

## STATEMENT

The purpose of the assignment is to create a virtual machine using the operating systems Windows 10 (or Windows 7) and Ubuntu 20.04 (older or newer versions are also valid) according to the criteria below.

You have to install the operating systems in the following order:

1. First Ubuntu.
2. Second Windows.

During the installation of each operating system, you must create all the partitions you consider necessary for Windows and Ubuntu (boot, system, etc.). You must also explain in the document your partition scheme, including partition types and file system for every single partition.

Then, if the bootloader does not work, repair it only using the command line according to the links below. The first one should work, but you have three additional resources to help you.

[https://help.ubuntu.com/community/Grub2/Installing#via\\_ChRoot](https://help.ubuntu.com/community/Grub2/Installing#via_ChRoot)

(steps from 7 to 13).

<https://howtoubuntu.org/how-to-repair-restore-reinstall-grub-2-with-a-ubuntu-live-cd>

<https://www.howtogeek.com/114884/how-to-repair-grub2-when-ubuntu-wont-boot/>

As soon as the bootloader is working correctly, the boot order must be configured this way:

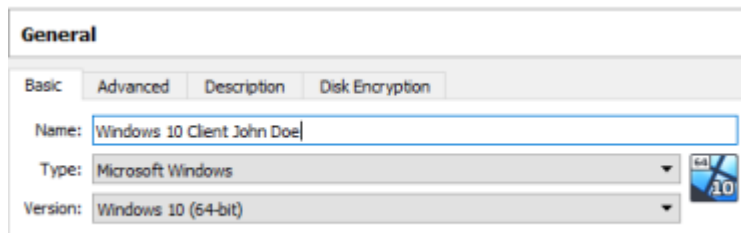
- **No menu displayed by default.**
- **Windows as default OS.**
- **Windows boots automatically after 10 seconds. You must display a countdown for that purpose.**

Finally, the virtual machine should meet the following requirements:

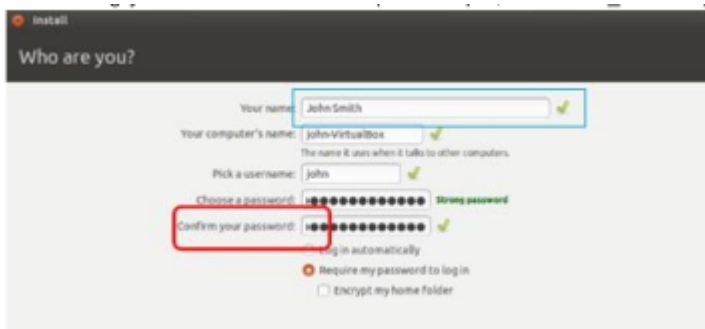
- **A shared folder to an external storage device that you can access from both Operating systems.**
- **Internet connection.**

## INSTRUCTIONS

- You must create a document with screenshots to demonstrate that everything works.  
You need to implement the assignment in virtual machines identified with your name (for example, Windows 10 Client John Doe).



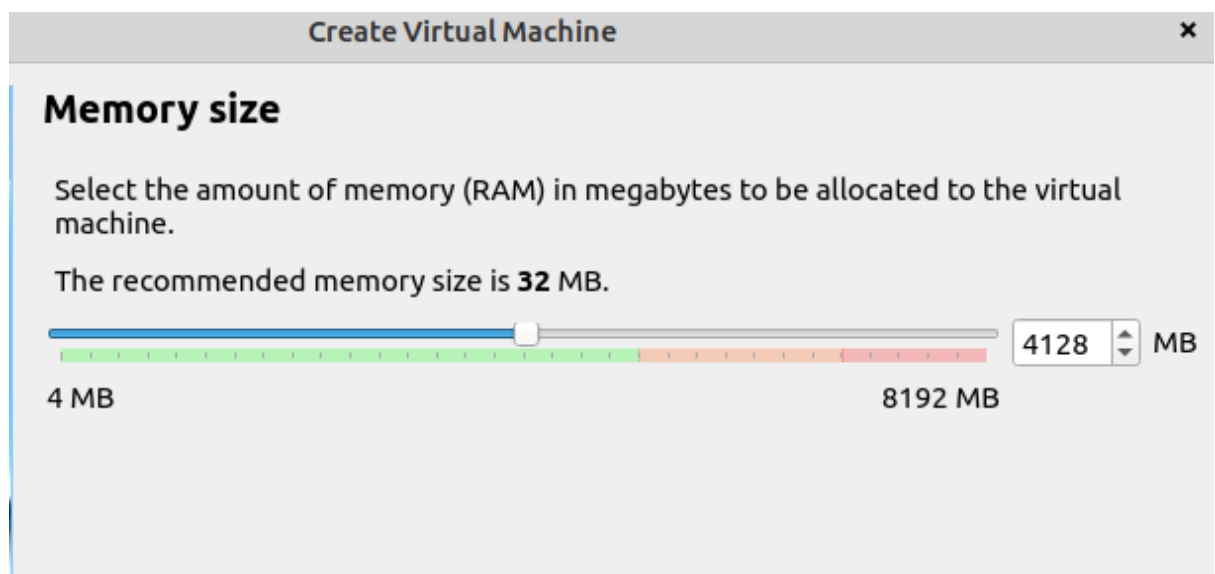
- You must also use other elements to identify that the assignment is individual. For example: username like your real name (like in the picture below), disk name using your name and surname (for example, disk “John\_Doe.vdi”), etc.



- Do not delete the virtual machine. This could be required if the statement is not clear enough to demonstrate that you are not cheating.
- Once finished the assignment, you must submit a PDF through the virtual classroom. The name must be “Unit2\_Name\_Surname.pdf”. For example, if your name is John Doe, the file name will be “Unit2\_John\_Doe.pdf”. Otherwise, the assignment will not be valid and you will get 0 marks.

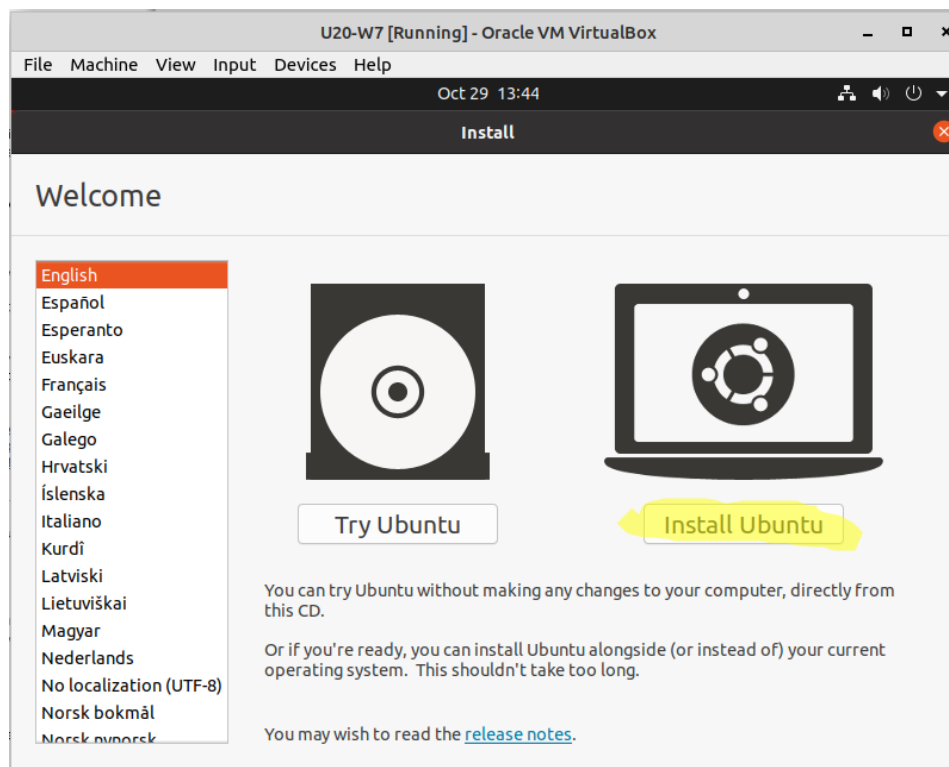
## 1. First Ubuntu.

WE CREATE THE VIRTUAL MACHINE WITH 4GB AND 88GB.

