

## Task 1: Linux History and Philosophy

Objective: Write a brief explanation of the history of Linux and its philosophy.

Action Items:

Open a terminal.

1. Use nano to create a .txt file named LinuxHistory.txt.
2. Within the file, summarize the origins of Linux and the principles of the GNU/Linux system.
3. Save and close the file.

1.

```
student@student-virtual-machine:~/25SUB4508_56133$ ll
total 24
drwxrwxr-x  3 student student 4096 Dec 17 14:38 ./
drwxr-x--- 23 student student 4096 Dec 17 14:45 ../
dr-xr-xr-x  2 student student 4096 Dec 16 12:53 day_09/
-rw-rw-r--  1 student student  309 Dec 17 12:47 first_nano.cpp
-rw-rw-r--  1 student student   0 Dec 16 15:47 hello.cpp
-rw-rw-r--  1 student student 1148 Dec 17 14:38 LinuxHistory.txt
-rwxr-xr-x  1 student student   0 Dec 16 15:32 test_1.txt*
-rw-rw-r--  1 student student  147 Dec 17 12:50 test_2.txt
student@student-virtual-machine:~/25SUB4508_56133$ nano LinuxHistory.txt
```

2.

```
GNU nano 6.2 LinuxHistory.txt
Origins of Linux:
- 1991: Linux was created by Linus Torvalds, a Finnish computer science student, who wanted to develop a free and open-source operati>
- Linux Kernel: The first version, Linux 0.01, was released on September 17, 1991. It was minimalistic but had the potential to grow >
- Collaboration: Torvalds released the Linux kernel under the GNU General Public License (GPL), allowing programmers worldwide to con>
- GNU Project: The combination of the Linux kernel and the GNU tools (from the Free Software Foundation) formed the complete GNU/Linu>

GNU/Linux Philosophy:
- Free Software: The core idea is the freedom to use, modify, and distribute software. This philosophy was championed by Richard Stal>
- Four Freedoms: The GNU GPL ensures the freedom to run, study, modify, and distribute software.
- Open Source: Linux is open-source, allowing anyone to contribute to its development.
- Community and collaboration: Linux thrives on a global community of developers and users working together to improve the system.
```

3.

```
File Name to Write: LinuxHistory.txt
^G Help      M-D DOS Format  M-A Append    M-B Backup File
^X Cancel    M-M Mac Format M-P Prepend   ^T Browse
```

## Task 2: File Navigation and Directory Structure

Objective: **Demonstrate basic file navigation and directory structure understanding.**

Action Items:

1. List all files in the home directory using a single command.
2. Display the absolute path of the current working directory.
3. Create a new directory called Practice in the home directory and navigate into it.

1.

```
-rw-rw-r-- 1 student student 147 Dec 17 12:50 test_2.txt
student@student-virtual-machine: ~/25SUB4508_56133$ ls -a ~
.          a.out          .cache        Downloads     minikube-linux-amd64  Public          valgrind
..         .azure         .config       .kube         Music              snap            Videos
25SUB4508  .bash_history Desktop       .lessht      Pictures          .sudo_as_admin_successful .vimrc
25SUB4508_56133 .bash_logout Documents    linux-headers-6.8.0-90-generic .pki              Templates       .vscode
56133_SOUVIK_ROY .bashrc      .dotnet      .local        .profile           test.cpp
student@student-virtual-machine: ~/25SUB4508_56133$
```

2.

```
student@student-virtual-machine: ~/25SUB4508_56133$ pwd
/home/student/25SUB4508_56133
student@student-virtual-machine: ~/25SUB4508_56133$
```

3.

```
virtual-machine: ~/25SUB4508_56133$ mkdir ~/Practice
virtual-machine: ~/25SUB4508_56133$ cd ~/Practice
student@student-virtual-machine: ~/Practice$
```

### Task 3: File Management Commands

Objective: **Use file management commands to organize files and directories.**

Action Items:

1. In the Practice directory, create a new file called sample.txt. Copy sample.txt to a new file called duplicate.txt.
2. Delete duplicate.txt using a command-line command.

1.

```
student@student-virtual-machine:~/25S084508_56133$ cd ~/Practice
student@student-virtual-machine:~/Practice$ touch sample.txt
student@student-virtual-machine:~/Practice$ nano sample.txt
student@student-virtual-machine:~/Practice$ cp sample.txt duplicateSample.txt
student@student-virtual-machine:~/Practice$ ll
total 16
drwxrwxr-x  2 student student 4096 Dec 17 14:51 ./
drwxr-x--- 23 student student 4096 Dec 17 14:45 ../
-rw-rw-r--  1 student student  23 Dec 17 14:51 duplicateSample.txt
-rw-rw-r--  1 student student  23 Dec 17 14:51 sample.txt
```

2.

```
student@student-virtual-machine:~/Practice$ rm duplicateSample.txt
```

## References

- Torvalds, L. (1991). Linux: A Portable Operating System Kernel. University of Helsinki.
- Stallman, R. M. (2002). Free Software, Free Society: Selected Essays of Richard M. Stallman. GNU Press.
- Love, R. (2010). Linux Kernel Development (3rd ed.). Addison-Wesley Professional.
- Silberschatz, A., Galvin, P. B., & Gagne, G. (2018). Operating System Concepts (10th ed.). Wiley.
- Shotts, W. E. (2019). The Linux Command Line (2nd ed.). No Starch Press.