

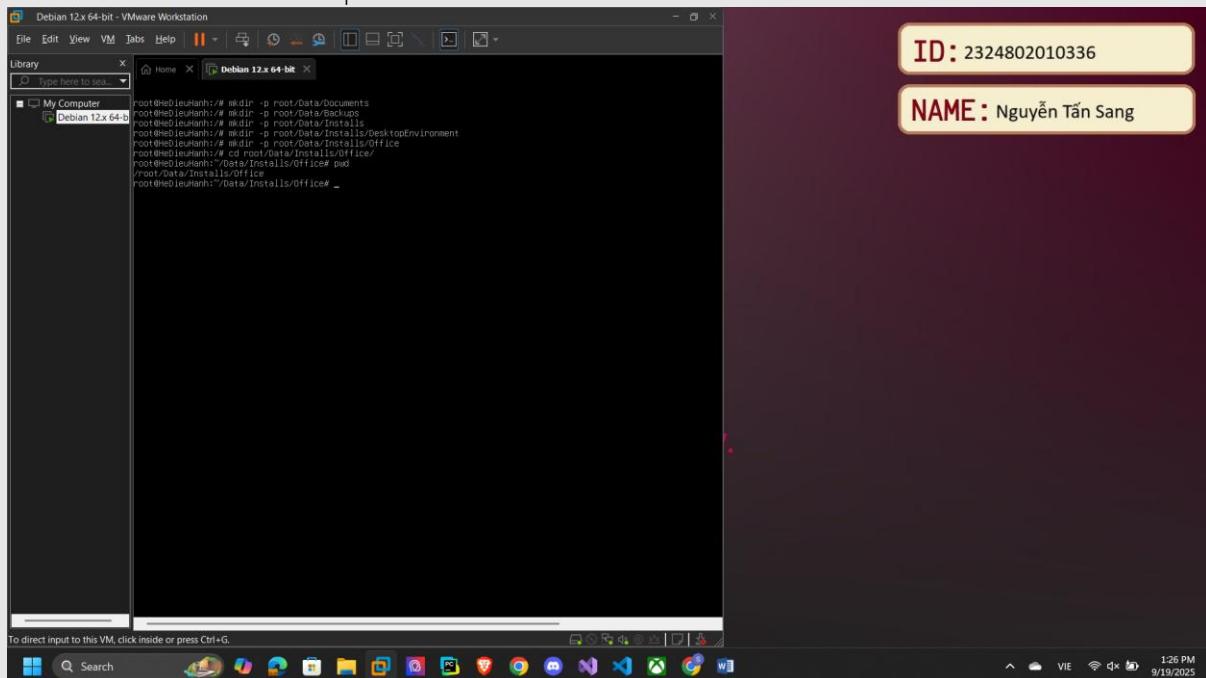
Mỗi vị trí chứa cụm từ **replace me** tương ứng 01 hoặc NHIỀU hình ảnh, hãy thực hiện yêu cầu và dán 01/các ảnh chụp toàn màn hình kết quả đạt được và mô tả tóm tắt ý nghĩa dưới mỗi hình ảnh. Thay "(Thực hiện theo yêu cầu trên)" bằng lời giải thích cho hình chụp đó (thường là nghĩa tiếng việt dịch được theo yêu cầu tiếng anh), hoặc giải thích ngắn gọn hơn theo ý sinh viên, không giải thích **-25%** điểm câu đó

1. VI(VIM) and NANO (5 Points):

After VM successfully startup , login as root

- 1.1 Make directory and subdirectory as below structure by using “mkdir”. If you already created, show me the result when you go into the last subdirectory in the structure below and use the “pwd” command.

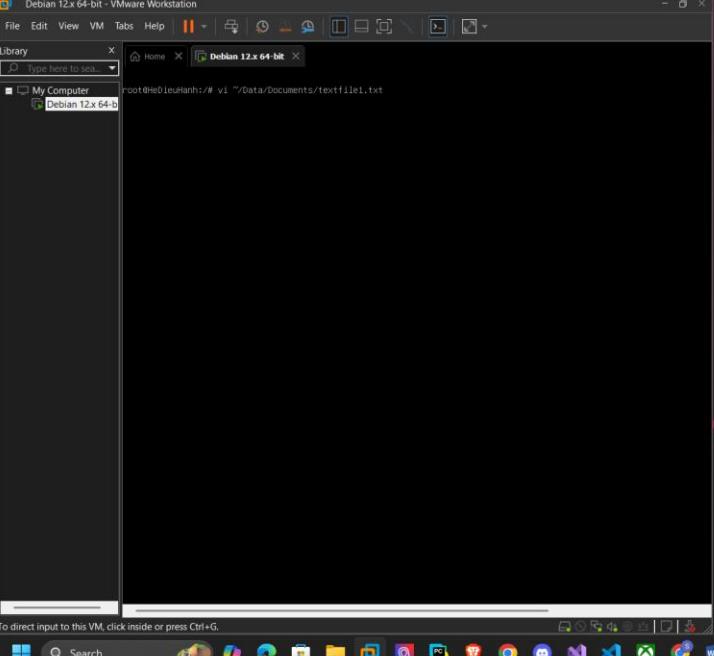
```
/---- root  
|---- Data  
|---- Documents  
|---- Backups  
|---- Installs  
|---- DesktopEnvironment  
|---- Office
```



1.

vi (màn hình sau khi thực hiện tạo các thư mục theo cấu trúc)

1.2 Creating a new file with file name `textfile1.txt` in `Documents` folder by using “vi” command / show me the command before execute.

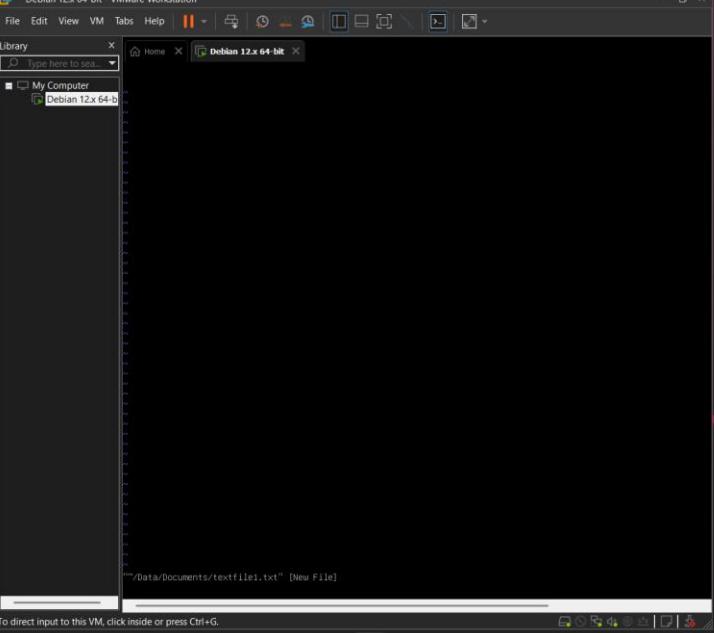


The screenshot shows a terminal window titled "Debian 12x 64-bit - VMware Workstation". The command "root@HebieuHanh:~# vi ~/Data/Documents/textfile1.txt" is being typed into the terminal. The terminal window has a dark background and light-colored text. To the right of the terminal, there are two yellow rounded rectangular boxes containing the text "ID: 2324802010336" and "NAME: Nguyễn Tấn Sang".

2.

