



Institute of Technology of Cambodia
Department of Information Technology
and communication



Operating System

Name of students

1. Pheng Menghour

ID of students

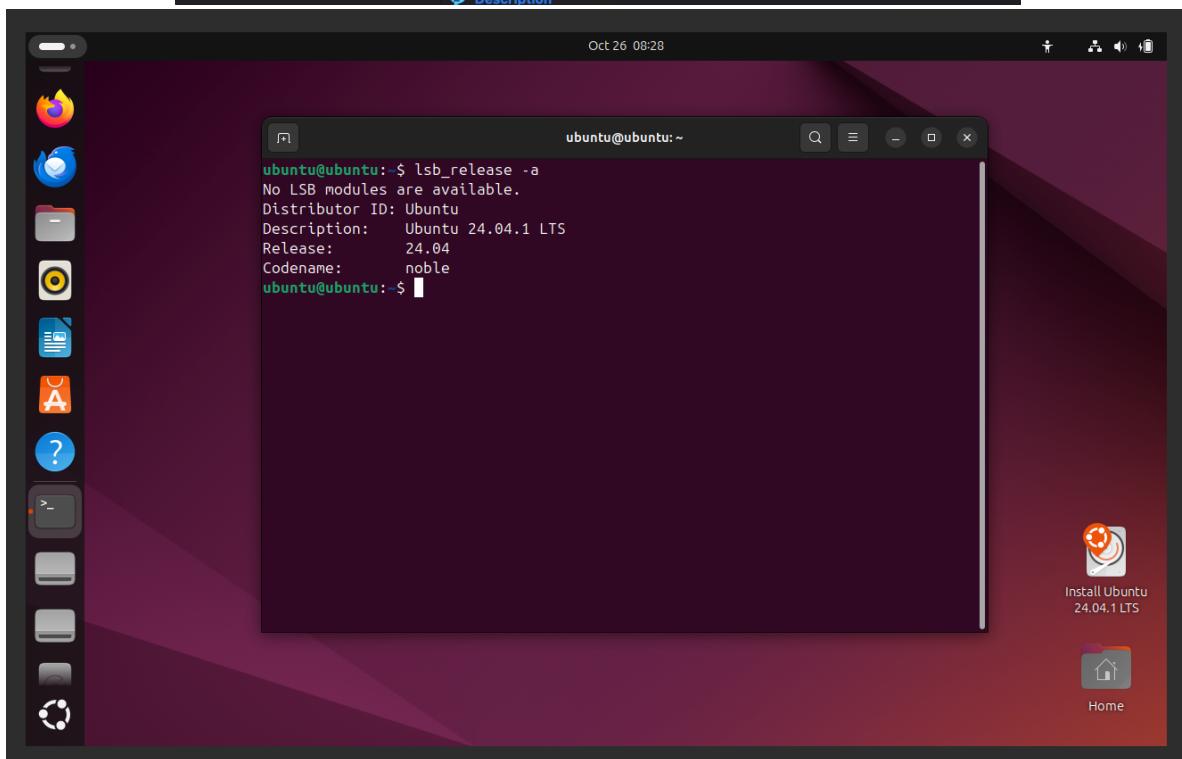
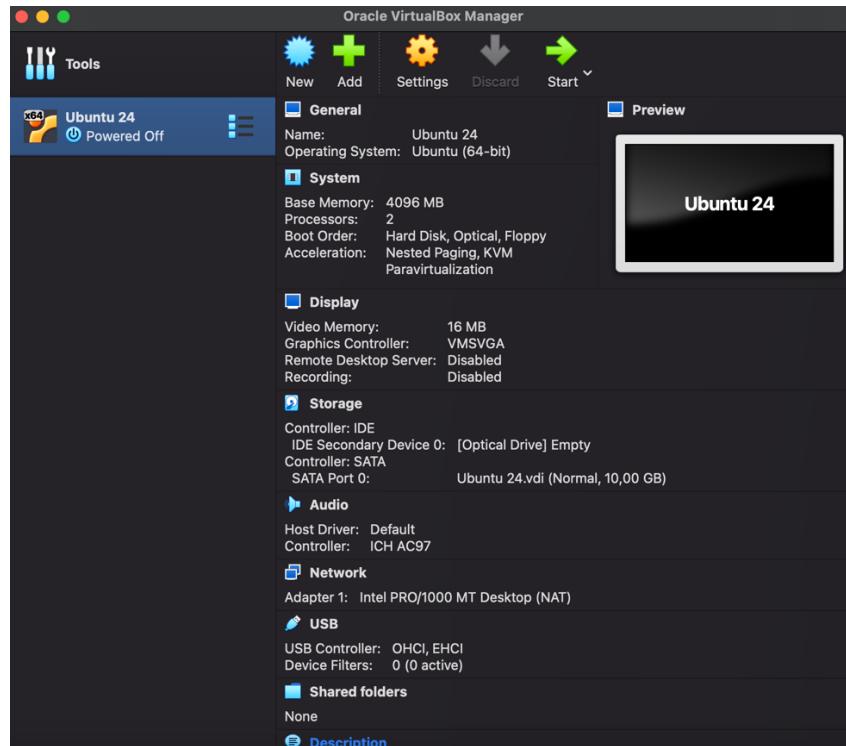
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Academic Year 2024-2025

