FILE SYSTEM SUPPORT

- Parrot Security OS supports several Linux file systems
- the default and most commonly used is:ext4

❖ **<u>why ext4?</u>**

✓ It is stable and mature, widely used in Linux environments.

✓ It supports large files and partitions.

✓ Provides journaling which helps protect data in case of power failure.

✓ It has good performance and is less prone to corruption.

❖**<u>Other file systems supported</u>**

✓Btrfs – advanced features like snapshotting and compression.

✓NTFS, FAT32, exFAT – for USB drives and compatibility with Windows systems.

✓ZFS HFS+, APFS – available but less common in Parrot setups.

ADVANTAGES OF PARROT OS

- The entire source code is accessible for anyone to read, modify, and contribute to.
- Designed with security in mind—offers full disk encryption, frequent updates, and privacy-protection tools.
- Users can choose from MATE, KDE, and Xfce according to their preference.
- Multiple editions available Security, Home, Studio, IoT, and Cloud allow users to pick one suited to their needs.
- Parrot OS is smaller in size than alternatives like Kali Linux and works with as little as 320MB of RAM.
- Parrot can be used for daily tasks with a good range of general-purpose applications.

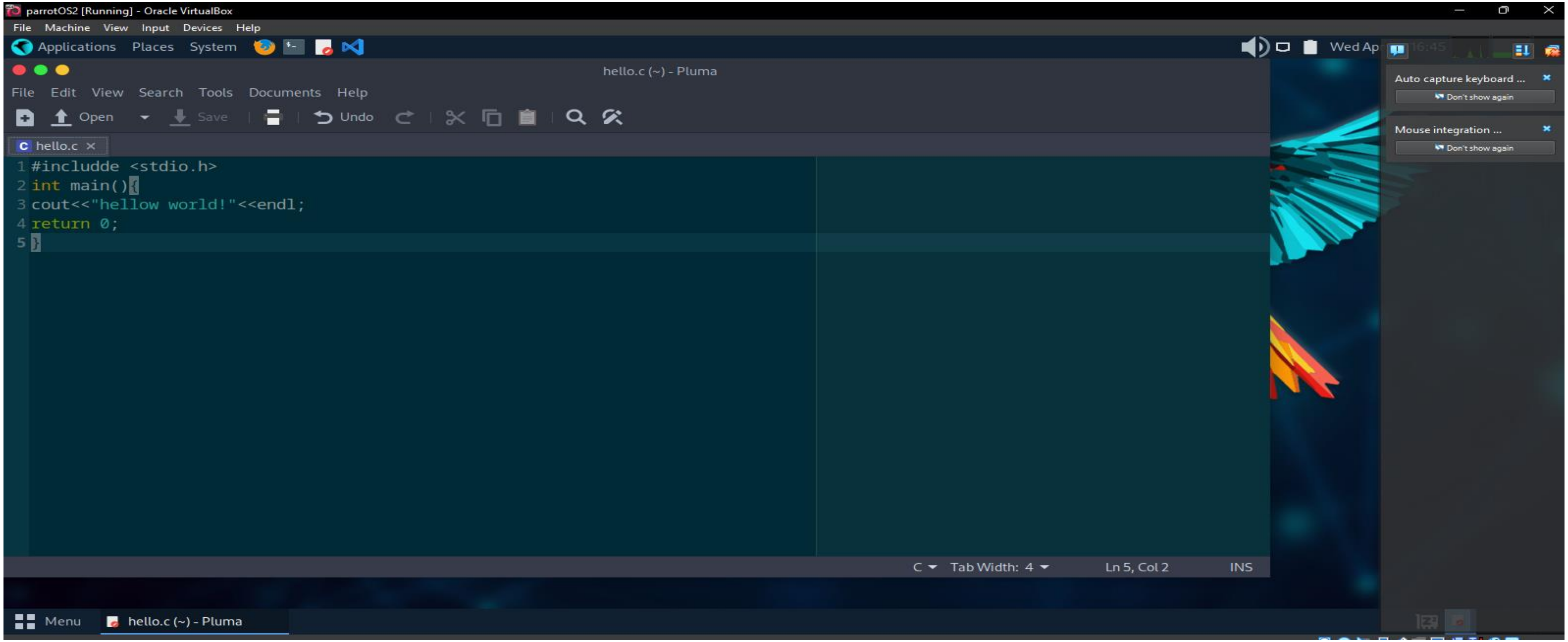
Disadvantages of Parrot OS

- Pre-installed tools can slow down older hardware due to increased storage and resource usage.
- Compared to Ubuntu or Kali, the community is still growing, so finding solutions or support can be a bit limited.
- The large number of tools and features may be confusing for users new to cybersecurity.

Implemented System Call

- A system call is a way for programs to request services from the operating system, such as accessing files, creating processes, or using hardware devices
- a bridge between the program and the OS kernel.

Step 1: Open Pluma,Write the Code and save.
pic 5.A:writting code on pluma



parrotOS2 [Running] - Oracle VirtualBox
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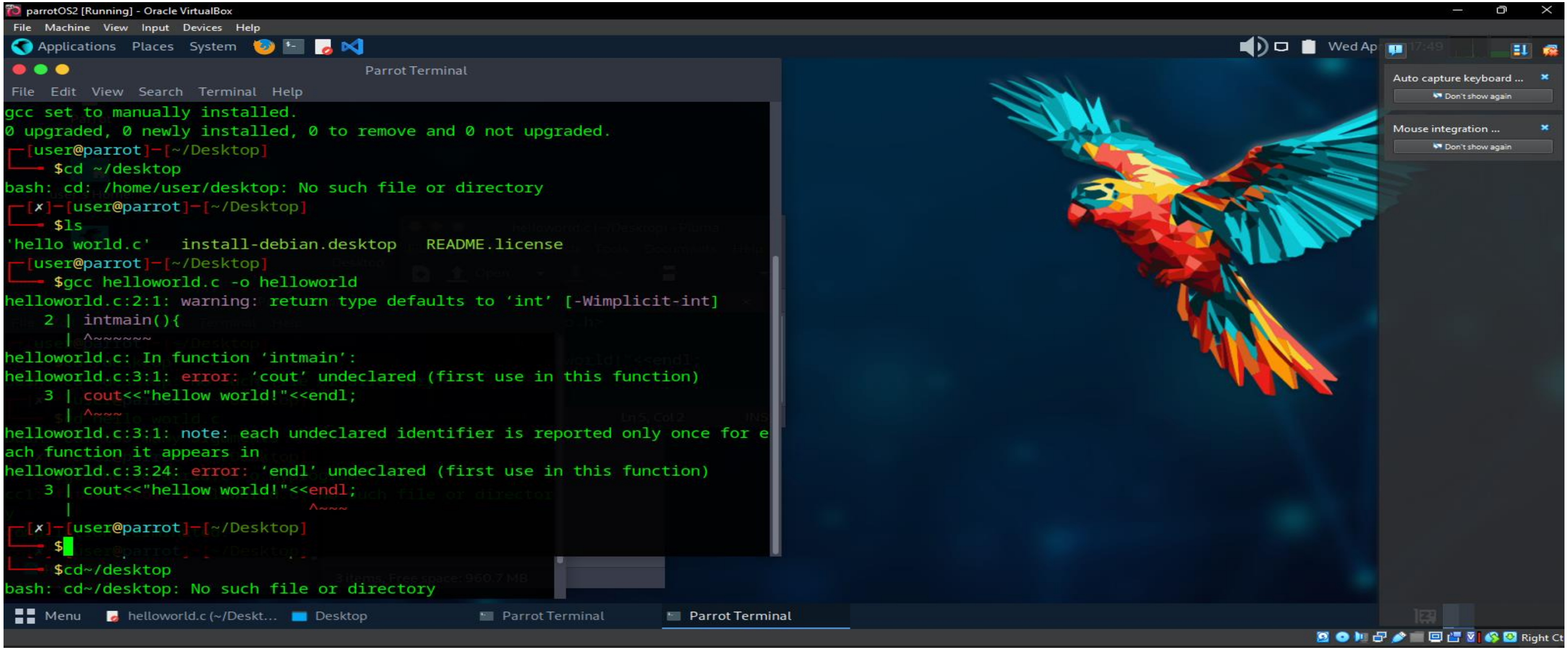
hello.c (~) - Pluma
File Edit View Search Tools Documents Help
Open
Save
Undo
hello.c
Auto capture keyboard ...
Don't show again
Mouse integration ...
Don't show again
C
Tab Width: 4
Ln 5, Col 2
INS
Menu
hello.c (~) - Pluma

```
#includde <stdio.h>
int main(){
cout<<"hellow world!"<<endl;
return 0;
}
```