(màn hình sau khi thực hiện câu lệnh trước khi thực thi)

1.3 When vi starts up, what is default mode ?

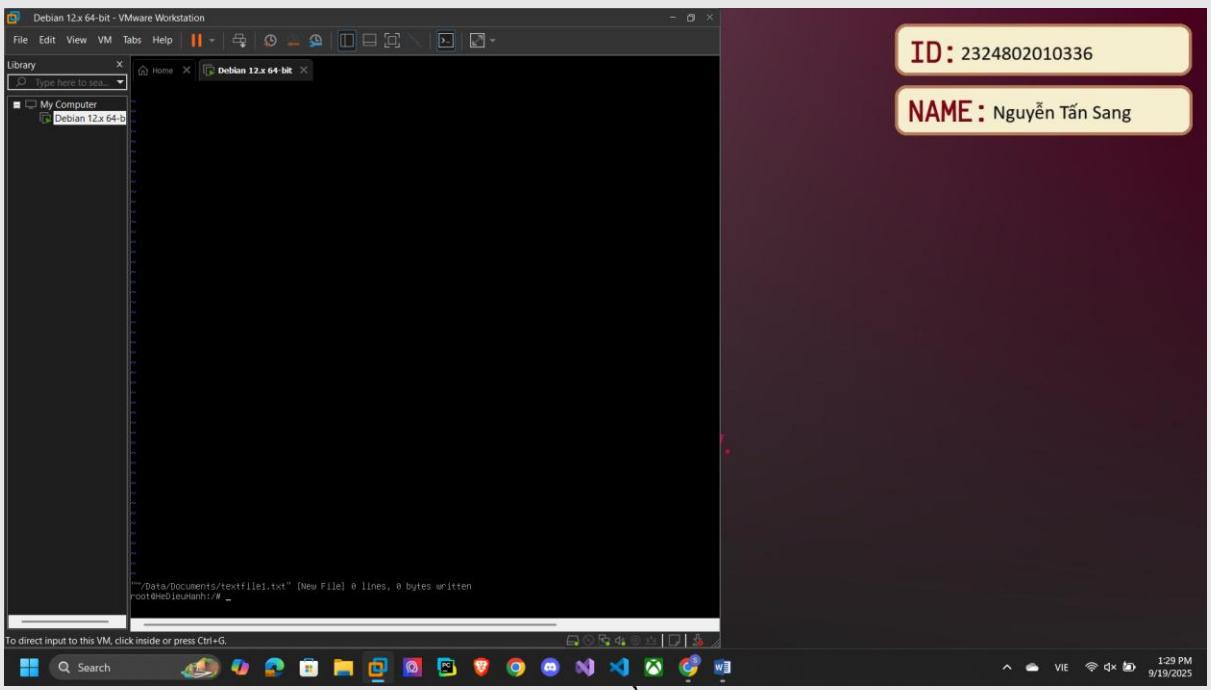


The screenshot shows a terminal window titled "Debian 12x 64-bit - VMware Workstation". The command "root@HebieuHanh:~# vi ~/Data/Documents/textfile1.txt" has been run, and the file has been created. The terminal window has a dark background and light-colored text. To the right of the terminal, there are two yellow rounded rectangular boxes containing the text "ID: 2324802010336" and "NAME: Nguyễn Tấn Sang".

3.

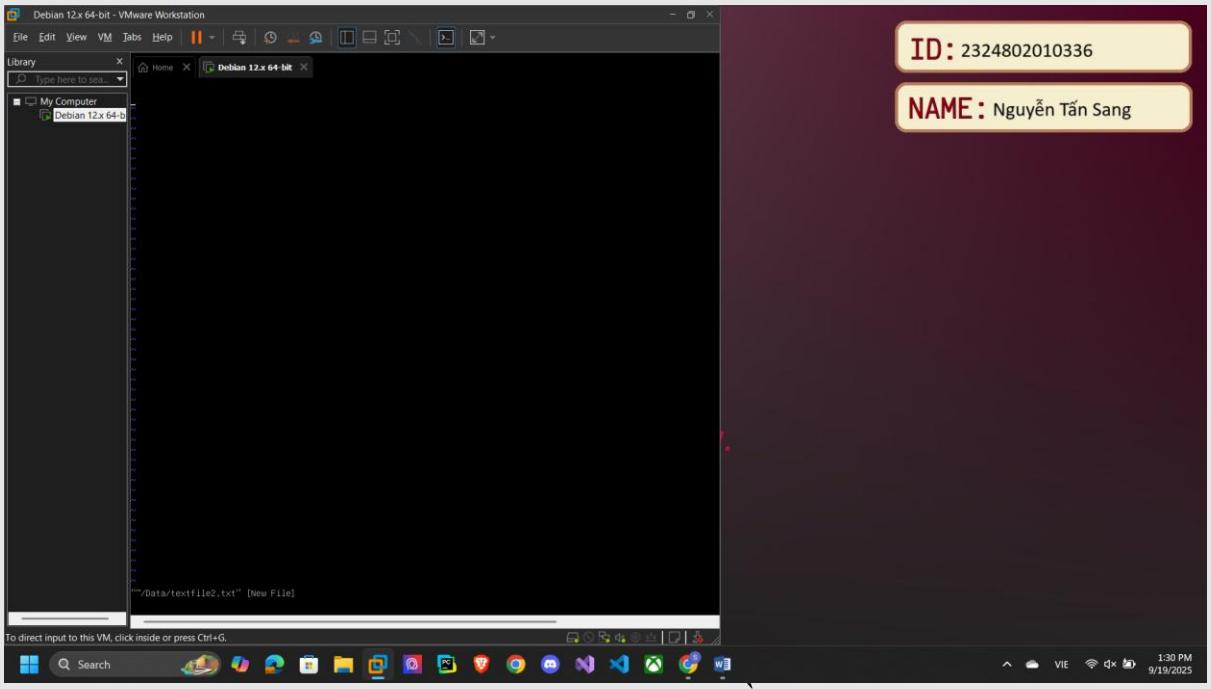
(màn hình sau khi khởi động vi, Và đang ở chế độ command mode)

1.4 Leave blank content for `textfile1.txt`, using command to save and exit vi editor



4. (màn hình sau khi thực hiện thoát khỏi vim bằng :wq)

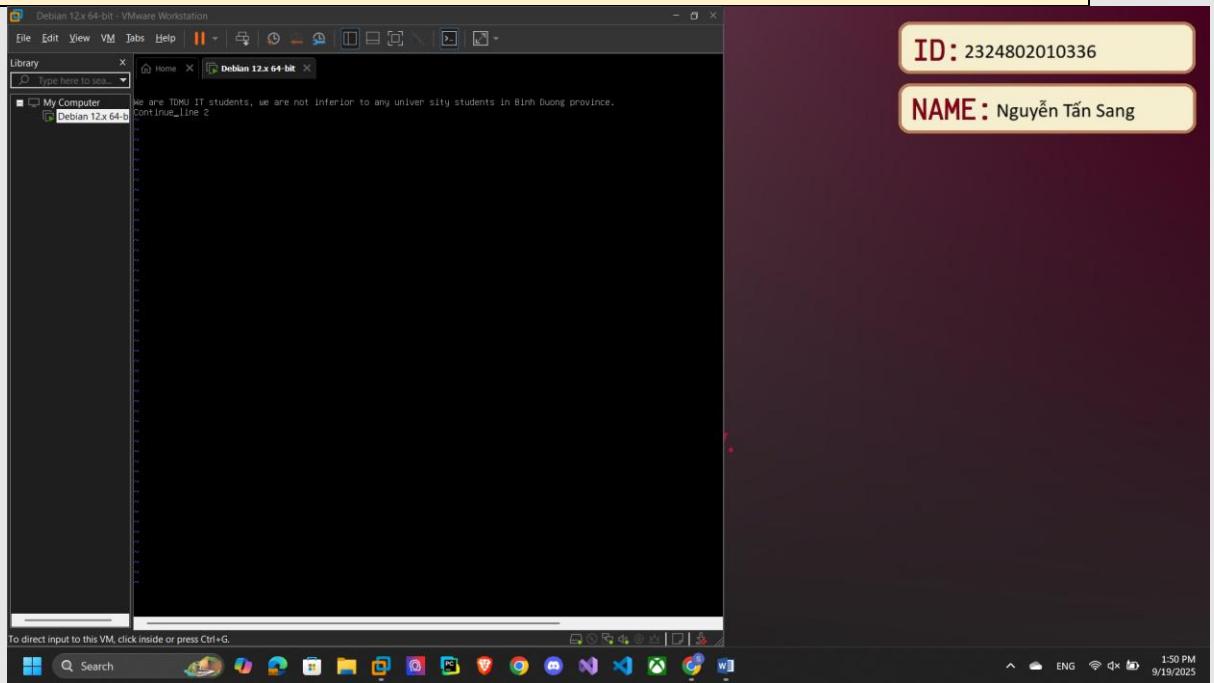
1.5 Creating a new file with file name `textfile2.txt` in `Data` folder by using “vi” command:



5. (màn hình sau khi thực hiện tạo file mới trong Data bằng lệnh “vi”)