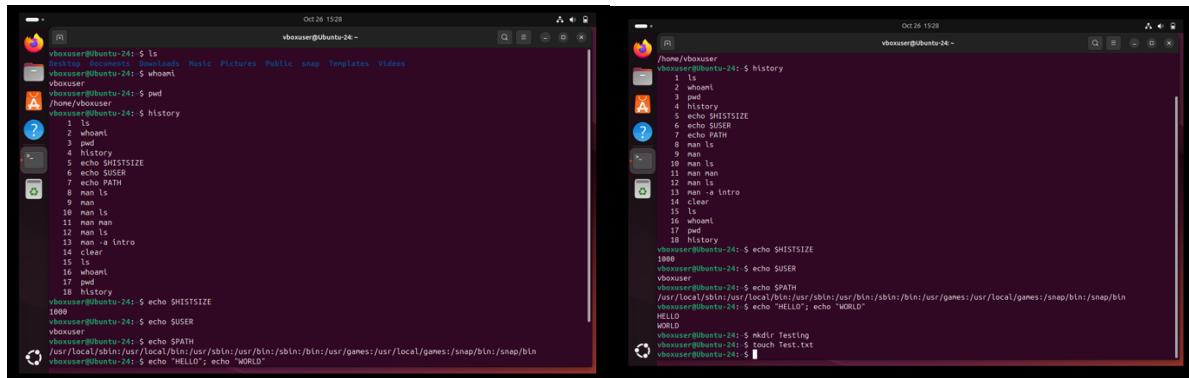
TP1

1. You are required to have an **Ubuntu operating system**.
 - a) If your PC is operated by any Ubuntu, take a screenshot of “About” which includes name and version of your current Ubuntu.
 - b) If your PC is operated by any Microsoft Windows or Apple macOS, please use any virtual machine tool to install **Ubuntu**, and take a screenshot of “About” which includes name and version of your current Linux.



2. Basic Linux:

- a) ls
- b) whoami
- c) pwd
- d) history
- e) Shell variables: echo \$HISTSIZE, \$USER, \$PATH
- f) man
- g) Control statements: ; && ||
- h) mkdir, touch



```
Oct 26 15:28
vboxuser@Ubuntu-24: ~
vboxuser@Ubuntu-24: ~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
vboxuser@Ubuntu-24: ~$ whoami
vboxuser
vboxuser@Ubuntu-24: ~$ pwd
/home/vboxuser
vboxuser@Ubuntu-24: ~$ history
1 ls
2 whoami
3 pwd
4 history
5 echo $HISTSIZE
6 echo $USER
7 echo $PATH
8 man ls
9 man
10 man ls
11 man man
12 man ls
13 man -a intro
14 clear
15 ls
16 whoami
17 pwd
18 history
vboxuser@Ubuntu-24: ~$ echo $HISTSIZE
1000
vboxuser@Ubuntu-24: ~$ echo $USER
vboxuser
vboxuser@Ubuntu-24: ~$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/snap/bin
vboxuser@Ubuntu-24: ~$ echo "HELLO"; echo "WORLD"
HELLO
WORLD
vboxuser@Ubuntu-24: ~$ rm -f Testing
vboxuser@Ubuntu-24: ~$ touch Testing
vboxuser@Ubuntu-24: ~$
```

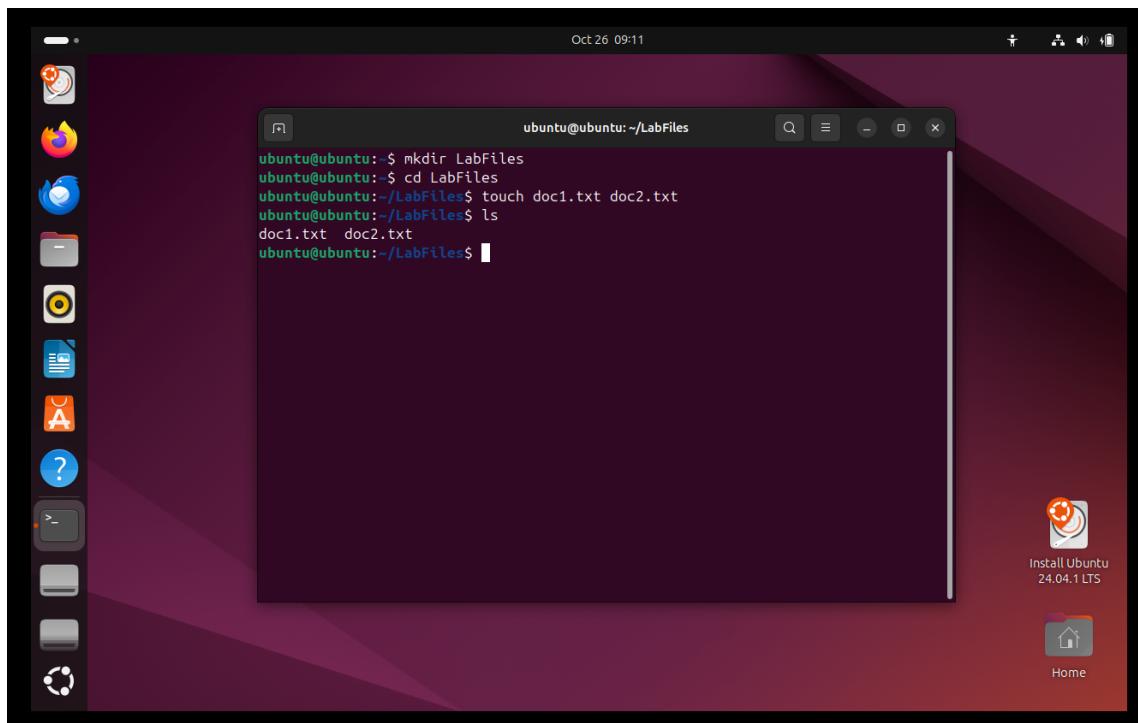
3. Scenario Exercise:

Task: Organize your files and gather information about your system.

- a) File Organization

Create a directory named LabFiles.

Inside LabFiles, create two files: doc1.txt and doc2.txt. List the contents of LabFiles to confirm the files' existence.



```
Oct 26 09:11
ubuntu@ubuntu: ~
ubuntu@ubuntu: ~$ mkdir LabFiles
ubuntu@ubuntu: ~$ cd LabFiles
ubuntu@ubuntu: ~/LabFiles$ touch doc1.txt doc2.txt
ubuntu@ubuntu: ~/LabFiles$ ls
doc1.txt doc2.txt
ubuntu@ubuntu: ~/LabFiles$
```

b) System Information Gathering

Check who the current user is.

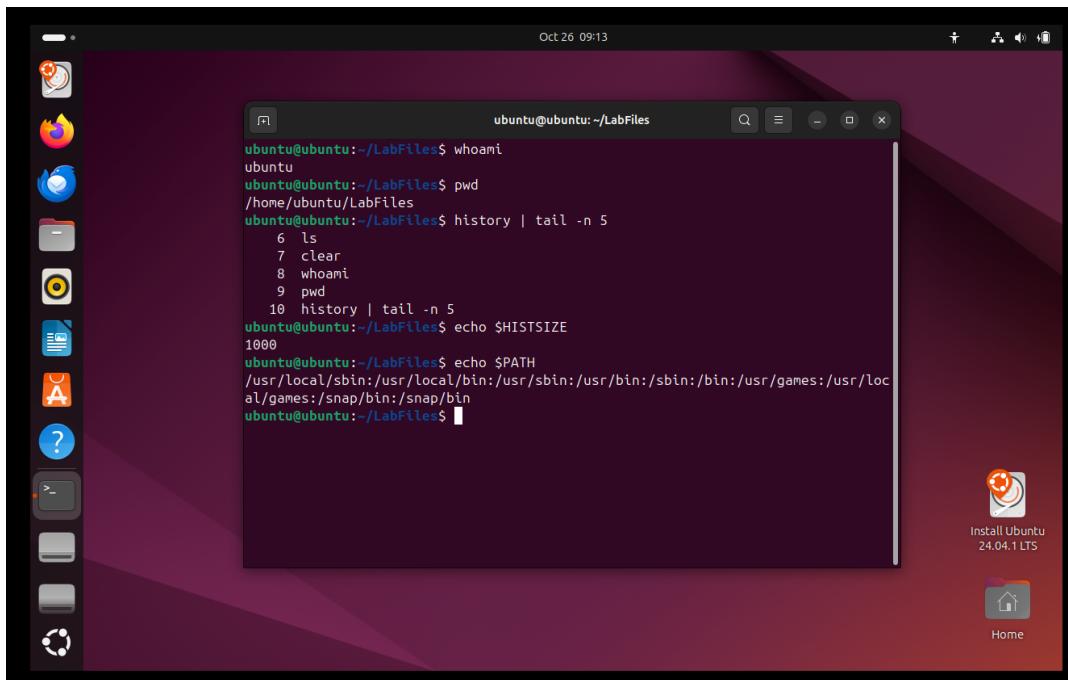
Determine the current working directory.

Print the last five commands you have used.

Display your shell's command history size.

