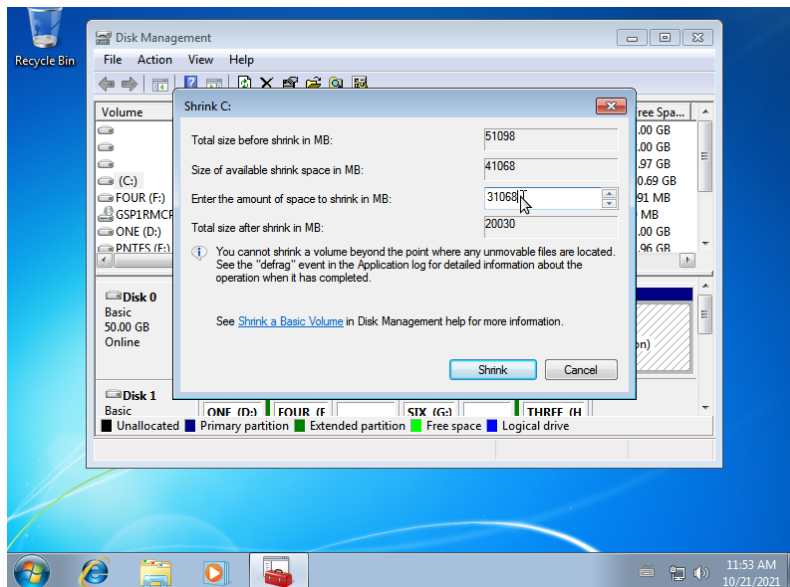


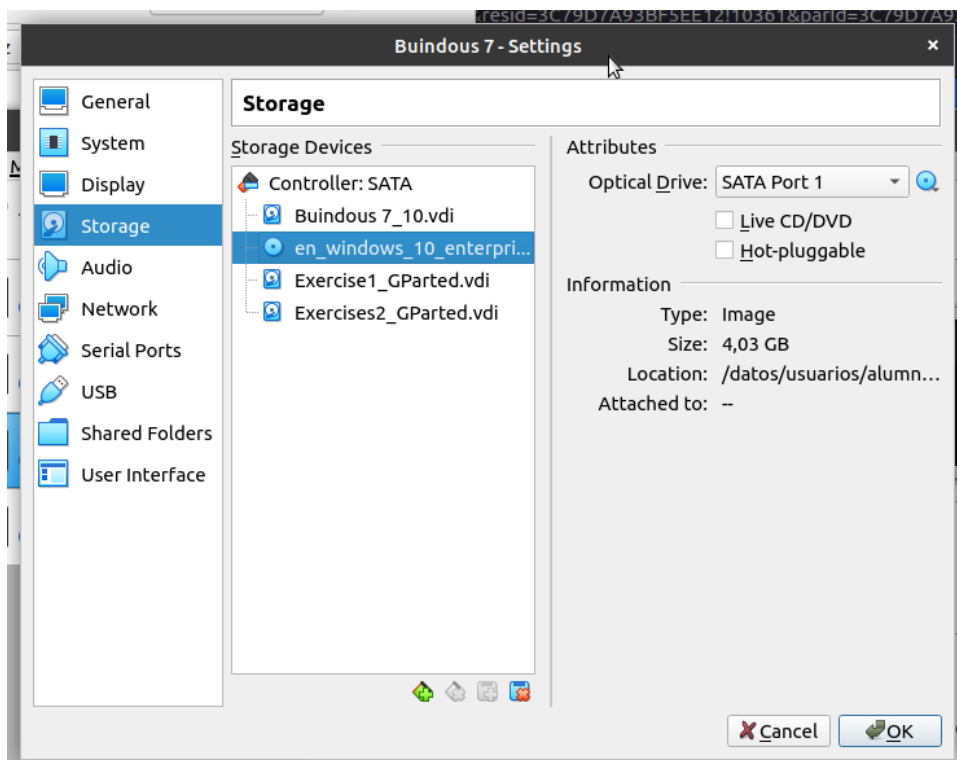
Create a document with screenshots to explain the answer for each exercise

1. **Create a virtual machine with two operating systems, Windows 7 and Windows 10 (in this order). Choose Windows 7 as the default operating system, which will boot after 5 seconds unless Windows 10 is manually selected.**

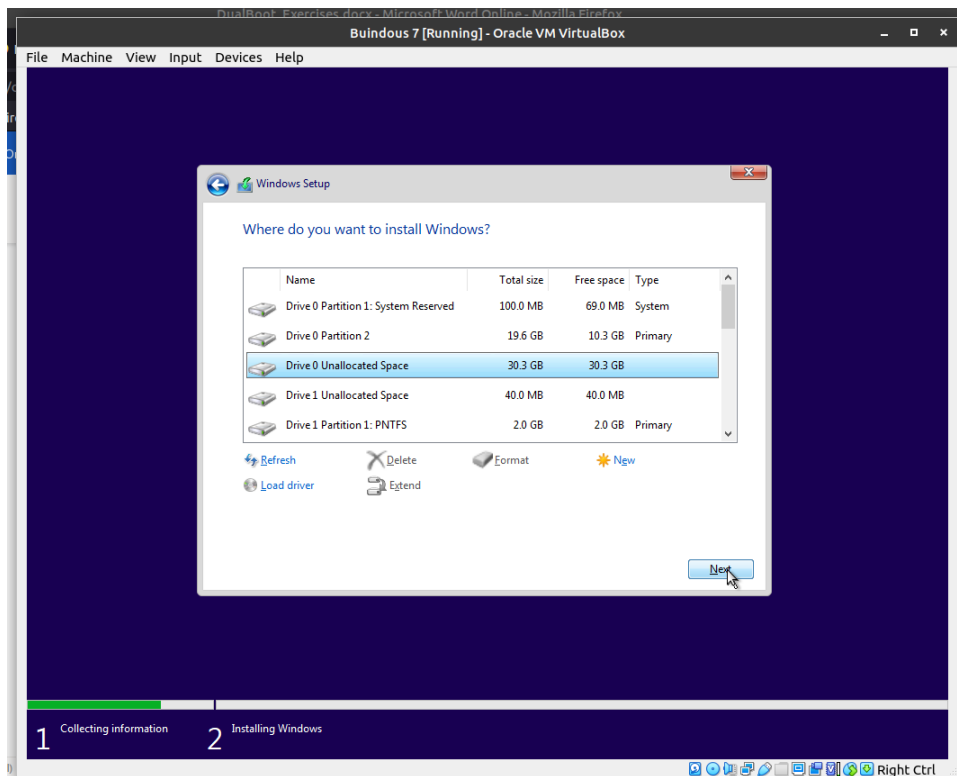
Firstly, I installed Windows 7 in a hard disk with 50 GB, to have enough space to install both operative systems. Once it's installed, in Windows 7, I run the program Disk Management. Then, I selected the Disk to shrink its space and create a new partition to install Windows 10:



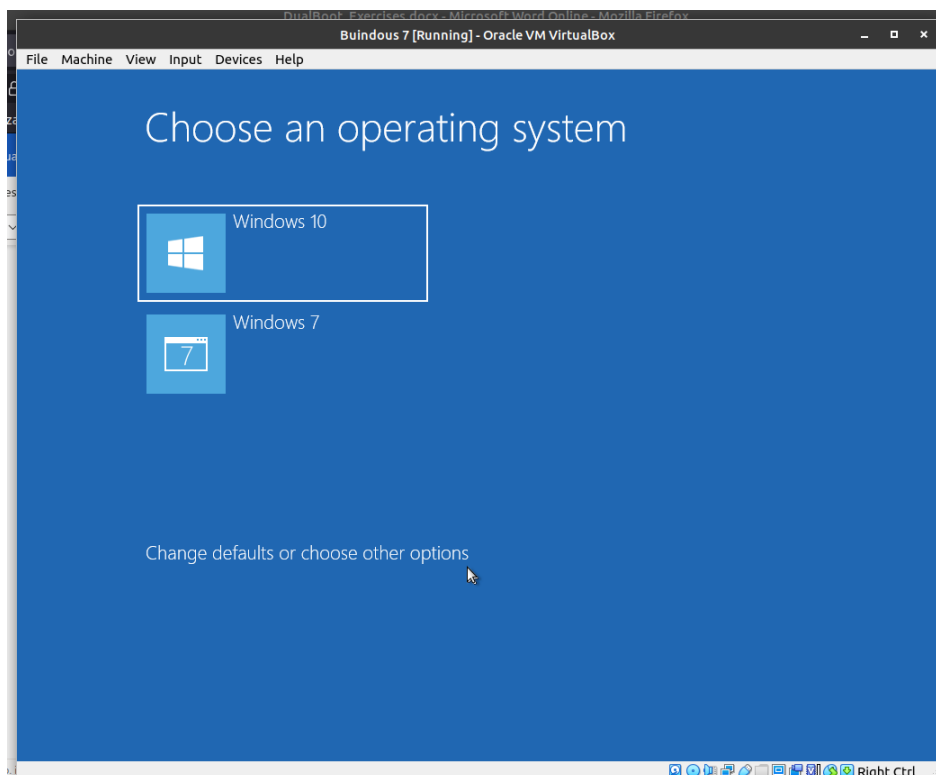
Back in VM Virtual Box, I load the OS image of Windows 10 on the logical drive:



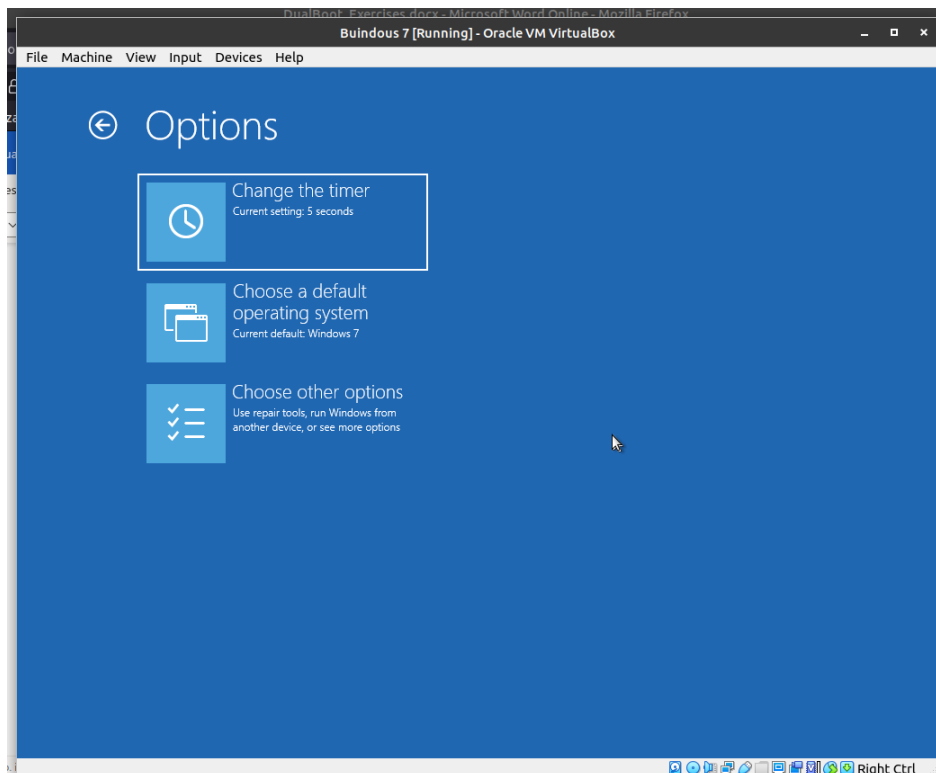
In the interface of Windows 10 installation process, I choose the partition I've created with Windows 7:



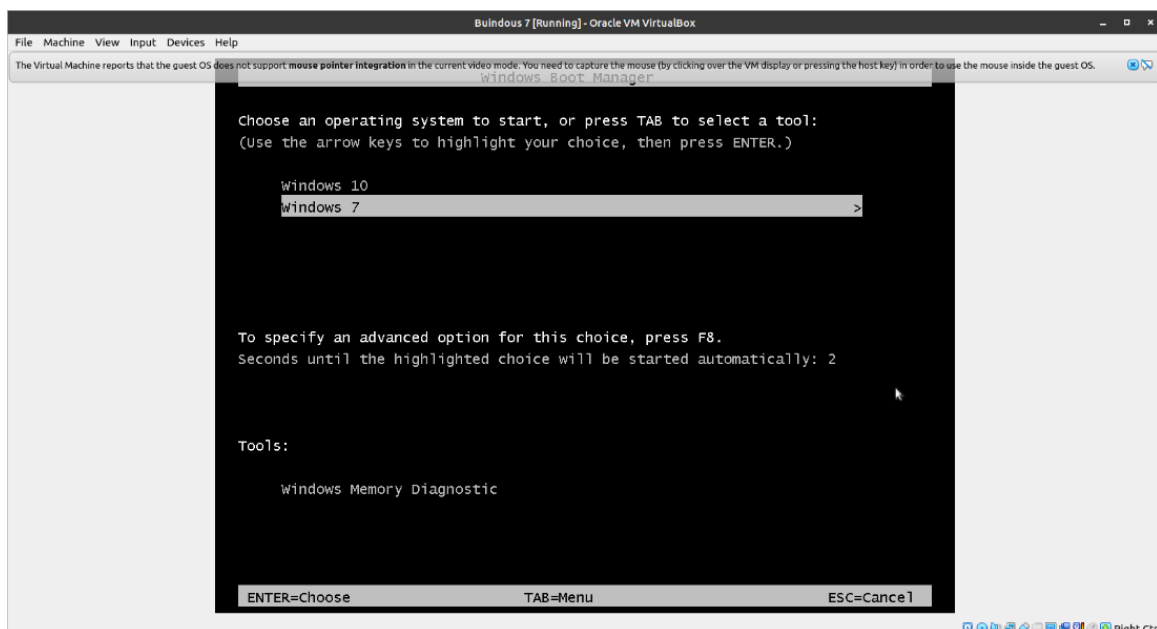
In this snapshot, when Windows 10 has been installed and there are two OS, a graphical system boot, where I can choose between Windows 10 or Windows 7:



In this exercise, it's needed to change Windows 7 as the default operating system and change the timer to boot after 5 seconds unless Windows 10 is manually selected, so in the graphical chart previously shown, I choose in "Change defaults or choose other options":



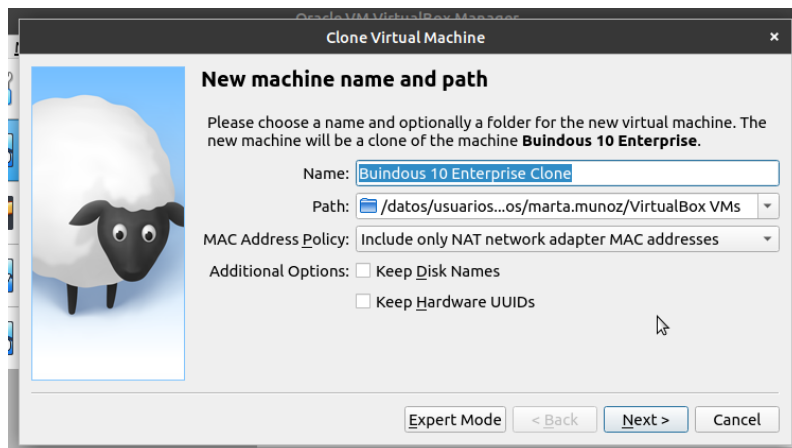
As Windows 7 has been chosen to be the first one to boot, the boot menu has been changed:



