OLD DOMINION UNIVERSITY

CYSE 270 LINUX SYSTEM FOR CYBERSECURITY

Assignment #7 Manage Local Storage

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CYSE 270 Assignment #7 Manage Local Storage

Part I– Check your file system (30 points)

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

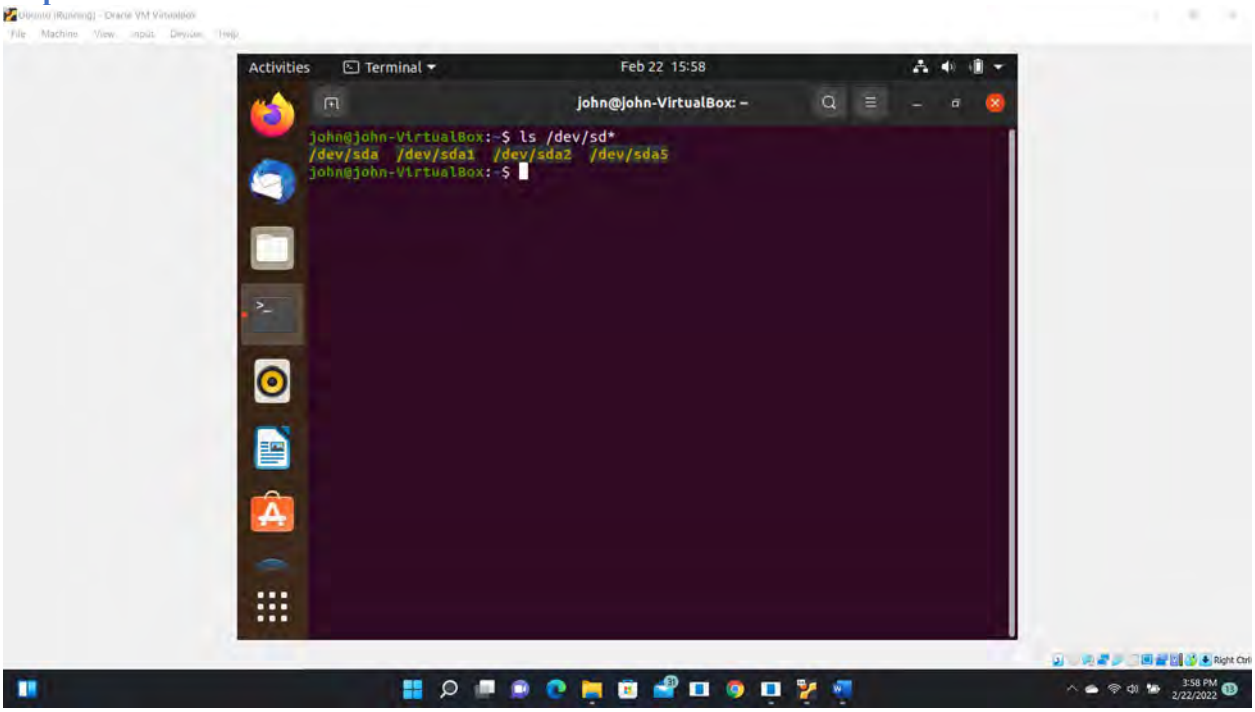

Figure 1 Screenshots of JWILS082 Computer screen for Step 1.

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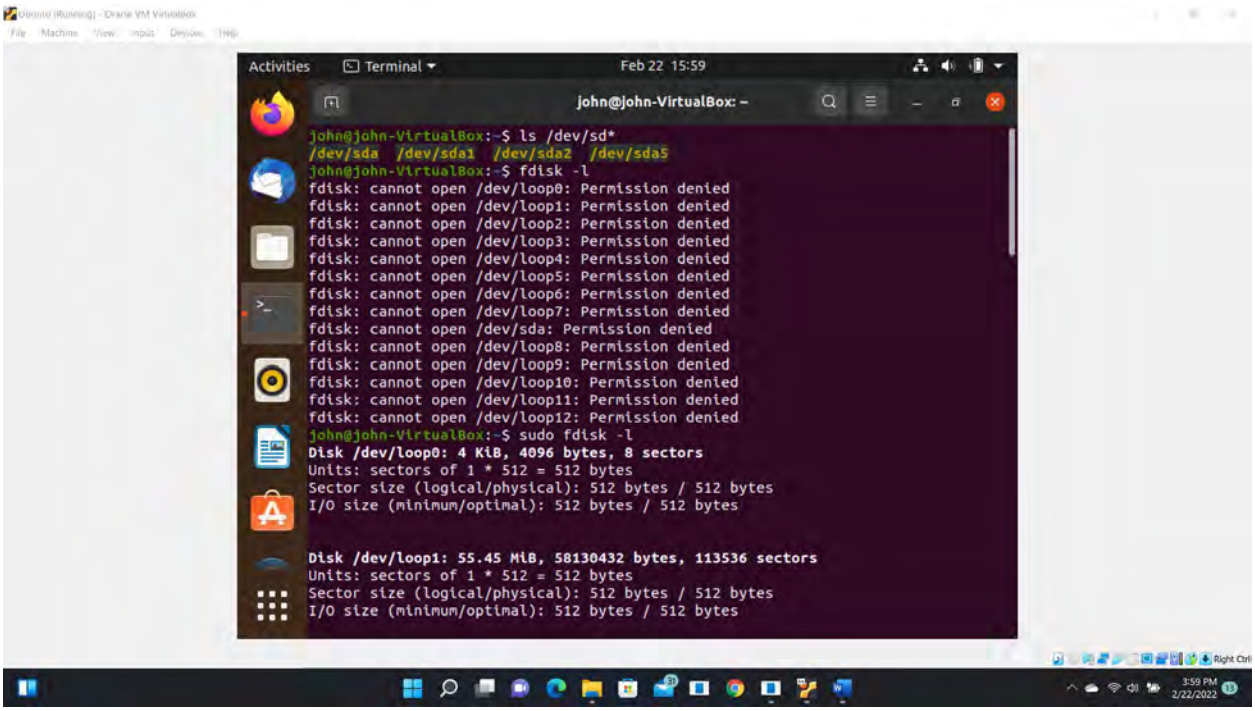
Step 2. Execute the fdisk -l command to list the current hard disk partitions.



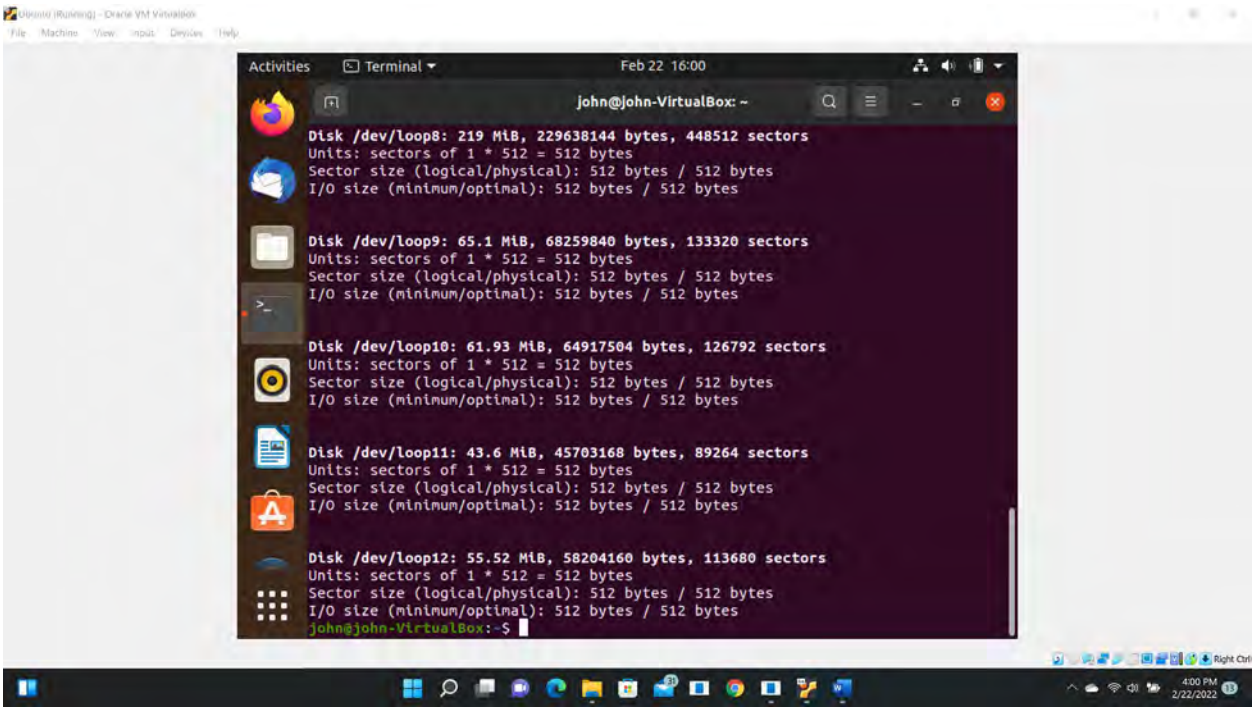


Figure 2 Screenshots of JWILS082 Computer screen for Step 2.

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.

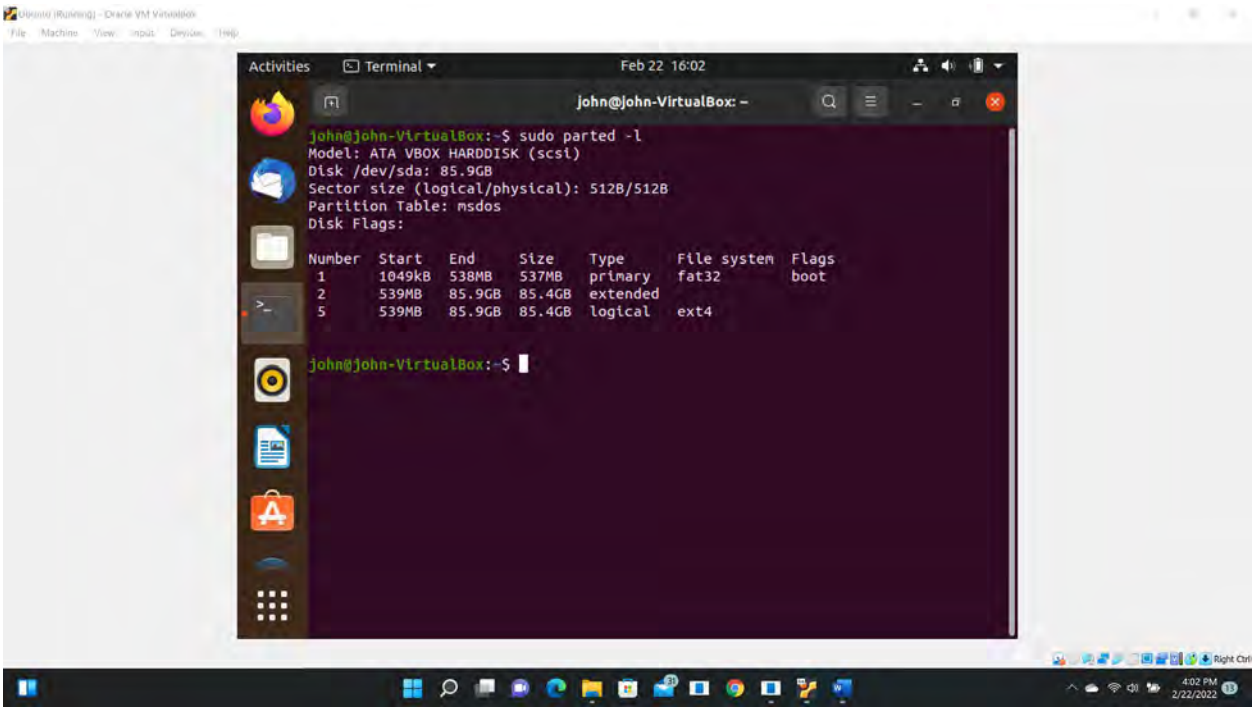

Figure 3 Screenshots of JWILS082 Computer screen for Step 3.