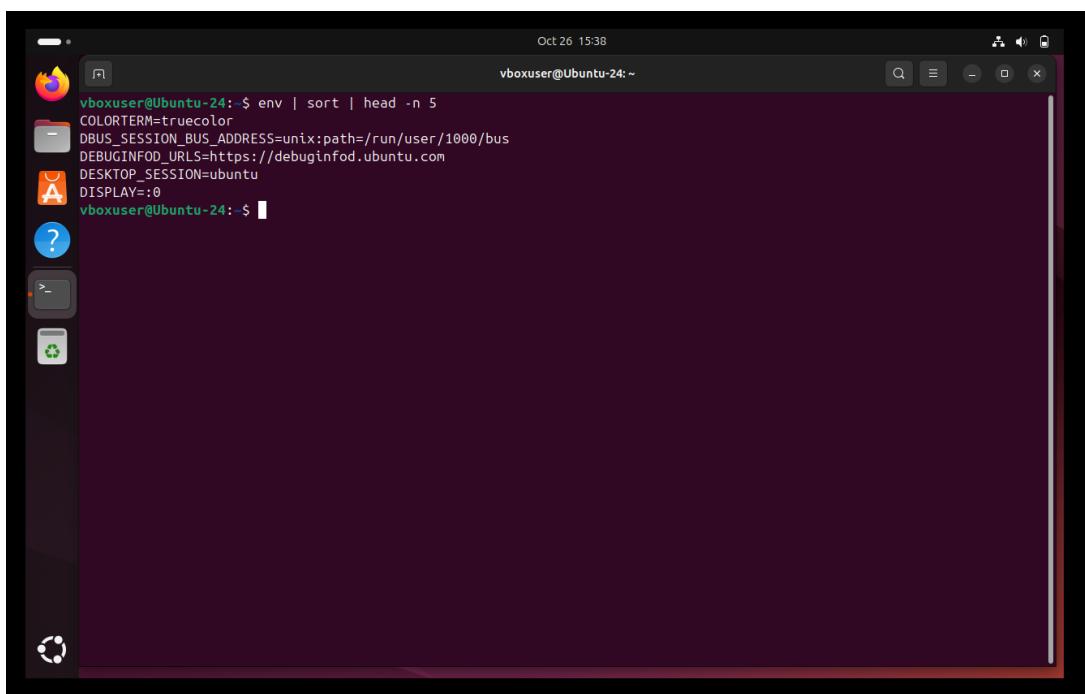
Check the directories included in your system's PATH variable.

Find 5 most used Environmental Variable and display their values



A screenshot of a terminal window titled "ubuntu@ubuntu:~/LabFiles". The window shows a command-line session with the following output:

```
ubuntu@ubuntu:~/LabFiles$ whoami
ubuntu
ubuntu@ubuntu:~/LabFiles$ pwd
/home/ubuntu/LabFiles
ubuntu@ubuntu:~/LabFiles$ history | tail -n 5
6 ls
7 clear
8 whoami
9 pwd
10 history | tail -n 5
ubuntu@ubuntu:~/LabFiles$ echo $HISTSIZE
1000
ubuntu@ubuntu:~/LabFiles$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/snap/bin
ubuntu@ubuntu:~/LabFiles$
```



A screenshot of a terminal window titled "vboxuser@Ubuntu-24:~". The window shows a command-line session with the following output:

```
vboxuser@Ubuntu-24:~$ env | sort | head -n 5
COLORTERM=truecolor
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
DEBUGINFOD_URLS=https://debuginfod.ubuntu.com
DESKTOP_SESSION=ubuntu
DISPLAY=:0
vboxuser@Ubuntu-24:~$
```

c) Documentation

For each command used,

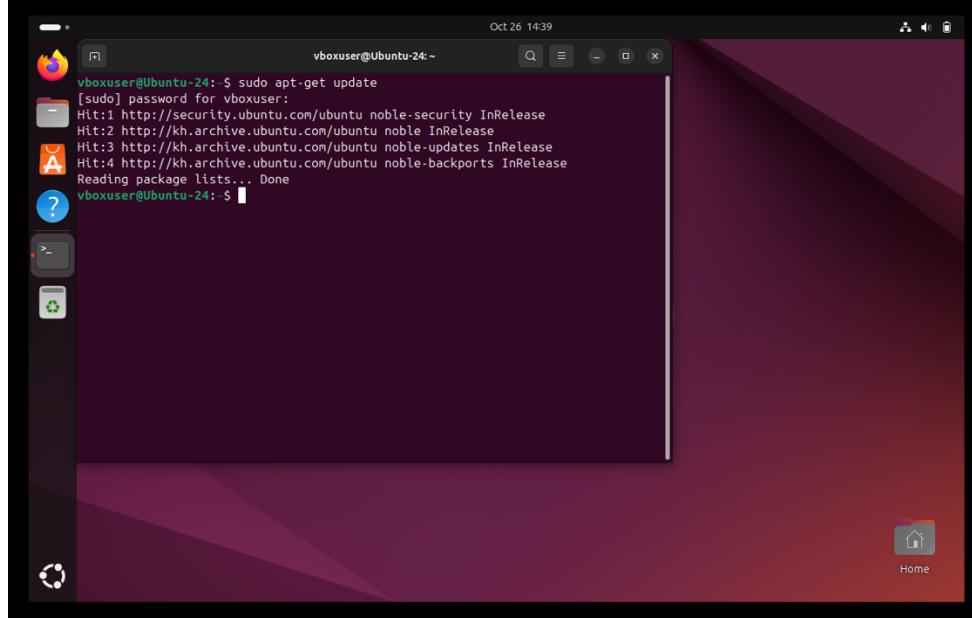
Screenshot the result from running the commands.

Include examples of control statements used during the exercise.

