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Operating System

OS Lab # 02

Task # 01

Advantages of Virtualization:

➢ The advantage of virtualization over dual boot is that virtualization lets you run two operating systems at the same time without restarting the computer. In dual boot, you must shut down and restart to switch systems.
➢ You can safely test new software on the guest OS without harming your main system.
➢ Virtualization allows easy file sharing between host and guest OS unlike dual boot.
Example: VirtualBox on Windows, you can run Linux inside a window while still using Windows. This saves time and makes multitasking easier.

Task # 02

Directory:

It is a folder that stores files and other folders can be at the top or middle level of the file system.

Appears first in the path can be at the top or middle level of the file system. It can exist on its own.

Example:

/etc and /bin are some examples of directory.

Subdirectory:

It is a directory that exists inside another directory. Always inside another directory (child level) that means comes after its parent directory in the path. It cannot exist at its own it must be present in some parent directory.

Example:

 In /documents/photos, documents is the directory, and photos is its subdirectory.

Task # 03

As relative path does not start from the root (/), it starts from wherever you currently are saves typing by using the current directory as the base. The same relative path can point to different files depending on your current directory. So in short, relative path depends on the current directory because it uses your present location as the starting point to find files or folders.

Example:

If your current directory is /home/user and you type docs/file.txt, it can open /home/user/docs/file.txt.

Task # 04

Because / is the root of the file system, and absolute path always begins from the root to show the full location of a file or folder.

It tells the computer exactly where a file is located, no matter where you are in the system. Since it always begins with / it avoids confusion and works the same from any current directory.

Example:

So,/usr/local/bin → starts from / (root) and goes step by step to the file.

Task # 05

Root Directory:

It is top-most directory that contains the entire file System. It is owned and managed by the system administrator (root user). Acts as the starting point of the whole Linux file system hierarchy.

Example: /root.

Home Directory:

A personal folder for each user to store their own files. It is used by individual users for personal files and settings. Provides a workspace where a user can create, save, and manage files safely.

Example: /home/ali/Desktop is where Ali keeps personal files.