Module Code & Module Title

Level 5 – CT5052, Network Operating Systems

Assessment Type

Logbook 6.

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Submitted to: Mr Prasant Adhikari

I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

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Introduction

The Linux command-line interface is an essential tool for interacting with Unix-based operating systems. Unlike graphical user interfaces (GUIs), the command-line provides a more powerful, flexible, and efficient way to perform tasks such as file management, process control, and system administration. It originated as a key component of the UNIX operating system in the 1970s and has since evolved to become a standard in modern computing, particularly for developers, system administrators, and IT professionals.

Despite the availability of GUI alternatives, the Linux command-line remains indispensable due to its ability to perform complex tasks quickly and script repetitive processes for automation. For instance, commands like whoami, ls, and cat allow users to manage files, monitor system activity, and retrieve information about their environment with minimal resource consumption. Tools like script enable users to record command-line sessions for documentation and troubleshooting purposes, making it ideal for professional and academic use.

In this workshop, we explore fundamental Linux commands and their practical applications. By creating and manipulating files, listing directories, and using the script command to log activities, this lab demonstrates the versatility and efficiency of the Linux environment. While GUI-based tools provide accessibility for beginners, the command-line's precision and control make it a vital skill for technical users. This workshop emphasizes these capabilities, ensuring a foundational understanding of Linux command-line utilities.

Objectives

The objective of this workshop is to build proficiency in fundamental Linux command-line utilities by exploring user and system information commands like whoami, who, and finger, and practicing file management using variations of the ls command to list files and directories. Participants will create and manipulate files using commands like echo and cat, combine multiple files, and analyze system files such as /etc/passwd. Additionally, the workshop aims to demonstrate the use of the script command for logging command-line activities, providing hands-on experience in session documentation. Through these activities, participants will develop a foundational understanding of Linux commands, fostering confidence and preparing them for advanced system administration and development tasks.

Required Tools and Concepts

Tools

a. Linux Operating System

   A Unix-based OS (e.g., Ubuntu, CentOS, Fedora) is required to execute the commands and scripts.

b. Terminal/Command-Line Interface

   Access to a terminal application for executing Linux commands.

c. Script Command Utility

   This utility is used to log the session activities. It is pre-installed on most Linux systems.

Concepts

a. Basic Linux Commands

   Familiarity with basic Linux commands such as whoami, who, ls, cat, echo, and finger.

b. File and Directory Management

   Understanding the basics of file creation, listing, and manipulation using commands like ls, echo, and cat.

c. User and System Information

   Knowledge of commands to retrieve information about users and accounts, such as whoami and finger.

d. Session Logging

   Awareness of how to start and stop session logging using the script command.

e. Accessing System Files

   Understanding the structure and purpose of system files, like /etc/passwd.