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

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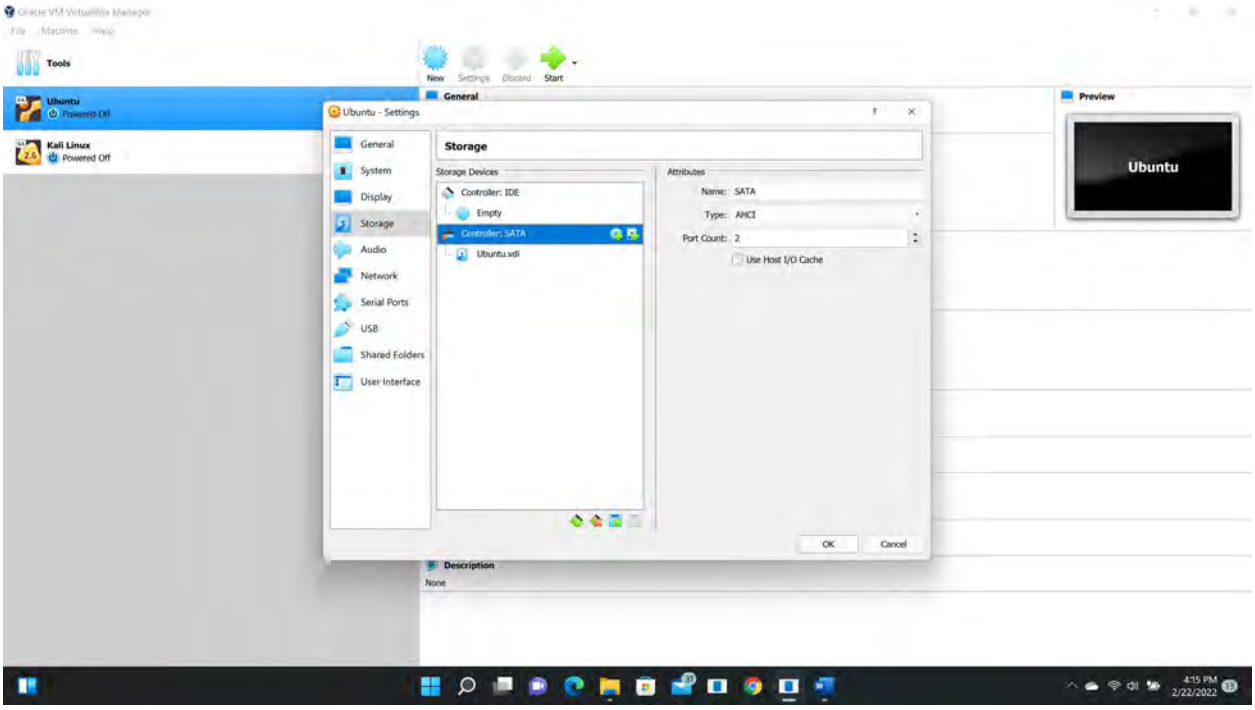
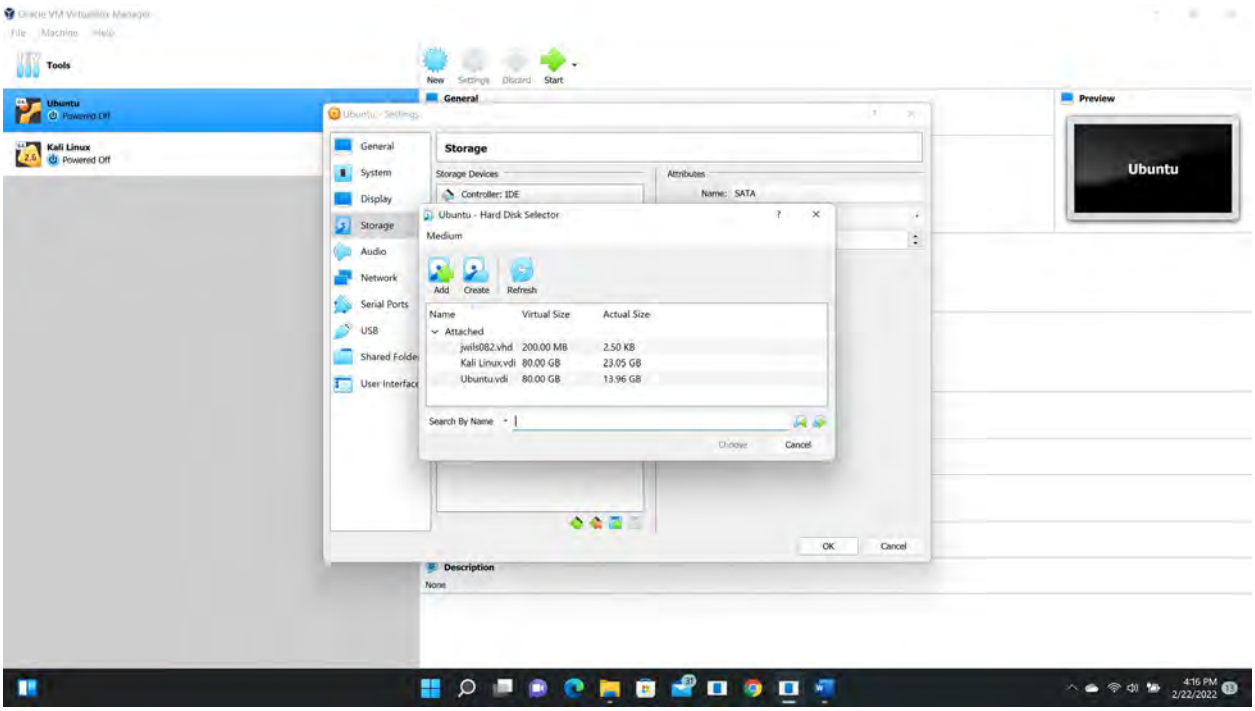
Part II– Create a new virtual disk (30 points)

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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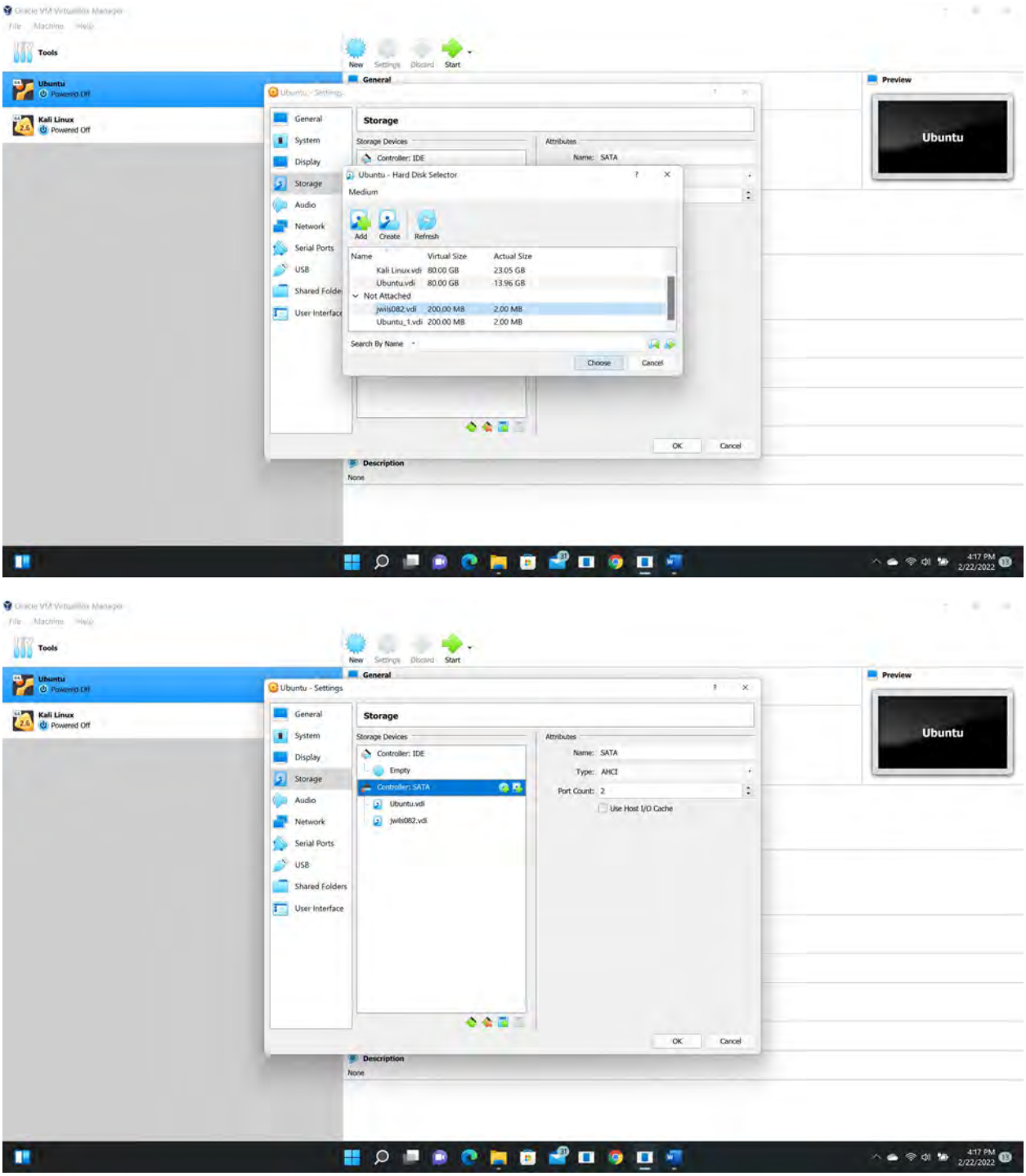

Figure 4 Screenshots of JWILS082 Computer screen for Step 1 and 2.

