

2. Create a virtual machine with two operating systems, Windows 7 (or Windows 10) and Ubuntu 16.04 (in this order) and configure the bootloader to:

- Set Windows as default entry and boot after 15 seconds if the user does not select another option in the menu.
- Boot Ubuntu without displaying the menu after showing a 10 seconds countdown.
- Boot Ubuntu without displaying the menu.
- Boot Windows without displaying the menu.

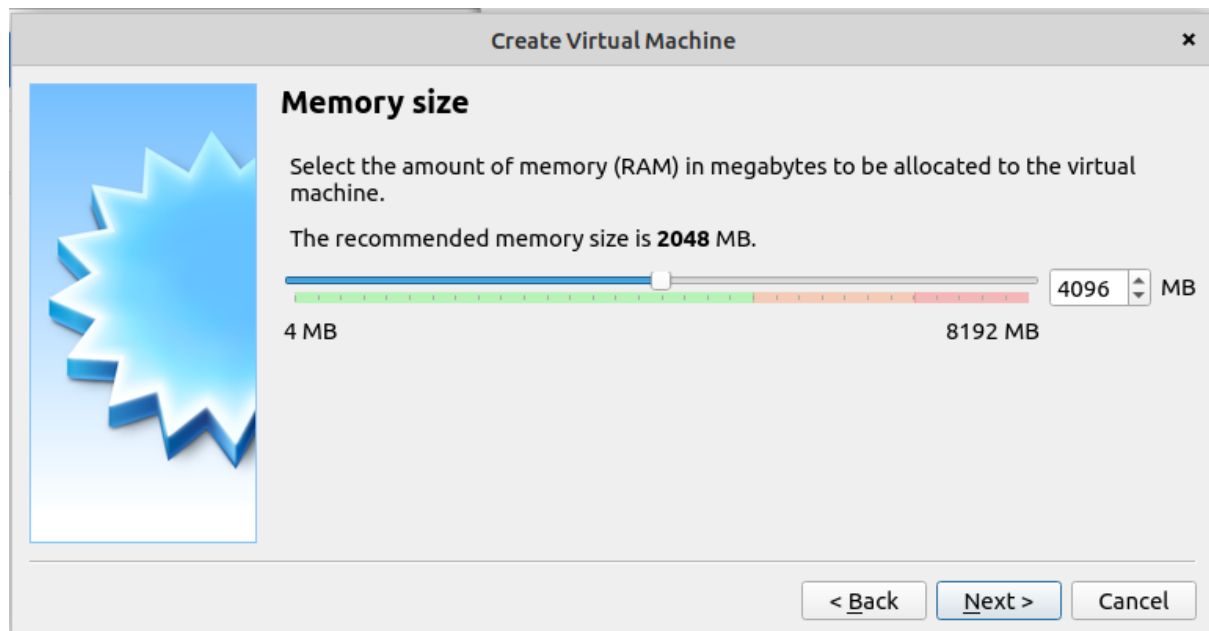
3. If you lose the bootloader in exercise 2, use the tool "Boot-Repair", which will let you solve the issue. If necessary, use the following the instructions in the URL:

<https://help.ubuntu.com/community/Boot-Repair>

OUR VIRTUAL MACHINE WILL HAVE 80GB RAM 4GB

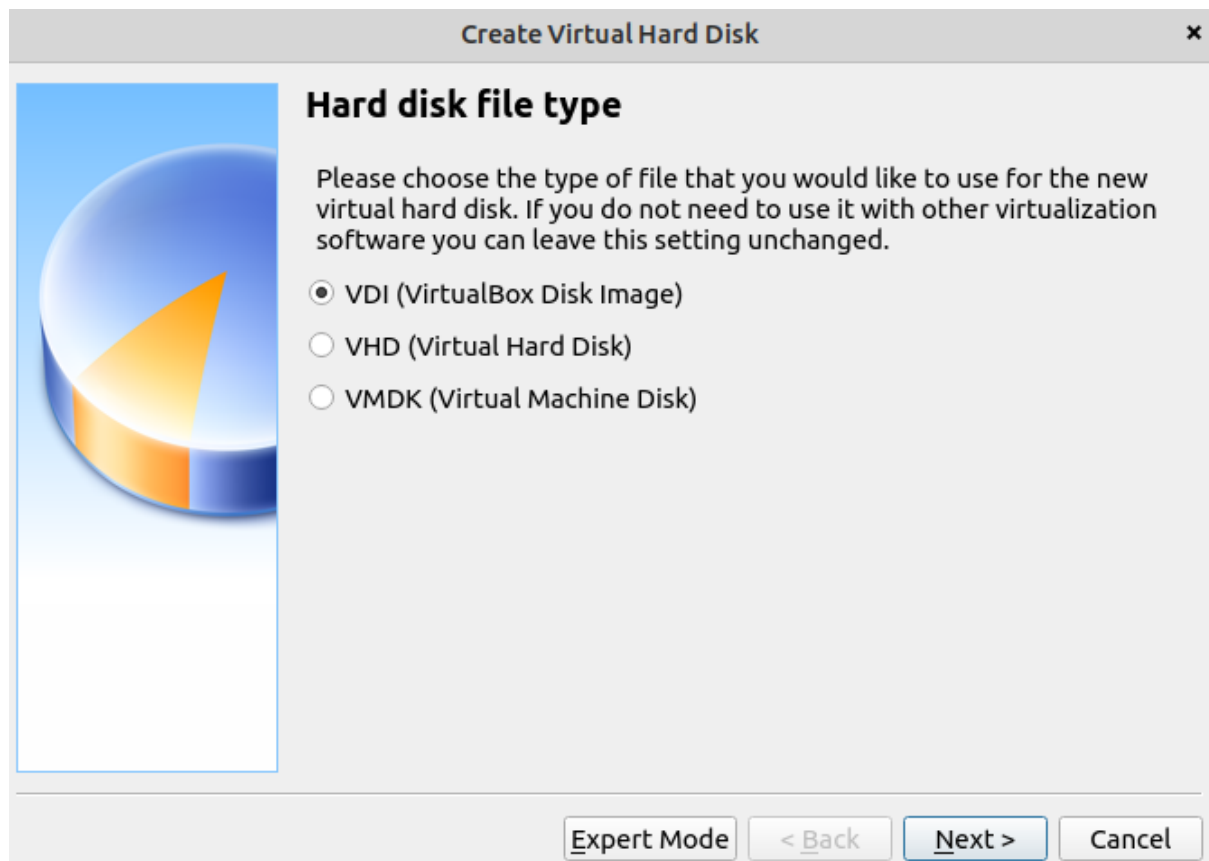
WE INSTALL WINDOWS 7 AS ALWAYS

THIS HARD DISK IT'S GOING TO TAKE TWO ISO SO WE ARE PUTTING 4GB OF RAM





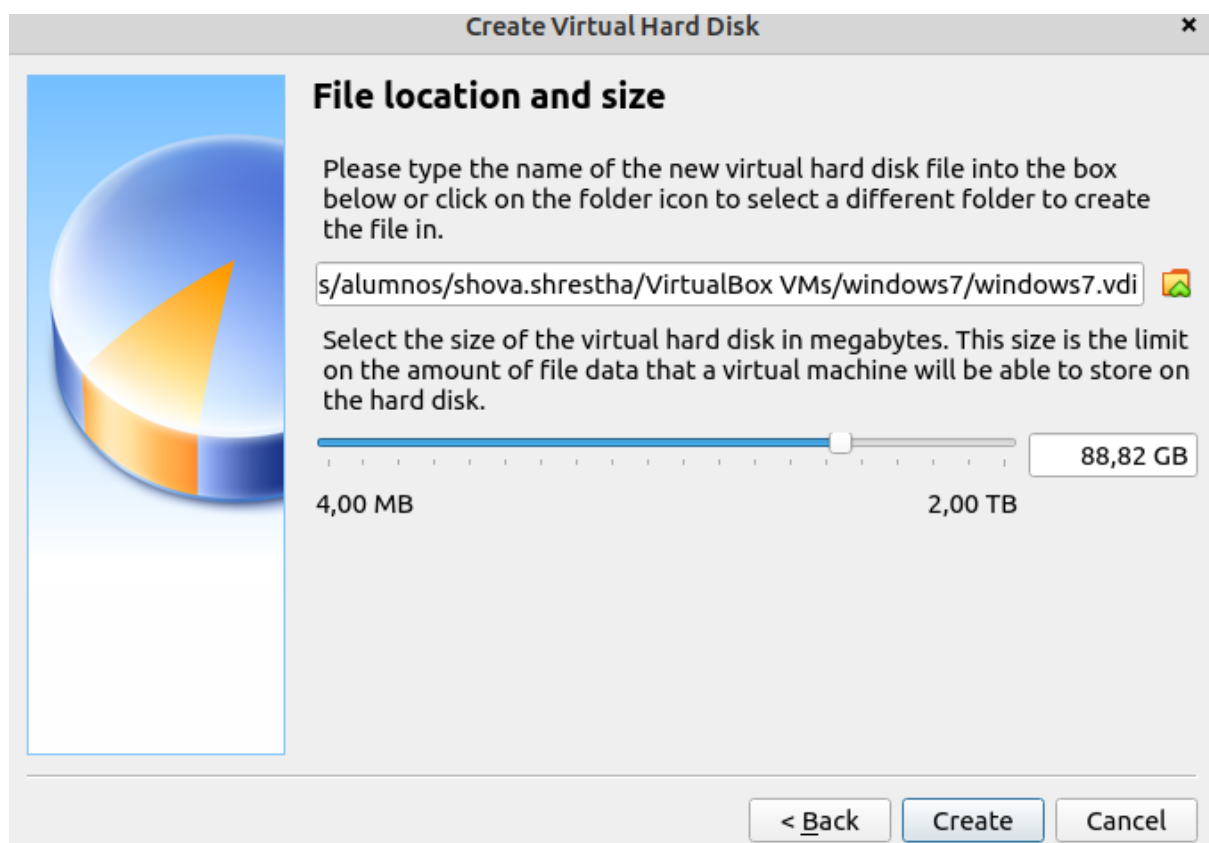
VDI



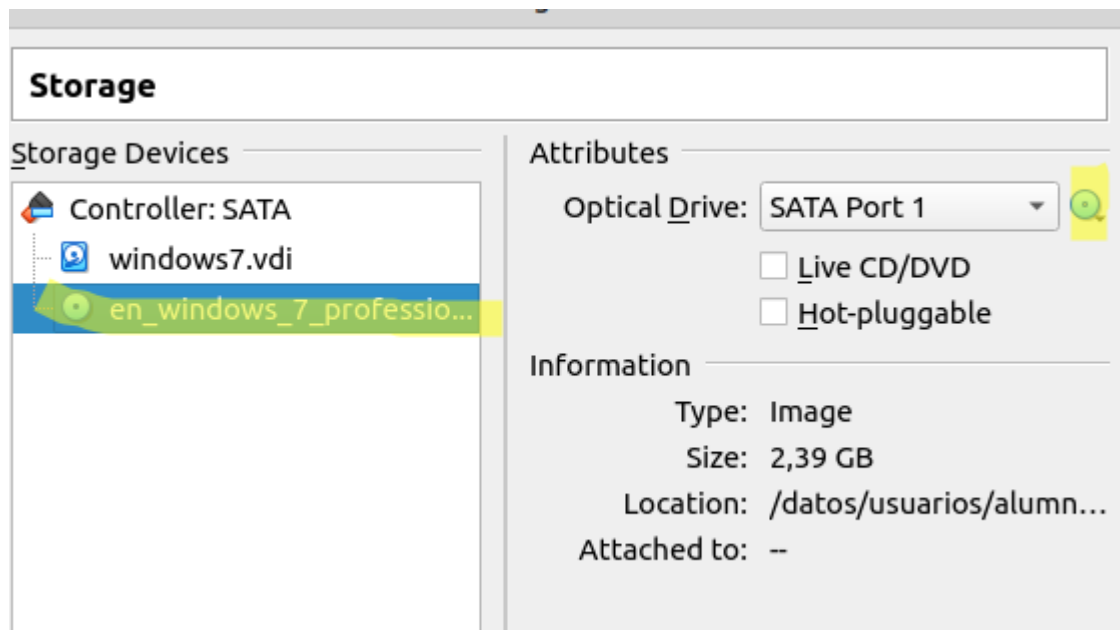
## DYNAMICALLY ALLOCATED



88GB THIS WAY WE BOTHE ISO MORE OR LESS WILL HAVE 44 GB.



IN THE CD WE PUT OUR WINDOWS7 ISO.

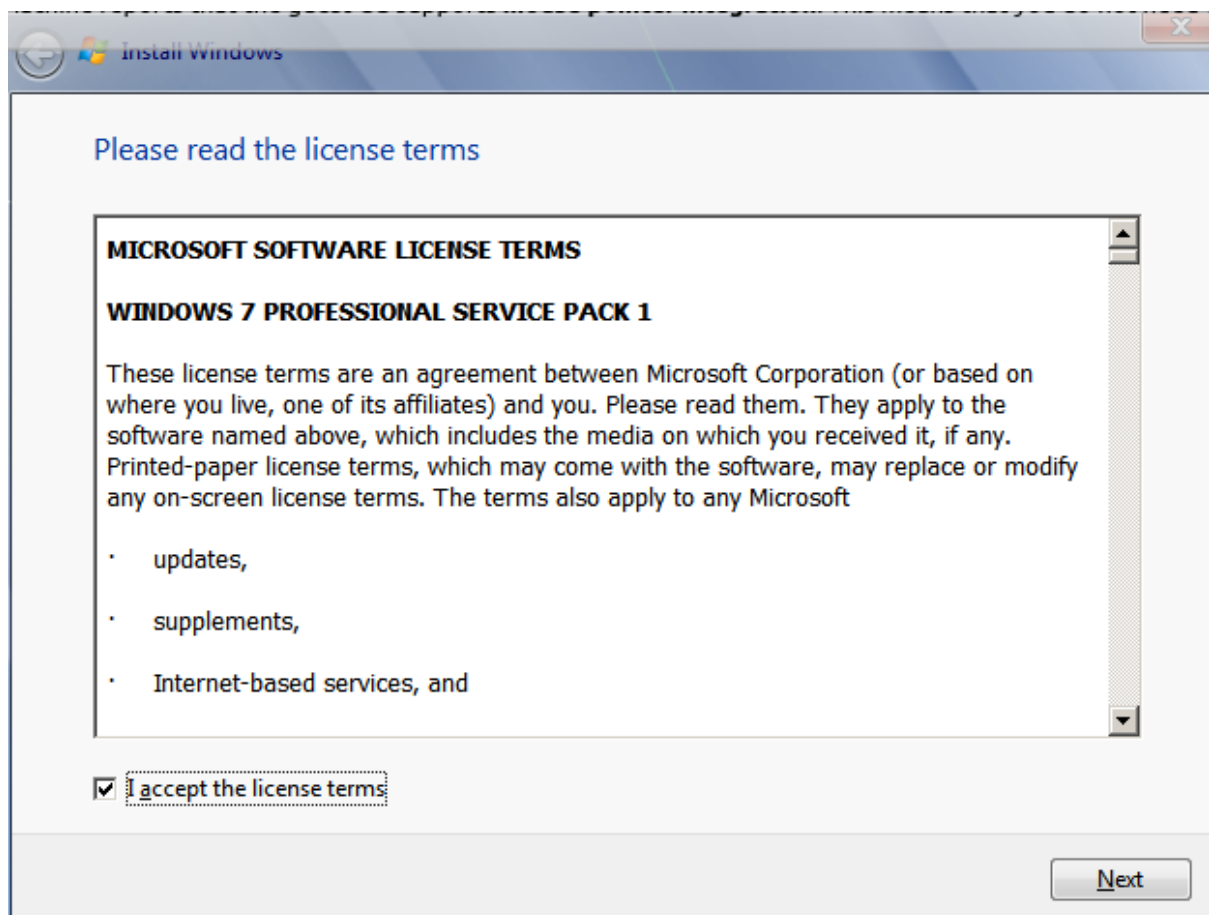


START THE MACHINE IT WILL ASK SOME CONFIGURATION ABOUT LANGUAGE AND KEYBOARD, LANGUAGE ENGLISH AND KEYBOARD SPANISH.

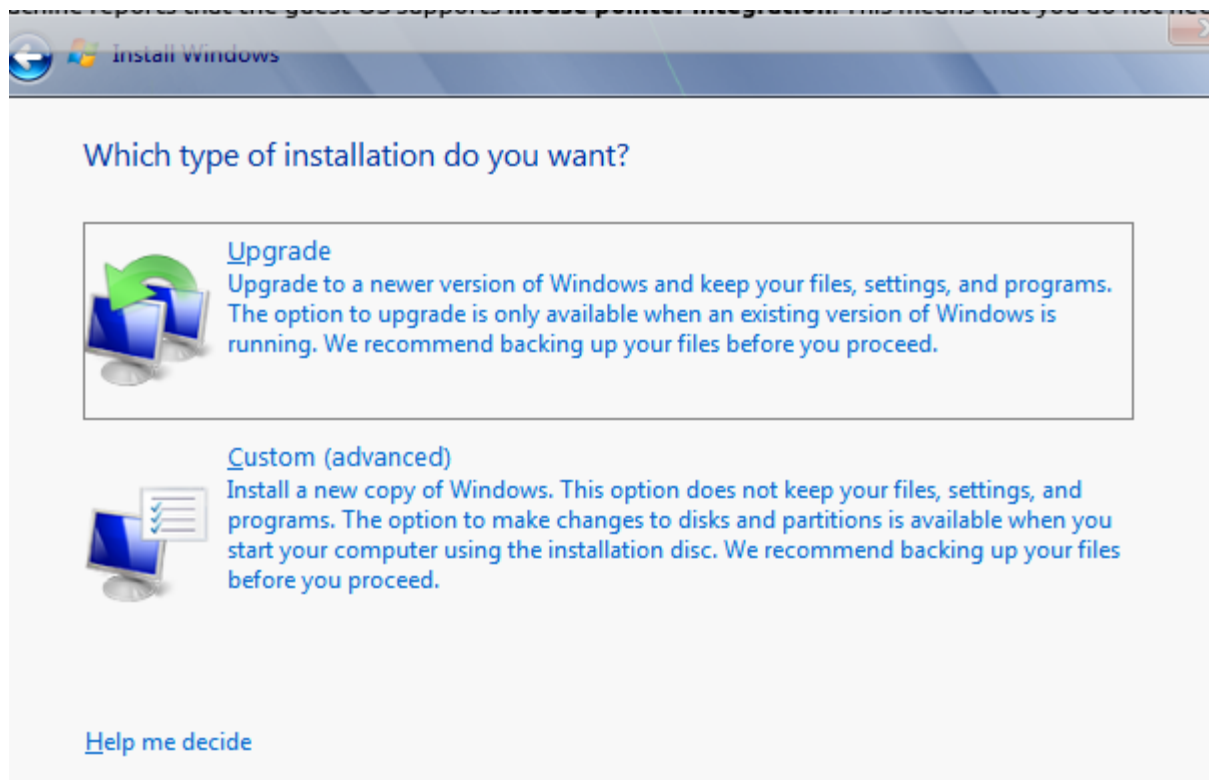




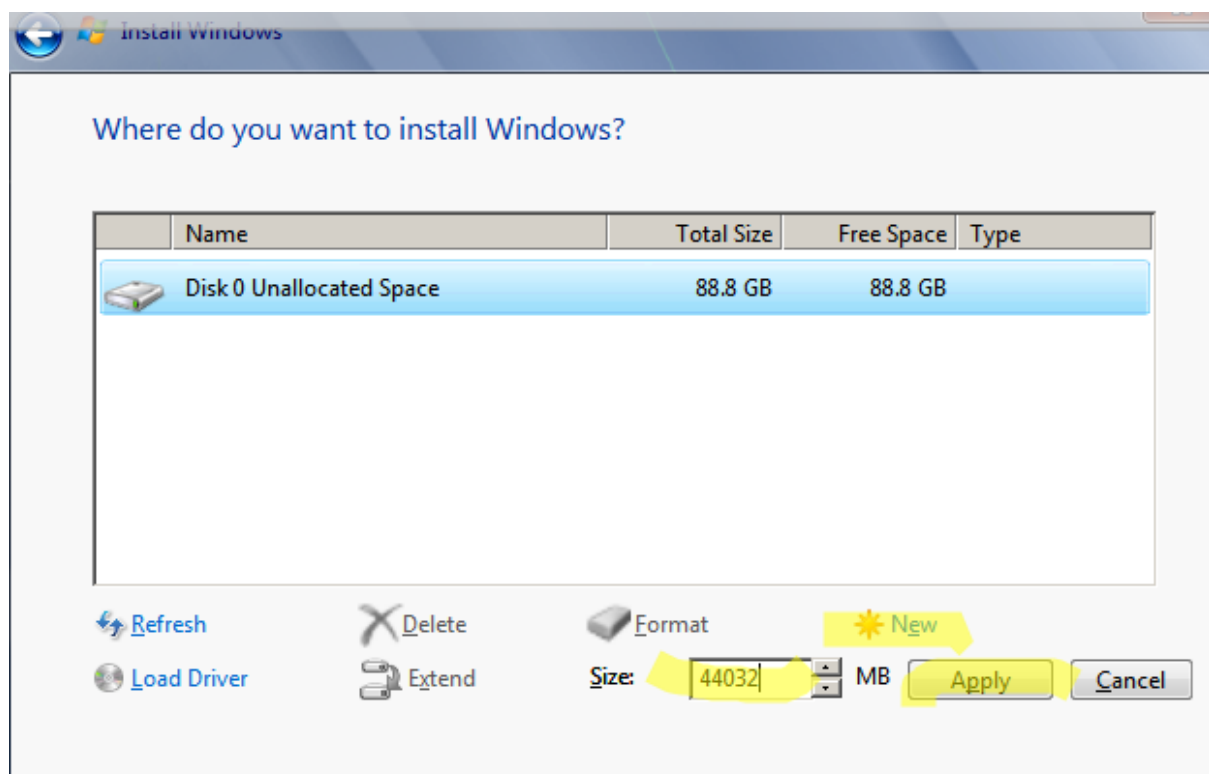
WE ACCEPT THE LICENSE TERMS.