Step 2: Open Terminal : parrot icon, system tool, terminal pic 5.B:open terminal



parrotOS2 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
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helloworld.c (~/Deskt...
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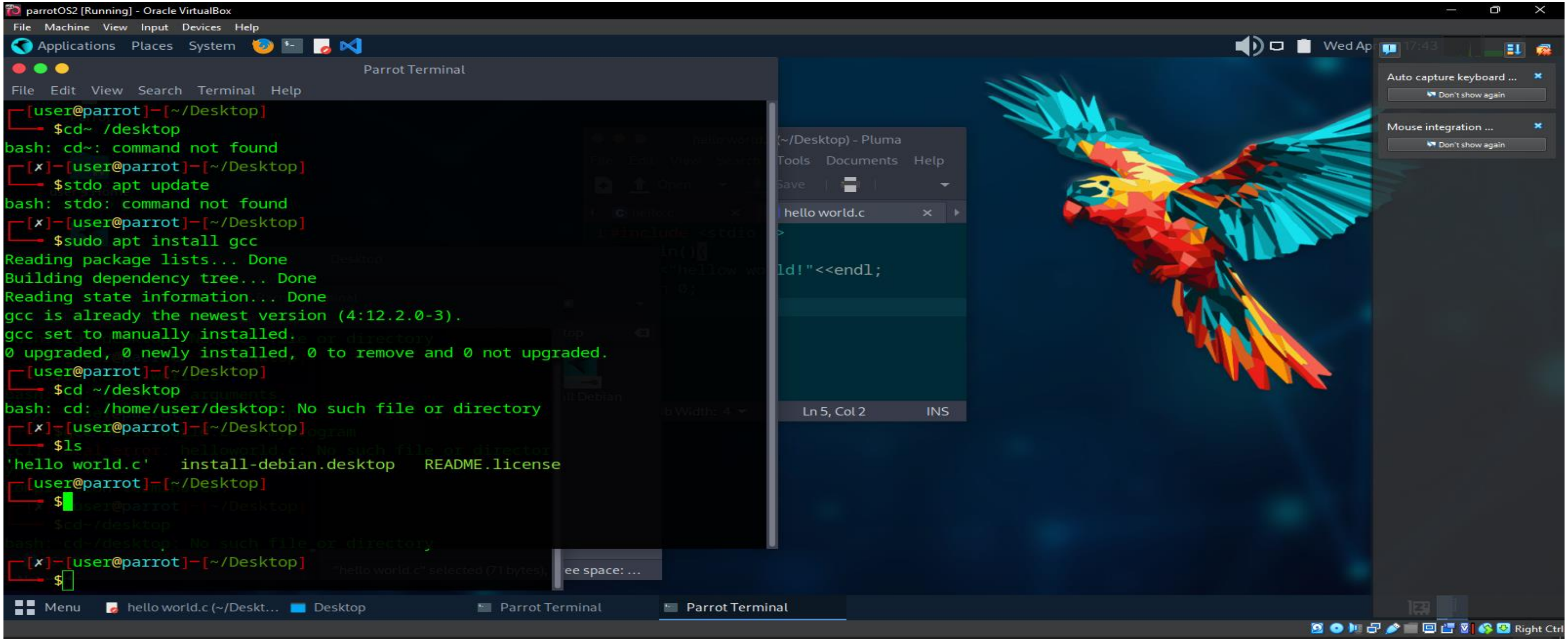
```
gcc set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
┌─[user@parrot]─[~/Desktop]
└──╼ $cd ~/desktop
bash: cd: /home/user/desktop: No such file or directory
┌─[✗]─[user@parrot]─[~/Desktop]
└──╼ $ls
'hello world.c'   install-debian.desktop   README.license
┌─[user@parrot]─[~/Desktop]
└──╼ $gcc helloworld.c -o helloworld
helloworld.c:2:1: warning: return type defaults to 'int' [-Wimplicit-int]
    2 | intmain(){
      | ^~~~~~~
helloworld.c: In function 'intmain':
helloworld.c:3:1: error: 'cout' undeclared (first use in this function)
    3 | cout<<"hellow world!"<<endl;
      | ^~~~
helloworld.c:3:1: note: each undeclared identifier is reported only once for e
ach function it appears in
helloworld.c:3:24: error: 'endl' undeclared (first use in this function)
    3 | cout<<"hellow world!"<<endl;
      |                        ^~~~
┌─[✗]─[user@parrot]─[~/Desktop]
└──╼ $
└──╼ $cd~/desktop
bash: cd~/desktop: No such file or directory
```

