

OLD DOMINION UNIVERSITY  
CYSE 270 LINUX SYSTEM FOR CYBERSECURITY

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Assignment #7 Manage Local Storage

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John Wilson  
01179411

## Part I- Check your file system (30 points)

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

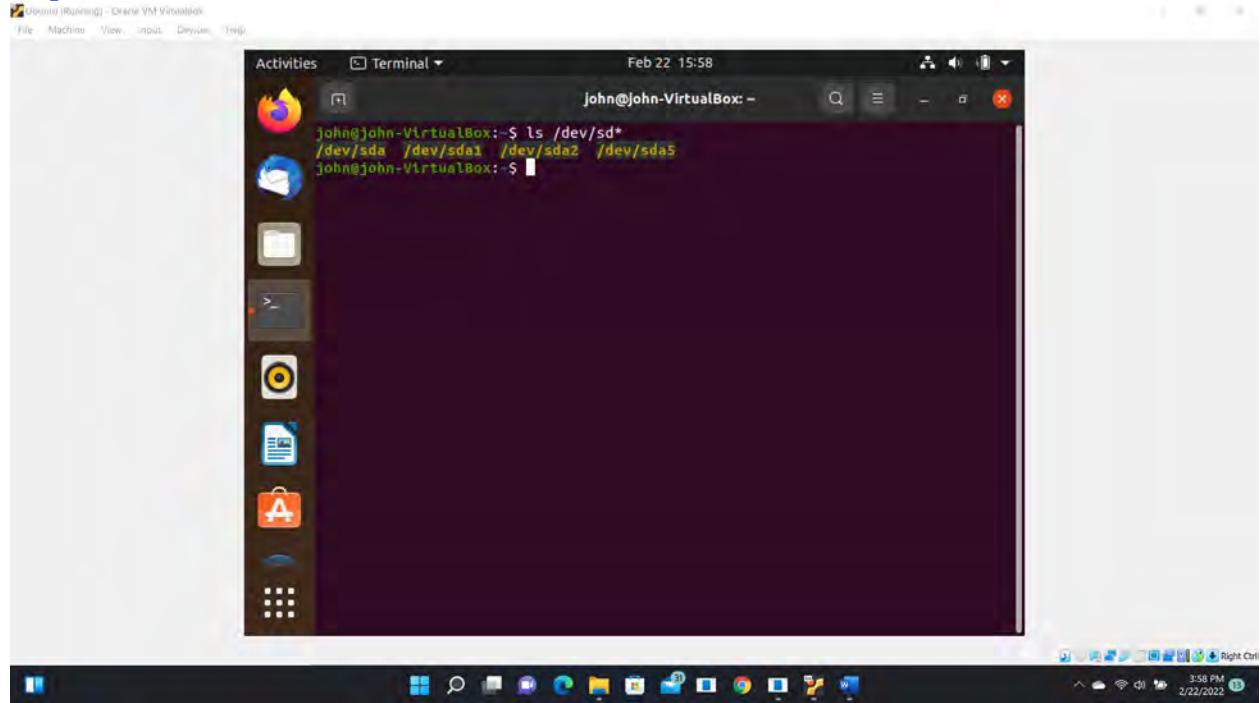
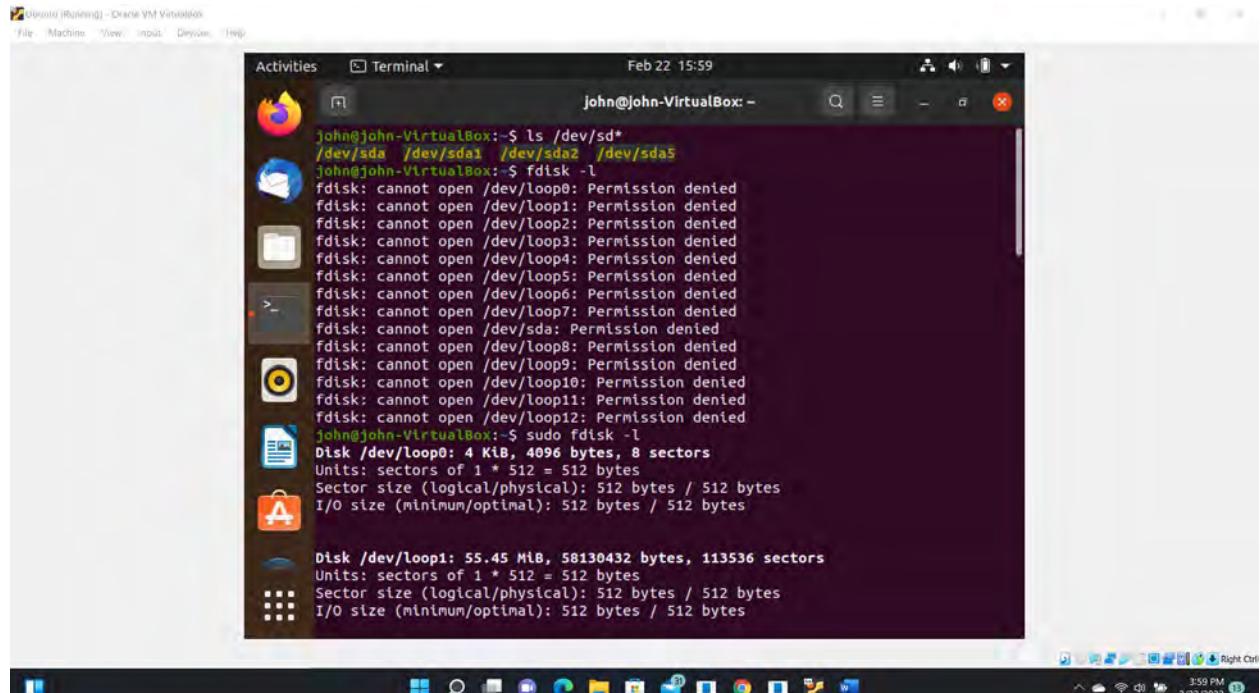


Figure 1 Screenshots of JWILS082 Computer screen for Step 1.

Above is the screen shot using the commands “ls /dev/sd\*” which shows the current hard disk drives. “ls” is the command that lists the files or directories. “/dev/sd” are the drives SETA, SCSI, and USB that start with /dev/sd.

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



Activities Terminal Feb 22 15:59 john@john-VirtualBox:~

```
john@john-VirtualBox:~$ ls /dev/sd*
/dev/sda /dev/sda1 /dev/sda2 /dev/sda5
john@john-VirtualBox:~$ fdisk -l
fdisk: cannot open /dev/loop0: Permission denied
fdisk: cannot open /dev/loop1: Permission denied
fdisk: cannot open /dev/loop2: Permission denied
fdisk: cannot open /dev/loop3: Permission denied
fdisk: cannot open /dev/loop4: Permission denied
fdisk: cannot open /dev/loop5: Permission denied
fdisk: cannot open /dev/loop6: Permission denied
fdisk: cannot open /dev/loop7: Permission denied
fdisk: cannot open /dev/sda: Permission denied
fdisk: cannot open /dev/loop8: Permission denied
fdisk: cannot open /dev/loop9: Permission denied
fdisk: cannot open /dev/loop10: Permission denied
fdisk: cannot open /dev/loop11: Permission denied
fdisk: cannot open /dev/loop12: Permission denied
john@john-VirtualBox:~$ sudo fdisk -l
Disk /dev/loop0: 4 KiB, 4096 bytes, 8 sectors
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/loop1: 55.45 MiB, 58130432 bytes, 113536 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

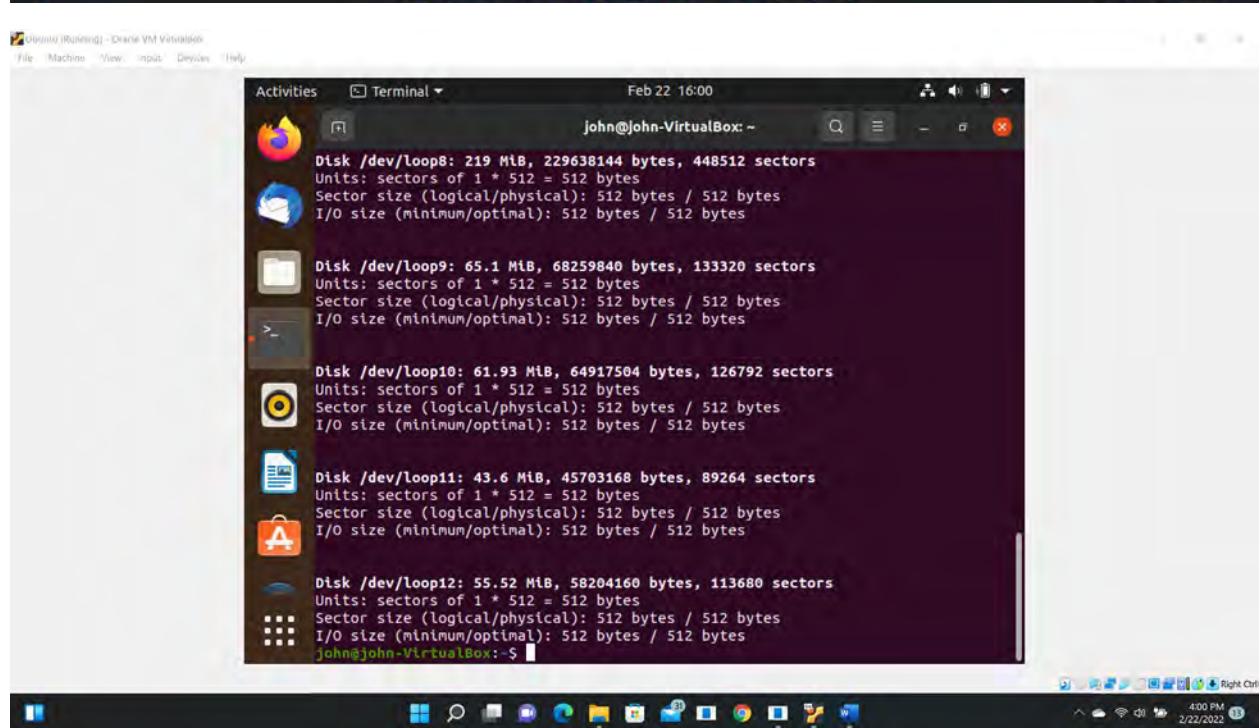
Disk /dev/loop2: 219 MiB, 229638144 bytes, 448512 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop3: 65.1 MiB, 68259840 bytes, 133320 sectors
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/loop4: 61.93 MiB, 64917504 bytes, 126792 sectors
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/loop5: 43.6 MiB, 45703168 bytes, 89264 sectors
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/loop6: 55.52 MiB, 58204160 bytes, 113680 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
john@john-VirtualBox:~$
```



Activities Terminal Feb 22 16:00 john@john-VirtualBox:~

```
Disk /dev/loop8: 219 MiB, 229638144 bytes, 448512 sectors
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/loop9: 65.1 MiB, 68259840 bytes, 133320 sectors
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/loop10: 61.93 MiB, 64917504 bytes, 126792 sectors
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/loop11: 43.6 MiB, 45703168 bytes, 89264 sectors
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/loop12: 55.52 MiB, 58204160 bytes, 113680 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
john@john-VirtualBox:~$
```

Figure 2 Screenshots of JWILS082 Computer screen for Step 2.

Above is the screen shot using the commands “sudo fdisk -l” which shows the current partitions on the disk. “sudo” is the command that allows you to run programs with the security privileges of another user (otherwise known as a super user). “fdisk -l” is the command that displays the current hard disk partitions.