Steps of Replicate

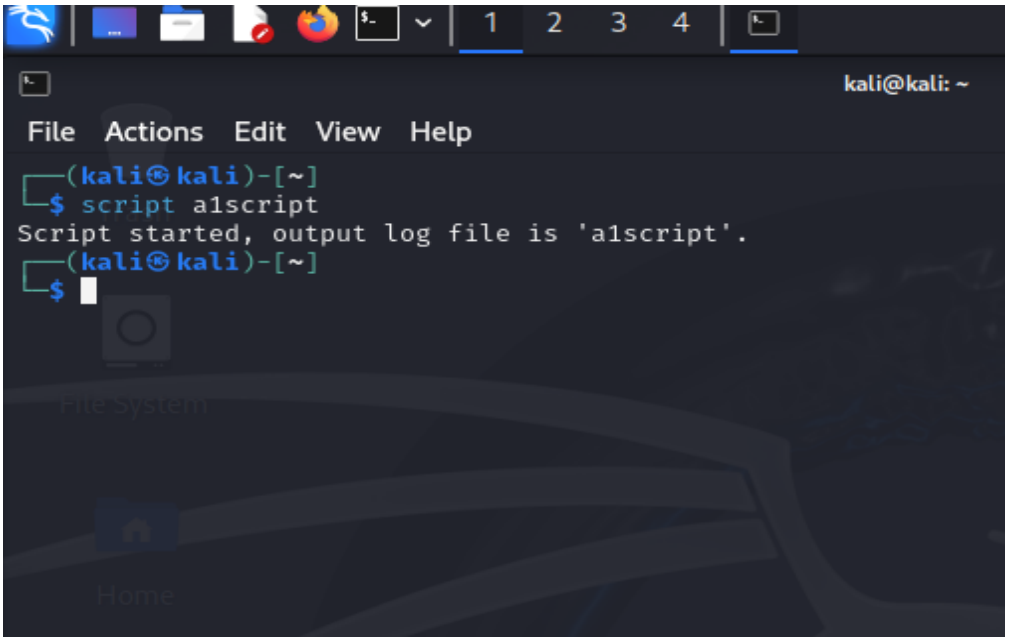

Figure 1: Start script session terminal output

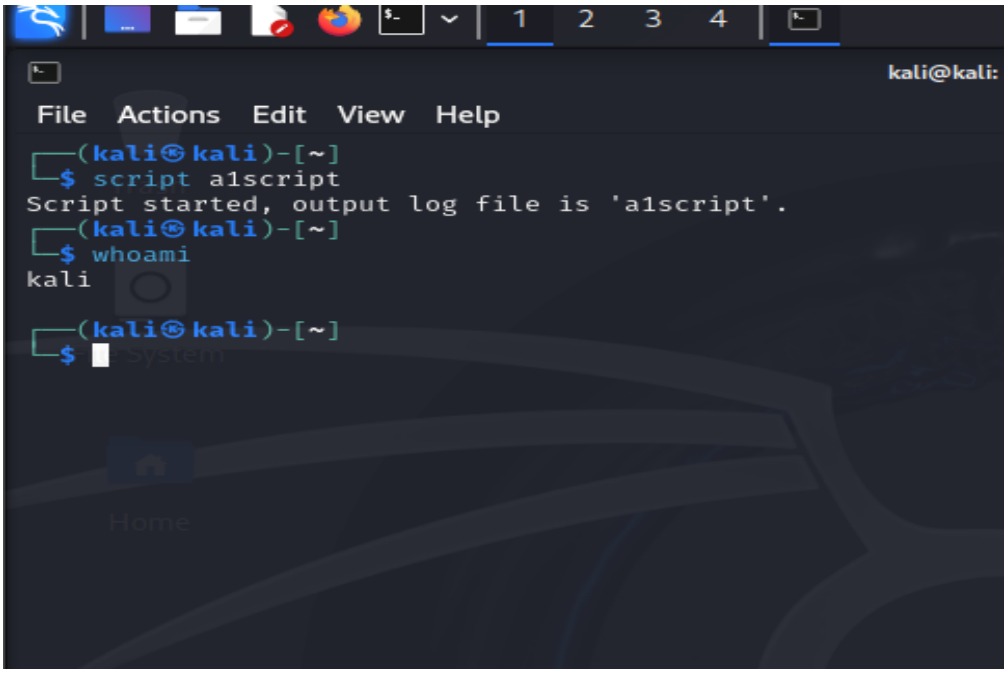

Figure 2: Display username in terminal

