



Individual Assessment Coversheet

To be attached to the front of the assessment.

Campus: Midrand

Faculty: Information Technology

Module Code: ITLSA1

Group: 4

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Indicate	Yes	No
Plagiarism report attached		

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Table of Contents

Table of Figures	2
Question 1.....	3
Question 2.....	5
Question 3.....	11
Bibliography	16

Table of Figures

Figure 1 VM with student name	5
Figure 2 Installing Ubuntu Linux.....	5
Figure 3 Install setup.....	6
Figure 4 2GB of RAM.....	6
Figure 5 20GB of Disk space	7
Figure 6 New user with sudo privileges	7
Figure 7 Update of system packages.....	8
Figure 8 Launching Chrome	8
Figure 9 Installing Chrome	9
Figure 10 Displaying hidden files	9
Figure 11 Basic Firewall.....	10
Figure 12 Installation of GNOME desktop.....	11
Figure 13 GNOME desktop installation process.....	11

Figure 14 Installing GNOME shell extensions.....	12
Figure 15 Installing Dash to Panel	12
Figure 16 Installing Clipboard indicator	13
Figure 17 Appearance modification	14
Figure 18 New screensaver	15
Figure 19 New font size.....	15

Question 1

Ubuntu and Kali Linux are popular Linux distributions that have different uses in the computer industry. Ubuntu is based on a strong Debian foundation and the GNOME desktop environment. It strikes a balance between usability and the power of Linux. Ubuntu provides suitability for desktops, cloud environments, and servers. The Offensive Security Ltd-maintained Kali Linux, on the other hand, is designed especially for security auditing and penetration testing. (Editor, 2024)

Kali and Ubuntu are based on the Debian Linux distribution. Since its original release in 1993, Debian has been one of the most popular and oldest Linux versions available. A wide range of Linux distributions, from user-friendly general operating systems like Ubuntu, to specialized versions with specialized tools like Kali Linux, use Debian as their foundation. (Hodgson, 2024)

Ubuntu has quite a few pros. It has a user-friendly interface that is suitable for beginners and experienced users. The GNOME desktop environment offers a seamless and modern user experience. Users can readily access support through manuals, forums, and some online resources due to its vibrant community. The APT package management system in Ubuntu provides access to a wide store of software. It has strong security features. Users can customize Ubuntu to their own taste. It is compatible with a lot of devices. It has open-source software and it is very efficient.

Although there is a number of pros, there are a few cons as well. The cons list includes, hardware compatibility, technical support, and software availability. Updates and installations can occasionally disrupt system functionality. It may have performance issues. The process of customization is time-consuming. Using different package

formats can lead to confusion and dependence concerns. Some enterprise contexts may find Ubuntu lacking in certain capabilities and integrations required for large-scale corporate use. (Qasim, 2023)

Kali Linux comes pre-installed with a comprehensive set of security tools. Kali Linux is regularly upgraded. There are a lot of documentations and tutorials that can help beginners. It is highly customizable. It can be run from a USB. Students can learn in a real-world setting of cybersecurity. There are different installation methods. It is open source. It comes with pre-configured security settings and configurations. Kali Linux is adaptable to a variety of gadgets.

Kali Linux also has cons that include security risks, hardware compatibility, and limited software repository. The functionality and user interface for beginners may be intimidatingly complex. It requires very powerful hardware in order to run smoothly. The frequent updates can be disruptive. There may be privacy concerns because Kali Linux automatically collects and reports statistics regarding usage. Kali Linux is primarily designed for security testing rather than productivity tasks. It takes a significant amount of time to learn how to use Kali Linux properly. (Fernando, 2024)

After evaluating the pros and cons of both Ubuntu and Kali Linux I realized that it is critical to choose a Linux distribution that is adaptable, dependable, and well supported, therefore I would recommend that TechCorp chooses to use Kali Linux. It was specifically designed for security professionals, penetration testers, and hackers that hack ethically. Although Ubuntu is a better option for most web development needs. Kali Linux is the better choice due to its focus on network security and penetration testing. Right out of the box, it has all the tools required for security audits and penetration tests. It is intended for security experts who require an atmosphere created especially for security-related duties just like the employees of TechCorp. (Williams, 2018)

