

Part I– Check your file system (30 points)

Step 1: I executed the **sudo ls /dev/sd*** command which displays all current hard disk devices.

```
(jasmin㉿Kali)-[~]
$ sudo ls /dev/sd*
/dev/sda  /dev/sda1  /dev/sda2  /dev/sda5
```

Step 2: I executed the **sudo fdisk -l** command which is used to list the current hard disk partitions.

```
(jasmin㉿Kali)-[~]
$ sudo fdisk -l
Disk /dev/sda: 25 GiB, 26843545600 bytes, 52428800 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: 0x4e9d9b72

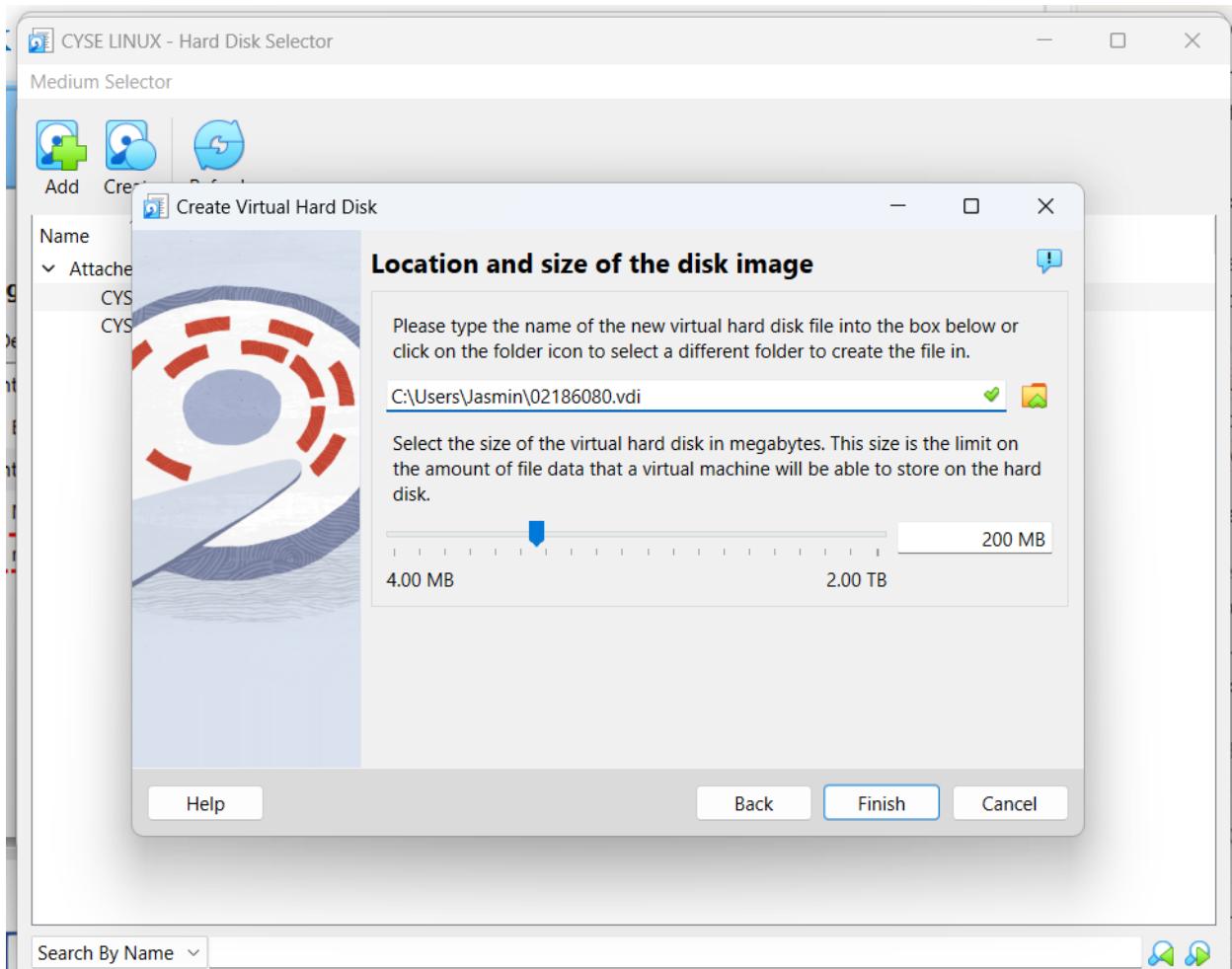
  Device      Boot   Start     End   Sectors  Size Id Type
  /dev/sda1    *      2048 49641471 49639424 23.7G 83 Linux
  /dev/sda2          49643518 52426751 2783234  1.3G  f W95 Ext'd (LBA)
  /dev/sda5          49643520 52426751 2783232  1.3G 82 Linux swap / Solaris
```

