

# Assignment 3 Answers

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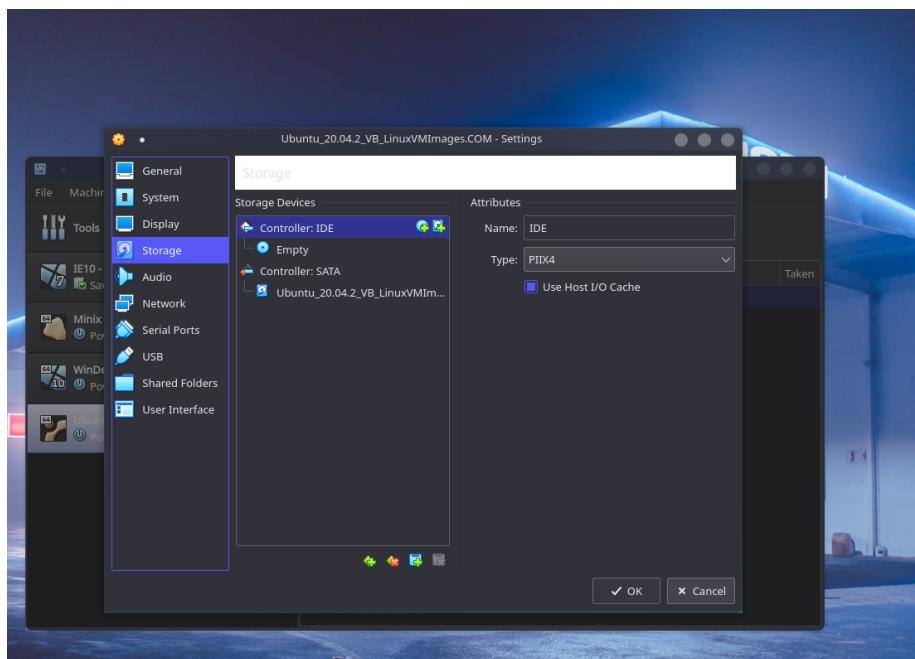
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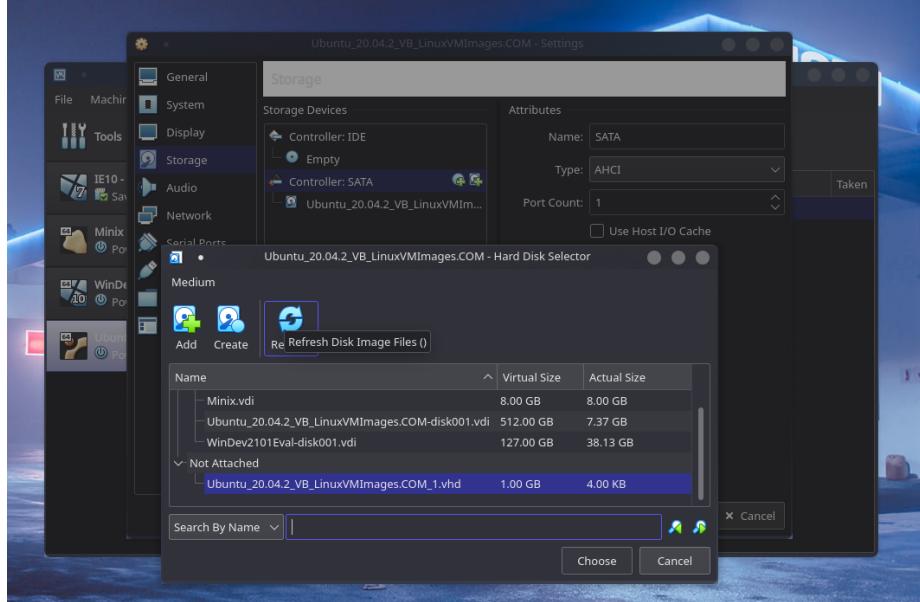
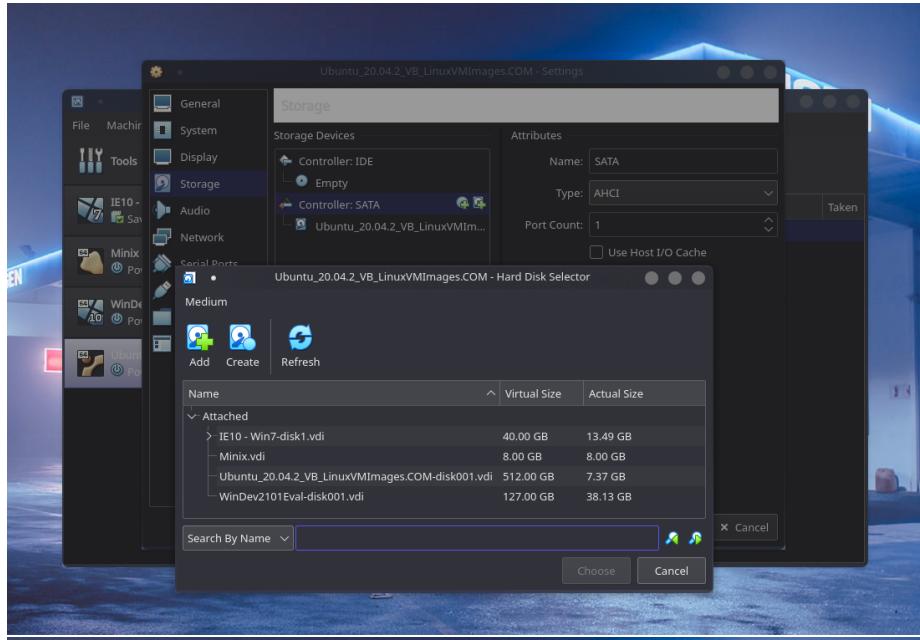
Class: Operating Systems