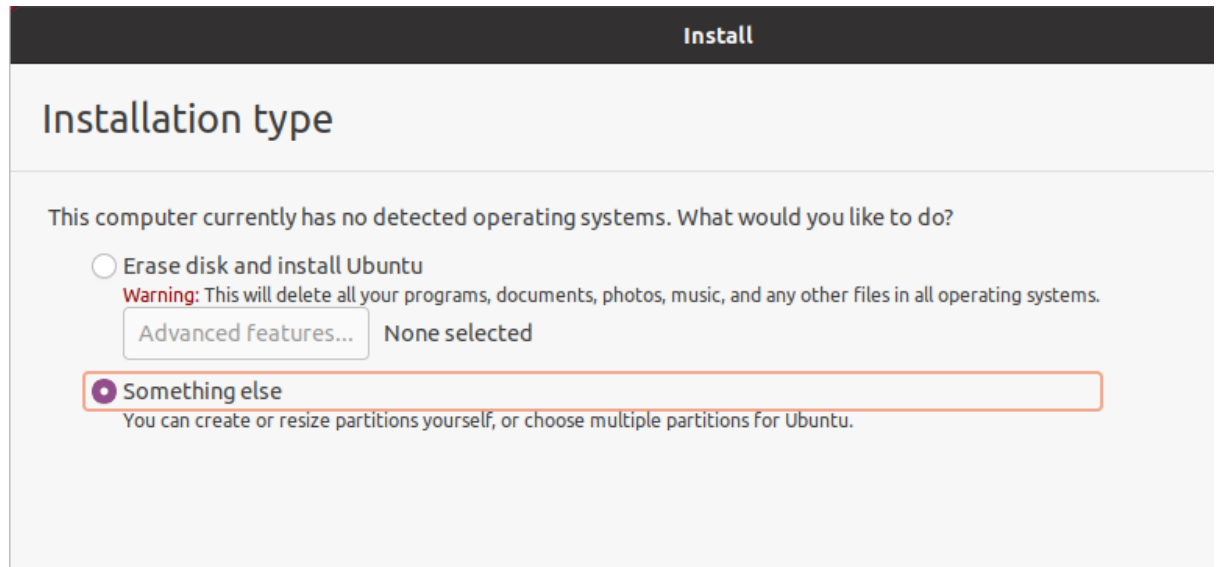




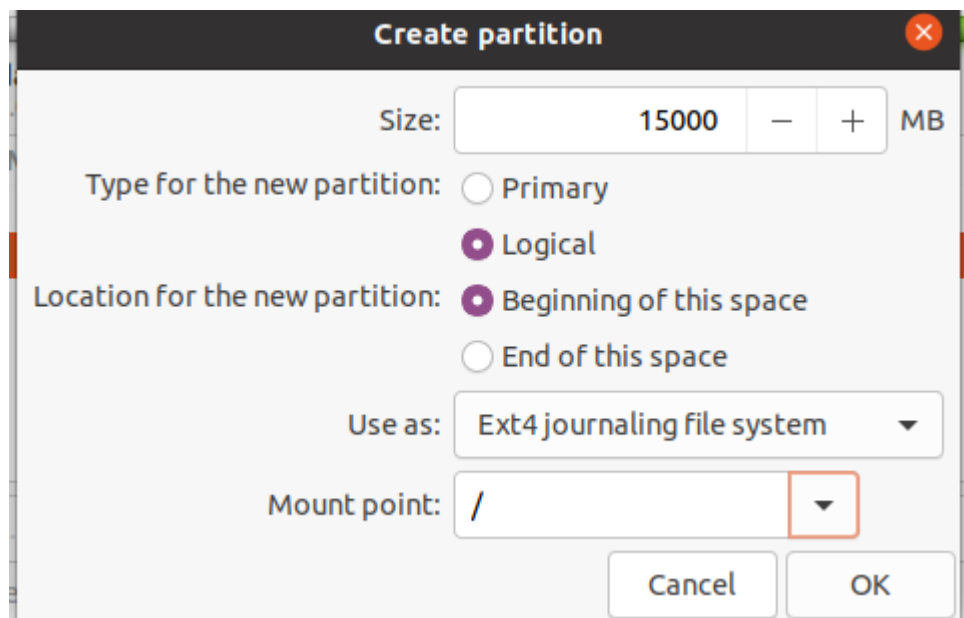
WE INSTALL UBUNTU,



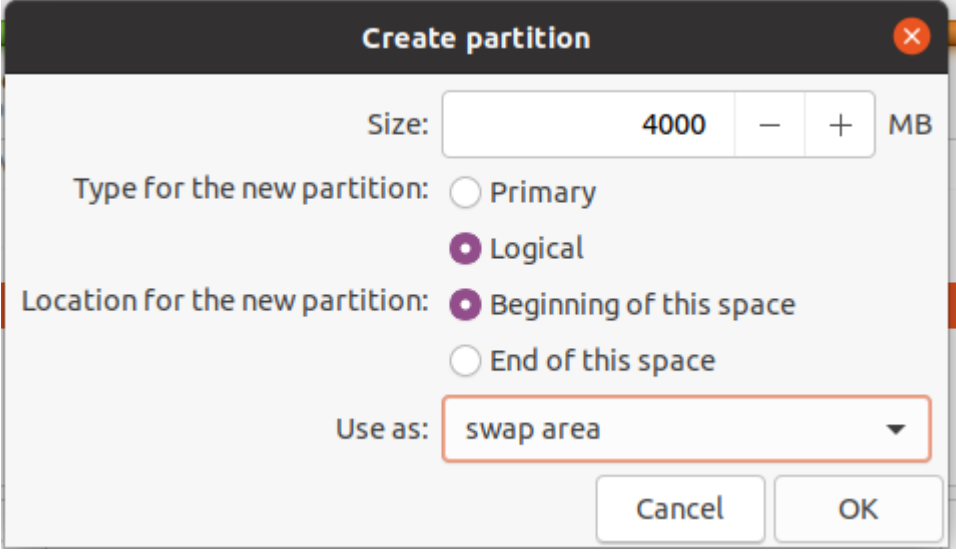
AS ALWAYS WE CHOOSE LANGUAGE, KEYBOARD... AND IN THE INSTALLATION TYPE WE WILL CHOOSE SOMETHING ELSE WHERE WE ARE GOING TO CREATE OUR PARTITIONS.



THIS PARTITION ARE GOING TO BE FOR UBUNTU SO, WE FIRST CREATE THE ROOT PARTITION WITH 15000MB



SWAP AREA WITH 4000MB



The image shows a 'Create partition' dialog box. At the top, the title is 'Create partition' with a close button. Below the title, there is a 'Size' field set to '4000' with minus and plus buttons and 'MB' as a unit. Underneath, 'Type for the new partition' has two radio buttons: 'Primary' and 'Logical', with 'Logical' being selected. The 'Location for the new partition' section has two radio buttons: 'Beginning of this space' (selected) and 'End of this space'. The 'Use as' dropdown menu is set to 'swap area'. At the bottom right, there are 'Cancel' and 'OK' buttons.

Create partition

Size: 4000 MB

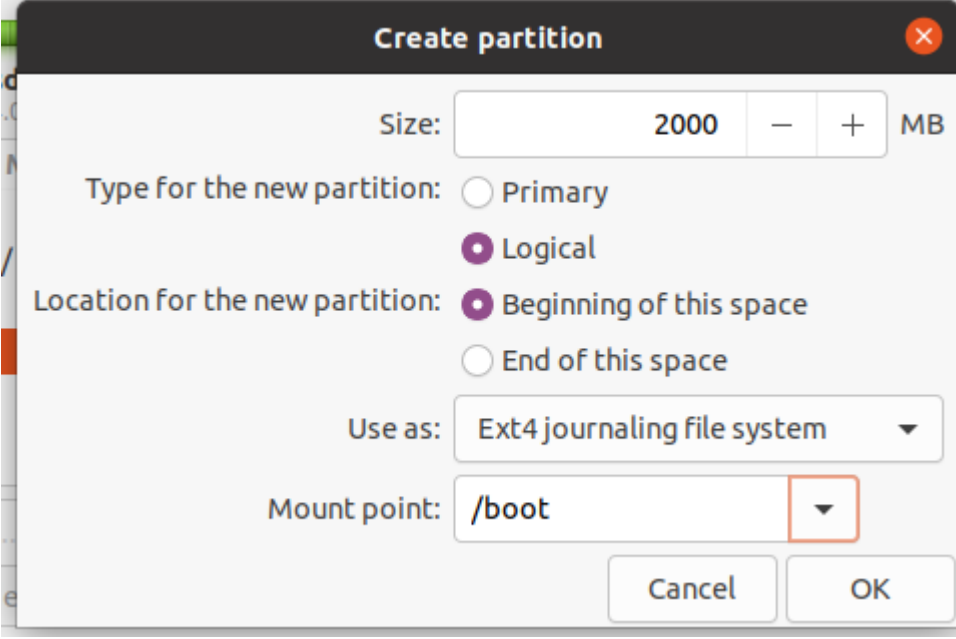
Type for the new partition: ☐ Primary ☒ Logical

Location for the new partition: ☒ Beginning of this space ☐ End of this space

Use as: swap area

Cancel OK

/BOOT 2000MB



The image shows a 'Create partition' dialog box. At the top, the title is 'Create partition' with a close button. Below the title, there is a 'Size' field set to '2000' with minus and plus buttons and 'MB' as a unit. Underneath, 'Type for the new partition' has two radio buttons: 'Primary' and 'Logical', with 'Logical' being selected. The 'Location for the new partition' section has two radio buttons: 'Beginning of this space' (selected) and 'End of this space'. The 'Use as' dropdown menu is set to 'Ext4 journaling file system'. The 'Mount point' dropdown menu is set to '/boot'. At the bottom right, there are 'Cancel' and 'OK' buttons.

Create partition

Size: 2000 MB

Type for the new partition: ☐ Primary ☒ Logical

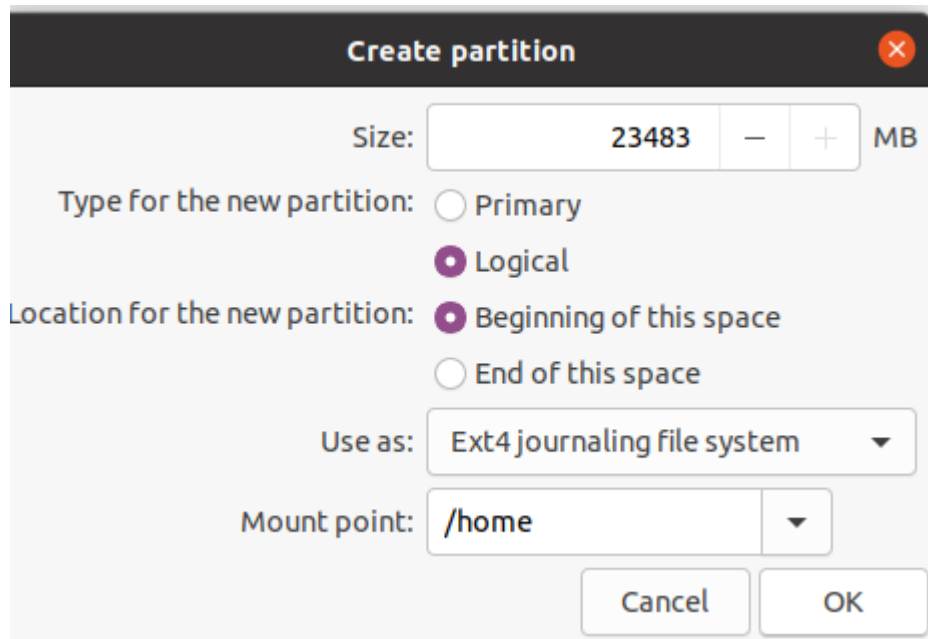
Location for the new partition: ☒ Beginning of this space ☐ End of this space

Use as: Ext4 journaling file system

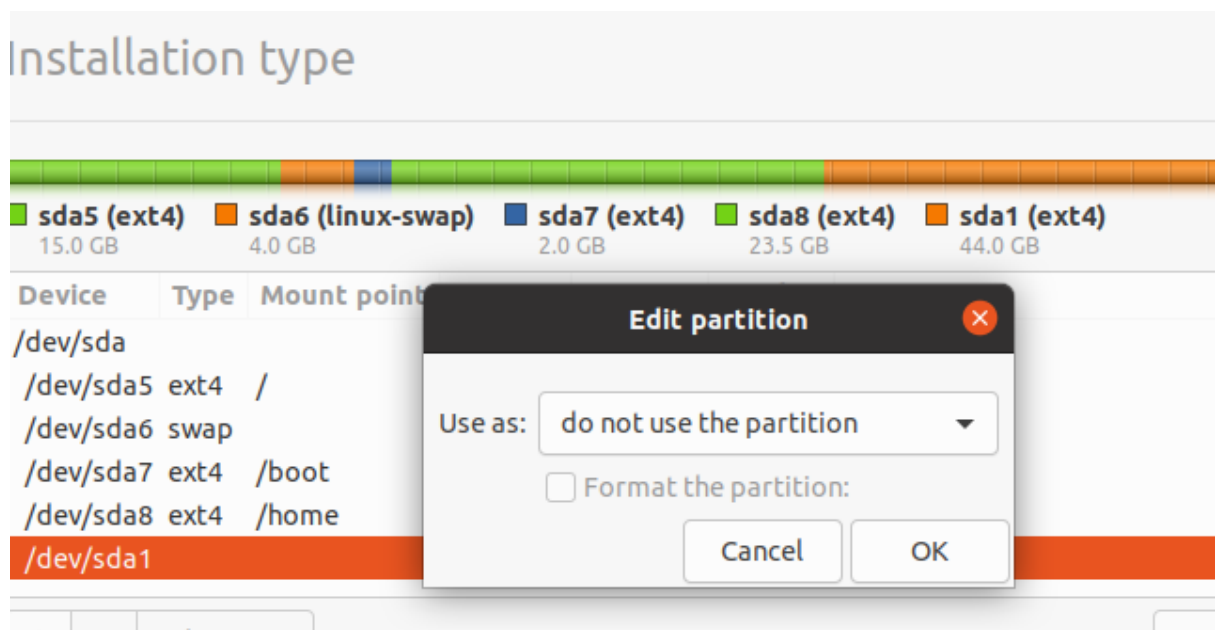
Mount point: /boot

Cancel OK

AND /HOME WE WILL PUT 23483MB.



I MADE THIS BUT IT WAS WRONG. THIS WAS GOING TO BE THE PARTITION FOR WINDOWS 7 ISO, SO I DIDN'T KNOW HOW TO DO IT SO IN CASE I CREATE A PARTITION WITH 40000MB AND SAID THAT DO NOT USE THE PARTITION, WE WILL SEE LATER WHAT I DID TO SOLVE THIS.



SO THIS IS OUR PARTITION TABLE.

