Assignment #1 - Linux Concepts
Explain Linux distributions, the different types, and their purposes.

Linux distributions can be likened to car parts. Each one being a different size or performing a different function, but they all work together to perform the functions of a car. Each Linux distribution varies in function and caters to its respective audience. The Linux Operating System has general-purpose, specialized, and enterprise distributions.

The General-purpose Distributions are for typical day-to-day operations. They consist of Ubuntu, Fedora, Debian and openSUSE. Ubuntu is famous for its user-friendliness. It is probably the easiest to learn. Fedora, like the hat, is known for its open-source compatibility and is popular for being innovation oriented. Debian is often the building block for many other distributions due to its known stability. Lastly, openSUSE; this distribution is supported by SUSE and has various open-source versions available to the general public.

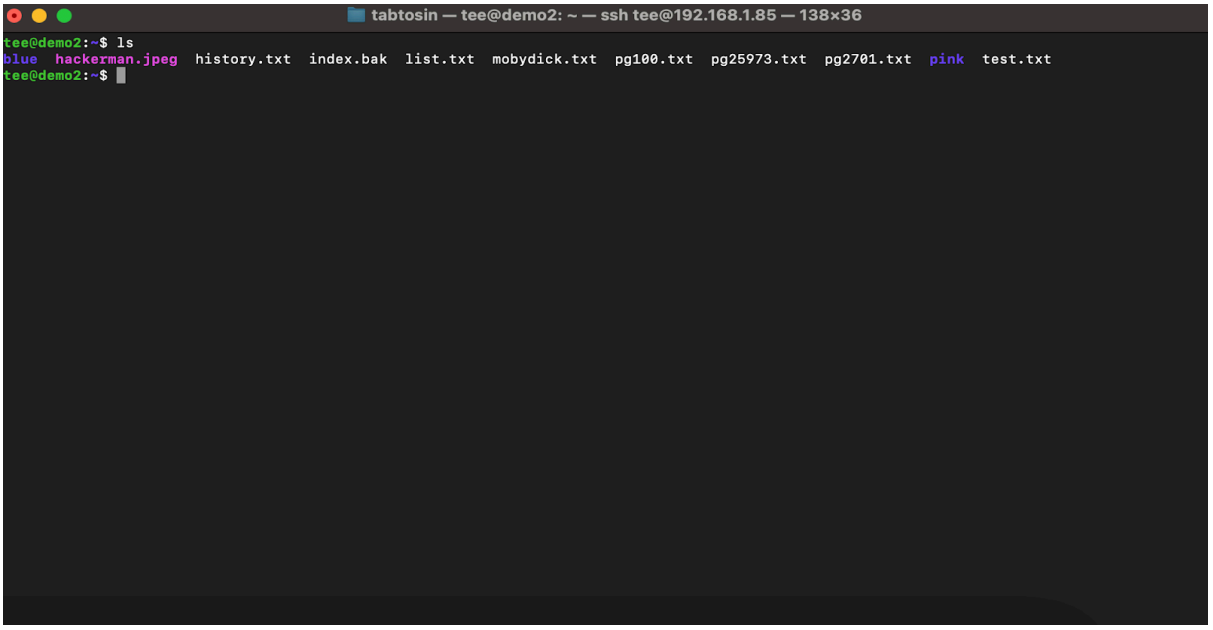
Specialized distributions include Kali Linux, Tails, Ubuntu Studio, and Raspberry Pi OS. Like the name states, these distributions are used for special functions. Kali comes with a collection of tools for security testing and ethical hacking, Tails focuses on privacy and anonymity, Ubuntu Studio is used for multimedia creation, and Raspberry Pi OS can be used for educational purposes.

When Enterprise Distributions are concerned, Red Hat Enterprise Linux (RHEL) and SUSE Linux Enterprise Server (SLES) are used. These two are known for their stability, scalability, reliability, availability, and long-term support.

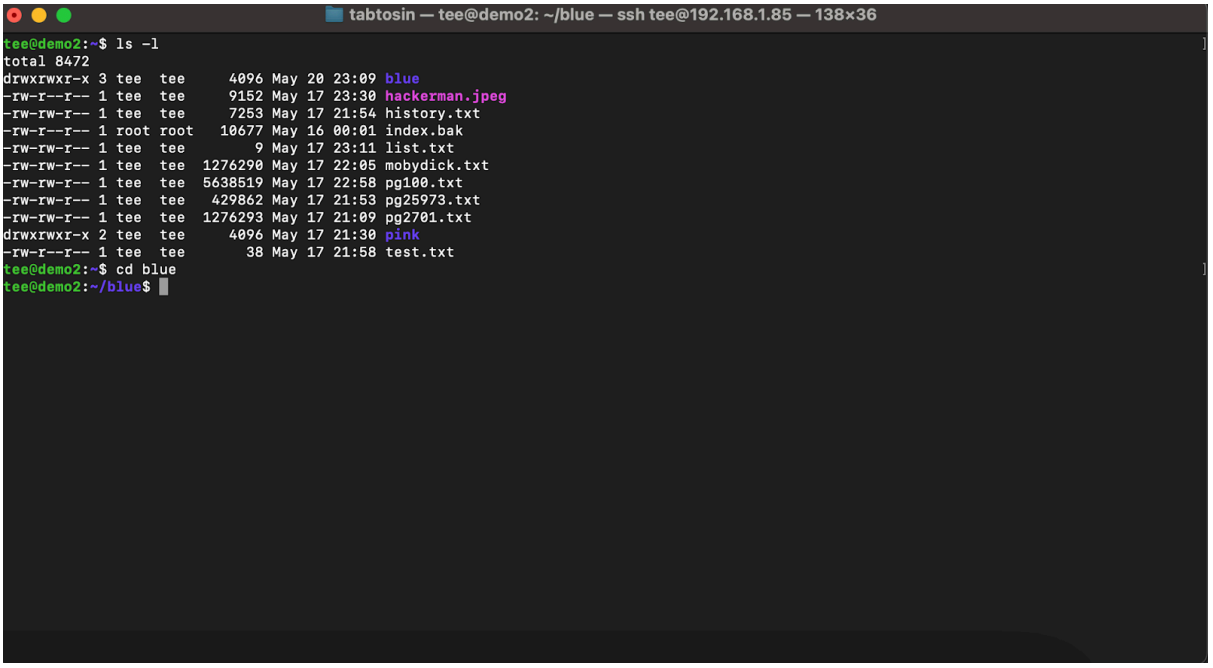
Linux distributions are designed for desktop use, server use, development and programming, specialized tasks, and education and learning purposes. Desktop use provides user-friendly GUI for a wide range of computer operations. Linux distributions can be used to set up servers according to user need. Some distributions are used by developers and programmers as a result of the wide range of tools they offer. Specialized tasks such as digital forensics, multimedia production, and security testing can also be carried out using Linux distributions. Lastly, they can also be used as a learning tool to teach computer science and programming due to their user-friendliness, ease of access, and open-source nature.