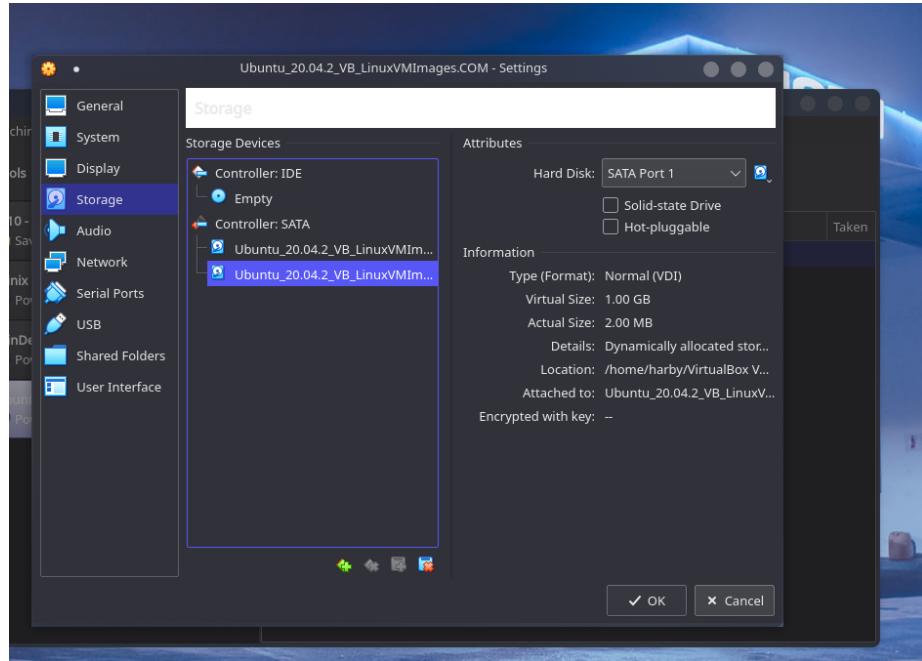
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## Question 1

Create some space on your hard drive to work on this assignment (highly recommended to use VirtualBox or other virtual machine software to assign some space for the Guest OS to create partition and file system). This would mimic a new hard drive attached to your Guest OS. You can also use a separate USB drive for this assignment but it is not recommended.