Question 2

2.1. In order for me to create a new VM and name it using my student name I press on “new”.

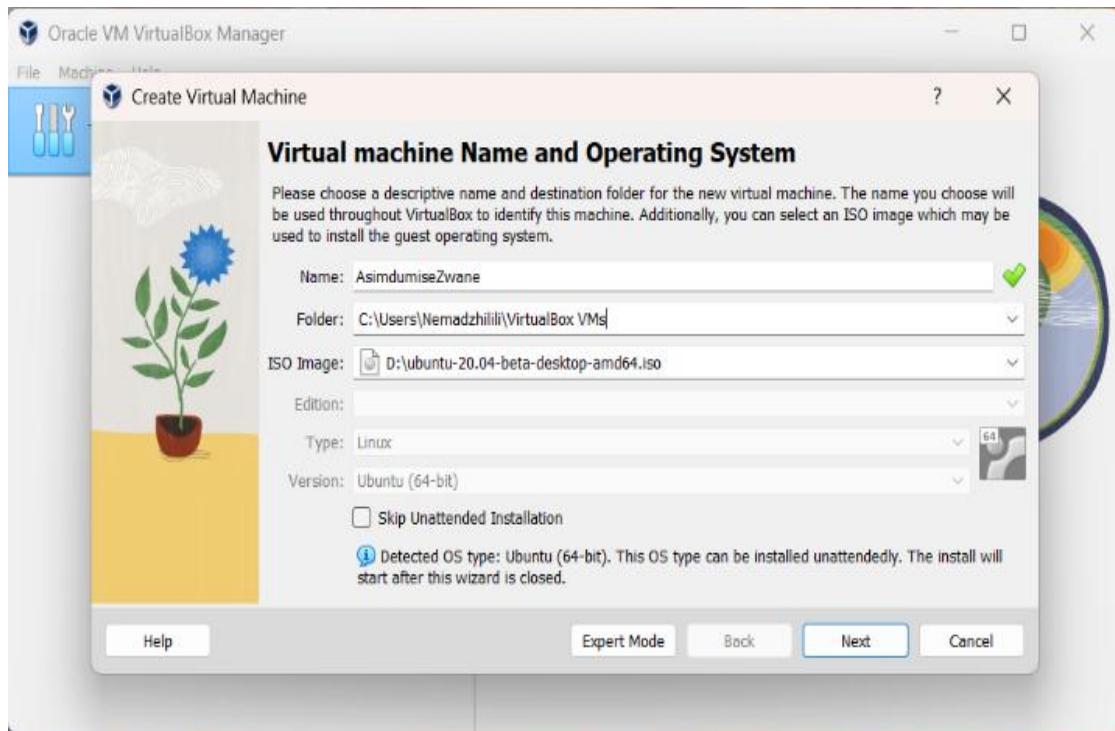


Figure 1 VM with student name

I then proceed to install the latest version of Ubuntu Linux as the guest OS

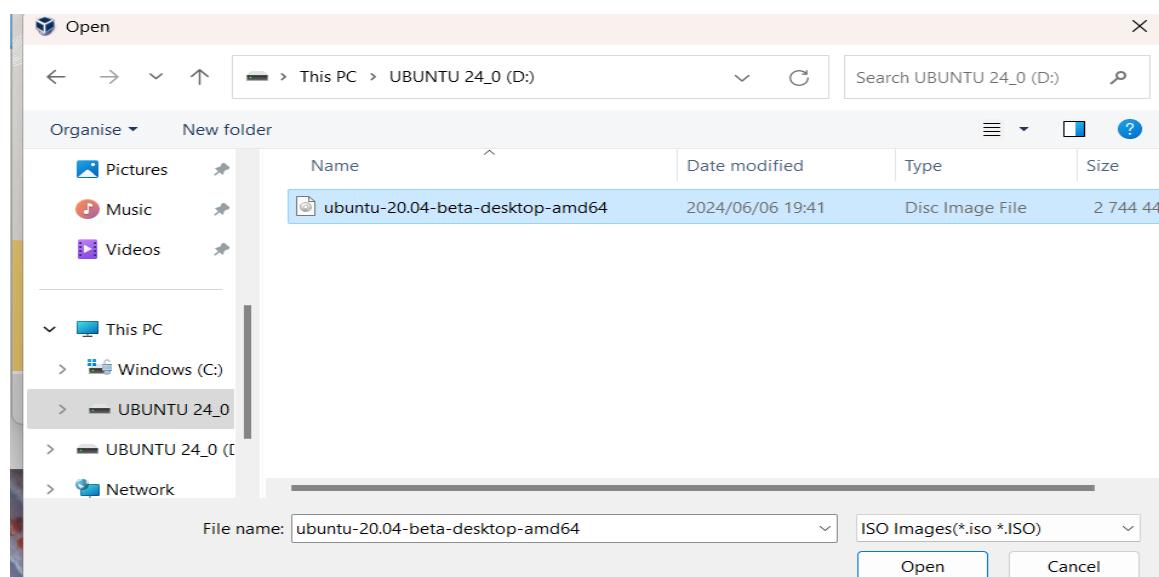


Figure 2 Installing Ubuntu Linux

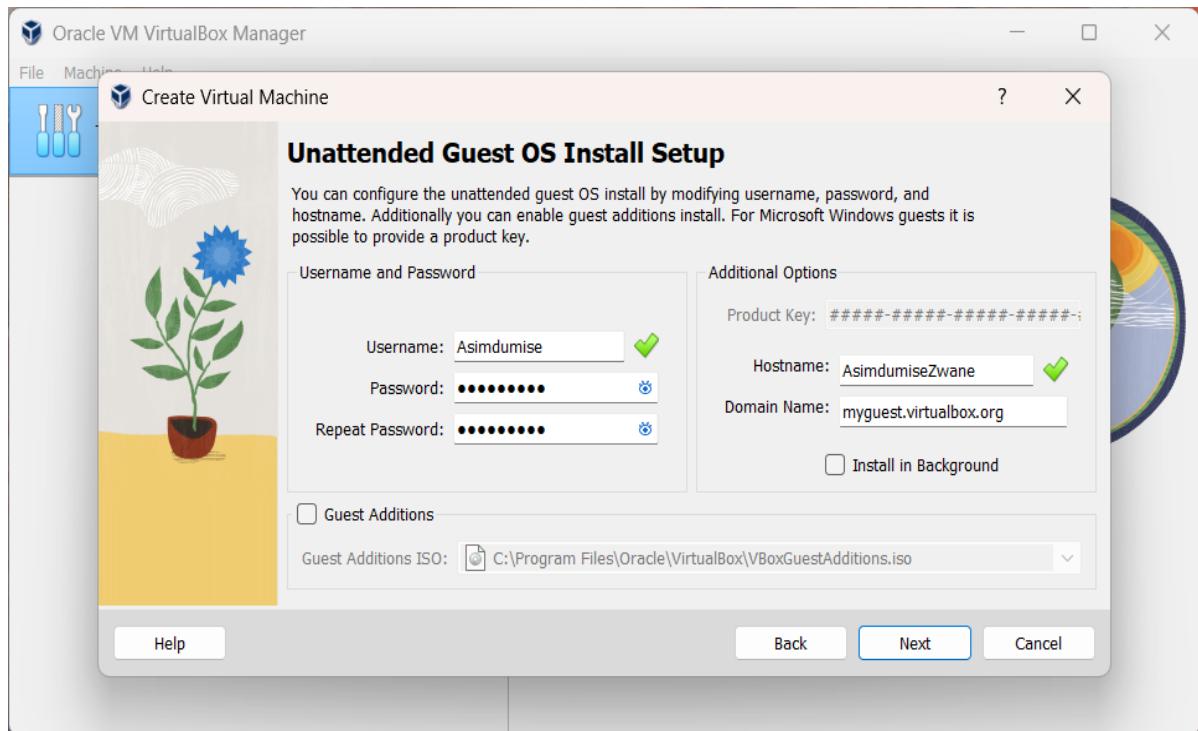


Figure 3 Install setup

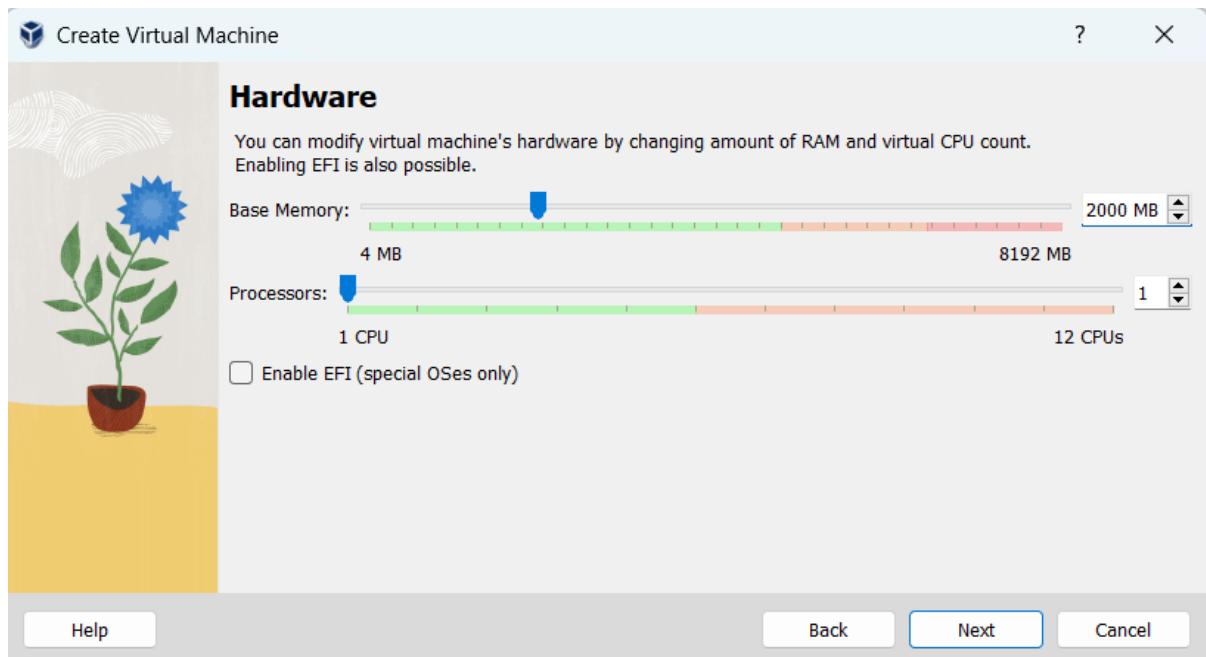


Figure 4 2GB of RAM

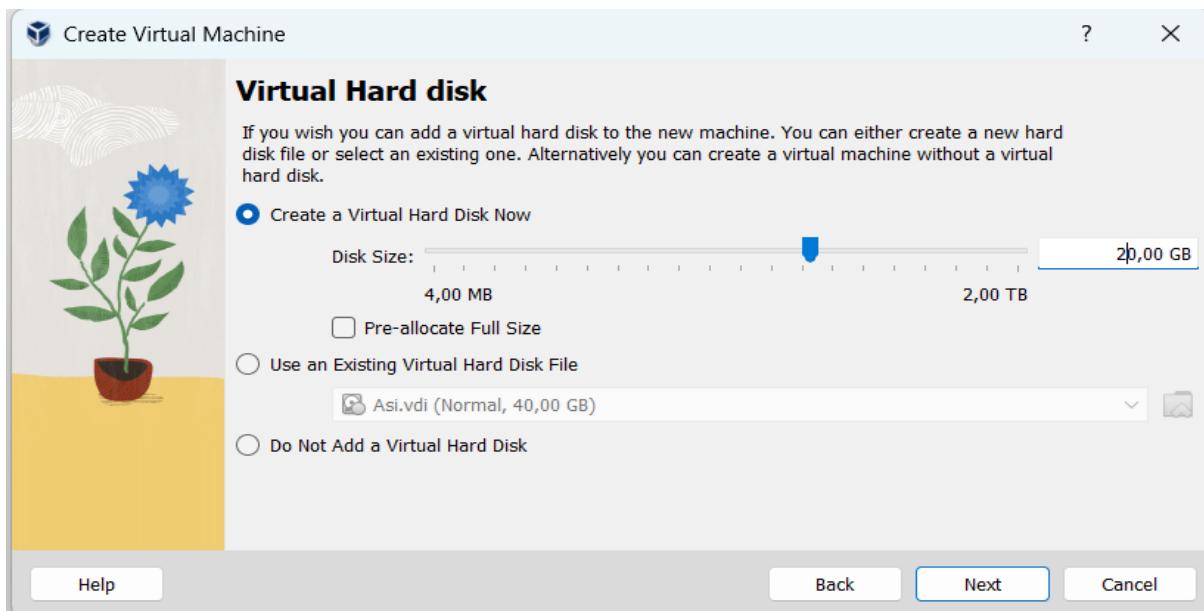


Figure 5 20GB of Disk space

2.2. I therefore created a new user with my name as the username, granting myself sudo privileges and I set a secure password. (Zandbergen, 2022)