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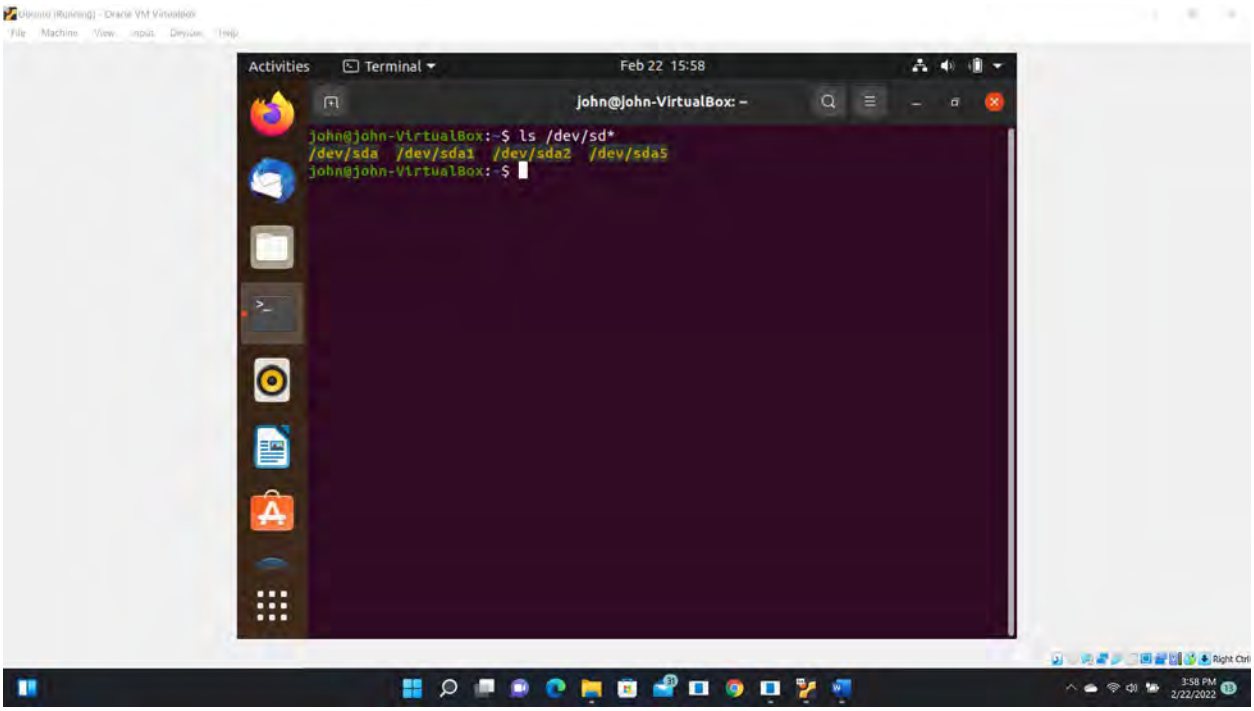
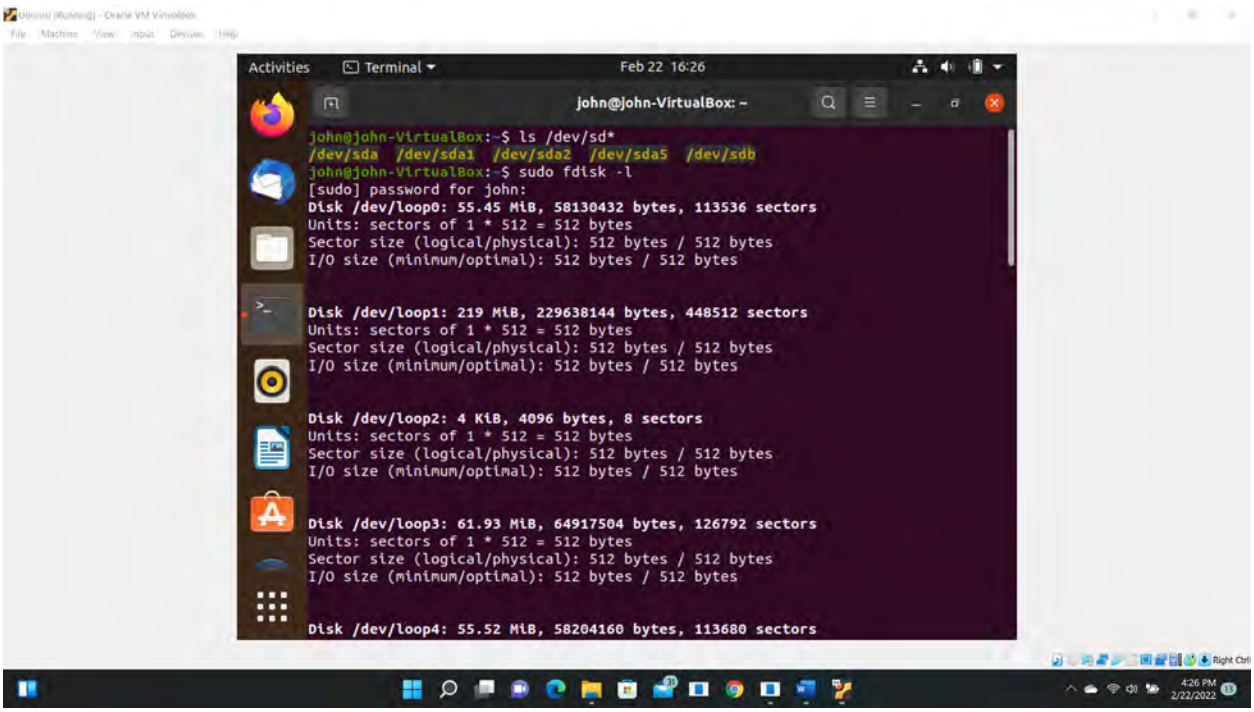
Step 3. Repeat the steps in Part I, and highlight the differences with the new virtual hard disk.





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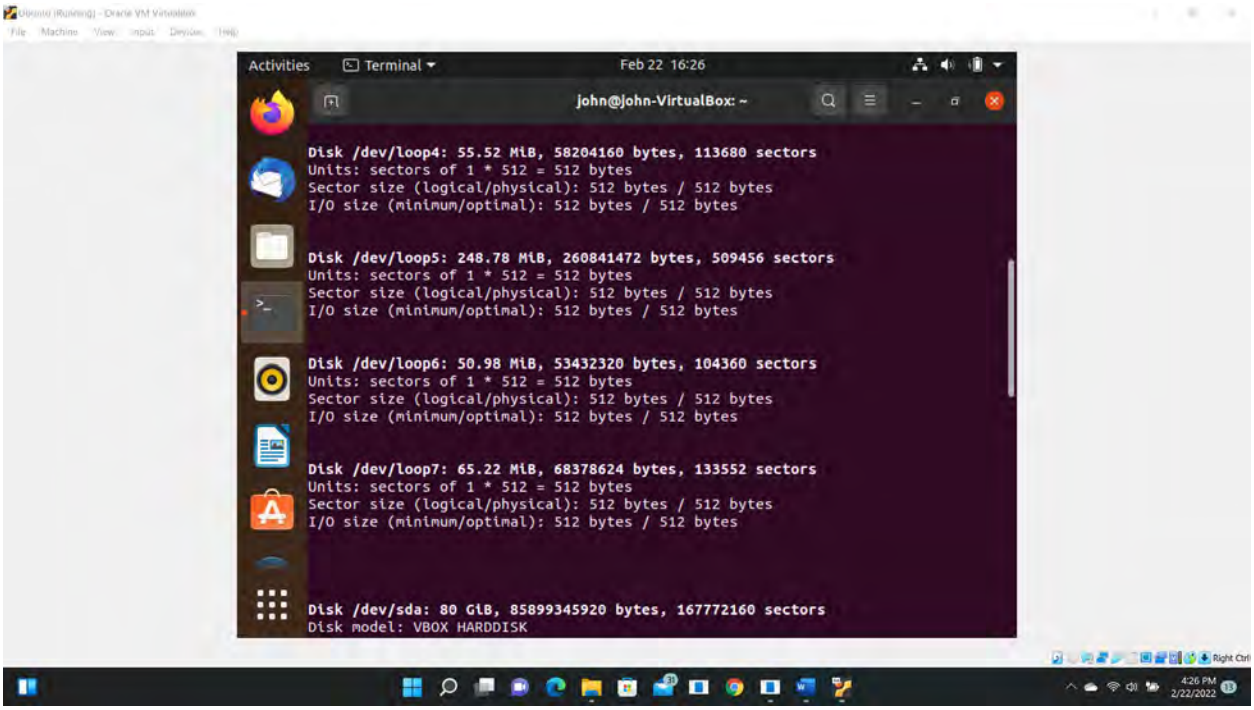