Install

Installation type

sda5 (ext4)

15.0 GB

sda6 (linux-swap)

4.0 GB

sda7 (ext4)

2.0 GB

sda8 (ext4)

23.5 GB

sda1 (ext4)

44.0 GB

Device	Type	Mount point	Format?	Size	Used	System
/dev/sda						
/dev/sda5	ext4	/	<input checked="" type="checkbox"/>	14998 MB	unknown	
/dev/sda6	swap		<input type="checkbox"/>	3999 MB	unknown	
/dev/sda7	ext4	/boot	<input checked="" type="checkbox"/>	1998 MB	unknown	
/dev/sda8	ext4	/home	<input checked="" type="checkbox"/>	23481 MB	unknown	
/dev/sda1			<input type="checkbox"/>	44000 MB	unknown	

+

−

Change...

New Partition Table...

Device for boot loader installation:

Write the changes to disks?

If you continue, the changes listed below will be written to the disks. Otherwise, you will be able to make further changes manually.

The partition tables of the following devices are changed:  
SCSI1 (0,0,0) (sda)

The following partitions are going to be formatted:  
partition #5 of SCSI1 (0,0,0) (sda) as ext4  
partition #6 of SCSI1 (0,0,0) (sda) as swap  
partition #7 of SCSI1 (0,0,0) (sda) as ext4  
partition #8 of SCSI1 (0,0,0) (sda) as ext4

Go Back

Continue

IN NAME I HAVE PUT MY NAME AND SURNAME

Your name:

shovashrestha

✓

Your computer's name:

shovashrestha-Virtual

✓

The name it uses when it talks to other computers.

Pick a username:

shovashrestha

✓

Choose a password:

●●●●

Short password

Confirm your password:

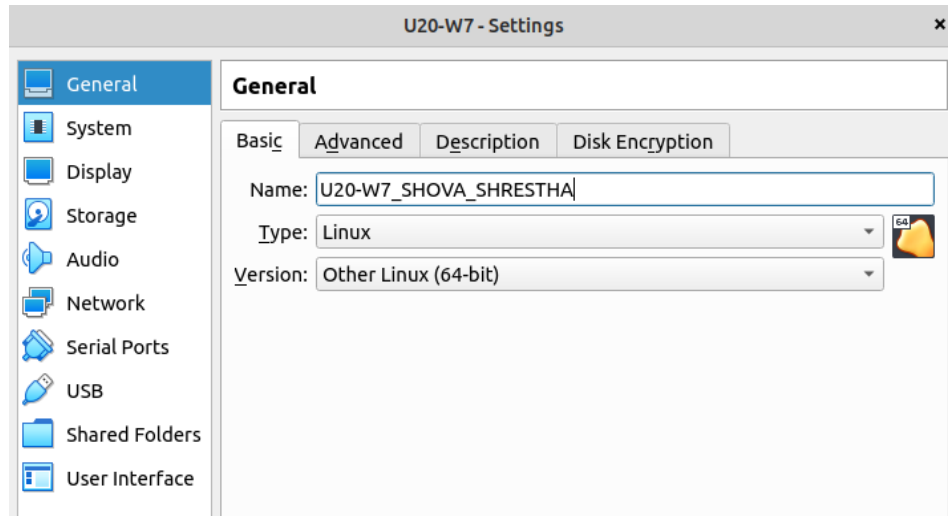
●●●●

✓

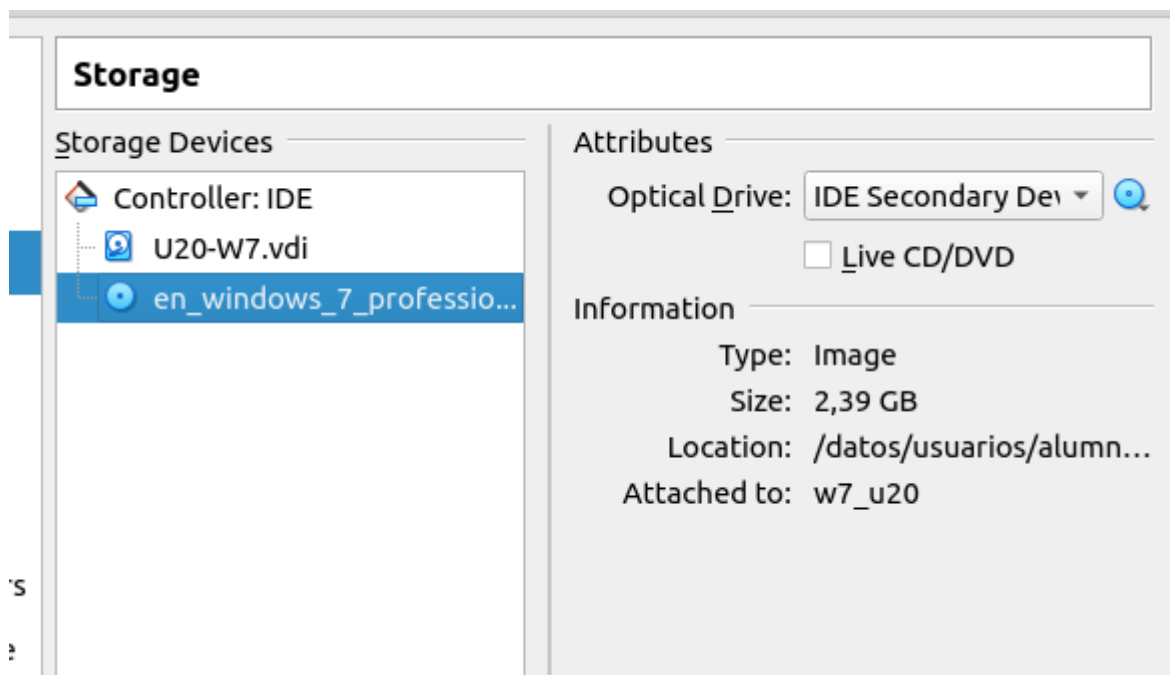
☒ Log in automatically

☐ Require my password to log in

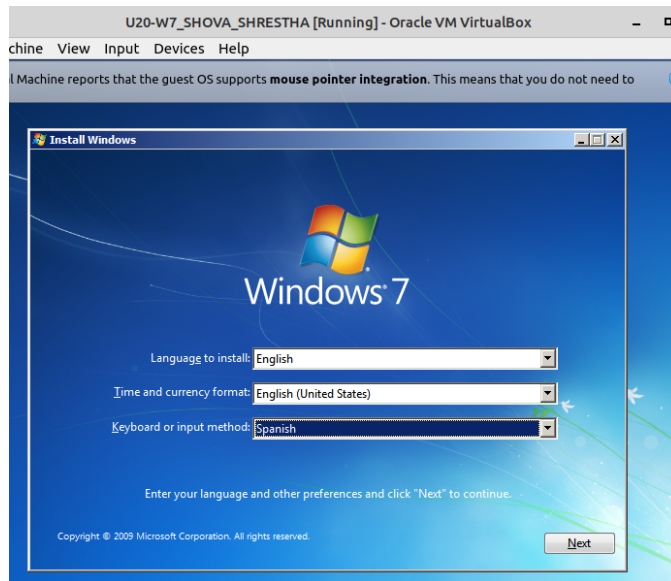
I DIDN'T PUT TO THE VIRTUAL MACHINE A CORRECT NAME, SO I CHANGE IT.



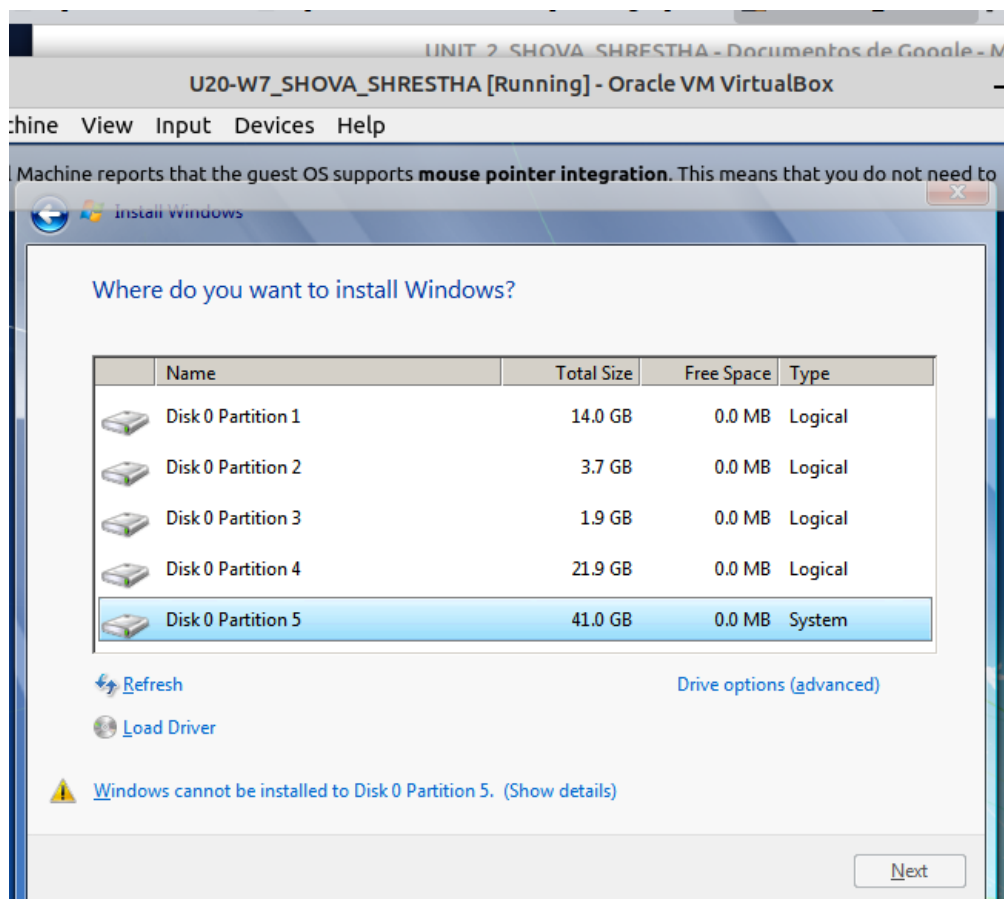
NOW IT'S TIME TO INSTALL WINDOWS 7, IN STORAGE WE CHOOSE TO PUT IN THE CD WINDOWS 7 ISO.