4. Task: Install, verify, and remove a software package.

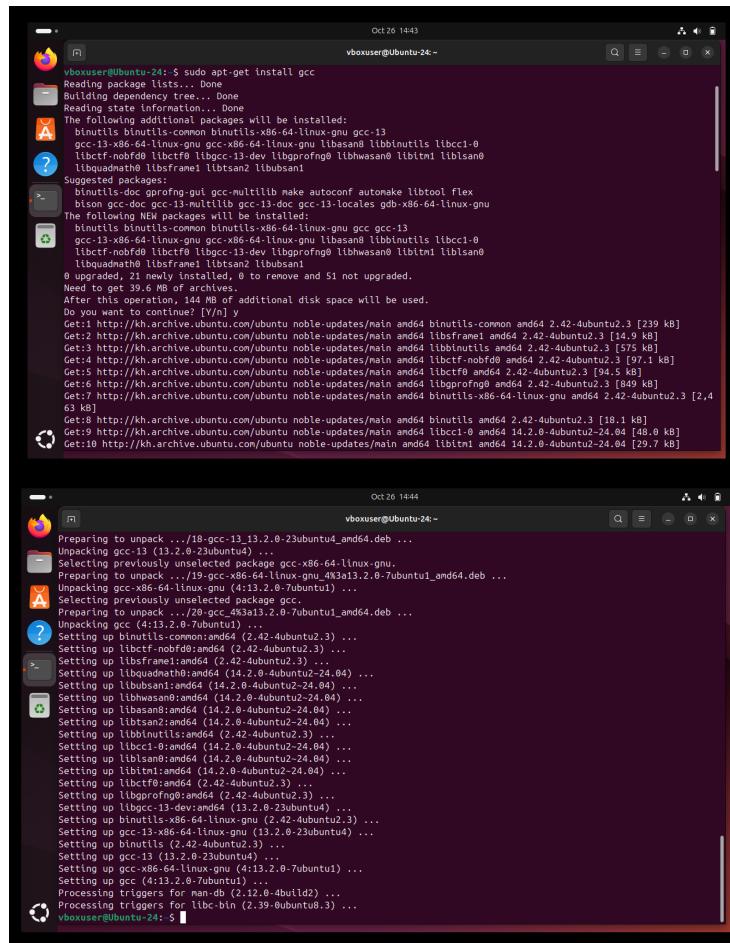
Installation Task

- Update your package lists.



```
vboxuser@Ubuntu-24:~$ sudo apt-get update
[sudo] password for vboxuser:
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:2 http://kh.archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://kh.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://kh.archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
vboxuser@Ubuntu-24:~$
```

- Install the c compiler gcc using `sudo apt-get install gcc`.



```
vboxuser@Ubuntu-24:~$ sudo apt-get install gcc
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  binutils binutils-common binutils-x86_64-linux-gnu gcc-i386
  gcc-13-x86_64-linux-gnu gcc-x86_64-linux-gnu libasan8 libbinutils libgcc1-0
  libctf-nobfd0 libctf6 libgcc-13-dev liblprofng0 libhwasan0 libitm1 liblsan0
  libquadmath liblsfraeli libtsan2 libubsan1
Suggested packages:
  binutils-doc gprofng-gui gcc-multilib make autoconf libtool flex
  libasan0 libasan1 libasan1:i386 libasan1-13-locales gdb-x86_64-linux-gnu
The following NEW packages will be installed:
  binutils binutils-common binutils-x86_64-linux-gnu gcc-i386
  gcc-13-x86_64-linux-gnu gcc-x86_64-linux-gnu libasan8 libbinutils libgcc1-0
  libctf-nobfd0 libctf6 libgcc-13-dev liblprofng0 libhwasan0 libitm1 liblsan0
  libquadmath liblsfraeli libtsan2 libubsan1
0 upgraded, 21 newly installed, 0 to remove and 51 not upgraded.
Need to get 144 MB of additional disk space.
After this operation, 144 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 binutils-common amd64 2.42-4ubuntu2.3 [239 kB]
Get:2 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 liblsfraeli amd64 2.42-4ubuntu2.3 [14.9 kB]
Get:3 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 libbinutils amd64 2.42-4ubuntu2.3 [575 kB]
Get:4 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 libctf-nobfd0 amd64 2.42-4ubuntu2.3 [97.1 kB]
Get:5 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 liblprofng0 amd64 2.42-4ubuntu2.3 [94.3 kB]
Get:6 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 libhwasan0 amd64 2.42-4ubuntu2.3 [849 kB]
Get:7 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 binutils-x86_64-linux-gnu amd64 2.42-4ubuntu2.3 [2.4
63 kB]
Get:8 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 binutils amd64 2.42-4ubuntu2.3 [18.1 kB]
Get:9 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 libctf1-0 amd64 14.2.0-4ubuntu2-24.04 [48.0 kB]
Get:10 http://kh.archive.ubuntu.com/ubuntu noble-updates/main amd64 libitm1 amd64 14.2.0-4ubuntu2-24.04 [29.7 kB]

Oct 26 14:44
Preparing to unpack .../18-gcc-13_13.2.0-23ubuntu4_amd64.deb ...
Unpacking gcc-13 (13.2.0-23ubuntu4) ...
Selecting previously unselected package gcc-x86_64-linux-gnu.
Preparing to unpack .../19-gcc-x86_64-linux-gnu_43x13.2.0-7ubuntu1_amd64.deb ...
Unpacking gcc-x86_64-linux-gnu (4:13.2.0-7ubuntu1) ...
Selecting previously unselected package gcc.
Preparing to unpack .../20_gcc_43x13.2.0-7ubuntu1_amd64.deb ...
Setting up binutils-common:amd64 (2.42-4ubuntu2.3) ...
Setting up libctf-nobfd:amd64 (2.42-4ubuntu2.3) ...
Setting up liblsfraeli:amd64 (2.42-4ubuntu2.3) ...
Setting up libquadmath:amd64 (14.2.0-4ubuntu2-24.04) ...
Setting up libubasan1:amd64 (14.2.0-4ubuntu2-24.04) ...
Setting up libhwasan0:amd64 (14.2.0-4ubuntu2-24.04) ...
Setting up libtsan2:amd64 (14.2.0-4ubuntu2-24.04) ...
Setting up libubsan1:amd64 (2.42-4ubuntu2-24.04) ...
Setting up libgcc1-0:amd64 (14.2.0-4ubuntu2-24.04) ...
Setting up libitm1:amd64 (14.2.0-4ubuntu2-24.04) ...
Setting up liblctf0:amd64 (2.42-4ubuntu2.3) ...
Setting up liblprofng0:amd64 (2.42-4ubuntu2.3) ...
Setting up libctf-gcc1:amd64 (13.2.0-23ubuntu4) ...
Setting up libgcc1-x86_64-linux-gnu (13.2.0-23ubuntu4) ...
Setting up gcc-13-x86_64-linux-gnu (13.2.0-23ubuntu4) ...
Setting up binutils (2.42-4ubuntu2.3) ...
Setting up gcc-13 (13.2.0-23ubuntu4) ...
Setting up gcc-x86_64-linux-gnu (4:13.2.0-7ubuntu1) ...
Setting up gcc (4:13.2.0-7ubuntu1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu0.3) ...
vboxuser@Ubuntu-24:~$
```