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

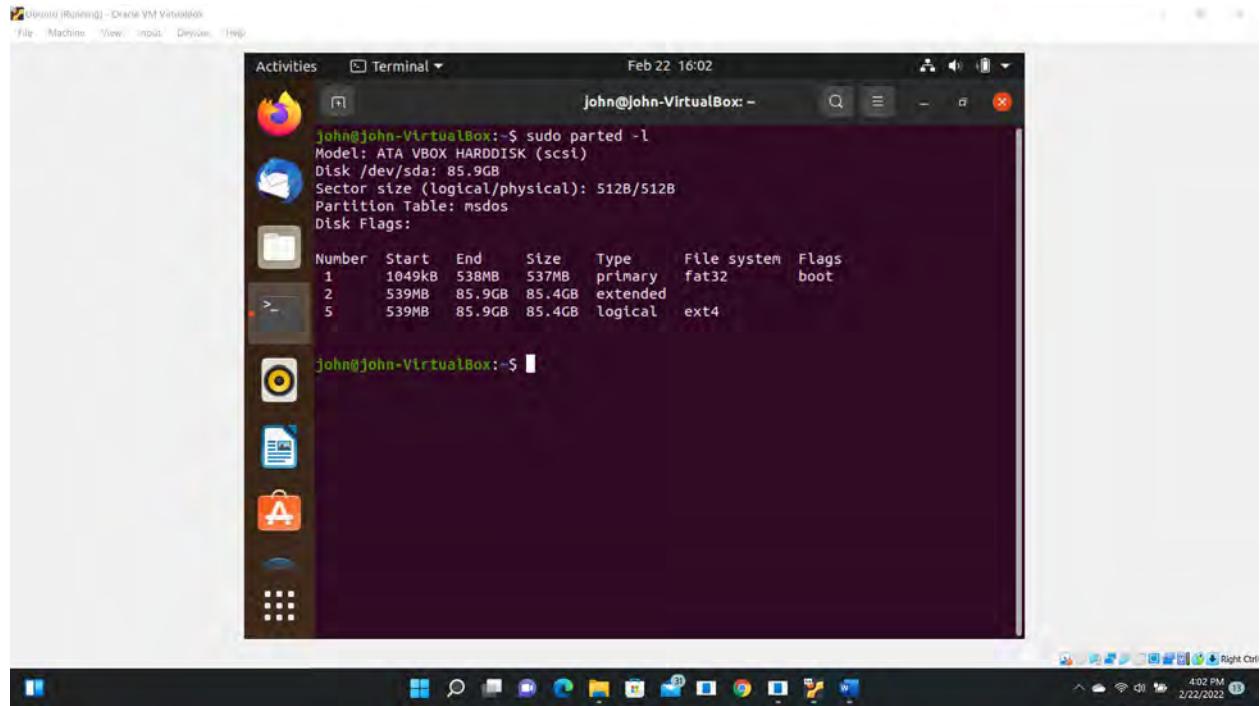


Figure 3 Screenshots of JWILS082 Computer screen for Step 3.

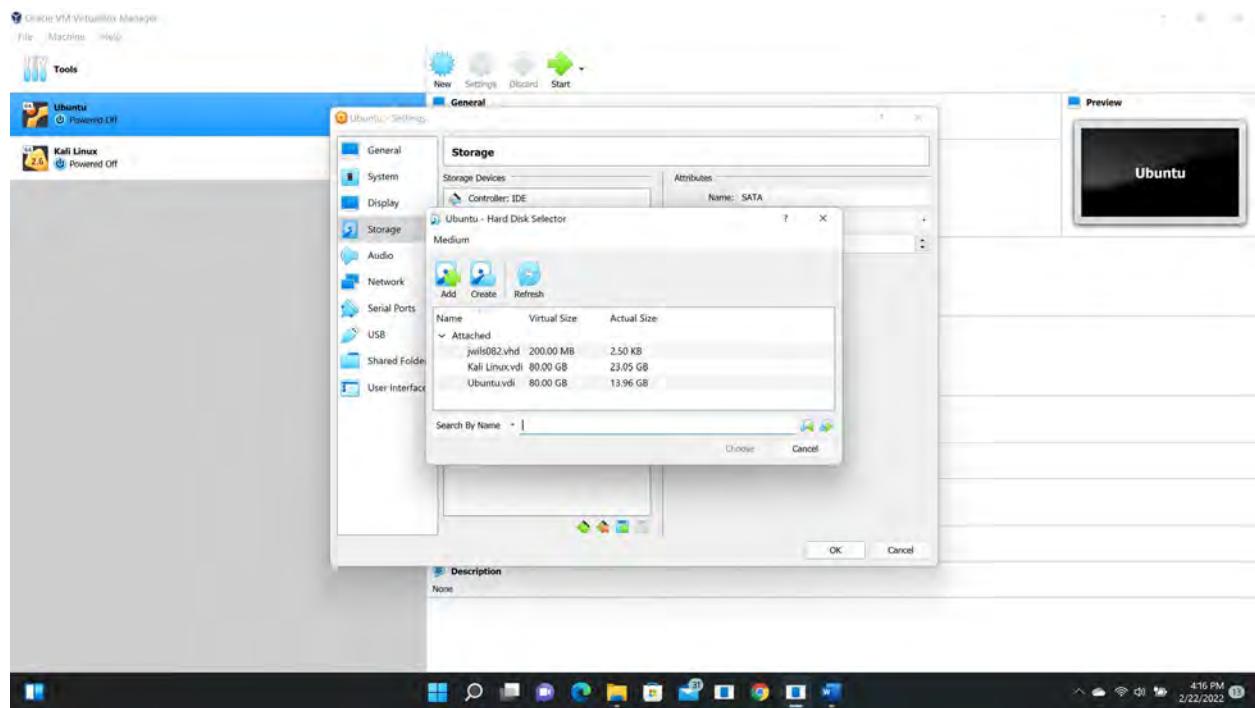
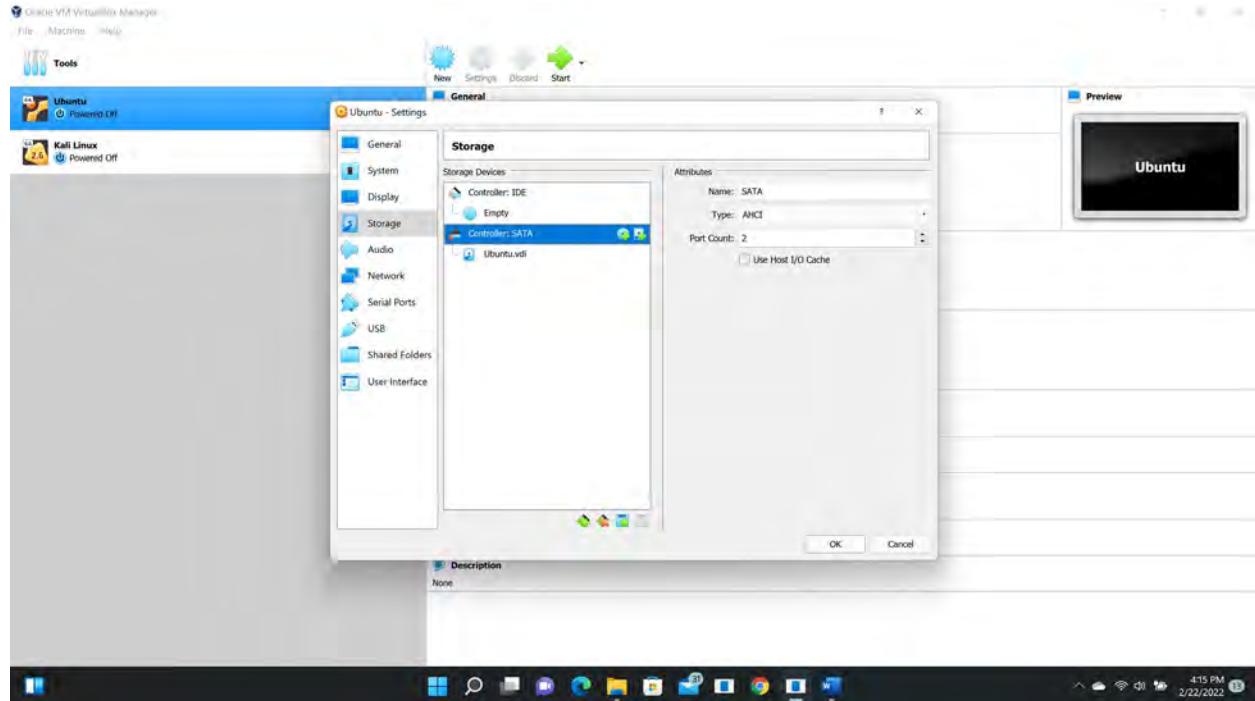
Above is the screen shot using the commands “sudo parted -l” which lists the current partitions table.

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

**Step 1.** In the Oracle VM VirtualBox setting, attach a new virtual hard disk with the size of 200 MB to your current Linux VM. Name it as “your\_midas.vdi”

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



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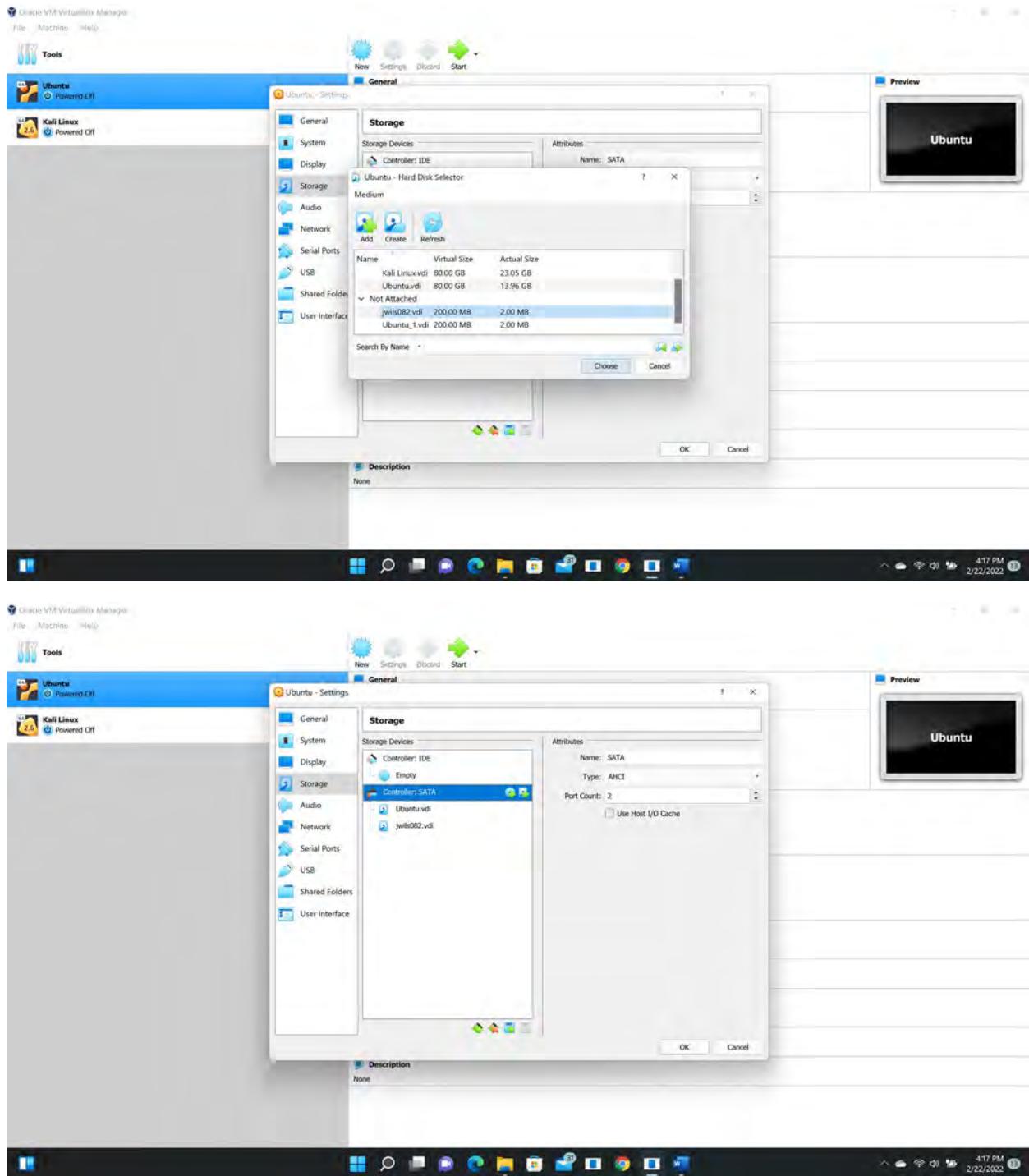
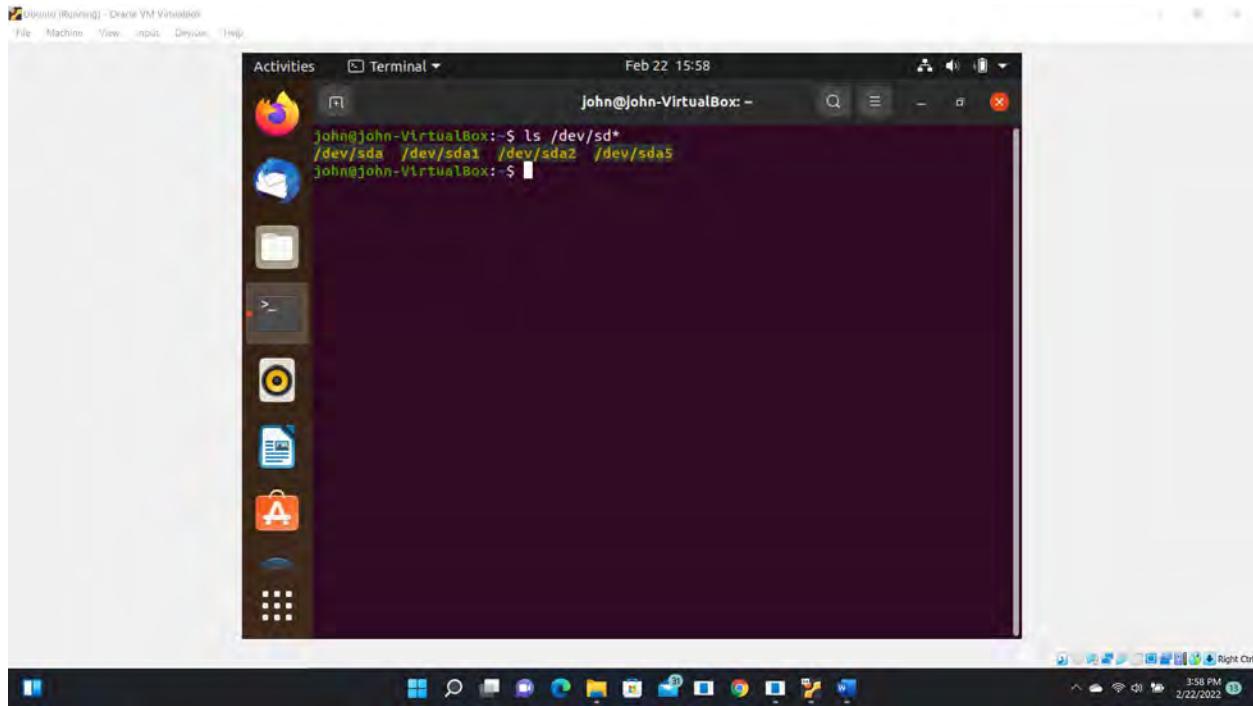


