

Operating System Lab
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Lab 02 Task



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Lab Task

Q1. 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.

Note: Include screenshots, where required to illustrate your explanation.

Create the OS_Course and OS_Lab directories:

```
Loading...

Welcome to Fedora 33 (riscv64)

m[root@localhost ~]# mkdir OS-COURSE OS-LAB
[root@localhost ~]#
```

Switch to the OS_Lab directory:

```
m[root@localhost ~]# mkdir OS-COURSE OS-LAB
[root@localhost ~]# cd OS-LAB
[root@localhost OS-LAB]#
```

Create the LAB_Class_Task, LAB_Activities, and Lab_Practice directories:

```
[root@localhost ~]# mkdir OS-COURSE OS-LAB
[root@localhost ~]# cd OS-LAB
[root@localhost OS-LAB]# mkdir LAB-CLASS-TASK LAB-ACTIVITIES LAB-PRACTICE
[root@localhost OS-LAB]#
```

Switch to the Lab_Practice directory:

```
[root@localhost OS-LAB]# mkdir LAB-CLASS-TASK LAB-ACTIVITIES LAB-PRACTICE
[root@localhost OS-LAB]# cd LAB-PRACTICE
[root@localhost LAB-PRACTICE]#
```

Create an empty file named example.cpp:

```
[root@localhost OS-LAB]# mkdir LAB-CLASS-TASK LAB-ACTIVITIES LAB-PRACTICE
[root@localhost OS-LAB]# cd LAB-PRACTICE
[root@localhost LAB-PRACTICE]# touch example.cpp
[root@localhost LAB-PRACTICE]#
```

Move back to your home directory:

```
[root@localhost LAB-PRACTICE]# cd
[root@localhost ~]#
```

Q2. 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.

Note: Include screenshots, where required to illustrate your explanation.

1. Absolute Path

An absolute path is the complete path from the root directory to the desired file or directory. It provides the full location of the file or directory in the file system, starting from the root.

For example:

If are in the Lab_Practice directory inside the OS_Lab directory in your home directory, the absolute path would be:

```
[root@localhost LAB-PRACTICE]# pwd
/root/OS-LAB/LAB-PRACTICE
```

2. Relative Path

A relative path is the path to a file or directory relative to your current directory. It does not start from the root but from your current location in the directory tree.

Example

If you are currently in the Lab_Practice directory and want to navigate to the LAB_Activities directory, you can use the relative path:

```
root@localhost LAB-ACTIVITIES]# cd
root@localhost ~]# cd OS-LAB
root@localhost OS-LAB]# cd LAB-PRACTICE
root@localhost LAB-PRACTICE]# cd ../LAB-ACTIVITIES
root@localhost LAB-ACTIVITIES]# pwd
root/OS-LAB/LAB-ACTIVITIES
root@localhost LAB-ACTIVITIES]#
```

Q3. 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?

Answer:

When you forcefully shut down your computer by holding the power button, the system saves some important information about itself so that when you turn it back on, it can skip some of the

normal startup steps. This allows your computer to reach the login screen or desktop much faster than if it had to start everything from scratch.