Assignment #2 - Linux Concepts

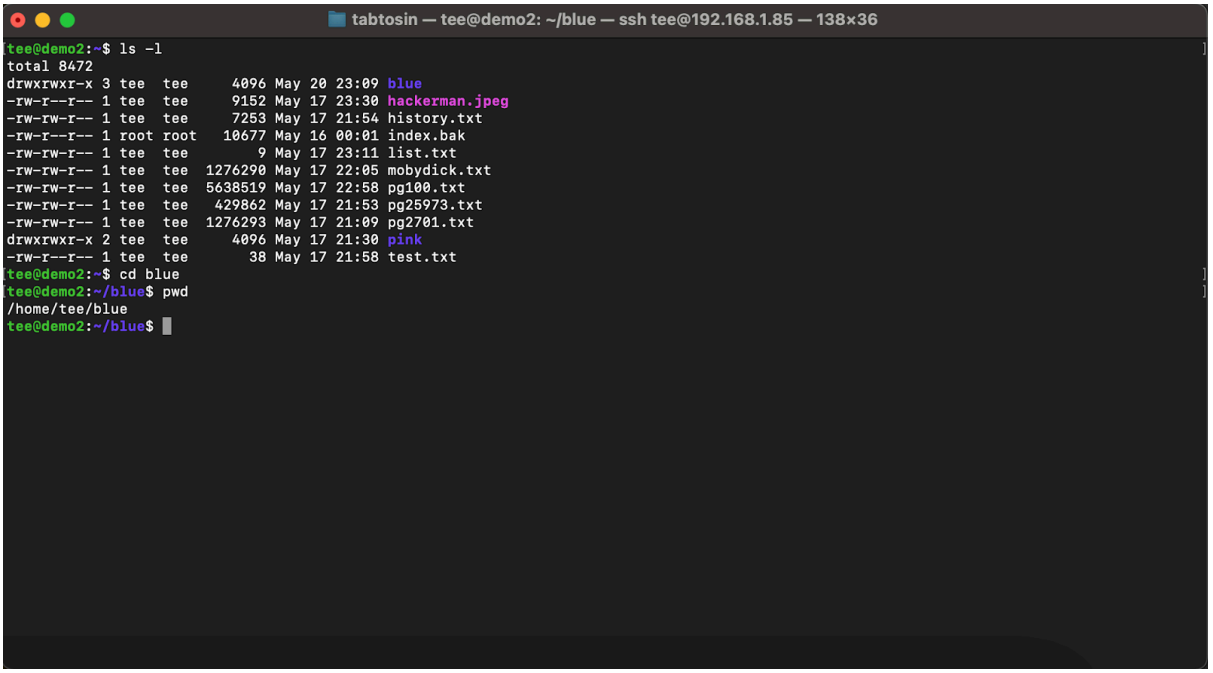
ls - this command lists the files and directories contained in the current directory the user is in.



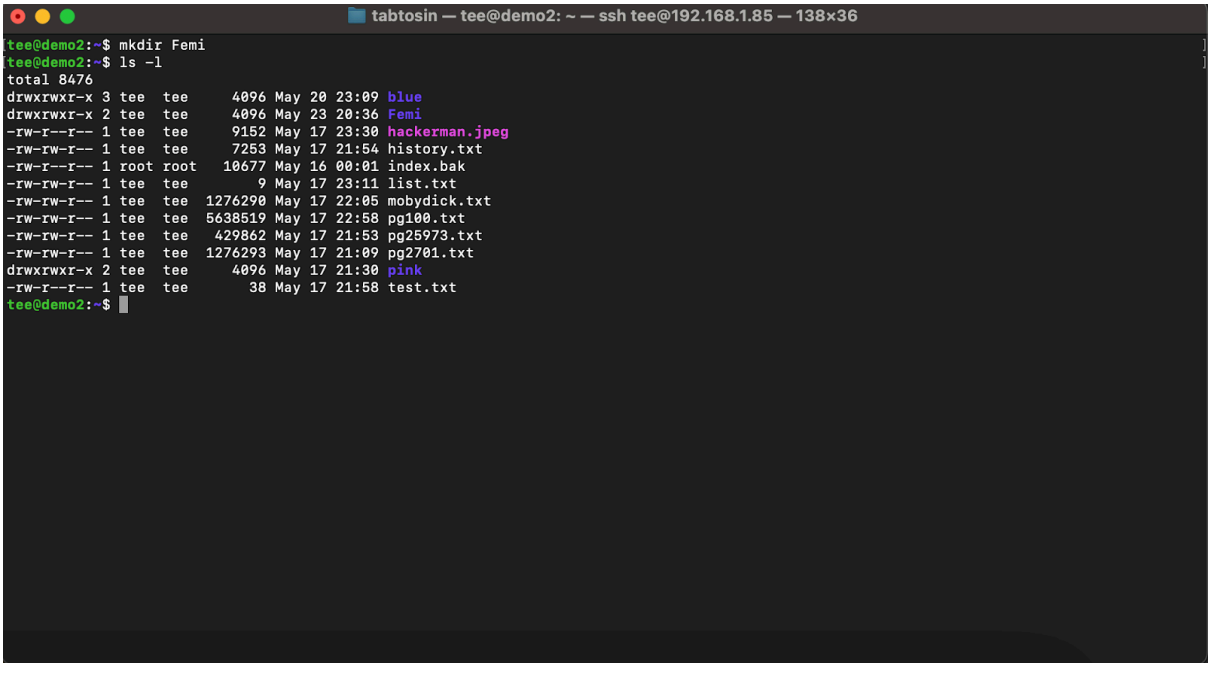
cd - this command is used to change directories. The command is an abbreviation for the action it performs “change directory”.