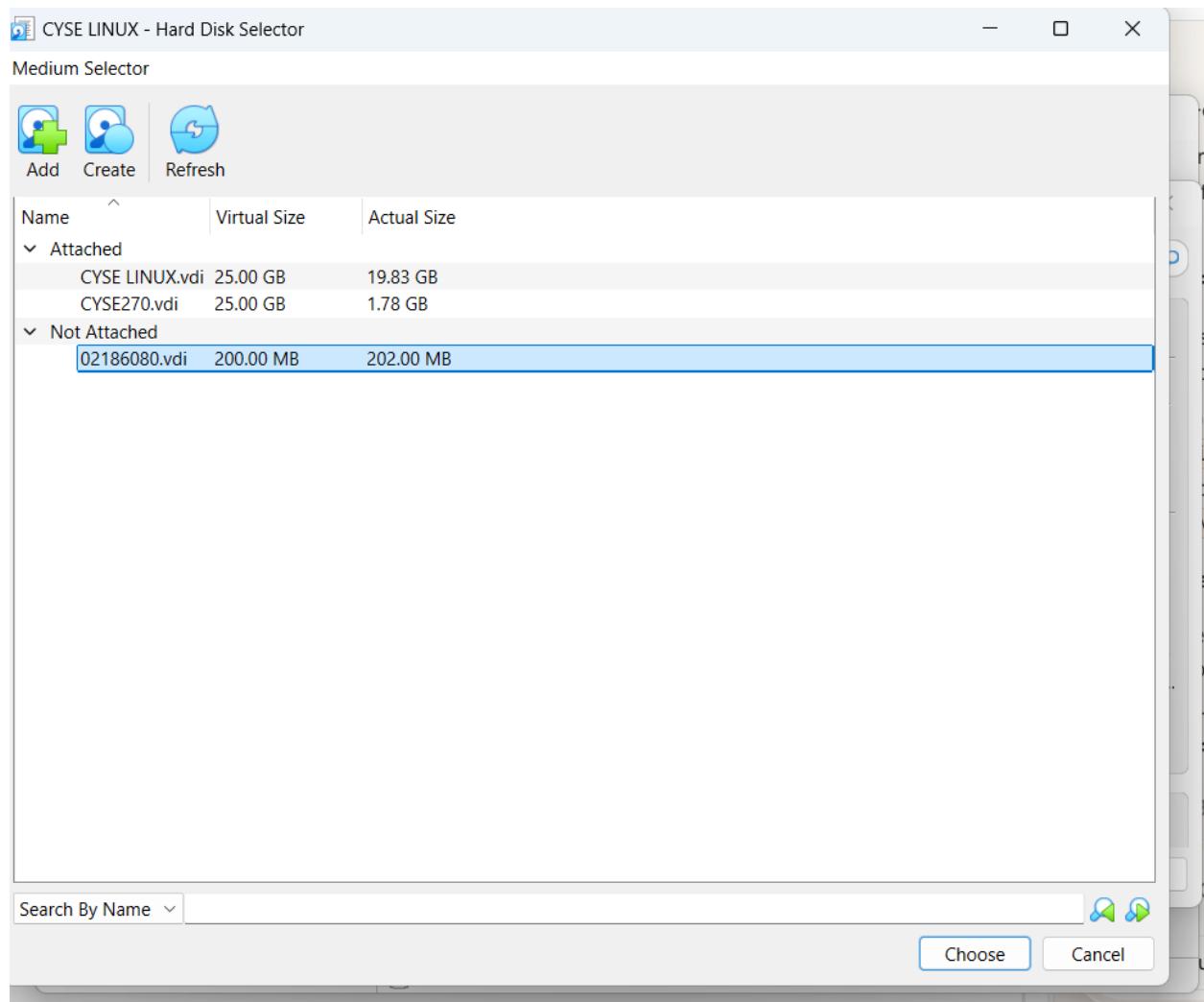
Step 3: I executed the **sudo parted -l** command which is used to list the current hard disk partition table.

```
(jasmin㉿Kali)-[~]
└─$ sudo parted -l
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sda: 26.8GB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Partition Flags:
Number  Start   End     Size    Type      File system     Flags
 1      1049kB  25.4GB  25.4GB  primary   ext4           boot
 2      25.4GB  26.8GB  1425MB  extended
 5      25.4GB  26.8GB  1425MB  logical   linux-swap(v1)  swap
```

