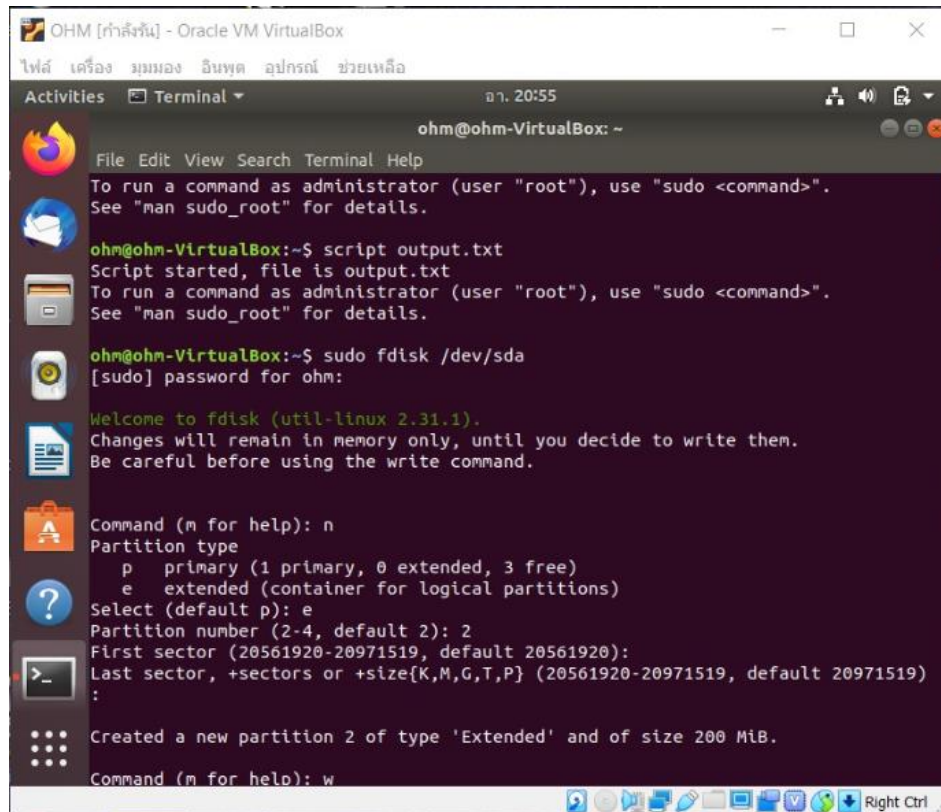


ITCS343 Principles of Operating Systems

Project 2 (Sec 1)



```
OHM [กำลังรัน] - Oracle VM VirtualBox
ไฟล์ เครื่อง มุมมอง อินพุต อุปกรณ์ ช่วยเหลือ
Activities Terminal ๑๗: 20:55
ohm@ohm-VirtualBox: ~
File Edit View Search Terminal Help
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ohm@ohm-VirtualBox:~$ script output.txt
Script started, file is output.txt
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ohm@ohm-VirtualBox:~$ sudo fdisk /dev/sda
[sudo] password for ohm:
Welcome to fdisk (util-linux 2.31.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.
Command (m for help): n
Partition type
  p   primary (1 primary, 0 extended, 3 free)
  e   extended (container for logical partitions)
Select (default p): e
Partition number (2-4, default 2): 2
First sector (20561920-20971519, default 20561920):
Last sector, +sectors or +size[K,M,G,T,P] (20561920-20971519, default 20971519):
Created a new partition 2 of type 'Extended' and of size 200 MiB.
Command (m for help): w
```

This page in the first command for save file output.txt and then in the second command is for do in first disk.

```
OHM [กำลังพิมพ์] - Oracle VM VirtualBox
ไฟล์ เครื่องมือ มุมมอง ลินุกซ์ อุปกรณ์ช่วยเหลือ
Activities Terminal 20:55
ohm@ohm-VirtualBox: ~
File Edit View Search Terminal Help
Command (m for help): w
The partition table has been altered.
Syncing disks.
ohm@ohm-VirtualBox:~$ sudo fdisk -l
Disk /dev/loop0: 89.1 MiB, 93417472 bytes, 182456 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: 54.7 MiB, 57294848 bytes, 111904 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: 44.9 MiB, 47063040 bytes, 91920 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: 160.2 MiB, 167931904 bytes, 327992 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
```