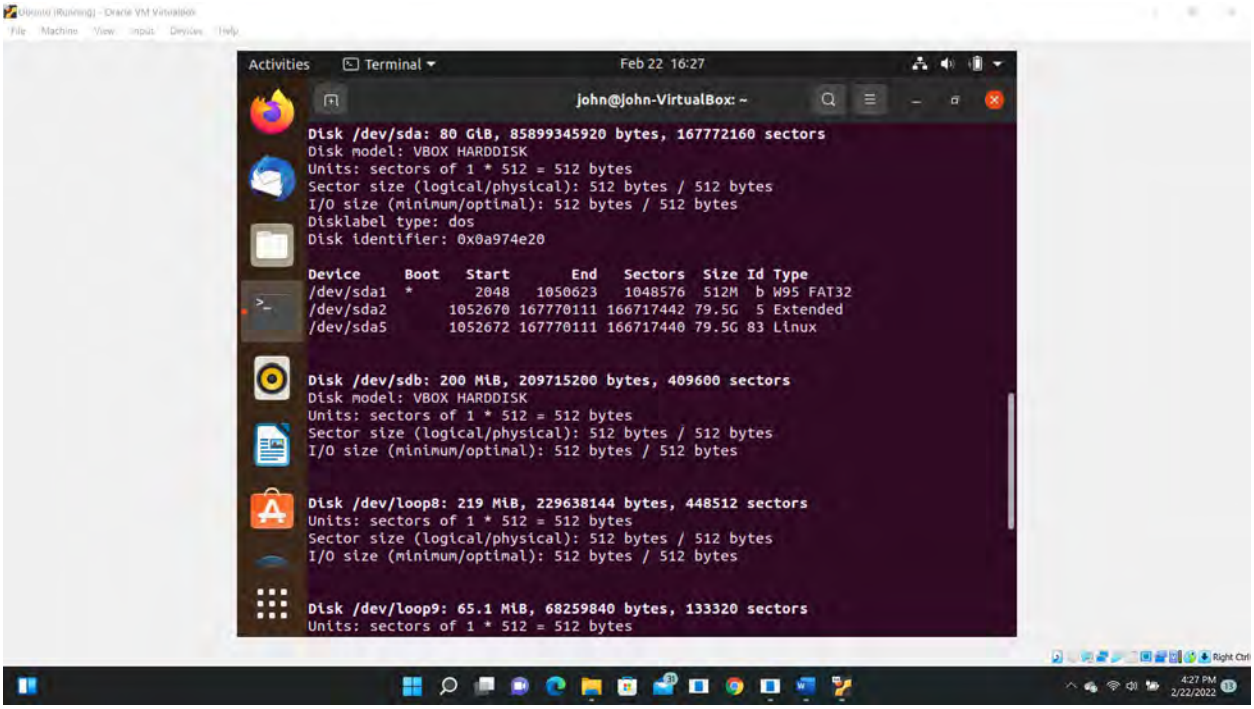

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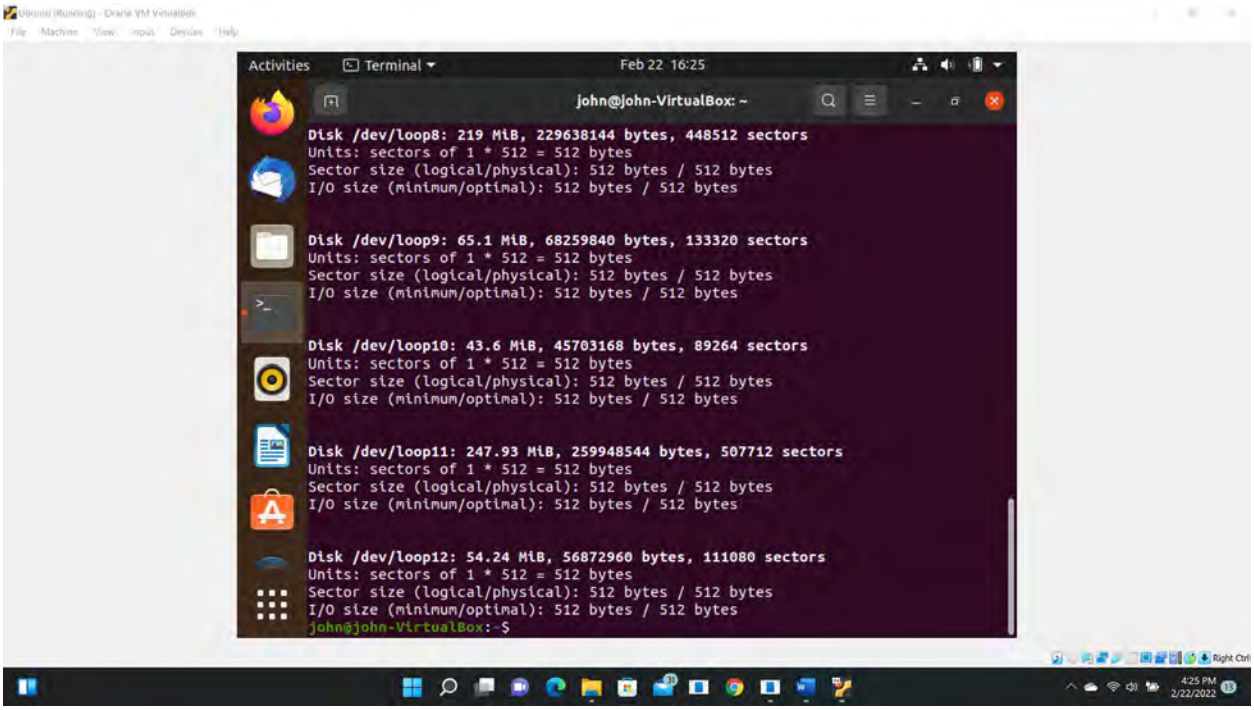

Figure 5 Screenshots of JWILS082 Computer screen for Step 3.

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.

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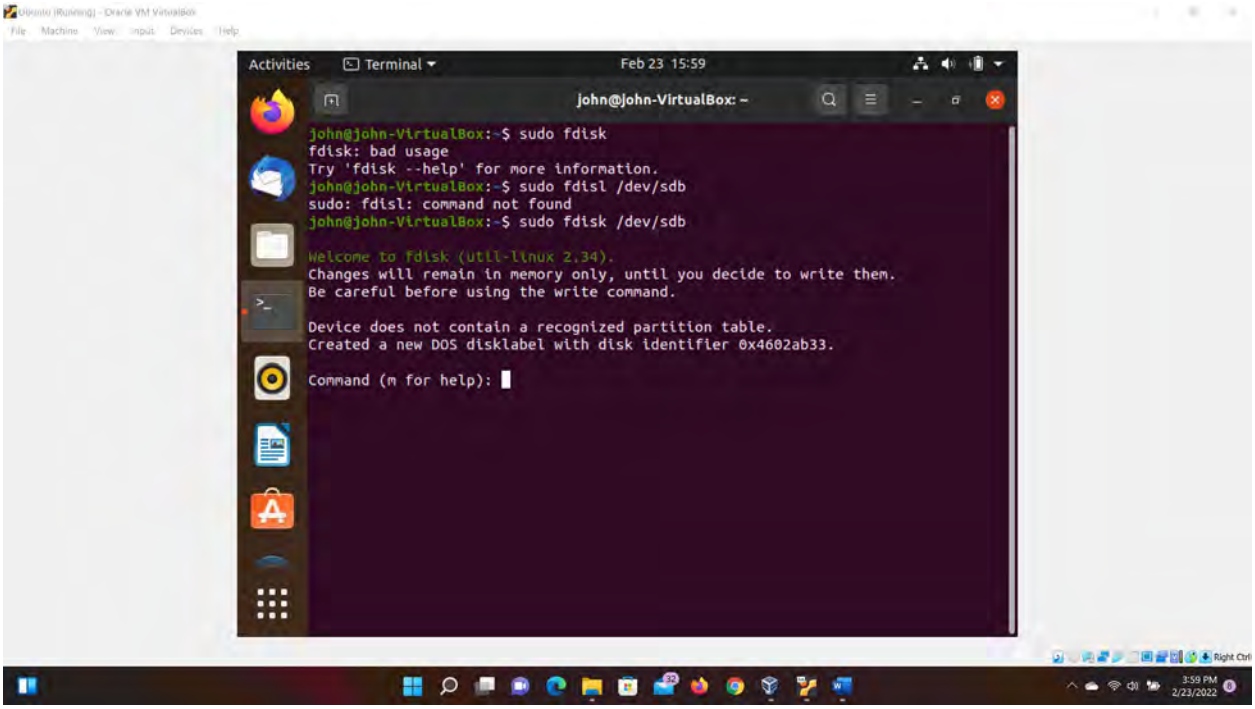
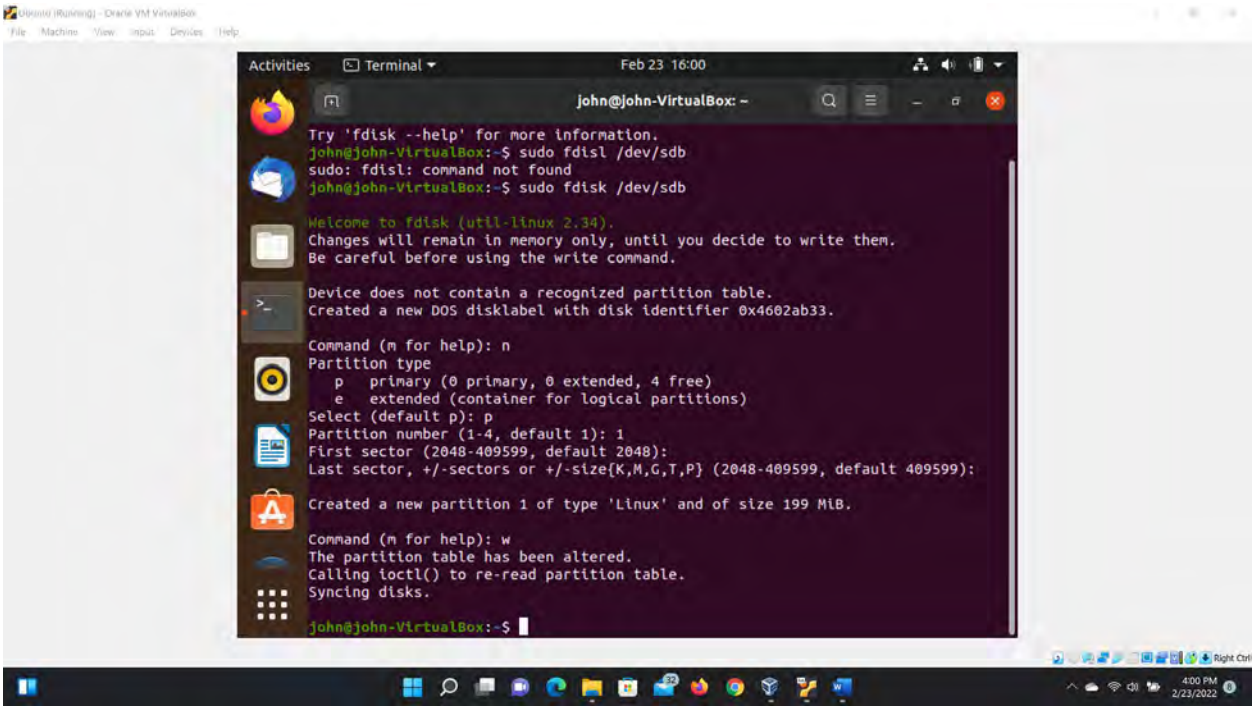
Part III– Creating Partitions and Filesystems (60 points)

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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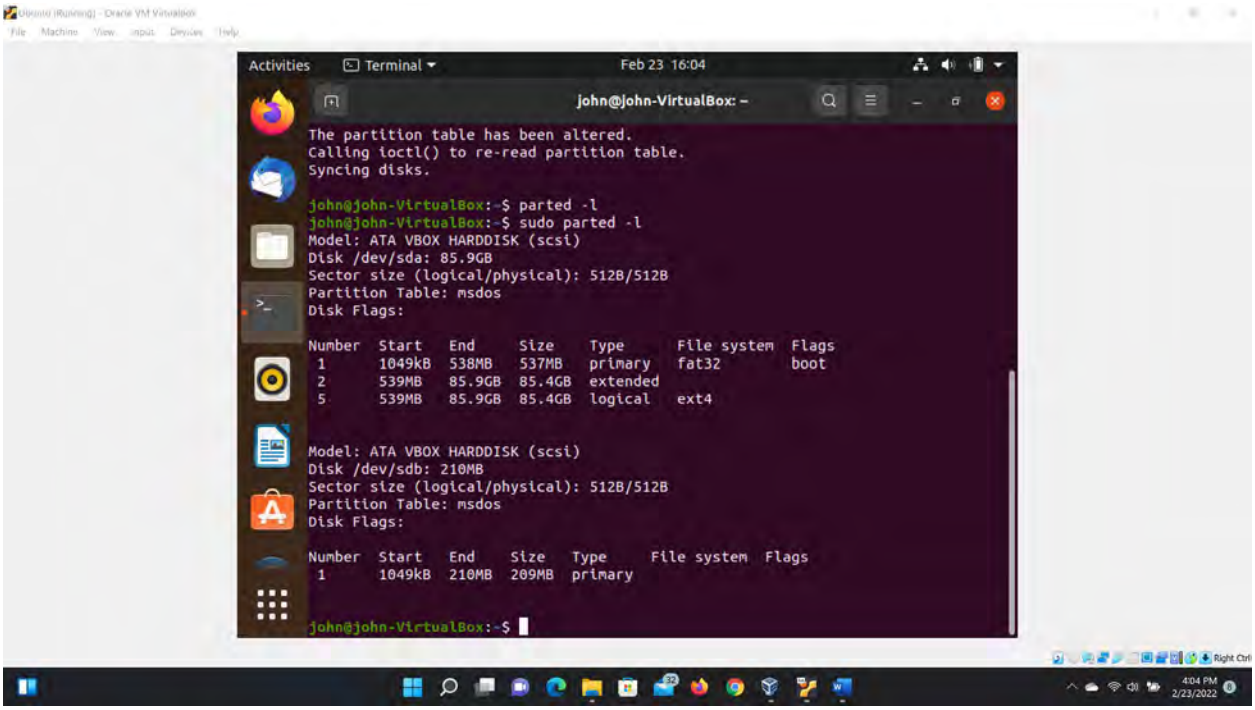

Figure 6 Screenshots of JWILS082 Computer screen for Step 1.

