Task 1

```
root@debianlab:~# journalctl -f
-- Logs begin at Wed 2021-04-14 10:33:25 CEST. --
Apr 14 10:37:31 debianlab org.gnome.Shell.desktop[940]: libinput error: client bug: timer event
4 debounce: offset negative (-12ms)
Apr 14 10:37:31 debianlab org.gnome.Shell.desktop[940]: libinput error: client bug: timer event
4 debounce short: offset negative (-26ms)
Apr 14 10:37:32 debianlab org.gnome.Shell.desktop[940]: libinput error: client bug: timer event
4 debounce short: offset negative (-4ms)
Apr 14 10:37:48 debianlab systemd[1]: systemd-hostnamed.service: Succeeded.
Apr 14 10:38:29 debianlab anacron[449]: Job `cron.daily' started
Apr 14 10:38:29 debianlab anacron[2386]: Updated timestamp for job `cron.daily' to 2021-04-14
Apr 14 10:38:29 debianlab cracklib[2406]: no dictionary update necessary.
Apr 14 10:38:30 debianlab anacron[449]: Job `cron.daily' terminated
Apr 14 10:38:55 debianlab su[2468]: (to root) illia on pts/0
Apr 14 10:38:55 debianlab su[2468]: pam_unix(su-l:session): session opened for user root by (ui
d=1000)
```

```
root@debianlab:~# PATH="/sbin:$PATH"
root@debianlab:~# command -v fdisk
/sbin/fdisk
```

```
root@debianlab:~# fdisk -c -u -l /dev/sdb
Disk /dev/sdb: 14.4 GiB, 15502147584 bytes, 30277632 sectors
Disk model: DataTraveler 3.0
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: F4A81DE7-5DAB-4CD5-8659-46DEED153E2F

Device      Start      End  Sectors  Size Type
/dev/sdb1    2048 30275583 30273536 14.4G Microsoft basic data
root@debianlab:~# fdisk -l /dev/sdb
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Device      Start      End  Sectors  Size Type
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```
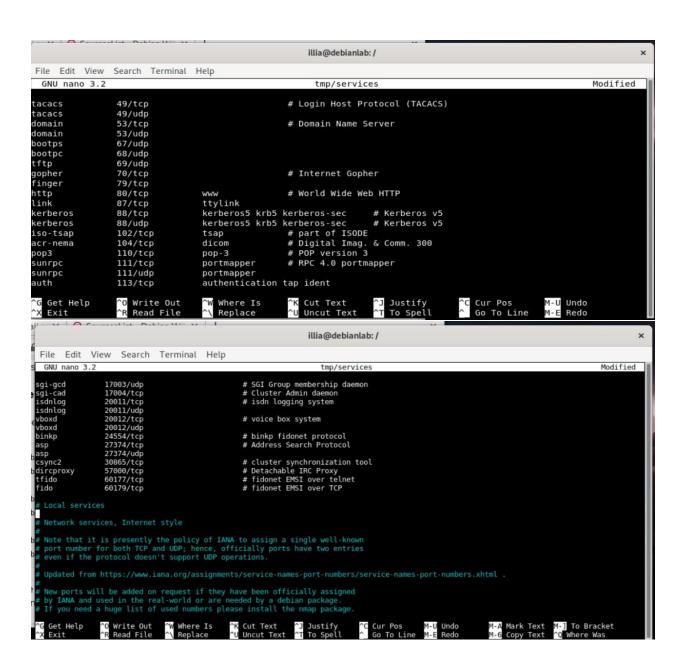
```
root@debianlab:~# fdisk /dev/sdb

Welcome to fdisk (util-linux 2.33.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.


Command (m for help): d
No partition is defined yet!