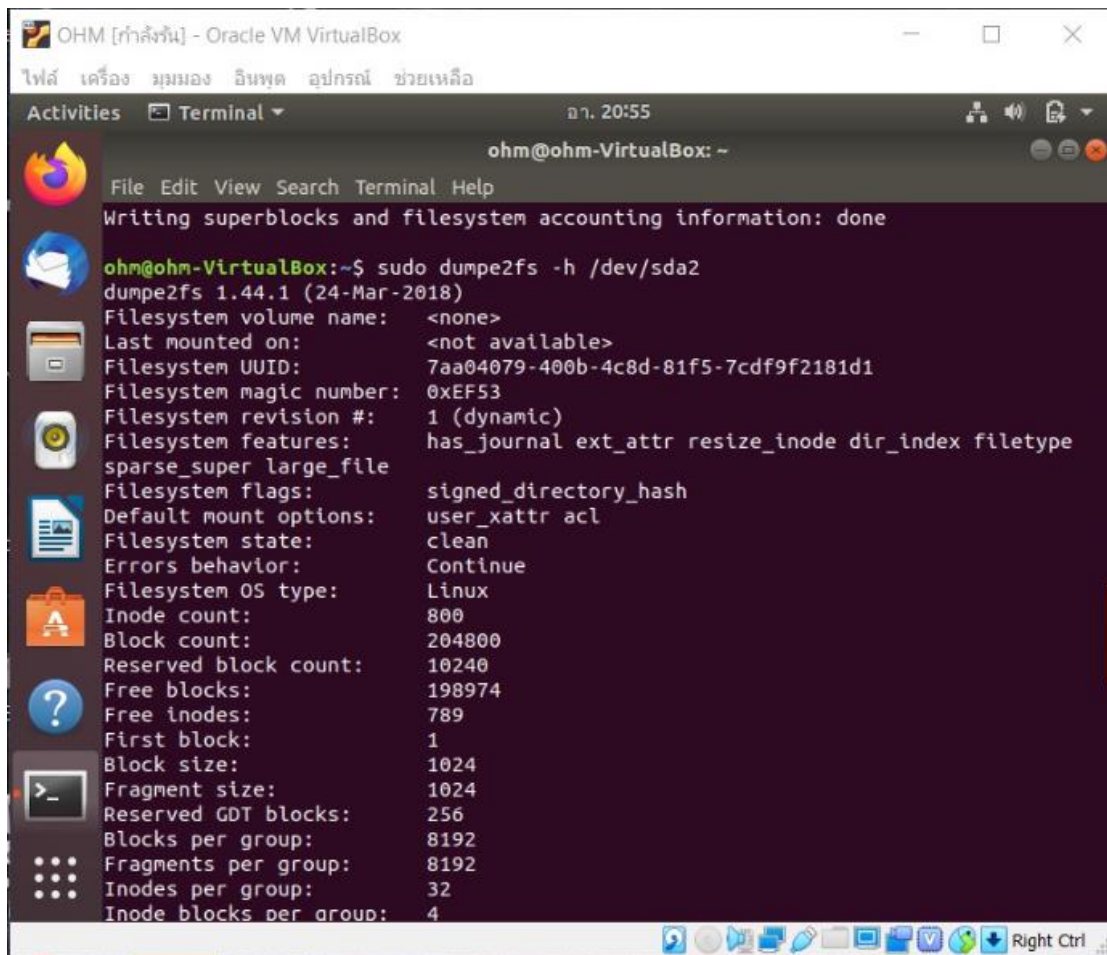
This page in the first command is about read information in the first disk.

```
OHM [กำลังพิมพ์] - Oracle VM VirtualBox
ไฟล์ เครื่องมือ มุมมอง ลินุกซ์ อุปกรณ์ช่วยเหลือ
Activities Terminal 20:55
ohm@ohm-VirtualBox: ~
File Edit View Search Terminal Help
Device Boot Start End Sectors Size Id Type
/dev/sda1 * 2048 20561919 20559872 9.8G 83 Linux
/dev/sda2 20561920 20971519 409600 200M 5 Extended
ohm@ohm-VirtualBox:~$ sudo mkfs -t ext3 -N 800 /dev/sda2
mkfs2fs 1.44.1 (24-Mar-2018)
Found a dos partition table in /dev/sda2
Proceed anyway? (y,N) y
Creating filesystem with 204800 1k blocks and 800 inodes
Filesystem UUID: 7aa04079-400b-4c8d-81f5-7cdf9f2181d1
Superblock backups stored on blocks:
8193, 24577, 40961, 57345, 73729

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

ohm@ohm-VirtualBox:~$ sudo dumpe2fs -h /dev/sda2
dumpe2fs 1.44.1 (24-Mar-2018)
Filesystem volume name: <none>
Last mounted on: <not available>
Filesystem UUID: 7aa04079-400b-4c8d-81f5-7cdf9f2181d1
Filesystem magic number: 0xEF53
Filesystem revision #: 1 (dynamic)
Filesystem features: has_journal ext_attr resize_inode dir_index filetype
sparse_super large_file
Filesystem flags: signed_directory_hash
Default mount options: user_xattr acl
Filesystem state: clean
```

For this page in the first command used for change node to 800 and in the second command for check the size of partition.