Figure 4 Screenshots of JWILS082 Computer screen for Step 1 and 2.

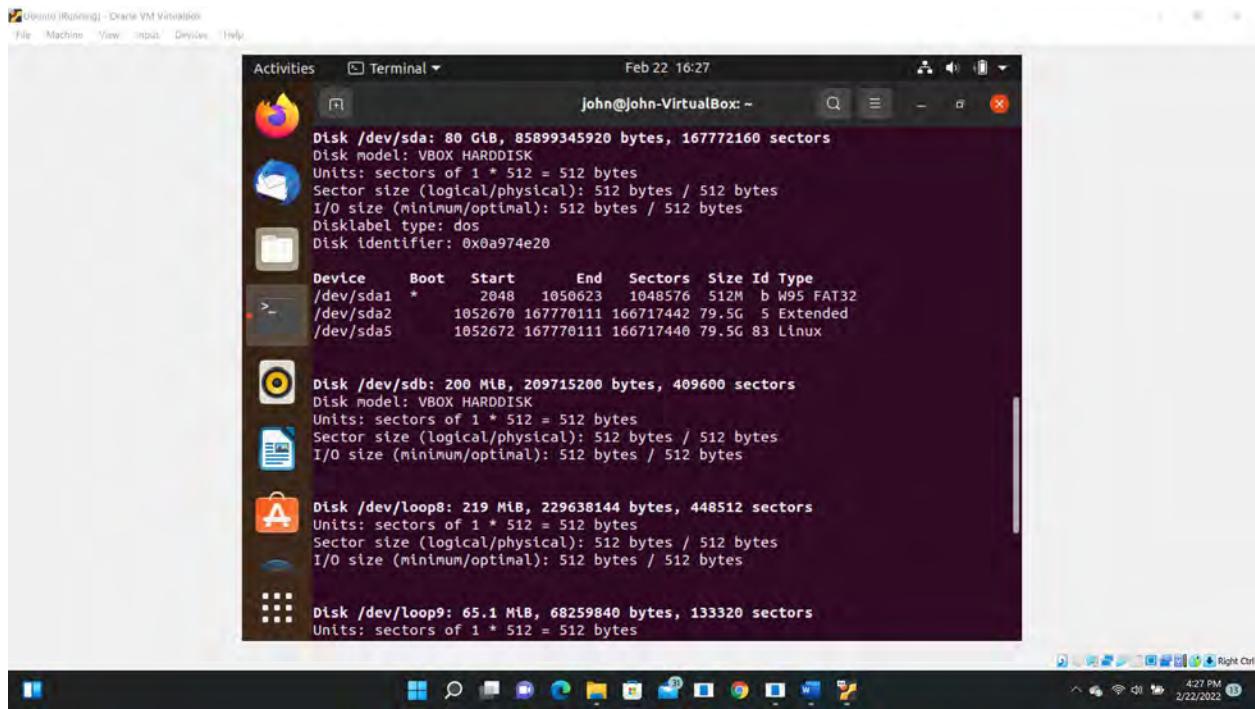
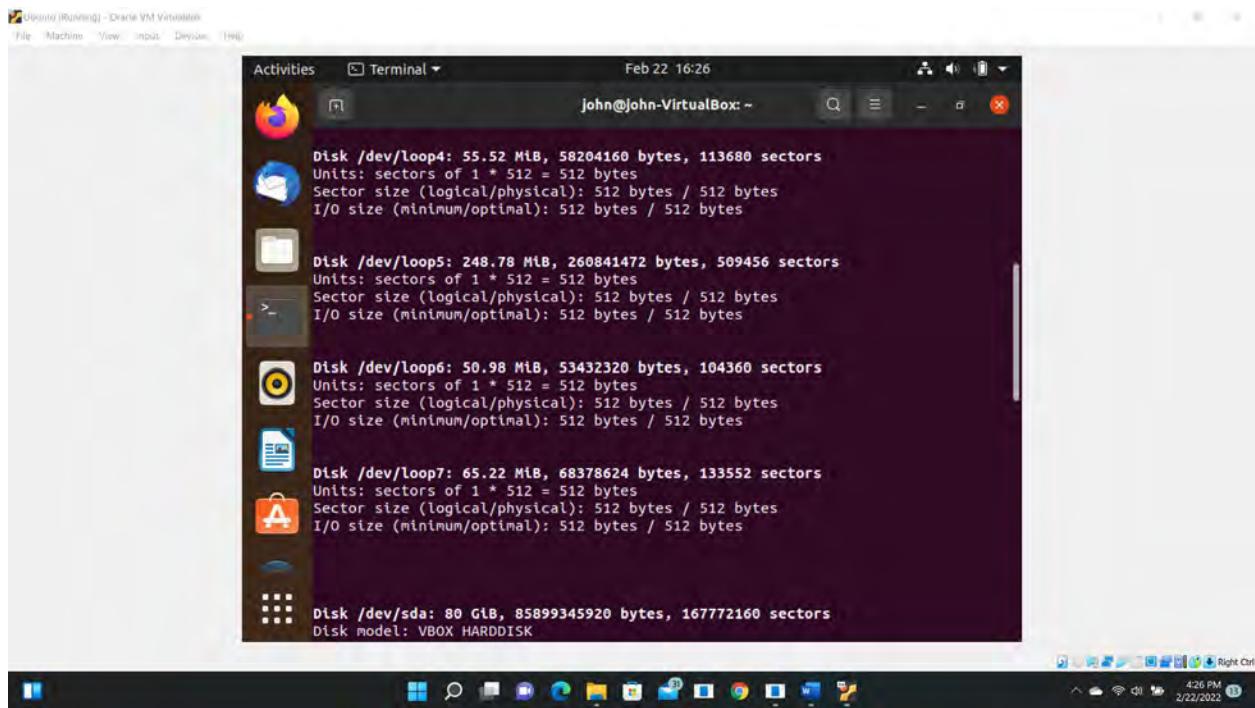
Above are the screen shots of adding a virtual hardrive with the name “jwils082.vdi” to the existing Ubuntu virtual machine.

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**Step 3.** Repeat the steps in Part I, and highlight the differences with the new virtual hard disk.



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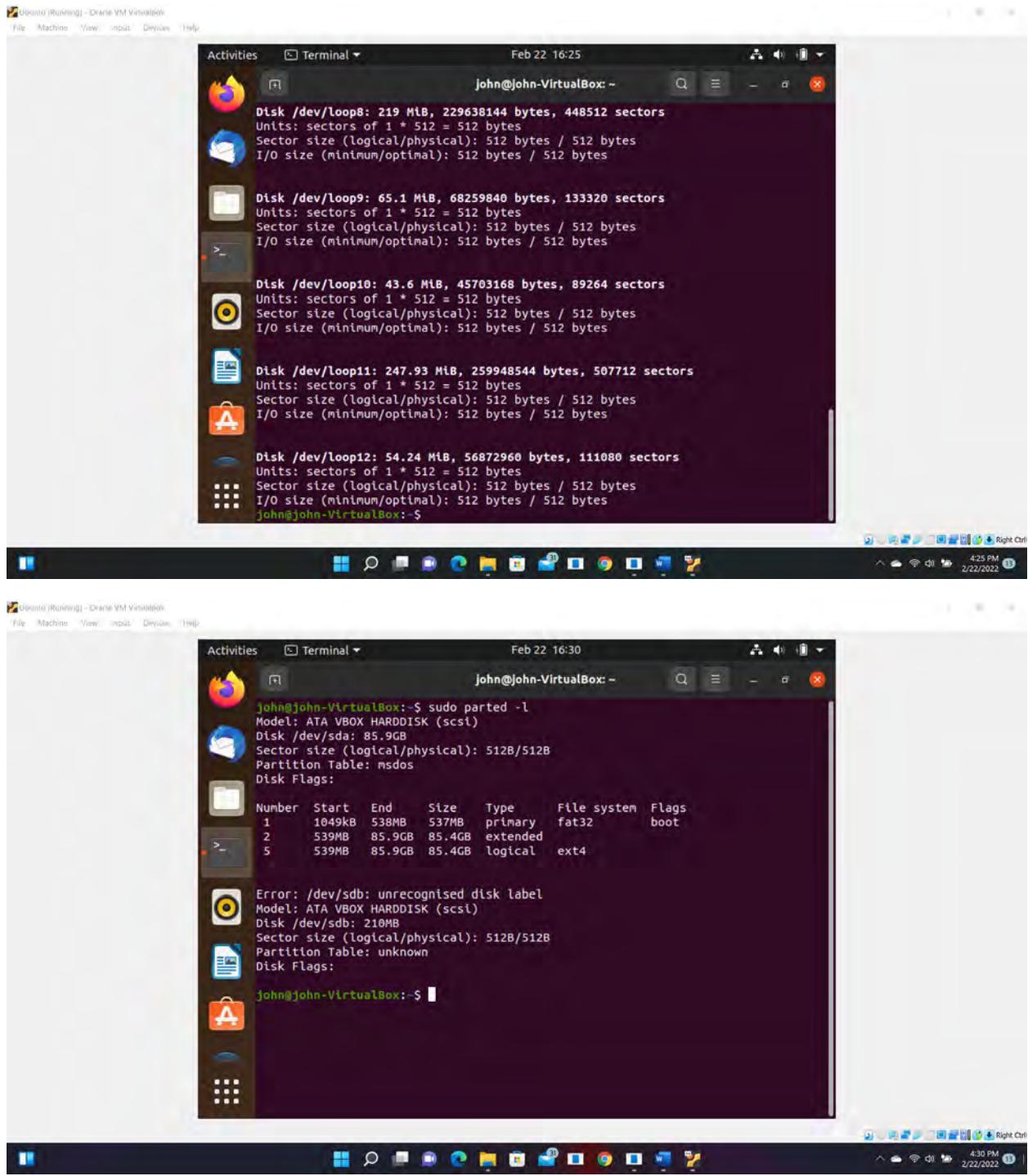


Figure 5 Screenshots of JWILS082 Computer screen for Step 3.