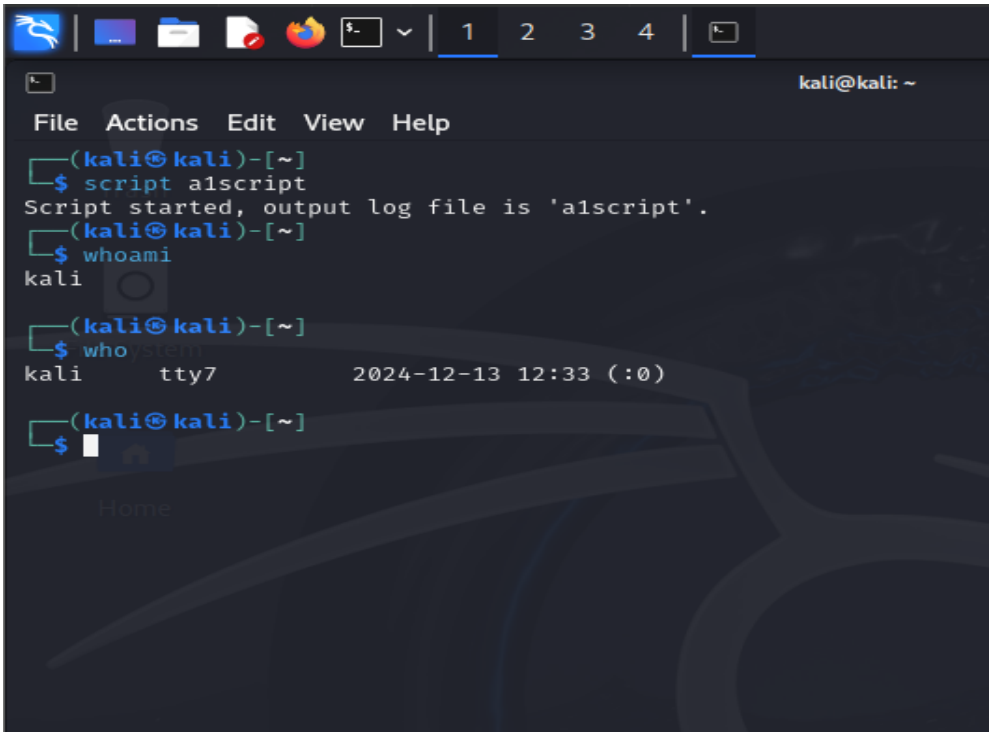

Figure 3: List of logged-in users in terminal

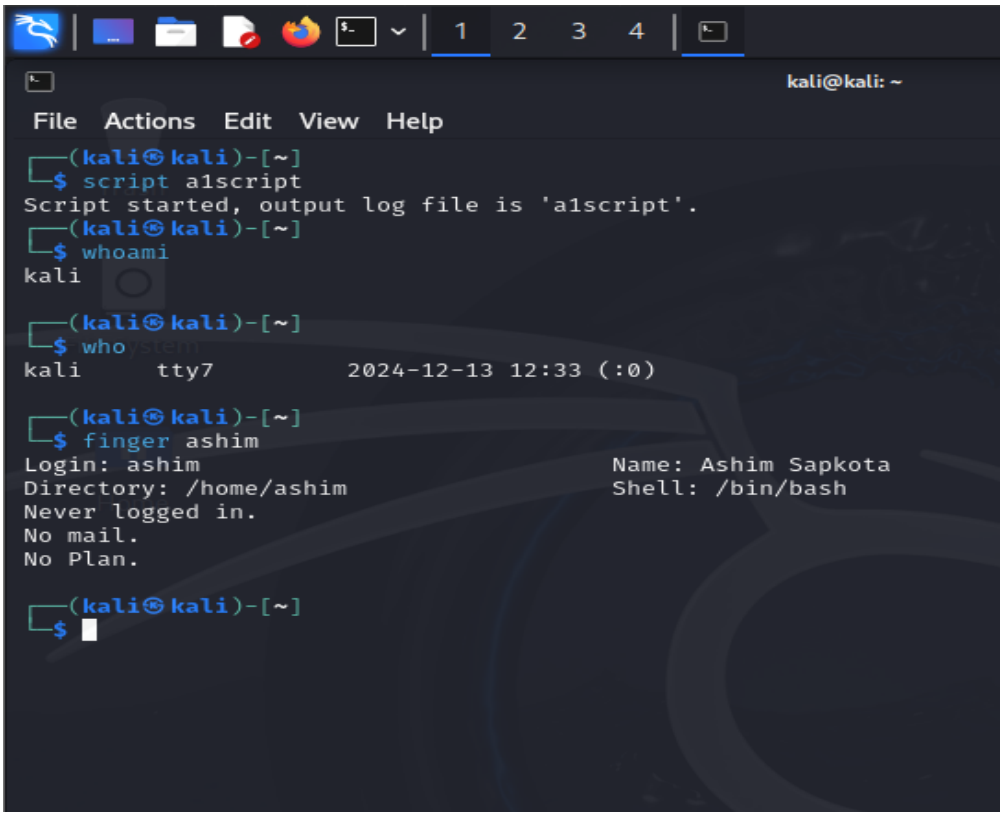

Figure 4: Detailed user information displayed in terminal