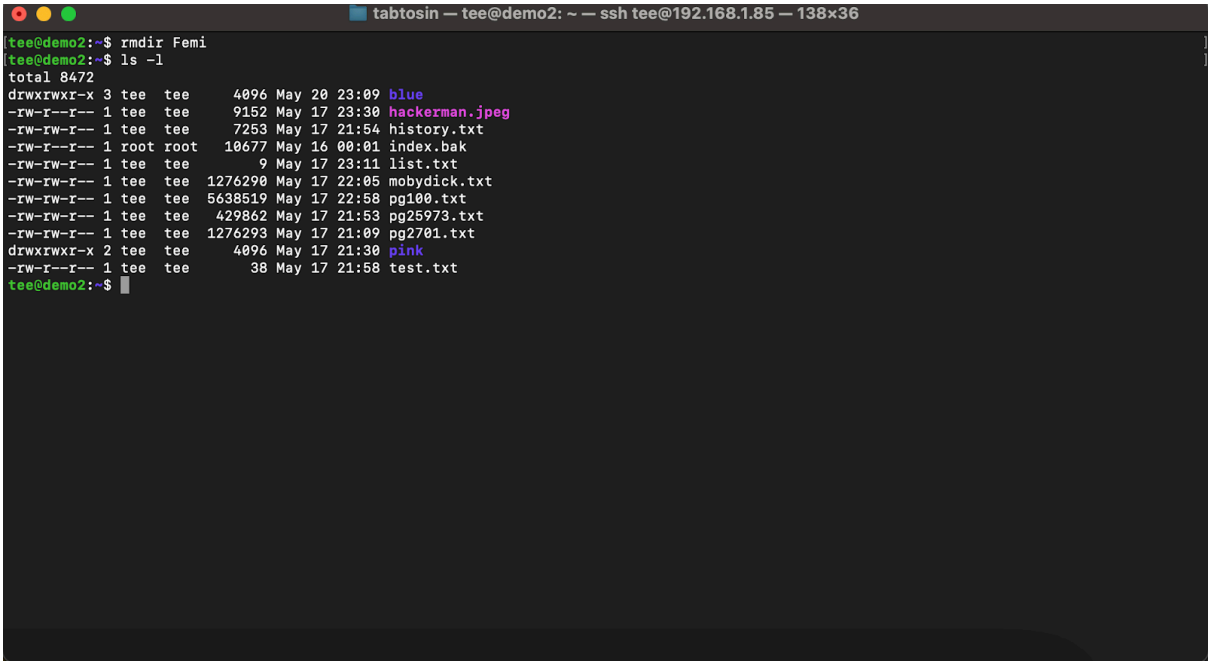
pwd - this command line is used to check the present working directory the user is currently in.



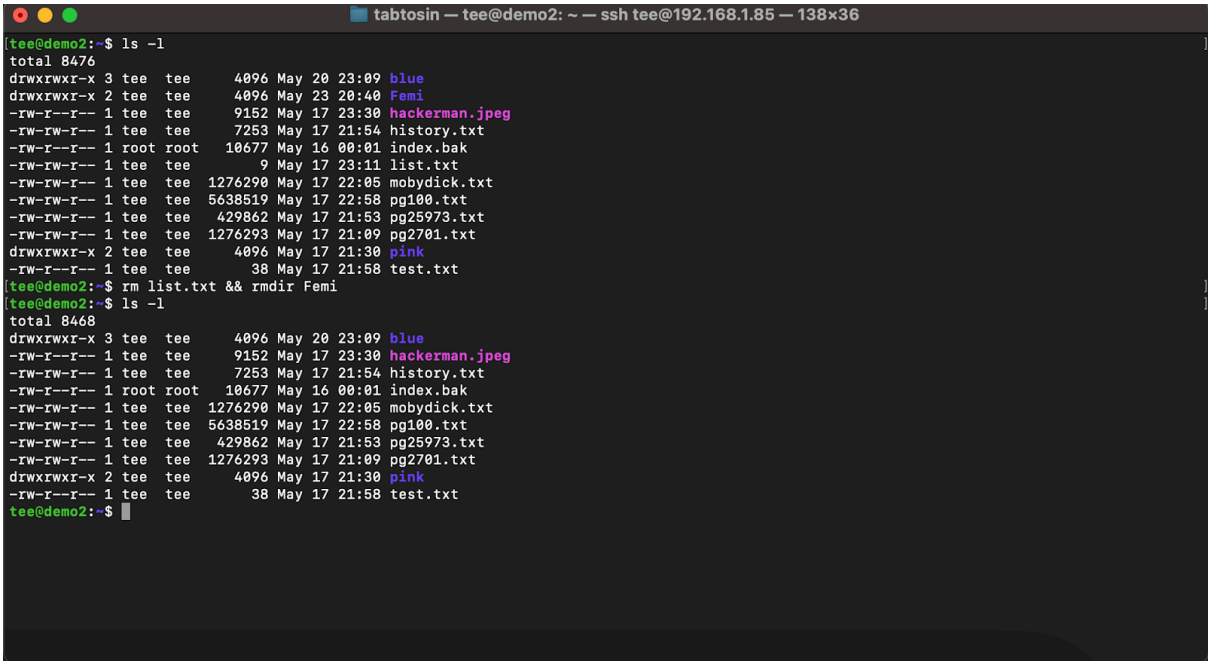
mkdir - this command is used to create a new directory. The command line can be interpreted to mean “make directory”



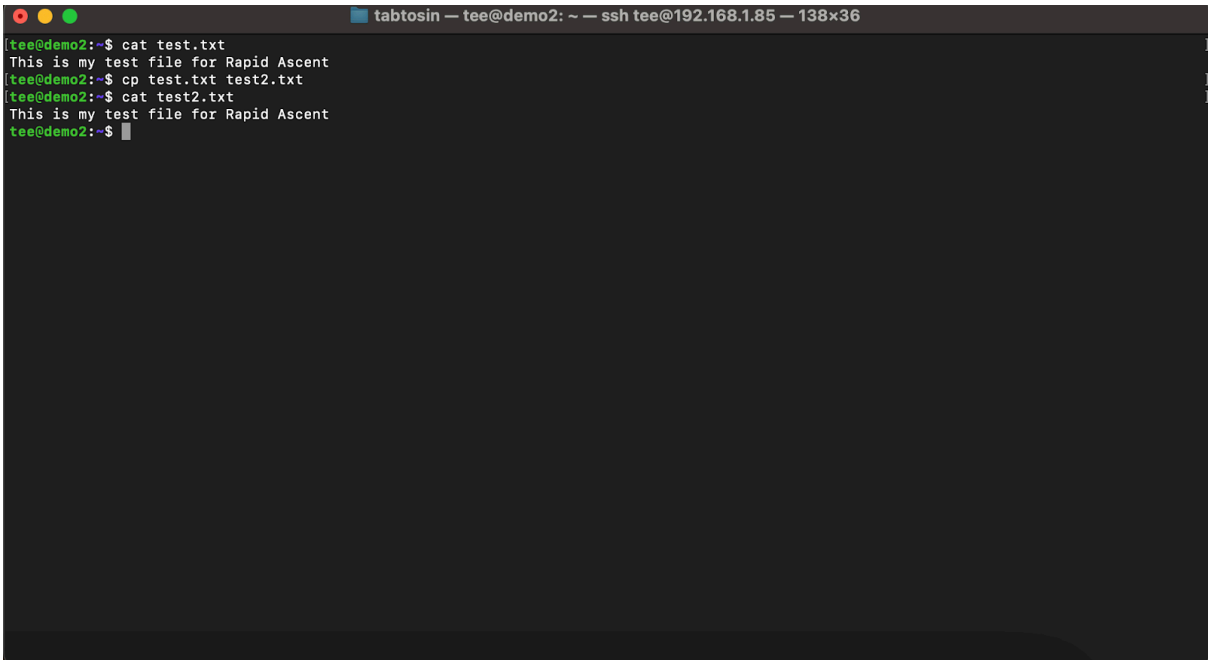
rmdir - this is the opposite of the previous line command. It is used to delete a directory. The command line can be interpreted to mean “remove directory”