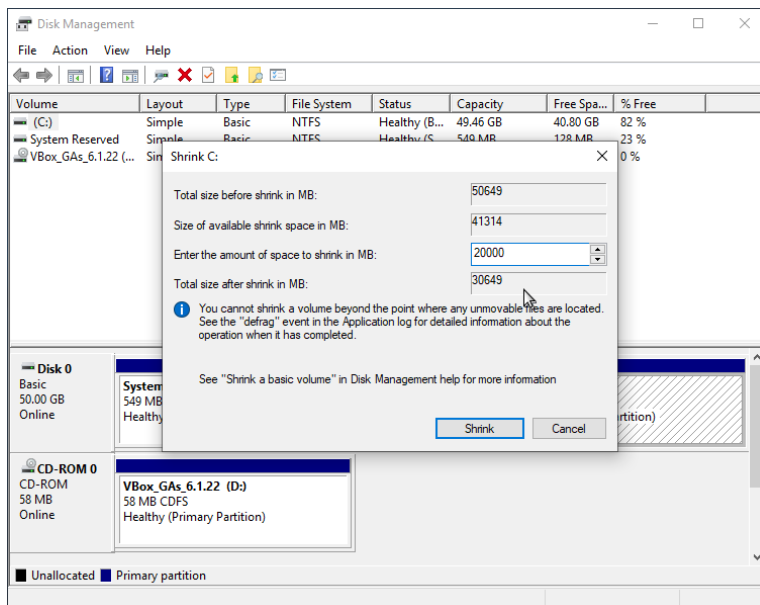
2. Create a virtual machine with two operating systems, Windows 7 (or Windows 10) and Ubuntu 20.04 (in this order) and configure the bootloader to:

Dual Boot Virtual Machine INSTALLATION:

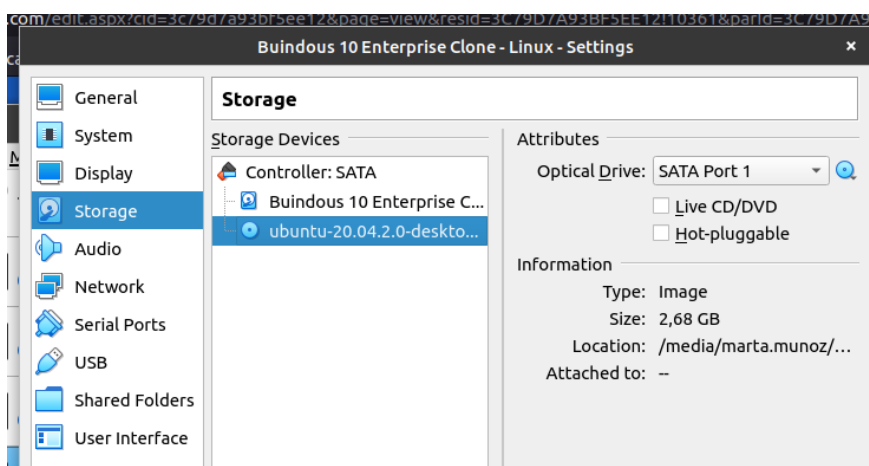
Firstly, I have created a clone copy from my previous Windows 10 Enterprise Virtual Machine, using the command Machine>Clone, showing the following window:



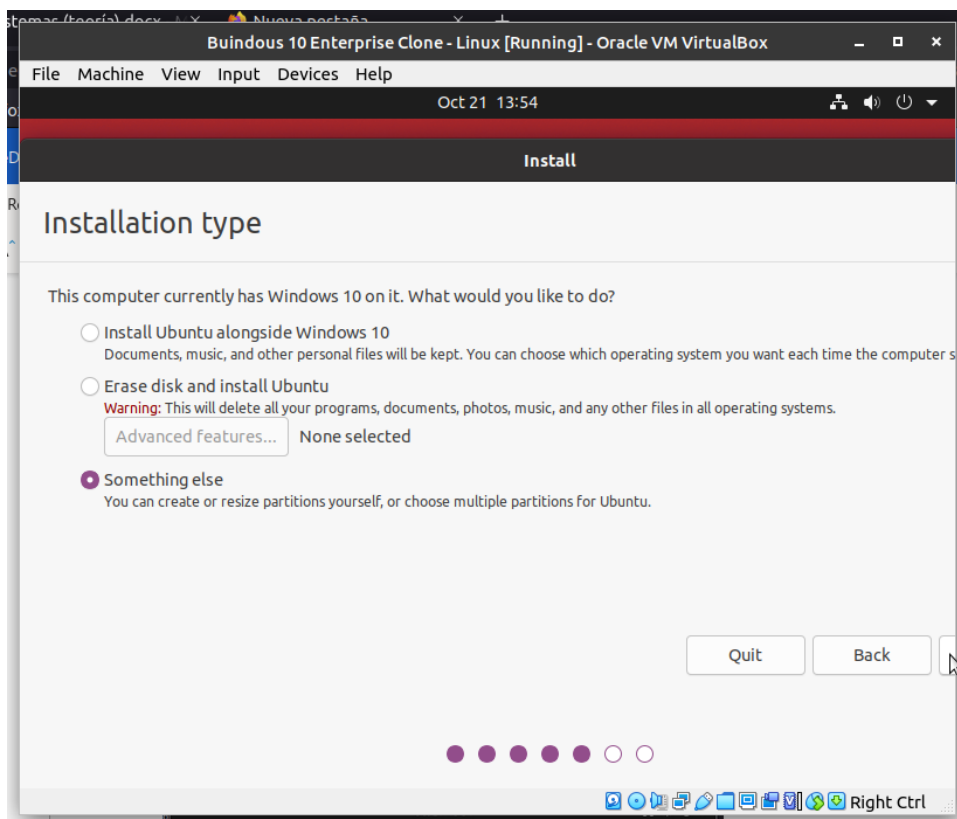
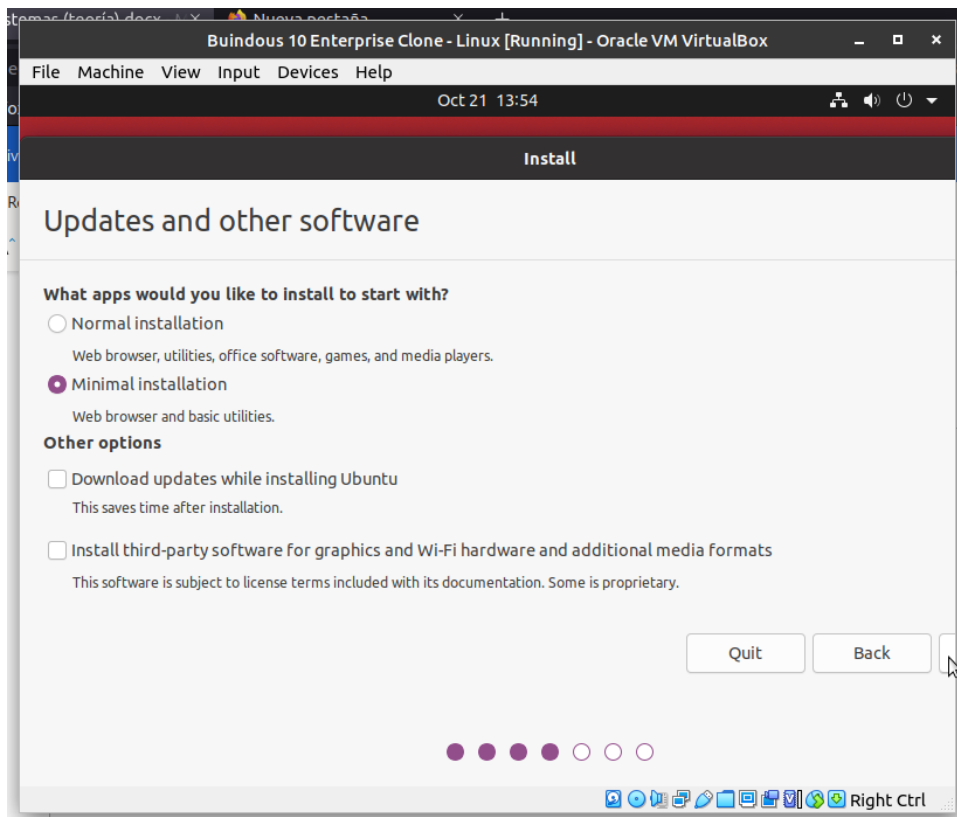
As in exercise 1, if I want to install another OS, I need to create another partition, shrinking and creating a new partition from Windows 10:

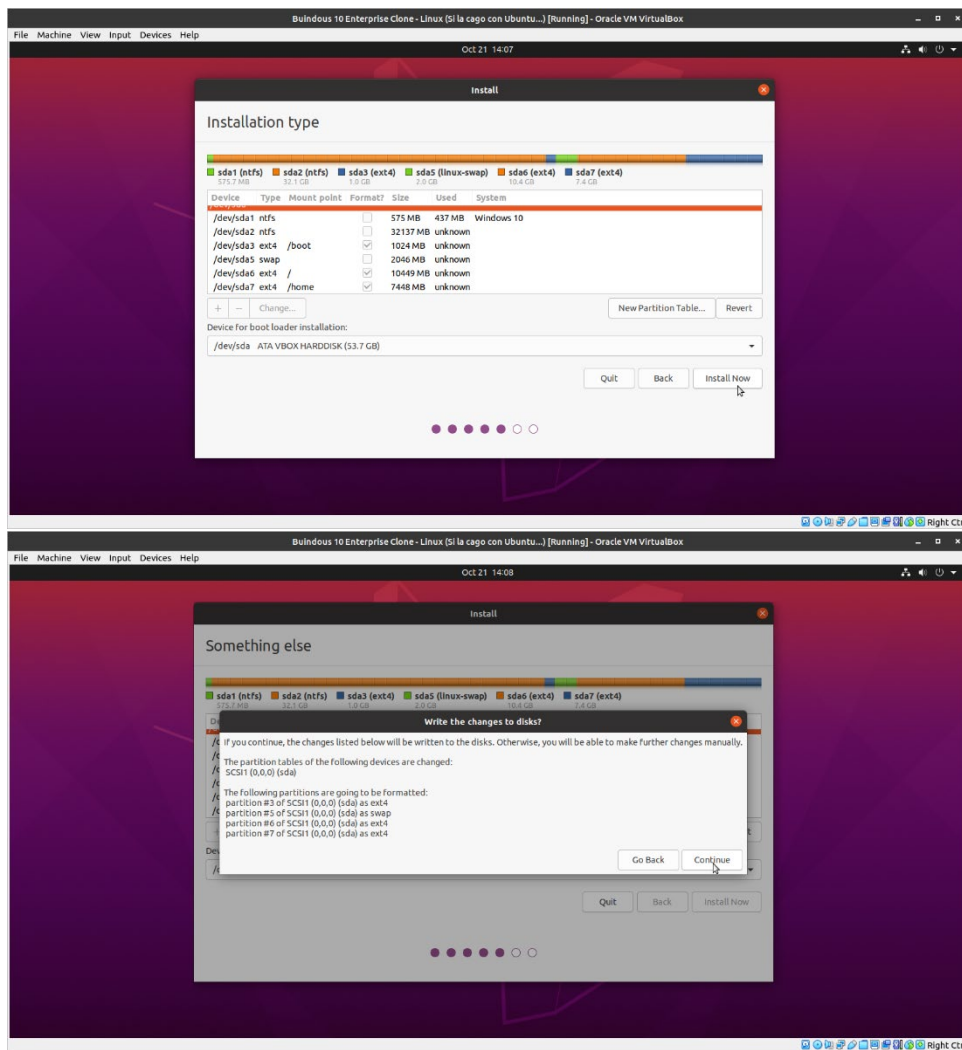


Then, I run in the optical drive the installation image of Ubuntu:

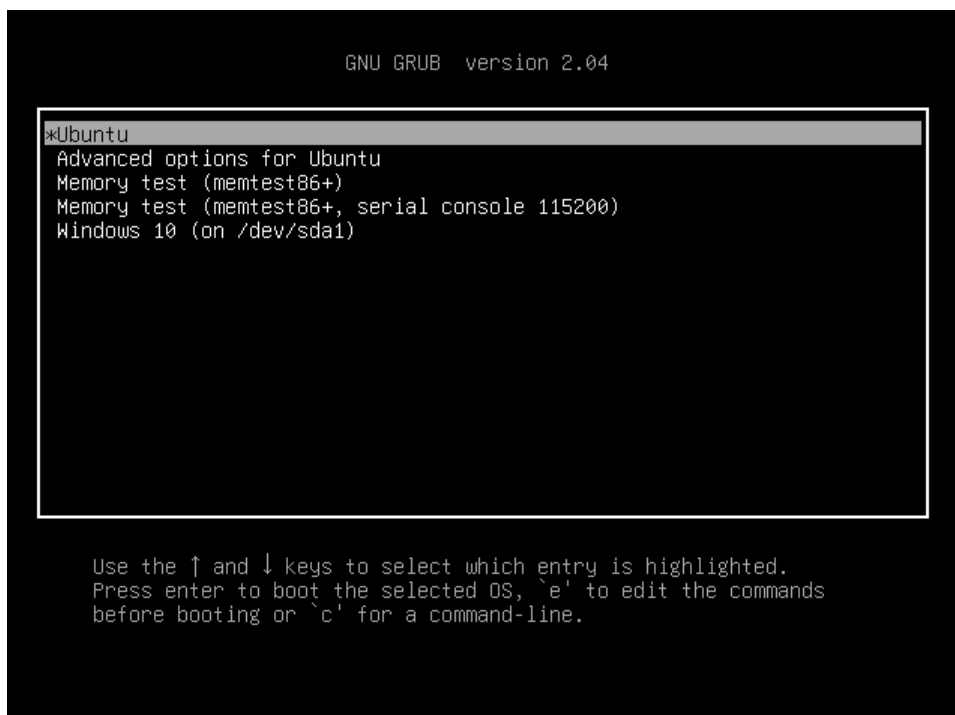


And I install Ubuntu...