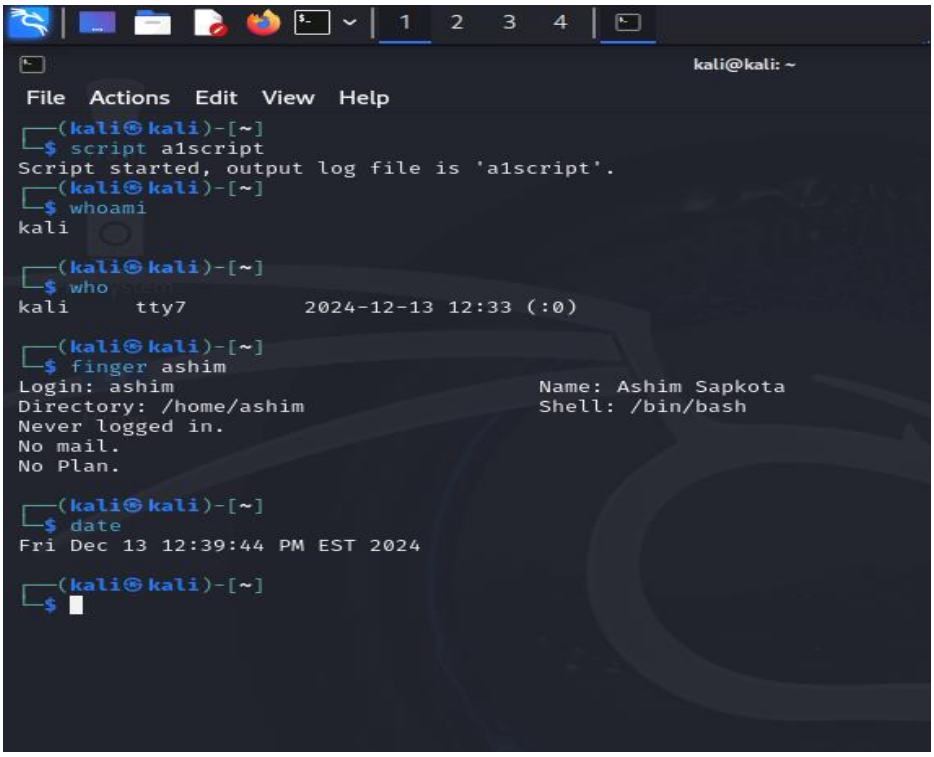

Figure 5: Current date and time terminal display

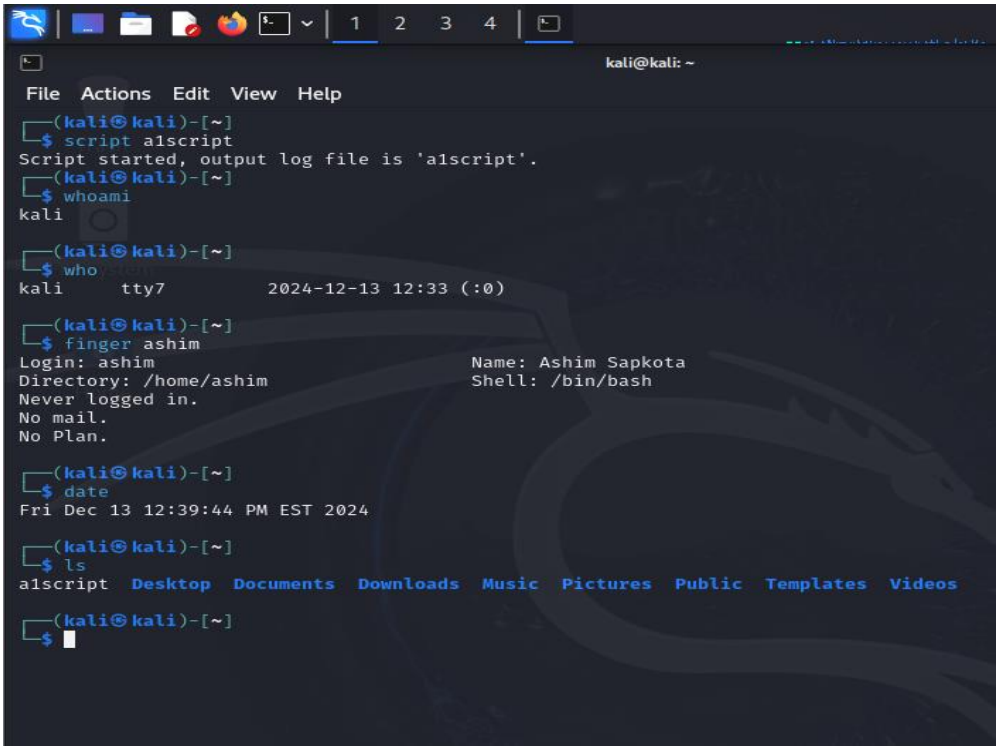

Figure 6: List of visible files in terminal

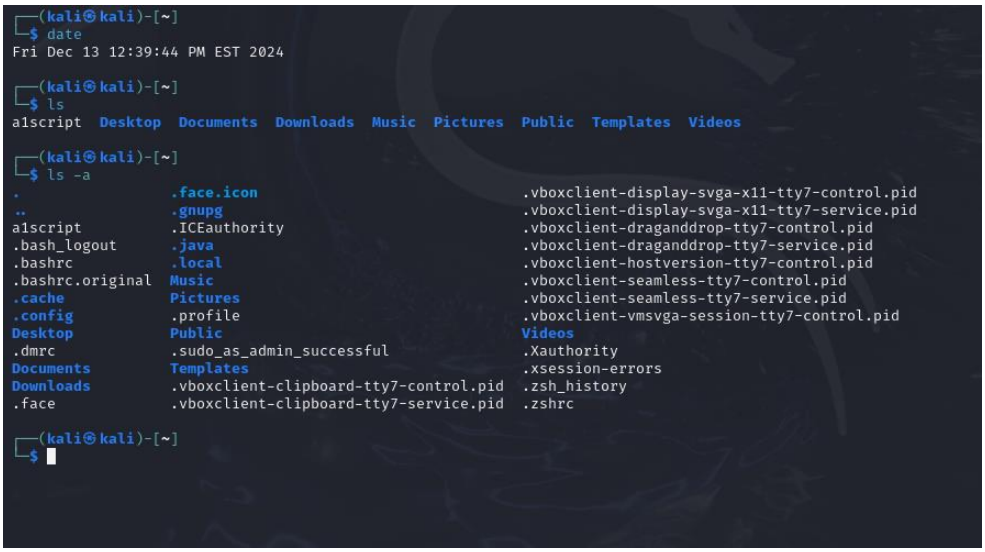