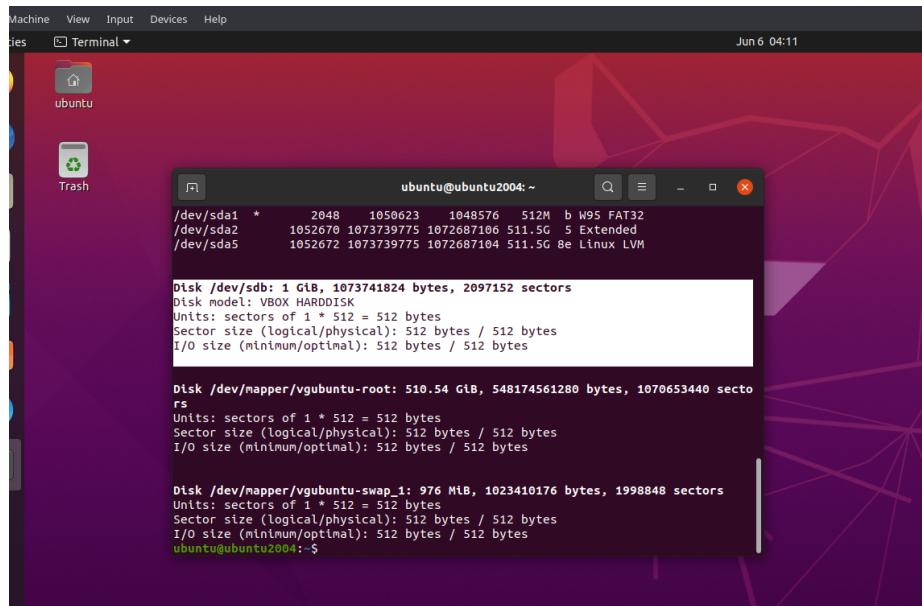


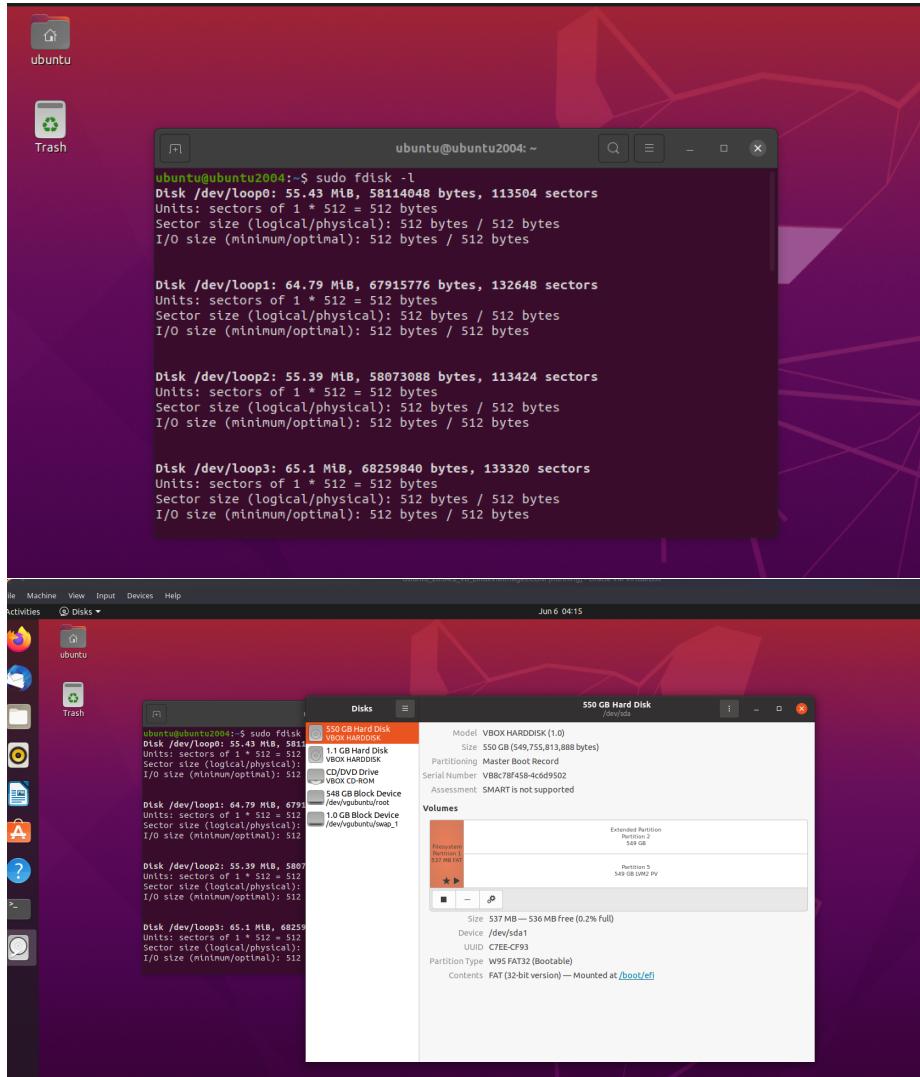




## Question 2

Verify the new disk (new space) in the Guest OS (Linux through GUI and Terminal)





### Question 3

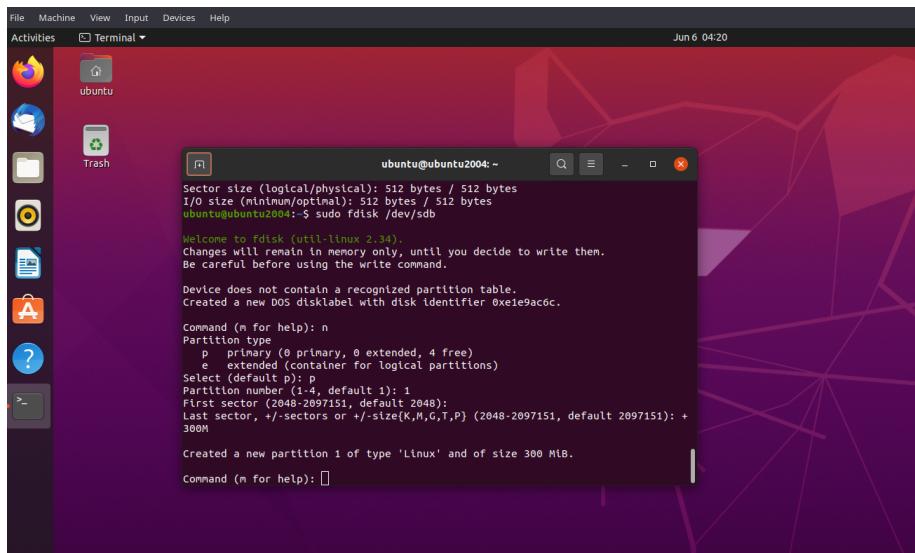
Get the name of the new disk before partitioning it (you can use any built-in utilities in Linux for getting the name)

```
Disk /dev/sdb: 1 GiB, 1073741824 bytes, 2097152 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
```

## Question 4

4. Partition the new disk with the following settings (you can use any utility in Linux)

- Type: Primary
- Number: 1
- First Sector: Default
- Last Sector / Size: 300M



The screenshot shows a terminal window titled "Terminal" in the Activities overview. The terminal is running the command `sudo fdisk /dev/sdb`. The output of the command is as follows:

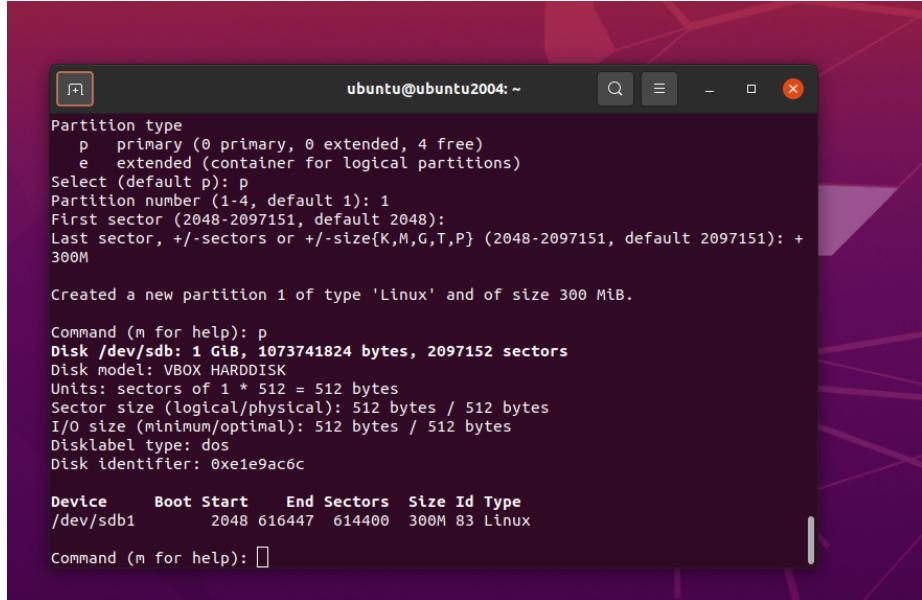
```
ubuntu@ubuntu2004:~$ sudo fdisk /dev/sdb
Welcome to fdisk (util-linux 2.34).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS disklabel with disk identifier 0xe1e9ac6c.

Command (m for help): n
Partition type
   p  primary (0 primary, 0 extended, 4 free)
   e  extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-2097151, default 2048):
Last sector, +/sectors or +/-size[K,M,G,T,P] (2048-2097151, default 2097151): +300M
Created a new partition 1 of type 'Linux' and of size 300 MiB.

Command (m for help): q
```

## Question 5



```
ubuntu@ubuntu2004: ~
Partition type
  p  primary (0 primary, 0 extended, 4 free)
  e  extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1):
First sector (2048-2097151, default 2048):
Last sector, +/sectors or +/-size{K,M,G,T,P} (2048-2097151, default 2097151): +300M

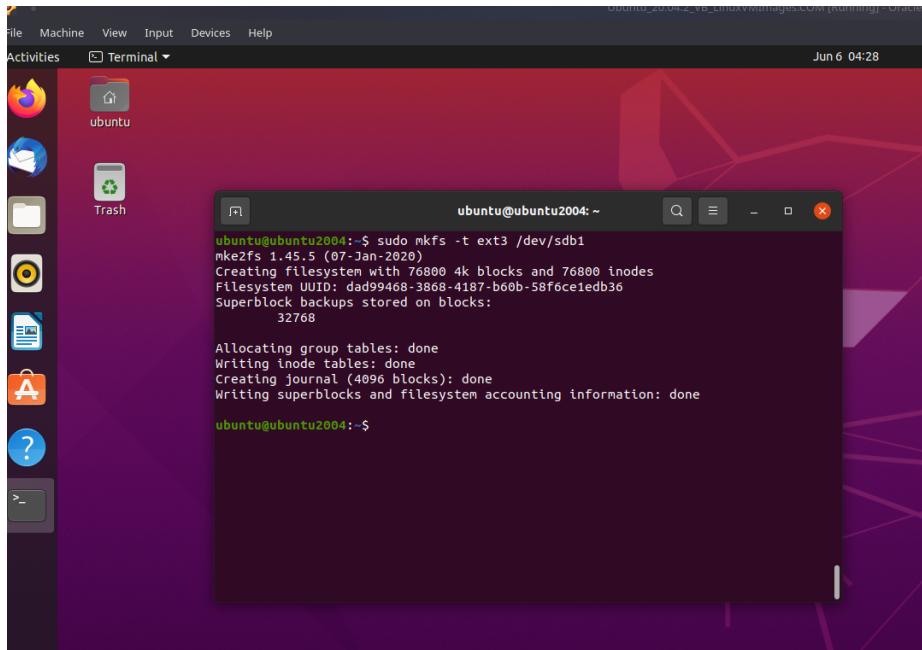
Created a new partition 1 of type 'Linux' and of size 300 MiB.

Command (m for help): p
Disk /dev/sdb: 1 GiB, 1073741824 bytes, 2097152 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: 0xe1e9ac6c

Device      Boot Start   End Sectors  Size Id Type
/dev/sdb1        2048 616447  614400 300M 83 Linux

Command (m for help):
```