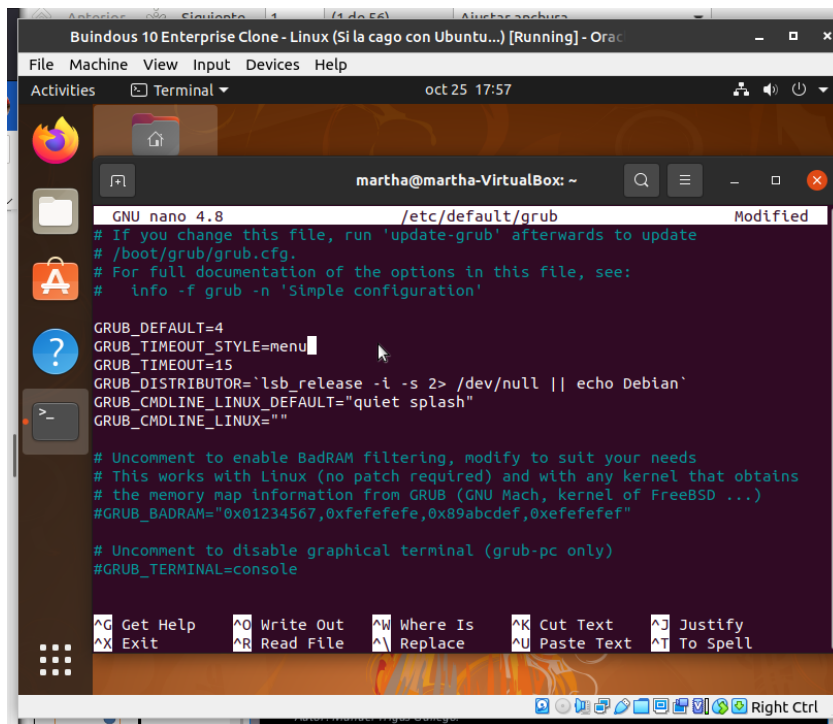
Once It's done, the GRUB boot menu will appear, because the system detects another OS:



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

Firstly, I open the command line in Ubuntu System and introduce the command “sudo nano /etc/default/grub”. Then, in the Terminal, I change the following options:

- GRUB\_DEFAULT=4
- GRUB\_TIMEOUT=15
- GRUB\_TIMEOUT\_STYLE=menu



```
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'

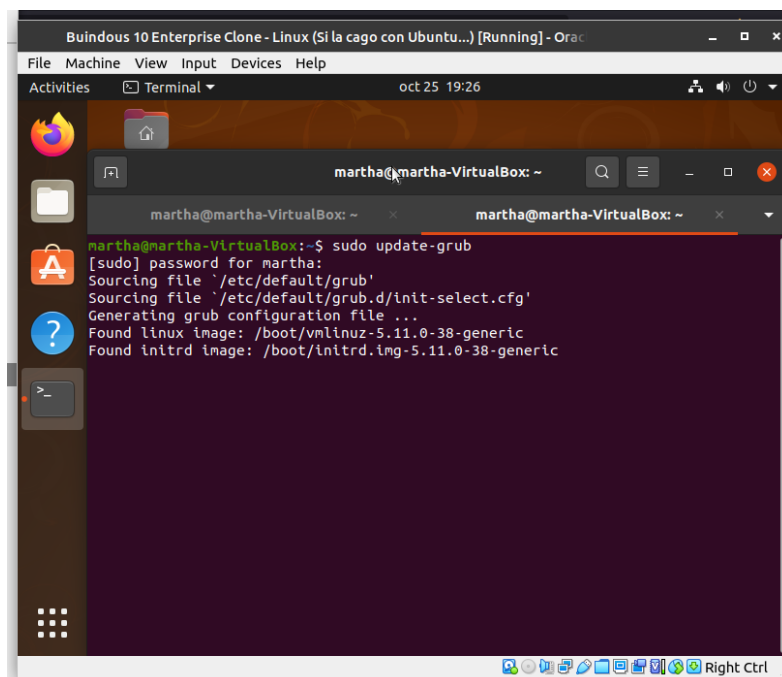
GRUB_DEFAULT=4
GRUB_TIMEOUT_STYLE=menu
GRUB_TIMEOUT=15
GRUB_DISTRIBUTOR=`lsb_release -i -s 2> /dev/null || echo Debian`
GRUB_CMDLINE_LINUX_DEFAULT="quiet splash"
GRUB_CMDLINE_LINUX=""

# 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

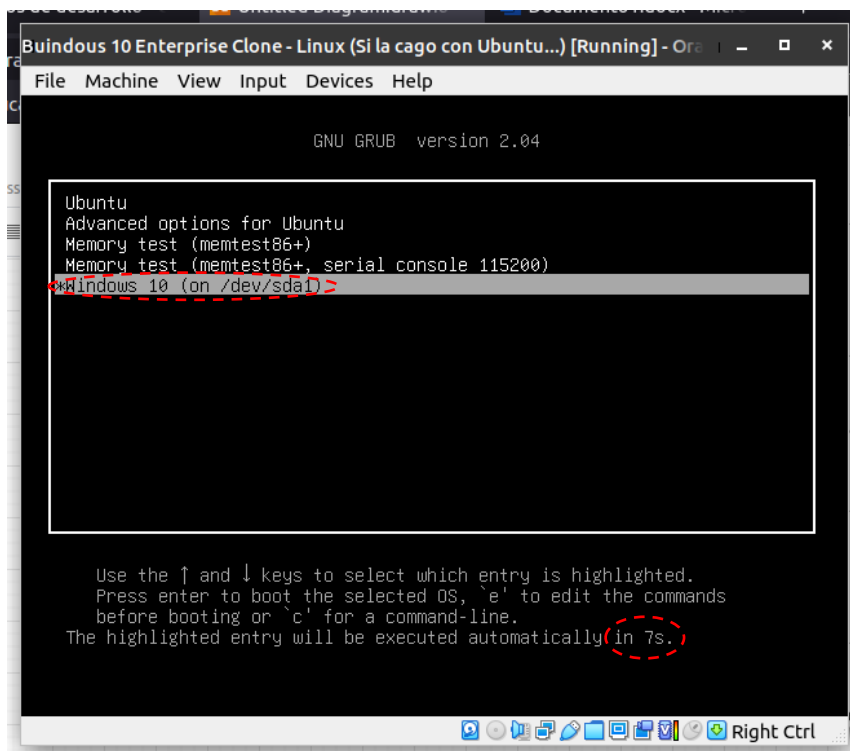
^G Get Help      ^O Write Out    ^W Where Is     ^K Cut Text      ^J Justify
^X Exit          ^R Read File    ^_ Replace      ^U Paste Text   ^T To Spell
```

Once I have committed the changes, I go to sudo update-grub in order to save the changes:



```
martha@martha-VirtualBox: ~
martha@martha-VirtualBox: ~
martha@martha-VirtualBox:~$ sudo update-grub
[sudo] password for martha:
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
```

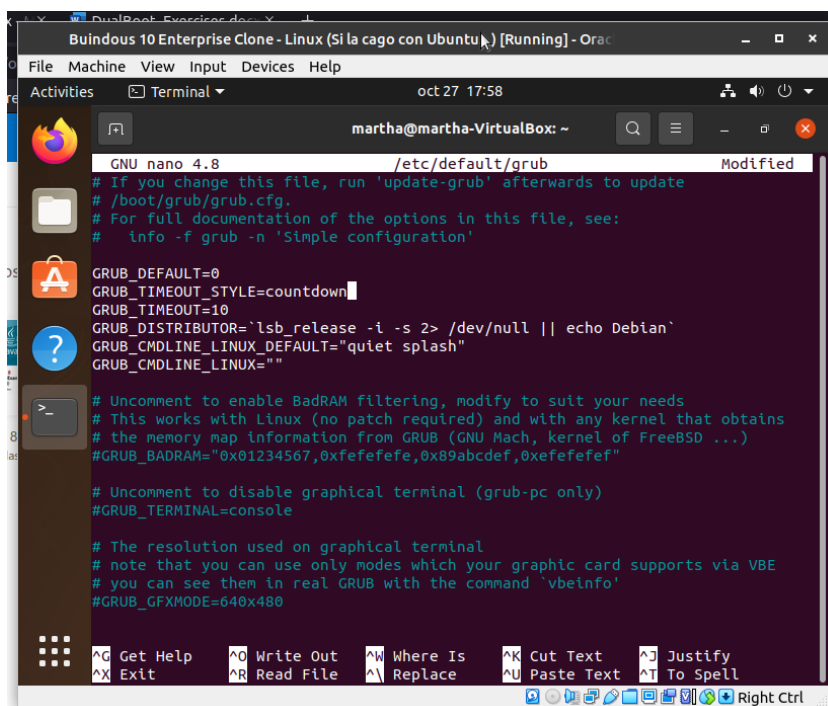
This is the GRUB menu, where the style “menu” has been applied and a countdown is shown, with Windows 10 as the first OS in order to boot:



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

Firstly, as in the previous exercise, I change the following options in grub:

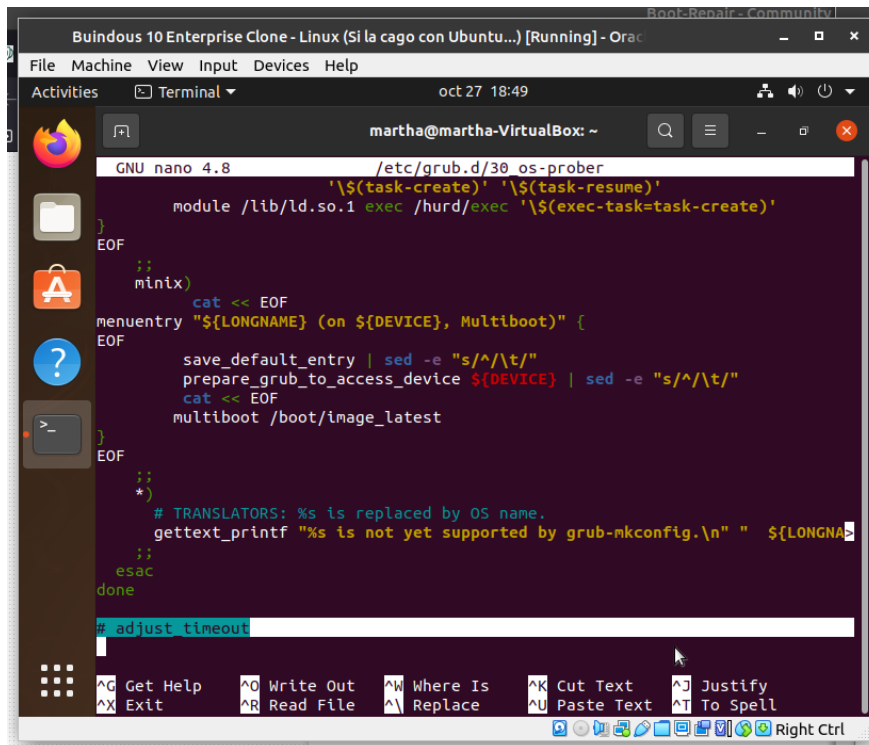
- GRUB\_DEFAULT=0
- GRUB\_TIMEOUT=10
- GRUB\_TIMEOUT\_STYLE=countdown





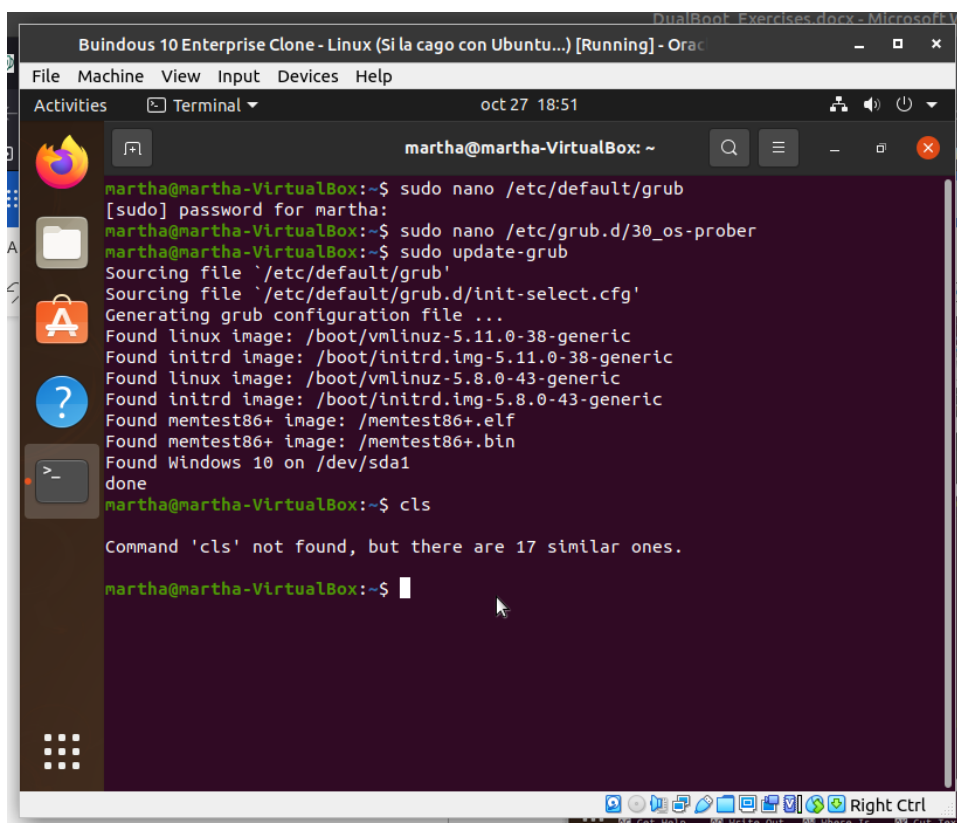
As this option is not the default one, my Dual Boot OS will not show the countdown until I edit the line below in the file `"/etc/grub.d/30_os-prober"`, by adding a hash (#) and changing it as a comment:

- `# adjust_timeout`



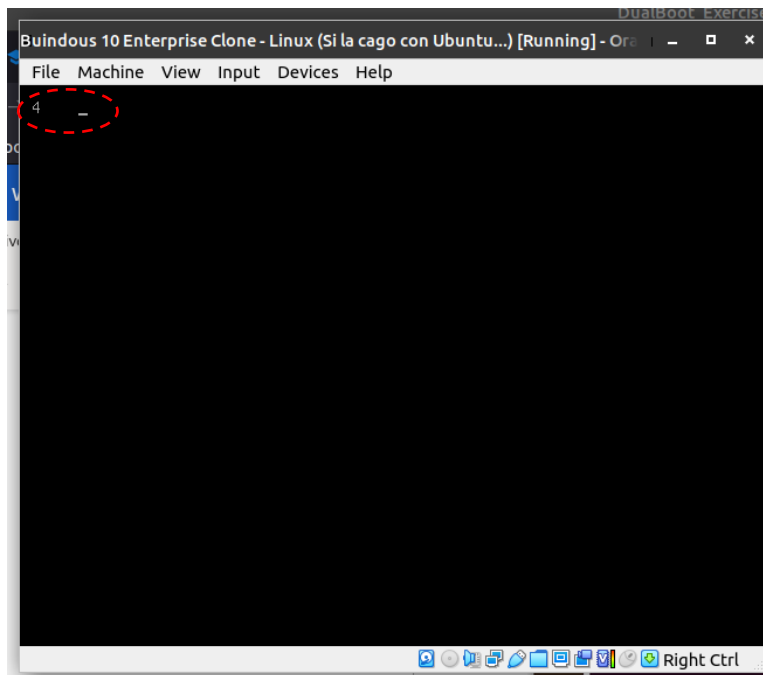
```
GNU nano 4.8 /etc/grub.d/30_os-prober
    '${task-create}' '${task-resume}'
    module /lib/ld.so.1 exec /hurd/exec '${exec-task=task-create}'
EOF
;;
minix)
    cat << EOF
menuentry "${LONGNAME} (on ${DEVICE}, Multiboot)" {
EOF
    save_default_entry | sed -e "s/^/\t/"
    prepare_grub_to_access_device ${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
```