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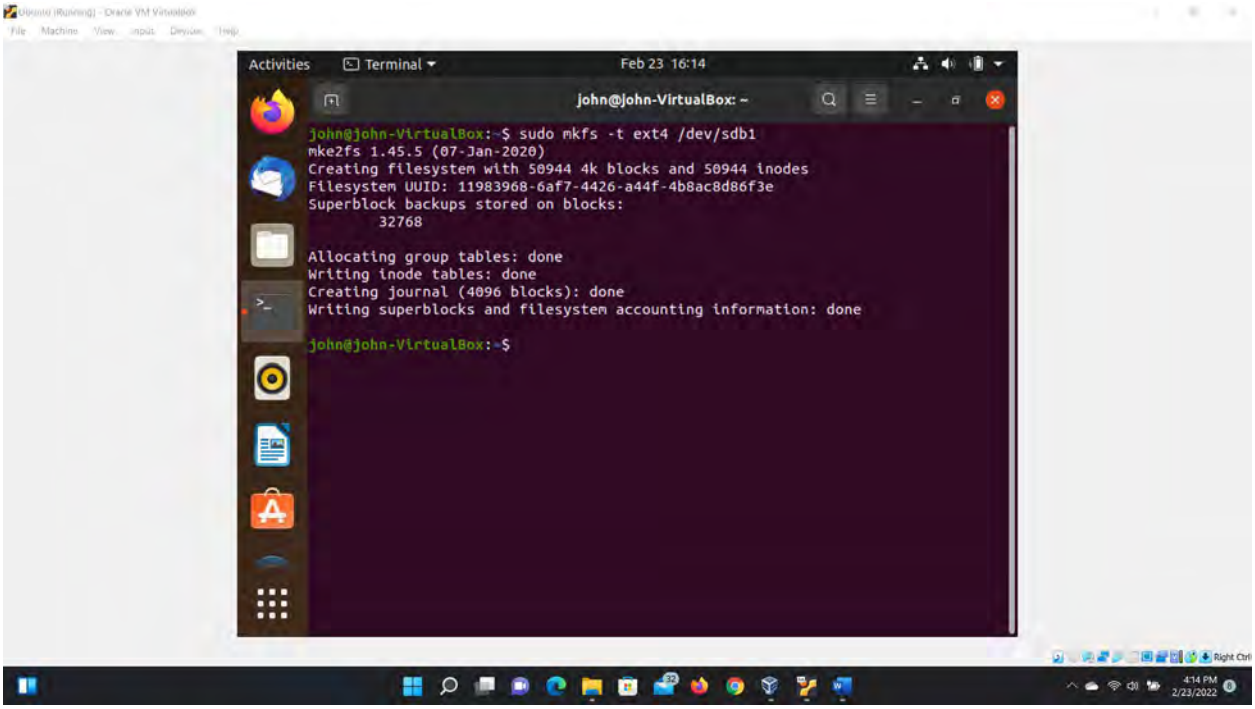
Step 2. Use the correct command to create an ext4 filesystem on the new partition.



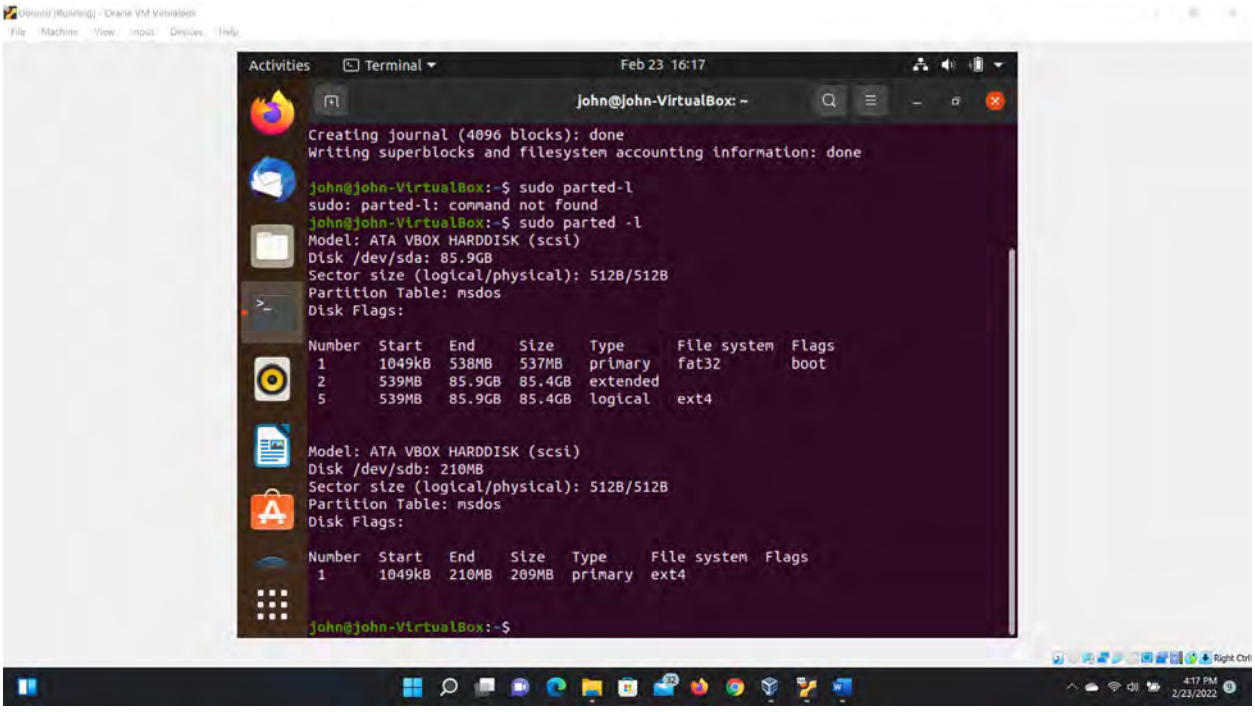


Figure 7 Screenshots of JWILS082 Computer screen for Step 2.

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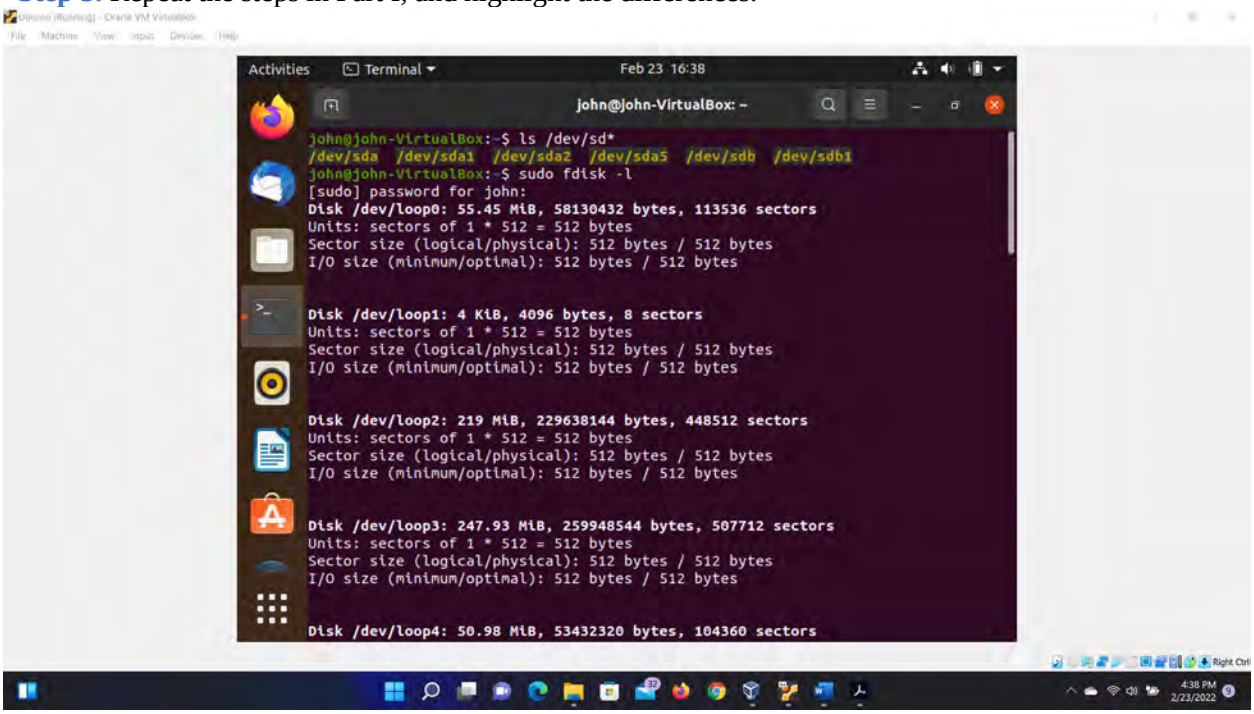
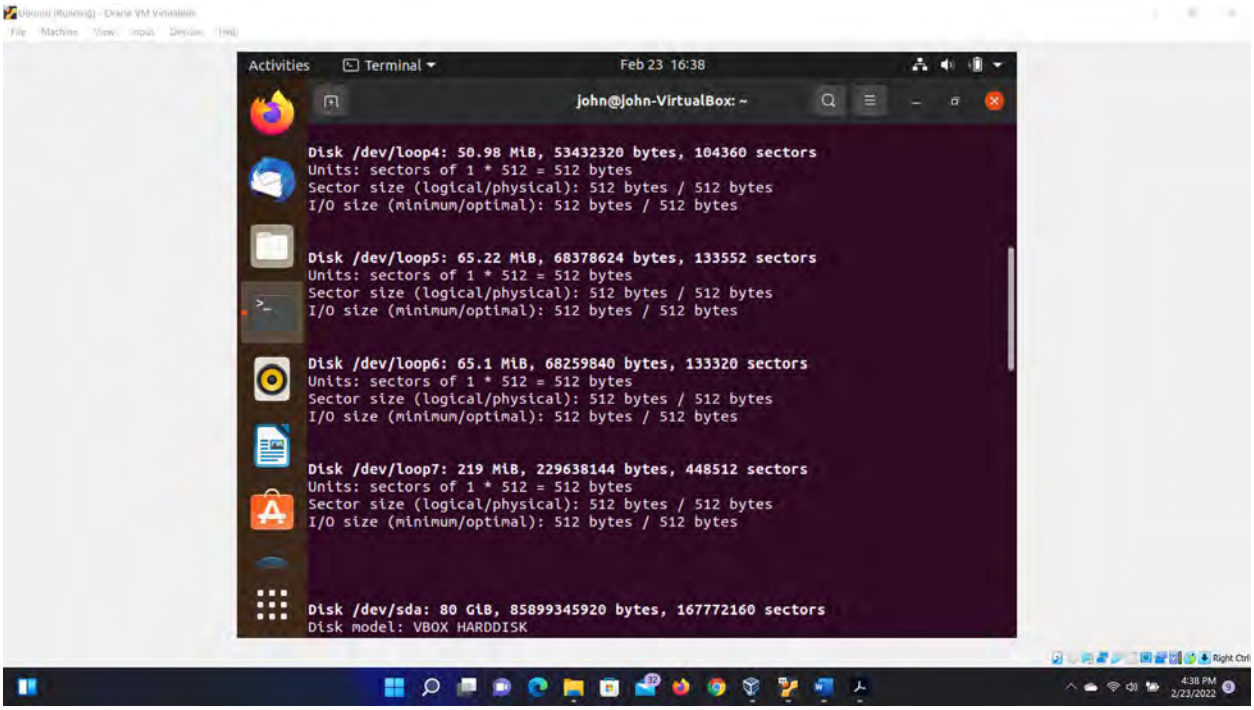
Step 3. Repeat the steps in Part I, and highlight the differences.





