Day 4 we discussed and learned about Linux operating system, focusing on the Linux terminal, shell architecture, and system hierarchy. We also touched on advanced concepts like the structure of Linux OS, the shell, and applications integrated within the system.

Key Topics Covered:

1. **Linux Terminal**:
   - **Prompt Symbols**:
     - **$**: Represents a normal user prompt.
     - #: Indicates a superuser (root) prompt.
   - Example :

     lab05-pc04@lab05pc04-H310M-S2-2-0:~$
   - In this example, `lab05-pc04` is the system's hostname, and the ~ symbol represents the user's home directory.
   - **hostname Command**:
     This command was demonstrated to show the machine's hostname, which is a unique identifier for the system on the network. By typing the command `hostname`, we can display the name of the system

2. **Bash Shell**:
   - **Bash**: Stands for **Bourne Again Shell**, a widely-used shell in Linux that allows users to interact with the operating system. It is both an interactive interface and a scripting environment for automating tasks.
   - Bash is the default shell for most Linux distributions and provides powerful command-line utilities for managing the system.

Linux System Architecture:

1. **Shell and Kernel**:

- In Linux, the shell and kernel are separate components, unlike Windows, where the shell and kernel are tightly bound together. The shell acts as an interface between the user and the kernel, allowing for user interaction and command execution.

2. **Shell as an Interactive Medium**:

- The shell is an interactive medium, allowing users to input commands and get results. It serves as the primary interface for executing programs, scripts, and system management tasks.

3. **Deep Web and Tor**:

- The **Deep Web** and **Tor Browser** were briefly mentioned. The Tor browser, which provides anonymous browsing capabilities, is integrated into the Brave web browser, which enhances privacy and security for users.

4. **Operating System as an Application**:

- It was noted that the operating system (OS) itself can be viewed as an application, as it is responsible for managing resources and providing a platform for other applications to run

Linux Hierarchy:

1. Linux File System Hierarchy:

- The structure of Linux is organized in a hierarchical manner, where various directories and files are located within specific folders. One important directory discussed is **/usr/bin**, which contains binary executables (commands) that are used by the system.

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Conclusion:

Day 4 of the internship provided an in-depth look into the Linux system, covering the structure and functionality of the terminal, the role of Bash as a shell, and the hierarchy of the Linux operating system. We also discussed various aspects of how the OS interacts with applications and the shell environment. Understanding these foundational concepts will be crucial as we continue to explore Linux in future sessions.