Figure 7: List of all files including hidden files

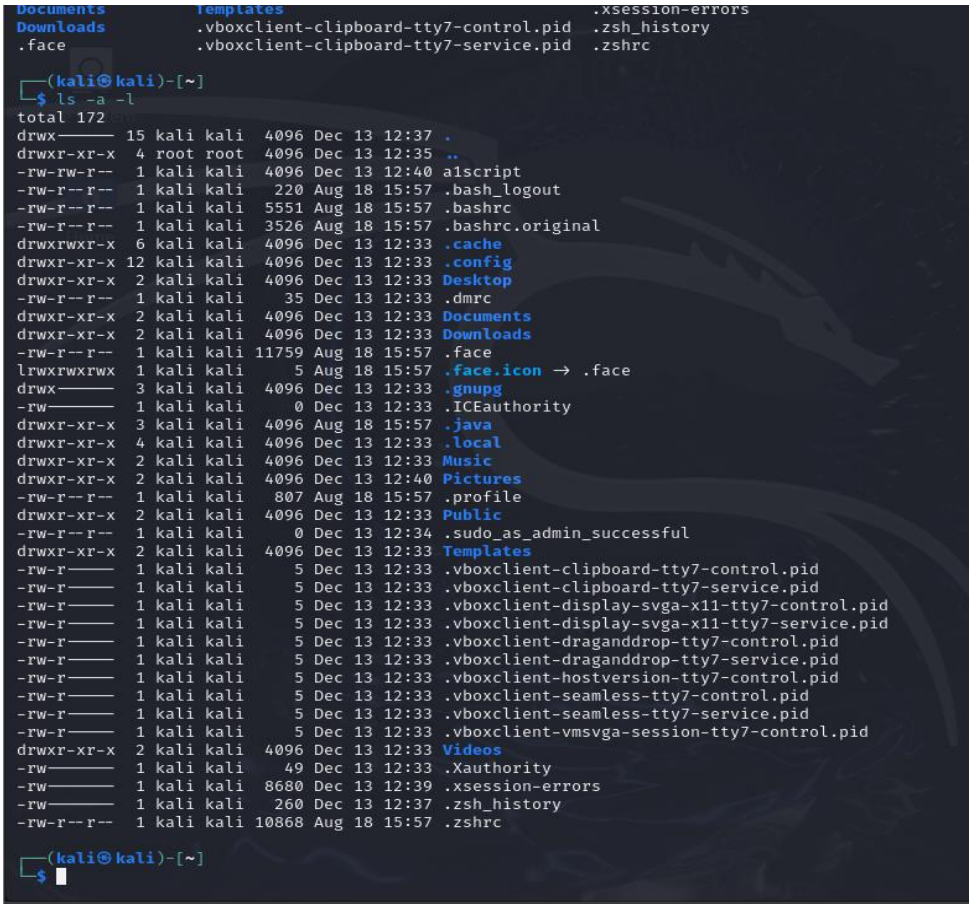

Figure 8: Detailed file listing with permissions and size

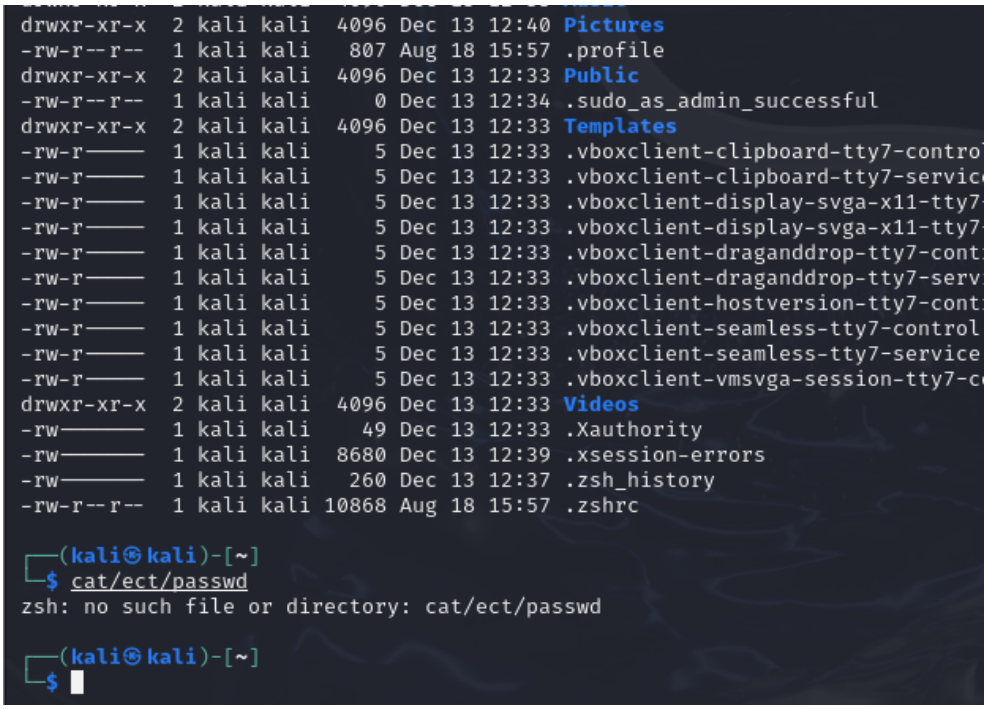