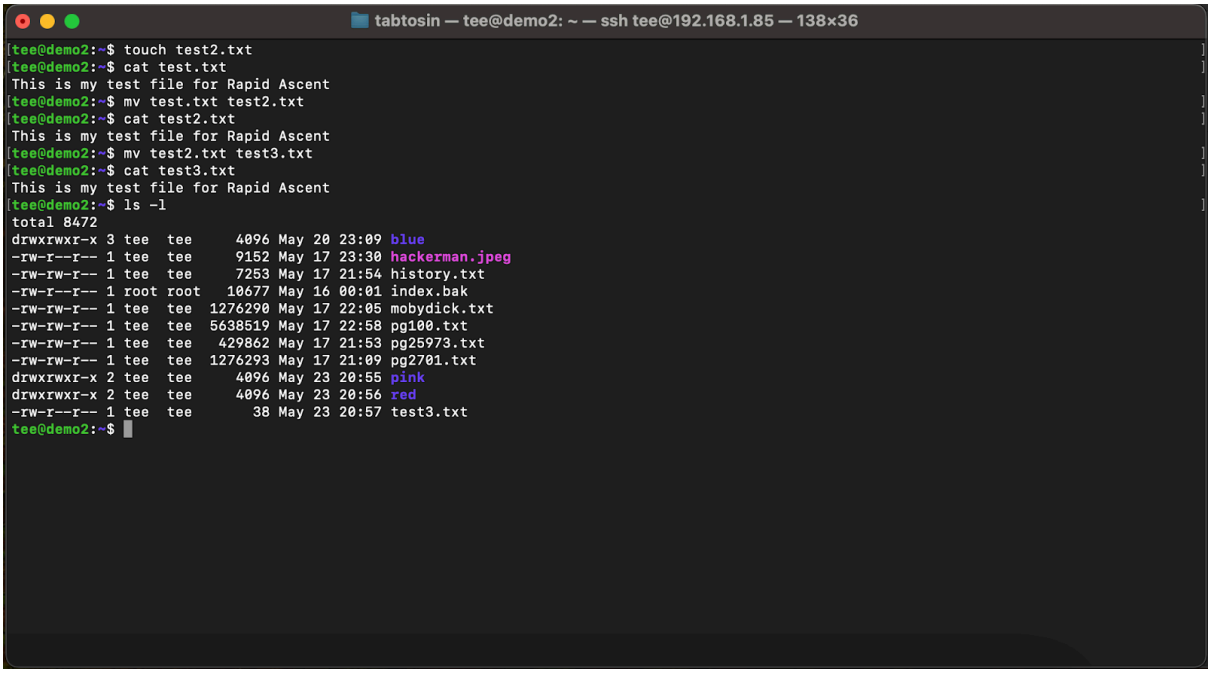
rm - this command is used to remove files and directories.



cp - this command is used to copy files and directories from one location to another.



mv - this command is used to move or rename files and directories.