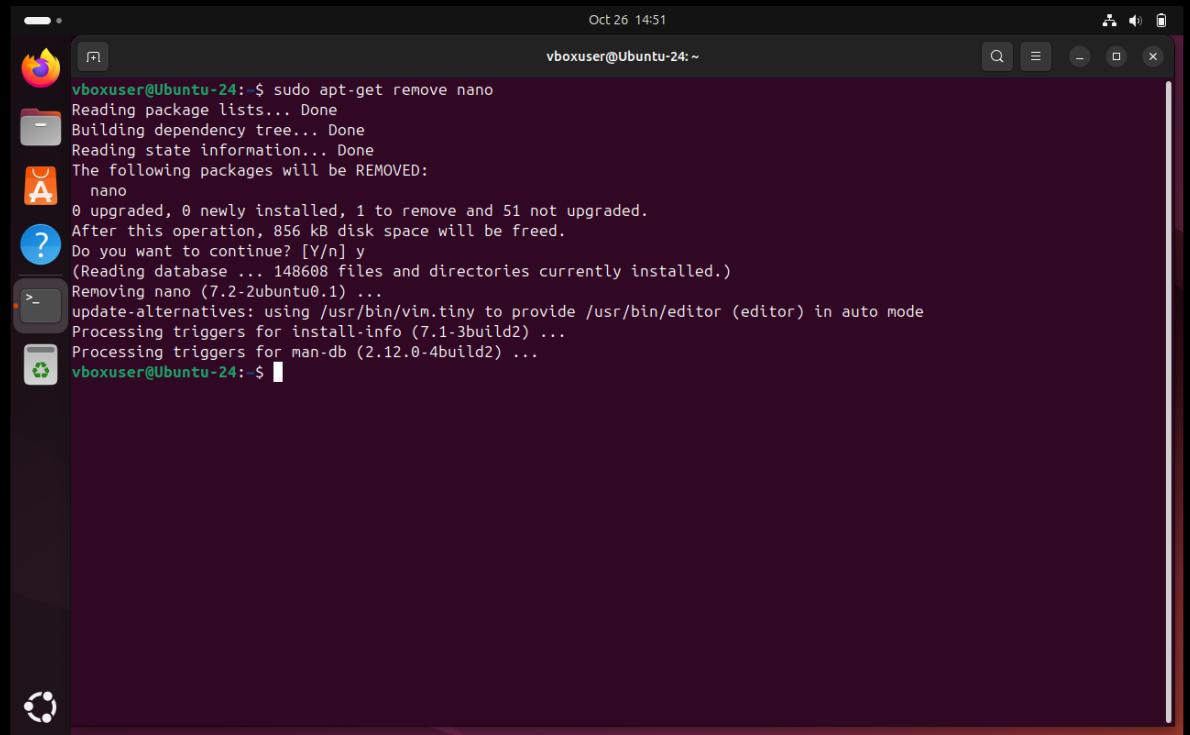
- c) Experiment with installing a different version of a common package, such as python.

```
vboxuser@Ubuntu-24: $ apt list -a python3.*  
Listing... Done  
python3.12-dbg/noble-updates,noble-security 3.12.3-1ubuntu0.2 amd64  
python3.12-dbg/noble 3.12.3-1 amd64  
python3.12-dev/noble-updates,noble-security 3.12.3-1ubuntu0.2 amd64  
python3.12-dev/noble 3.12.3-1 amd64  
python3.12-doc/noble-updates,noble-security 3.12.3-1ubuntu0.2 all  
python3.12-doc/noble 3.12.3-1 all  
python3.12-examples/noble-updates,noble-security 3.12.3-1ubuntu0.2 all  
python3.12-examples/noble 3.12.3-1 all  
python3.12-full/noble-updates,noble-security 3.12.3-1ubuntu0.2 amd64  
python3.12-full/noble 3.12.3-1 amd64  
python3.12-minimal/noble-updates,noble-security,now 3.12.3-1ubuntu0.2 amd64 [installed,automatic]  
python3.12-minimal/noble 3.12.3-1 amd64  
python3.12-nopie/noble-updates,noble-security 3.12.3-1ubuntu0.2 amd64  
python3.12-nopie/noble 3.12.3-1 amd64  
python3.12-venv/noble-updates,noble-security 3.12.3-1ubuntu0.2 amd64  
python3.12-venv/noble 3.12.3-1 amd64  
python3.12/noble-updates,noble-security,now 3.12.3-1ubuntu0.2 amd64 [installed,automatic]  
python3.12/noble 3.12.3-1 amd64  
vboxuser@Ubuntu-24: $
```