Figure 9: Contents of cat/etc/passwd file displayed in terminal

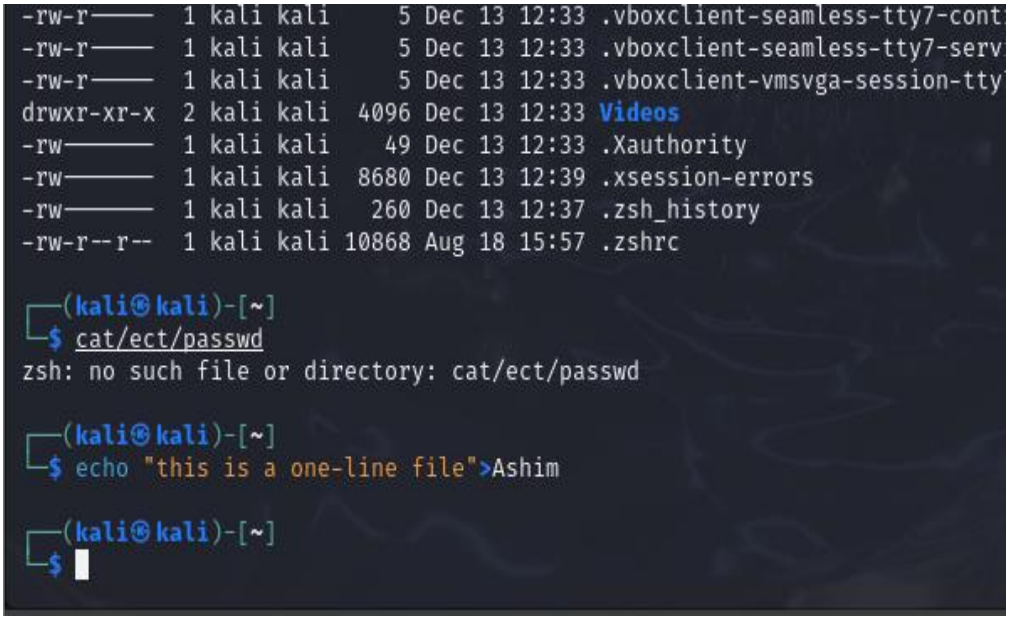

Figure 10: Create a file with echo command terminal

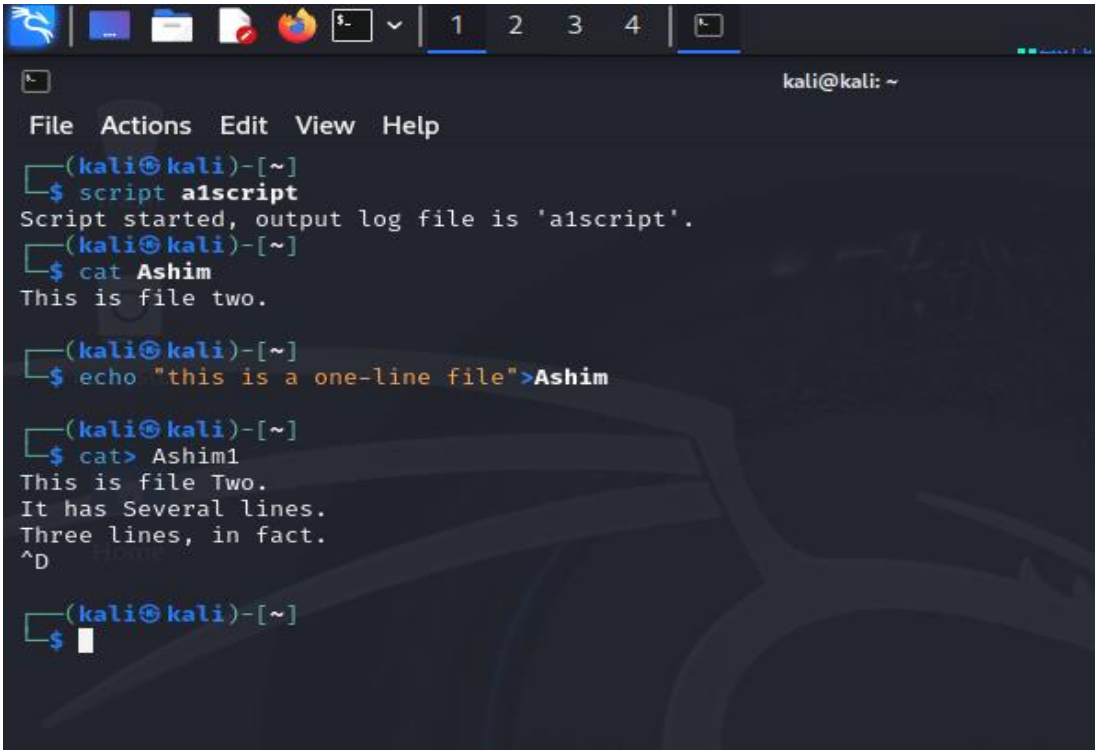

Figure 11: Create multi-line file with cat command terminal

Figure 12:Display contents of Ashim and Ashim1 file in terminal and Combine two files into one using cat command terminal