Above are the screen shots showing the differences of the virtual disks before and after the addition of "jwils082.vdi". The first shot is of before and the second shot is after the addition. Please notice that "/dev/sdb" is the addition.

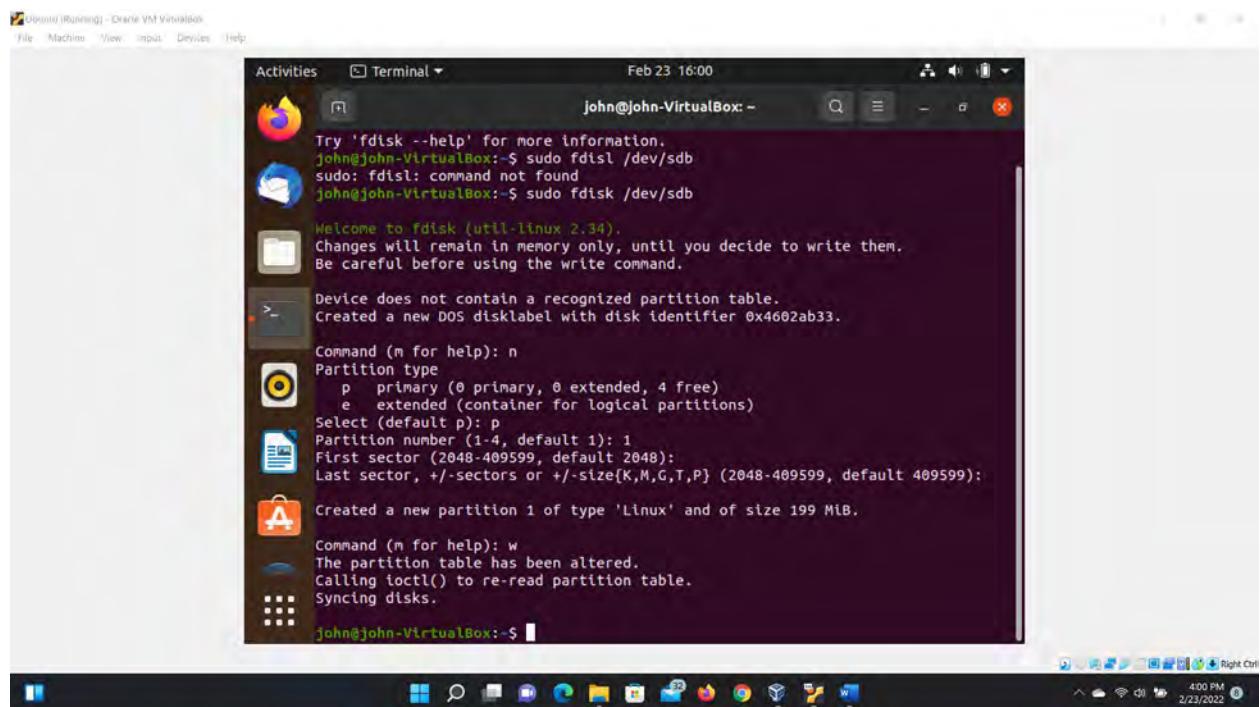
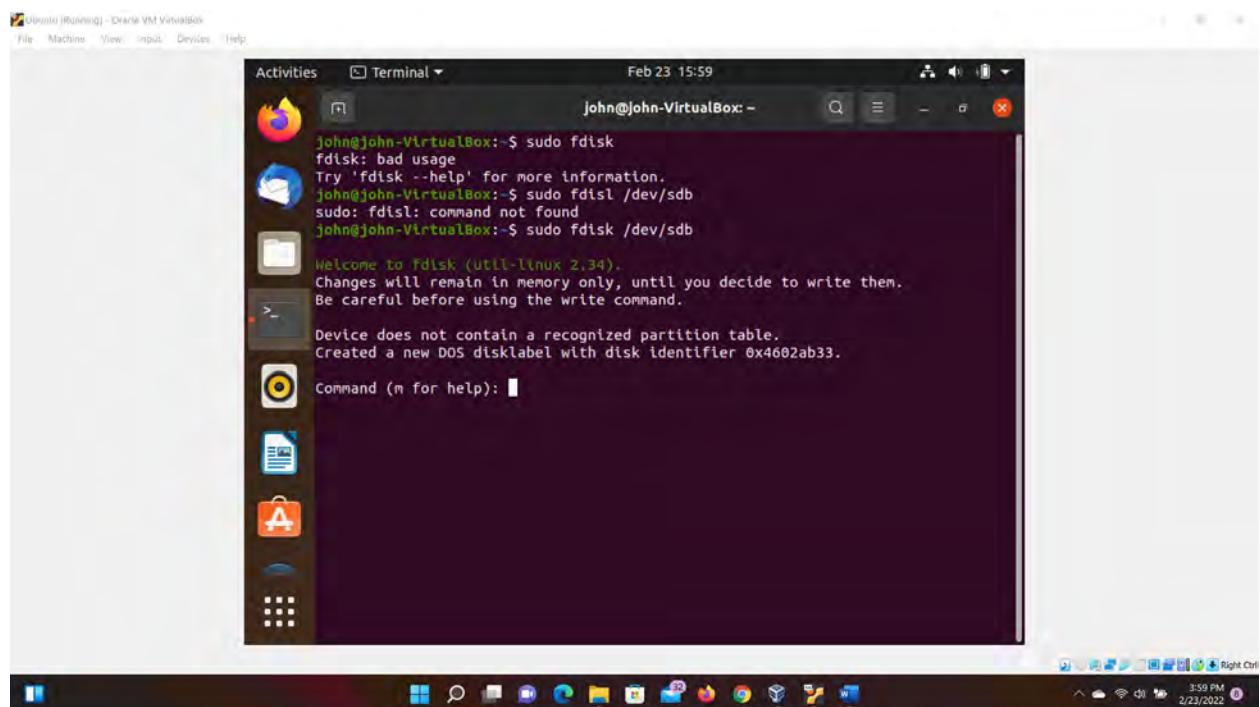
I also ran the command "sudo fdisk -l" to show the additional partitions.

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Above is the screen shot using the commands “sudo parted -l” which lists the current partitions table.

### Part III – Creating Partitions and Filesystems (60 points)

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



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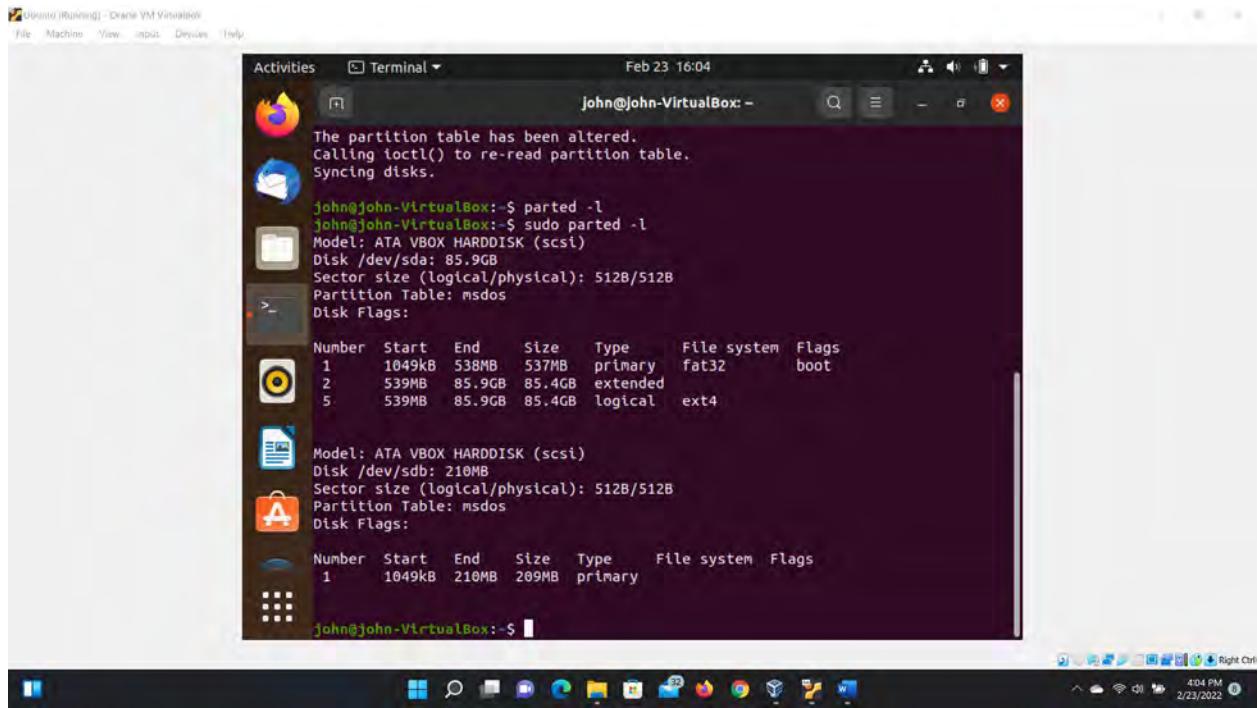


Figure 6 Screenshots of JWILS082 Computer screen for Step 1.

Above are the screen shots showing the command “sudo fdisk /dev/sdb” which creates a partition on the virtual drive.

I also used the command “sudo parted -l” to validate the partition was created.

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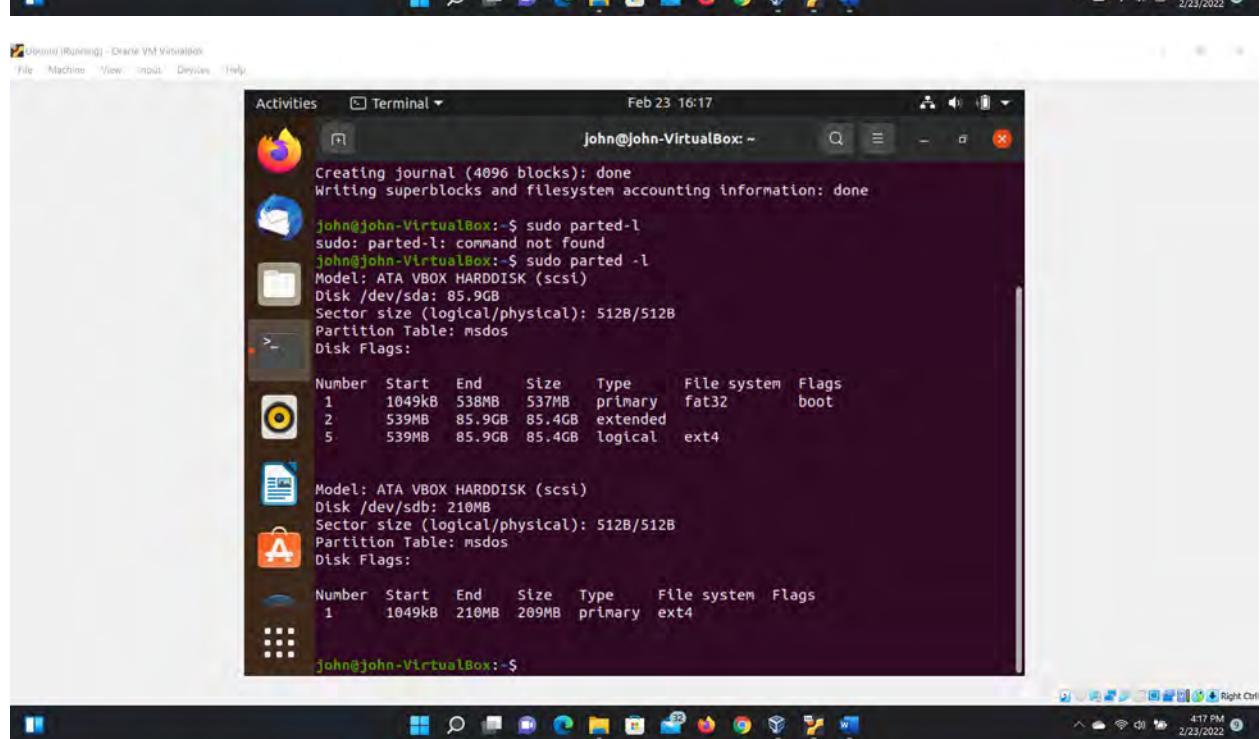
**Step 2.** Use the correct command to create an ext4 filesystem on the new partition.



```
Activities Terminal Feb 23 16:14
john@john-VirtualBox:~$ sudo mkfs -t ext4 /dev/sdb1
mke2fs 1.45.5 (07-Jan-2020)
Creating filesystem with 50944 4k blocks and 50944 inodes
Filesystem UUID: 11983968-6af7-4426-a44f-4b8ac8d86f3e
Superblock backups stored on blocks:
32768

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

john@john-VirtualBox:~$
```



```
Activities Terminal Feb 23 16:17
john@john-VirtualBox:~$ sudo parted -l
Creating journal (4096 blocks): done
Writing superblocks and filesystem accounting information: done

john@john-VirtualBox:~$ sudo parted -l
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sda: 85.9GB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

Number Start End Size Type File system Flags
1 1049kB 538MB 537MB primary fat32 boot
2 539MB 85.9GB 85.4GB extended
5 539MB 85.9GB 85.4GB logical ext4

Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sdb: 210MB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:

Number Start End Size Type File system
1 1049kB 210MB 209MB primary ext4

john@john-VirtualBox:~$
```