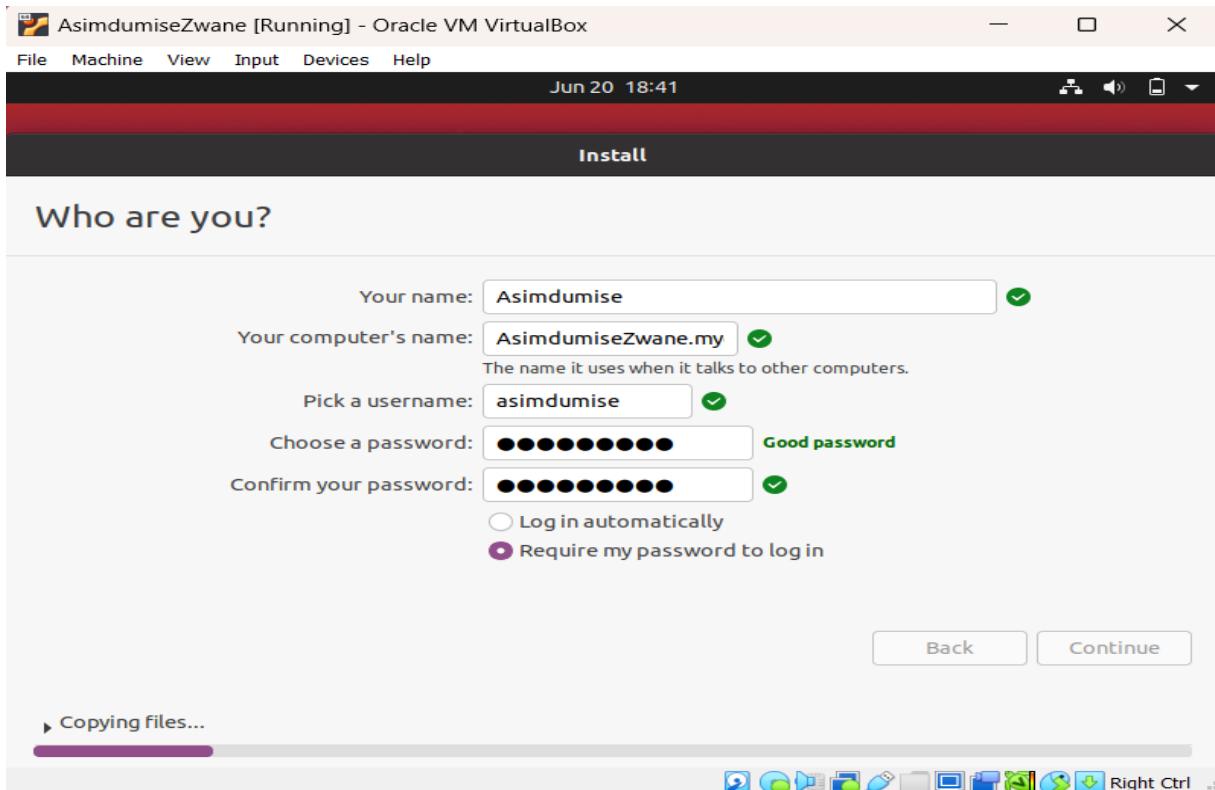
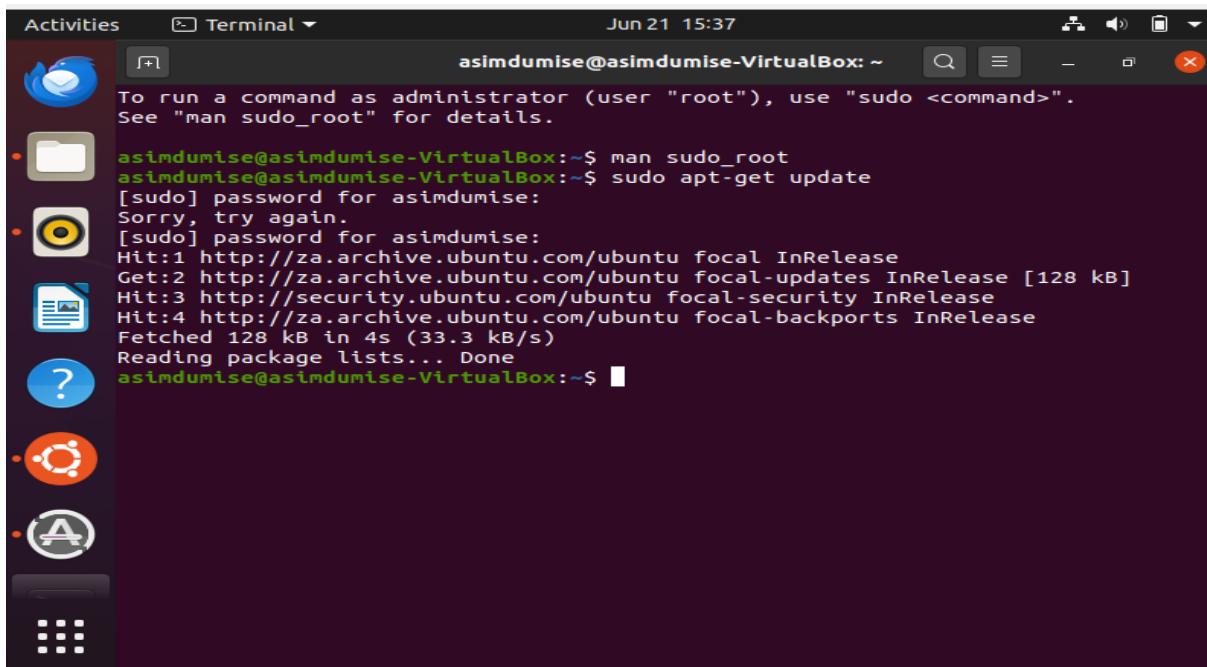


Figure 6 New user with sudo privileges

2.3. I updated the package index with: **sudo apt-get update**

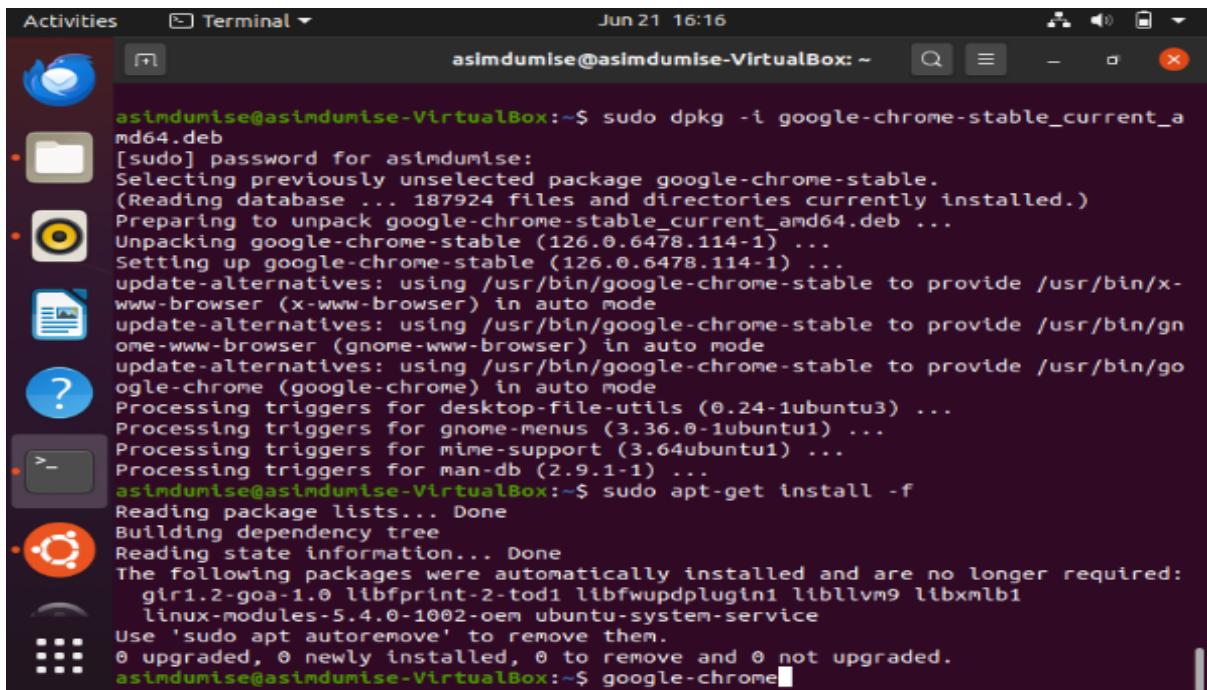


```
Activities Terminal Jun 21 15:37
asimdumise@asimdumise-VirtualBox: ~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

asimdumise@asimdumise-VirtualBox:~$ man sudo_root
asimdumise@asimdumise-VirtualBox:~$ sudo apt-get update
[sudo] password for asimdumise:
Sorry, try again.
[sudo] password for asimdumise:
Hit:1 http://za.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://za.archive.ubuntu.com/ubuntu focal-updates InRelease [128 kB]
Hit:3 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:4 http://za.archive.ubuntu.com/ubuntu focal-backports InRelease
Fetched 128 kB in 4s (33.3 kB/s)
Reading package lists... Done
asimdumise@asimdumise-VirtualBox:~$
```