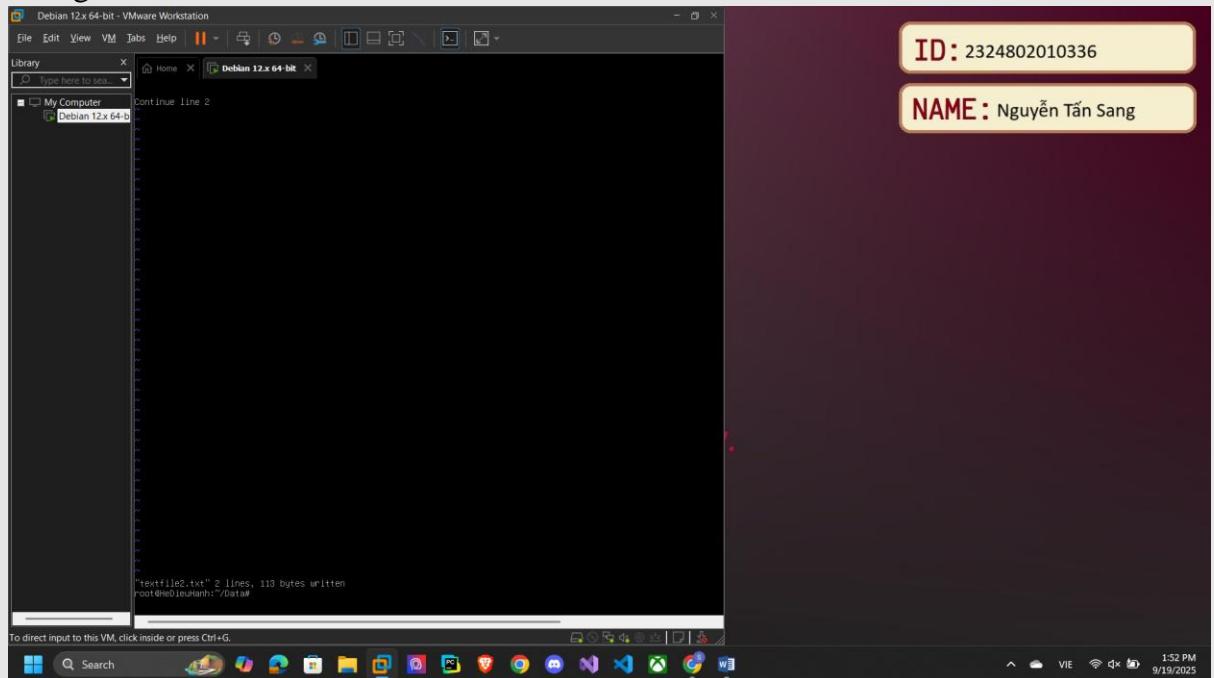
1.6 Insert new content for `textfile2.txt` as bellow:

```
We are TDMU IT students, we are not inferior to any  
university students in Binh Duong province.  
Continue line 2
```



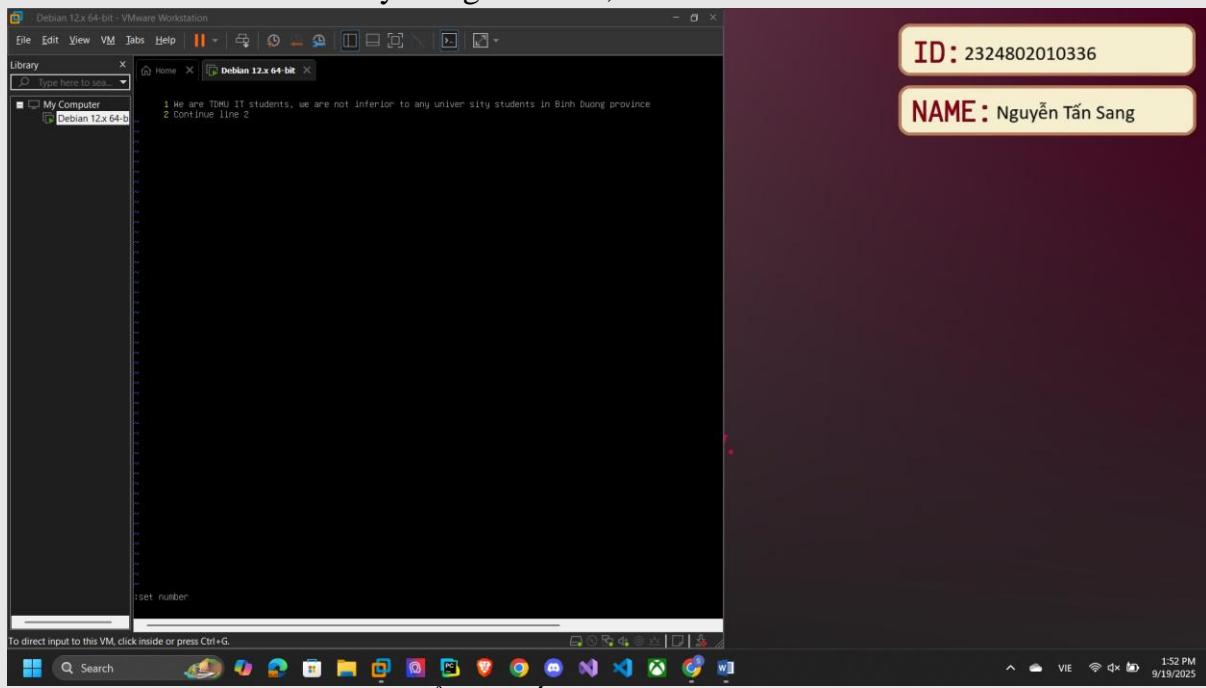
6. (màn hình sau khi thực hiện thêm nội dung vào file text2.txt)

1.7 Using command to save and exit vi editor:



7. (màn hình sau khi thực hiện thoát và lưu)

1.8 Edit `textfile2.txt` by using vi editor, show line number:



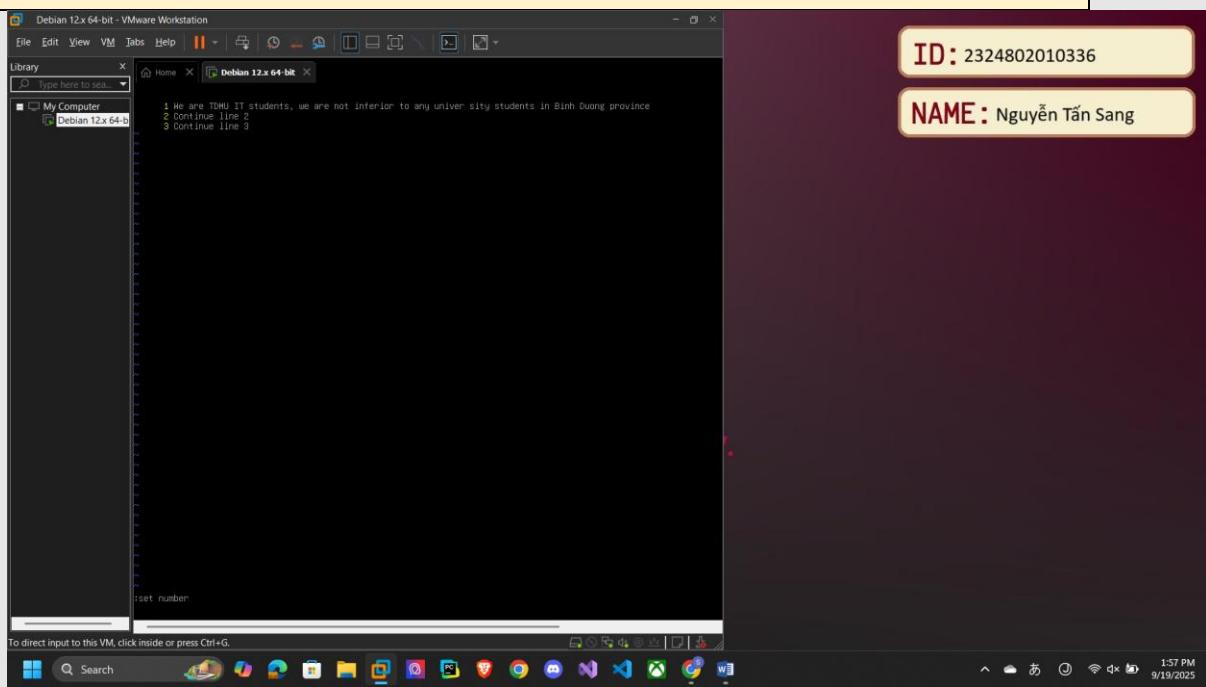
```
1 We are TMU IT students, we are not inferior to any university students in Bình Dương province
2 Continue line 2
3 Continue line 3
```

8.