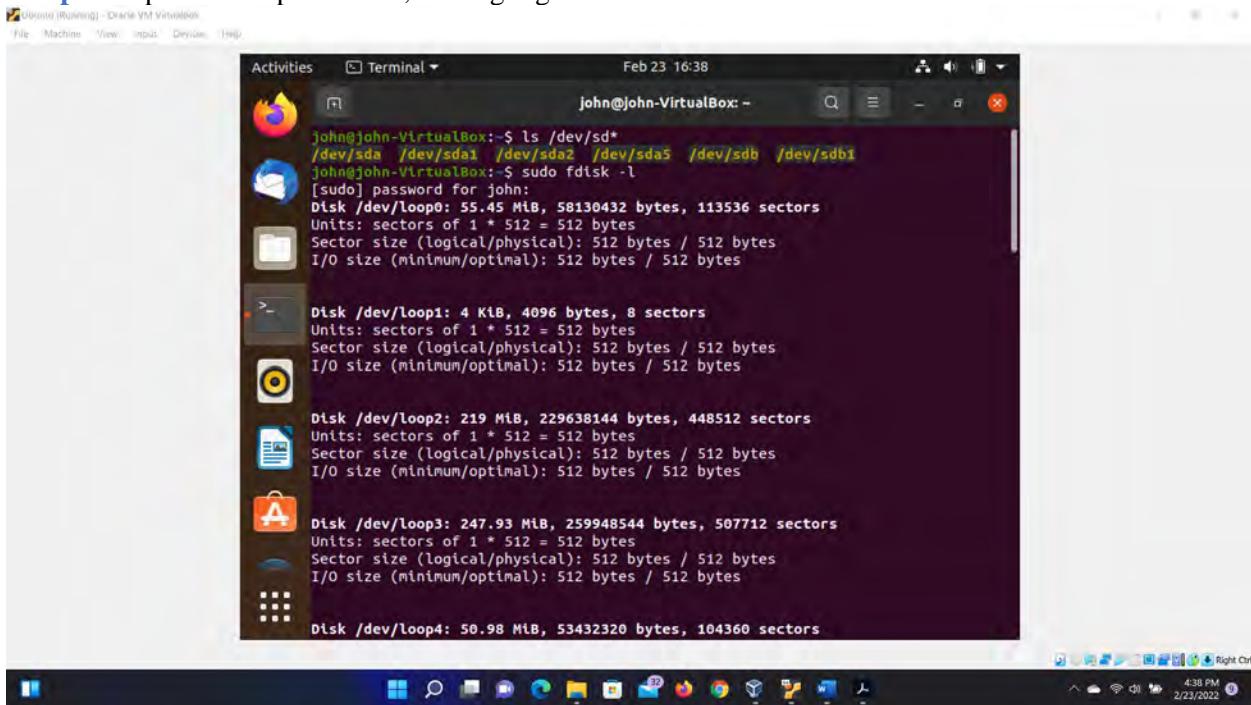
Figure 7 Screenshots of JWILS082 Computer screen for Step 2.

Above are the screen shots showing the command “sudo mkfs -t ext4 /dev/sdb1” which creates an ext4 filesystem on partition sdb1.

I also used the command “sudo parted -l” to validate the ext4 file system was created.

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**Step 3.** Repeat the steps in Part I, and highlight the differences.



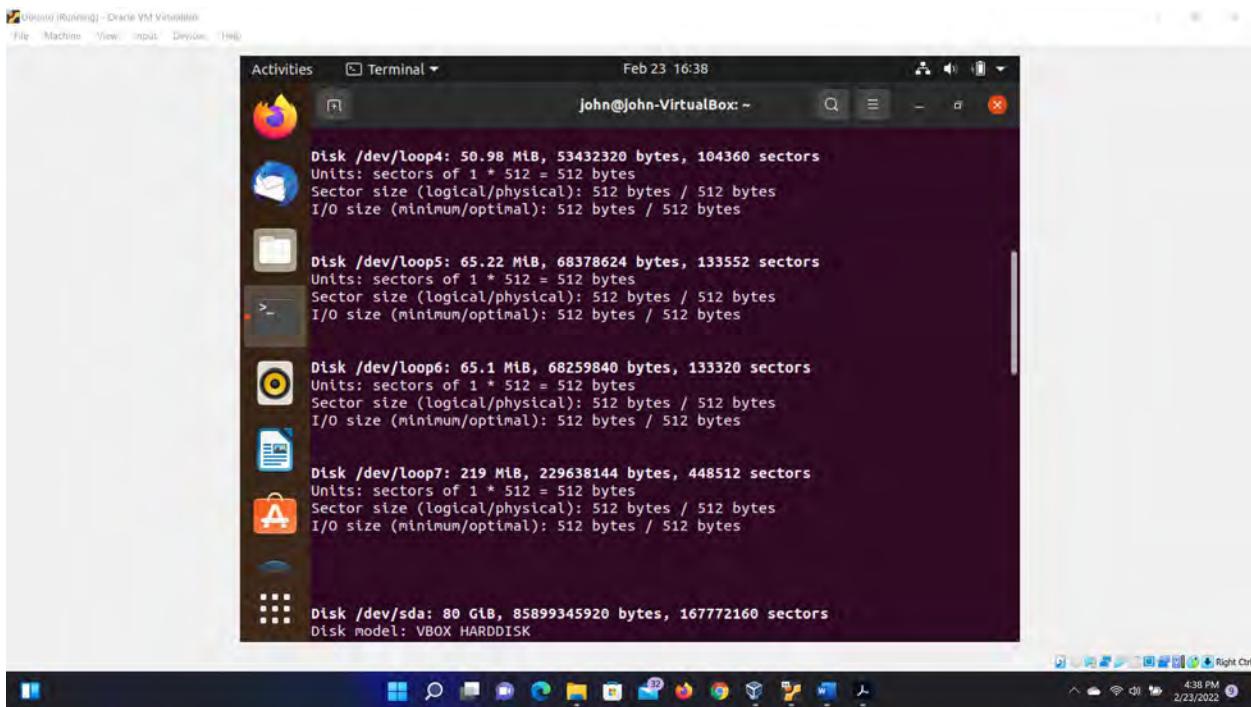
```
john@john-VirtualBox:~$ ls /dev/sd*
/dev/sda /dev/sda1 /dev/sda2 /dev/sda5 /dev/sdb /dev/sdb1
john@john-VirtualBox:~$ sudo fdisk -l
[sudo] password for john:
Disk /dev/loop0: 55.45 MiB, 58130432 bytes, 113536 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop1: 4 Kib, 4096 bytes, 8 sectors
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/loop2: 219 MiB, 229638144 bytes, 448512 sectors
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/loop3: 247.93 MiB, 259948544 bytes, 507712 sectors
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/loop4: 50.98 MiB, 53432320 bytes, 104360 sectors
```



```
john@john-VirtualBox:~$ sudo fdisk -l
[sudo] password for john:
Disk /dev/loop4: 50.98 MiB, 53432320 bytes, 104360 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

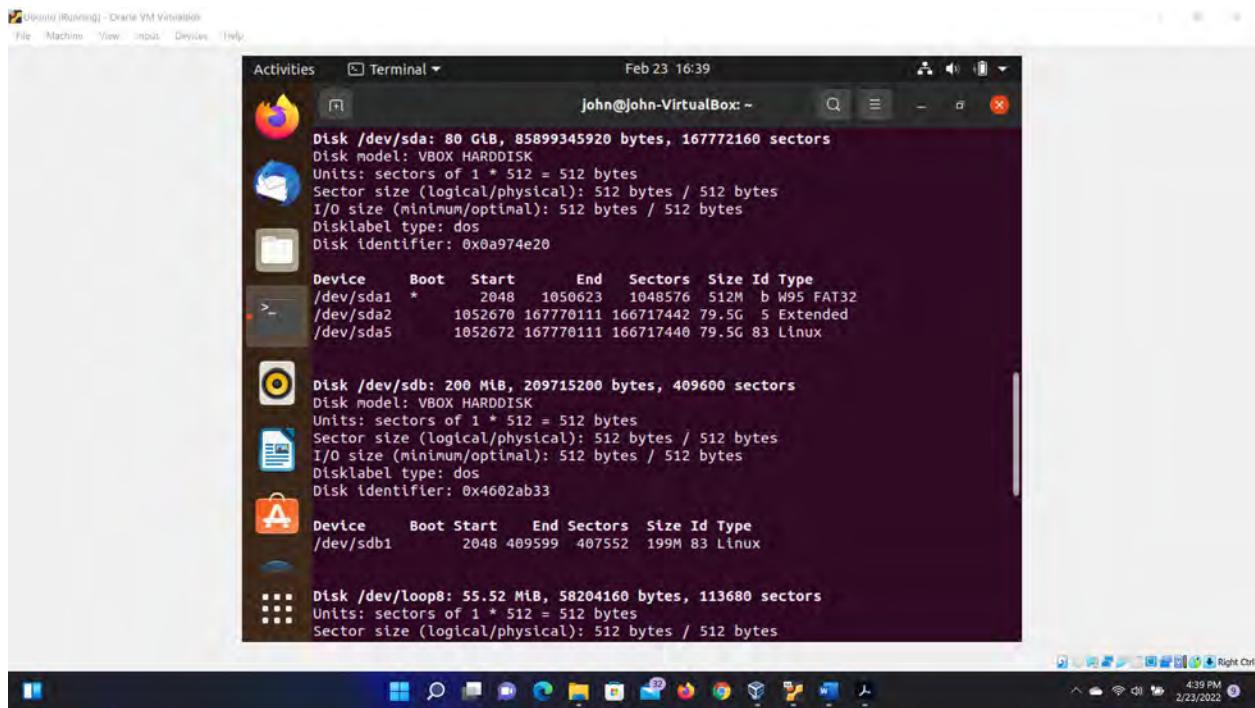
Disk /dev/loop5: 65.22 MiB, 68378624 bytes, 133552 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop6: 65.1 MiB, 68259840 bytes, 133320 sectors
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/loop7: 219 MiB, 229638144 bytes, 448512 sectors
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 GiB, 85899345920 bytes, 167772160 sectors
Disk model: VBOX HARDDISK
```

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Activities Terminal Feb 23 16:39 john@John-VirtualBox: ~

