etc/pam.d/passwd
berkayberber@Berkay:~$
```

Task 3.5)



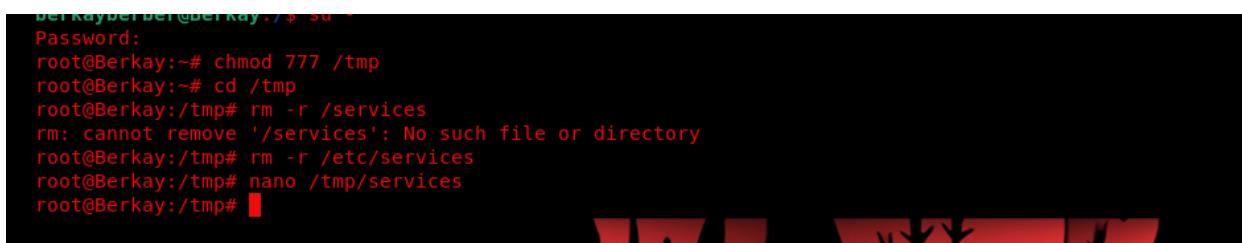
A screenshot of a Linux desktop environment showing a terminal window. The terminal title is "berkayberber@Berkay: //". The terminal content shows a user performing the following steps:

```
berkayberber@Berkay:~$ mkdir ~/TEST124
berkayberber@Berkay:~$ touch ~/TEST124/{one,two,three}
berkayberber@Berkay:~$ cd ~/TEST124
berkayberber@Berkay:~/home/berkayberber/TEST124$ ls
one three two
berkayberber@Berkay:~/home/berkayberber/TEST124$ ls -l
total 0
-rw-r--r-- 1 berkayberber berkayberber 0 Mar 27 22:53 one
-rw-r--r-- 1 berkayberber berkayberber 0 Mar 27 22:53 three
-rw-r--r-- 1 berkayberber berkayberber 0 Mar 27 22:53 two
berkayberber@Berkay:~/home/berkayberber/TEST124$ cd..
bash: cd..: command not found
berkayberber@Berkay:~/home/berkayberber/TEST124$ cd ..
berkayberber@Berkay:~/home/berkayberber$ cd ..
berkayberber@Berkay:~/home$ cd ..
berkayberber@Berkay:~/${HOME}/TEST124 -type f -exec chmod a+rwx {} \;
bash: find:/${HOME}/TEST124: No such file or directory
berkayberber@Berkay:~/${HOME}/TEST124 -type f -exec chmod a+rwx {} \;
find: Unknown argument to -type: -
berkayberber@Berkay:~/${HOME}/TEST124 -type f -exec chmod a+rwx {} \;
berkayberber@Berkay://$
```

In order to remove the copied /etc/services file into /tmp, first chmod 777 /tmp

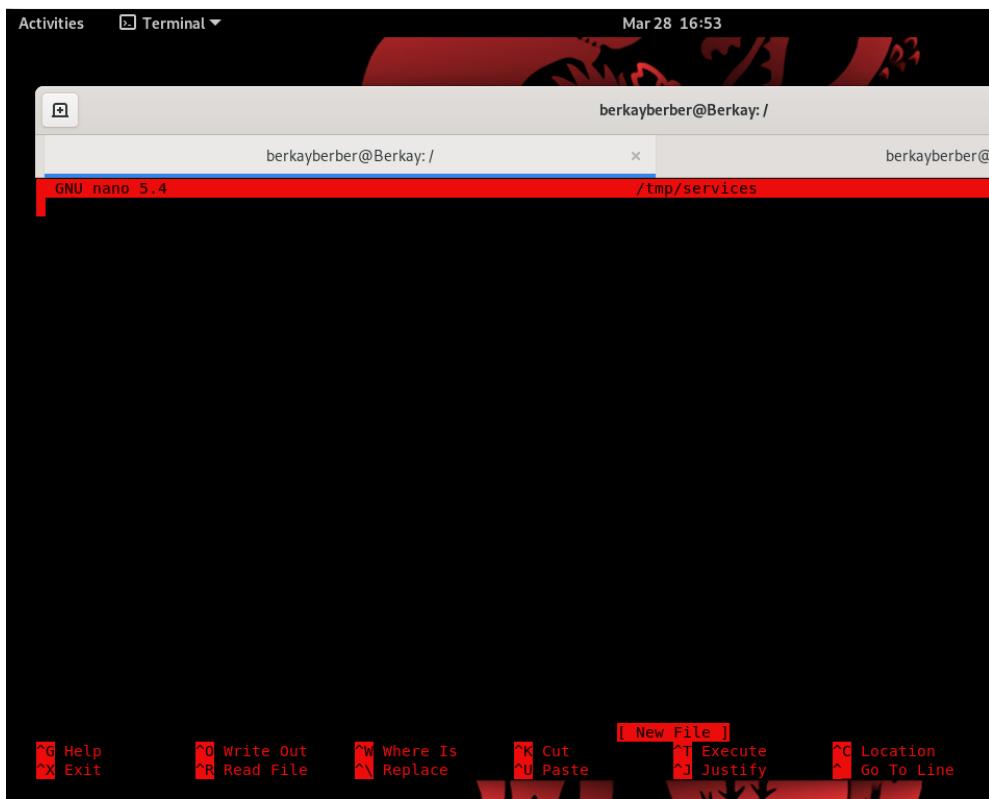
Permission given. And than in the /tmpdirectory used rm -r /etc/services command to delete the copied directory.

Point1 = after given permission used rm -r command in /tmpdirectory to delete the copied /etc/services directory.



A screenshot of a Linux terminal window showing a user with root privileges performing the following steps:

```
berkayberber@Berkay:~$ su -
Password:
root@Berkay:~# chmod 777 /tmp
root@Berkay:~# cd /tmp
root@Berkay:/tmp# rm -r /services
rm: cannot remove '/services': No such file or directory
root@Berkay:/tmp# rm -r /etc/services
root@Berkay:/tmp# nano /tmp/services
root@Berkay:/tmp#
```



Point 2 done