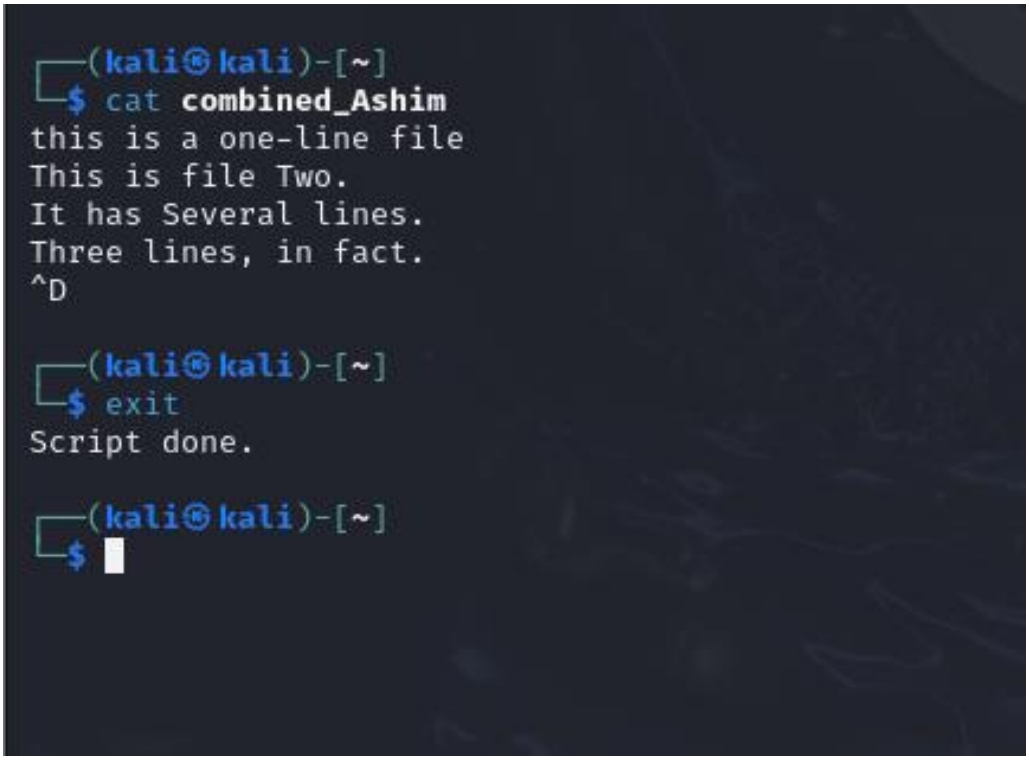

Figure 13: Exit script session and save recording terminal

Conclusion

In this workshop, I gained practical experience with fundamental Linux commands and their applications. I learned to retrieve user and system information using commands like whoami, who, and finger, which helped me understand how to access account details and active user sessions. Exploring file management with ls and its variations provided me with insights into listing files and directories, including hidden files and detailed metadata. I practiced creating and manipulating files using commands like echo and cat, which allowed me to combine files and view their contents efficiently. Analyzing the /etc/passwd file deepened my understanding of system files and their significance in user account configurations. Using the script command, I successfully logged my command-line activities, which is a valuable skill for documentation and troubleshooting. This workshop helped me enhance my confidence in using Linux commands, laying a strong foundation for more advanced system administration and development tasks. Overall, I found this workshop engaging and essential for improving my proficiency with the Linux operating system.

References

Sobell, M. G. (2017). The Utilities. In P. Education, *A practical Guide to Linux Commands,Editors and Shell Programming* (pp. 58-87).