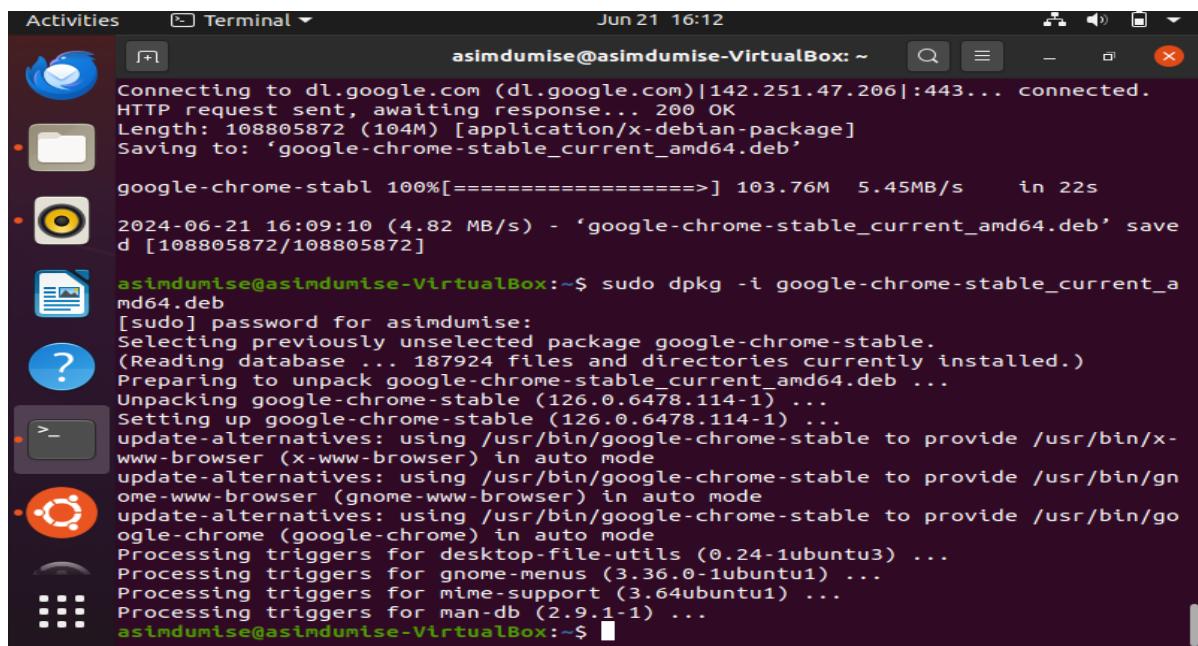
Figure 7 Update of system packages

Before launching chrome I ran this command: **sudo apt install wget**. I then ran this command: **sudo dpkg -i google-chrome-stable_current_amd64.deb**



```
Activities Terminal Jun 21 16:16
asimdumise@asimdumise-VirtualBox: ~
asimdumise@asimdumise-VirtualBox:~$ sudo dpkg -i google-chrome-stable_current_amd64.deb
[sudo] password for asimdumise:
Selecting previously unselected package google-chrome-stable.
(Reading database ... 187924 files and directories currently installed.)
Preparing to unpack google-chrome-stable_current_amd64.deb ...
Unpacking google-chrome-stable (126.0.6478.114-1) ...
Setting up google-chrome-stable (126.0.6478.114-1) ...
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/x-www-browser (x-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/gnome-www-browser (gnome-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/google-chrome (google-chrome) in auto mode
Processing triggers for desktop-file-utils (0.24-1ubuntu3) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu1) ...
Processing triggers for mime-support (3.64ubuntu1) ...
Processing triggers for man-db (2.9.1-1) ...
asimdumise@asimdumise-VirtualBox:~$ sudo apt-get install -f
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  gir1.2-goa-1.0 libfprint-2-tod1 libfwupdplugin1 libllvm9 libxml2
  linux-modules-5.4.0-1002-oem ubuntu-system-service
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
asimdumise@asimdumise-VirtualBox:~$ google-chrome
```

Figure 8 Launching Chrome



```
Activities Terminal Jun 21 16:12
asimdumise@asimdumise-VirtualBox: ~
Connecting to dl.google.com (dl.google.com)|142.251.47.206|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 108805872 (104M) [application/x-debian-package]
Saving to: 'google-chrome-stable_current_amd64.deb'

google-chrome-stabl 100%[=====] 103.76M 5.45MB/s in 22s
2024-06-21 16:09:10 (4.82 MB/s) - 'google-chrome-stable_current_amd64.deb' saved [108805872/108805872]

asimdumise@asimdumise-VirtualBox: ~$ sudo dpkg -i google-chrome-stable_current_amd64.deb
[sudo] password for asimdumise:
Selecting previously unselected package google-chrome-stable.
(Reading database ... 187924 files and directories currently installed.)
Preparing to unpack google-chrome-stable_current_amd64.deb ...
Unpacking google-chrome-stable (126.0.6478.114-1) ...
Setting up google-chrome-stable (126.0.6478.114-1) ...
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/x-www-browser (x-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/gnome-www-browser (gnome-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/google-chrome (google-chrome) in auto mode
Processing triggers for desktop-file-utils (0.24-1ubuntu3) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu1) ...
Processing triggers for mime-support (3.64ubuntu1) ...
Processing triggers for man-db (2.9.1-1) ...
asimdumise@asimdumise-VirtualBox: ~$
```

Figure 9 Installing Chrome

After installing chrome, I configure the system to display hidden files.