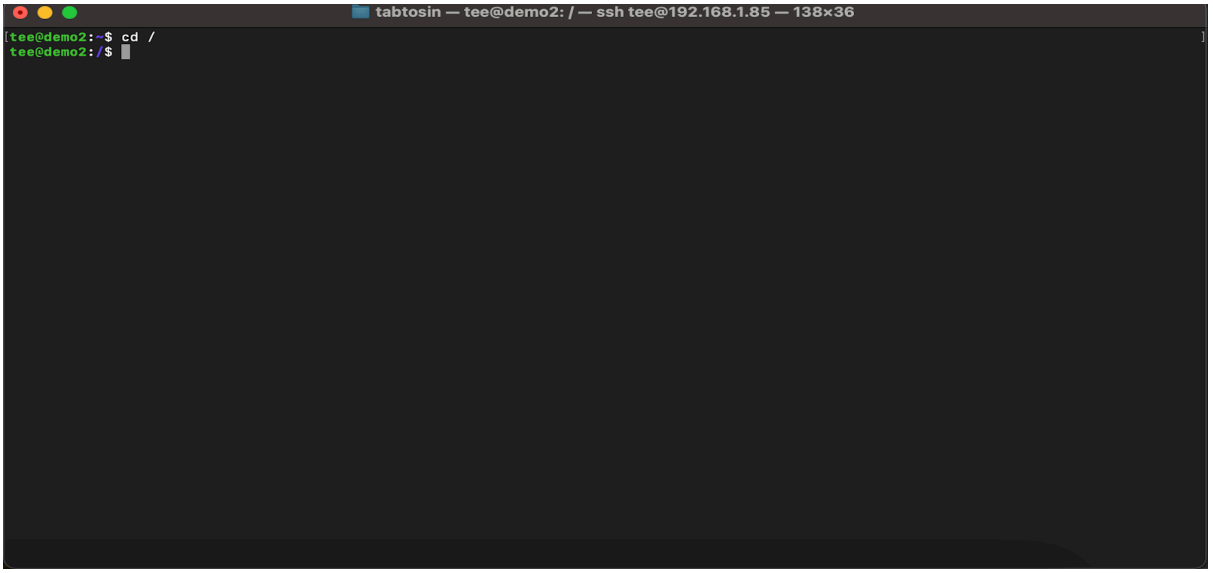


Assignment #3 - Linux Concepts

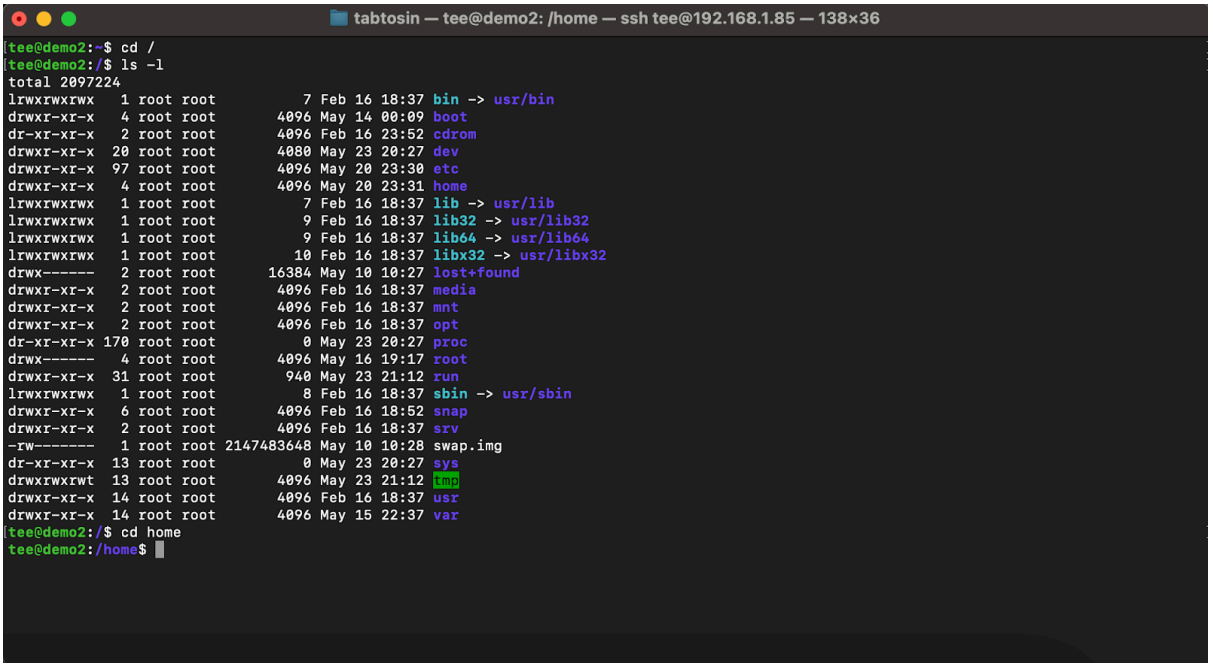
Linux File System: this can be compared to a big tree whose branches hold files and folders in a well organized format.

Linux Prompt: this is the text in the home display field of the Linux Window. It usually in this format: “username@hostname :~$”

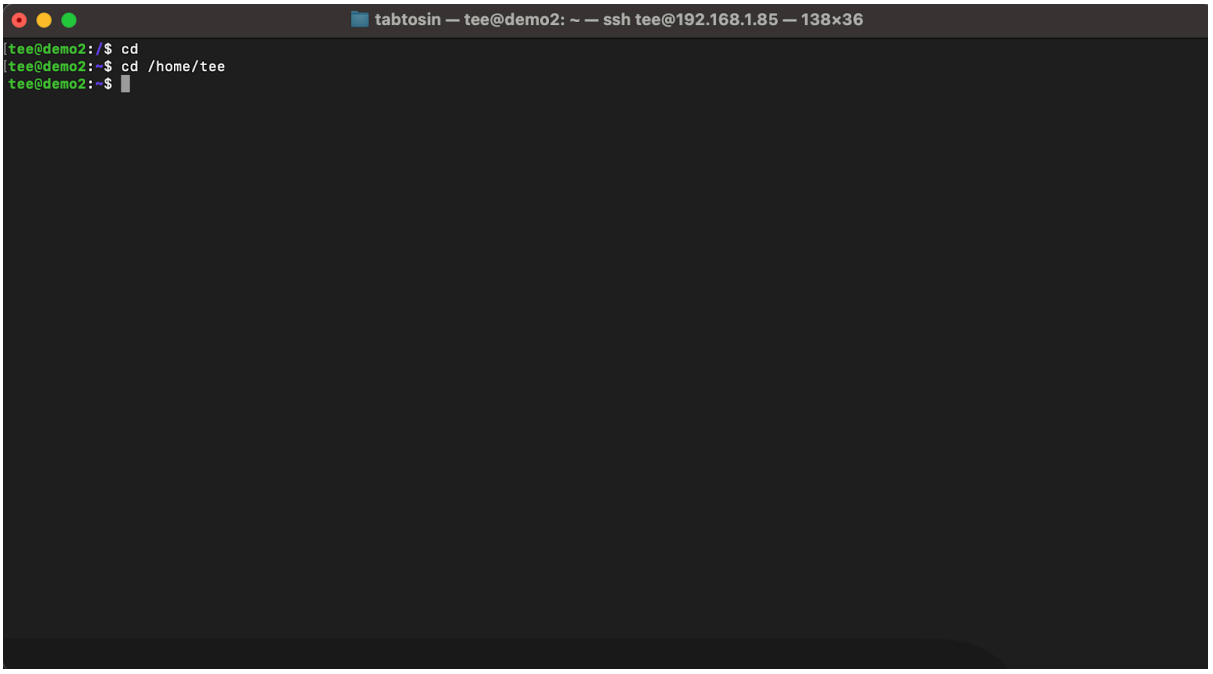
Root Directory: the root directory is the headquarter for all directories and files located in the system.