Part II– Create a new virtual disk (30 points)

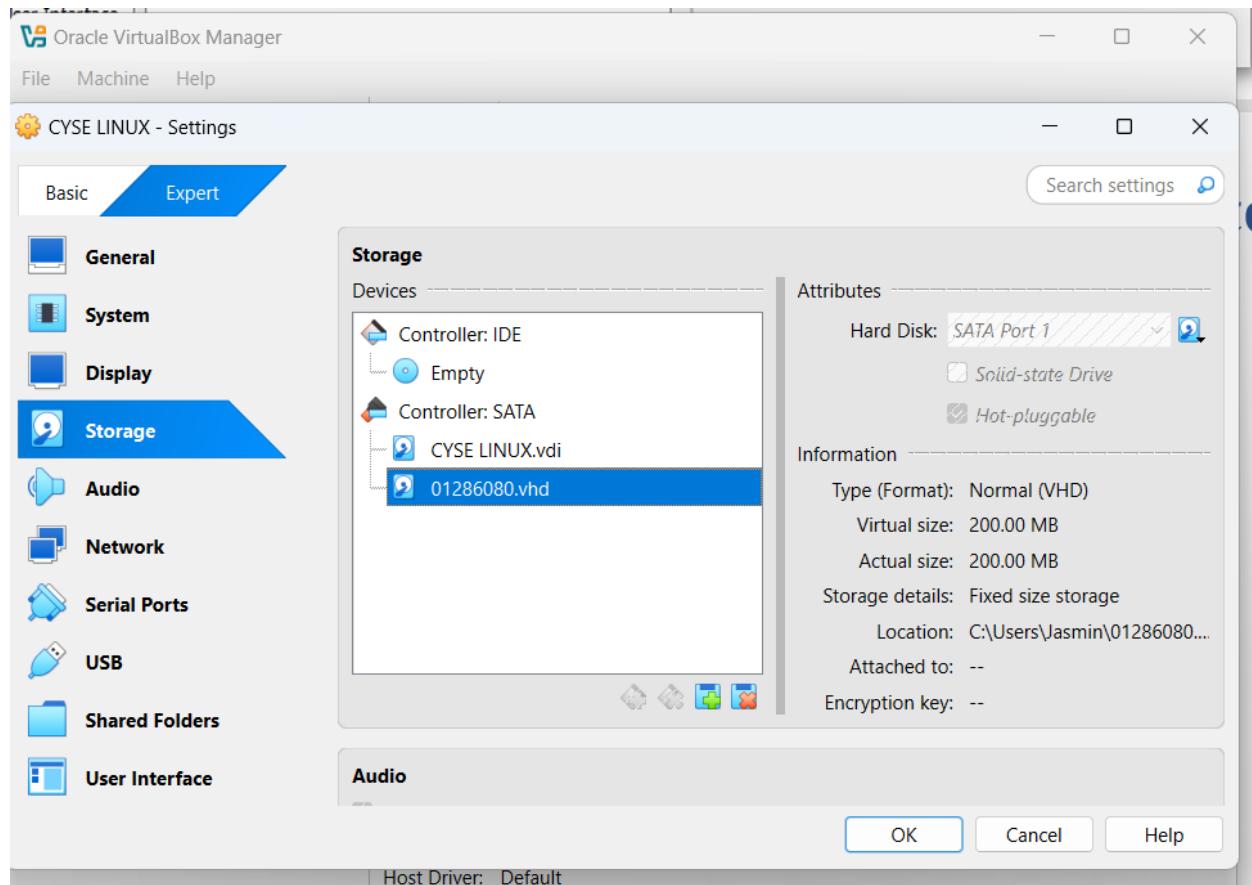
Step 1:



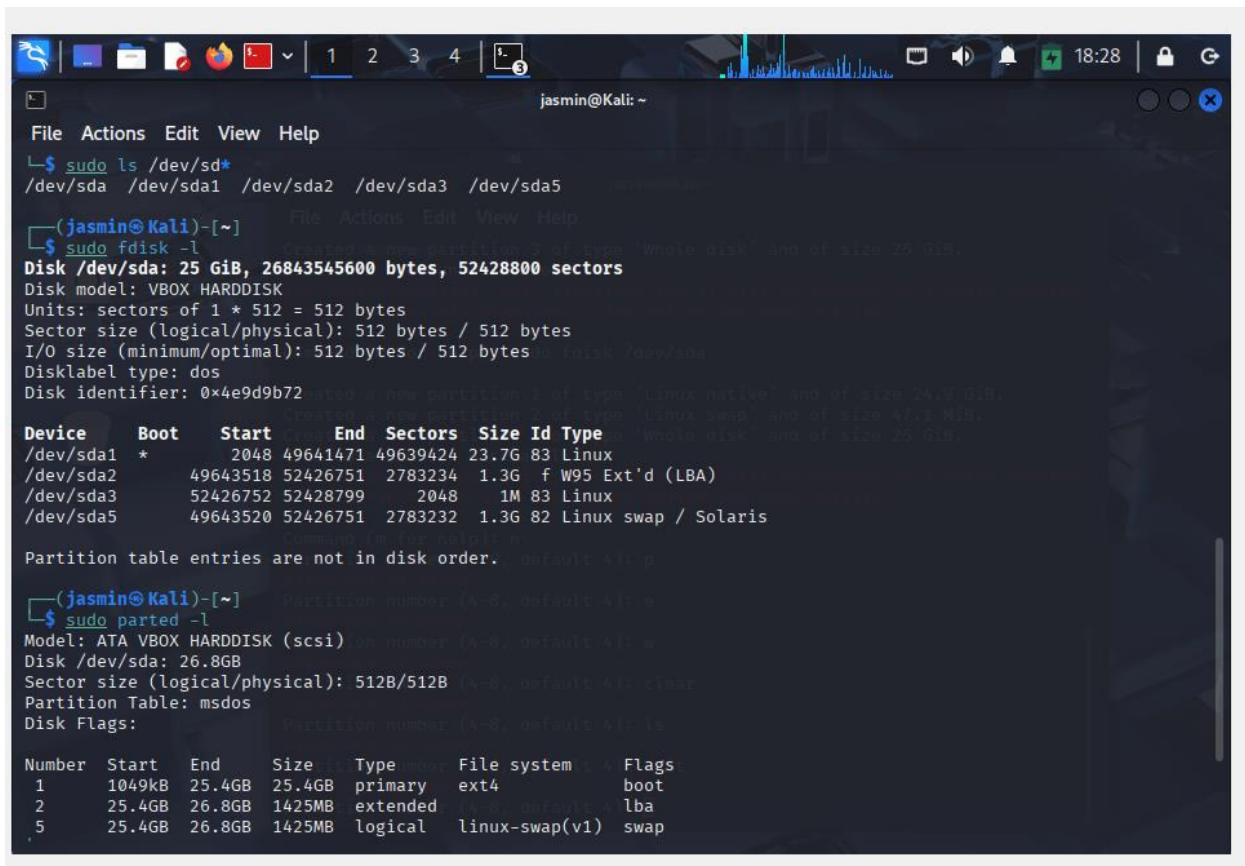


Step 2. I loaded the hard disk by going into

- a. settings**
- b. storage**
- c. clicking on 02186080.vhd and then clicking on “ok”**