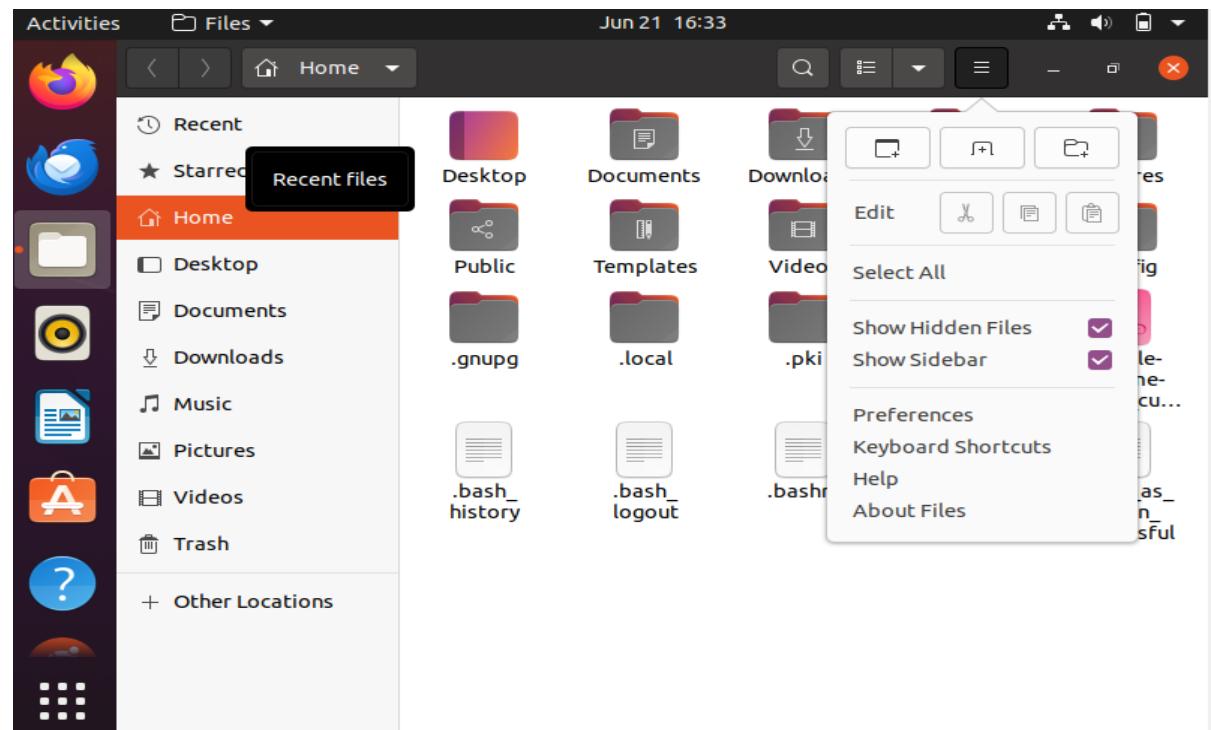
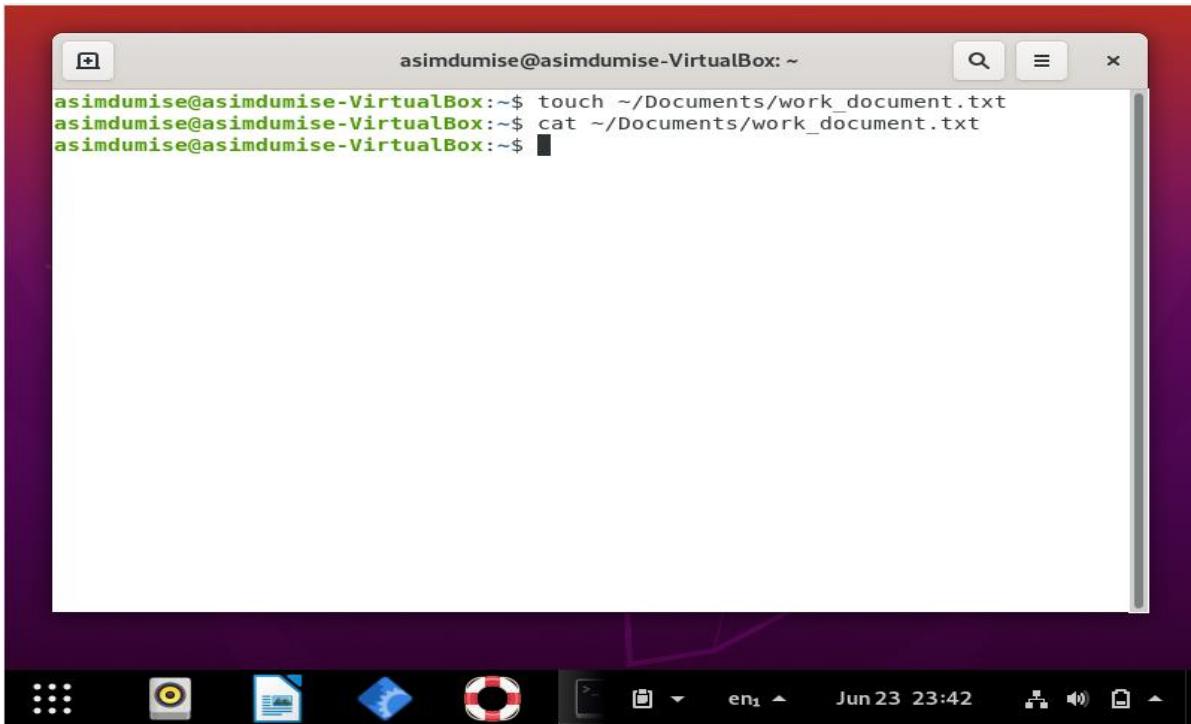


Figure 10 Displaying hidden files

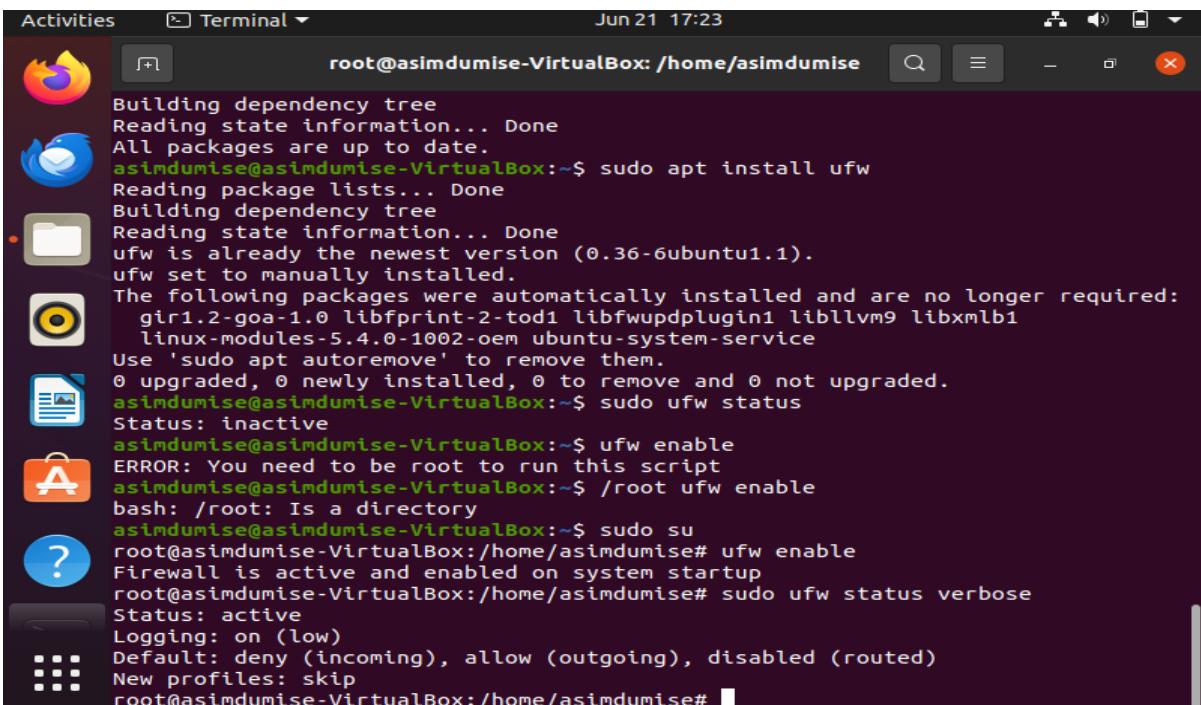
I used the command to create a text file: **touch ~/Documents/work_document.txt**. I then used: **cat ~/Documents/work_document.txt** to view the text file.



The screenshot shows a terminal window titled "asimdumise@asimdumise-VirtualBox: ~". Inside the terminal, the user has run two commands: "touch ~/Documents/work_document.txt" and "cat ~/Documents/work_document.txt". The output of the second command is empty, indicating that the file is currently empty. The terminal window is set against a dark purple desktop background with a dock containing various icons at the bottom.

```
asimdumise@asimdumise-VirtualBox:~$ touch ~/Documents/work_document.txt
asimdumise@asimdumise-VirtualBox:~$ cat ~/Documents/work_document.txt
asimdumise@asimdumise-VirtualBox:~$
```

2.4. Figure 11 displays how I setup and configured a basic firewall.



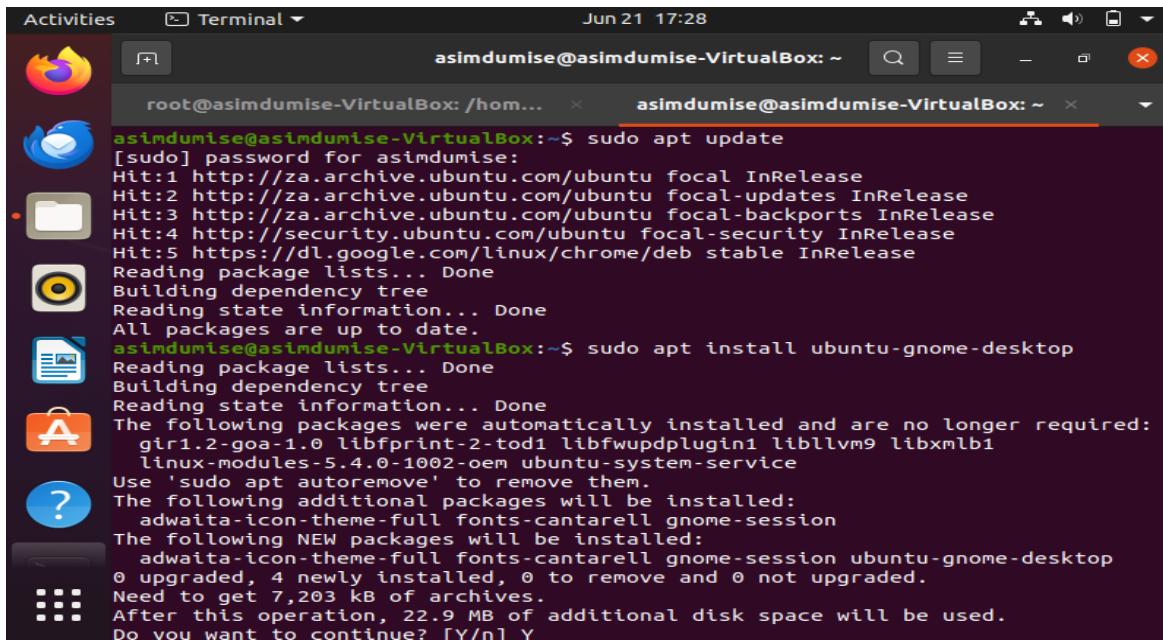
The screenshot shows a terminal window titled "root@asimdumise-VirtualBox: /home/asimdumise". The user has run several commands to manage the ufw (Uncomplicated Firewall) service. They first checked the status of ufw, which was inactive. They then enabled ufw using the "sudo ufw enable" command. After enabling it, they checked the status again, which showed that the firewall was active and enabled on system startup. Finally, they ran "sudo ufw status verbose" to get detailed information about the firewall's configuration, including logging levels and default rules.

```
Activities Terminal Jun 21 17:23
root@asimdumise-VirtualBox: /home/asimdumise
Building dependency tree
Reading state information... Done
All packages are up to date.
root@asimdumise-VirtualBox:~$ sudo apt install ufw
Reading package lists... Done
Building dependency tree
Reading state information... Done
ufw is already the newest version (0.36-6ubuntu1.1).
ufw set to manually installed.
The following packages were automatically installed and are no longer required:
  gir1.2-goa-1.0 libfprint-2-tod1 libfwupdplugin1 liblvm2m libxml2
  linux-modules-5.4.0-1002-oem ubuntu-system-service
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@asimdumise-VirtualBox:~$ sudo ufw status
Status: inactive
root@asimdumise-VirtualBox:~$ ufw enable
ERROR: You need to be root to run this script
root@asimdumise-VirtualBox:~$ /root ufw enable
bash: /root: Is a directory
root@asimdumise-VirtualBox:~$ sudo su
root@asimdumise-VirtualBox:/home/asimdumise# ufw enable
Firewall is active and enabled on system startup
root@asimdumise-VirtualBox:/home/asimdumise# sudo ufw status verbose
Status: active
Logging: on (low)
Default: deny (incoming), allow (outgoing), disabled (routed)
New profiles: skip
root@asimdumise-VirtualBox:/home/asimdumise#
```