Step 4: Navigate to the File Location and compile program

- ❖Terminal : bash:
- ✓ cd ~/Desktop
- ✓ls
- ❖Now compile using GCC: bash:
- ✓gcc hello_world.c -o hello_world
- ❖Run the Program :Execute the compiled : bash:
- ✓./hello_world

Pic 5.C finish implementation of hello_worled program



```
┌─[user@parrot]─[~/Desktop]
└──╼ $cd~ /desktop
bash: cd~: command not found
┌─[✗]─[user@parrot]─[~/Desktop]
└──╼ $stdo apt update
bash: stdo: command not found
┌─[✗]─[user@parrot]─[~/Desktop]
└──╼ $sudo apt install gcc
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
gcc is already the newest version (4:12.2.0-3).
gcc set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
┌─[user@parrot]─[~/Desktop]
└──╼ $cd ~/desktop
bash: cd: /home/user/desktop: No such file or directory
┌─[✗]─[user@parrot]─[~/Desktop]
└──╼ $ls
'hello world.c'   install-debian.desktop   README.license
┌─[user@parrot]─[~/Desktop]
└──╼ $

┌─[✗]─[user@parrot]─[~/Desktop]
└──╼ $
```

RECOMMENDATIONS

- Make sure your virtual machine has at least 15 GB of disk space and 4 GB of RAM to avoid installation errors.
- Make sure you download the proper edition of Parrot OS (Security, Home, etc.) based on your needs.
- This caused issues during installation, so use simple names with no special characters or spaces.
- The process can be slow, especially on low-end systems, but it's worth the wait.
- This helps in understanding and also makes your report more complete and professional.

CONCLUSION

- Working on this project gave me hands-on experience with installing and using Parrot OS in a virtual environment.
- Throughout the process, I learned not only the technical steps but also how to troubleshoot real problems, like system requirements, partitioning errors, and ISO setup issues.
- These challenges were frustrating at times, but they helped me understand how operating systems work at a deeper level.

Conclusion Cont.......

- Parrot OS stood out as a flexible and secure platform, especially useful for cybersecurity students and professionals.
- It combines powerful security tools with general-use features, making it useful for both daily tasks and ethical hacking.
- Overall, this project was a valuable learning journey that improved my technical skills and made me more confident in working with Linux-based systems.

REFERENCES

- Parrot OS Official : https://www.parrotsec.org

  Information about different Parrot editions, features, and system requirements.

- Parrot OS Documentation : https://docs.parrotsec.org

  Step-by-step guides, installation instructions, and FAQs.

- VirtualBox Official: https://www.virtualbox.org

  For learning about virtualization and setting up VMs.

- Geeks for Geeks – System Calls in Operating Systems: https://www.geeksforgeeks.org/introduction-of-system-call/

  Easy explanation of what system calls are and how they work in Linux.