Lab 7 Manage Local Storage

Part I– Check your file system

Step 1. Execute the ls /dev/sd* command to see the current hard disk devices.

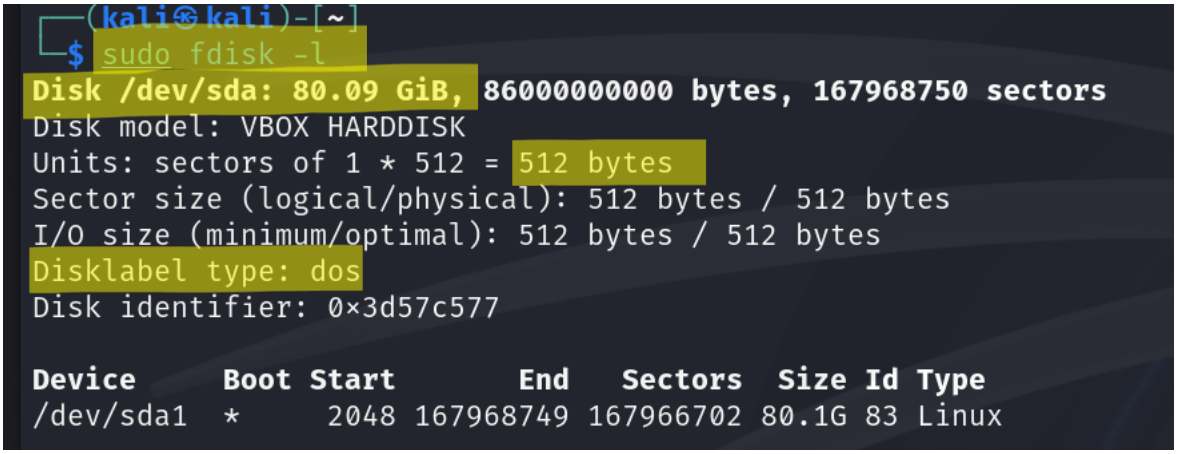
Explanation: I use the command **sudo ls /dev/sd*** required by the lab to list my block stage devices, including hard disks & partitions, in my system.

Screenshot:


Step 2. Execute the fdisk -l command to list the current hard disk partitions.

Explanation: Still using **sudo** command as required by the lab, followed by command **fdisk -l** to display in detail info about my partitions on the storage devices in my system that are findable at this point.

Screenshot:




Step 3. Execute the parted -l command to list the current hard disk partition table.

Explanation: Still using **sudo** command as required by the lab, followed by command **parted -l** to output the partition tables and their structure for the connected drives.

Screenshot:

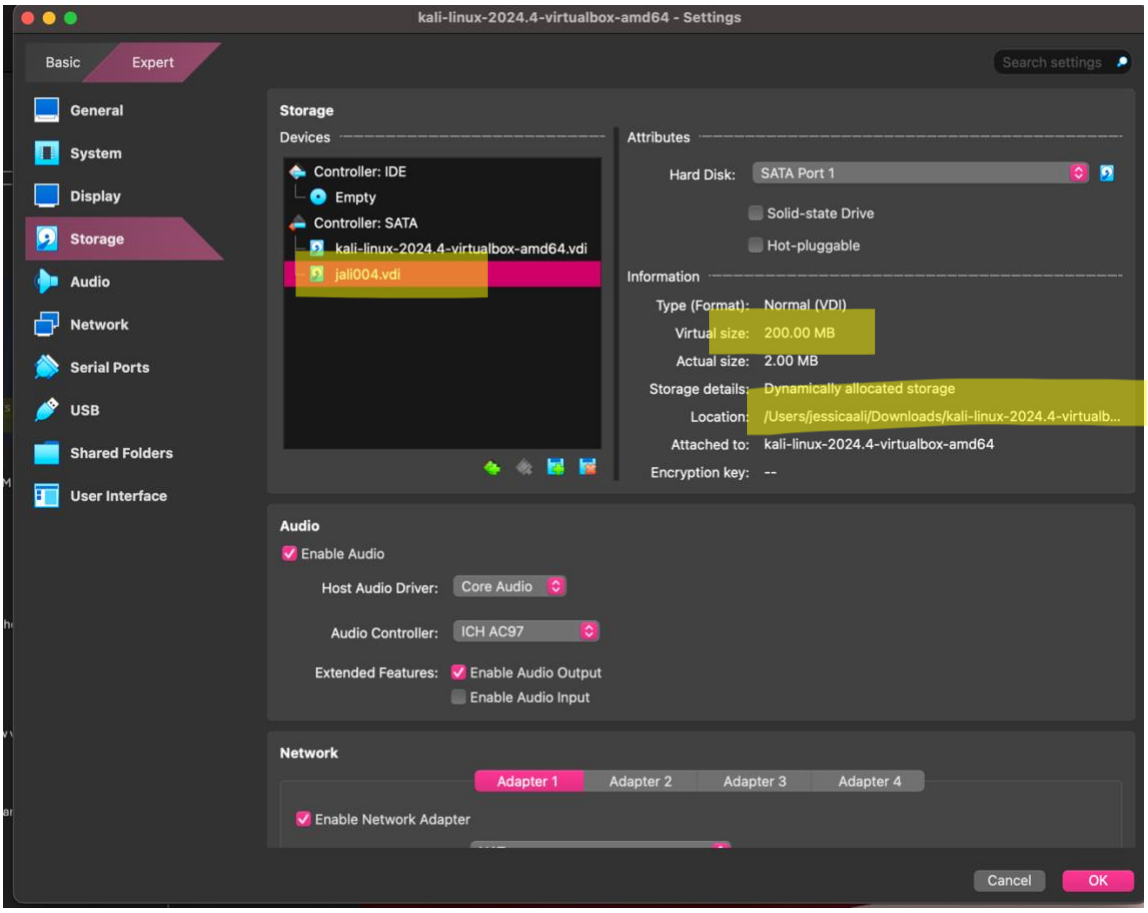
```
┌──(kali㉿kali)-[~]
└─$ sudo parted -l
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sda: 86.0GB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

Number  Start   End     Size    Type     File system  Flags
 1      1049kB  86.0GB  86.0GB  primary  ext4         boot
```

Part II– Create a new virtual disk

Step 1. In the VM setting, attach a new virtual hard disk with the size of 200 MB to our current Linux VM. Name it as “your_midas.vdi”