(màn hình sau khi thực hiện hiển thị số dòng)

1.9 In vi editor (textfile2.txt), copy line number 2 to new line (line number 3), 3change new content in line 3 as below:

Continue line 3

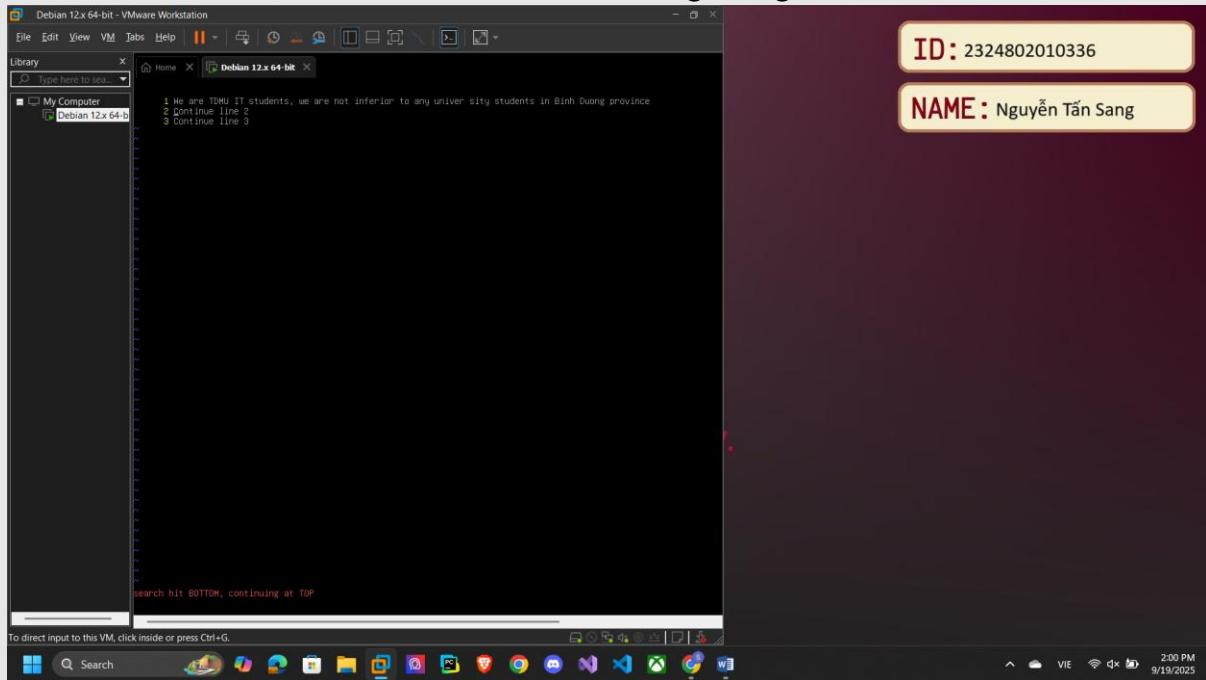


```
1 We are TMU IT students, we are not inferior to any university students in Bình Dương province
2 Continue line 2
3 Continue line 3
```

9.

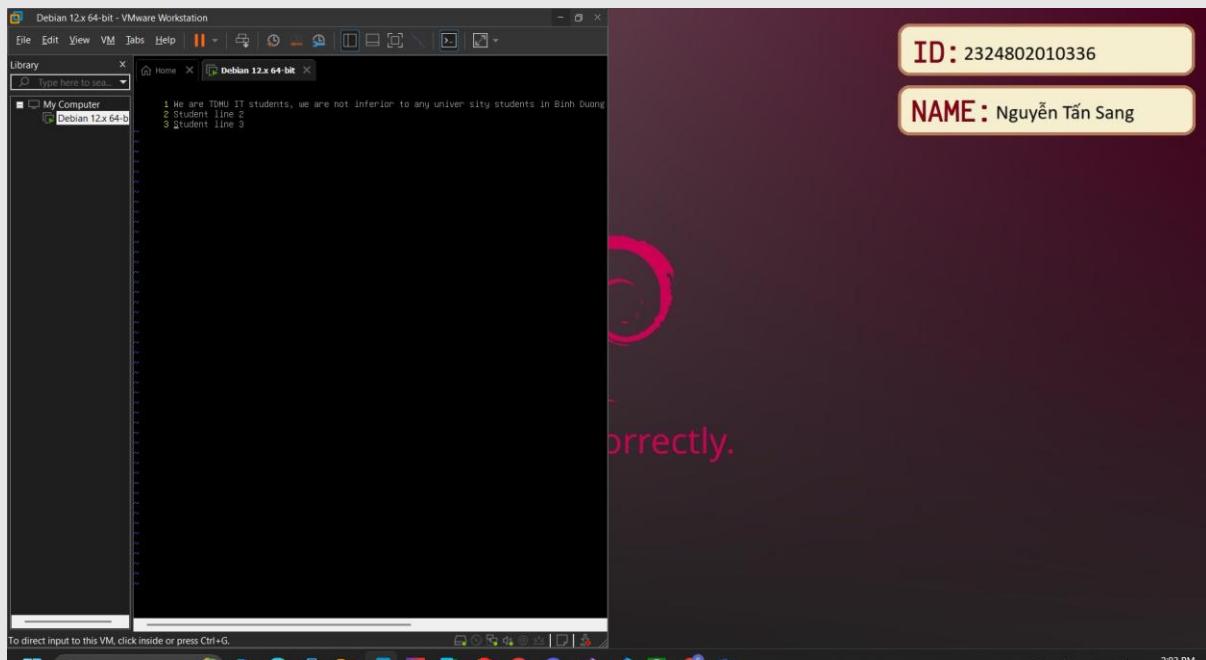
(màn hình sau khi thực hiện copy dòng 2 sang dòng 3 và đổi lại nội dung)

1.10 In vi editor (textfile2.txt), how to searching string “Continue”? let’s do it.



(màn hình sau khi thực hiện tìm chuỗi “Continue” bằng lệnh /Continue)

1.11 In vi editor (textfile2.txt), replace all string “Continue” by string “Student”? let’s do it.



(màn hình sau khi thực hiện dùng :%s/Continue/Student/g để thay thế toàn bộ chuỗi Continue bằng Student)

1.12 In vi editor (textfile2.txt), how to remove line number 2 ? let's do it, save and exit. Show me what content in textfile2.txt with “cat” command

The screenshot shows a Linux desktop environment. On the left is a terminal window titled "Debian 12.x 64-bit - VMware Workstation". The terminal displays the following text:

```
"textfile2.txt" 2 lines, 112 bytes written
root@Debian:~/Data# cat textfile2.txt
We are TOU IT students, we are not inferior to any university students in Binh Duong province
Student file name: "textfile2.txt"
root@Debian:~/Data#
```

To direct input to this VM, click inside or press Ctrl+G.

The status bar at the bottom right shows:

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NAME: Nguyễn Tấn Sang
2:26 PM 9/19/2025

12.

(màn hình sau khi thực hiện xóa dòng 2 và dùng cả để hiện thị nội dung bằng cách ở chế độ Command và nhấn dd)

1.13 Creating a new file with file name `textfile3.txt` in `Documents` folder by using “nano” command:

The screenshot shows a Linux desktop environment. On the left is a terminal window titled "Debian 12.x 64-bit - VMware Workstation". The terminal displays the following text:

```
GNU nano 7.2
./root/Data/Documents/textfile3.txt
```

To direct input to this VM, click inside or press Ctrl+G.

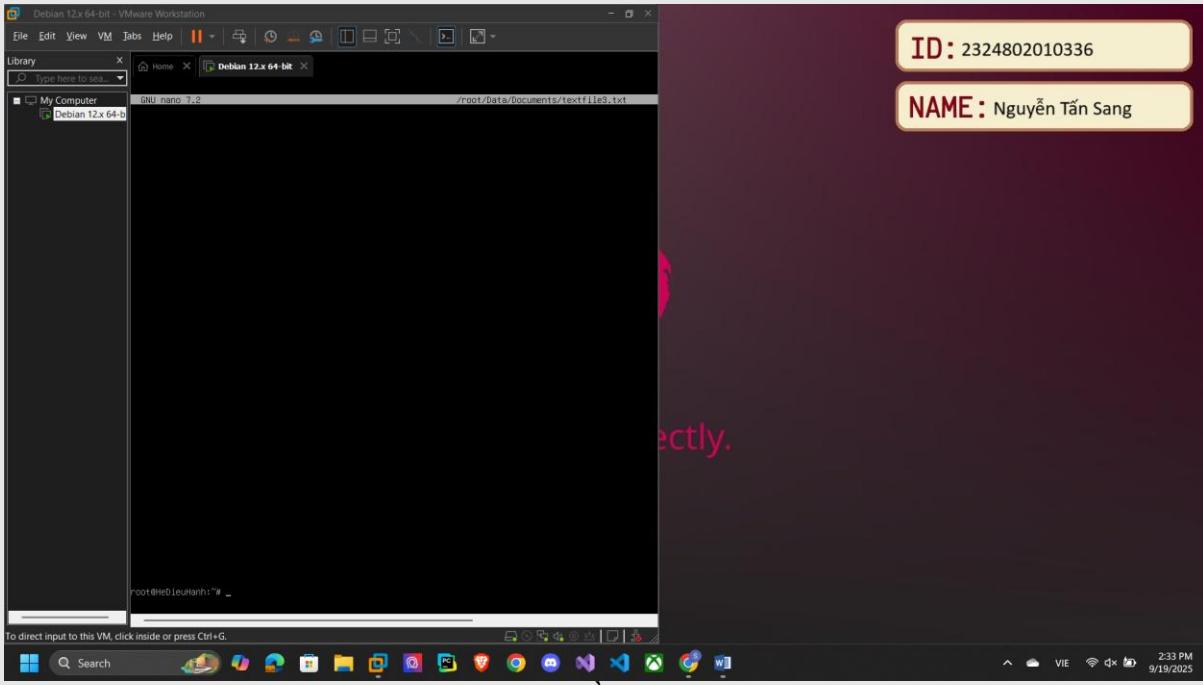
The status bar at the bottom right shows:

ID: 2324802010336
NAME: Nguyễn Tấn Sang
2:31 PM 9/19/2025

13.