Figure 11 Basic Firewall

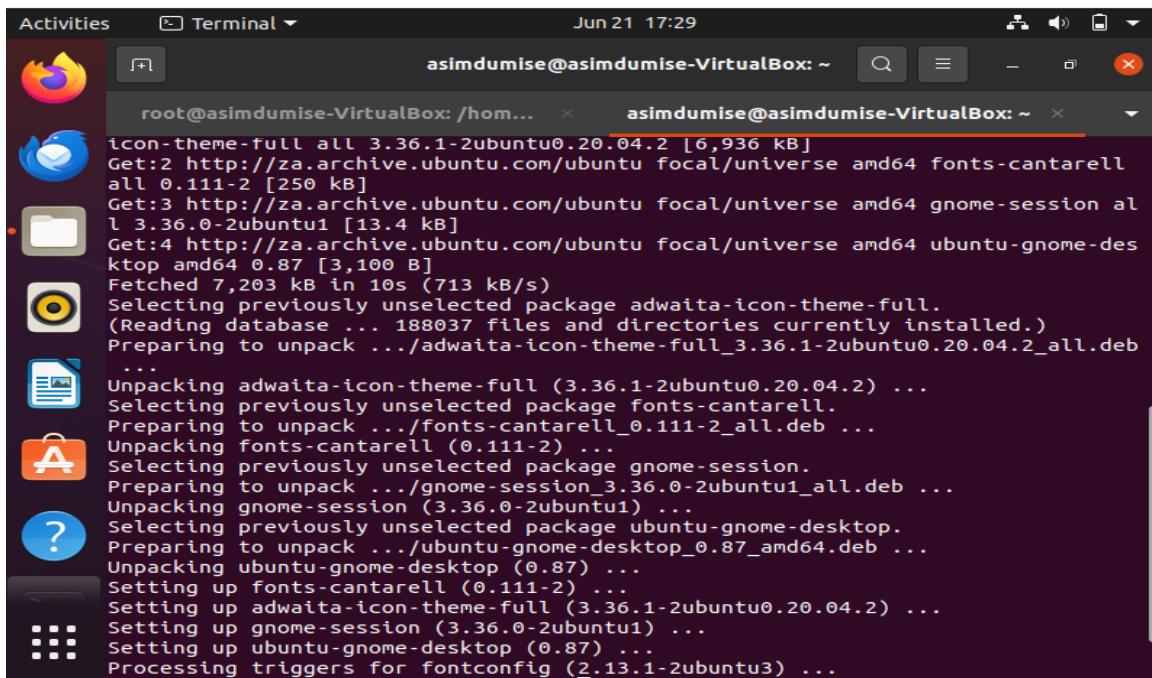
Question 3

3.1. I installed the Ubuntu GNOME desktop using the commands in figure 12 and figure 13.



```
root@asimdumise-VirtualBox:~$ sudo apt update
[sudo] password for asimdumise:
Hit:1 http://za.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://za.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://za.archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:5 https://dl.google.com/linux/chrome/deb stable InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
root@asimdumise-VirtualBox:~$ sudo apt install ubuntu-gnome-desktop
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  gir1.2-goa-1.0 libfprint-2-tod1 libfwupdplugin1 liblomm3 libxmlb1
  linux-modules-5.4.0-1002-oem ubuntu-system-service
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  adwaita-icon-theme-full fonts-cantarell gnome-session
The following NEW packages will be installed:
  adwaita-icon-theme-full fonts-cantarell gnome-session ubuntu-gnome-desktop
0 upgraded, 4 newly installed, 0 to remove and 0 not upgraded.
Need to get 7,203 kB of archives.
After this operation, 22.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

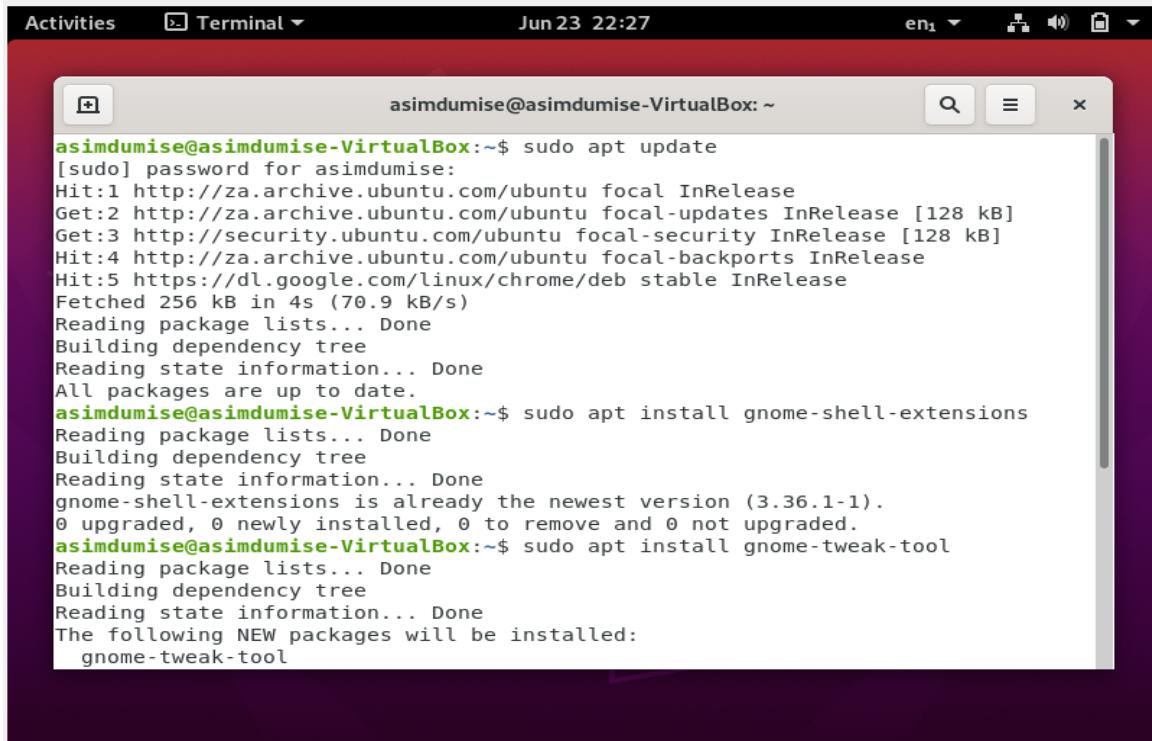
Figure 12 Installation of GNOME desktop