Command (m for help): w

The partition table has been altered.
Syncing disks.

root@debianlab:~# ^C
root@debianlab:~# partprobe /dev/sdb
Error: Partition(s) 1 on /dev/sdb have been written, but we have been unable to inform the kern
el of the change, probably because it/they are in use.  As a result, the old partition(s) will
remain in use.  You should reboot now before making further changes.
```

illia@debianlab: ~   ✕

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```
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 number (1-128, default 1): 1
First sector (34-30277598, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-30277598, default 30277598): +100M

Created a new partition 1 of type 'Linux filesystem' and of size 100 MiB.

Command (m for help): n
Partition number (2-128, default 2): 2
First sector (206848-30277598, default 206848):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (206848-30277598, default 30277598): +200M

Created a new partition 2 of type 'Linux filesystem' and of size 200 MiB.

Command (m for help): n
Partition number (3-128, default 3): 3
First sector (616448-30277598, default 616448):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (616448-30277598, default 30277598): +500M

Created a new partition 3 of type 'Linux filesystem' and of size 500 MiB.

Command (m for help): t
Partition number (1-3, default 3): 2
Partition type (type L to list all types): 82

Changed type of partition 'Linux filesystem' to 'VMware Virtual SAN'.

Command (m for help): t
Partition number (1-3, default 3): 3
Partition type (type L to list all types): 8e
```

```
root@debianlab:~# partprobe /dev/sdc
root@debianlab:~# grep sdc /proc/partitions
   8       32    15138816 sdc
   8       33      102400 sdc1
   8       34      204800 sdc2
   8       35      512000 sdc3
```

```
root@debianlab:~# dd if=/dev/zero of=/dev/sdc1 bs=512 count=10000
10000+0 records in
10000+0 records out
5120000 bytes (5.1 MB, 4.9 MiB) copied, 13.426 s, 381 kB/s
root@debianlab:~# mkfs -t ext4 -L data /dev/sdc1
mke2fs 1.44.5 (15-Dec-2018)
Creating filesystem with 102400 1k blocks and 25688 inodes
Filesystem UUID: fdd435df-988b-443c-a3ee-e7d8c4e374ec
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@debianlab:~# mkdir /mnt/mypart
root@debianlab:~# mount -t ext4 /dev/sdc1 /mnt/mypart
root@debianlab:~#
Device        Start       End Sectors   Size Type
/dev/sdb1      2048    206847  204800   100M Linux filesystem
/dev/sdb2    206848    616447  409600   200M VMware Virtual SAN
/dev/sdb3    616448   1640447 1024000   500M Linux filesystem

Command (m for help): ^Z
[1]+  Stopped                 fdisk /dev/sdb
root@debianlab:~# mkswap /dev/sdb2
Setting up swapspace version 1, size = 200 MiB (209711104 bytes)
no label, UUID=a69f140a-8730-4365-93ab-72f83a3b7241
root@debianlab:~# swapon /dev/sdb2
root@debianlab:~#
```

```
root@debianlab:~# pvcreate /dev/sdb3
  Physical volume "/dev/sdb3" successfully created.
root@debianlab:~# vgcreate  abc /dev/sdb3
  Volume group "abc" successfully created
root@debianlab:~# lvcreate -n data -L 200M abc
  Logical volume "data" created.
root@debianlab:~# mkfs -t vfat /dev/mapper/abc-data
mkfs.fat 4.1 (2017-01-24)
root@debianlab:~# mkdir /mnt/test
root@debianlab:~# mount /dev/mapper/abc-data/mnt/test
mount: /dev/mapper/abc-data/mnt/test: can't find in /etc/fstab.
root@debianlab:~# mount /dev/mapper/abc-data /mnt/test
root@debianlab:~#
```

```
root@debianlab:~# umount /dev/sdb1
root@debianlab:~# umount /dev/sdb2
umount: /dev/sdb2: not mounted.
root@debianlab:~# swapoff /dev/sdb2
root@debianlab:~# umount /mnt/test
umount: /mnt/test: not mounted.
root@debianlab:~# 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@debianlab:~# vgremove abc
  Volume group "abc" successfully removed
root@debianlab:~# pvremove /dev/sdb3
  Labels on physical volume "/dev/sdb3" successfully wiped.
```