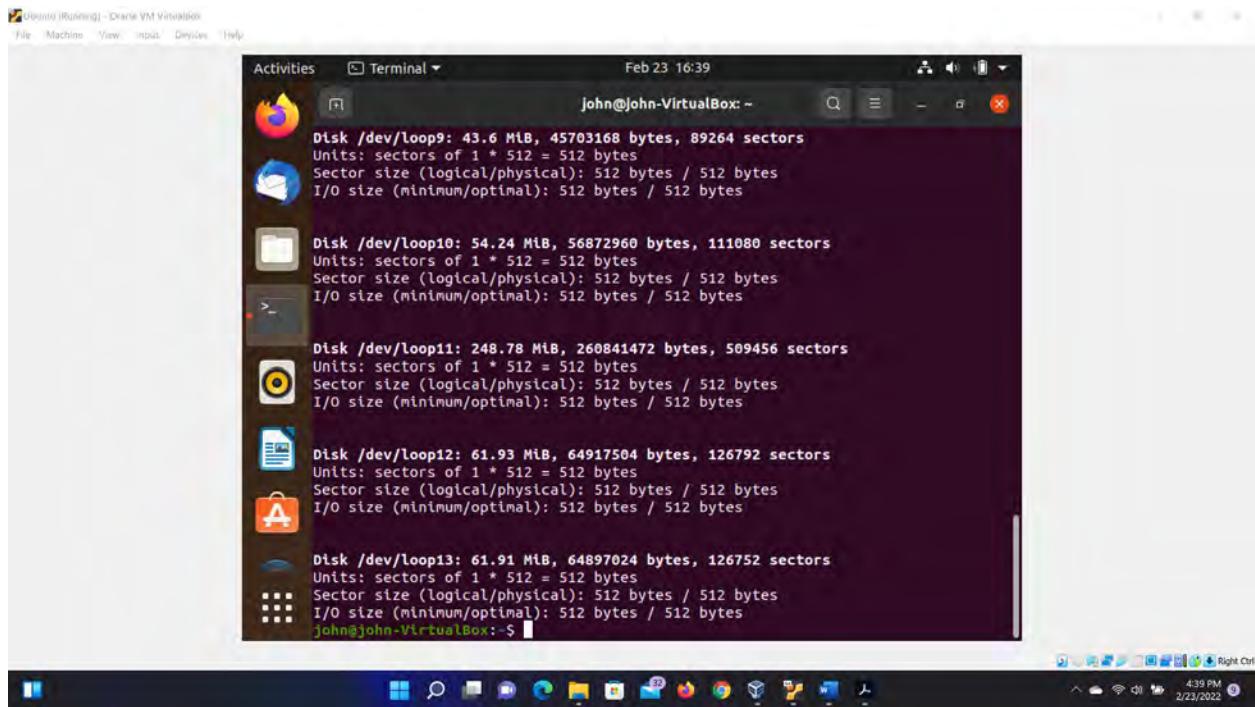
```
Disk /dev/sda: 80 GiB, 85899345920 bytes, 167772160 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x0a974e20

Device Boot Start End Sectors Size Id Type
/dev/sda1 * 2048 1050623 1048576 512M b W95 FAT32
/dev/sda2 1052670 167770111 166717442 79.5G 5 Extended
/dev/sda5 1052672 167770111 166717440 79.5G 83 Linux

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
Disklabel type: dos
Disk identifier: 0x4602ab33

Device Boot Start End Sectors Size Id Type
/dev/sdb1 2048 409599 407552 199M 83 Linux

Disk /dev/loop8: 55.52 MiB, 58204160 bytes, 113680 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
```



Activities Terminal Feb 23 16:39 john@John-VirtualBox: ~

```
Disk /dev/loop9: 43.6 MiB, 45703168 bytes, 89264 sectors
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/loop10: 54.24 MiB, 56872960 bytes, 111080 sectors
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/loop11: 248.78 MiB, 260841472 bytes, 509456 sectors
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/loop12: 61.93 MiB, 64917504 bytes, 126792 sectors
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/loop13: 61.91 MiB, 64897024 bytes, 126752 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
john@john-VirtualBox: ~
```

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Figure 8 Screenshots of JWILS082 Computer screen for Step 3.

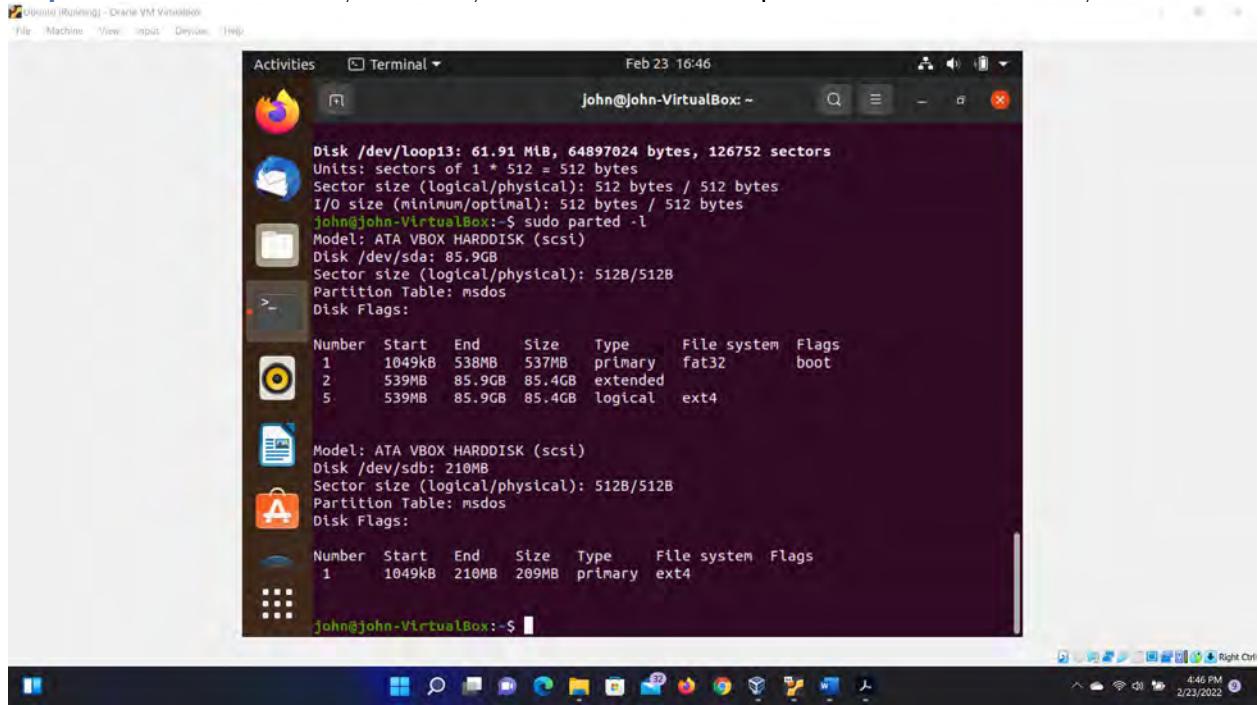
Above is the screen shot using the commands “ls /dev/sd\*” which shows the current hard disk drives. “ls” is the command that lists the files or directories. “/dev/sd” are the drives SETA, SCSI, and USB that start with /dev/sd\*

I also used the command “sudo fdisk -l” which shows the current partitions on the disk. “sudo” is the command that allows you to run programs with the security privileges of another user (otherwise known as a super user). “fdisk -l” is the command that displays the current har disk partitions.

I also used the command “sudo parted -l” to validate the ext4 file system was created. . “sudo” is the command that allows you to run programs with the security privileges of another user (otherwise known as a super user). “parted -l” is the command that displays the current hardisk partition table.

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

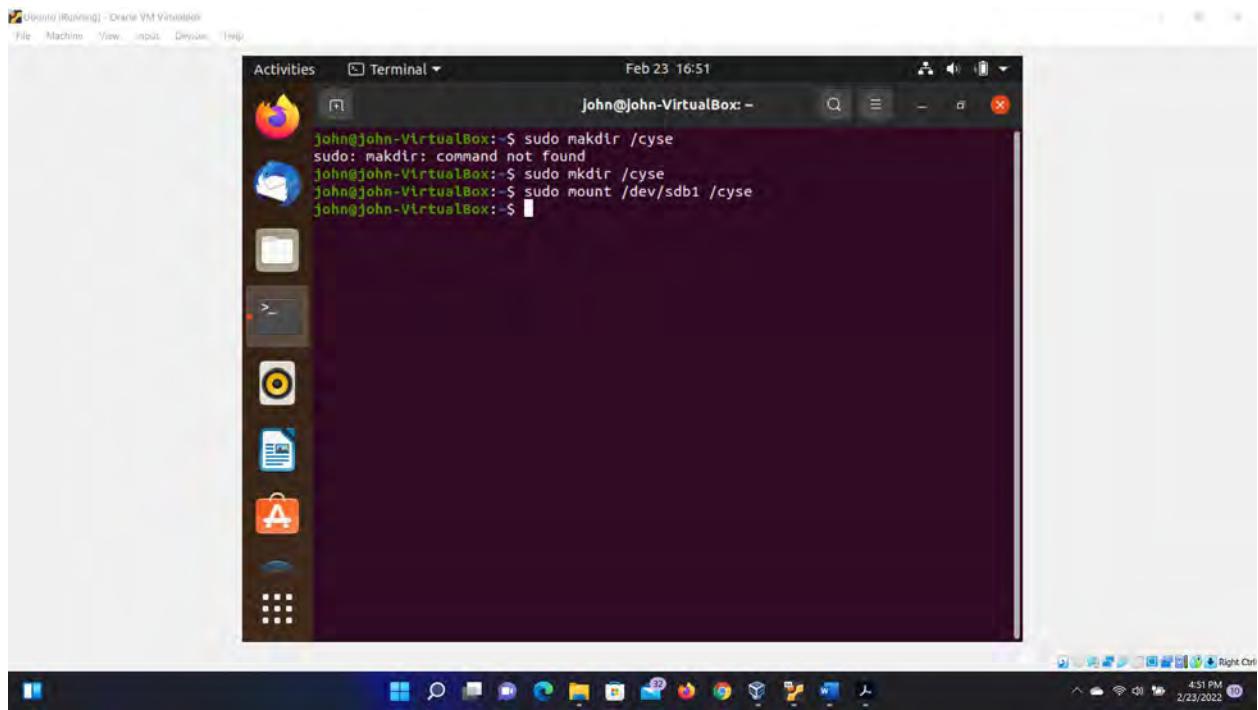


The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "Activities Terminal" and the date and time are "Feb 23 16:46". The user is "john@john-VirtualBox: ~". The terminal displays the following command and output:

```
Disk /dev/loop13: 61.91 MiB, 64897024 bytes, 126752 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
john@john-VirtualBox:~$ sudo parted -l
Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sda: 85.9GB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:
Number  Start   End     Size    Type      File system  Flags
 1      1049kB  538MB   537MB   primary   fat32        boot
 2      539MB   85.9GB   85.4GB  extended
 5      539MB   85.9GB   85.4GB  logical    ext4

Model: ATA VBOX HARDDISK (scsi)
Disk /dev/sdb: 210MB
Sector size (logical/physical): 512B/512B
Partition Table: msdos
Disk Flags:
Number  Start   End     Size    Type      File system  Flags
 1      1049kB  210MB   209MB   primary   ext4

john@john-VirtualBox:~$
```



The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "Activities Terminal" and the date and time are "Feb 23 16:51". The user is "john@john-VirtualBox: ~". The terminal displays the following commands and output:

```
john@john-VirtualBox:~$ sudo mkdir /cyse
sudo: mkdir: command not found
john@john-VirtualBox:~$ sudo mkdir /cyse
john@john-VirtualBox:~$ sudo mount /dev/sdb1 /cyse
john@john-VirtualBox:~$
```

Figure 9 Screenshots of JWILS082 Computer screen for Step 4.

Above is the screen shot using the commands “mkdir /cyse” which makes a new directory that will be mounted with the new partition /dev/sdb1. “mkdir” is the command that creates a new directory. “/cyse” is the name and location of the new directory.