When the line has been edited, then I save the changes with `update-grub`:



```
martha@martha-VirtualBox:~$ sudo nano /etc/default/grub
[sudo] password for martha:
martha@martha-VirtualBox:~$ sudo nano /etc/grub.d/30_os-prober
martha@martha-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 10 on /dev/sda1
done
martha@martha-VirtualBox:~$ cls
Command 'cls' not found, but there are 17 similar ones.
martha@martha-VirtualBox:~$
```

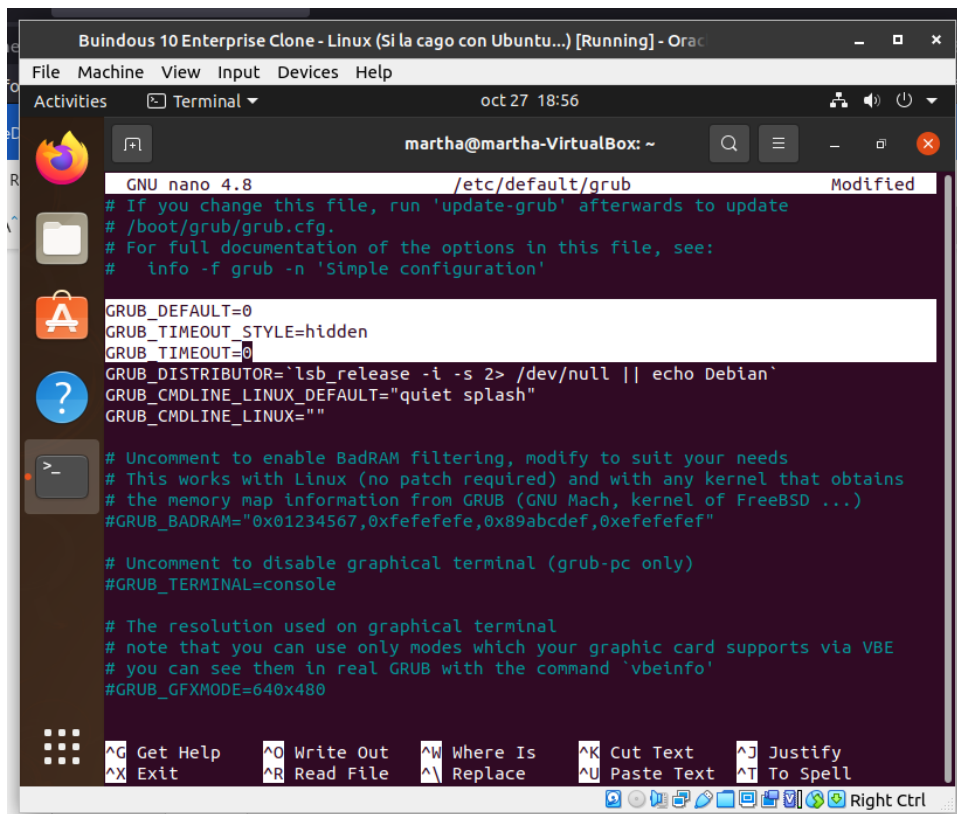
And here, I have the “hidden” menu with a countdown:



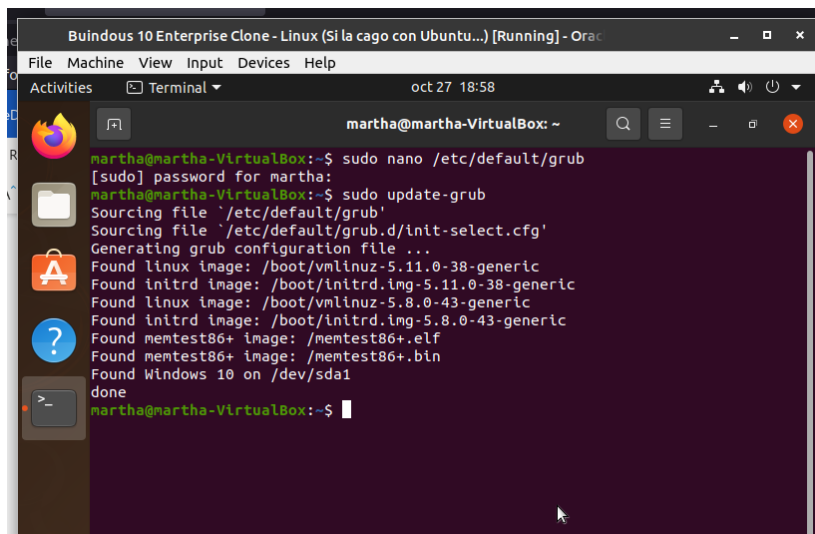
**c. Boot Ubuntu without displaying the menu.**

As in the previous exercises, I’m going to change the following options:

- GRUB\_DEFAULT=0
- GRUB\_TIMEOUT=0
- GRUB\_TIMEOUT\_STYLE=hidden



And save the changes with the command `sudo update-grub`:



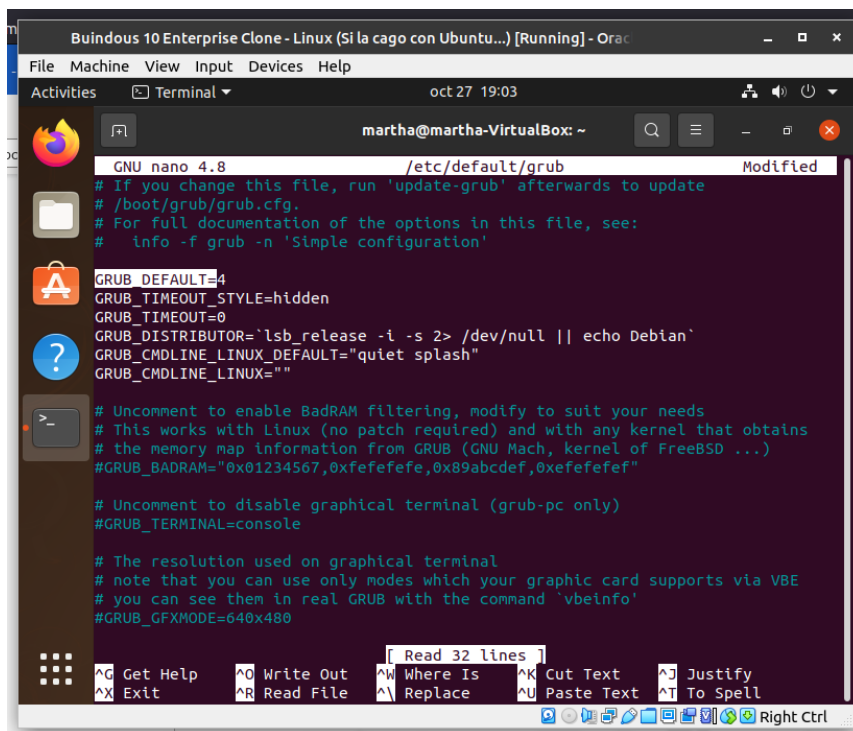
```
martha@martha-VirtualBox:~$ sudo nano /etc/default/grub
[sudo] password for martha:
martha@martha-VirtualBox:~$ sudo update-grub
Sourcing file '/etc/default/grub'
Sourcing file '/etc/default/grub.d/init-select.cfg'
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-5.11.0-38-generic
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 10 on /dev/sda1
done
martha@martha-VirtualBox:~$
```

(As I am going to show a snapshot where there is only a black screen, I think that It's unnecessary to show).