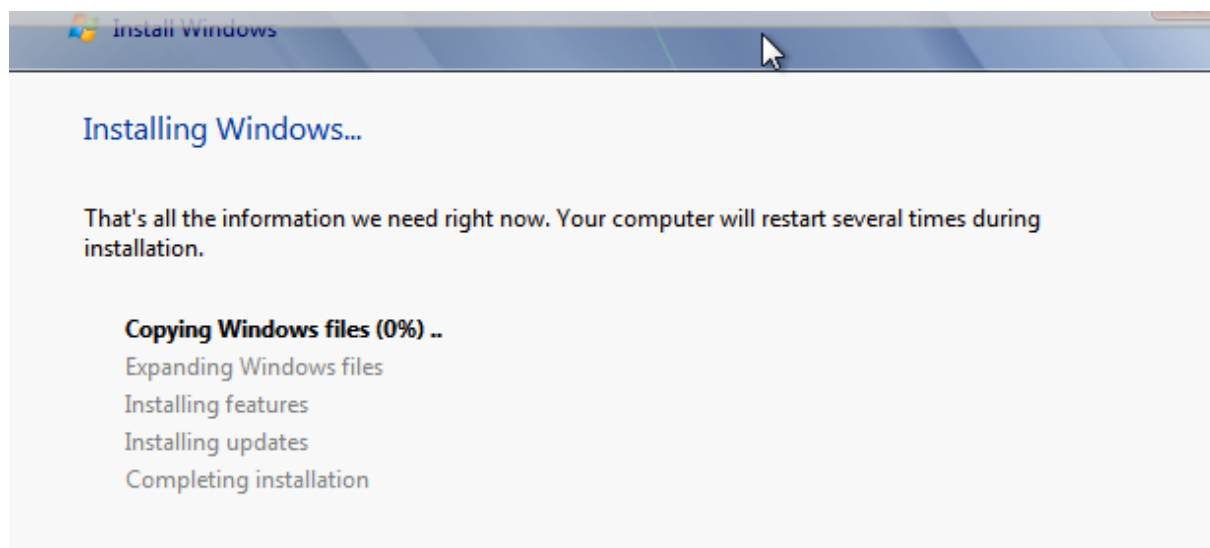
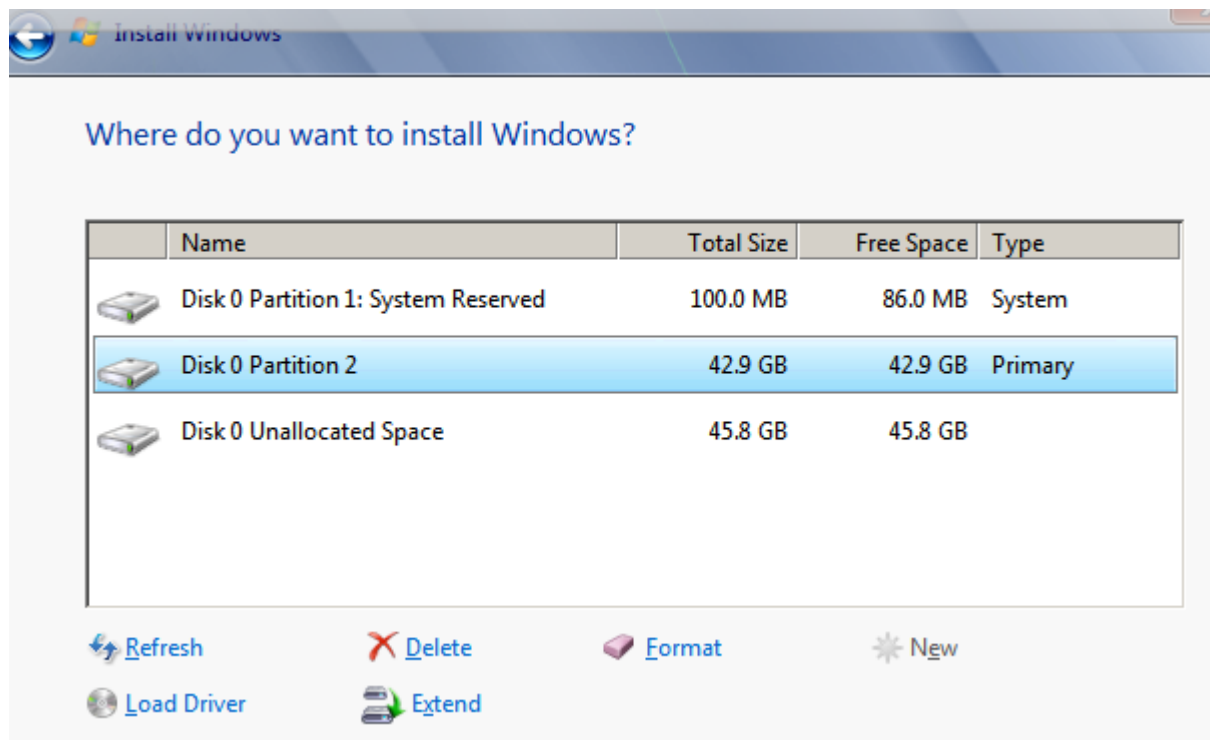
IT'S THE FIRST TIME WE INSTALL WINDOWS7 IN THIS VIRTUAL MACHINE SO WE CHOOSE THE SECOND OPTION.



BEFORE THIS TAB IT APPEARS A TAB IN WHICH WE HAS TO CHOOSE IF THE PARTITION IT'S MADE MANUALLY OR AUTOMATICALLY. WE CLICK IN NEW WE GIVE HALF OF THE SIZE 44032MB AND WE APPLY.



AS WE CAN SEE IT HAS BEEN CREATED A DISK FOR THE SYSTEM, OTHER THE PRIMARY WHERE IT WILL THE WINDOWS7 AND THE UNALLOCATED SPACE WILL BE FOR WINDOWS10.





IT WILL RESTART  
NOW WE NEED TO PUT THE USER NAME, PASSWORD.



Choose a user name for your [account](#) and name your computer to distinguish it on the network.


Type a user name (for example, John):

Type a [computer name](#):

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Next



 Set Up Windows

## Set a password for your account

Creating a password is a smart security precaution that helps protect your user account from unwanted users. Be sure to remember your password or keep it in a safe place.

Type a password (recommended):

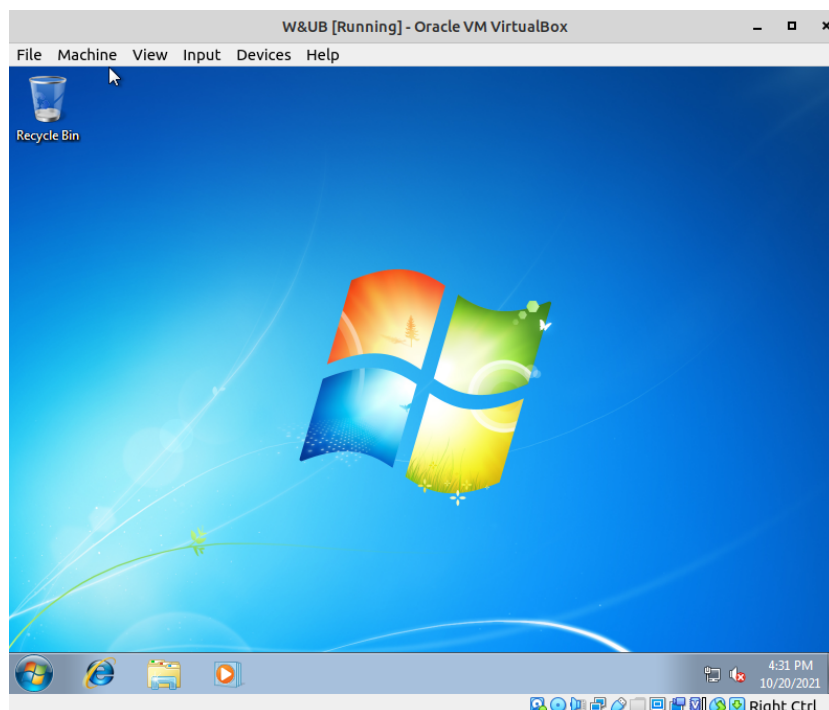
Retype your password:

Type a password hint (required):