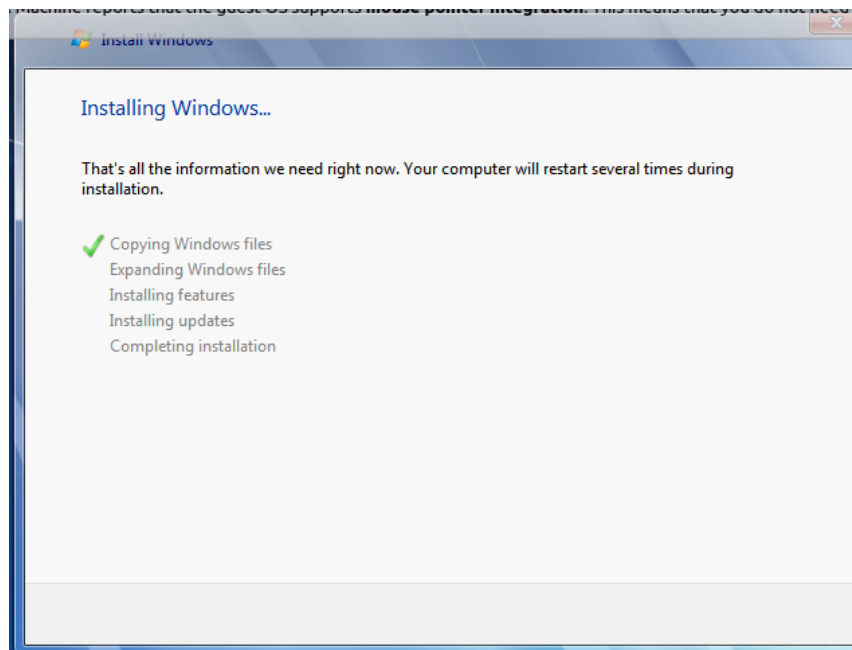
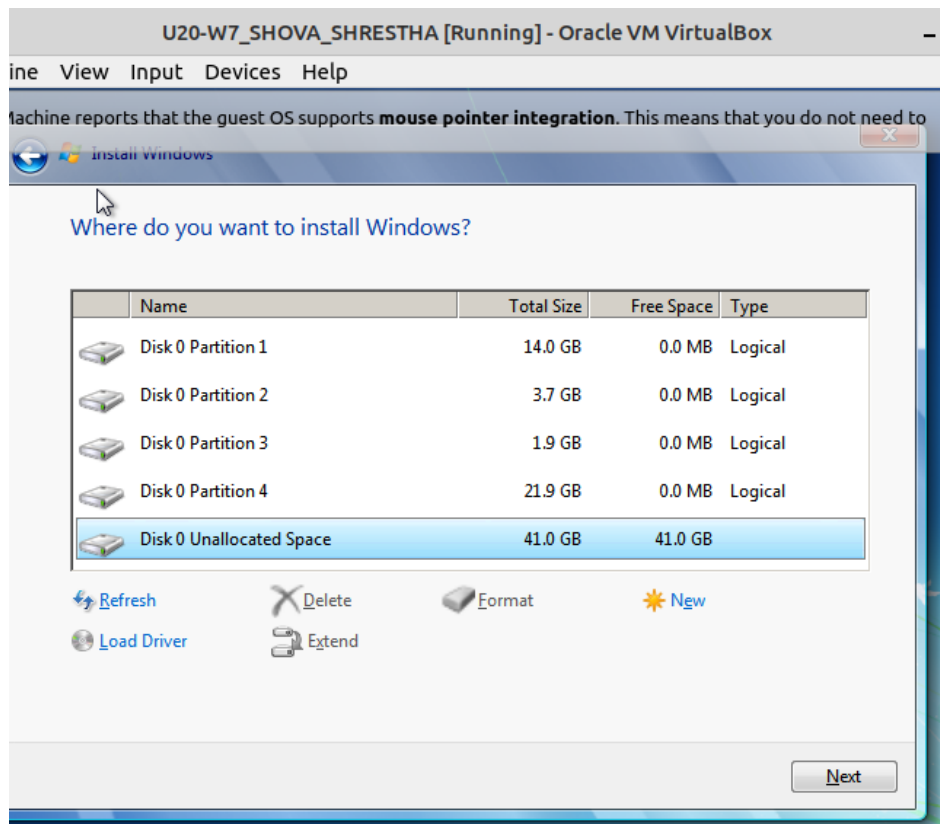




AS I SAID BEFORE NOW THAT I WANT TO INSTALL WINDOWS 7 IT CAN'T BE AS WE CAN SEE IT SAYS **WINDOWS CANNOT BE INSTALLED TO DISK 0 PARTITION 5** TO SOLVE THIS PROBLEM WE CLICK IN REFRESH AND THEN CLICK TO DELETE

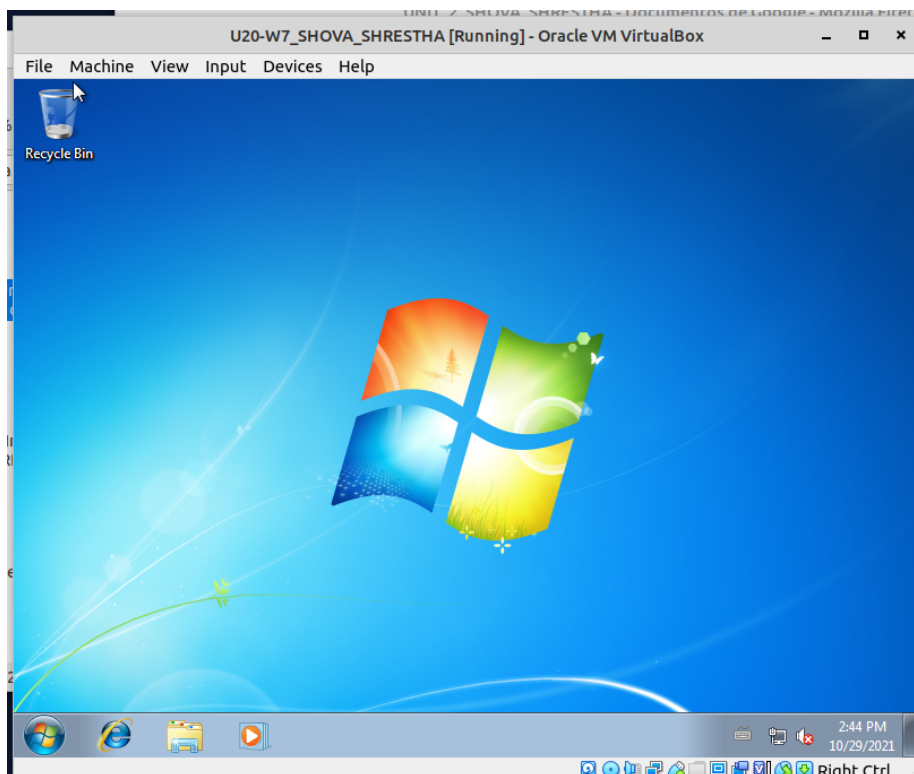


THE PARTITION DOING THAT WE WILL HAVE AN UNALLOCATED SPACE, WE CHOOSE THAT DISK, THEN IT WILL BE POSSIBLE TO INSTALL WINDOWS

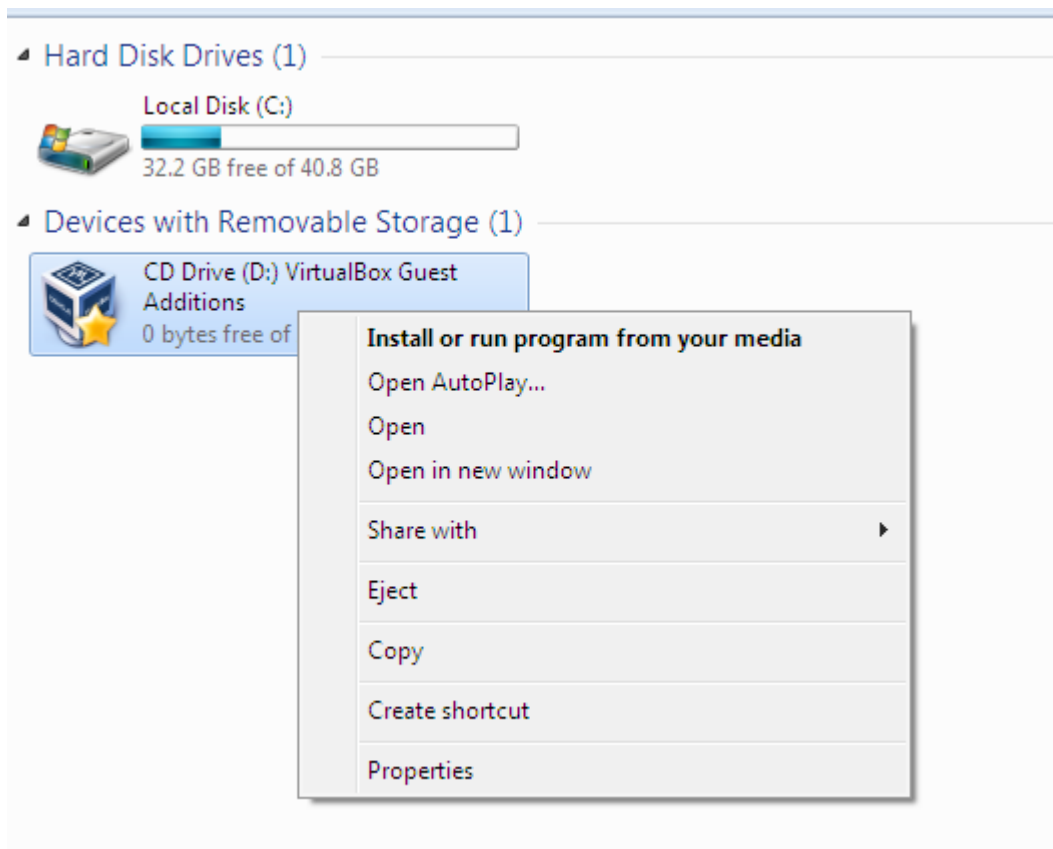


WE PUT OUR NAME AND SURNAME

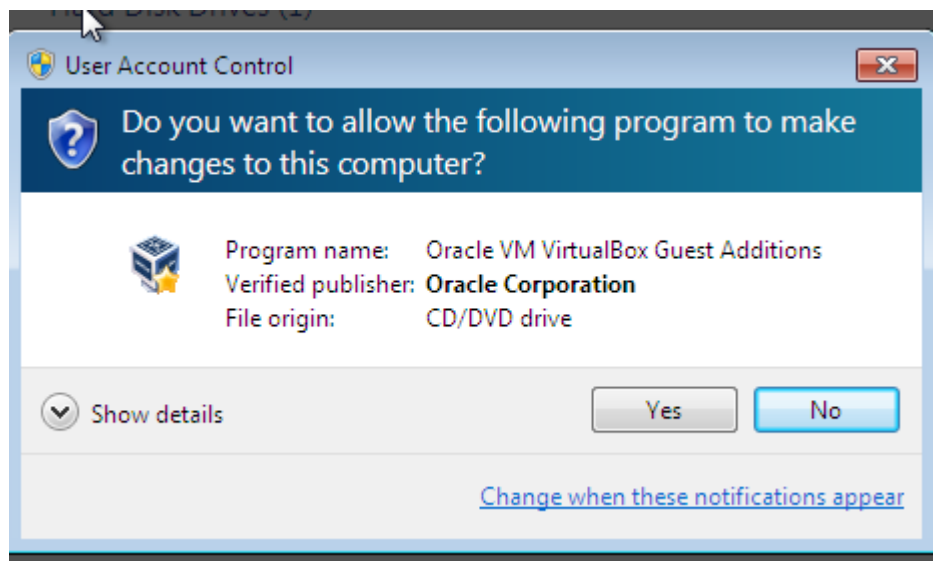
AND IT'S DONE



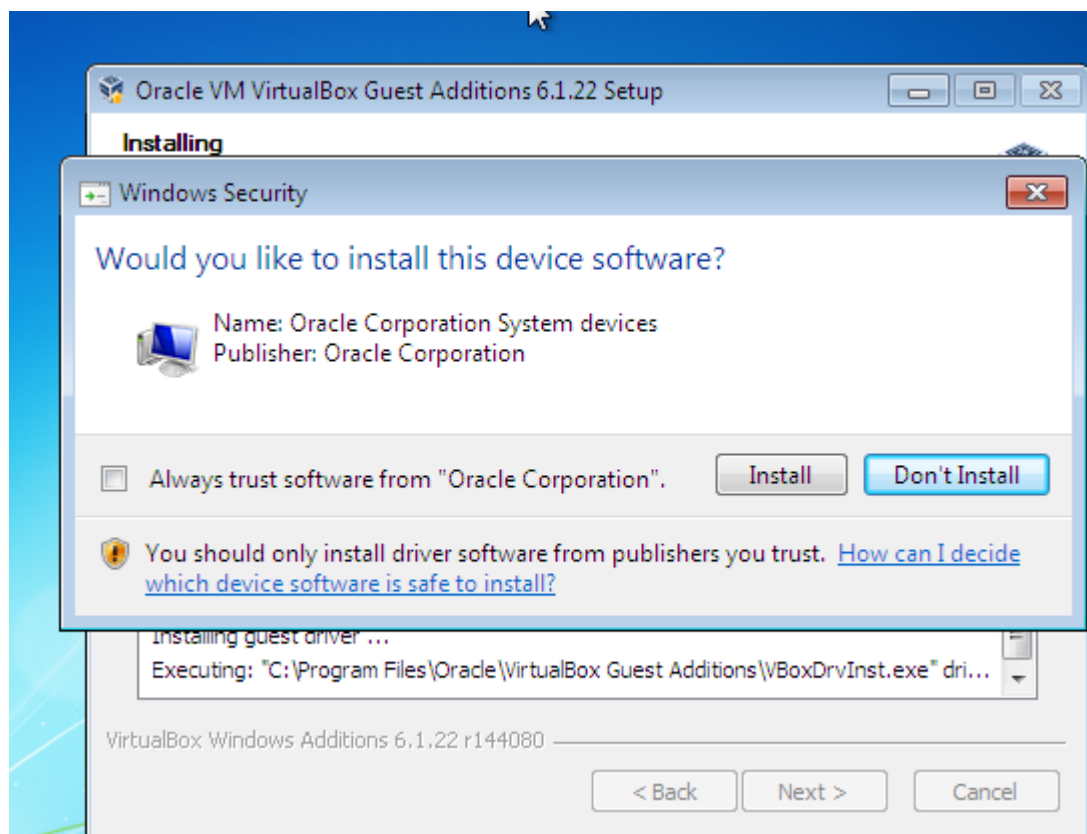
AS WE NEED TO DO AND OTHER EXERCISE LATER I WILL INSTALL GUEST ADDITIONS, SO LATER WE CAN USE IT AND SHARE FOLDERS.