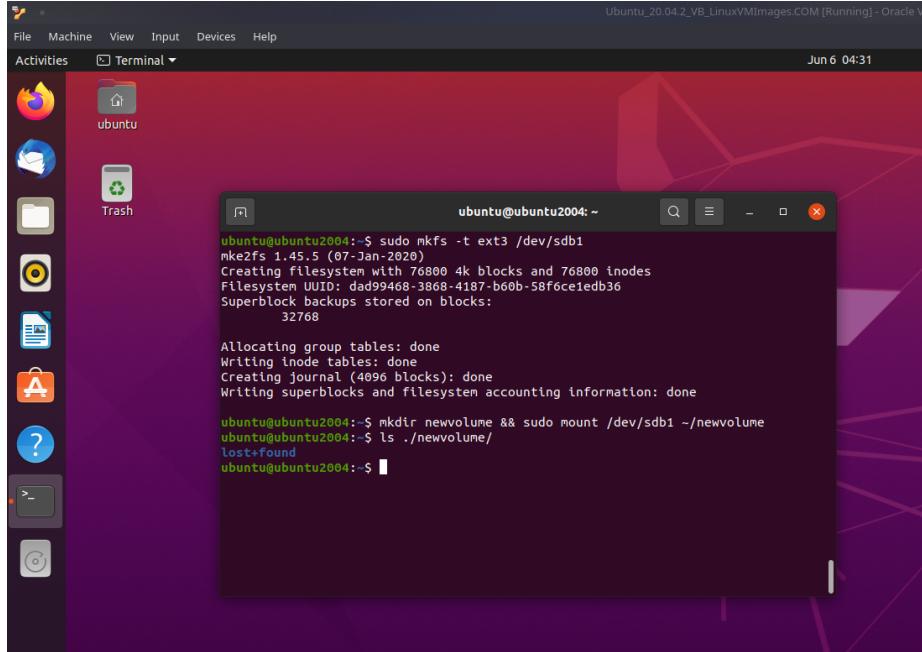
## Question 6



```
File Machine View Input Devices Help
Activities Terminal Jun 6 04:28
ubuntu@ubuntu2004: ~
sudo mkfs -t ext3 /dev/sdb1
mke2fs 1.45.5 (07-Jan-2020)
Creating filesystem with 76800 4k blocks and 76800 inodes
Filesystem UUID: dad99468-3868-4187-b60b-58f6celedb36
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
ubuntu@ubuntu2004: ~
```