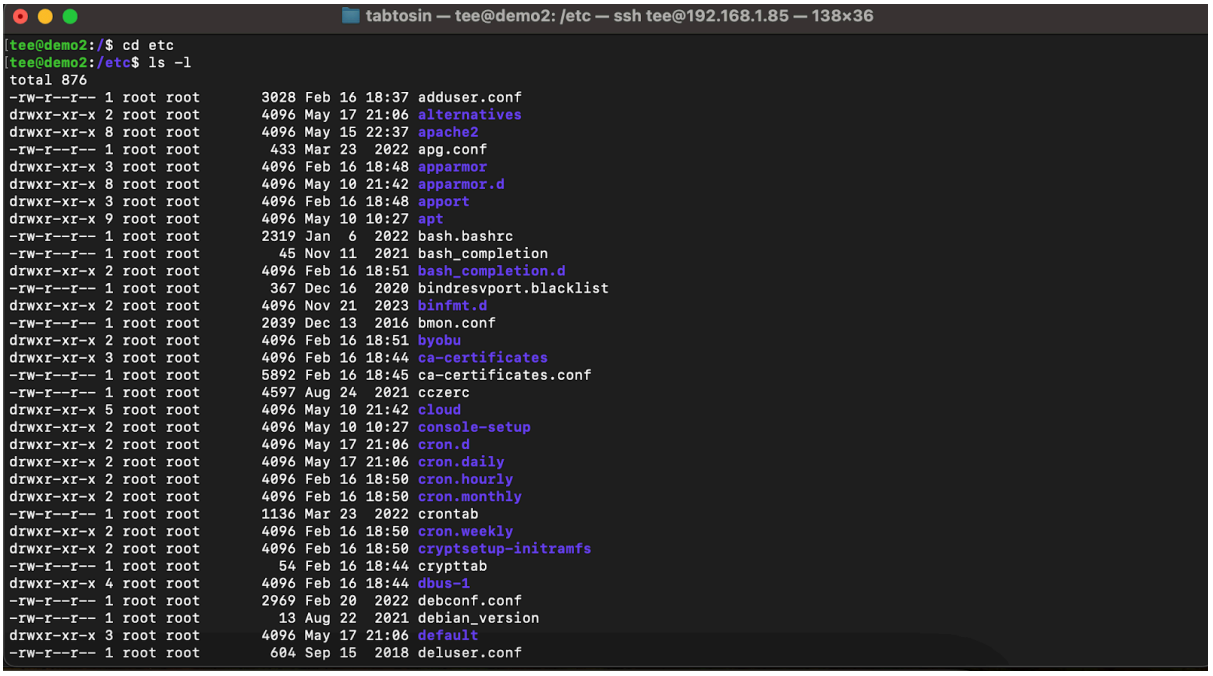
Root Home Directory: this is the home directory exclusive to the root user account. It holds all the files and folders accessible only by the root user.



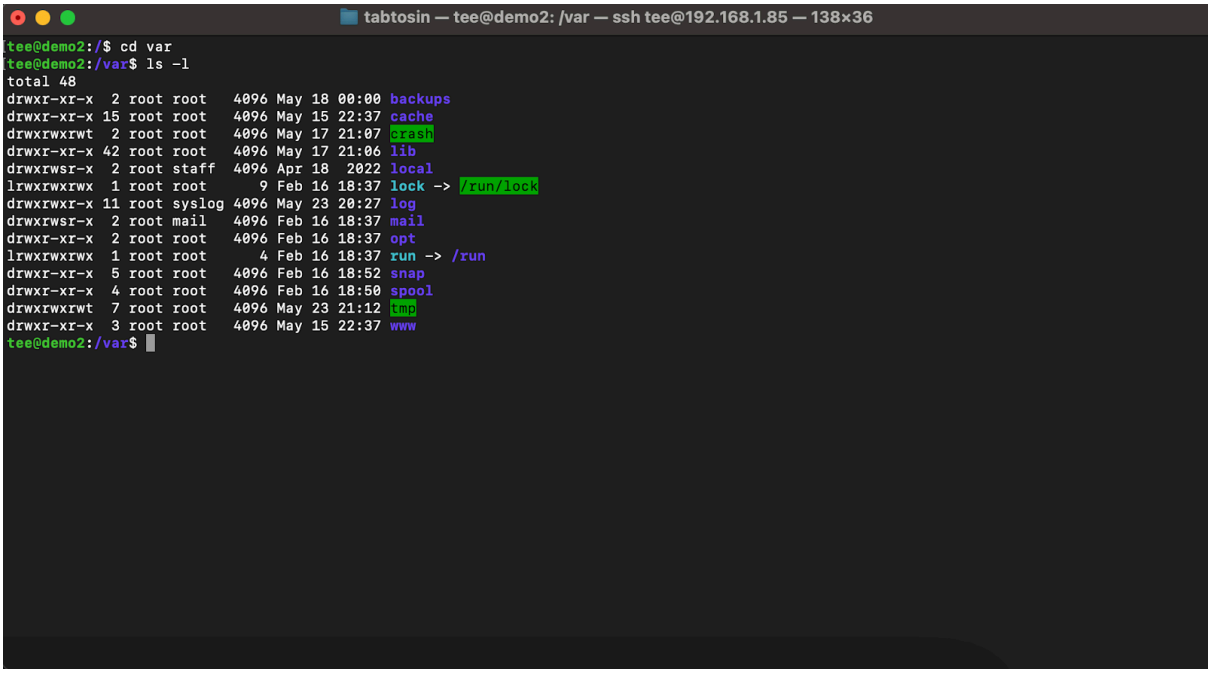
Home Directory: this is like the root home directory but for non-root users. Each user is assigned a home directory exclusive to them upon account creation.



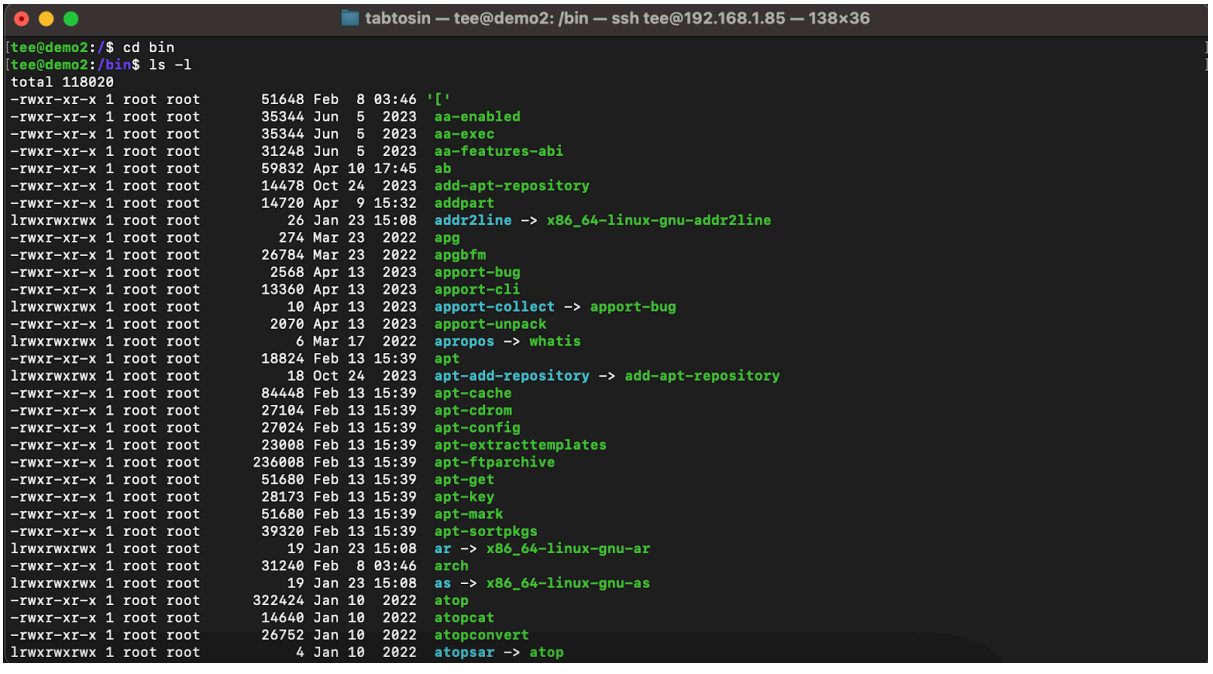
etc Directory: this directory contains configuration files and directories used by the programs and services running on the system.