WE CLICK YES



INSTALL





AFTER INSTALLING WINDOWS 7 THE VIRTUAL MACHINE OPENED ONLY THE WINDOWS, UBUNTU 20 WAS DISAPPEAR, SO WE NEED TO PUT IN THE CD UBUNTU AGAIN AND JUST CLICK IN **TRY UBUNTU**, WE OPEN THE TERMINAL AND WE PUT THIS COMMANDS. WE NEED THIS TO REPAIR THE BOOTLOADER.

<https://www.howtogeek.com/114884/how-to-repair-grub2-when-ubuntu-wont-boot/>

```
sudo apt-add-repository ppa:yannubuntu/boot-repair
```

```
sudo apt-get update
```

```
sudo apt-get install -y boot-repair
```

```
boot-repair
```

```
ubuntu@ubuntu:~$ sudo apt-add-repository ppa:yannubuntu/boot-repair
Simple tool to repair frequent boot problems.

Website: https://sourceforge.net/p/boot-repair/home
More info: https://launchpad.net/~yannubuntu/+archive/ubuntu/boot-repair
Press [ENTER] to continue or Ctrl-c to cancel adding it.

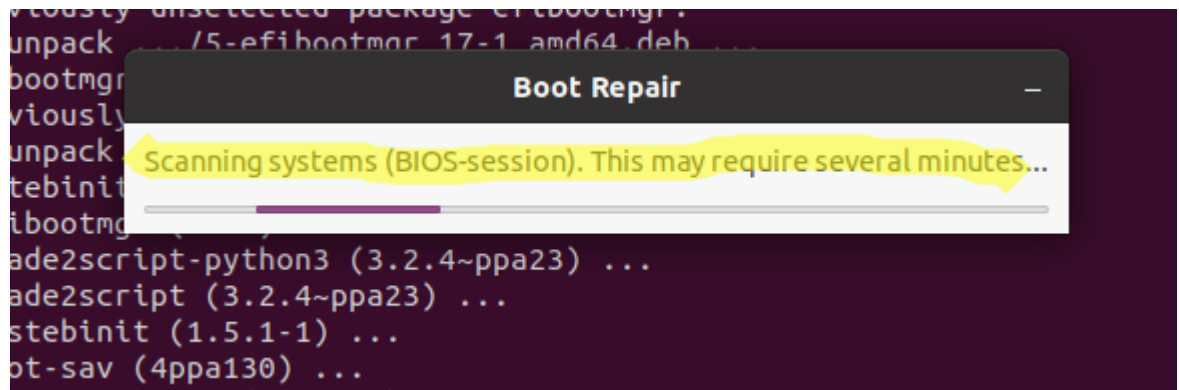
Ign:1 cdrom://Ubuntu 20.04.2.0 LTS _Focal Fossa_ - Release amd64 (20210209.1) f
ocal InRelease
Hit:2 cdrom://Ubuntu 20.04.2.0 LTS _Focal Fossa_ - Release amd64 (20210209.1) f
ocal Release
Get:3 http://ppa.launchpad.net/yannubuntu/boot-repair/ubuntu focal InRelease [1
7.5 kB]
Hit:4 http://archive.ubuntu.com/ubuntu focal InRelease
Hit:6 http://archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:7 http://security.ubuntu.com/ubuntu focal-security InRelease
Get:8 http://ppa.launchpad.net/yannubuntu/boot-repair/ubuntu focal/main amd64 P
ackages [1,792 B]
Get:9 http://ppa.launchpad.net/yannubuntu/boot-repair/ubuntu focal/main Transla
tion-en [1,596 B]
Fetched 20.9 kB in 0s (45.7 kB/s)
Reading package lists... Done
ubuntu@ubuntu:~$ sudo apt-get update
Ign:1 cdrom://Ubuntu 20.04.2.0 LTS _Focal Fossa_ - Release amd64 (20210209.1) f
ocal InRelease
Hit:2 cdrom://Ubuntu 20.04.2.0 LTS _Focal Fossa_ - Release amd64 (20210209.1) f
```

```
ubuntu@ubuntu:~$ sudo apt-get install -y boot-repair
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  boot-sav boot-sav-extra efibootmgr glade2script glade2script-python3
  pastebinit
Suggested packages:
  boot-info mdadm os-uninstaller gir1.2-appindicator3-0.1
```

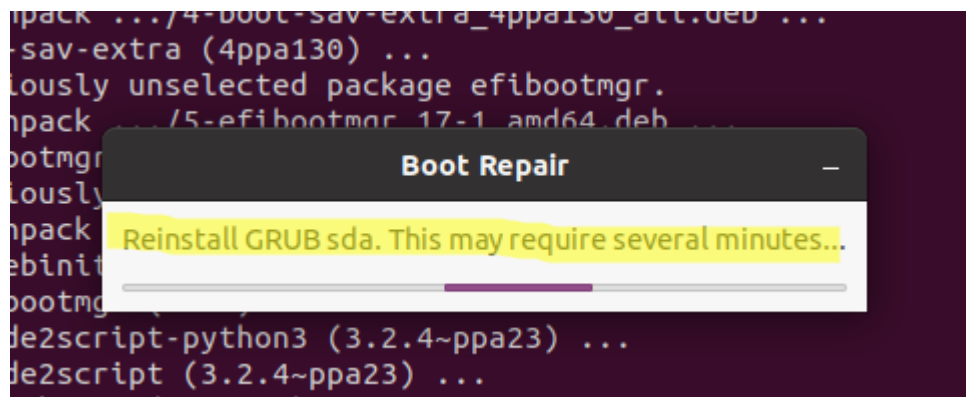


```
Setting up boot-sav (4ppa130) ...  
Setting up boot-sav-extra (4ppa130) ...  
Setting up boot-repair (4ppa130) ...  
Processing triggers for mime-support (3.64ubuntu1) ...  
Processing triggers for gnome-menus (3.36.0-1ubuntu1) ...  
Processing triggers for man-db (2.9.1-1) ...  
Processing triggers for desktop-file-utils (0.24-1ubuntu3) ...  
ubuntu@ubuntu:~$ boot-repair
```

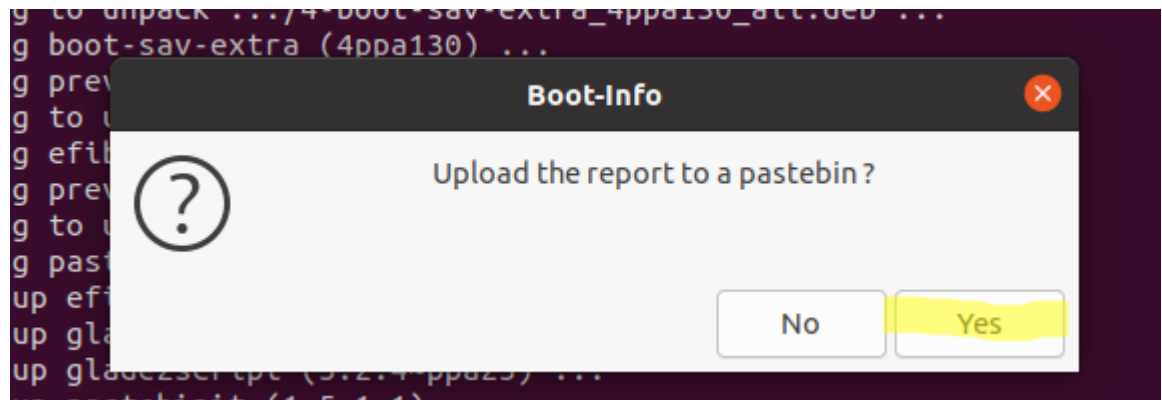
IT WILL APPEAR THIS TAB WHICH IS SCANNING THE SYSTEM