```
root@asimdumise-VirtualBox:~$ sudo apt install ubuntu-gnome-desktop
icon-theme-full all 3.36.1-2ubuntu0.20.04.2 [6,936 kB]
Get:2 http://za.archive.ubuntu.com/ubuntu focal/universe amd64 fonts-cantarell
all 0.111-2 [250 kB]
Get:3 http://za.archive.ubuntu.com/ubuntu focal/universe amd64 gnome-session al
l 3.36.0-2ubuntu1 [13.4 kB]
Get:4 http://za.archive.ubuntu.com/ubuntu focal/universe amd64 ubuntu-gnome-des
ktop amd64 0.87 [3,100 B]
Fetched 7,203 kB in 10s (713 kB/s)
Selecting previously unselected package adwaita-icon-theme-full.
(Reading database ... 188037 files and directories currently installed.)
Preparing to unpack .../adwaita-icon-theme-full_3.36.1-2ubuntu0.20.04.2_all.deb
...
Unpacking adwaita-icon-theme-full (3.36.1-2ubuntu0.20.04.2) ...
Selecting previously unselected package fonts-cantarell.
Preparing to unpack .../fonts-cantarell_0.111-2_all.deb ...
Unpacking fonts-cantarell (0.111-2) ...
Selecting previously unselected package gnome-session.
Preparing to unpack .../gnome-session_3.36.0-2ubuntu1_all.deb ...
Unpacking gnome-session (3.36.0-2ubuntu1) ...
Selecting previously unselected package ubuntu-gnome-desktop.
Preparing to unpack .../ubuntu-gnome-desktop_0.87_amd64.deb ...
Unpacking ubuntu-gnome-desktop (0.87) ...
Setting up fonts-cantarell (0.111-2) ...
Setting up adwaita-icon-theme-full (3.36.1-2ubuntu0.20.04.2) ...
Setting up gnome-session (3.36.0-2ubuntu1) ...
Setting up ubuntu-gnome-desktop (0.87) ...
Processing triggers for fontconfig (2.13.1-2ubuntu3) ...
```

Figure 13 GNOME desktop installation process

3.2.



The screenshot shows a terminal window titled "Terminal" with the command line "asimdumise@asimdumise-VirtualBox:~\$". The terminal displays the output of several commands:

```
asimdumise@asimdumise-VirtualBox:~$ sudo apt update
[sudo] password for asimdumise:
Hit:1 http://za.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://za.archive.ubuntu.com/ubuntu focal-updates InRelease [128 kB]
Get:3 http://security.ubuntu.com/ubuntu focal-security InRelease [128 kB]
Hit:4 http://za.archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:5 https://dl.google.com/linux/chrome/deb stable InRelease
Fetched 256 kB in 4s (70.9 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
asimdumise@asimdumise-VirtualBox:~$ sudo apt install gnome-shell-extensions
Reading package lists... Done
Building dependency tree
Reading state information... Done
gnome-shell-extensions is already the newest version (3.36.1-1).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
asimdumise@asimdumise-VirtualBox:~$ sudo apt install gnome-tweak-tool
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  gnome-tweak-tool
```

Figure 14 Installing GNOME shell extensions

After configuring, I therefore proceed to install dash to panel and clipboard indicator.

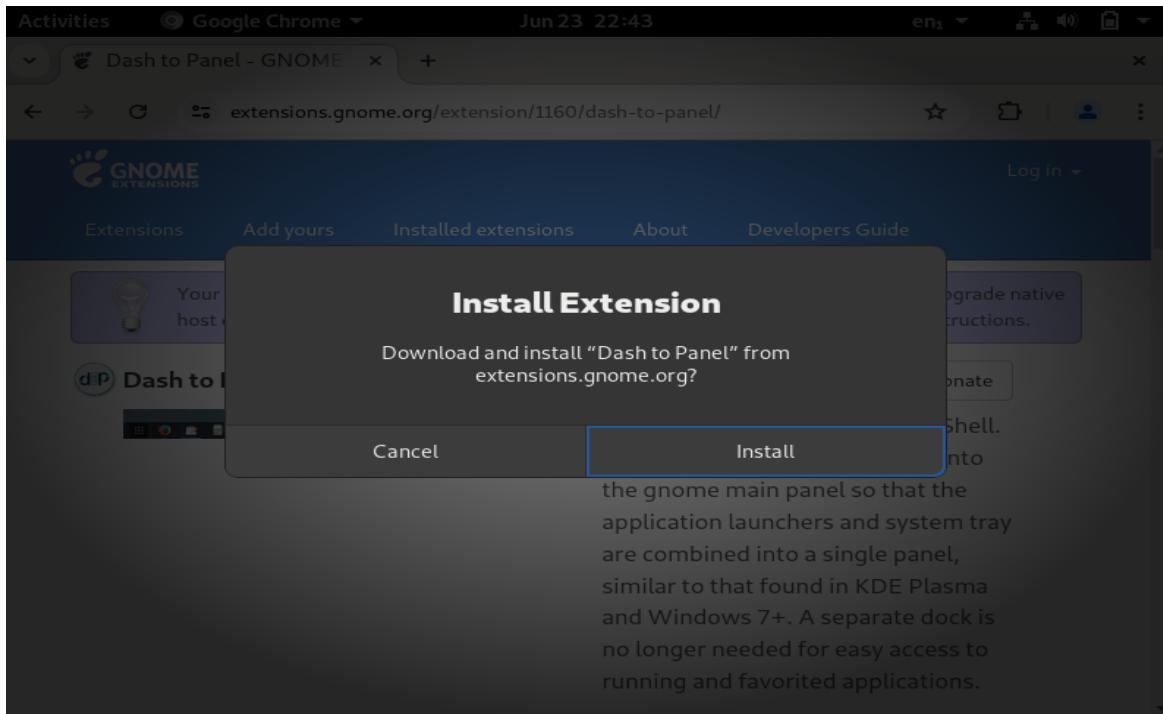


Figure 15 Installing Dash to Panel

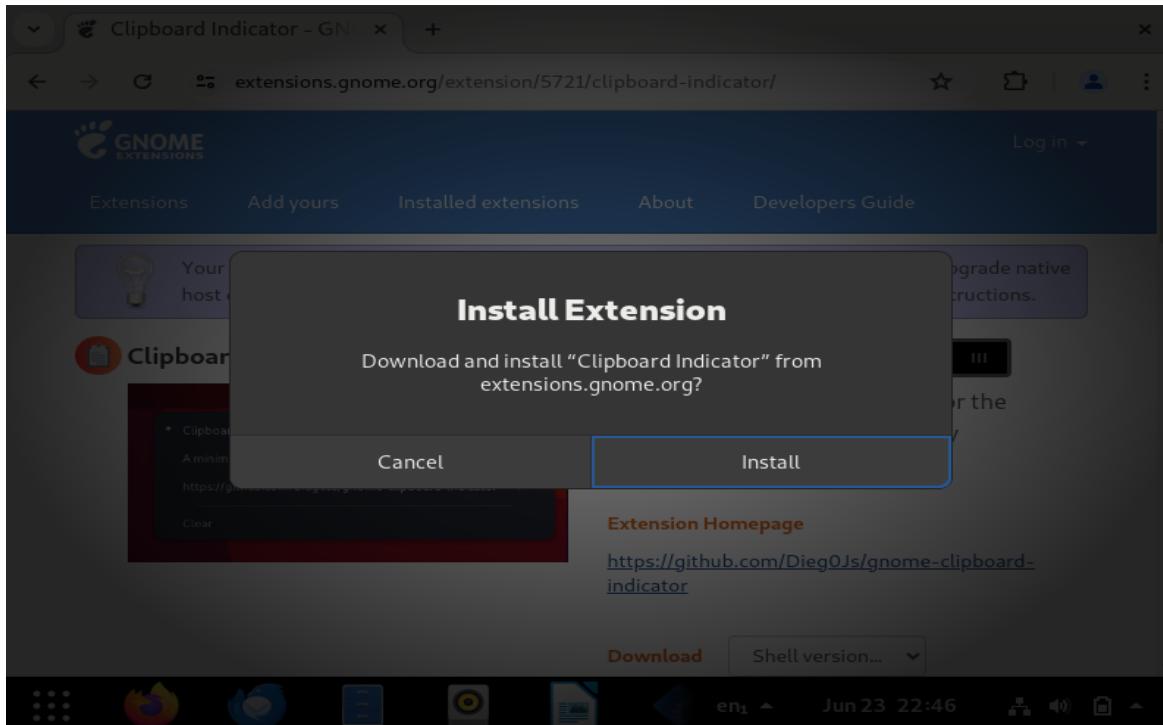


Figure 16 Installing Clipboard indicator

3.3. Dash to panel: Its purpose is to improve GNOME desktop usability by providing a taskbar-centric workflow, efficient window management, and customization choices for users switching from Windows, decreasing mouse movements and clicking.

Its function is to provide live previews of open windows, allowing for easy switching and selection. It includes system tray icons, which provide rapid access to settings and notifications. It also includes application grouping, activity indicators, and multi-monitor functionality.

- In order to install and configure it start by opening the GNOME Extensions website.
- Search for “Dash to panel”
- Turn it “ON” and then it will install
- Therefore configure it by adding applications and selecting workspaces.

Clipboard indicator: Its purpose is to improve clipboard management, increase productivity by giving quick access to previously copied objects, and to provide a simple interface for effective and intuitive clipboard management.

Its function is to allow users to access previously copied objects. It has search capabilities, persistent storage, customization choices, easy paste, data type support, keyboard shortcuts, and privacy settings.

- In order to install and configure it start by opening the GNOME Extensions website.
- Search for “Clipboard indicator”
- Turn it “ON” and then it will install
- Therefore configure it by adding applications and selecting workspaces.

3.4.1. Since I have already made this command: **`sudo apt install gnome-tweak-tool`**. I can discover several choices for personalizing my desktop experience inside the GNOME Tweak Tool settings.

3.4.2. In order for me to modify the theme, I launched GNOME Tweak Tool and navigated to the Appearance section. There were options to modify the shell, application, and cursor themes so I chose my preferred theme from the drop-down menu that was provided.

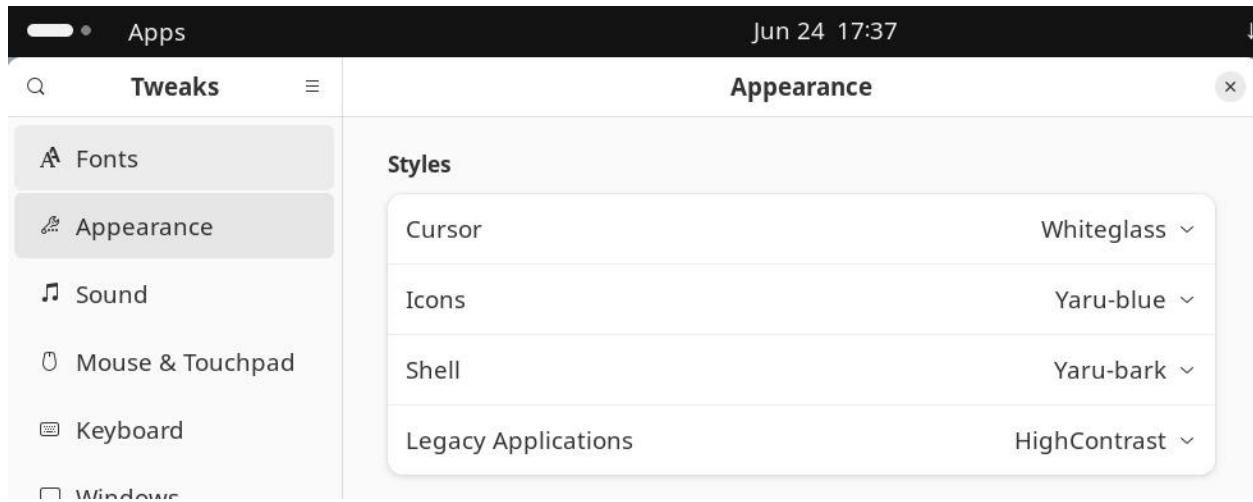


Figure 17 Appearance modification

3.4.3. This is how I created my personalized screensaver: I started by opening the GNOME Tweak Tool and I navigated to the “Extensions” area. I then pressed the “Screensaver Button”. I installed and enabled the extension. I selected and customized a screensaver of my choice by clicking on the screensaver icon in the top bar.

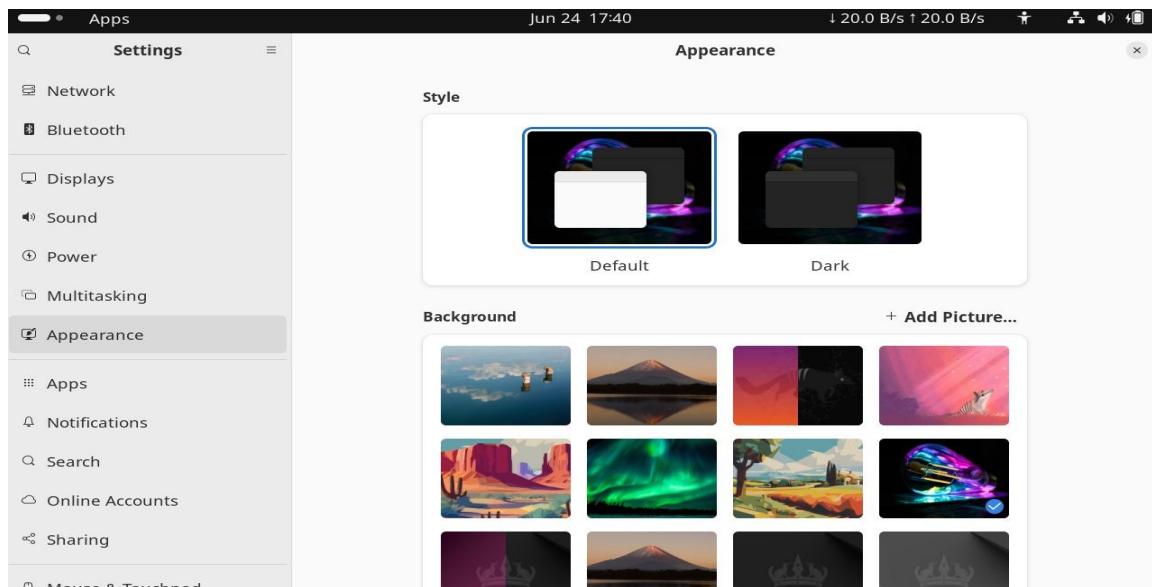


Figure 18 New screensaver

3.4.4. To improve readability, I adjusted the system typefaces and icon sizes. I launched GNOME Tweaks Tool and went to the “Fonts” area. I also modified the default icon style under the “Icons” section. I saved all my modifications after each customization step.

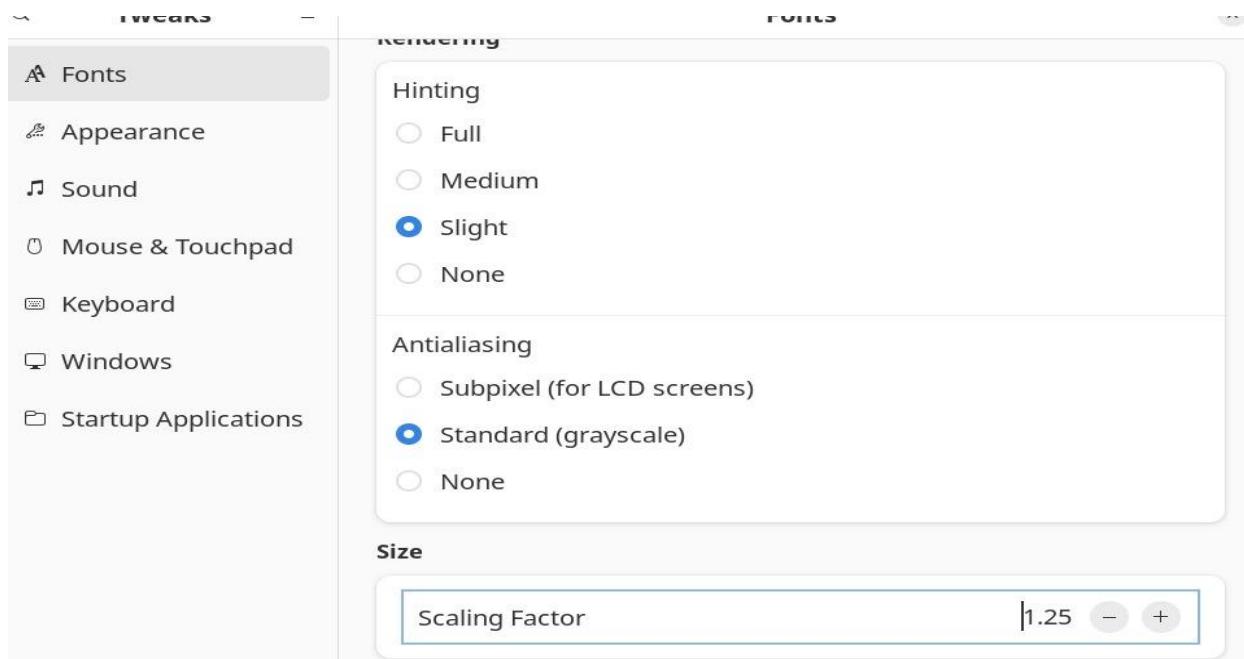


Figure 19 New font size

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