var Directory: the var here stands for variable. Like the name implies, this directory contains files that change every so often during system processes.



bin Directory: the bin here stands for binaries. This directory contains vital binary executable files that are necessary for the Linux system to operate without any issues.



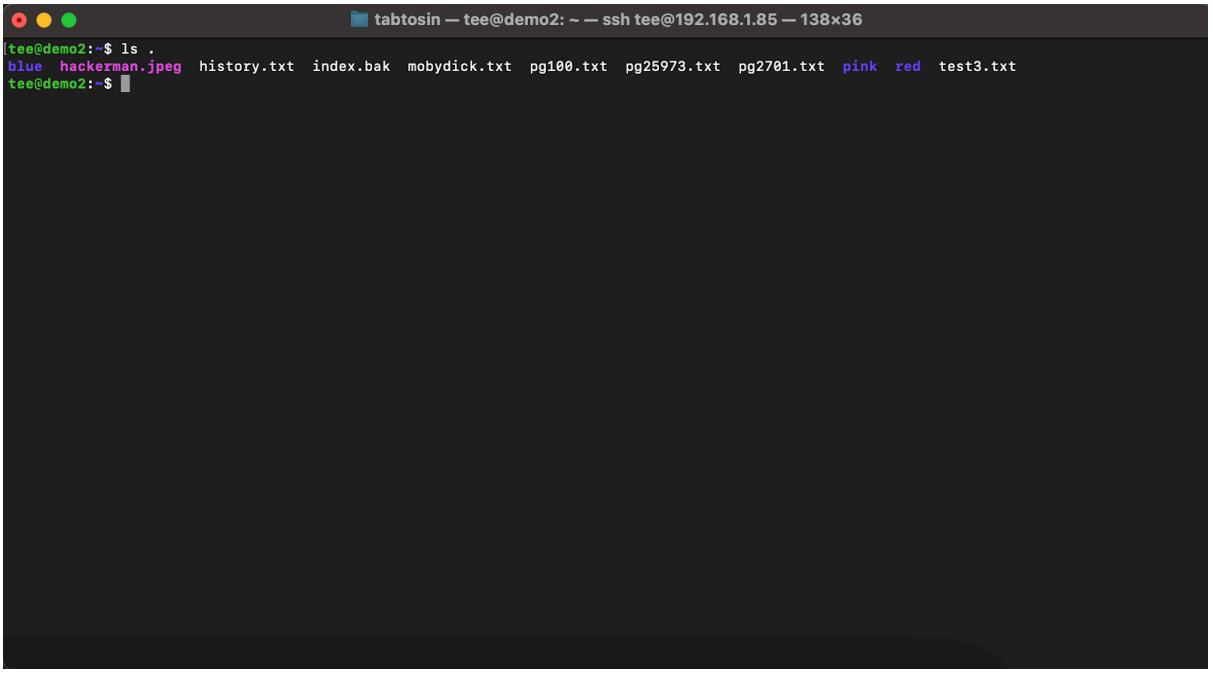
Assignment #4 - Linux Concepts

Explain “.” and “..” in Linux, and how it is used.

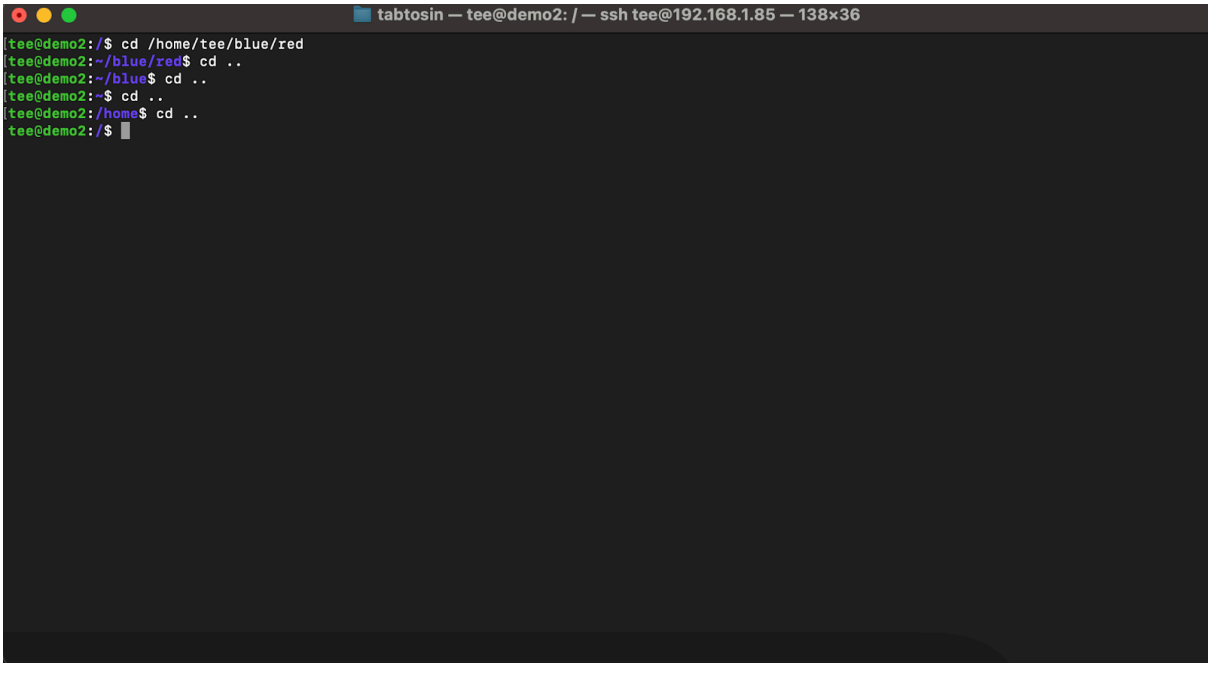
The “.” command in Linux refers to the directory the user is currently working in. It is used in a command line to specify that a particular command should be executed in the same directory in which the command was given.