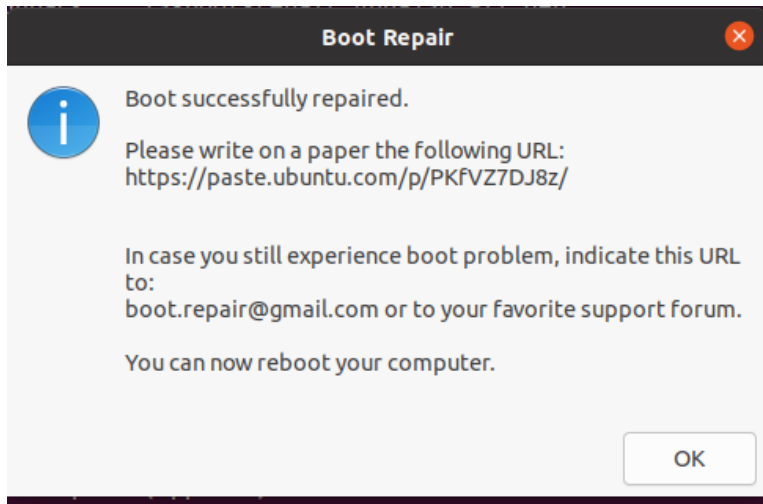
INSTALL GRUB SADA



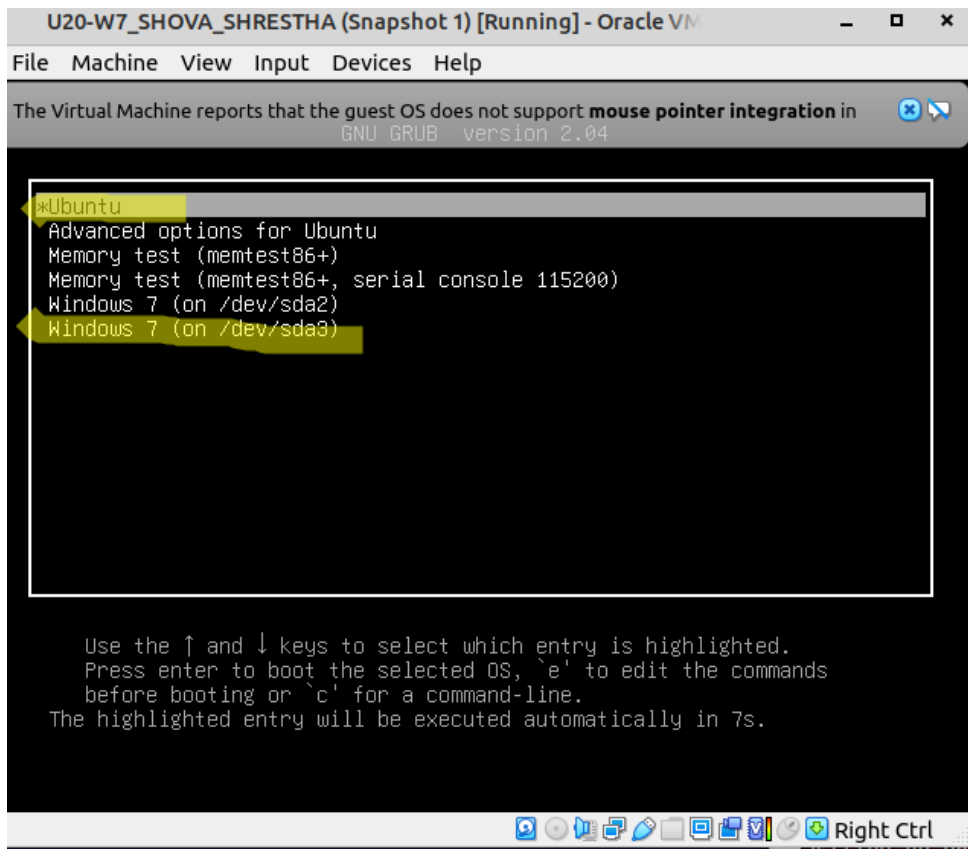
IT ASK IF WE WANT A REPORT, WE SAY YES







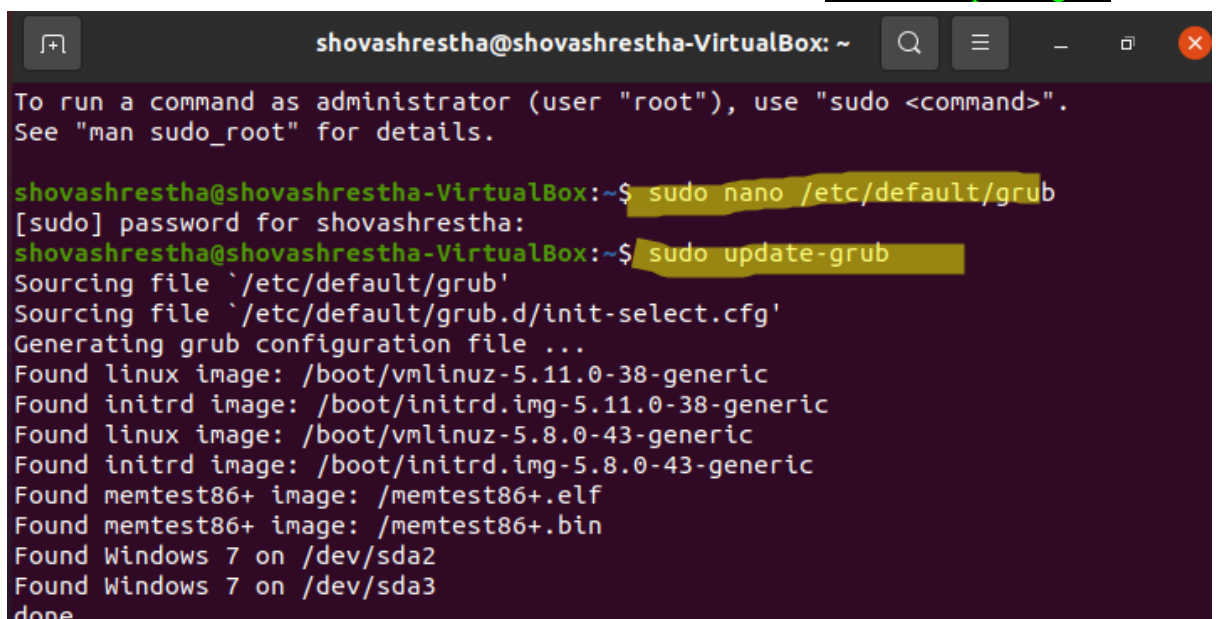
AND WE SEE THAT IT WORK WE CAN SEE OUR TWO SYSTEMS UBUNTU AND WINDOWS 7



- No menu displayed by default.
- Windows as default OS.
- Windows boots automatically after 10 seconds. You must display a countdown for that purpose.

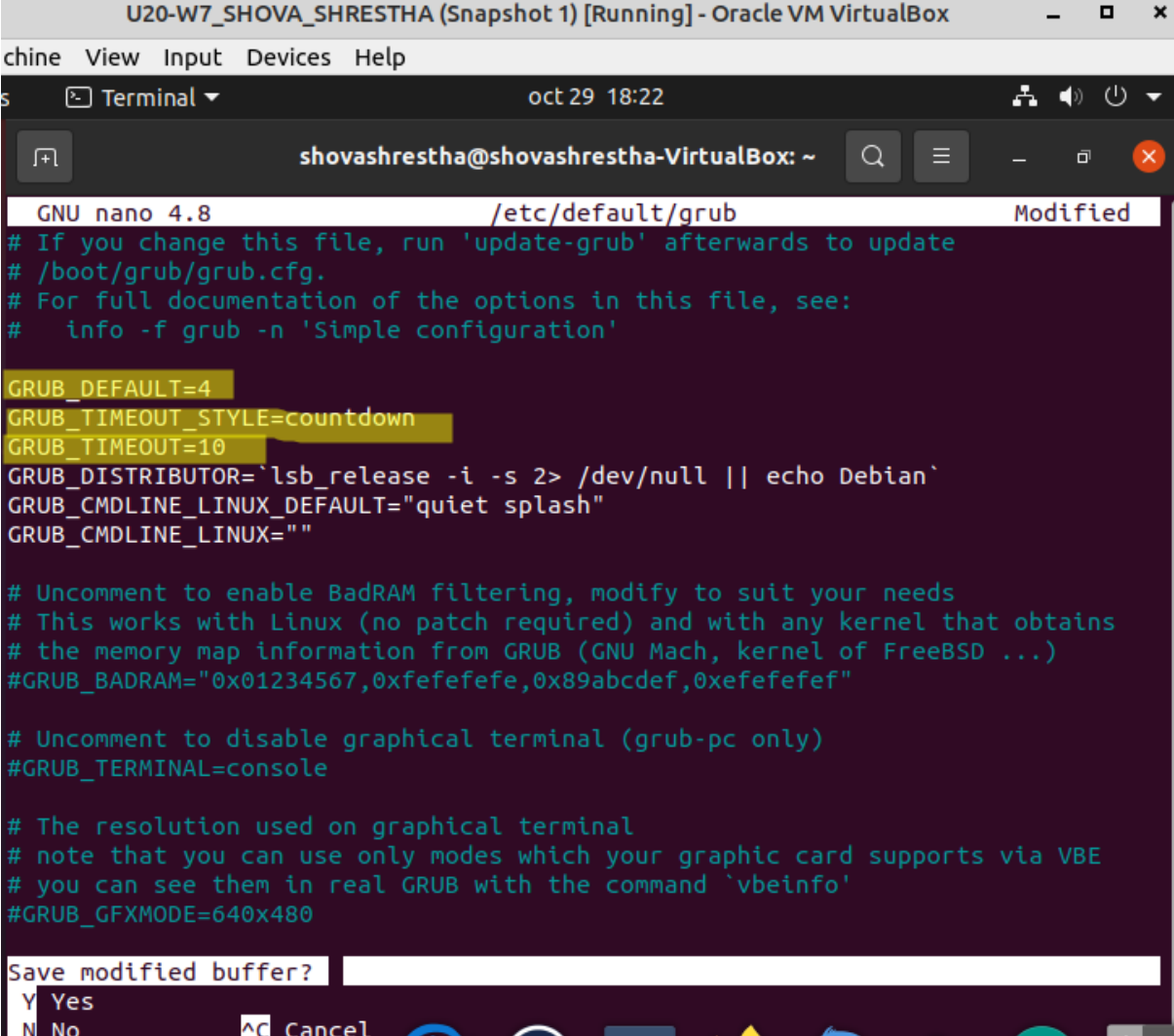
WE ARE GOING TO MODIFY GRUB SO WE CAN CHANGE HOW TO START THE MACHINE WITHOUT A MENU, WINDOWS AS THE DEFAULT OS, 10 SECOND AND WITH A COUNTDOWN.

SO FIRST WE OPEN THE TERMINAL AND OPEN GRUB DOCUMENT WITH THE COMMAND `sudo nano /etc/default/grub` AFTER WE MODIFY THE DOCUMENT WE UPDATE IT WITH `sudo update-grub`



```
shovashrestha@shovashrestha-VirtualBox: ~  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
shovashrestha@shovashrestha-VirtualBox:~$ sudo nano /etc/default/grub  
[sudo] password for shovashrestha:  
shovashrestha@shovashrestha-VirtualBox:~$ sudo update-grub  
Sourcing file `/etc/default/grub'  
Sourcing file `/etc/default/grub.d/init-select.cfg'  
Generating grub configuration file ...  
Found linux image: /boot/vmlinuz-5.11.0-38-generic  
Found initrd image: /boot/initrd.img-5.11.0-38-generic  
Found linux image: /boot/vmlinuz-5.8.0-43-generic  
Found initrd image: /boot/initrd.img-5.8.0-43-generic  
Found memtest86+ image: /memtest86+.elf  
Found memtest86+ image: /memtest86+.bin  
Found Windows 7 on /dev/sda2  
Found Windows 7 on /dev/sda3  
done
```

HERE WE CAN SEE THE MODIFICATION, IN  
GRUB\_DEFAULT WILL BE WINDOWS 7 SO IT'S NUMBER 4  
WE NEED TO PUT IN GRUB\_TIMEOUT\_STYLE THE COUNTDOWN  
AND IN GRUB\_TIMEOUT 10 SECONDS.



