ANNEX A · PRACTICAL 4.4 — THREE DOORS FOR THREE ROOMS

NAME _____ **DATE** _____

Yesterday the second disk of **Tramuntana Apps** got three file systems. Nobody can use them yet. Today you give each one a place in the tree — and make two of them stay there. Work in the **Terminal** of `deb-lab`. In this sheet the disk is `vdb`: if yours has another letter, use yours everywhere.

TASKS 1–4 · 22 MIN

TASK 1 Find the three rooms

```
lsblk -f
```

My second disk is: _____

	FSTYPE	LABEL	UUID (first 4 characters)
…1			
…2			
…3			

Is anything written under MOUNTPOINTS for them? _____

DONE WHEN three lines, three different file systems.

TASK 2 Mount dev by hand

```
sudo mkdir -p /srv/tramuntana/dev
sudo touch /srv/tramuntana/dev/i-was-here.txt
ls /srv/tramuntana/dev
```

You made the mount point and left a note inside. Now mount, and look again:

```
sudo mount /dev/vdb1 /srv/tramuntana/dev
ls -a /srv/tramuntana/dev
findmnt /srv/tramuntana/dev
df -h /srv/tramuntana/dev
```

What does `ls -a` show now? Where is your note?

_____

_____

Size: _____ Used: _____ Avail: _____

DONE WHEN `findmnt` answers with one line that has your partition under SOURCE.

TASK 3 Unmount it

```
cd /srv/tramuntana/dev
sudo umount /srv/tramuntana/dev
```

Copy the error message:

_____

```
cd ~
sudo umount /srv/tramuntana/dev
ls /srv/tramuntana/dev
findmnt /srv/tramuntana/dev
```

Why did it fail the first time? What does `ls` show now?

_____

_____

DONE WHEN your note is back and `findmnt` prints nothing.

TASK 4 The exchange stick

`EXCHANGE` is the room every system can read. Use it like a USB stick: mount, copy, unmount.

```
sudo mkdir /mnt/exchange
sudo mount /dev/vdb3 /mnt/exchange
df -hT /mnt/exchange
sudo cp ~/tramuntana-share/admin/staff.csv \
  /mnt/exchange/
ls -l /mnt/exchange
sudo umount /mnt/exchange
ls /mnt/exchange
```

The `\` at the end of a line means "the command goes on". Type: _____ Where is `staff.csv` after the last command?

_____

DONE WHEN the last `ls` shows nothing: the stick is "safely removed".

TASKS 5–7 · 25 MIN

TASK 5 Two identities

```
sudo blkid /dev/vdb1 /dev/vdb2
```

You need the **UUID** (not the PARTUUID) of both. Do not copy them by hand: in the next task select with the mouse, Ctrl+Shift+C copies, Ctrl+Shift+V pastes.

DONE WHEN you can point at both UUIDs on your screen: 36 characters, 8-4-4-4-12.

TASK 6 Write them in the table

```
sudo mkdir /srv/tramuntana/design
sudo cp /etc/fstab /etc/fstab.bak
sudo nano /etc/fstab
```

Add **two lines at the end**, each with **its own** UUID. Six fields, separated by spaces:

```
UUID=uuid-of-1 /srv/tramuntana/dev ext4 defaults,nofail 0 2
UUID=uuid-of-2 /srv/tramuntana/design xfs defaults,nofail 0 2
```

Save with Ctrl+O, Enter. Leave with Ctrl+X. Then test **before** any reboot:

```
sudo findmnt --verify
sudo systemctl daemon-reload
sudo findmnt --verify
sudo mount -a
findmnt /srv/tramuntana/dev
findmnt /srv/tramuntana/design
```

Last line of the second `findmnt --verify`:

_____

DONE WHEN it says `Success, no errors or warnings detected` and both `findmnt` show a mount. If not: fix the line, do not reboot.

TASK 7 The real test

```
sudo reboot
```

Log in again, open the Terminal:

```
findmnt /srv/tramuntana/dev
findmnt /srv/tramuntana/design
sudo chown -R $USER: /srv/tramuntana
touch /srv/tramuntana/dev/test.txt
ls -l /srv/tramuntana/dev
```

`chown` makes you the owner, so you can write there without `sudo` (Unit 5 explains it). Owner of `test.txt`: _____

DONE WHEN both rooms were mounted **without you typing** `mount`, and `touch` worked without `sudo`.

TASKS 8–9 · 15 MIN

TASK 8 Fill them and measure them

Move the work of the two teams into their rooms, and add a 300 MB video made of random bytes:

```
cp -r ~/tramuntana-share/dev/* \
  /srv/tramuntana/dev/
cp -r ~/tramuntana-share/design/* \
  /srv/tramuntana/design/
df -hT /srv/tramuntana/dev /srv/tramuntana/design
cd /srv/tramuntana/design
head -c 300M /dev/urandom > campaign.mp4
df -hT /srv/tramuntana/dev /srv/tramuntana/design
du -sh /srv/tramuntana/*
```

Used in `design` before the video: _____ after: _____

`du` says: dev _____ design _____

Which command told you **how full** a file system is? _____ And **who** filled it? _____

DONE WHEN four numbers, and you can name the file that weighs the most.

TASK 9 Find the hog

The system disk fills up one day. Where do you look? Measure one level of `/usr` and sort by size:

```
sudo du -h --max-depth=1 /usr | sort -h
```

`sort -h` puts the biggest at the bottom. The two biggest folders inside `/usr`:

_____

DONE WHEN you wrote two folders with their sizes.

Hand in on Classroom, by Monday 01/02 at 23:59: `practical-4.4-surname.md`, with the report template. One section per task: the command, the evidence (copied text or a screenshot) and one sentence in your own words. Include your two lines of `/etc/fstab` and explain the six fields of one of them.

Marking (10): tasks 1–4 with evidence 3 · tasks 5–7: correct lines, both checks, proof after reboot 4 · tasks 8–9 with evidence 2 · clear Markdown, your own words 1.

EXIT TICKET

1. What does mounting a file system do?

- ☐ **A** Copies its files into a folder of the system disk
- ☐ **B** Attaches it to a directory of the tree, so you can reach it
- ☐ **C** Creates a new, empty file system on the partition
- ☐ **D** Gives the disk a drive letter like `D:`

2. Why does `/etc/fstab` use `UUID=...` instead of `/dev/vdb1`?

- ☐ **A** It is shorter to type
- ☐ **B** It makes the disk faster
- ☐ **C** It stays the same when disks are added or removed
- ☐ **D** It encrypts the disk

3. What does the option `nofail` do?

- ☐ **A** If the disk is missing, the system still boots
- ☐ **B** The disk can never fail
- ☐ **C** Errors on the disk are repaired at boot
- ☐ **D** The disk is mounted read-only

4. Which command tells you how big **one folder** is?

- ☐ **A** `df -h`
- ☐ **B** `lsblk -f`
- ☐ **C** `findmnt`
- ☐ **D** `du -sh`

5. Joan saved photos in `/srv/tramuntana/design` while the partition was **not** mounted. Then it is mounted there. The photos…

- ☐ **A** are deleted for ever
- ☐ **B** are on the system disk, hidden under the mount point
- ☐ **C** are copied to the new partition
- ☐ **D** break the file system of the partition