On the other hand, the “..” command refers to the directory in which the current directory exists. In other words, a parent directory. Including the “..” in a command line specifies that the given command should be executed against the backdrop of the parent directory.

Show how “.” can be used with ls command in Linux.



Show how “..” can be used with the cd command in Linux.



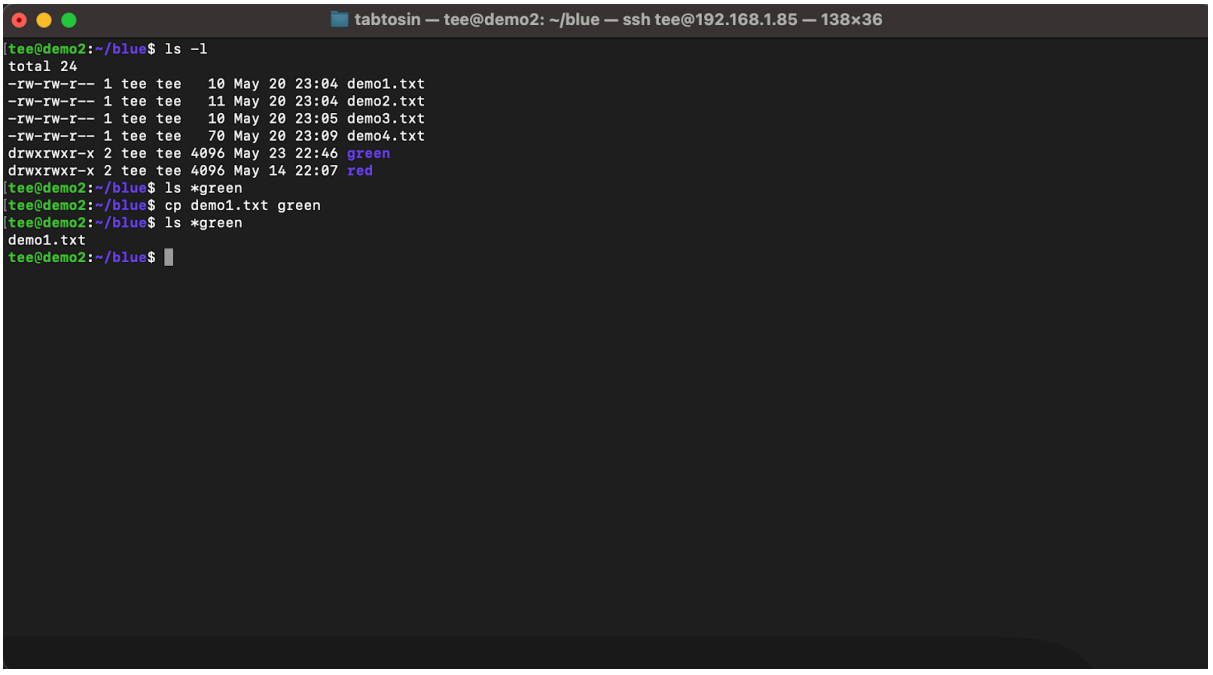
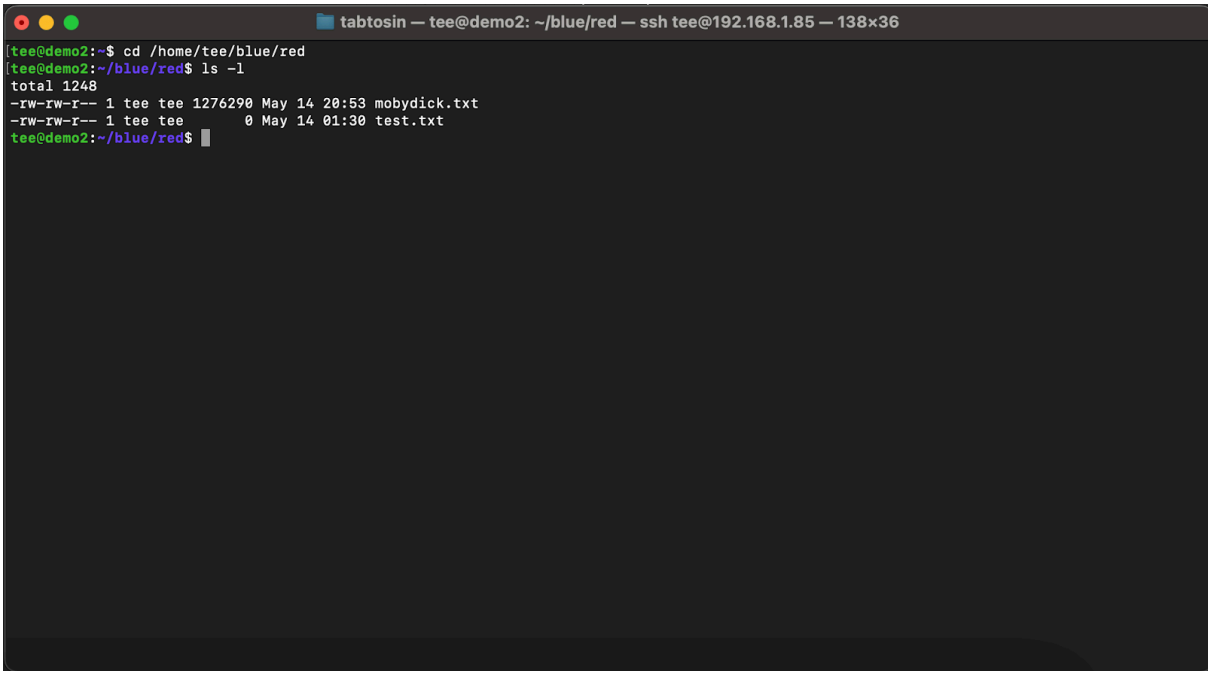
Assignment #5 - Linux Concepts

Explain Relative vs. Absolute Paths, and how they are used in Linux.

In Linux, relative paths are used to specify the location of a current file or directory against the backdrop of the current working directory the user is present in. They are typically shorter commands used to reference a file or directory stored in the present working directory.

On the other hand, absolute path is a more elaborate command that specifies the location of a file or directory, tracing it all the way back from the root folder to its present direct directory. Due to the specificity of the absolute path command line, it is typically long but precise.

Show how you can use the Relative Path with the cp command in Linux.



Show how you can use the Absolute Path with the cd command in Linux.