The screenshot shows a terminal window titled "U20-W7\_SHOVA\_SHRESTHA (Snapshot 1) [Running] - Oracle VM VirtualBox". The terminal is running the GNU nano 4.8 editor, editing the file /etc/default/grub. The user has modified the following lines: GRUB\_DEFAULT=4, GRUB\_TIMEOUT\_STYLE=countdown, and GRUB\_TIMEOUT=10. The terminal also shows other configuration options like GRUB\_DISTRIBUTOR, GRUB\_CMDLINE\_LINUX\_DEFAULT, and GRUB\_CMDLINE\_LINUX. At the bottom, a prompt asks "Save modified buffer?" with options Y (Yes), N (No), and ^C (Cancel).

```
GNU nano 4.8 /etc/default/grub Modified
# If you change this file, run 'update-grub' afterwards to update
# /boot/grub/grub.cfg.
# For full documentation of the options in this file, see:
# info -f grub -n 'Simple configuration'

GRUB_DEFAULT=4
GRUB_TIMEOUT_STYLE=countdown
GRUB_TIMEOUT=10
GRUB_DISTRIBUTOR=`lsb_release -i -s 2> /dev/null || echo Debian`
GRUB_CMDLINE_LINUX_DEFAULT="quiet splash"
GRUB_CMDLINE_LINUX=""

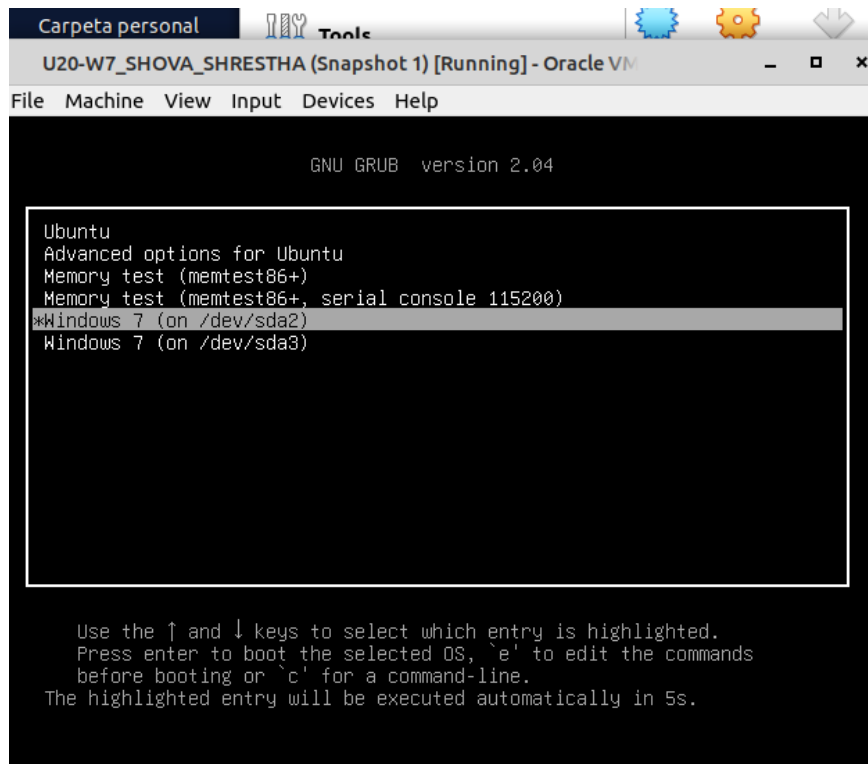
# Uncomment to enable BadRAM filtering, modify to suit your needs
# This works with Linux (no patch required) and with any kernel that obtains
# the memory map information from GRUB (GNU Mach, kernel of FreeBSD ...)
#GRUB_BADRAM="0x01234567,0xfefefefe,0x89abcdef,0xefefefef"

# Uncomment to disable graphical terminal (grub-pc only)
#GRUB_TERMINAL=console

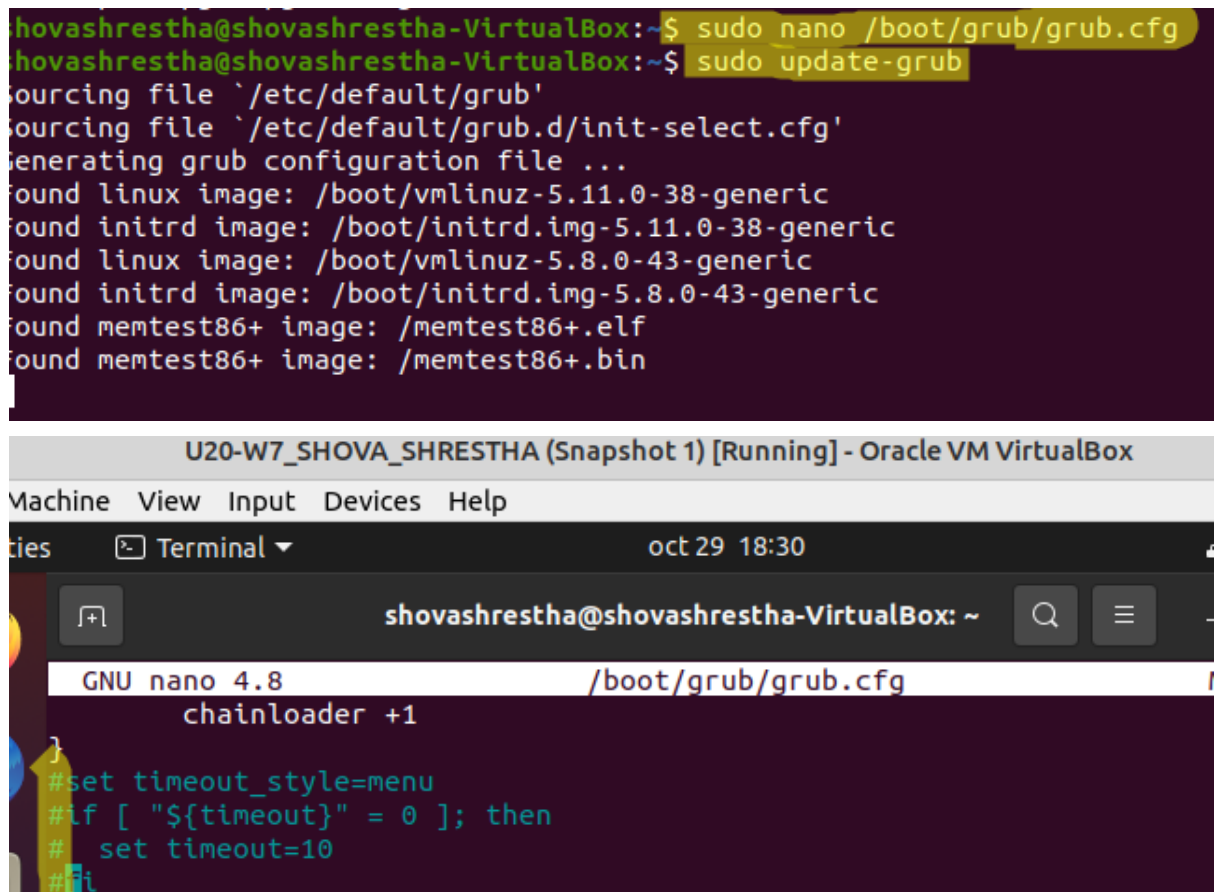
# The resolution used on graphical terminal
# note that you can use only modes which your graphic card supports via VBE
# you can see them in real GRUB with the command `vbeinfo'
#GRUB_GFXMODE=640x480

Save modified buffer?
Y Yes
N No
^C Cancel
```

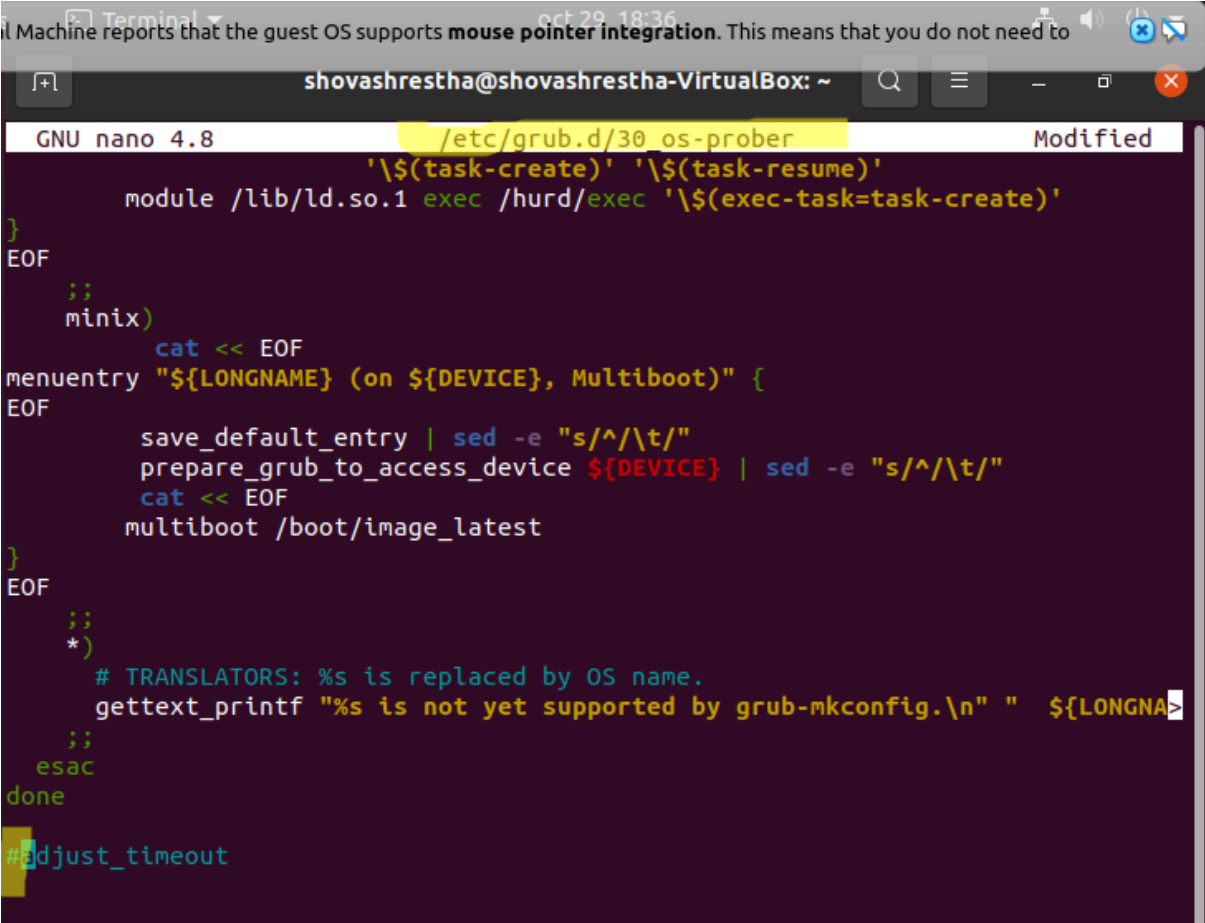
IT DIDN'T WORK THE COUNTDOWN



IT DIDN'T WORK BECAUSE I TRY TO UPDATE GRUB WHEN I CHANGE THE DOCUMENT GRUB.CFG, BUT IT HAS NEVER BEEN UPDATED.

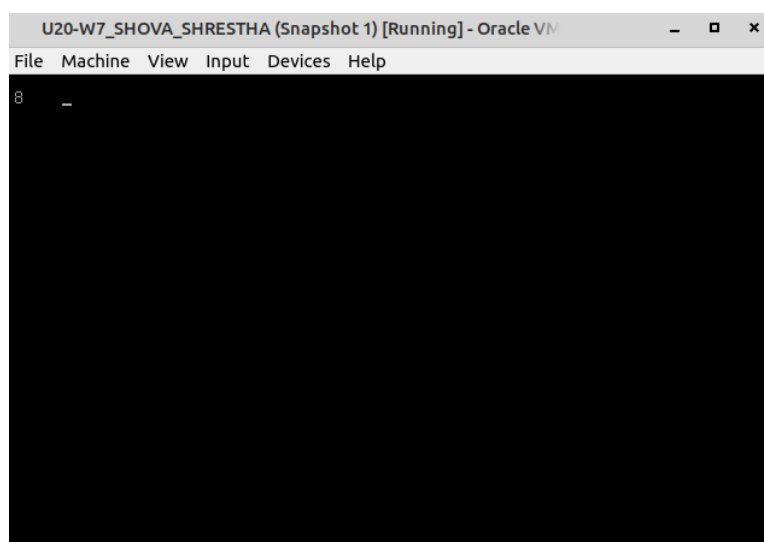


THEN I TRY TO CHANGE THE DOCUMENT `/etc/grub.d/30_os-prober` I COMMENT  
THE LINE `adjust_timeout` AND UPDATE GRUB, IT DID WORK