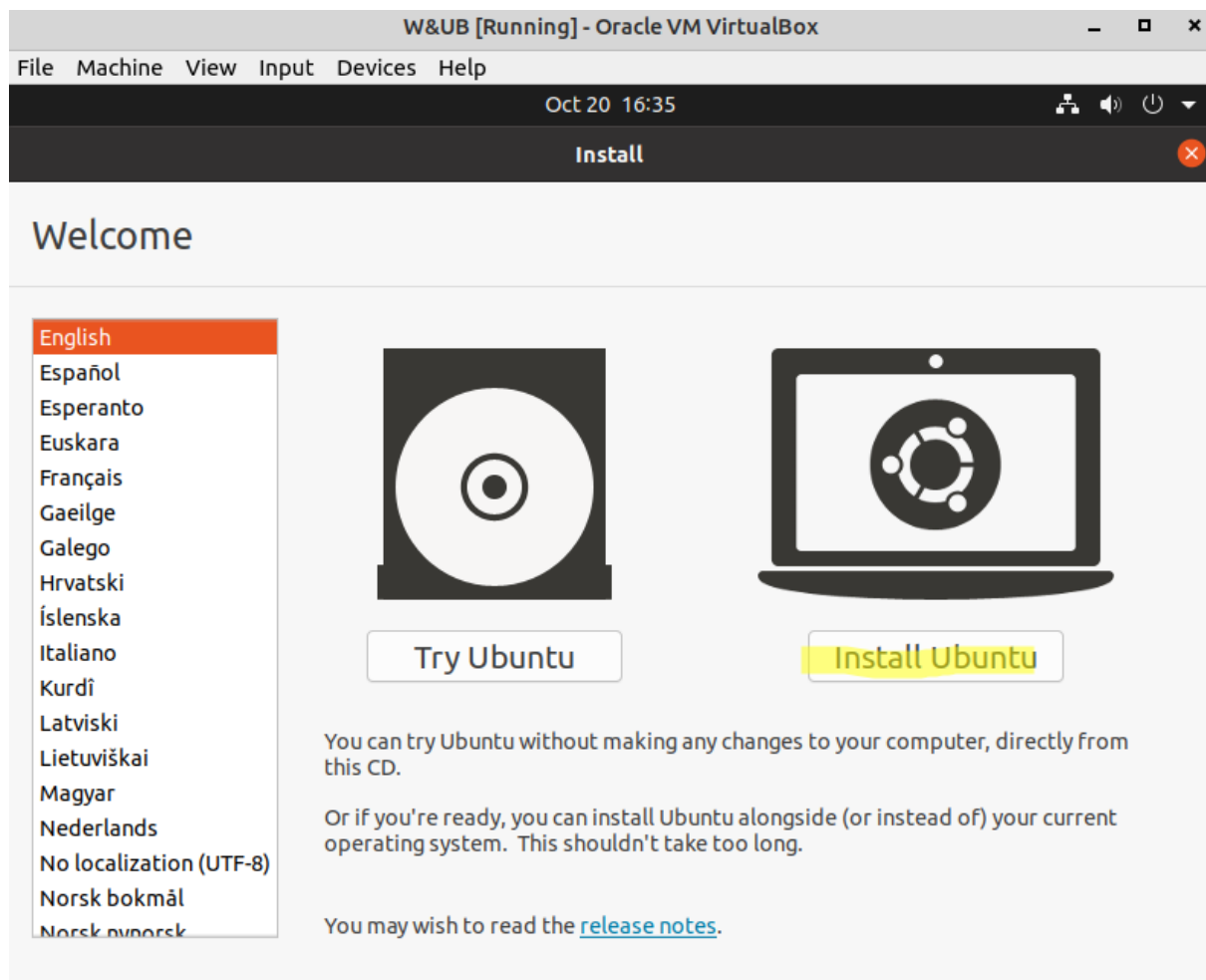
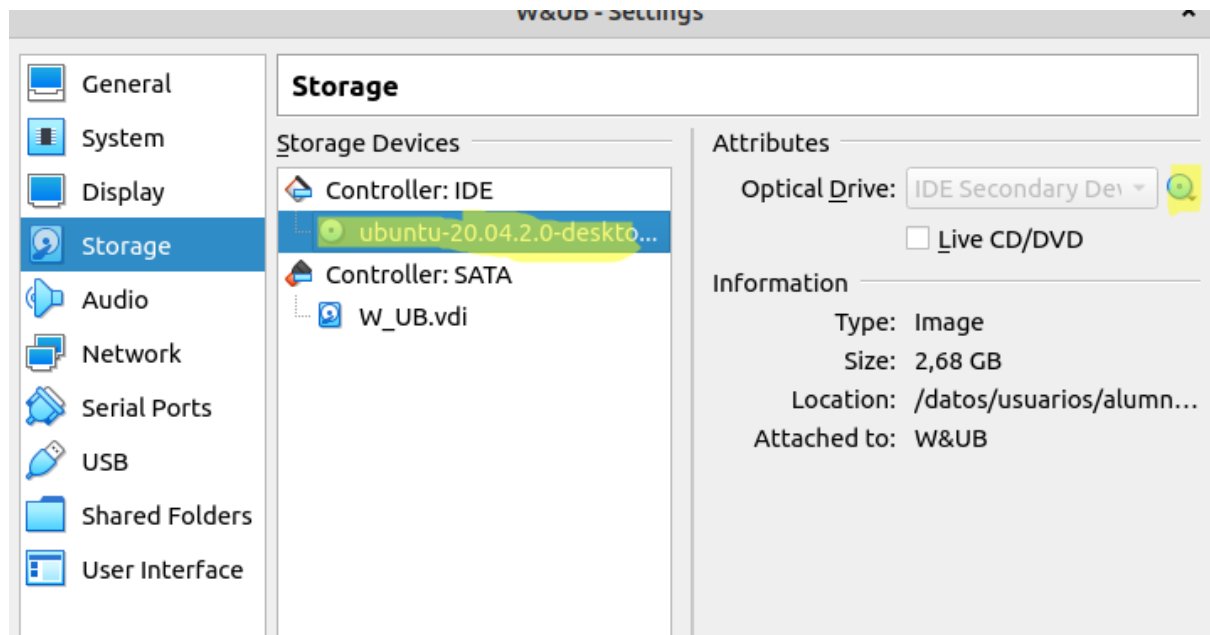
Choose a word or phrase that helps you remember your password.  
If you forget your password, Windows will show you your hint.

Next

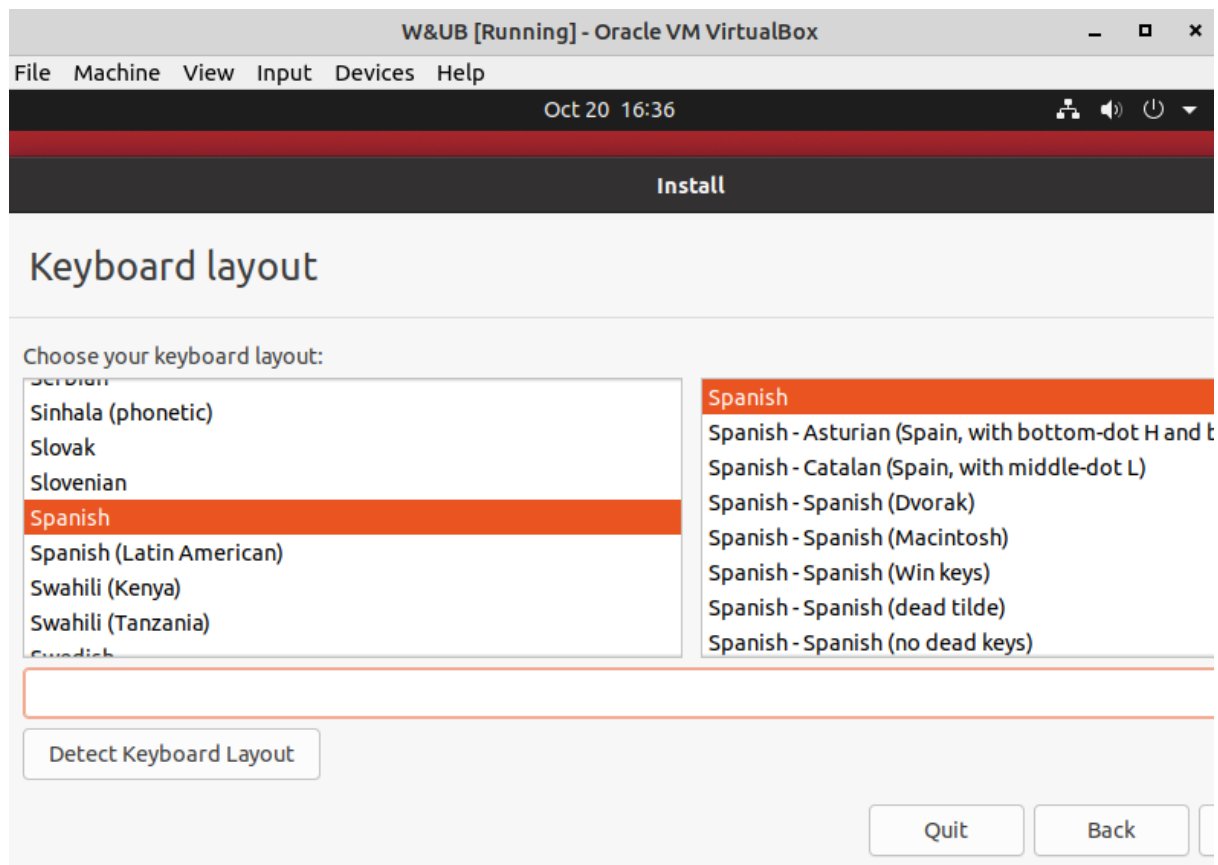
WINDOWS7 IT HAS BEEN INSTALLED.