## Question 7



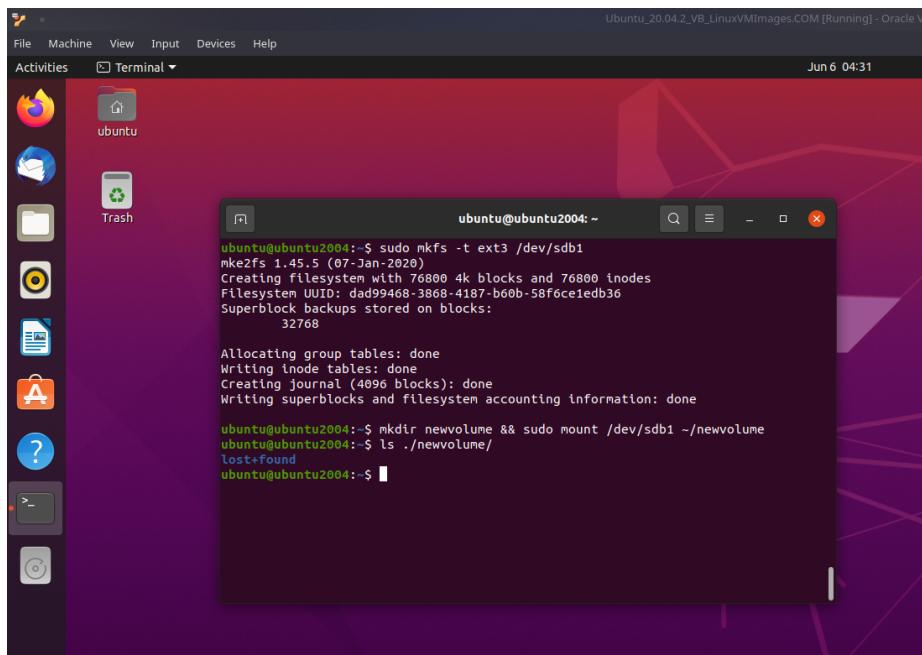
The image shows a screenshot of an Ubuntu 20.04 LTS desktop environment. A terminal window is open in the center, displaying the following command-line session:

```
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mke2fs 1.45.5 (07-Jan-2020)
Creating filesystem with 76800 4k blocks and 76800 inodes
Filesystem UUID: dad99468-3868-4187-b60b-58f6ce1edb36
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

ubuntu@ubuntu2004:~$ mkdir newvolume && sudo mount /dev/sdb1 ~/newvolume
ubuntu@ubuntu2004:~$ ls ./newvolume/
lost+found
ubuntu@ubuntu2004:~$
```

## Question 8



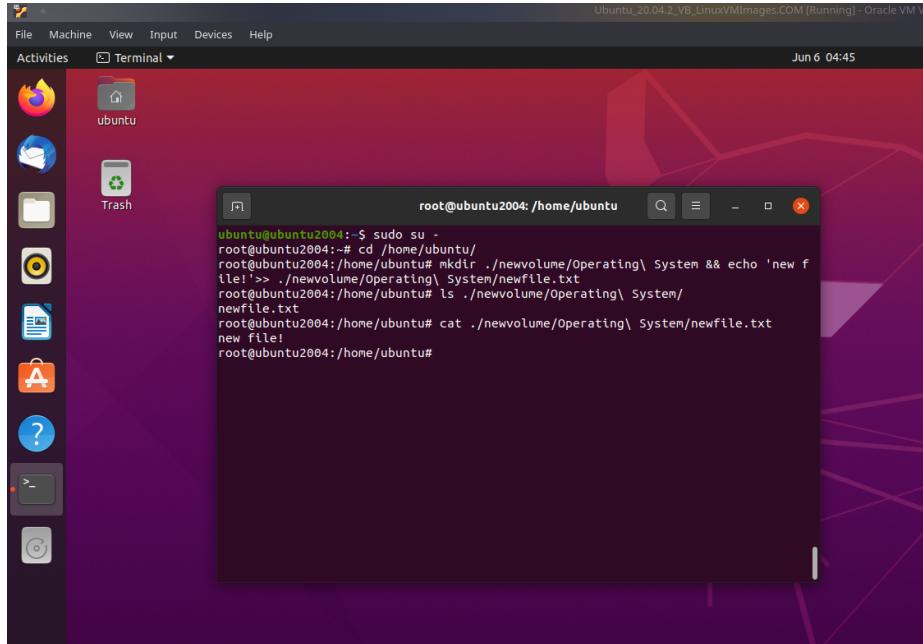
The image shows a screenshot of an Ubuntu 20.04 LTS desktop environment. A terminal window is open in the center, displaying the following command-line session:

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Filesystem UUID: dad99468-3868-4187-b60b-58f6ce1edb36
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

ubuntu@ubuntu2004:~$ mkdir newvolume && sudo mount /dev/sdb1 ~/newvolume
ubuntu@ubuntu2004:~$ ls ./newvolume/
lost+found
ubuntu@ubuntu2004:~$
```

## Question 9



## Question 10

```
total 20K  
drwxr--r-- 2 root root 4.0K 'Operating System'  
drwx----- 2 root root 16K lost+found
```