(màn hình sau khi thực hiện tạo file mới bằng nano)

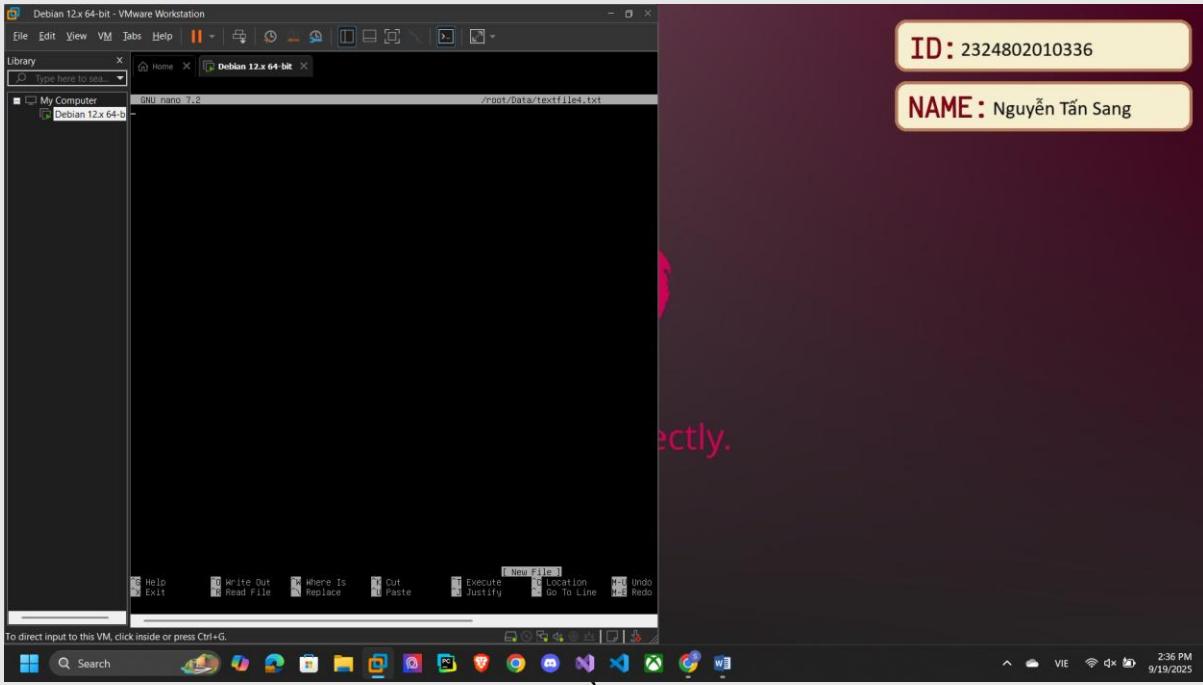
- 1.14 Similar to the requirement of step 1.4 but we are using `nano` for `textfile3.txt`



14.

(màn hình sau khi thực hiện thoát và lưu bằng ctrlO và ctrlX)

- 1.15 Creating a new file with file name `textfile4.txt` in `Data` folder by using “nano” command:



15.

(màn hình sau khi thực hiện tạo file mới bằng nano trong Data)

1.16 Similar to the requirement of step 1.6 but we are using `nano` for `textfile4.txt`

```
GNU nano 7.2
We are TOMU IT students, we are not inferior to any university students in Bình Dương province.
Continue line 2
```

To direct input to this VM, click inside or press Ctrl+G.

16. (màn hình sau khi thực hiện thêm nội dung vào file)

1.17 Similar to the requirement of step 1.7 but we are using `nano` for `textfile4.txt`

```
GNU nano 7.2
We are TOMU IT students, we are not inferior to any university students in Bình Dương province.
Continue line 2
```

To direct input to this VM, click inside or press Ctrl+G.

16. (màn hình sau khi thực hiện lưu và thoát)

1.18 Similar to the requirement of step 1.8 but we are using `nano` for `textfile4.txt`

The screenshot shows a terminal window titled "Debian 12.x 64-bit - VMware Workstation". The terminal is running the nano editor on the file "/root/Desktop/textfile4.txt". The content of the file is:
GNU nano 3.2 /root/Desktop/textfile4.txt
We are TOMU IT students, we are not inferior to any university students in Binh Duong province.
Continue line 2
Continue line 3
The terminal has a menu bar with options like File, Edit, View, VM, Tabs, Help, and a toolbar with icons for Cut, Copy, Paste, Undo, and Redo. A status bar at the bottom indicates "To direct input to this VM, click inside or press Ctrl+G." and shows the date and time as 9/19/2025 2:51 PM.

17. (màn hình sau khi thực hiện hiển thị số dòng trong nano)

1.19 Similar to the requirement of step 1.9 but we are using `nano` for `textfile4.txt`

The screenshot shows a terminal window titled "Debian 12.x 64-bit - VMware Workstation". The terminal is running the nano editor on the file "/root/Desktop/textfile4.txt". The content of the file is:
GNU nano 3.2 /root/Desktop/textfile4.txt
We are TOMU IT students, we are not inferior to any university students in Binh Duong province.
Continue line 2
Continue line 3
The terminal has a menu bar with options like File, Edit, View, VM, Tabs, Help, and a toolbar with icons for Cut, Copy, Paste, Undo, and Redo. A status bar at the bottom indicates "To direct input to this VM, click inside or press Ctrl+G." and shows the date and time as 9/19/2025 2:55 PM.

18. (màn hình sau khi thực hiện copy dòng 2 và dán ở dòng 3 kèm đổi nội)

1.20 Similar to the requirement of step 1.10 but we are using `nano` for `textfile4.txt`

```
GNU nano 2.2 /root/Desktop/textfile4.txt *
1 We are TOMU IT students, we are not inferior to any university students in Binh Duong province.
2 Continue line 2
3 Continue line 3
4
```

19.

(màn hình sau khi thực hiện tìm chuỗi “Continue”)

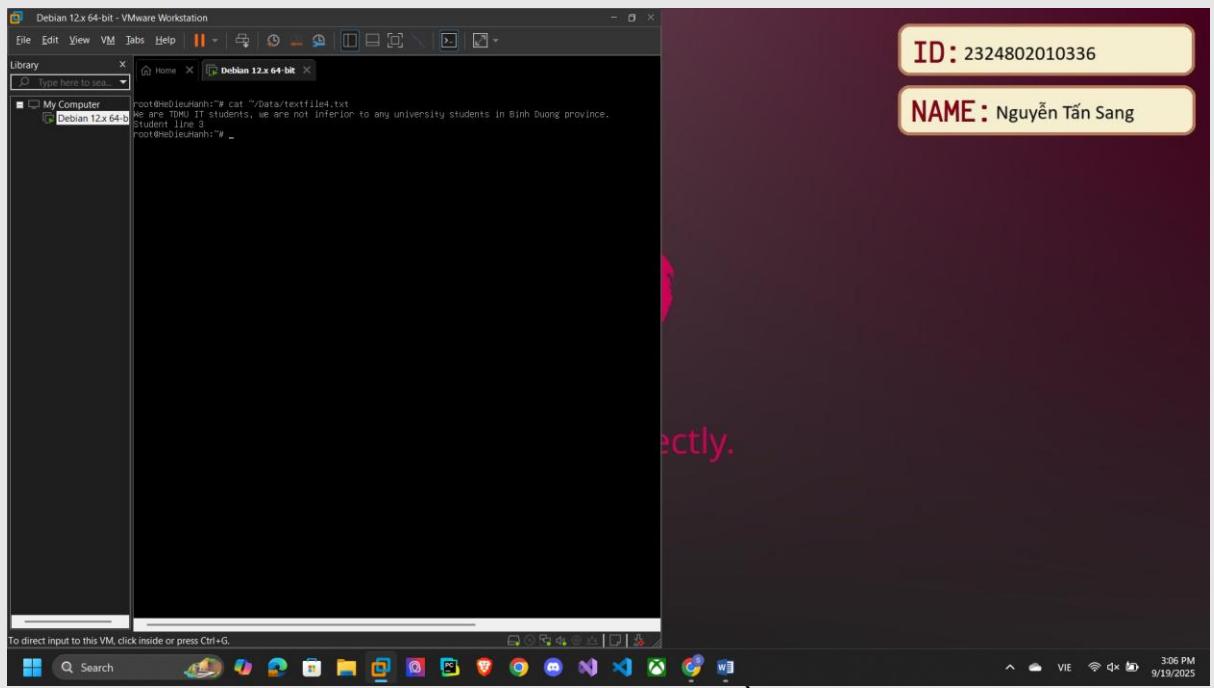
1.21 Similar to the requirement of step 1.11 but we are using `nano` for `textfile4.txt`

```
GNU nano 2.2 /root/Desktop/textfile4.txt *
1 We are TOMU IT students, we are not inferior to any university students in Binh Duong province.
2 Student line 2
3 Student line 3
4
```

20.