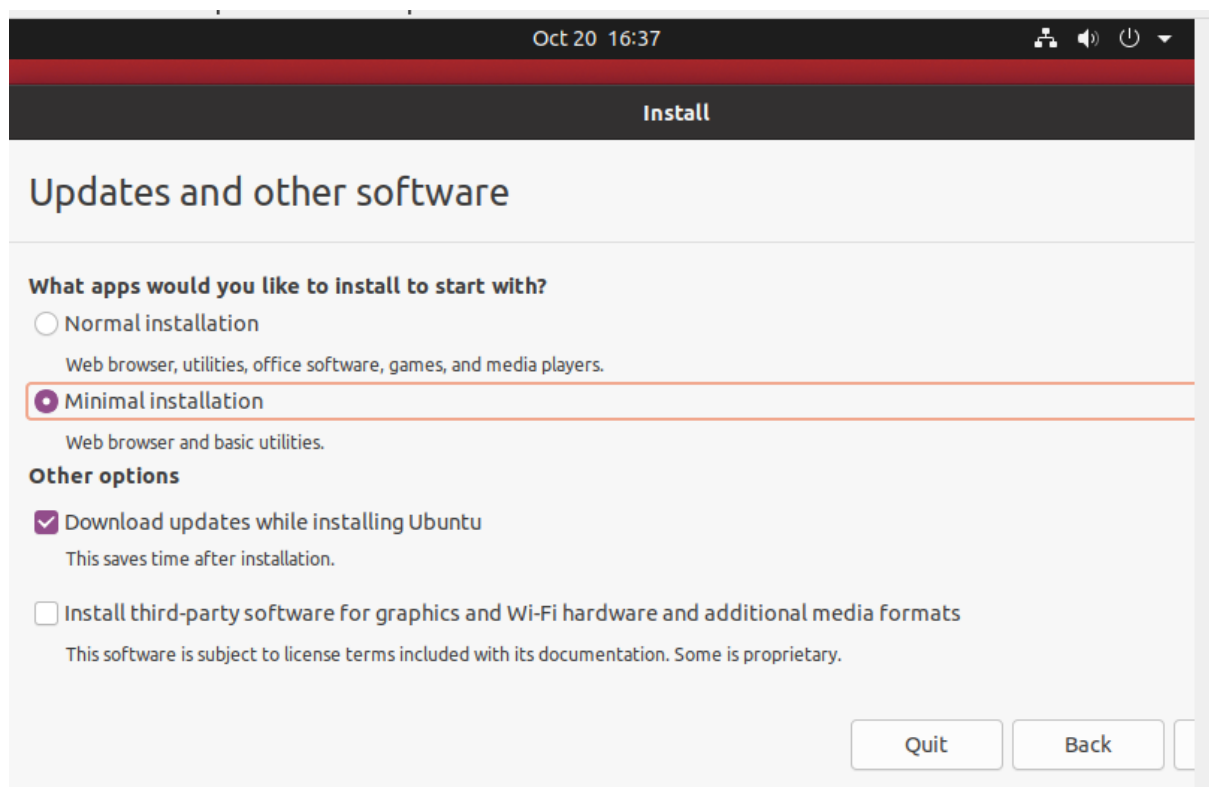
NOW IT'S TIME TO INSTALL UBUNTO20 ISO

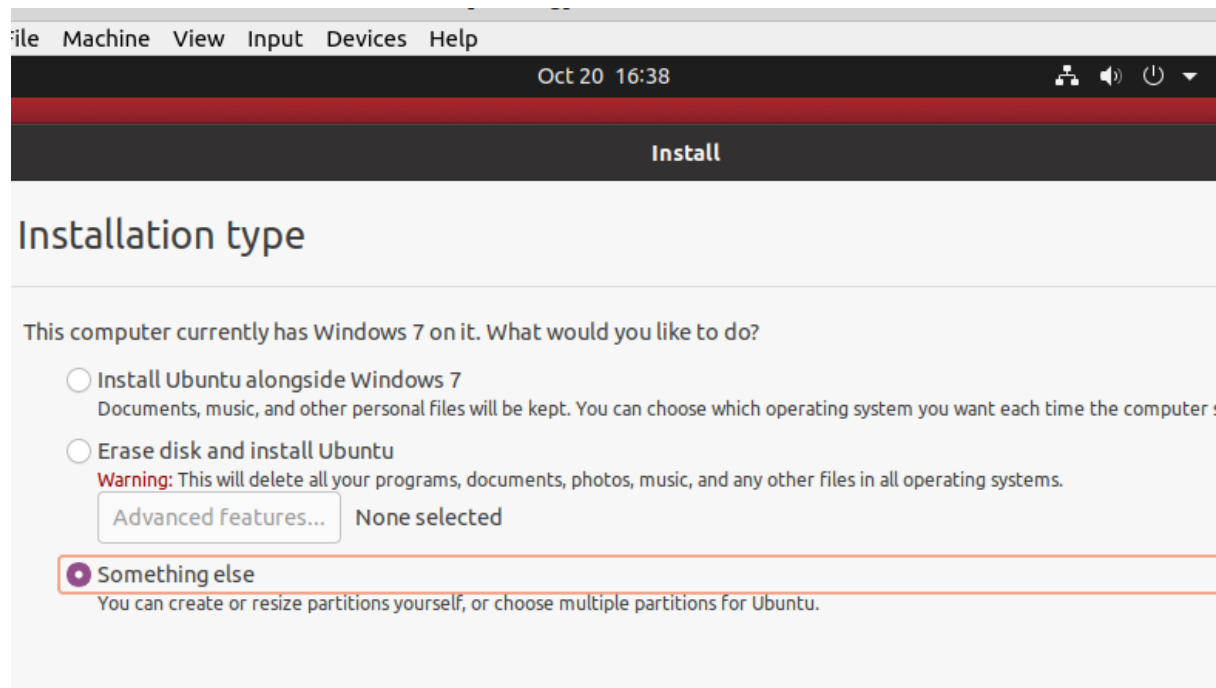


## OUR KEYBOARD WILL BE SPANISH

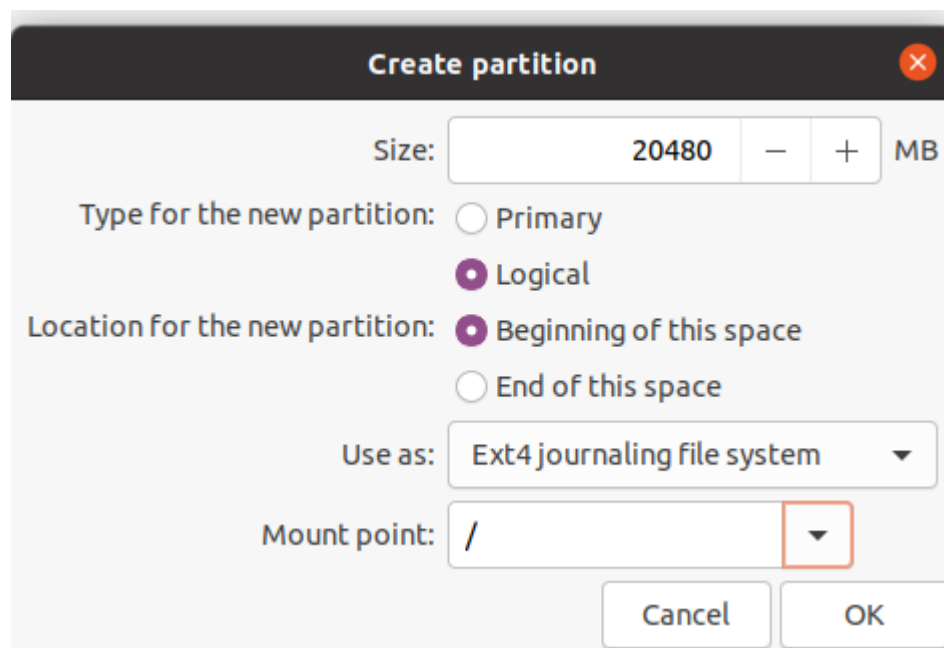


## WE CHOOSE MINIMAL INSTALLATION BECAUSE I WANT TO INSTALL IT QUICK.

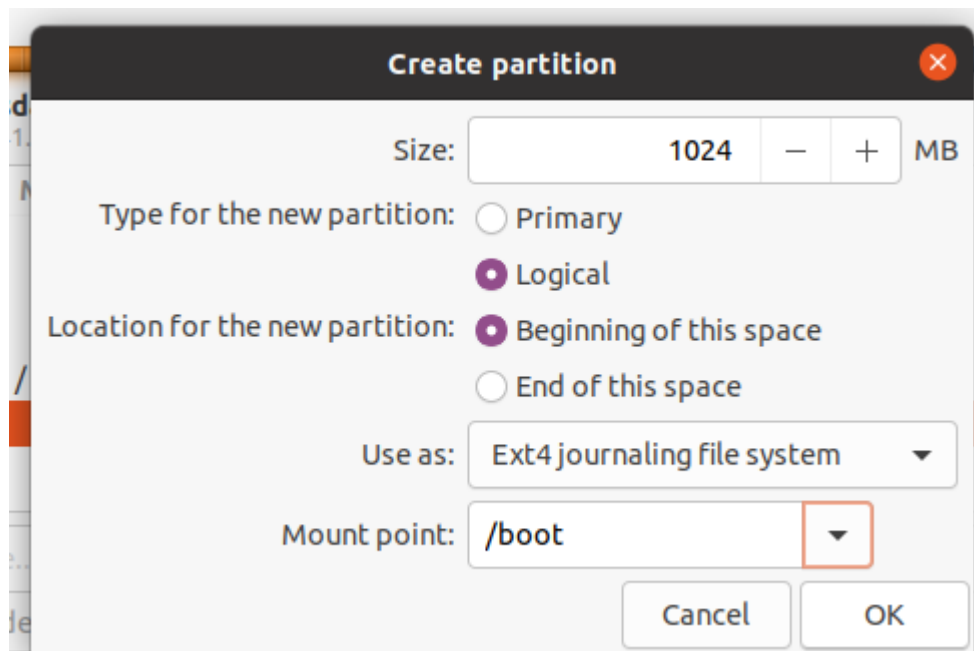




WE ARE CREATING THE PARTITION TABLE  
FIRST THE ROOT PARTITION WITH 20480MB



## BOOT PARTITION WITH 1024MB

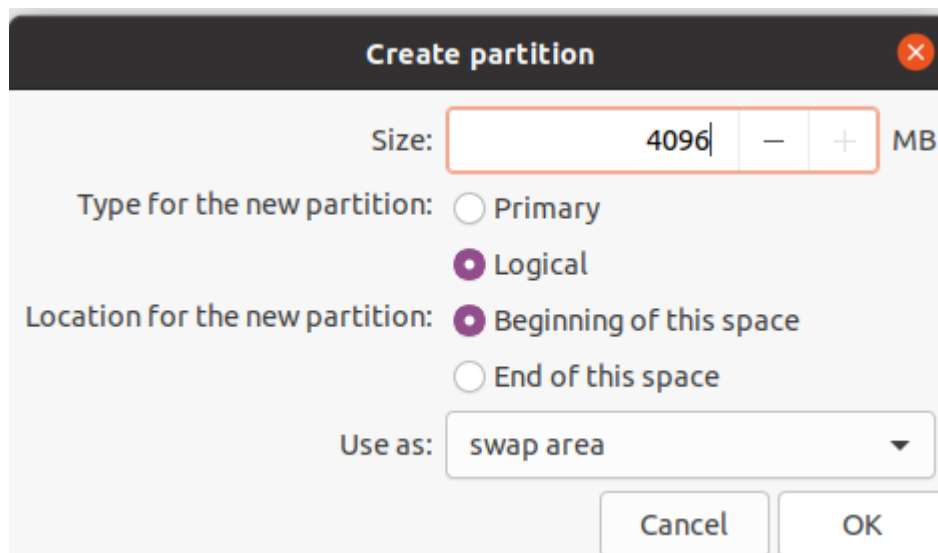


The image shows a 'Create partition' dialog box with the following settings:

- Size:** 1024 MB
- Type for the new partition:** Logical (selected)
- Location for the new partition:** Beginning of this space (selected)
- Use as:** Ext4 journaling file system
- Mount point:** /boot

Buttons: Cancel, OK

## SWAP AREA PARTITION WITH 4096MB

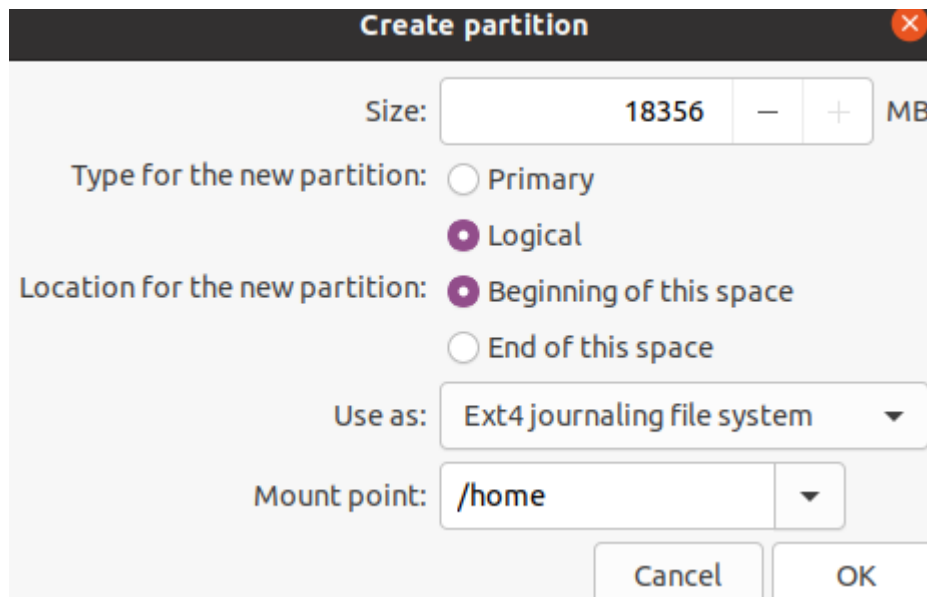


The image shows a 'Create partition' dialog box with the following settings:

- Size:** 4096 MB
- Type for the new partition:** Logical (selected)
- Location for the new partition:** Beginning of this space (selected)
- Use as:** swap area

Buttons: Cancel, OK

HOME PARTITION WITH 18356MB

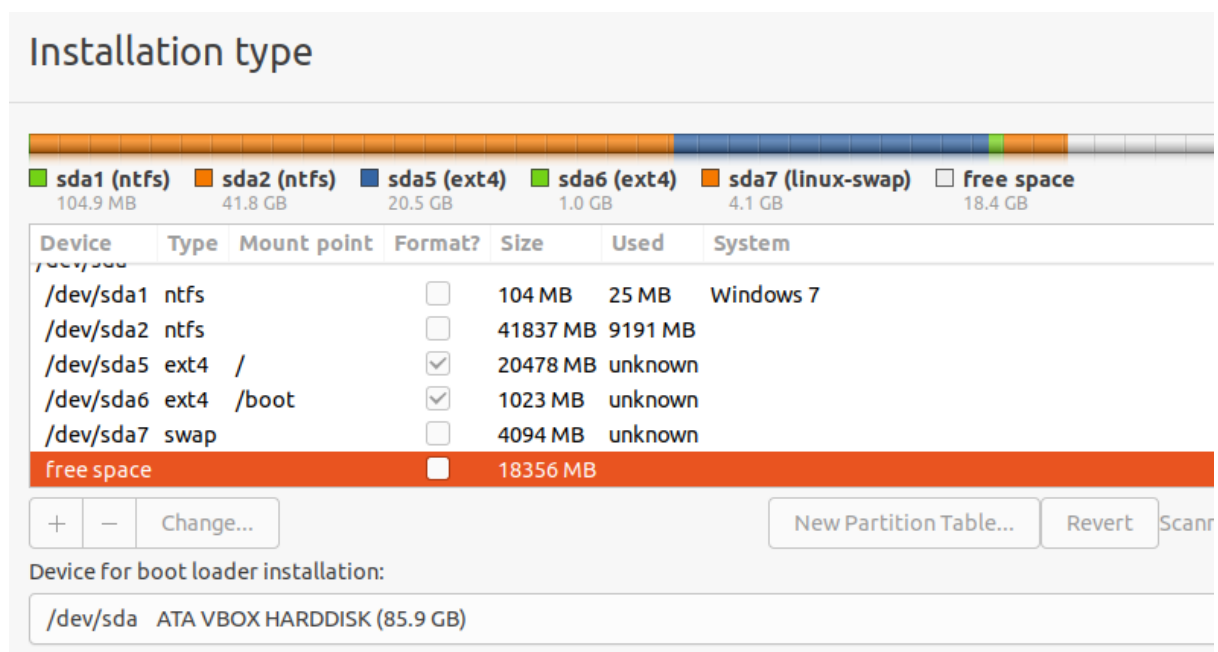


The 'Create partition' dialog box shows the following configuration:

- Size: 18356 MB
- Type for the new partition: ☒ Logical
- Location for the new partition: ☒ Beginning of this space
- Use as: Ext4 journaling file system
- Mount point: /home

Buttons: Cancel, OK

THIS OUR PARTITION TABLE



The 'Installation type' window displays the following partition table:

Device	Type	Mount point	Format?	Size	Used	System
/dev/sda1	ntfs		<input type="checkbox"/>	104 MB	25 MB	Windows 7
/dev/sda2	ntfs		<input type="checkbox"/>	41837 MB	9191 MB	
/dev/sda5	ext4	/	<input checked="" type="checkbox"/>	20478 MB	unknown	
/dev/sda6	ext4	/boot	<input checked="" type="checkbox"/>	1023 MB	unknown	
/dev/sda7	swap		<input type="checkbox"/>	4094 MB	unknown	
free space			<input type="checkbox"/>	18356 MB		

Buttons: +, -, Change..., New Partition Table..., Revert, Scan

Device for boot loader installation: /dev/sda ATA VBOX HARDISK (85.9 GB)

WE CREATE AN USER WHITH NAME AND PASSWORD

Oct 20 18:50

Install

### Who are you?

Your name:  ✓

Your computer's name:  ✓  
The name it uses when it talks to other computers.

Pick a username:  ✓

Choose a password:  **Short password**

Confirm your password:  ✓

☒ Log in automatically

☐ Require my password to log in

WE BOOT THE SYSTEM FROM FLOPPY

W&UB - Settings

### System

**Motherboard** | Processor | Acceleration

Base Memory:  4096 MB  
4 MB 8192 MB

Boot Order:

- ☒ Floppy
- ☒ Optical
- ☒ Hard Disk
- ☐ Network

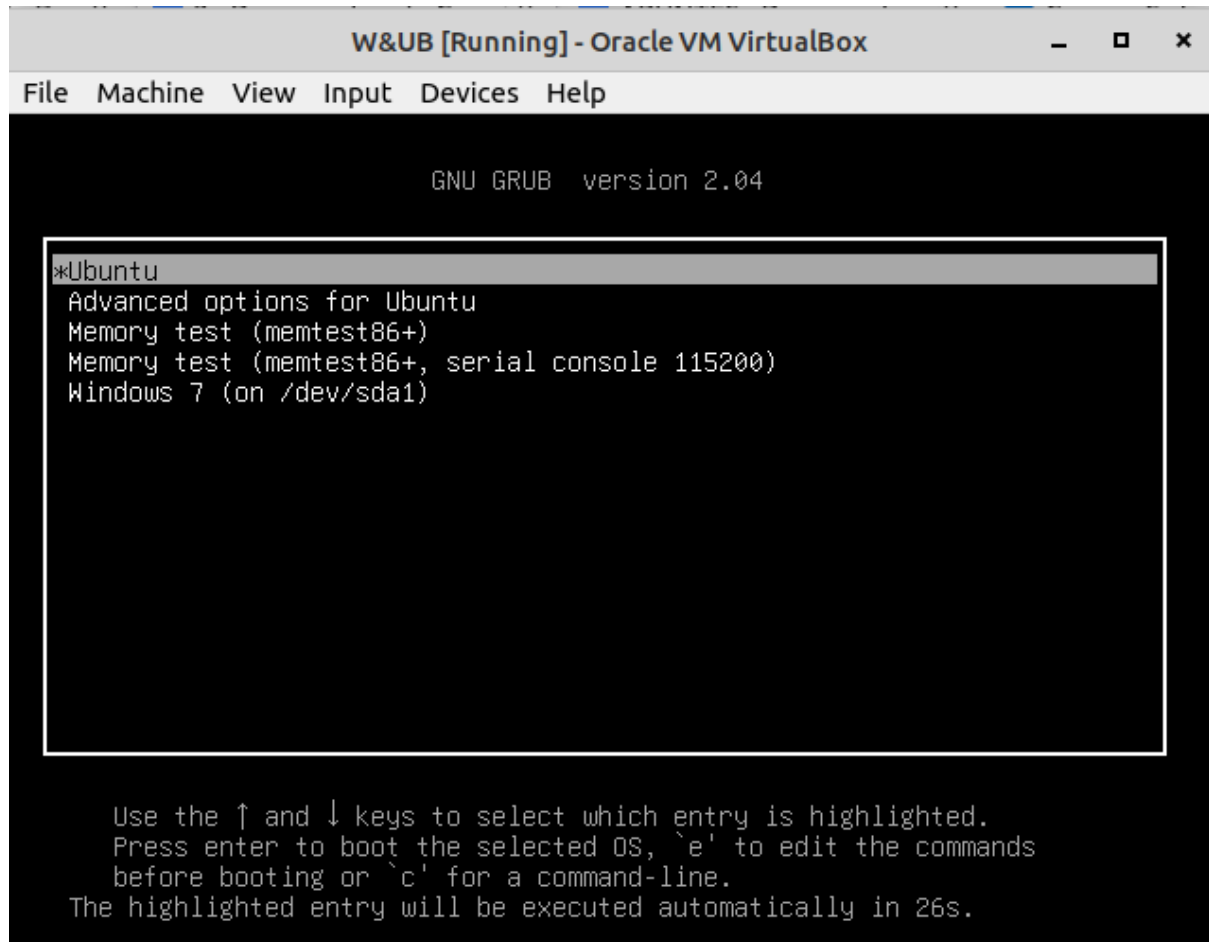
Chipset:

Pointing Device:

Extended Features:

- ☒ Enable I/O APIC
- ☐ Enable EFI (special OSes only)
- ☒ Hardware Clock in UTC Time

- a. Set Windows as default entry and boot after 15 seconds if the user does not select another option in the menu.



TO DO FIRST EXERCISE WE NEED TO GO TO THE TERMINAL WHERE WE ARE GOING TO PUT THIS COMMANDS TO CHANGE THE DEFAULT OS AND THE TIME.  
`sudo nano /etc/default/grub`

WE CHANGE GRUB\_DEFAULT TO WINDOWS WHICH IS THE NUMBER 4 AND FOR CHANGING THE BOOT TIME WE CHANGE IT IN GRUB\_TIMEOUT.  
AFTER THAT WE NEED TO UPDATE THE GRUB DOCUMENT.



```
sofi@sofi-VirtualBox: ~  
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=hidden  
GRUB_TIMEOUT=15  
GRUB_DISTRIBUTOR=`lsb_release -i -s 2> /dev/null || echo Debian`  
GRUB_CMDLINE_LINUX_DEFAULT="quiet splash"  
GRUB_CMDLINE_LINUX=""
```

```
sofi@sofi-VirtualBox: ~  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub  
[sudo] password for sofi:  
sofi@sofi-VirtualBox:~$ sudo aptdate-grub  
sudo: aptdate-grub: command not found  
sofi@sofi-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 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/sda1  
done  
sofi@sofi-VirtualBox:~$
```

IF IT DOESN'T WORK WE NEED TO CHANGE THE GRUB.CFG DOCUMENT  
CAREFULLY BECAUSE IT'S A DELICATE DOCUMENT.

