Lab 1 – Environment Setup and Basic Linux Command

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

Instructions:

- *ls . Observe the files and directories listed.*

Experiment with variations: ls -l (detailed list), ls -a (include hidden files).
Identify Current User (whoami)

- *whoami. Note the username displayed.*

Print Working Directory (pwd)

- *pwd. This command shows your current directory path.*

View Command History (history)

- *history. Browse through the list of commands you've previously entered.*

Explore Shell Variables

echo $HISTSIZE to see the history size.
echo $USER to confirm your username.
echo $PATH to view the path variable.

- *Use the Manual (man)*

Learn about any command by typing man followed by the command name (e.g., man ls).

- *Practice Control Statements*

Experiment with ;, &&, and ||:
echo "Hello"; echo "World" (executes both commands sequentially)
mkdir newfolder && cd newfolder (cd into newfolder only if mkdir is successful)
cd unknownfolder || echo "Folder not found" (echo message if cd fails)

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.

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

c. Documentation

For each command used,
Screenshot the result from running the commands.
Include examples of control statements used during the exercise.

Additional

Instructions:

Understanding sudo and apt-get

sudo: Stands for "superuser do," used to execute commands with administrative privileges.

apt-get: A command-line tool used for handling packages on Debian-based systems.

Updating Package Lists

Before installing new software, it's good practice to update your package lists.

Run sudo apt-get update and enter your password if prompted.

Searching for a Package

To find the package name of the software you want to install, use apt-cache search. For example, to search for Python, you would use apt-cache search python.

Installing a Software Package

- *Choose a software package to install. For this exercise, let's install vim (a text editor).*

Run sudo apt-get install vim.

Verify the installation by running vim --version.

Installing a Specific Version of a Package

- *Sometimes, you may need a specific version of a software package.*

First, find available versions: apt list -a vim.

Install a specific version: sudo apt-get install vim=version_number (replace version_number with the desired version).

Removing a Software Package

- *To remove vim, run sudo apt-get remove vim.*

To completely remove vim along with its configuration files, run sudo apt-get purge vim.

Scenario Exercise:

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

Installation Task

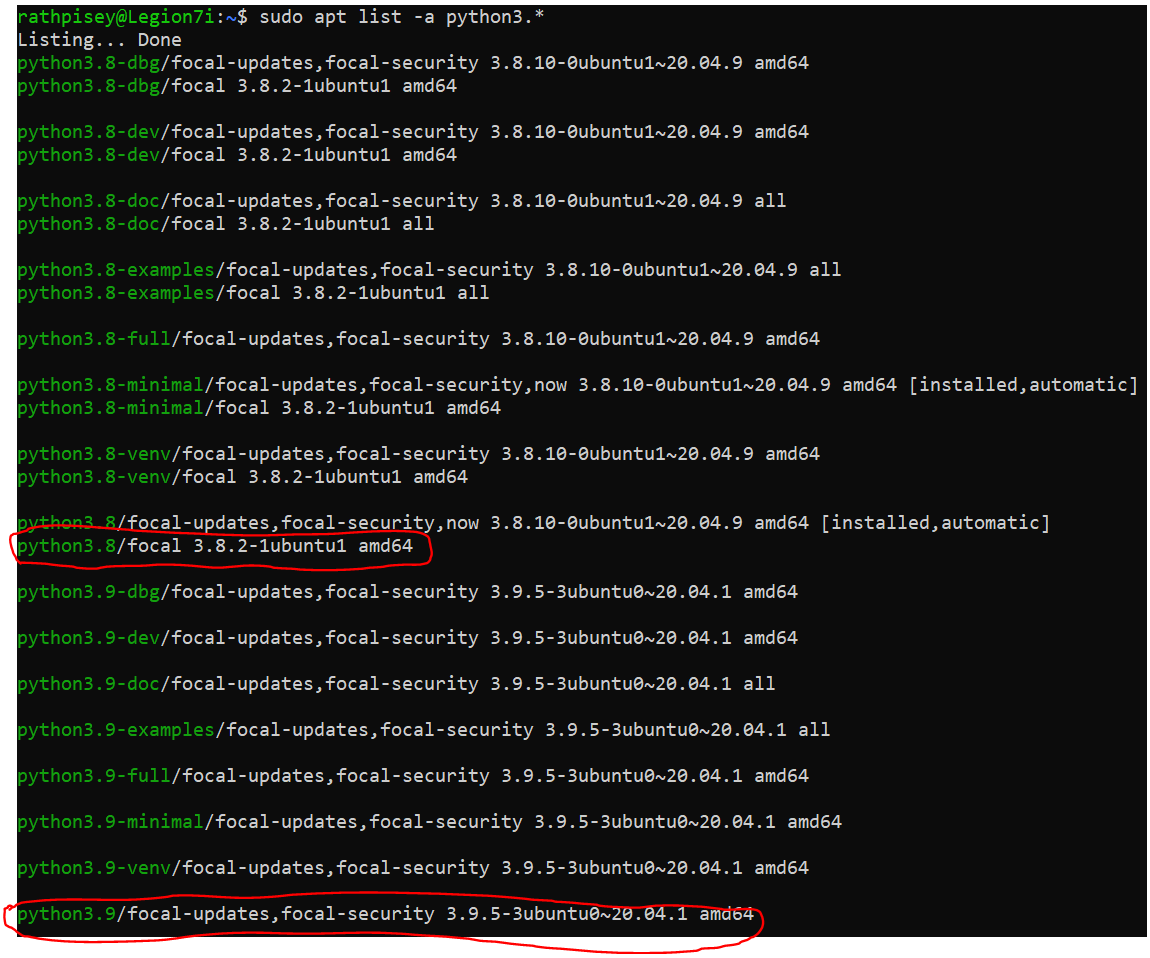
1. Update your package lists.
2. Install the c compiler gcc using *sudo apt-get install gcc*.
3. Experiment with installing a different version of a common package, such as python.

*Use apt list -a python[version-number] to find available versions. i.e. apt list -a python3.**

Install a specific version using *sudo apt-get install python[version-number]*

sudo apt-get install python3.9

Make sure to replace version_number with one of the versions listed.



Removal Task

4. Remove nano using *sudo apt-get remove nano.*

To ensure complete removal, also run *sudo apt-get purge nano.*

Check that nano is no longer accessible by running nano --version.

Deliverables:

Screenshots documenting each step of the installation, verification, and removal processes.

Copy all the screenshots and save them in PDF file naming YourNameLab1.pdf