(màn hình sau khi thực hiện thay thế toàn bộ chuỗi “Continue” thành chuỗi “Student”)

1.22 Similar to the requirement of step 1.12 but we are using `nano` for `textfile4.txt`



21.

(màn hình sau khi thực hiện xóa dòng 2 trong nano bằng cách ctrl + K)

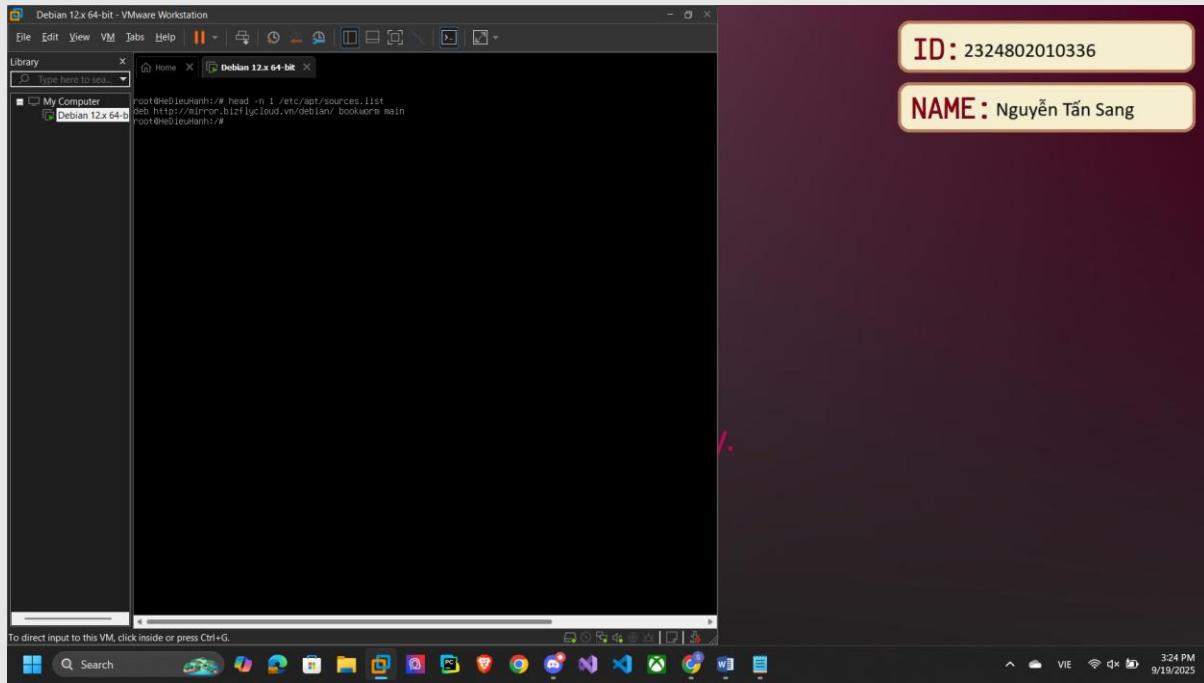
2. BASIC APPLICATION MANAGEMENT (5 Point):

After VM successfully startup , login as root

- 2.1 Make sure the contents of the /etc/apt/sources.list file are similar to the contents below (otherwise edit it), show me some first lines and then save and exit:

```
deb http://mirror.bizflycloud.vn/debian/ bookworm main
deb-src http://mirror.bizflycloud.vn/debian/ bookworm main
deb http://security.debian.org/debian-security bookworm-
security main
deb-src http://security.debian.org/debian-security
bookworm-security main
deb http://mirror.bizflycloud.vn/debian/ bookworm-updates
main
deb-src http://mirror.bizflycloud.vn/debian/ bookworm-
updates main
```

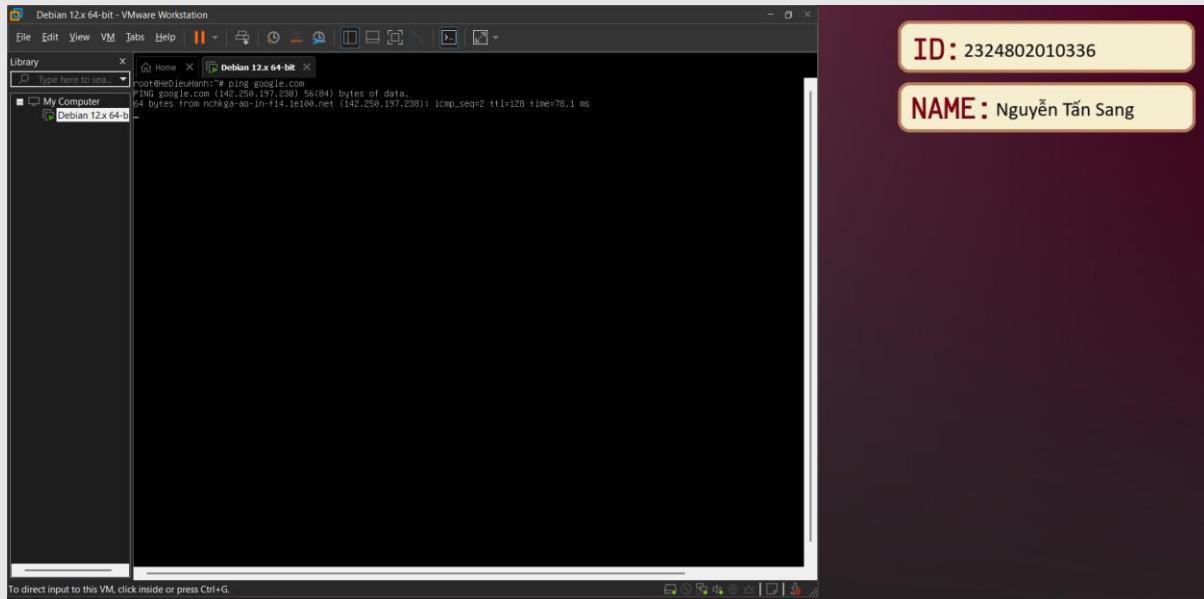
Note: The # symbol before any line is considered a comment and will be ignored when the related program or system reads this configuration file.



```
root@HeDieuHanh:~# head -n 1 /etc/apt/sources.list
deb https://mirr0r.blizflycloud.vn/debian/ bookworm main
root@HeDieuHanh:~#
```

22. (màn hình sau khi thực hiện theo yêu cầu trên)

2.2 Make sure the system is connected to the internet



```
root@HeDieuHanh:~# ping google.com
PING google.com (142.250.197.238) 56(84) bytes of data.
64 bytes from nchkg-a-2d-in-14.le100.net (142.250.197.238): icmp_seq=2 ttl=128 time=78.1 ms
```

23. (màn hình sau khi thực hiện ping google để kiểm tra có mạng hay không)

2.3 Update the link definition repository in step 2.1 using the “apt update” command.

- 24.

25.d

The screenshot shows a terminal window titled "Debian 12.x 64-bit" running on a VMware Workstation interface. The terminal displays the command "root@HeBieuHanhh:~# apt update" followed by a series of package retrieval logs from mirrors like "http://mirror.biflycloud.vn/debian/bookworm-updates InRelease" and "http://security.debian.org/debian-security/bookworm-security InRelease". The log ends with "Reading state information... Done" and "0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded". The desktop background features a pink circular logo.