COMMAND: `sudo nano /boot/grub/grub.cfg`

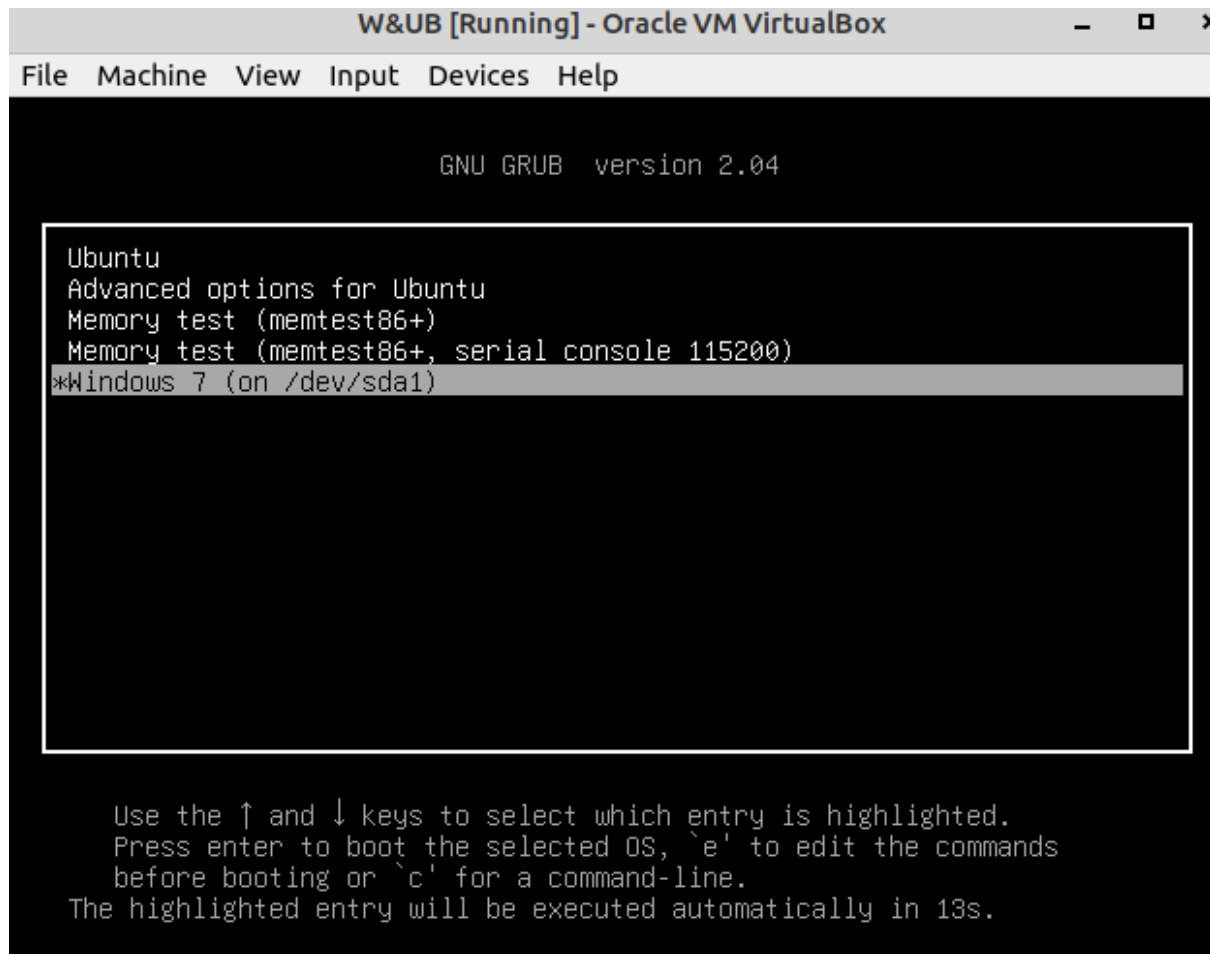
```
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub
[sudo] password for sofi:
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub.cfg
sofi@sofi-VirtualBox:~$ sudo nano /boot/grub/grub.cfg

Use "fg" to return to nano.

[1]+  Stopped                  sudo nano /boot/grub/grub.cfg
sofi@sofi-VirtualBox:~$ sudo nano /boot/grub/grub.cfg
sofi@sofi-VirtualBox:~$ sudo nano /boot/grub/grub.cfg
sofi@sofi-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 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
```

```
}
set timeout_style=menu
if [ "${timeout}" = 0 ]; then
    set timeout=10
fi
### END /etc/grub.d/30_os-prober
```

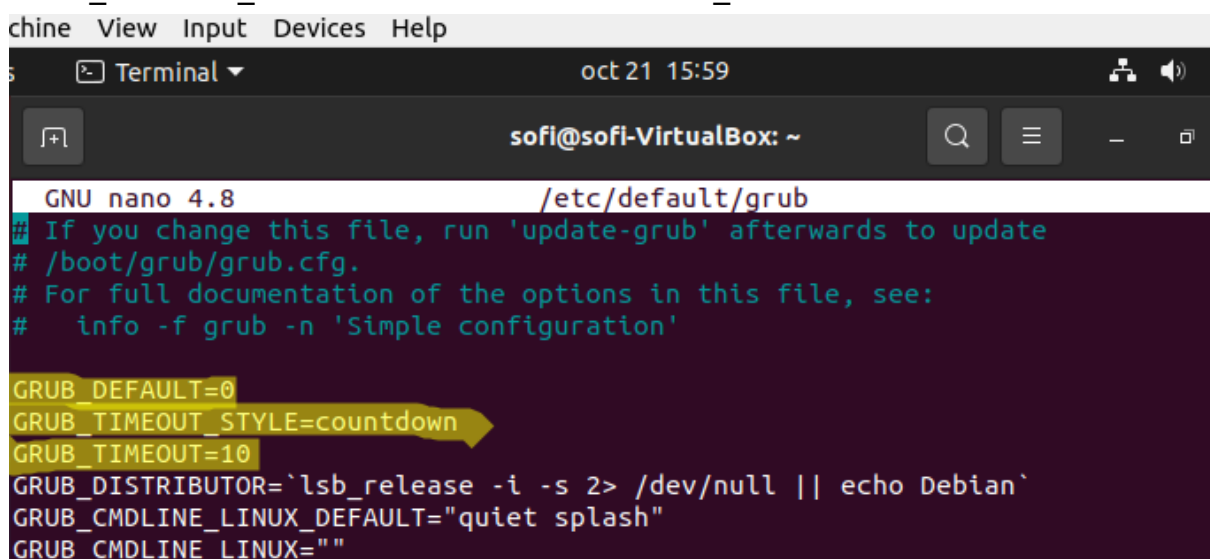
```
}
#set timeout_style=menu
#if [ "${timeout}" = 0 ]; then
#    set timeout=10
#fi
### END /etc/grub.d/30_os-prober ###
```



b. Boot Ubuntu without displaying the menu after showing a 10 seconds countdown.

GRUB\_DEFAULT 0 BECAUSE IT'S UBUNTU 20

GRUB\_TIMEOUT\_STYLE COUNTDOWN AND GRUB\_TIMEOUT 10 SECONDS.



```
sofi@sofi-VirtualBox: ~  
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub  
[sudo] password for sofi:  
sofi@sofi-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 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/sda1  
done  
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub  
sofi@sofi-VirtualBox:~$
```

```
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub  
[sudo] password for sofi:  
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub.cfg  
sofi@sofi-VirtualBox:~$ sudo nano /boot/grub/grub.cfg  
  
Use "fg" to return to nano.  
  
[1]+  Stopped                  sudo nano /boot/grub/grub.cfg  
sofi@sofi-VirtualBox:~$ sudo nano /boot/grub/grub.cfg  
sofi@sofi-VirtualBox:~$ sudo nano /boot/grub/grub.cfg  
sofi@sofi-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 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
```

```
}  
set timeout_style=menu  
if [ "${timeout}" = 0 ]; then  
    set timeout=10  
fi  
### END /etc/grub.d/30_os-prober
```

AND COMMENT

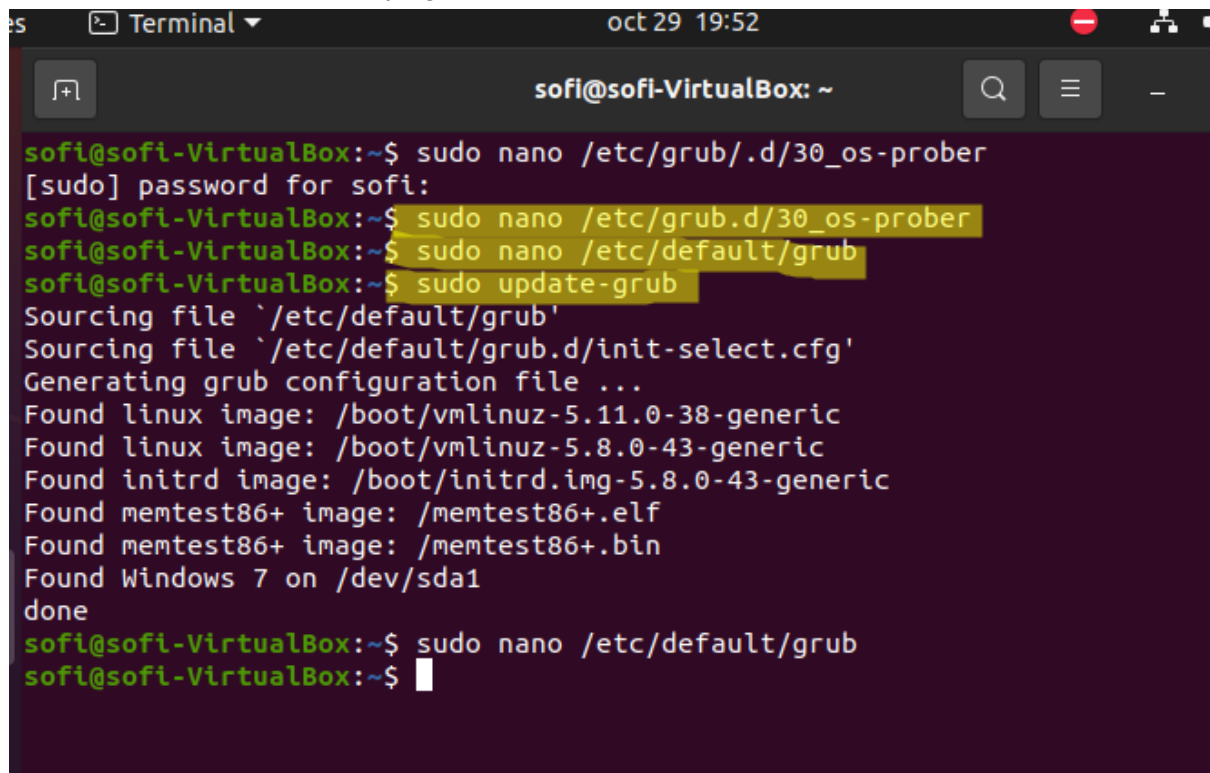
```
}  
#set timeout_style=menu  
#if [ "${timeout}" = 0 ]; then  
#  set timeout=10  
#fi  
### END /etc/grub.d/30_os-prober ###
```