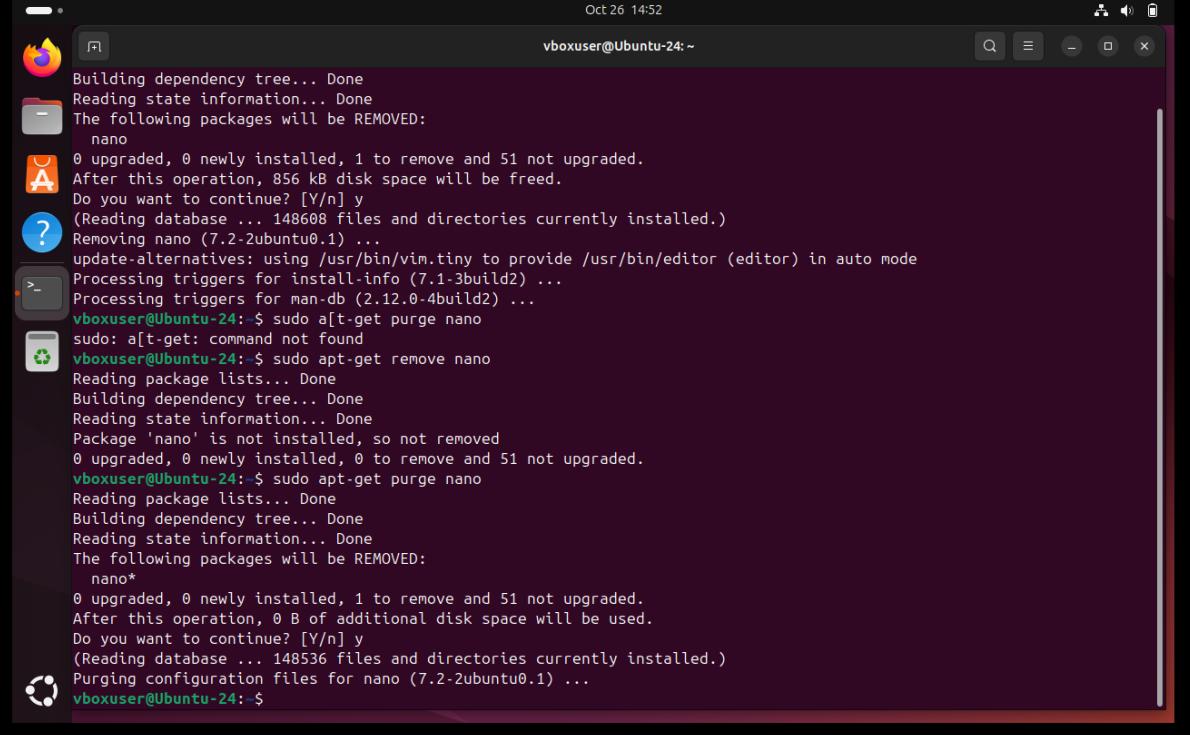
```
vboxuser@Ubuntu-24: ~$ sudo apt-get install python3.12  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
python3.12 is already the newest version (3.12.3-1ubuntu0.2).  
python3.12 set to manually installed.  
0 upgraded, 0 newly installed, 0 to remove and 51 not upgraded.  
vboxuser@Ubuntu-24: ~$
```

Removal Task

- d) Remove nano using *sudo apt-get remove nano*.