Step 3. The changes that I noted after executed the three commands include



```
jasmin@Kali: ~
File Actions Edit View Help
└$ sudo ls /dev/sd*
/dev/sda /dev/sda1 /dev/sda2 /dev/sda3 /dev/sda5
(jasmin@Kali)-[~] File Actions Edit View Help
└$ sudo fdisk -l
Disk /dev/sda: 25 Gib, 26843545600 bytes, 52428800 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: 0x4e9d9b72
  Partition created a new partition 1 of type 'Linux native' and of size 24.7 Gib.
  Created a new partition 2 of type 'Linux swap' and of size 47.1 MiB.
  Created a new partition 3 of type 'Linux swap' and of size 25 Gib.
  Created a new partition 4 of type 'Linux swap' and of size 25 Gib.
  Created a new partition 5 of type 'Linux swap' and of size 25 Gib.
Device Boot Start End Sectors Size Id Type
/dev/sda1 * 2048 49641471 49639424 23.7G 83 Linux
/dev/sda2 49643518 52426751 2783234 1.3G f W95 Ext'd (LBA)
/dev/sda3 52426752 52428799 2048 1M 83 Linux
/dev/sda5 49643520 52426751 2783232 1.3G 82 Linux swap / Solaris
Partition table entries are not in disk order.

(jasmin@Kali)-[~] Partition number (4-8, default 4): 0
└$ sudo parted -l
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sda: 26.8GB
Sector size (logical/physical): 512B/512B (4-8, default 4): clear
Partition Table: msdos
Disk Flags:          Partition number (4-8, default 4): 0
Number  Start   End     Size    Type      File system  Flags
 1      1049kB 25.4GB 25.4GB  primary   ext4        boot
 2      25.4GB  26.8GB 1425MB extended
 3      25.4GB  26.8GB 1425MB logical   linux-swap(v1)  swap
 4      25.4GB  26.8GB 1425MB logical   linux-swap(v1)  swap
 5      25.4GB  26.8GB 1425MB logical   linux-swap(v1)  swap
```

Part III– Creating Partitions and Filesystems (60 points)

Step 1. I executed the **sudo fdisk /dev/sda** command to create a new partition.

```
0  dump disk layout to sfdisk script file
Save & Exit
w  write table to disk and exit
q  quit without saving changes

Create a new label
g  create a new empty GPT partition table
G  create a new empty SGI (IRIX) partition table
o  create a new empty MBR (DOS) partition table
s  create a new empty Sun partition table

Command (m for help): d
Partition number (1-3, default 3): 3

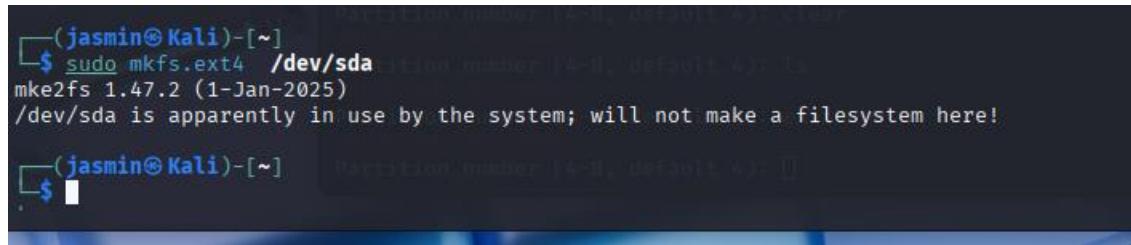
If you want to maintain SunOS/Solaris compatibility, consider leaving this partition as Whole disk (5), starting at 0, with 52420095 sectors
Partition 3 has been deleted.

Command (m for help): n
Partition number (3-8, default 3): 3

It is highly recommended that the third partition covers the whole disk and is of type 'Whole disk'
First sector (0-0, default 0): 0
Last sector or +/-sectors or +/-size{K,M,G,T,P} (52420095-52420095, default 52420095): 52420095

Created a new partition 3 of type 'Whole disk' and of size 25 GiB.
```

Step 2. to create an ext4 filesystem on the new partition I used the sudo mkfs.ext4 /dev/sdb1 command.



```
(jasmin㉿Kali)-[~]
$ sudo mkfs.ext4 /dev/sda
mke2fs 1.47.2 (1-Jan-2025)
/dev/sda is apparently in use by the system; will not make a filesystem here!

(jasmin㉿Kali)-[~]
$
```