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NAME: Nguyễn Tấn Sang

(màn hình sau khi thực hiện lệnh apt update)

2.4 Checking if unzip, 7zip, git, gcc applications are installed or not?

The screenshot shows a terminal window titled "Debian 12.x 64-bit" running on a VMware Workstation interface. The terminal displays the command "root@HeBieuHanhh:~# command -v gcc", followed by "command -v git", "command -v 7z", and "command -v unzip". All four commands return the path to their respective executables. The desktop background features a pink circular logo.

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26.

(màn hình sau khi thực hiện kiểm tra unzip, 7zip, git và gcc. Những cái trên chưa được cài đặt)

2.5 Install applications at the same time if not installed in step 2.4.

```
root@HebieuHanh:~# apt install -y unzip p7zip-full git gcc
Reading package lists... Done
Building dependency tree... Done
The following packages were automatically installed and are no longer required:
  lib++-12 libstdc++-12-dev
Use 'apt autoremove' to remove them.
The following additional packages will be installed:
  libbz2-1.1 libcurl4-openssl-dev libexpat1 libgcc1 libgmp1 liblzma5
Suggested packages:
  libbz2-1.1-dev libcurl4-openssl-dev-dev libexpat1-dev libgcc1-dev libgmp1-dev liblzma5-dev
The following NEW packages will be installed:
  git git-mediawiki1 git-svn p7zip-rar zip
0 upgraded, 6 newly installed, 0 to remove and 166 not upgraded.
Need to get 0.996 kB of archives.
After this operation, 52.2 kB of additional disk space will be used.
Get:1 http://mirr0r.biflycloud.vn/debian bookworm/main amd64 git amd64 4:12.2.0-3 [5.216 kB]
Get:2 http://mirr0r.biflycloud.vn/debian bookworm/main amd64 git amd64 12.30.5-0+deb12u2 [7.02 kB]
Get:3 http://mirr0r.biflycloud.vn/debian bookworm/main amd64 p7zip amd64 15.02+dfsg-8 [881 kB]
Get:4 http://mirr0r.biflycloud.vn/debian bookworm/main amd64 unZip amd64 6.0-28 [166 kB]
Fetched 0.996 kB in 2s (4.77 kB/s)
Selecting previously unselected package git.
(Reading database ... 100000 files and directories currently installed.)
Preparing to unpack .../git_4:12.2.0-3_amd64.deb ...
Unpacking git (4:12.2.0-3) ...
Selecting previously unselected package git-mediawiki1.
Preparing to unpack .../git-mediawiki1_12.30.5-0+deb12u2_amd64.deb ...
Unpacking git-mediawiki1 (12.30.5-0+deb12u2) ...
Selecting previously unselected package git-svn.
Preparing to unpack .../git-svn_1.1.2-1_amd64.deb ...
Unpacking git-svn (1.1.2-1) ...
Selecting previously unselected package p7zip.
Preparing to unpack .../p7zip_15.02+dfsg-8_amd64.deb ...
Unpacking p7zip (15.02+dfsg-8) ...
Selecting previously unselected package p7zip-full.
Preparing to unpack .../p7zip-full_15.02+dfsg-8_amd64.deb ...
Unpacking p7zip-full (15.02+dfsg-8) ...
Selecting previously unselected package unzip.
Preparing to unpack .../unZip_6.0-28_amd64.deb ...
Unpacking unZip (6.0-28) ...
Setting up git (4:12.2.0-3) ...
Setting up git-mediawiki1 (12.30.5-0+deb12u2) ...
Setting up git-svn (1.1.2-1) ...
Setting up p7zip (15.02+dfsg-8) ...
Setting up p7zip-full (15.02+dfsg-8) ...
Processing triggers for man-db (3.7.0+mu1) ...
Processing triggers for man-db (3.11.2-2) ...
root@HebieuHanh:~#
```

VMware Tools enables many features and improves mouse movement, video and performance. Log in to the guest operating system and click "Install Tools".

To direct input to this VM, click inside or press Ctrl+G.

5:16 PM 9/19/2025

(màn hình sau khi thực hiện tải những ứng dụng yêu cầu ở bước 2.4)

2.6 Try checking if the "killall" tool is available, if not install it

```
root@HebieuHanh:~# command -v killall
/usr/bin/killall
root@HebieuHanh:~# killall --version
Killall (Psmisc) 23.6
Copyright (C) 1993-2022 Werner Heimesberger and Craig Small
Psmisc comes with ABSOLUTELY NO WARRANTY.
This is free software, and you are welcome to redistribute it under
the terms of the GNU General Public License.
For more information about these matters, see the files named COPYING.
root@HebieuHanh:~#
```

Psmisc comes with ABSOLUTELY NO WARRANTY.
This is free software, and you are welcome to redistribute it under
the terms of the GNU General Public License.
For more information about these matters, see the files named COPYING.

VMware Tools enables many features and improves mouse movement, video and performance. Log in to the guest operating system and click "Install Tools".

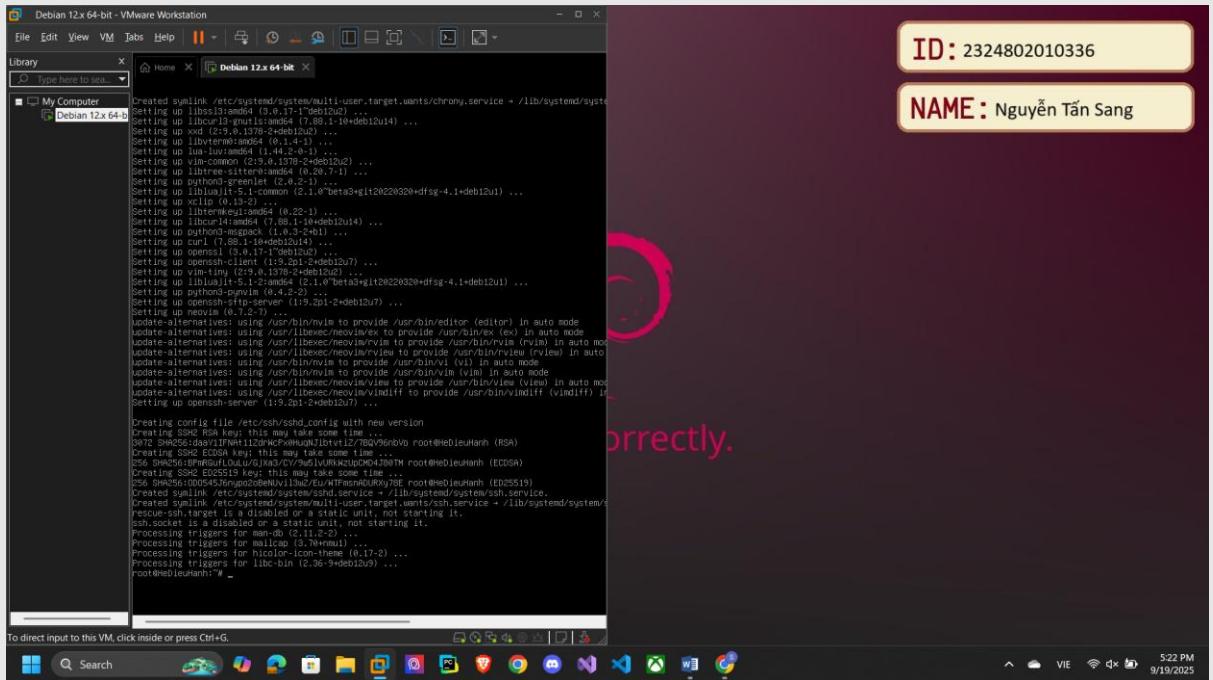
To direct input to this VM, click inside or press Ctrl+G.

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27.

(màn hình sau khi thực hiện kiểm tra killall và thấy đã có)

2.7 Uninstall "nano" and install "neovim", "chrony", "openssh-server", "curl" applications, explain the meaning of newly installed applications



28.

(màn hình sau khi thực hiện xóa nano và cài những ứng dụng trên.