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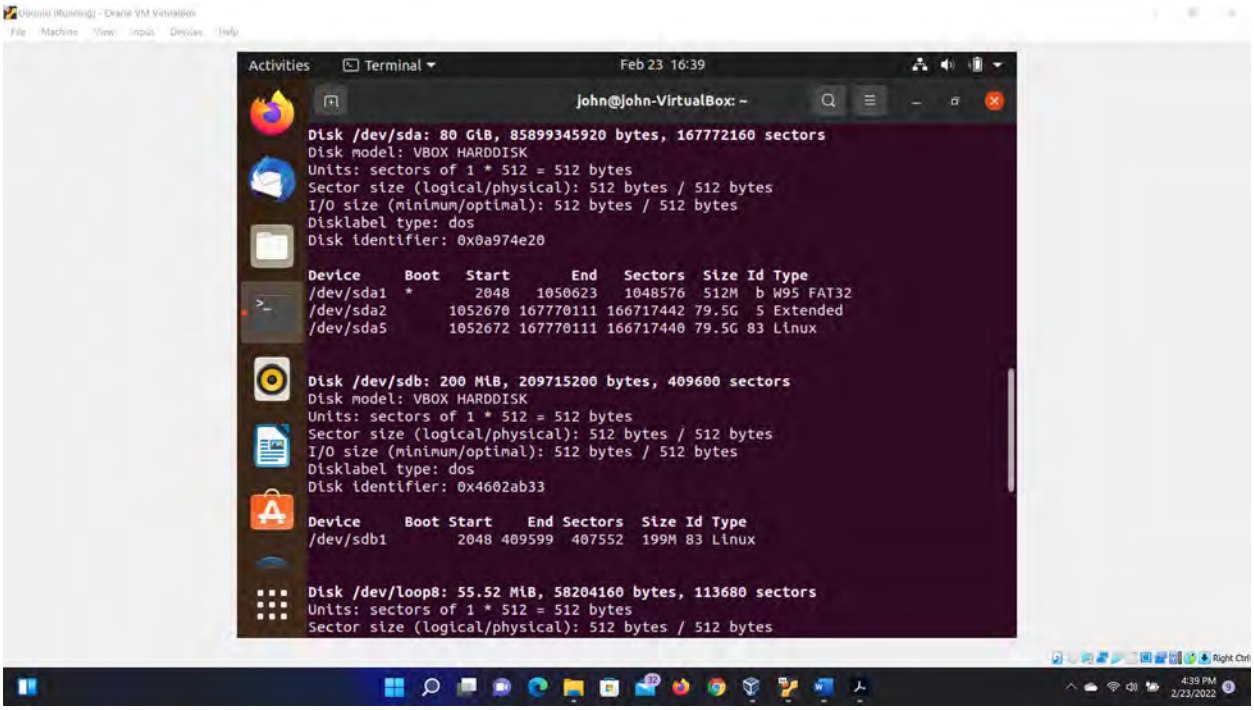

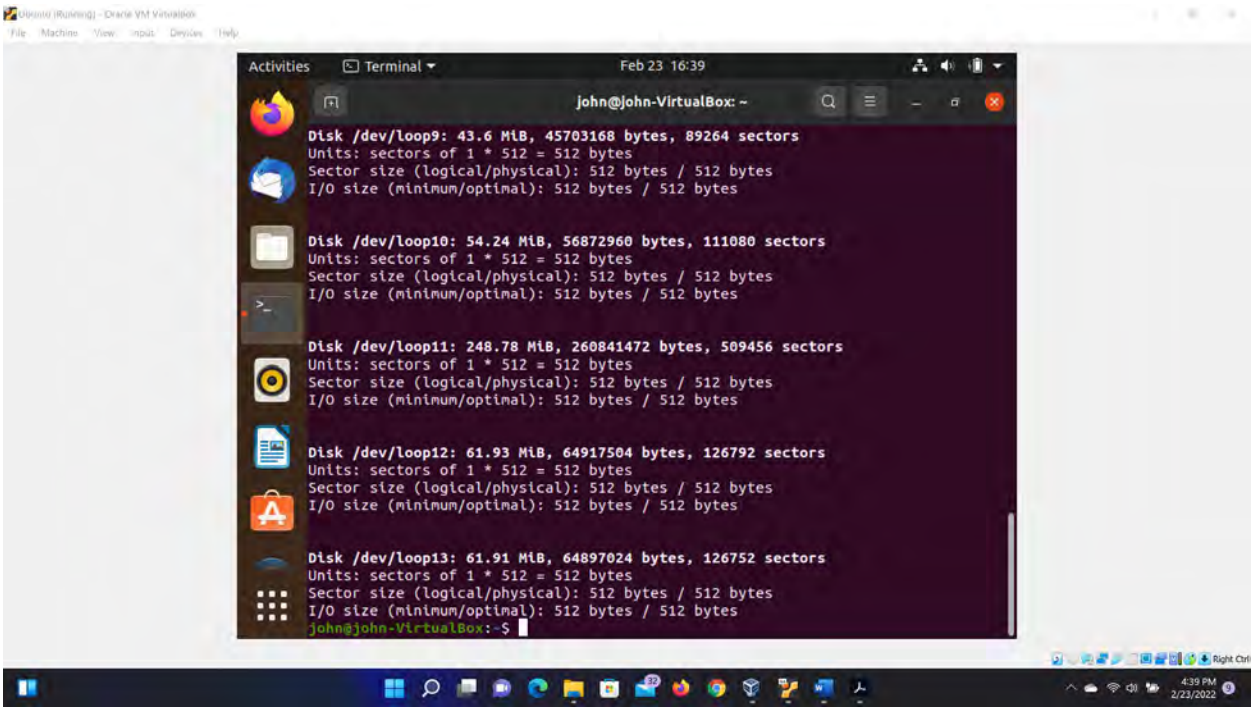

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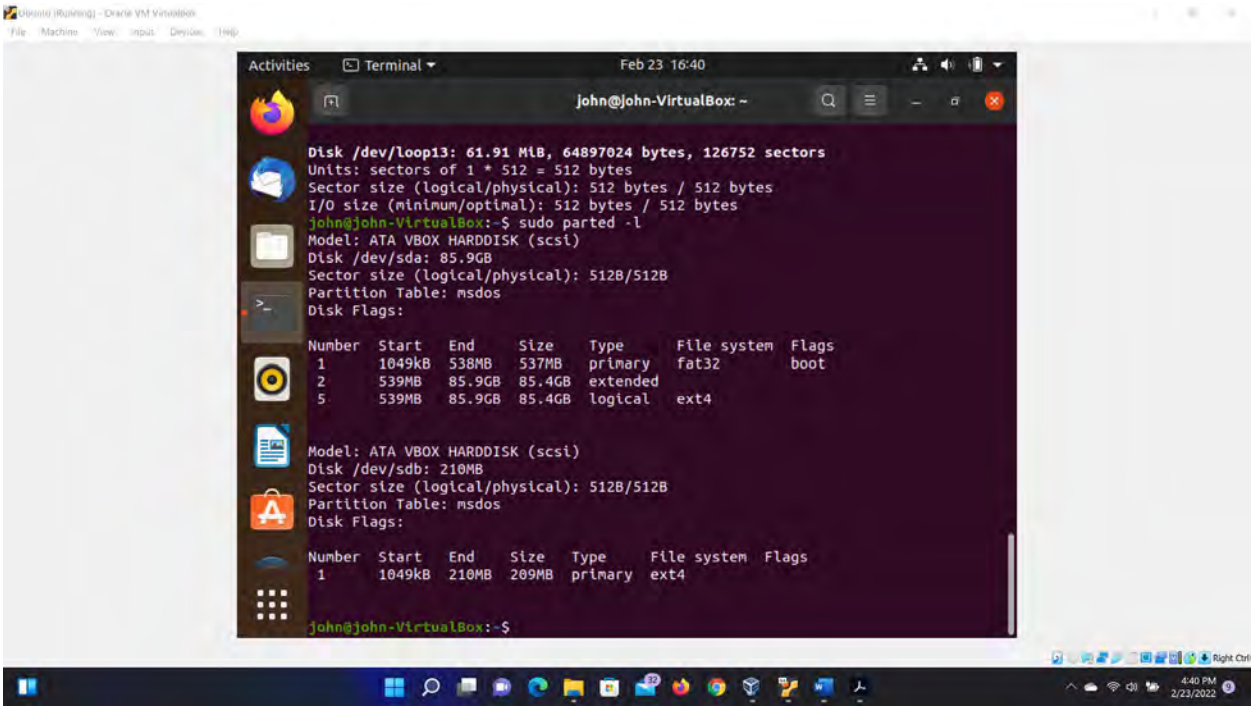

Figure 8 Screenshots of JWILS082 Computer screen for Step 3.