Task 2

```
illia@debianlab:~$ mkdir projects
illia@debianlab:~$ cd projects/
illia@debianlab:~/projects$ touch house1
illia@debianlab:~/projects$ touch house2
illia@debianlab:~/projects$ touch house3
illia@debianlab:~/projects$ touch house4
illia@debianlab:~/projects$ touch house5
illia@debianlab:~/projects$ touch house6
illia@debianlab:~/projects$ touch house7
illia@debianlab:~/projects$ touch house8
illia@debianlab:~/projects$ touch house9
illia@debianlab:~/projects$ ls
house1   house2   house3   house4   house5   house6   house7   house8   house9
illia@debianlab:~/projects$ ls house*
house1   house2   house3   house4   house5   house6   house7   house8   house9
illia@debianlab:~/projects$ ls house4
house4
illia@debianlab:~/projects$ ls house*
house1   house2   house3   house4   house5   house6   house7   house8   house9
illia@debianlab:~/projects$
```

```
illia@debianlab:~/projects$ mkdir $HOME/projects/houses/doors
mkdir: cannot create directory '/home/illia/projects/houses/doors': No such file or directory
illia@debianlab:~/projects$ cd ..
illia@debianlab:~$ mkdir $HOME/projects/houses/doors
mkdir: cannot create directory '/home/illia/projects/houses/doors': No such file or directory
illia@debianlab:~$ mkdire projects/houses
bash: mkdire: command not found
illia@debianlab:~$ mkdir projects/houses
illia@debianlab:~$ cd projects/houses
illia@debianlab:~/projects/houses$ ls
illia@debianlab:~/projects/houses$ mkdir doors
illia@debianlab:~/projects/houses$ ls
doors
illia@debianlab:~/projects/houses$ cd doors
illia@debianlab:~/projects/houses/doors$ cd $HOME
illia@debianlab:~$ ls
bin  Desktop  Documents  Downloads  Music  Pictures  projects  Public  Templates  Videos
illia@debianlab:~$ touch projects/houses/bungalow.txt
illia@debianlab:~$ touch projects/houses/bifold.txt
illia@debianlab:~$ touch projects/houses/bungalow.txt
```

```
illia@debianlab:~$ ls
bin  Desktop  Documents  Downloads  Music  Pictures  projects  Public  Templates  Videos
illia@debianlab:~$ touch projects/houses/bungalow.txt
illia@debianlab:~$ touch projects/houses/bifold.txt
illia@debianlab:~$ touch projects/houses/bungalow.txt
illia@debianlab:~$ touch projects/houses/doors/bifold.txt
illia@debianlab:~$ touch projects/outdoors/vegetation/landscape.txt
touch: cannot touch 'projects/outdoors/vegetation/landscape.txt': No such file or directory
illia@debianlab:~$ mkdir projects/outdoors
illia@debianlab:~$ mkdir projects/outdoors/vegetation
illia@debianlab:~$ touch projects/outdoors/vegetation/landscape.txt
illia@debianlab:~$ cp projects/house1 $HOME/projects/houses
illia@debianlab:~$ cp projects/house5 $HOME/projects/houses
illia@debianlab:~$
```

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```
illia@debianlab:/usr/share/doc/init$ cp -R /usr/share/doc/init* $HOME/projects/
illia@debianlab:/usr/share/doc/init$ ls -R $HOME/projects
/home/illia/projects:
house1   house3   house5   house7   house9   init                initramfs-tools-core   outdoors
house2   house4   house6   house8   houses   initramfs-tools     init-system-helpers

/home/illia/projects/houses:
bifold.txt   bungalow.txt   doors   house1   house5

/home/illia/projects/houses/doors:
bifold.txt

/home/illia/projects/init:
changelog.gz   copyright

/home/illia/projects/initramfs-tools:
changelog.gz   copyright   NEWS.Debian.gz   TODO

/home/illia/projects/initramfs-tools-core:
changelog.gz   copyright   examples   NEWS.Debian.gz

/home/illia/projects/initramfs-tools-core/examples:
example_hook   example_script   framebuffer   modules
```