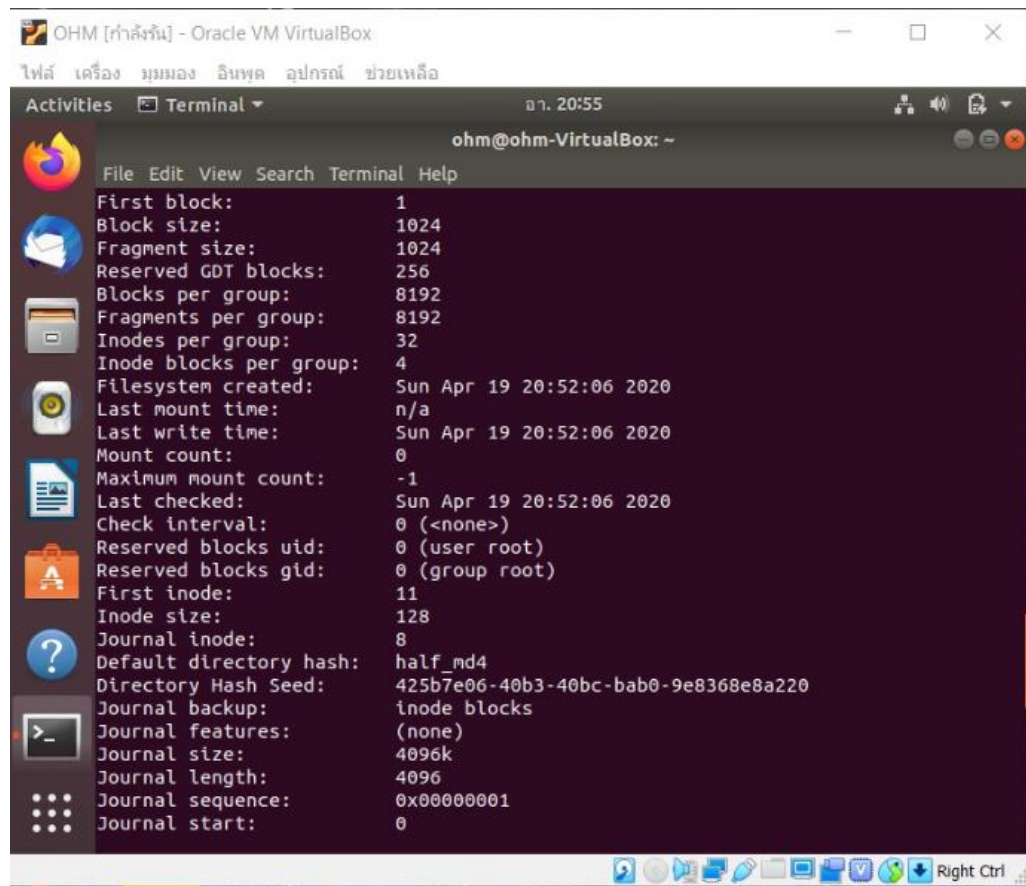


The screenshot shows a terminal window titled "OHM [กำลังรัน] - Oracle VM VirtualBox". The terminal output is as follows:

```
Writing superblocks and filesystem accounting information: done

ohm@ohm-VirtualBox:~$ sudo dumpe2fs -h /dev/sda2
dumpe2fs 1.44.1 (24-Mar-2018)
Filesystem volume name:   <none>
Last mounted on:         <not available>
Filesystem UUID:         7aa04079-400b-4c8d-81f5-7cdf9f2181d1
Filesystem magic number:  0xEF53
Filesystem revision #:    1 (dynamic)
Filesystem features:      has_journal ext_attr resize_inode dir_index filetype
                        sparse_super large_file
Filesystem flags:         signed_directory_hash
Default mount options:    user_xattr acl
Filesystem state:         clean
Errors behavior:          Continue
Filesystem OS type:       Linux
Inode count:              800
Block count:              204800
Reserved block count:     10240
Free blocks:              198974
Free inodes:              789
First block:              1
Block size:               1024
Fragment size:            1024
Reserved GDT blocks:      256
Blocks per group:         8192
Fragments per group:      8192
Inodes per group:         32
Inode blocks per group:   4
```