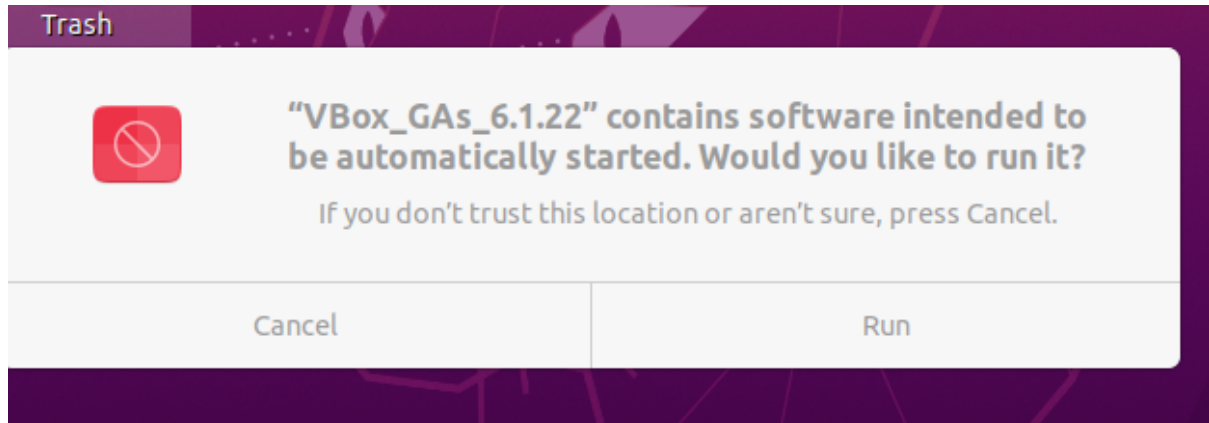
```
Machine reports that the guest OS supports mouse pointer integration. This means that you do not need to
shovashrestha@shovashrestha-VirtualBox: ~
GNU nano 4.8 /etc/grub.d/30_os-prober Modified
        '\$(task-create)' '\$(task-resume)'
        module /lib/ld.so.1 exec /hurd/exec '\$(exec-task=task-create)'
    }
EOF
    ;;
    minix)
        cat << EOF
menuentry "${LONGNAME} (on ${DEVICE}, Multiboot)" {
EOF
    save_default_entry | sed -e "s/^/\t/"
    prepare_grub_to_access_device ${DEVICE} | sed -e "s/^/\t/"
    cat << EOF
    multiboot /boot/image_latest
}
EOF
    ;;
    *)
        # TRANSLATORS: %s is replaced by OS name.
        gettext_printf "%s is not yet supported by grub-mkconfig.\n" " ${LONGNAME}
    ;;
    esac
done
#adjust_timeout
```

HERE WE CAN SEE IT WORK

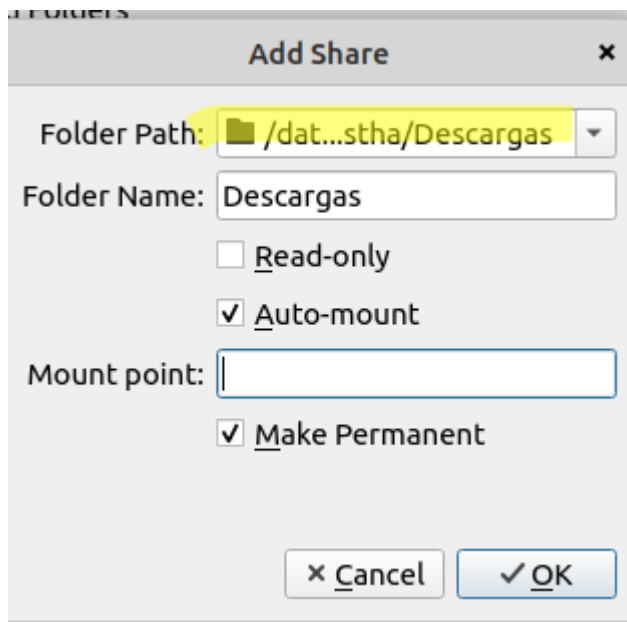


- A shared folder to an external storage device that you can access from both Operating systems.

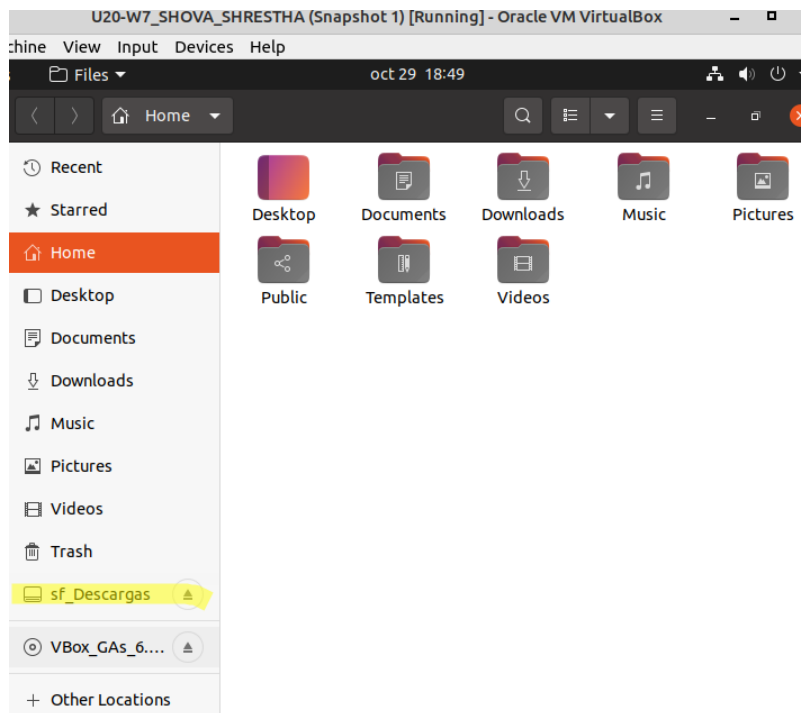
WE NEED TO INSTALL GUEST ADDITION WE ALREADY DID IN WINDOWS  
SO NOW WE INSTALL IN UBUNTU20, WE CLICK RUN AND THEN WILL  
INSTALL.



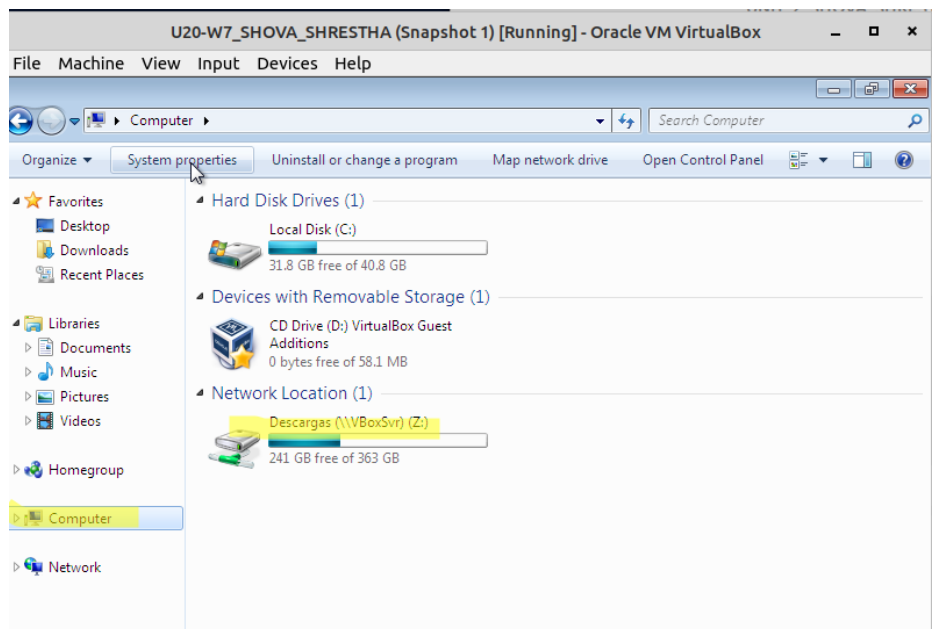
HERE WE WILL GO IN SETTINGS AND SHARE FOLDER WE CLICK IN FOLDER  
PATH WE CHOOSE ONE, IN MY CASE I CHOOSE THE FOLDER DOWNLOAD

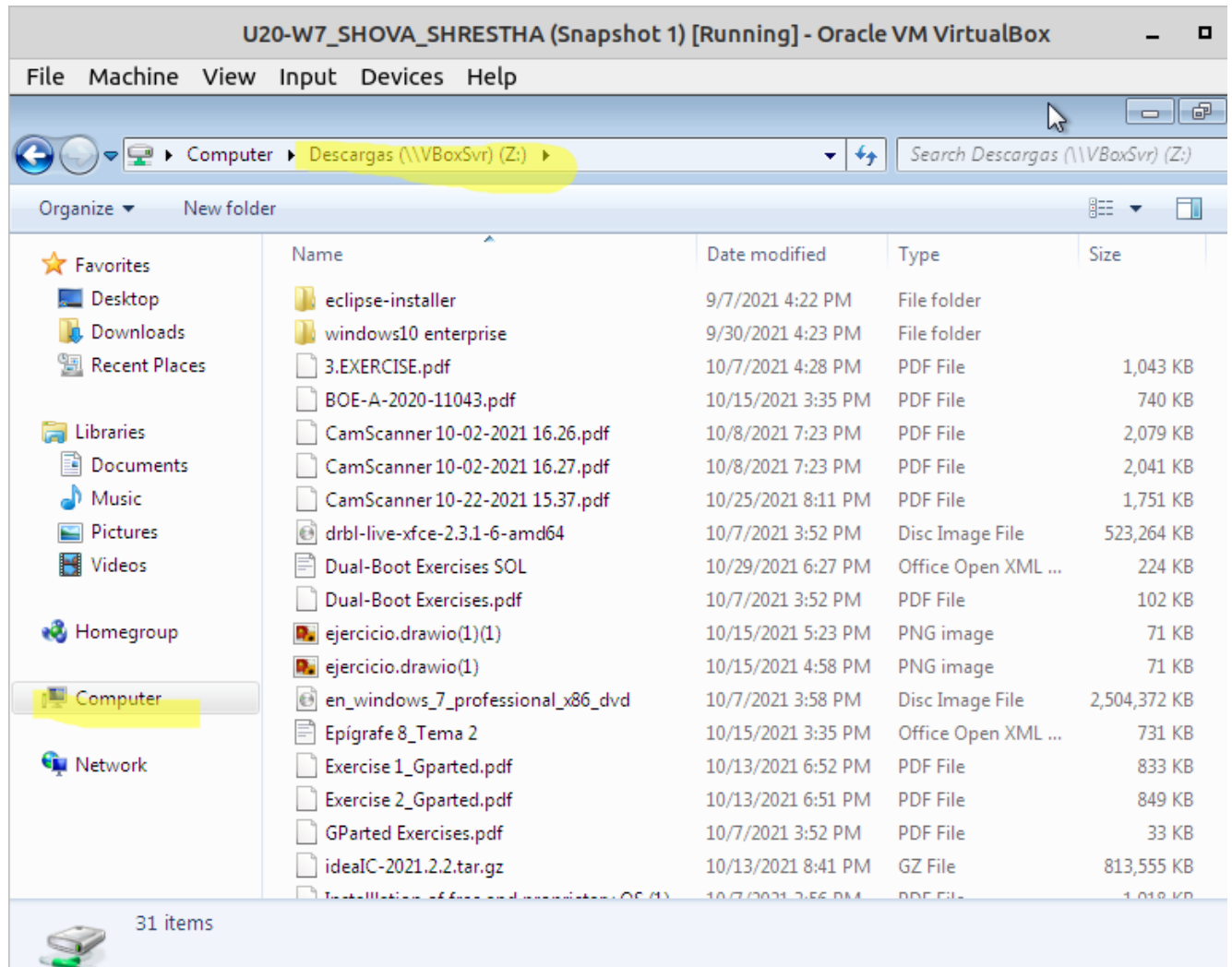


HERE IN UBUNTU WE CAN SEE IT WORK



AND ALSO IN WINDOWS







- **Internet connection.**

I CHOOSE BRIDGED ADAPTER SO WE CAN HAVE INTERNET FROM OUR COMPUTER IT COULD BE ALSO NAT NETWORK.