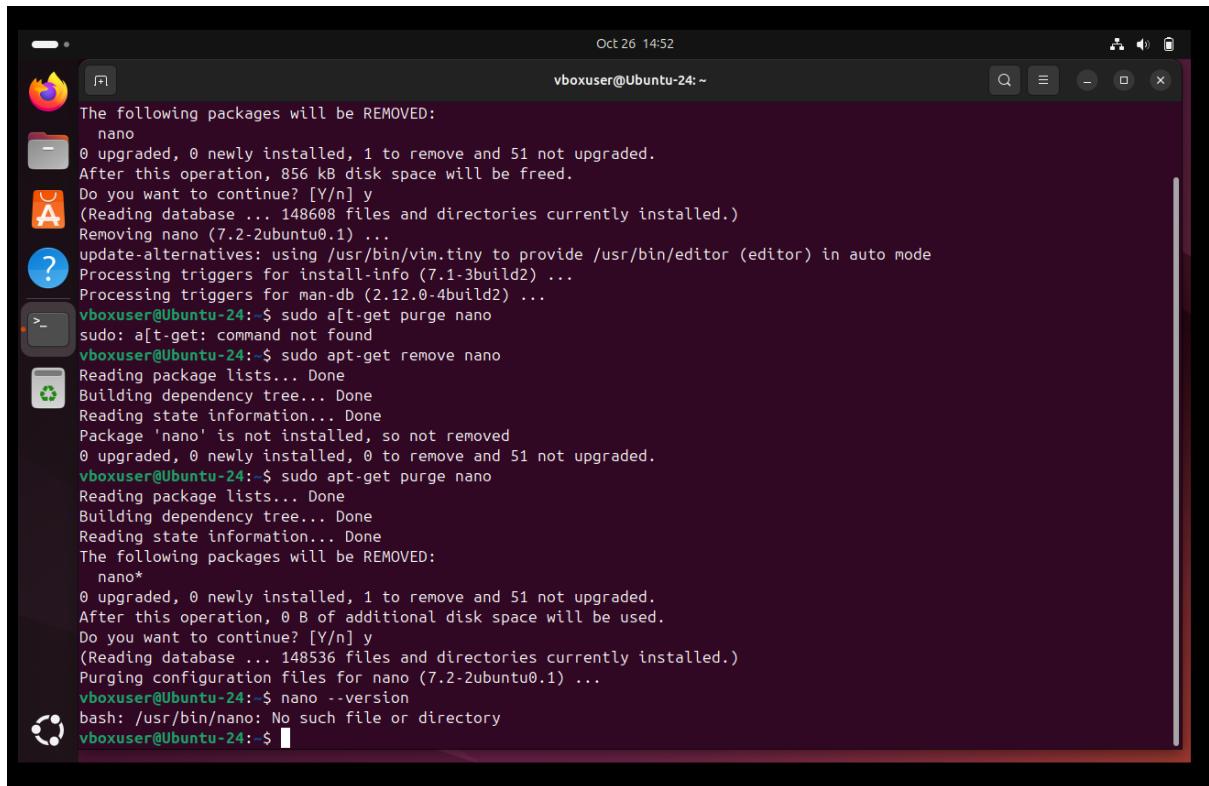


vboxuser@Ubuntu-24: \$ sudo apt-get remove nano
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages will be REMOVED:
 nano
0 upgraded, 0 newly installed, 1 to remove and 51 not upgraded.
After this operation, 856 kB disk space will be freed.
Do you want to continue? [Y/n] y
(Reading database ... 148608 files and directories currently installed.)
Removing nano (7.2-2ubuntu0.1) ...
update-alternatives: using /usr/bin/vim.tiny to provide /usr/bin/editor (editor) in auto mode
Processing triggers for install-info (7.1-3build2) ...
Processing triggers for man-db (2.12.0-4build2) ...
vboxuser@Ubuntu-24: \$



Oct 26 14:52
vboxuser@Ubuntu-24: ~

```
Building dependency tree... Done
Reading state information... Done
The following packages will be REMOVED:
  nano
0 upgraded, 0 newly installed, 1 to remove and 51 not upgraded.
After this operation, 856 kB disk space will be freed.
Do you want to continue? [Y/n] y
(Reading database ... 148608 files and directories currently installed.)
Removing nano (7.2-2ubuntu0.1) ...
update-alternatives: using /usr/bin/vim.tiny to provide /usr/bin/editor (editor) in auto mode
Processing triggers for install-info (7.1-3build2) ...
Processing triggers for man-db (2.12.0-4build2) ...
vboxuser@Ubuntu-24: $ sudo apt-get purge nano
sudo: apt-get: command not found
vboxuser@Ubuntu-24: $ sudo apt-get remove nano
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package 'nano' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 51 not upgraded.
vboxuser@Ubuntu-24: $ sudo apt-get purge nano
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages will be REMOVED:
  nano*
0 upgraded, 0 newly installed, 1 to remove and 51 not upgraded.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n] y
(Reading database ... 148536 files and directories currently installed.)
Purging configuration files for nano (7.2-2ubuntu0.1) ...
vboxuser@Ubuntu-24: $
```



The following packages will be REMOVED:
nano
0 upgraded, 0 newly installed, 1 to remove and 51 not upgraded.
After this operation, 856 kB disk space will be freed.
Do you want to continue? [Y/n] y
(Reading database ... 148608 files and directories currently installed.)
Removing nano (7.2-2ubuntu0.1) ...
update-alternatives: using /usr/bin/vim.tiny to provide /usr/bin/editor (editor) in auto mode
Processing triggers for install-info (7.1-3build2) ...
Processing triggers for man-db (2.12.0-4build2) ...
vboxuser@Ubuntu-24: \$ sudo apt-get purge nano
sudo: apt-get: command not found
vboxuser@Ubuntu-24: \$ sudo apt-get remove nano
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package 'nano' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 51 not upgraded.
vboxuser@Ubuntu-24: \$ sudo apt-get purge nano
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages will be REMOVED:
nano*
0 upgraded, 0 newly installed, 1 to remove and 51 not upgraded.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n] y
(Reading database ... 148536 files and directories currently installed.)
Purging configuration files for nano (7.2-2ubuntu0.1) ...
vboxuser@Ubuntu-24: \$ nano --version
bash: /usr/bin/nano: No such file or directory
vboxuser@Ubuntu-24: \$