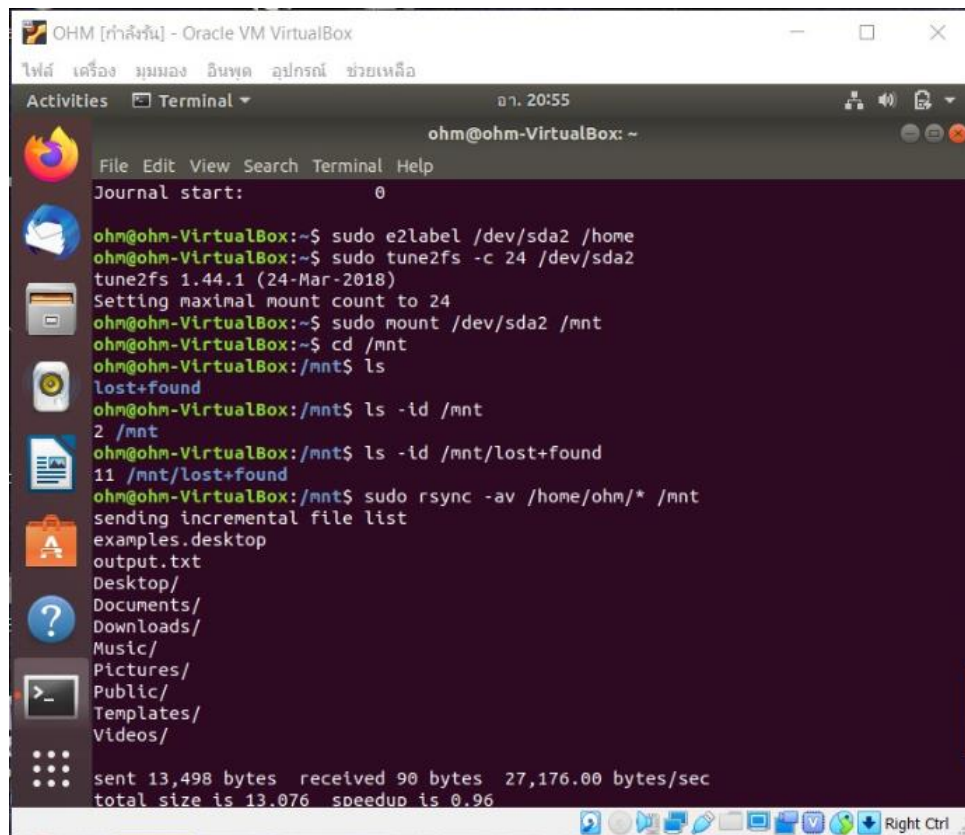
Same command is same with the above picture.



The screenshot shows a terminal window titled "OHM [กำลังรัน] - Oracle VM VirtualBox". The terminal output displays various file system statistics for a mounted file system. The statistics include block size, fragment size, reserved blocks, inodes, and journal information. The output is as follows:

```
File Edit View Search Terminal Help
First block: 1
Block size: 1024
Fragment size: 1024
Reserved GDT blocks: 256
Blocks per group: 8192
Fragments per group: 8192
Inodes per group: 32
Inode blocks per group: 4
Filesystem created: Sun Apr 19 20:52:06 2020
Last mount time: n/a
Last write time: Sun Apr 19 20:52:06 2020
Mount count: 0
Maximum mount count: -1
Last checked: Sun Apr 19 20:52:06 2020
Check interval: 0 (<none>)
Reserved blocks uid: 0 (user root)
Reserved blocks gid: 0 (group root)
First inode: 11
Inode size: 128
Journal inode: 8
Default directory hash: half_md4
Directory Hash Seed: 425b7e06-40b3-40bc-bab0-9e8368e8a220
Journal backup: inode blocks
Journal features: (none)
Journal size: 4096k
Journal length: 4096
Journal sequence: 0x00000001
Journal start: 0
```