Explanation: I add a new 200MB v/m from my Virtual Box GUI by setting the size, name (I use **jali004** here as required by the lab), path, etc.
Screenshot:



Step 2. Load this virtual hard disk to your virtual machine.

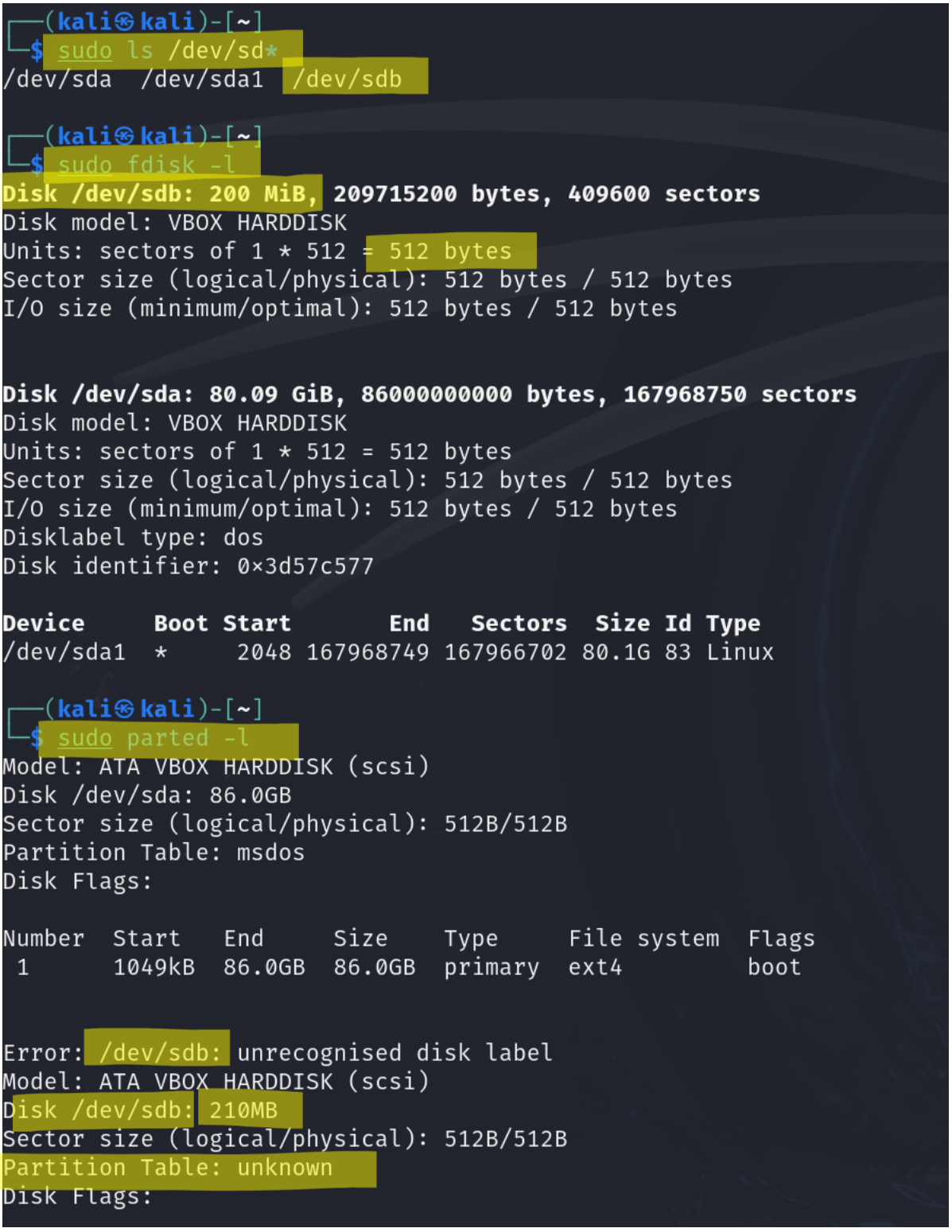
Explanation: I use command **sudo** followed by **ls /dev/sd*** to check if my new disk is recognized. It is, notice the 3rd output, **/dev/sdb.**