Giải thích:

Neovim là trình soạn thảo văn bản

Chrony là dịch vụ đồng bộ thời gian hệ thống

Openssh-server: cho phép mình truy cập từ xa vào máy qua giao thức SSH

Curl là công cụ dòng lệnh để gửi và nhận dữ liệu qua nhiều giao thức khác nhau)

2.8 Install “zsh” applications, explain the meaning of newly installed applications

```

root@Debian12x:~# apt install -y zsh
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  libzsh3 zsh-common
0 upgraded, 2 newly installed, 0 to remove and 150 not upgraded.
Need to get 5,596 kB of archives.
After this operation, 15.0 MB of additional disk space will be used.
Get:1 http://mirror.bifizycloud.vn/debian bookworm/main amd64 libzsh3 amd64 5.9-4+deb10u15 [541 kB]
Get:2 http://mirror.bifizycloud.vn/debian bookworm/main amd64 zsh-common all 5.9-4+deb10u15 [907 kB]
Fetched 5,596 kB in 2s (3,586 kB/s)
Selecting previously unselected package libzsh3:amd64.
(Reading database... 863 files and directories currently installed.)
Preparing to unpack .../libzsh3_5.9-4+deb10u15_amd64.deb ...
Unpacking libzsh3:amd64 (5.9-4+deb10u15) ...
Selecting previously unselected package zsh-common.
Preparing to unpack .../zsh-common_5.9-4+deb10u15_all.deb ...
Unpacking zsh-common (5.9-4) ...
Selecting previously unselected package zsh.
Preparing to unpack .../zsh_5.9-4+deb10u15_amd64.deb ...
Unpacking zsh (5.9-4) ...
Setting up zsh-common (5.9-4) ...
Setting up libzsh3:amd64 (5.9-4+deb10u15) ...
Setting up zsh (5.9-4) ...
Processing triggers for man-db (2.11.2-2) ...
Processing triggers for deb�utils (5.7-0.5~deb10u1) ...
Processing triggers for libc-bin (2.36-9+deb10u9) ...
root@Debian12x:~#

```

To direct input to this VM, click inside or press Ctrl+G.

5:25 PM 9/19/2025

29.

(màn hình sau khi thực hiện tải zsh. zsh là trình thông dịch (shell), giúp thao tác dễ và nhanh hơn trên terminal)

2.9 Install "Oh-My-Zsh" applications, and change default linux shell to Oh-My-Zsh

```

root@Debian12x:~# curl -fsSL https://raw.githubusercontent.com/ohmyzsh/ohmyzsh/master/tools/install.sh | sh
remote: Enumerating objects: 1453, done.
remote: Counting objects: 100% (1453/1453), done.
remote: Compressing objects: 100% (1136/1136), done.
remote: Total 1453 (delta 43), reused 1396 (delta 40), pack-reused 0 (from 0)
Receiving objects: 100% (1453/1453), 9.29 MB | 6.43 MB/s, done.
Resolving deltas: 100% (43/43), done.
From https://github.com/ohmyzsh/ohmyzsh
 * [new branch] master >--> origin/master
branch 'master' set up to track 'origin/master'.
Already on 'master'
root@Debian12x:~# 

[oh my zsh] Using the Oh My Zsh template file and adding it to /root/.zshrc.

[oh my zsh] Would you like to change your default shell to zsh? [Y/n] y
Changing your shell to /usr/bin/zsh...
Shell successfully changed to '/usr/bin/zsh'.

[oh my zsh] ....is now installed!

Before you scream Oh My Zsh! look over the ".zshrc" file to select plugins, themes, and options.

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Join our Discord community: https://discord.gg/ohmyzsh
Get stickers, t-shirts, coffee mugs and more: https://shop.planetargon.com/collections/oh-my-zsh

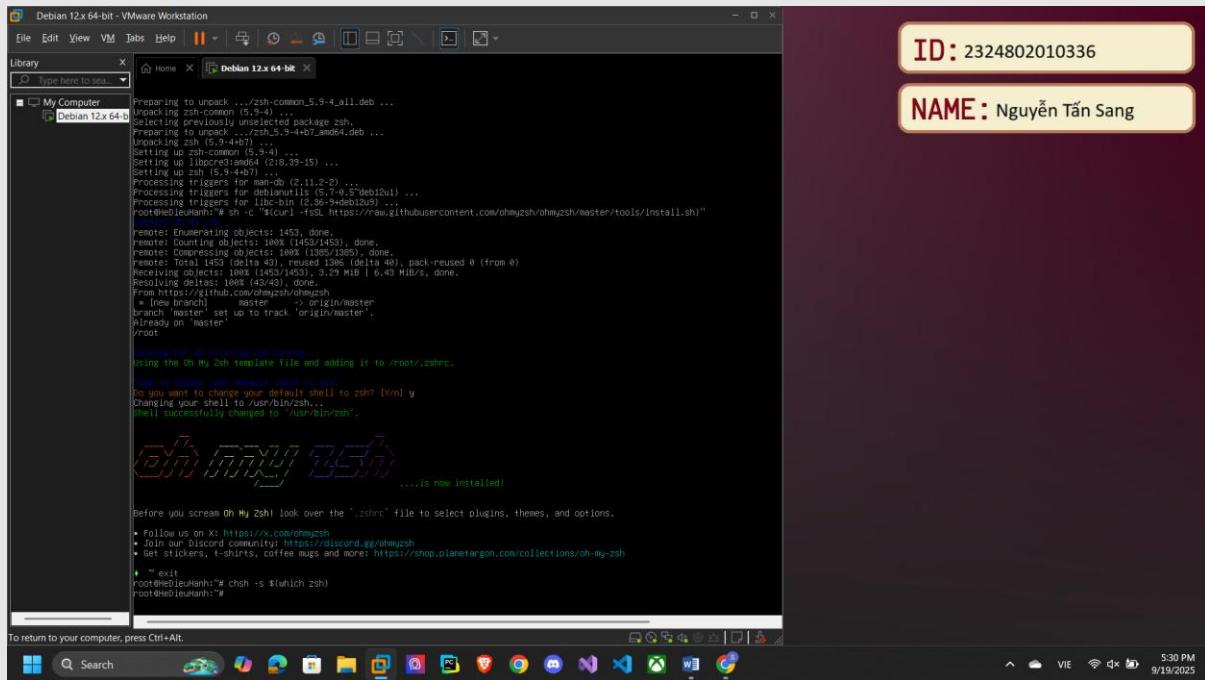
```

To direct input to this VM, click inside or press Ctrl+G.

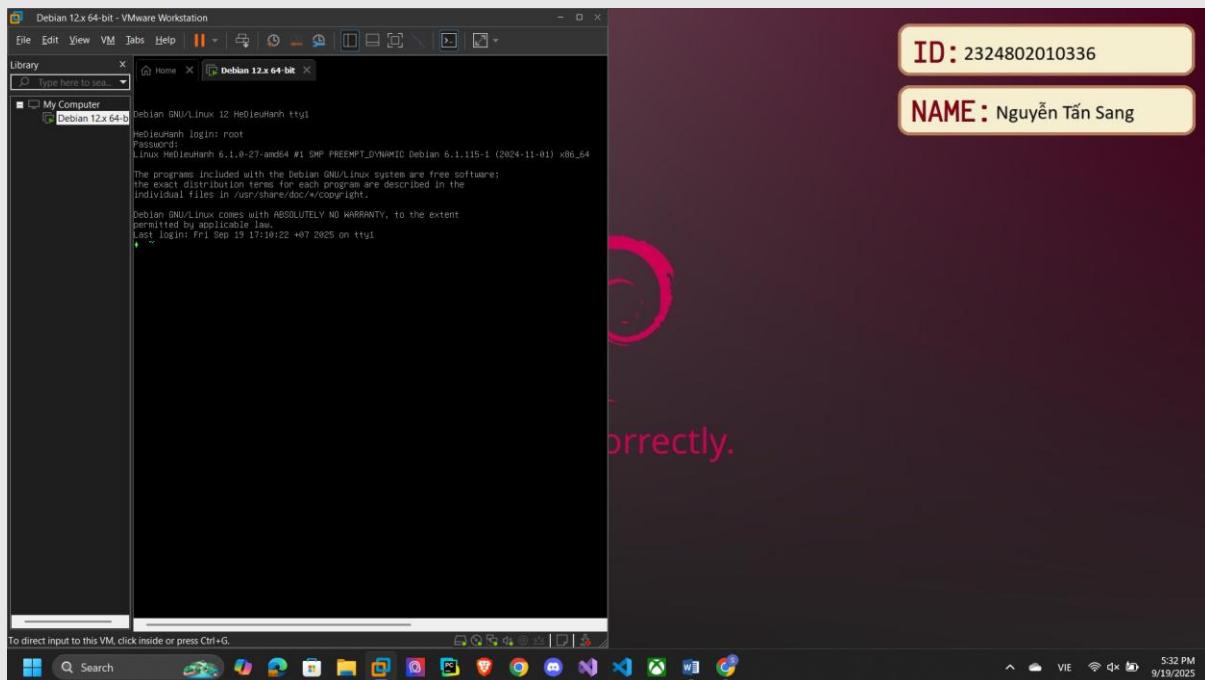
5:29 PM 9/19/2025

30.

(màn hình sau khi thực hiện tải xong ohmyzsh)



(màn hình sau khi thực hiện đổi ohmyzsh làm shell mặc định)



(màn hình sau khi đăng nhập lại và ohmyzsh đã thay thế bash trở thành shell mặc định)