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.

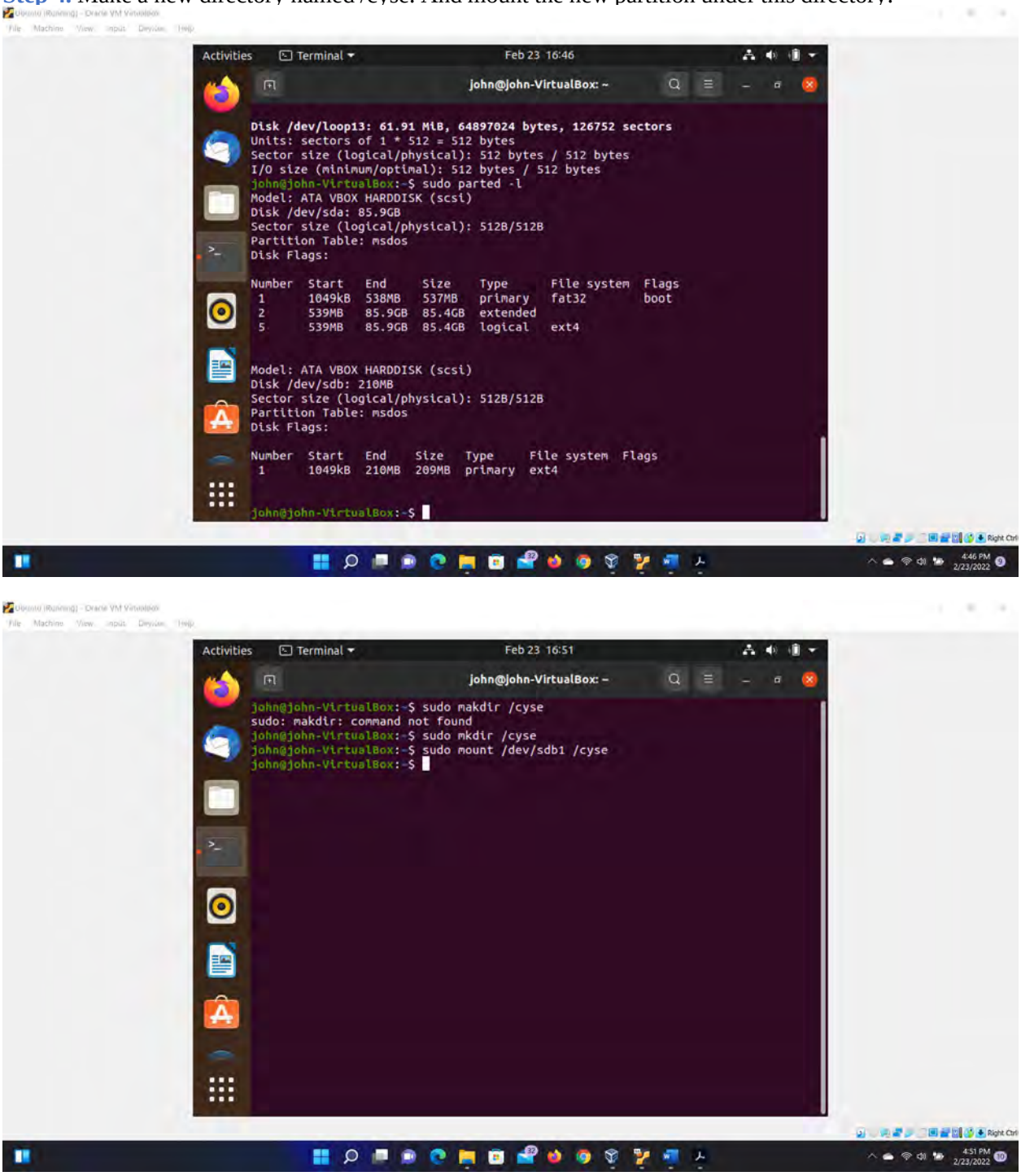

Figure 9 Screenshots of JWILS082 Computer screen for Step 4.

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 diercotry /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.

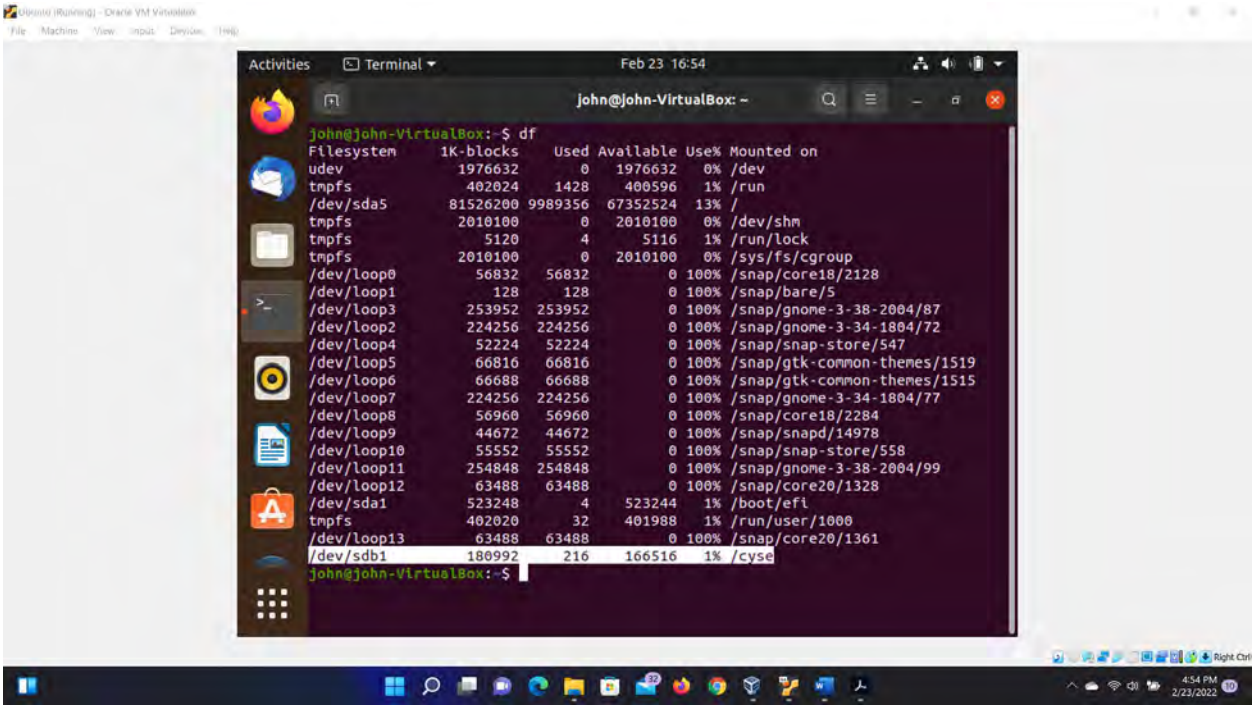
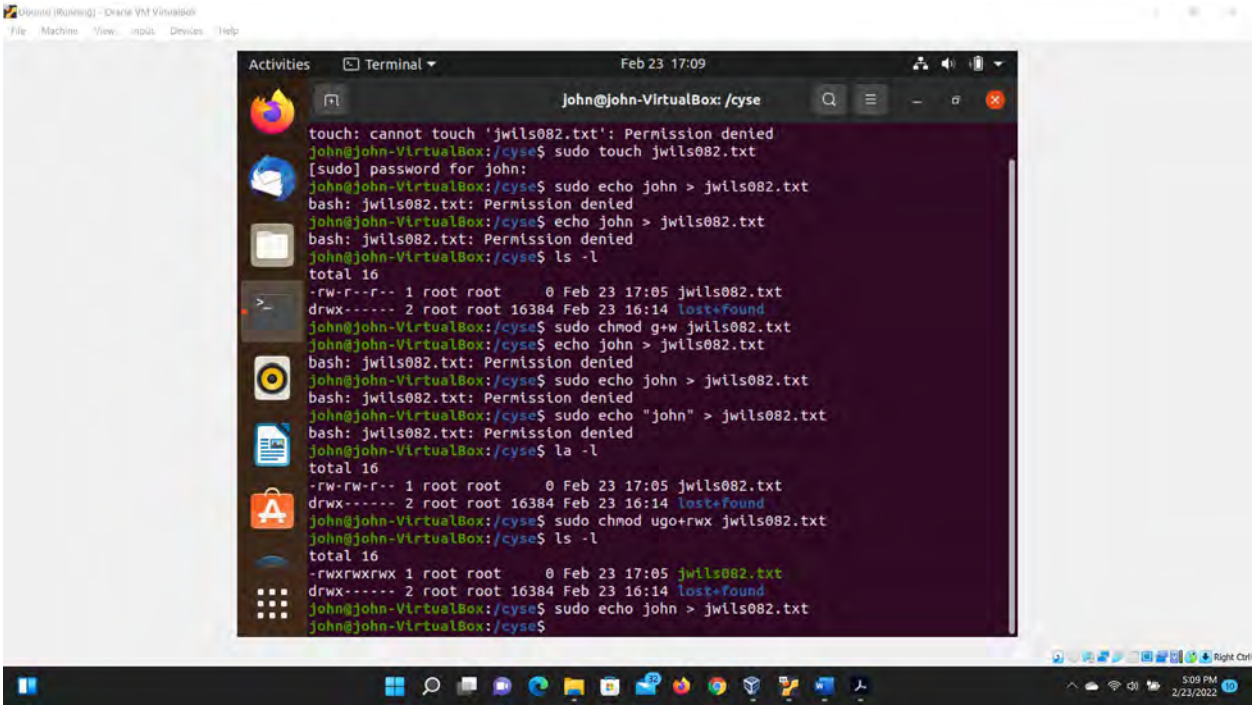


Figure 10 Screenshots of JWILS082 Computer screen for Step 5.