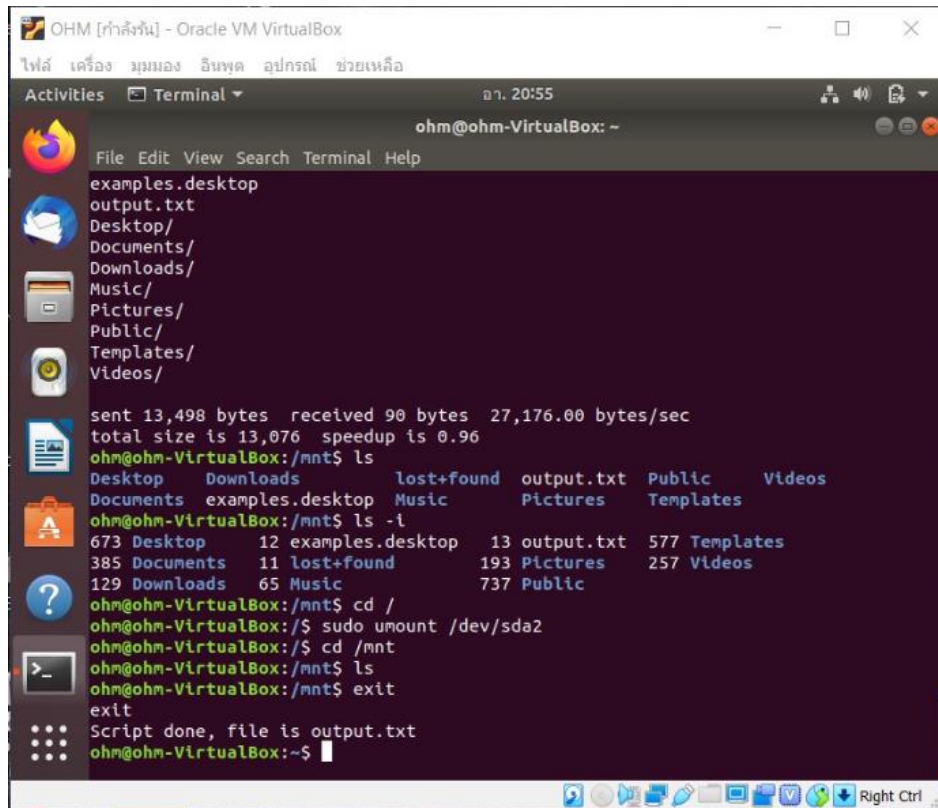
This page for output



```
OHM [กำลังรัน] - Oracle VM VirtualBox
ไฟล์ เครื่อง มุมมอง อินพุต อุปกรณ์ ช่วยเหลือ
Activities Terminal ๑๗. 20:55
ohm@ohm-VirtualBox: ~
File Edit View Search Terminal Help
Journal start: 0
ohm@ohm-VirtualBox:~$ sudo e2label /dev/sda2 /home
ohm@ohm-VirtualBox:~$ sudo tune2fs -c 24 /dev/sda2
tune2fs 1.44.1 (24-Mar-2018)
Setting maximal mount count to 24
ohm@ohm-VirtualBox:~$ sudo mount /dev/sda2 /mnt
ohm@ohm-VirtualBox:~$ cd /mnt
ohm@ohm-VirtualBox:/mnt$ ls
lost+found
ohm@ohm-VirtualBox:/mnt$ ls -ld /mnt
2 /mnt
ohm@ohm-VirtualBox:/mnt$ ls -ld /mnt/lost+found
11 /mnt/lost+found
ohm@ohm-VirtualBox:/mnt$ sudo rsync -av /home/ohm/* /mnt
sending incremental file list
examples.desktop
output.txt
Desktop/
Documents/
Downloads/
Music/
Pictures/
Public/
Templates/
Videos/

sent 13,498 bytes received 90 bytes 27,176.00 bytes/sec
total size is 13.076 speedup is 0.96
```

This page for add volume of name to home by command e2label and command rsync for copy file.



The screenshot shows a terminal window titled "OHM [กำลังรัน] - Oracle VM VirtualBox". The terminal output includes a file transfer summary, a directory listing, and a series of commands to manage the mount point.

```
sent 13,498 bytes received 90 bytes 27,176.00 bytes/sec
total size is 13,076 speedup is 0.96
ohm@ohm-VirtualBox:/mnt$ ls
Desktop Downloads lost+found output.txt Public Videos
Documents examples.desktop Music Pictures Templates
ohm@ohm-VirtualBox:/mnt$ ls -l
673 Desktop 12 examples.desktop 13 output.txt 577 Templates
385 Documents 11 lost+found 193 Pictures 257 Videos
129 Downloads 65 Music 737 Public
ohm@ohm-VirtualBox:/mnt$ cd /
ohm@ohm-VirtualBox:/$ sudo umount /dev/sda2
ohm@ohm-VirtualBox:/$ cd /mnt
ohm@ohm-VirtualBox:/mnt$ ls
ohm@ohm-VirtualBox:/mnt$ exit
exit
Script done, file is output.txt
ohm@ohm-VirtualBox:~$
```

This page command ls-i is finding function for find a folder or directory.