Screenshot:


Step 3. Repeat the steps in Part I and highlight the differences after adding the new virtual hard disk.

Explanation: I use commands as follows **sudo ls dev/ sd*** , **sudo fdisk -l** , and end with **sudo parted -l**. To summarize, there is an /dev/sdb, a new disk entry of 200 Mib w/o partitions, and lastly the inclusion of a new /dev/sdb with an unknown partition table. Which means it is ready to be setup. You can find the screenshot on the next page for a visual summary required by the lab. It is important to note moving forward the new device name is /dev/sdb and will not display as the filename jali004.vdi. The file name was just what VirtualBox uses to store the virtual disk on my Mac. Screenshot can be found on the next page.

Screenshot:

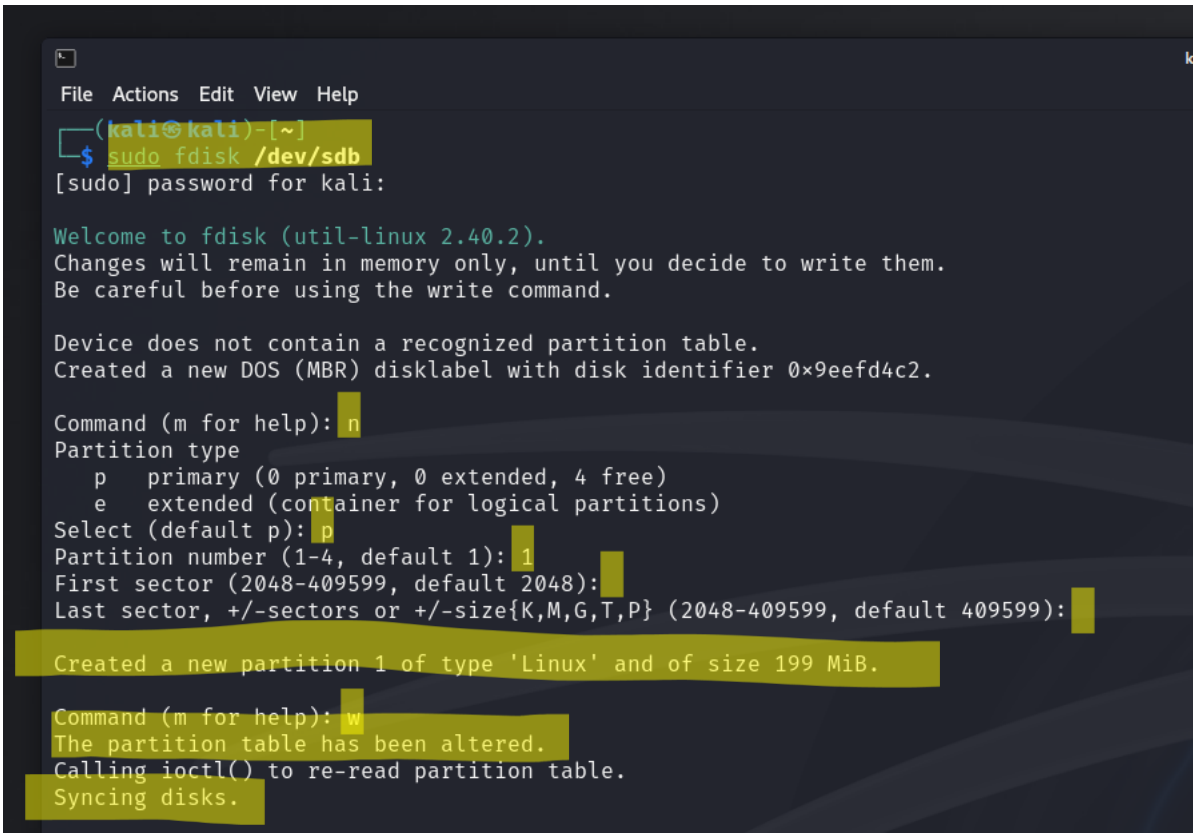

┌──(kali㉿kali)-[~]
└─$ sudo ls /dev/sd*
/dev/sda  /dev/sda1  /dev/sdb
┌──(kali㉿kali)-[~]
└─$ sudo fdisk -l
Disk /dev/sdb: 200 MiB, 209715200 bytes, 409600 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk /dev/sda: 80.09 GiB, 86000000000 bytes, 167968750 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: dos
Disk identifier: 0x3d57c577
Device Boot Start End Sectors Size Id Type
/dev/sda1 * 2048 167968749 167966702 80.1G 83 Linux
┌──(kali㉿kali)-[~]
└─$ sudo parted -l
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sda: 86.0GB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:
Number Start End Size Type File system Flags
1 1049kB 86.0GB 86.0GB primary ext4 boot
Error: /dev/sdb: unrecognised disk label
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sdb: 210MB
Sector size (logical/physical): 512B/512B
Partition Table: unknown
Disk Flags:

Part III– Creating Partitions and Filesystems

Step 1. Use the fdisk command to create a new primary partition on the new virtual hard disk attached in Part II.

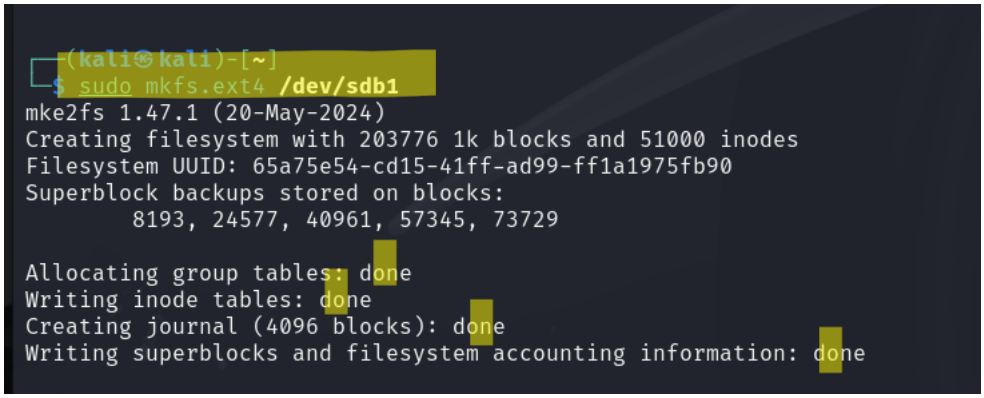
Explanation: I use command **sudo fdisk /dev/sbd** to enter into the new virtual hard disk and create a partition. Once inside fdisk, I press **n** to create a new partition, followed by **p** to make it primary, followed by **1** to allocate a partition number, I press enter to accept the default first sector, I press **enter** again to accept the default last sector, then press **enter** again to create the new partition followed by **w** to confirm the write changes.