#### d. Boot Windows without displaying the menu.

If I want to change the OS boot order, I change from 0 to 4 in GRUB\_DEFAULT, because 4 it's the boot order for Windows 10, and change the GRUB\_TIMEOUT\_STYLE to "hidden", and nothing will be shown, but Ubuntu also will be "disappeared":

- GRUB\_DEFAULT=4
- GRUB\_TIMEOUT=0
- GRUB\_TIMEOUT\_STYLE=hidden



```
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

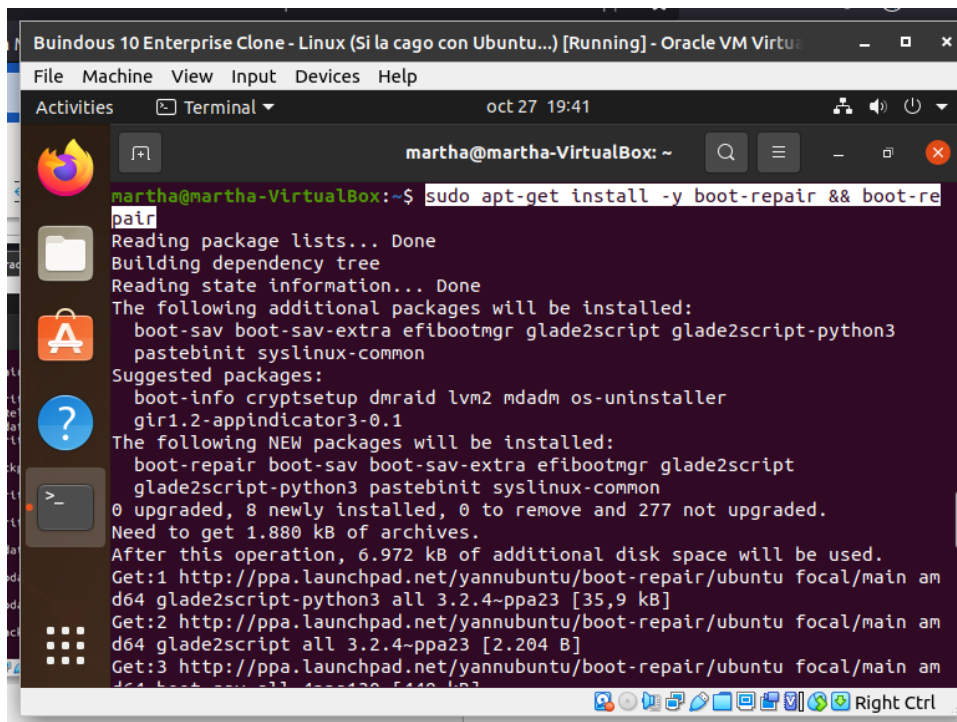
^G Get Help      ^O Write Out    ^M Where Is     ^K Cut Text      ^J Justify
^X Exit          ^R Read File    ^\ Replace      ^U Paste Text   ^T To Spell
Right Ctrl
```

And I save the changes with `update-grub`.

- Following the tutorial from the community of Ubuntu, from my installed Ubuntu session:

- I connect to the Internet
- I open a new Terminal, and then type the following commands:
  - The command `sudo add-apt-repository ppa:yannubuntu/boot-repair`
  - `sudo apt-get update`
  - `sudo apt-get install -y boot-repair && boot-repair`

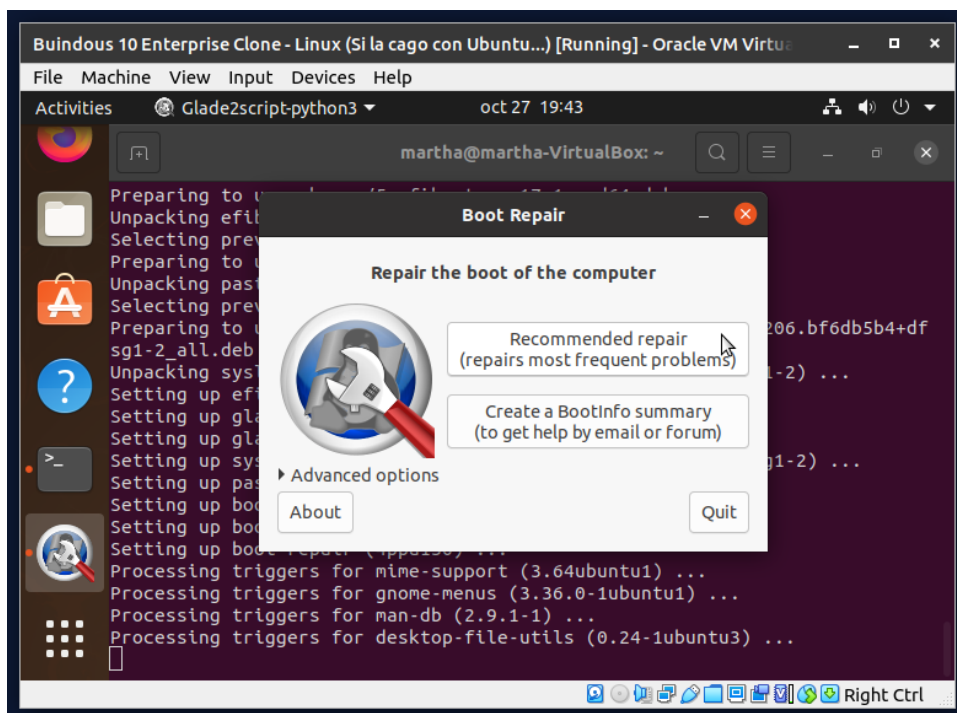




A terminal window titled 'Buindous 10 Enterprise Clone - Linux (Si la cago con Ubuntu...) [Running] - Oracle VM VirtualBox'. The terminal shows the command `sudo apt-get install -y boot-repair` being executed. The output indicates that several additional packages will be installed along with `boot-repair`. The packages to be installed are `boot-repair`, `boot-sav`, `boot-sav-extra`, `efibootmgr`, `glade2script`, `glade2script-python3`, `pastebinit`, and `syslinux-common`. The terminal also shows the disk space requirements and the sources from which the packages are being fetched.

```
martha@martha-VirtualBox:~$ 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 syslinux-common
Suggested packages:
  boot-info cryptsetup dmraid lvm2 mdadm os-uninstaller
  gir1.2-appindicator3-0.1
The following NEW packages will be installed:
  boot-repair boot-sav boot-sav-extra efibootmgr glade2script
  glade2script-python3 pastebinit syslinux-common
0 upgraded, 8 newly installed, 0 to remove and 277 not upgraded.
Need to get 1.880 kB of archives.
After this operation, 6.972 kB of additional disk space will be used.
Get:1 http://ppa.launchpad.net/yannubuntu/boot-repair/ubuntu focal/main amd64 glade2script-python3 all 3.2.4-ppa23 [35,9 kB]
Get:2 http://ppa.launchpad.net/yannubuntu/boot-repair/ubuntu focal/main amd64 glade2script all 3.2.4-ppa23 [2.204 B]
Get:3 http://ppa.launchpad.net/yannubuntu/boot-repair/ubuntu focal/main amd64 boot-repair all 3.2.4-ppa23 [1.880 kB]
```

Once It's installed, I choose the Recommended repair of the tool:



And then, the GRUB menu will be repaired.