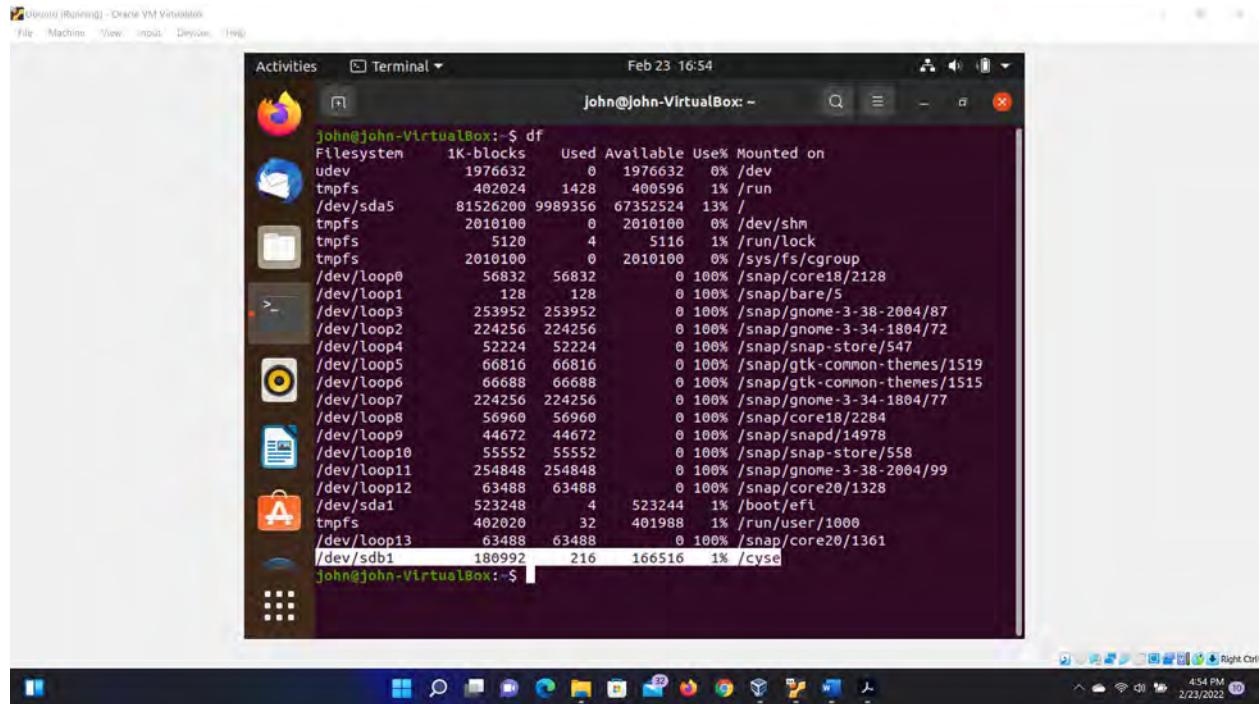
I then used the command “sudo mount /dev/sdb1 /cyse” to mount the partition under the directory /cyse.

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“sudo” is the command that allows you to run programs with the security privileges of another user (otherwise known as a super user). “mount” is the command that mounts a device to a mount point. “/dev/sdb1” is the partition that you want to mount. “/cyse” is the name of the directory that the partition will be mounted.

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



The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "Terminal" and the date and time are "Feb 23 16:54". The command "df" is run, and the output shows the following disk usage:

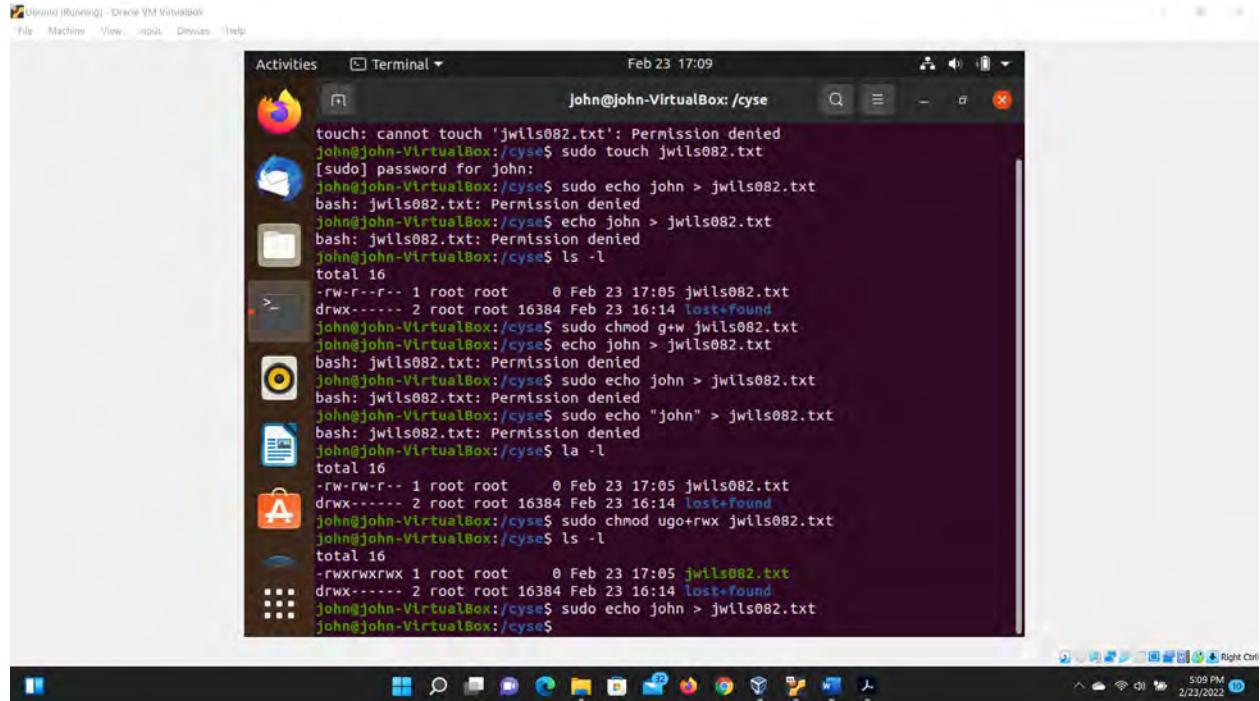
Filesystem	1K-blocks	Used	Available	Use%	Mounted on
udev	1976632	0	1976632	0%	/dev
tmpfs	402024	1428	400596	1%	/run
/dev/sda5	81526200	9989356	67352524	13%	/
tmpfs	2010100	0	2010100	0%	/dev/shm
tmpfs	5120	4	5116	1%	/run/lock
tmpfs	2010100	0	2010100	0%	/sys/fs/cgroup
/dev/loop0	56832	56832	0	100%	/snap/core18/2128
/dev/loop1	128	128	0	100%	/snap/bare/5
/dev/loop3	253952	253952	0	100%	/snap/gnome-3-38-2004/87
/dev/loop2	224256	224256	0	100%	/snap/gnome-3-34-1804/72
/dev/loop4	52224	52224	0	100%	/snap/snap-store/547
/dev/loop5	66816	66816	0	100%	/snap/gtk-common-themes/1519
/dev/loop6	66688	66688	0	100%	/snap/gtk-common-themes/1515
/dev/loop7	224256	224256	0	100%	/snap/gnome-3-34-1804/77
/dev/loop8	56960	56960	0	100%	/snap/core18/2284
/dev/loop9	44672	44672	0	100%	/snap/snapd/14978
/dev/loop10	55552	55552	0	100%	/snap/snap-store/558
/dev/loop11	254848	254848	0	100%	/snap/gnome-3-38-2004/99
/dev/loop12	63488	63488	0	100%	/snap/core20/1328
/dev/sda1	523248	4	523244	1%	/boot/efi
tmpfs	402020	32	401988	1%	/run/user/1000
/dev/loop13	63488	63488	0	100%	/snap/core20/1361
/dev/sdb1	180992	216	166516	1%	/cyse

Figure 10 Screenshots of JWILS082 Computer screen for Step 5.

Above is the screen shot using the commands "df" which validates the mount to the directory was successful.

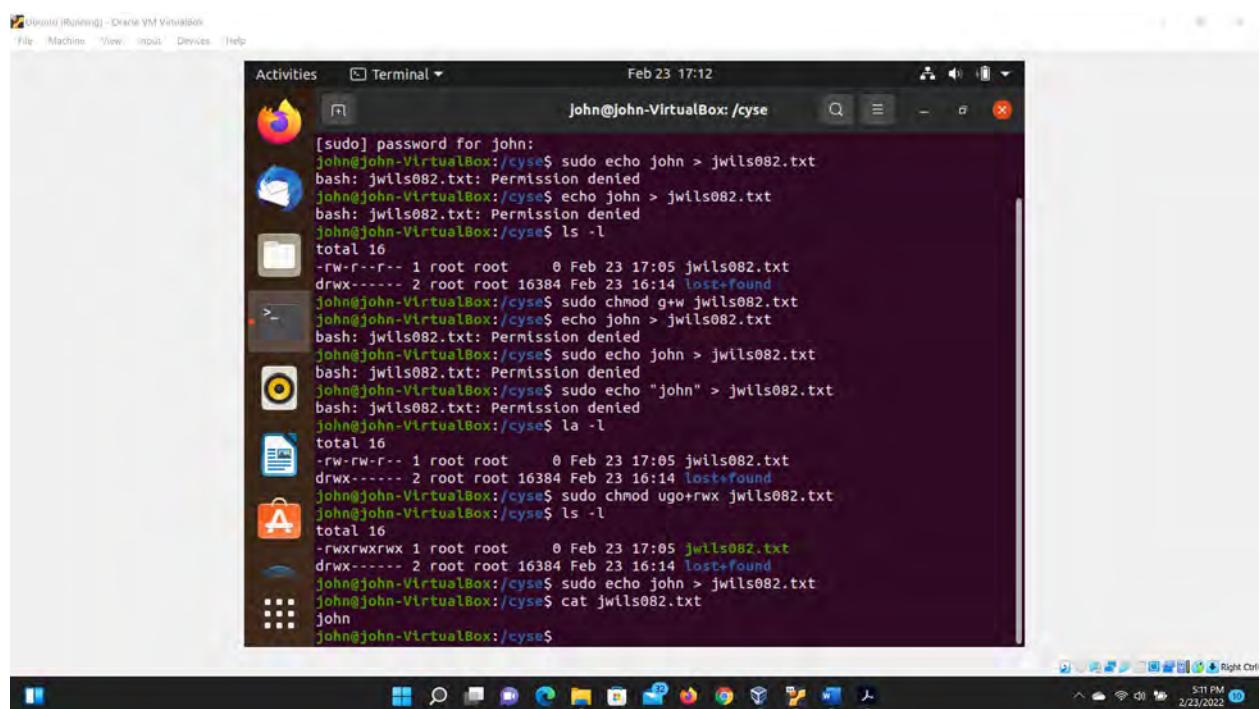
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**Step 6.** Create a new file named forYourMIDAS.txt (replace YourMIDAS with your MIDAS ID) in the directory /cyse and put your name in that file.