Screenshot:



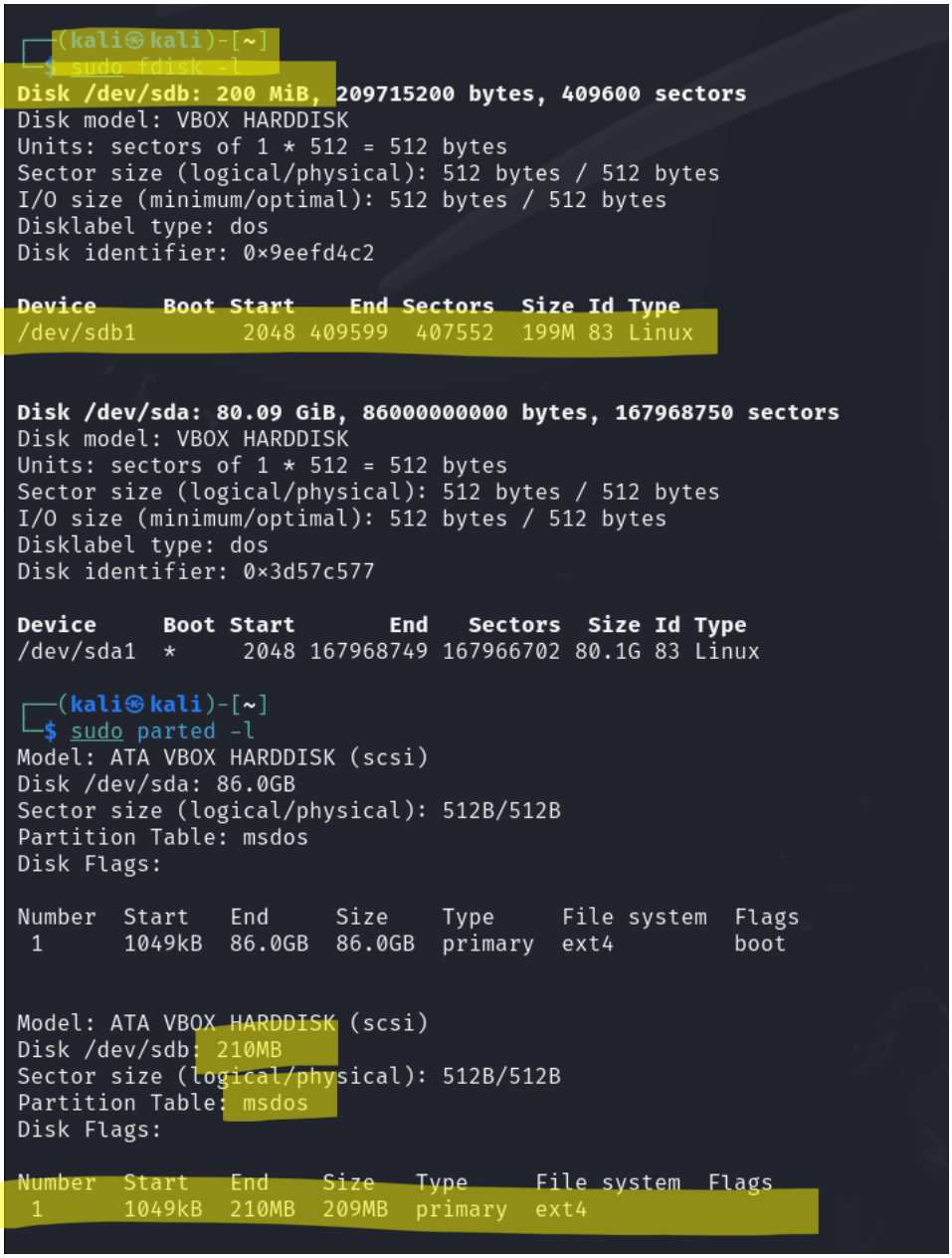

Step 2. Use the correct command to create an ext4 filesystem on the new partition.
Explanation: It is important to note that I am working with /dev/sdb1 because I am referring to the first partition on /dev/sdb. I use command **sudo mkfs.ext4** followed by what I am altering **/dev/sdb1**. Sceenshot can be found on the next page.

Screenshot:




Step 3. Repeat the steps in Part I and highlight the differences.
Explanation: I use command **sudo fdisk -l** and then **sudo parted -l** to list out in detail so I can compare. Before there were no partions lksted under my /dev/sdb but now there are. The partion size now cotains around 200 MB. I also see in my -l output that there is a partion listed as 1 under my /dev/sdb. Revealing a formatted ext4 partition on my disk. Screenshot can be found on the next page.

