

# **RIPHAH INTERNATIONAL** **UNIVERSITY, ISLAMABAD**



## **Lab#2**

**Bachelors of Computer Science – 5<sup>th</sup> Semester**

**Subject: Operating System**

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### **Task#1:**

To begin, you need to set up a structured directory layout in your home directory. Start by creating two directories named **OS\_Course** and **OS\_Lab**. These directories will serve as the main folders for organizing your OS Lab tasks. After creating these directories, switch to the **OS\_Lab** directory. Within **OS\_Lab**, create three more directories named **LAB\_Class\_Task**, **LAB\_Activities**, and **Lab\_Practice**. Each of these directories will help you categorize different aspects of your lab work. Once you have created these directories, go into the **Lab\_Practice** directory and create a file named **example.cpp**. This file should be empty and will be used for practice later. Finally, move back to your home directory. Make sure to take screenshots of each step, including the creation of directories, the file creation, and your navigation commands to document your process.

```
Loading...
```

```
Welcome to Fedora 33 (riscv64)
```

```
[root@localhost ~]# ls
```

```
bench.py  hello.c
```

```
[root@localhost ~]# mkdir OS_Course
```

```
[root@localhost ~]# mkdir OS_Lab
```

```
[root@localhost ~]# cd OS_Lab
```

```
[root@localhost OS_Lab]# mkdir LAB_Class_Task
```

```
[root@localhost OS_Lab]# mkdir LAB_Activities
```

```
[root@localhost OS_Lab]# mkdir Lab_Practice
```

```
[root@localhost OS_Lab]# cd Lab_Practice
```

```
[root@localhost Lab_Practice]# nano example.cpp
```

```
GNU nano 5.3 example.cpp

[ New File ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste      ^J Justify   ^_ Go To Line
↑
```

```
GNU nano 5.3 example.cpp

[root@localhost Lab_Practice]#
```

```
[root@localhost Lab_Practice]#
[root@localhost Lab_Practice]# cd
[root@localhost ~]#
↑
```

## **Task#2:**

Finally, you need to understand the concepts of absolute and relative paths. Explain the difference between these two types of paths and provide an example of each. This will help you navigate directories more effectively. If you are currently in the `Lab_Practice` directory, describe the relative path to access the `LAB_Activities` directory. This will test your understanding of how to move between directories using relative paths.

### **Absolute Pathname:**

The pathname, which identifies a file or a directory irrespective of the current state of the user. The user's "current directory" is part of the user's state. The absolute pathname always starts from the root directory.

```
[root@localhost Lab_Practice]# pwd
/root/OS_Lab/Lab_Practice
[root@localhost Lab_Practice]# cd /root/OS_Lab/Lab_Activities
[root@localhost Lab_Activities]#
```

### **Relative pathname:**

The pathname, which identifies a file or a directory in a way that depends on the state of the user i.e. users current directory. Relative pathname identifies files with respect to user current directory.

```
[root@localhost Lab_Practice]# pwd
/root/OS_Lab/Lab_Practice
[root@localhost Lab_Practice]# cd ../Lab_Activities
[root@localhost Lab_Activities]#
```

### **Task#3:**

Imagine you're working on your computer when you suddenly need to turn it off quickly. You press and hold the power button until the computer shuts down completely. After an hour, you turn the computer back on, and it quickly shows the login screen or desktop.

Why does your computer start up smoothly and quickly after being turned off? Describe the process that happens between powering off the computer and seeing the login or desktop screen. What steps does the computer go through to get everything ready in a short amount of time?

### **Solution:**

When we quickly turn off the computer by hold the power button, it saves all the work, closes programs, and shut down. When we turn it back on after an hour, the computer checks if all its parts are working correctly like memory and storage etc., and loads the BIOS to get the hardware.

After that an operating system is loaded from the storage drive into the memory. The system then starts loading necessary drives and services to get everything ready.

Since the computer was shut down properly, it can go through these steps quickly, bringing us to the login screen or desktop smooth