Terminal window showing the process of creating a file named `jwils082.txt` and changing its permissions:

```
john@John-VirtualBox:/cyse$ touch 'jwils082.txt': Permission denied
john@John-VirtualBox:/cyse$ sudo touch jwils082.txt
[sudo] password for john:
john@John-VirtualBox:/cyse$ sudo echo john > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ echo john > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ ls -l
total 16
-rw-r--r-- 1 root root 0 Feb 23 17:05 jwils082.txt
drwx----- 2 root root 16384 Feb 23 16:14 lost+found
john@John-VirtualBox:/cyse$ sudo chmod g+w jwils082.txt
john@John-VirtualBox:/cyse$ echo john > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ sudo echo john > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ sudo echo "john" > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ ls -l
total 16
-rw-r--r-- 1 root root 0 Feb 23 17:05 jwils082.txt
drwx----- 2 root root 16384 Feb 23 16:14 lost+found
john@John-VirtualBox:/cyse$ sudo chmod ugo+rwx jwils082.txt
john@John-VirtualBox:/cyse$ ls -l
total 16
-rwxrwxrwx 1 root root 0 Feb 23 17:05 jwils082.txt
drwx----- 2 root root 16384 Feb 23 16:14 lost+found
john@John-VirtualBox:/cyse$ sudo echo john > jwils082.txt
john@John-VirtualBox:/cyse$ cat jwils082.txt
john
john@John-VirtualBox:/cyse$
```

Terminal window showing the process of creating a file named `jwils082.txt` and changing its permissions:

```
[sudo] password for john:
john@John-VirtualBox:/cyse$ sudo echo john > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ echo john > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ ls -l
total 16
-rw-r--r-- 1 root root 0 Feb 23 17:05 jwils082.txt
drwx----- 2 root root 16384 Feb 23 16:14 lost+found
john@John-VirtualBox:/cyse$ sudo chmod g+w jwils082.txt
john@John-VirtualBox:/cyse$ echo john > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ sudo echo john > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ sudo echo "john" > jwils082.txt
bash: jwils082.txt: Permission denied
john@John-VirtualBox:/cyse$ ls -l
total 16
-rw-r--r-- 1 root root 0 Feb 23 17:05 jwils082.txt
drwx----- 2 root root 16384 Feb 23 16:14 lost+found
john@John-VirtualBox:/cyse$ sudo chmod ugo+rwx jwils082.txt
john@John-VirtualBox:/cyse$ ls -l
total 16
-rwxrwxrwx 1 root root 0 Feb 23 17:05 jwils082.txt
drwx----- 2 root root 16384 Feb 23 16:14 lost+found
john@John-VirtualBox:/cyse$ sudo echo john > jwils082.txt
john@John-VirtualBox:/cyse$ cat jwils082.txt
john
john@John-VirtualBox:/cyse$
```

Figure 11 Screenshots of JWILS082 Computer screen for Step 6.

Above is the screen shot using the commands “cd /cyse” to change to the directory /cyse.

## CYSE 270 Assignment #7 Manage Local Storage

I also used the command “touch jwils082.txt” to create a file in the /cyse directory.

I then used the command “echo John > jwils082.txt” to place my name into the file jwils082.txt. as you can see I had a tad bit of trouble adding the name to the file without changing the permission. To do this I used the command “sudo chmod ugo+rwx jwils082.txt” to give god like permissions to this file. I know this is not a secure way to do this. I probably should have just done the command “chmod g+rw jwils082.txt”.

I also did the command “cat jwils082.txt” to validate the name “John” was placed in the file.

## CYSE 270 Assignment #7 Manage Local Storage

### Step 7. Unmount /cyse directory.

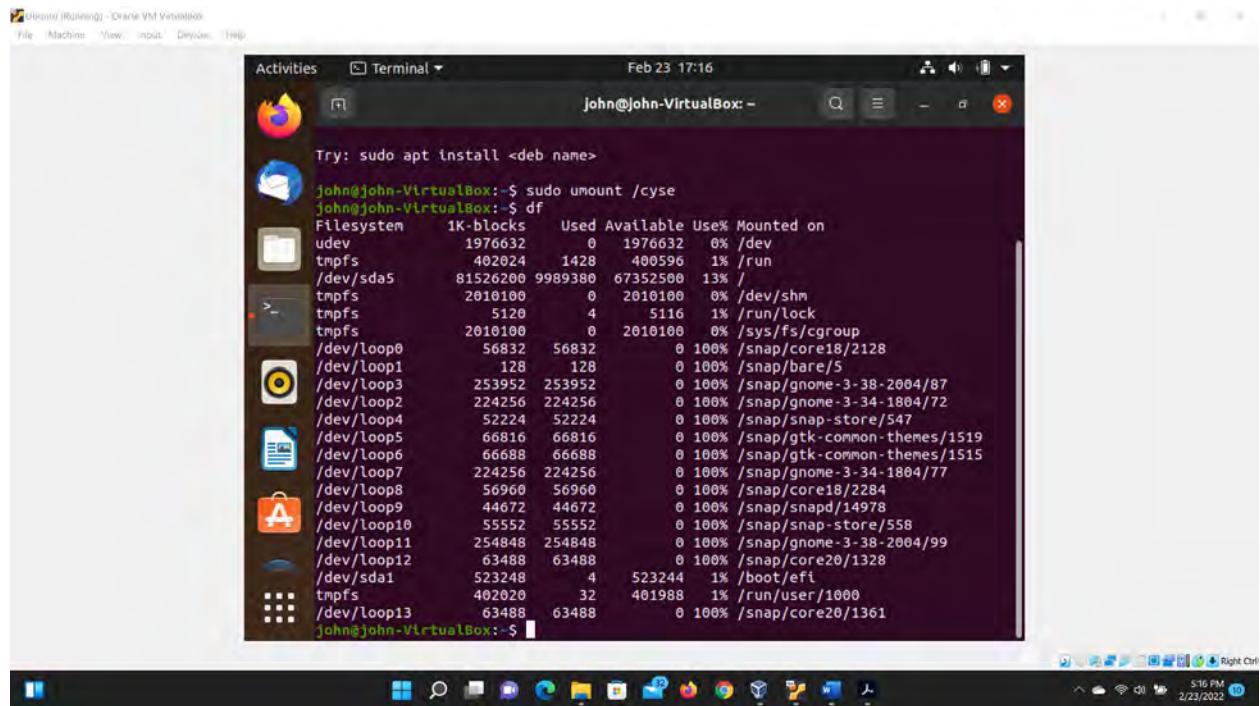


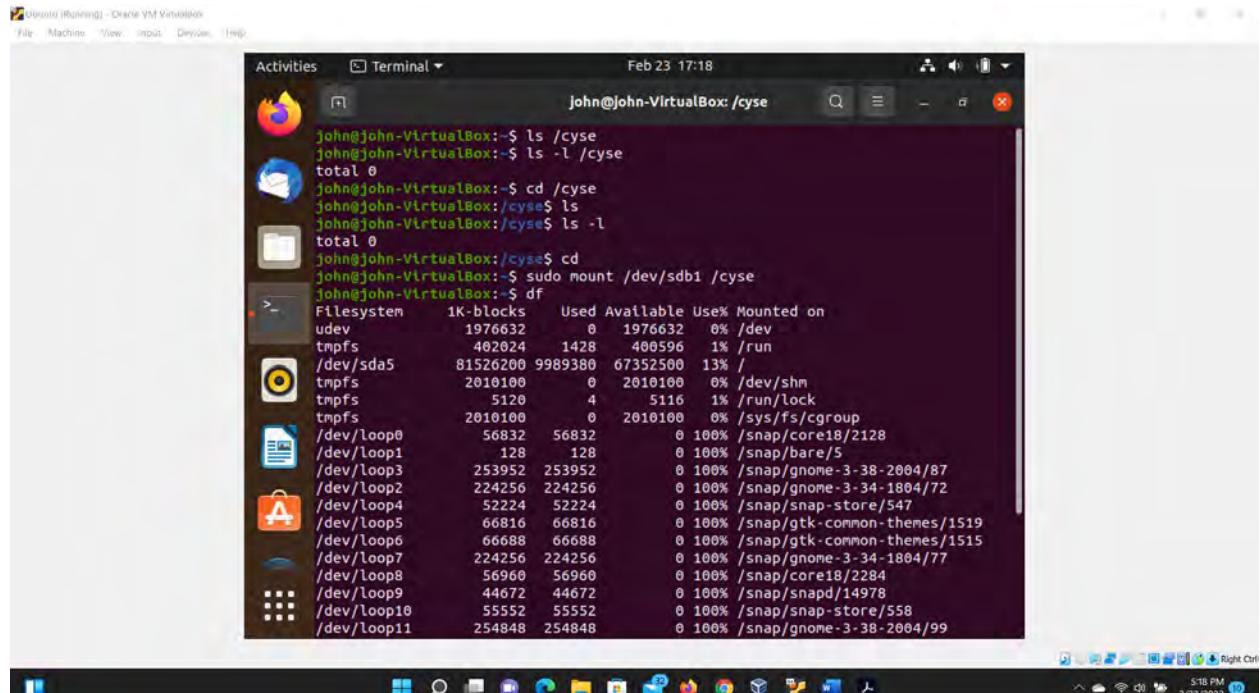
Figure 12 Screenshots of JWILS082 Computer screen for Step 7.

Above is the screen shot using the commands “unmount /cyse” to unmount the device from the directory.

I then used the command “df” to validate the device unmounted from the directory /cyse.

## CYSE 270 Assignment #7 Manage Local Storage

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



Activities Terminal Feb 23 17:18

```
john@john-VirtualBox:~$ ls /cyse
john@john-VirtualBox:~$ ls -l /cyse
total 0
john@john-VirtualBox:~$ cd /cyse
john@john-VirtualBox:/cyse$ ls
john@john-VirtualBox:/cyse$ ls -l
total 0
john@john-VirtualBox:/cyse$ cd
john@john-VirtualBox:~$ sudo mount /dev/sdb1 /cyse
john@john-VirtualBox:~$ df
Filesystem 1K-blocks Used Available Use% Mounted on
udev 1976632 0 1976632 0% /dev
tmpfs 402024 1428 400596 1% /run
/dev/sda5 81526200 9989380 67352500 13% /
tmpfs 2010100 0 2010100 0% /dev/shm
tmpfs 5120 4 5116 1% /run/lock
tmpfs 2010100 0 2010100 0% /sys/fs/cgroup
/dev/loop0 56832 56832 0 100% /snap/core18/2128
/dev/loop1 128 128 0 100% /snap/bare/5
/dev/loop3 253952 253952 0 100% /snap/gnome-3-38-2004/87
/dev/loop2 224256 224256 0 100% /snap/gnome-3-34-1804/72
/dev/loop4 52224 52224 0 100% /snap/snap-store/547
/dev/loop5 66816 66816 0 100% /snap/gtk-common-themes/1519
/dev/loop6 66688 66688 0 100% /snap/gtk-common-themes/1515
/dev/loop7 224256 224256 0 100% /snap/gnome-3-34-1804/77
/dev/loop8 56960 56960 0 100% /snap/core18/2284
/dev/loop9 44672 44672 0 100% /snap/snapd/14978
/dev/loop10 55552 55552 0 100% /snap/snap-store/558
/dev/loop11 254848 254848 0 100% /snap/gnome-3-38-2004/99
```

Activities Terminal Feb 23 17:19

```
john@john-VirtualBox:~$ df
Filesystem 1K-blocks Used Available Use% Mounted on
udev 1976632 0 1976632 0% /dev
tmpfs 402024 1428 400596 1% /run
/dev/sda5 81526200 9989380 67352500 13% /
tmpfs 2010100 0 2010100 0% /dev/shm
tmpfs 5120 4 5116 1% /run/lock
tmpfs 2010100 0 2010100 0% /sys/fs/cgroup
/dev/loop0 56832 56832 0 100% /snap/core18/2128
/dev/loop1 128 128 0 100% /snap/bare/5
/dev/loop3 253952 253952 0 100% /snap/gnome-3-38-2004/87
/dev/loop2 224256 224256 0 100% /snap/gnome-3-34-1804/72
/dev/loop4 52224 52224 0 100% /snap/snap-store/547
/dev/loop5 66816 66816 0 100% /snap/gtk-common-themes/1519
/dev/loop6 66688 66688 0 100% /snap/gtk-common-themes/1515
/dev/loop7 224256 224256 0 100% /snap/gnome-3-34-1804/77
/dev/loop8 56960 56960 0 100% /snap/core18/2284
/dev/loop9 44672 44672 0 100% /snap/snapd/14978
/dev/loop10 55552 55552 0 100% /snap/snap-store/558
/dev/loop11 254848 254848 0 100% /snap/gnome-3-38-2004/99
/dev/loop12 63488 63488 0 100% /snap/core20/1328
/dev/sda1 523248 4 523244 1% /boot/efi
tmpfs 402020 32 401988 1% /run/user/1000
/dev/loop13 63488 63488 0 100% /snap/core20/1361
/dev/sdb1 180992 220 166512 1% /cyse
john@john-VirtualBox:~$ cd /cyse
john@john-VirtualBox:/cyse$ ls
jwls082.txt lost+found
john@john-VirtualBox:/cyse$
```

Figure 13 Screenshots of JWILS082 Computer screen for Step 8.

After running the command “ls” I found that no files were located in the directory. However, I mounted /dev/sdb1 to /cyse once again and ran the command “ls” and the files were located in the directory /cyse.