```
illia@debianlab:~/projects$ ls
house1    house3    house5    house7    house9    init
house2    house4    house6    house8    houses    initramfs-tools
illia@debianlab:~/projects$ rm -f house6 house7 house8
illia@debianlab:~/projects$
```

```
illia@debianlab:~/projects$ mv house3 $HOME/projects/houses/doors
illia@debianlab:~/projects$ mv house4 $HOME/projects/houses/doors
illia@debianlab:~/projects$
```

Task 3

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```
  GNU nano 3.2                              tmp/services                              Modified

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
link              87/tcp          ttylink
kerberos          88/tcp          kerberos5 krb5 kerberos-sec      # Kerberos v5
kerberos          88/udp          kerberos5 krb5 kerberos-sec      # Kerberos v5
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
auth              113/tcp         authentication tap ident

^G Get Help     ^O Write Out    ^W Where Is     ^K Cut Text     ^J Justify      ^C Cur Pos      M-U Undo
^X Exit         ^R Read File    ^\ Replace      ^U Uncut Text   ^T To Spell     ^  Go To Line   M-E Redo
```

File   Edit   View   Search   Terminal   Help

```
  GNU nano 3.2                              tmp/services                              Modified

sgi-gcd           17003/udp       # SGI Group membership daemon
sgi-cad           17004/tcp       # Cluster Admin daemon
isdnlog           20011/tcp       # isdn logging system
isdnlog           20011/udp
vboxd             20012/tcp       # voice box system
vboxd             20012/udp
binkp             24554/tcp       # binkp fidonet protocol
asp               27374/tcp       # Address Search Protocol
asp               27374/udp
csync2            30865/tcp       # cluster synchronization tool
dircproxy         57000/tcp       # Detachable IRC Proxy
tfido             60177/tcp       # fidonet EMSI over telnet
fido              60179/tcp       # fidonet EMSI over TCP

# Local services

# Network services, Internet style
#
# Note that it is presently the policy of IANA to assign a single well-known
# port number for both TCP and UDP; hence, officially ports have two entries
# even if the protocol doesn't support UDP operations.
#
# 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.

^G Get Help     ^O Write Out    ^W Where Is     ^K Cut Text     ^J Justify      ^C Cur Pos      M-U Undo      M-A Mark Text   M-] To Bracket
^X Exit         ^R Read File    ^\ Replace      ^U Uncut Text   ^T To Spell     ^  Go To Line   M-E Redo      M-6 Copy Text   ^Q Where Was
```

```
illia@debianlab:/$ ls
bin   dev  home           initrd.img.old  lib32  libx32      media  opt   root  sbin  sys  usr  vmlinuz
boot  etc  initrd.img  lib             lib64  lost+found  mnt    proc  run   srv   tmp  var  vmlinuz.old
illia@debianlab:/$ cp /etc/services /tmp
illia@debianlab:/$ nano tmp
illia@debianlab:/$ nano tmp/services
illia@debianlab:/$ ex /tmp/services
illia@debianlab:/$ ex /tmp/services
illia@debianlab:/$ cd $HOME
illia@debianlab:~$ mkdir TEST
illia@debianlab:~$ cd TEST
illia@debianlab:~/TEST$ touch one
illia@debianlab:~/TEST$ touch two
illia@debianlab:~/TEST$ touch thre
illia@debianlab:~/TEST$ touch three
illia@debianlab:~/TEST$ rm thre
illia@debianlab:~/TEST$ chmod 777 one
illia@debianlab:~/TEST$ chmod 777 two
illia@debianlab:~/TEST$ chmod 777 three
illia@debianlab:~/TEST$ find
.
./two
./one
./three
illia@debianlab:~/TEST$ cd ..
illia@debianlab:~$ cd $HOME
illia@debianlab:~$ find -perm 777
././.mozilla/firefox/rmhm9s8o.default-esr/lock
./TEST/two
./TEST/one
./TEST/three
illia@debianlab:~$
```