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

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



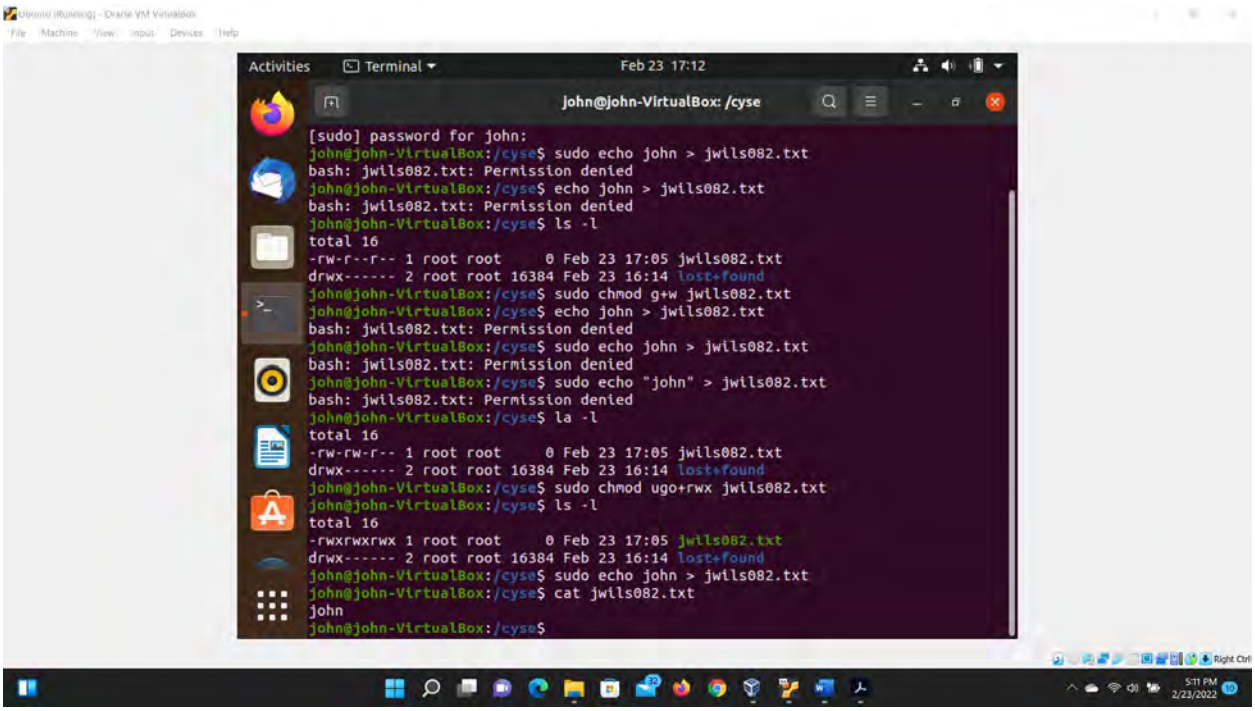


Figure 11 Screenshots of JWILS082 Computer screen for Step 6.

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

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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 jwilso82.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.

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Step 7. Unmount /cyse directory.

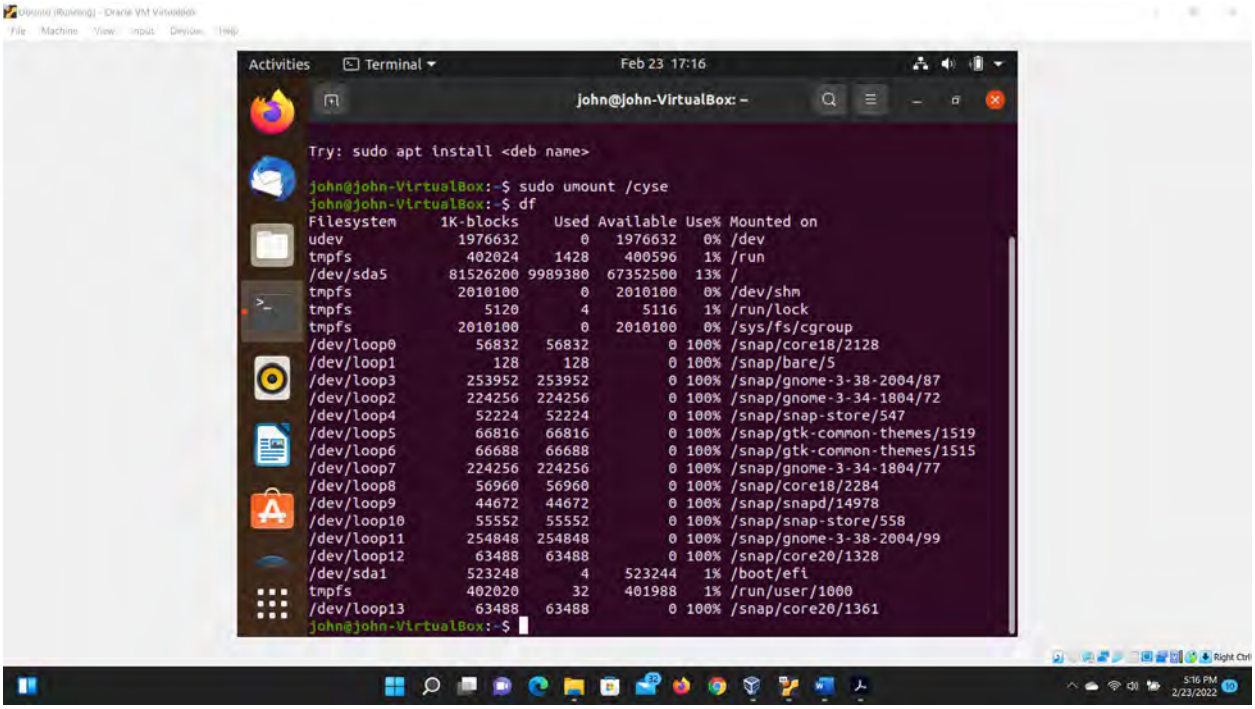

Figure 12 Screenshots of JWILS082 Computer screen for Step 7.

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.

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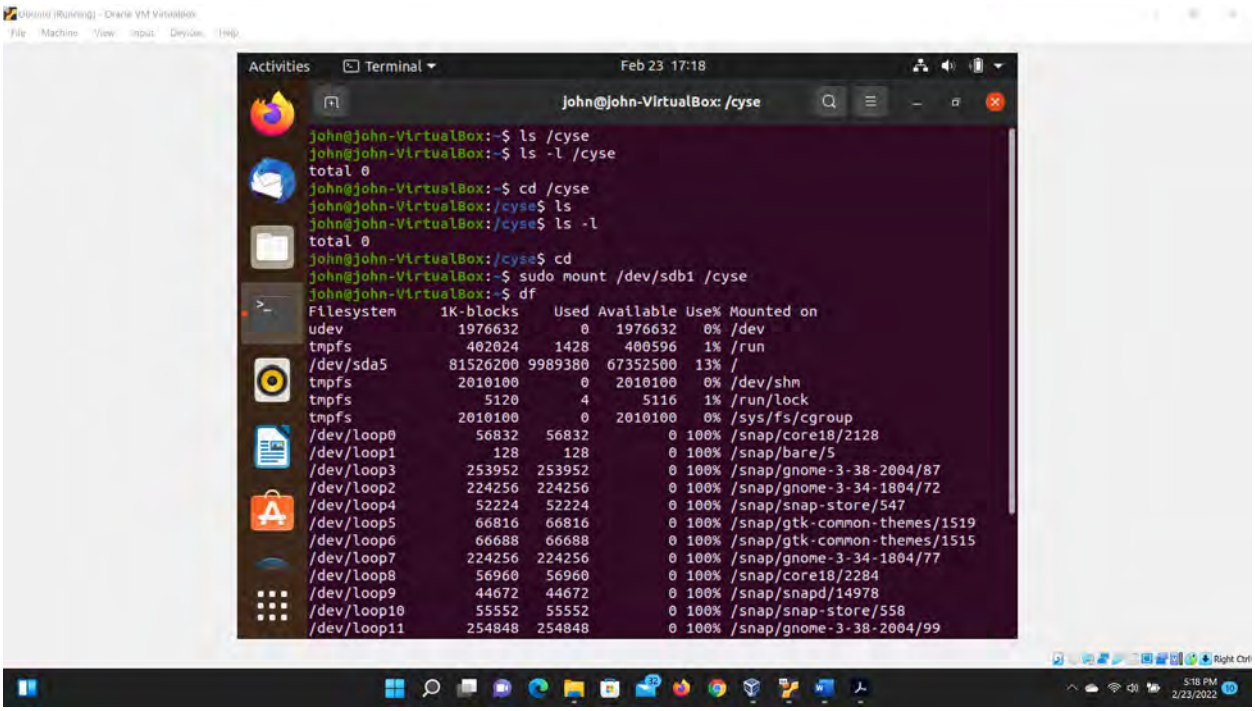
Step 8. Check the contents in /cyse directory. What do you find?



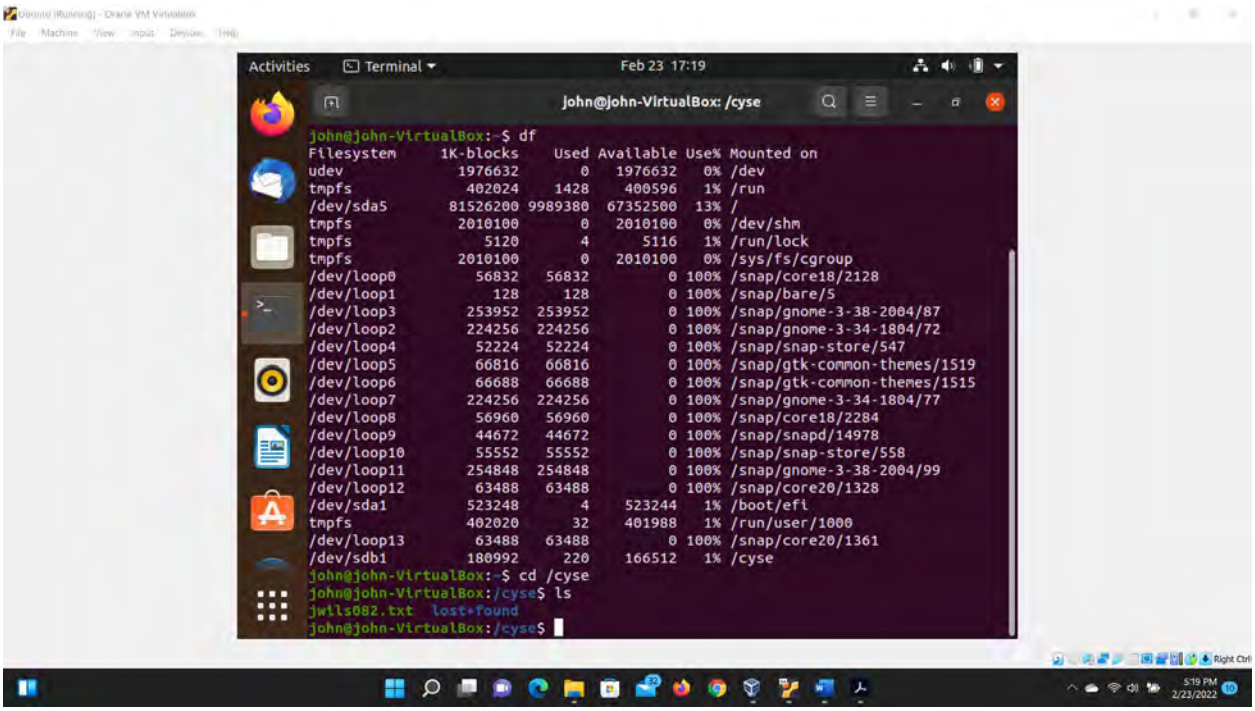


Figure 13 Screenshots of JWILS082 Computer screen for Step 8.

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.