AND IF DOESN'T WORK THAT WE WILL GO TO `/etc/grub.d/30_os-prober` AND  
COMMENT

`# adjust_timeout`

```
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub  
sofi@sofi-VirtualBox:~$ sudo nano /boot/grub/grub.cfg  
sofi@sofi-VirtualBox:~$ sudo nano /boot/grub/grub.cfg  
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub  
sofi@sofi-VirtualBox:~$ sudo nano /etc/grub.d/30_os-prober  
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub  
sofi@sofi-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 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/sda1  
done
```

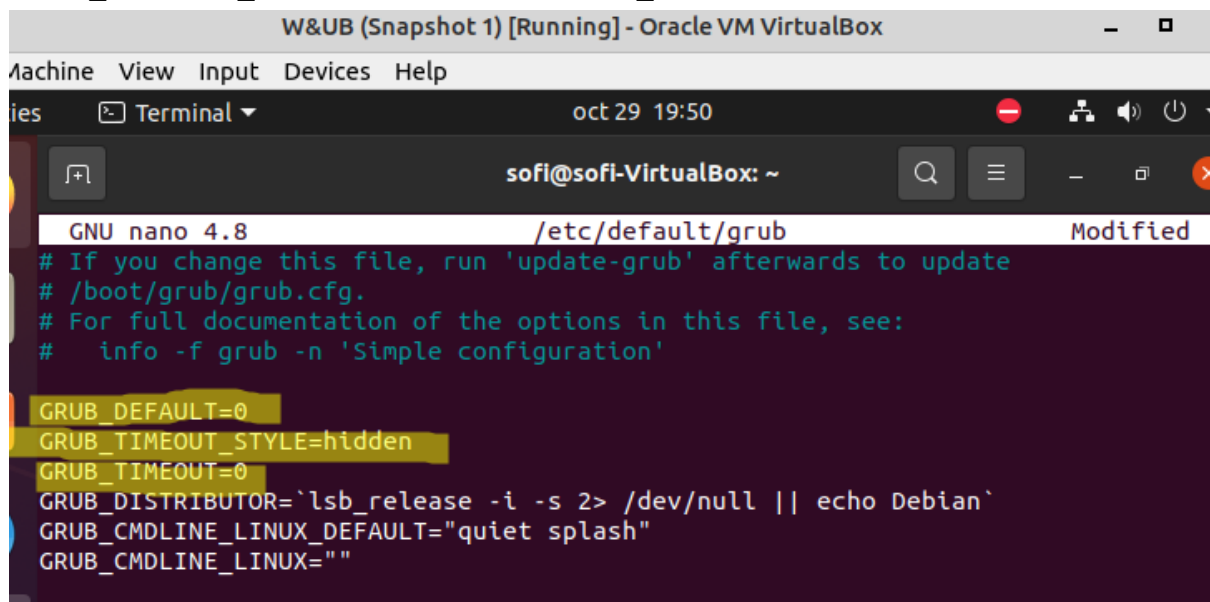
c. Boot Ubuntu without displaying the menu.



```
sofi@sofi-VirtualBox: ~$ sudo nano /etc/grub/.d/30_os-prober
[sudo] password for sofi:
sofi@sofi-VirtualBox:~$ sudo nano /etc/grub.d/30_os-prober
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub
sofi@sofi-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 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/sda1
done
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub
sofi@sofi-VirtualBox:~$
```

GRUB\_DEFAULT 0 BECAUSE IT'S UBUNTU 20

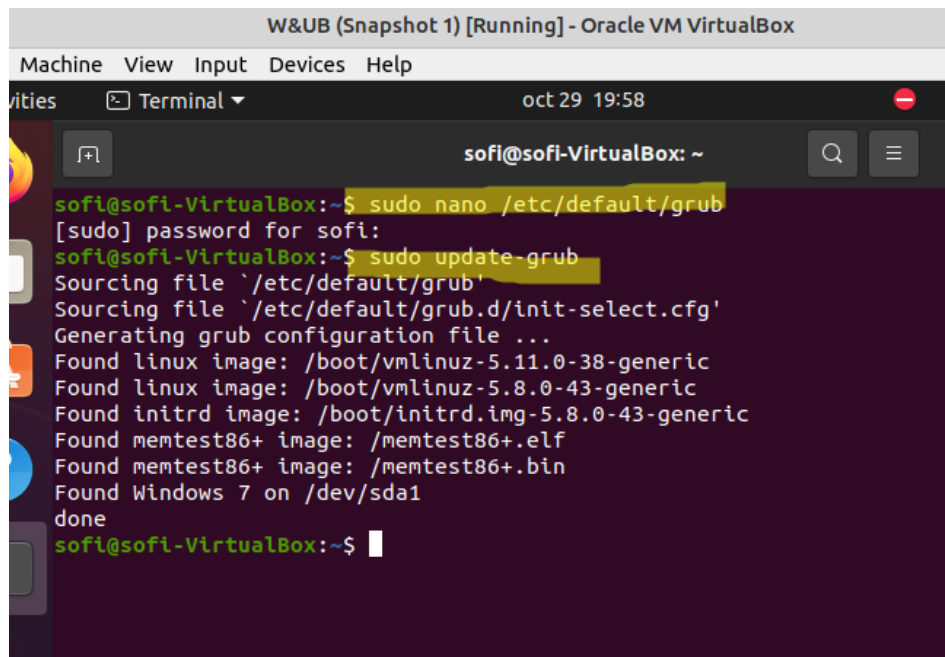
GRUB\_TIMEOUT\_STYLE HIDDEN AND GRUB\_TIMEOUT 0 SECONDS.



```
W&UB (Snapshot 1) [Running] - Oracle VM VirtualBox
Machine View Input Devices Help
ies Terminal oct 29 19:50
sofi@sofi-VirtualBox: ~
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'

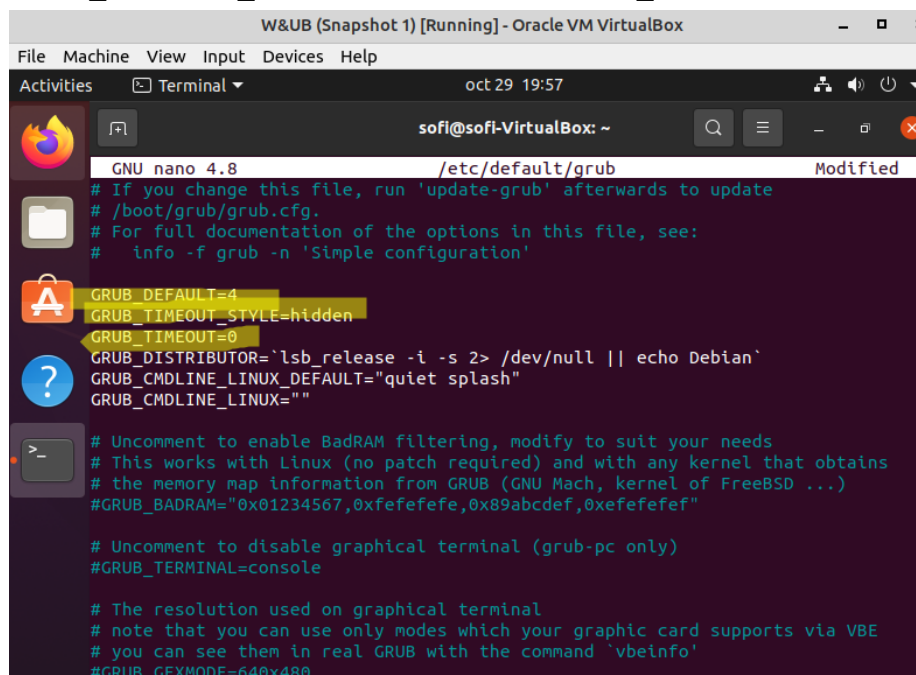
GRUB_DEFAULT=0
GRUB_TIMEOUT_STYLE=hidden
GRUB_TIMEOUT=0
GRUB_DISTRIBUTOR=`lsb_release -i -s 2> /dev/null || echo Debian`
GRUB_CMDLINE_LINUX_DEFAULT="quiet splash"
GRUB_CMDLINE_LINUX=""
```

d. Boot Windows without displaying the menu.  
AS BEFORE WE MODIFY THE GRUB DOCUMENT



```
W&UB (Snapshot 1) [Running] - Oracle VM VirtualBox
Machine View Input Devices Help
Activities Terminal oct 29 19:58
sofi@sofi-VirtualBox: ~
sofi@sofi-VirtualBox:~$ sudo nano /etc/default/grub
[sudo] password for sofi:
sofi@sofi-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 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/sda1
done
sofi@sofi-VirtualBox:~$
```

GRUB\_DEFAULT 4 BECAUSE IT'S WINDOWS  
GRUB\_TIMEOUT\_STYLE HIDDEN AND GRUB\_TIMEOUT 0 SECONDS.



```
W&UB (Snapshot 1) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal oct 29 19:57
sofi@sofi-VirtualBox: ~
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=hidden
GRUB_TIMEOUT=0
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
```



## SOL BY THE TEACHER

a.

```
GRUB_DEFAULT=4  
GRUB_TIMEOUT=15  
GRUB_TIMEOUT_STYLE=menu
```

The parameter GRUB\_TIMEOUT\_STYLE is not necessary, since “menu” is the default value

For b, c and d, it is required to comment the following lines in /boot/grub/grub.cfg after running update-grub

```
# set timeout_style=menu  
# if [ "${timeout}" = 0 ]; then  
#   set timeout=10  
# fi
```

Or the best efficient option (but less safe) is to edit the line below in the file /etc/grub.d/30\_os-prober

```
# adjust_timeout
```

b.

```
GRUB_DEFAULT=0  
GRUB_TIMEOUT=10  
GRUB_TIMEOUT_STYLE=countdown
```

Another option that is deprecated:

```
GRUB_DEFAULT=0  
GRUB_TIMEOUT=0  
GRUB_HIDDEN_TIMEOUT=10  
GRUB_HIDDEN_TIMEOUT_QUIET=false
```

c.

```
GRUB_DEFAULT=0  
  
GRUB_TIMEOUT=0  
  
GRUB_TIMEOUT_STYLE=hidden
```

Another option that is deprecated:

```
GRUB_DEFAULT=0
```



```
GRUB_TIMEOUT=0
```

```
GRUB_HIDDEN_TIMEOUT=0
```

```
GRUB_HIDDEN_TIMEOUT_QUIET=true
```

d.

```
GRUB_DEFAULT=4
```

```
GRUB_TIMEOUT=0
```

```
GRUB_TIMEOUT_STYLE=hidden
```

Another option that is deprecated:

```
GRUB_DEFAULT=4
```

```
GRUB_TIMEOUT=0
```

```
GRUB_HIDDEN_TIMEOUT=0
```

```
GRUB_HIDDEN_TIMEOUT_QUIET=true
```