Screenshot:




Step 4. Make a new directory named /cyse. And mount the new partition under this directory.

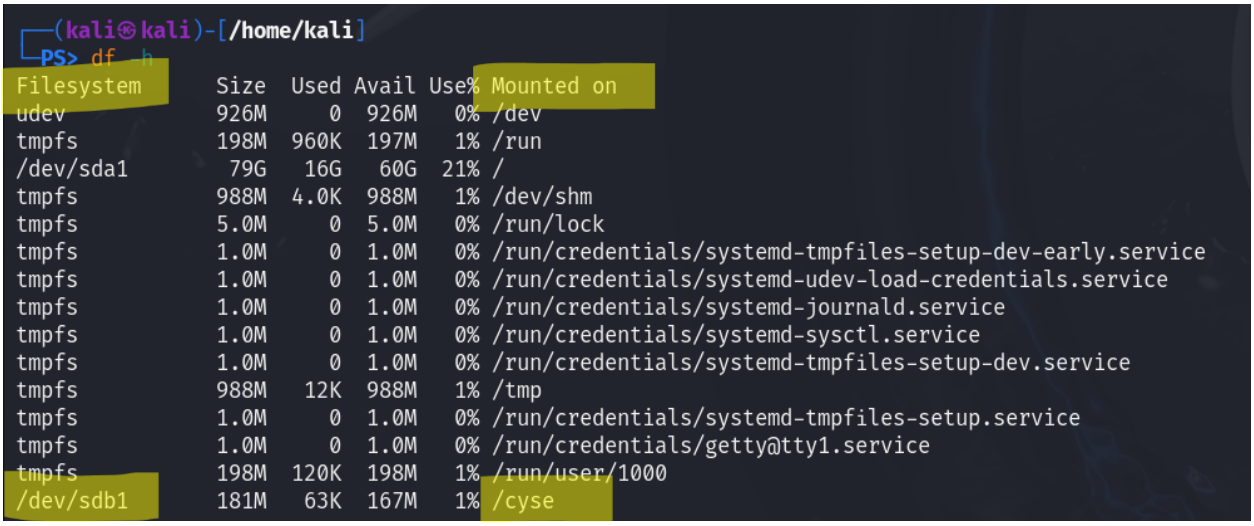
Explanation: I use command **sudo mkdir** followed by what is required by the lab **/cyse**. I use the command **sudo mount /dev/sdb1 /cyse** to allow accessibility to the partition through the /cyse directory. Screenshot is found on the following page.

Screenshot:


Step 5. Use the df command to check the mounting point of the new partition.

Explanation: I use command **df -h** to display that I correctly executed step 4. I did as seen in the last line of the screen shot below. My file system and where it is mounted are all correct.

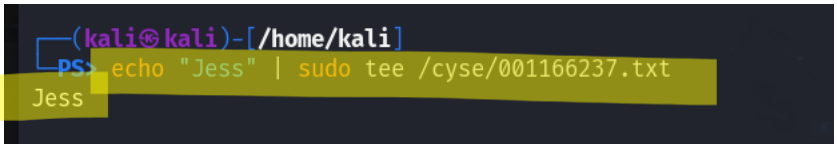
Screenshot:




Step 6. Create a new file named for YourMIDAS.txt (replace YourMIDAS with your MIDAS ID) in the directory /cyse and put your name in that file.

Explanation: I use the command **echo** followed by my name for an ouput, then a pipe, followed by **sudo tee** to create the file and define where it will be. I do this to demonstrate that the partition created for the lab to verify it is writable.

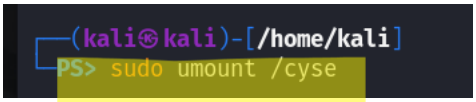
Screenshot:



Step 7. Unmount /cyse directory.

Explanation: I use command **sudo unmount** followed by the directory **cyse** because it is required by the lab. I am unmounting the partition from the mount point and safely disconnecting it from my file system.

Screenshot:




Step 8. Check the contents in /cyse directory. What do you find?

Explanation: I use command **ls /cyse** to confirm the directory is empty because the partition was unmounted. I do not have access to this directory anymore and I can not see the file I previously created within directory cyse.

Screenshot: