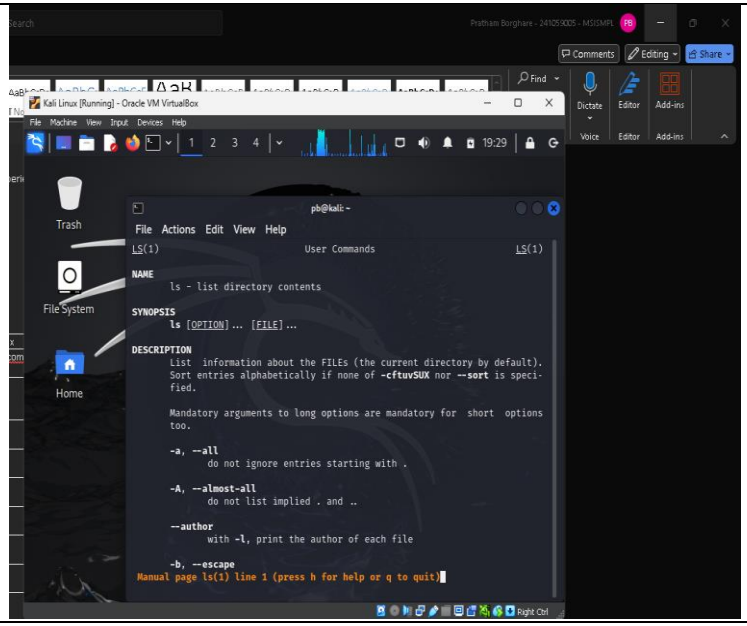
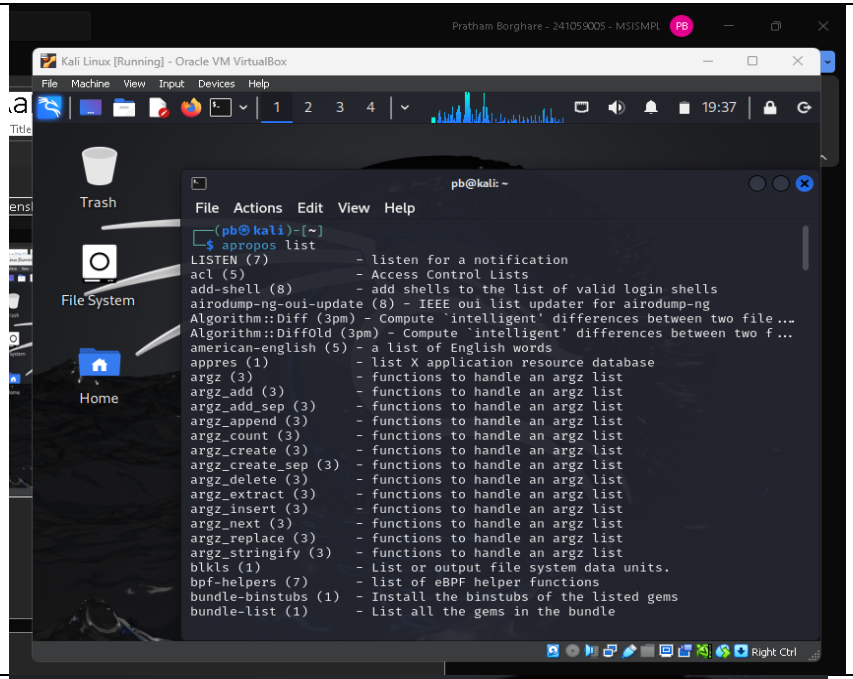
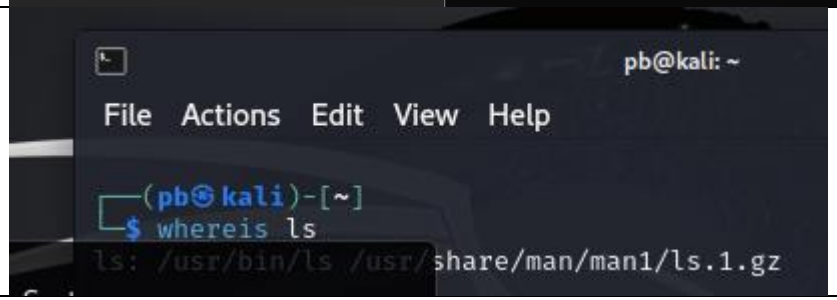
Topic Name:

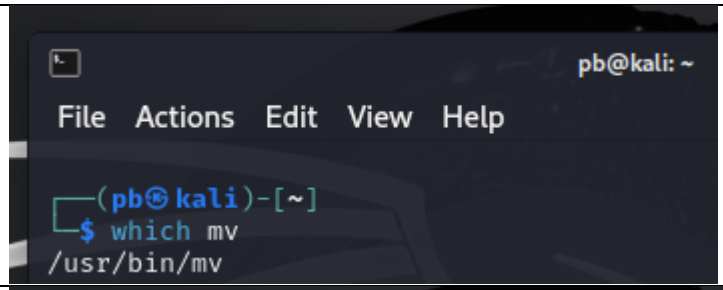
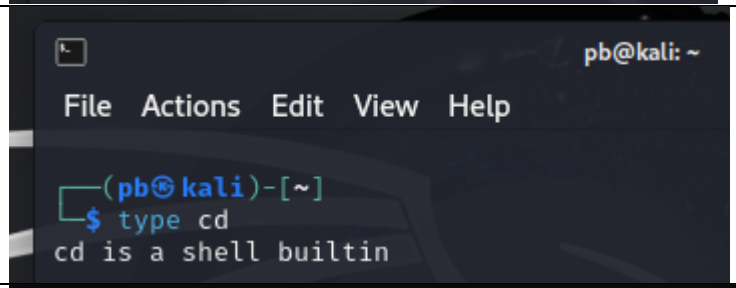
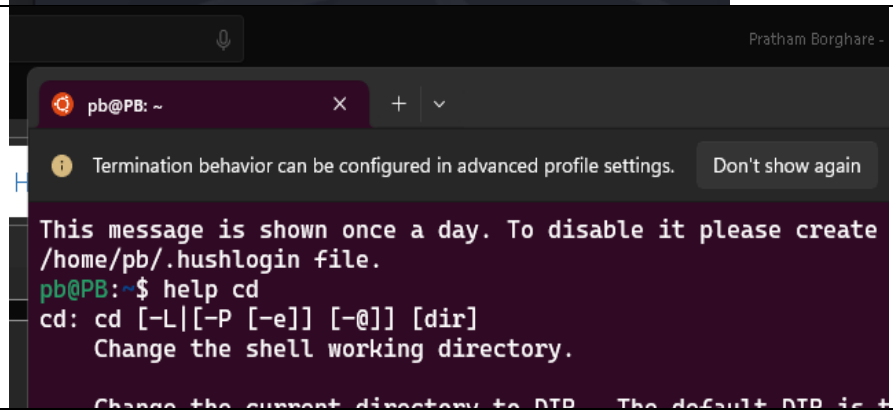
The main aim of this lab session is to provide hands-on experience on

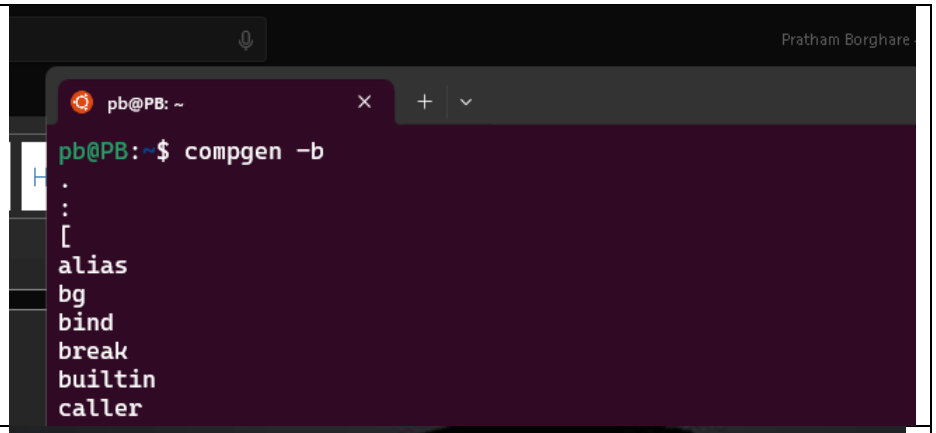
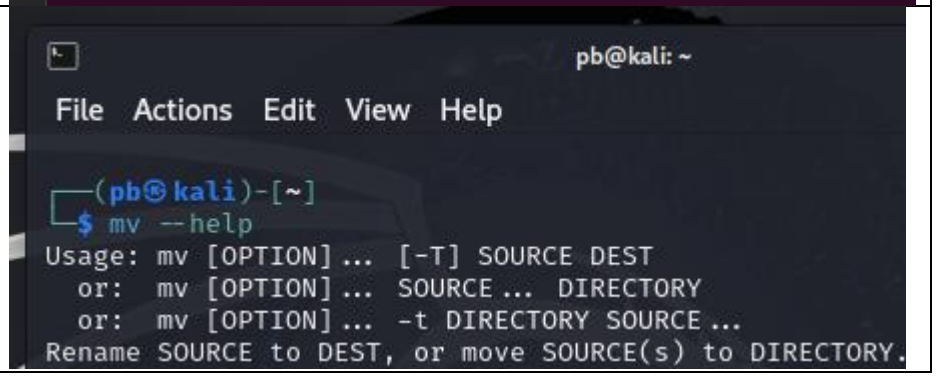
- Getting Help
- Basic Commands
- Navigation
- File System
- simple shell script

1. Getting Help

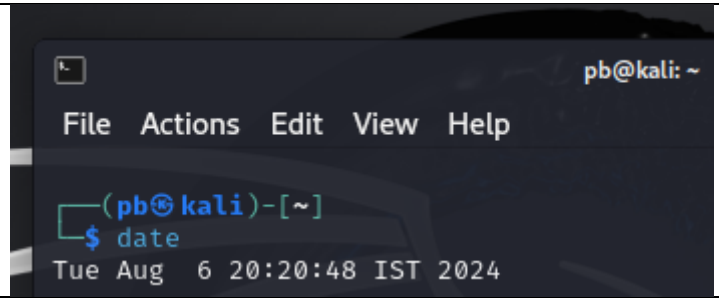
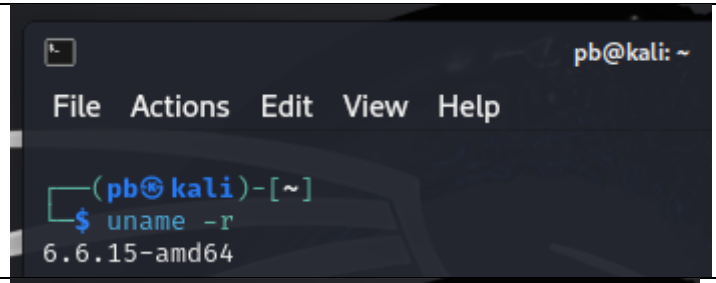
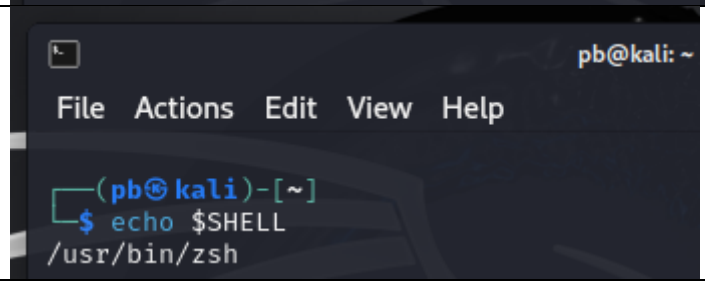
Task	Command Name	Syntax	Example	Screenshots
To get manual page for the known command	man	man command_name	man ls	

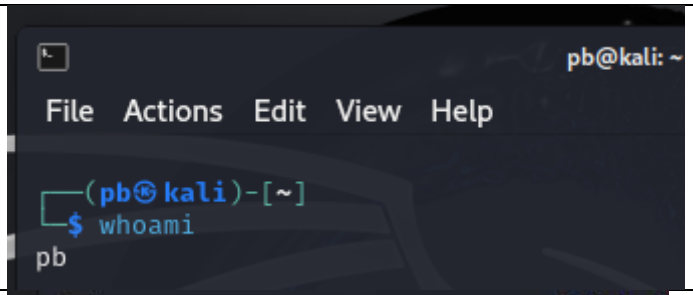
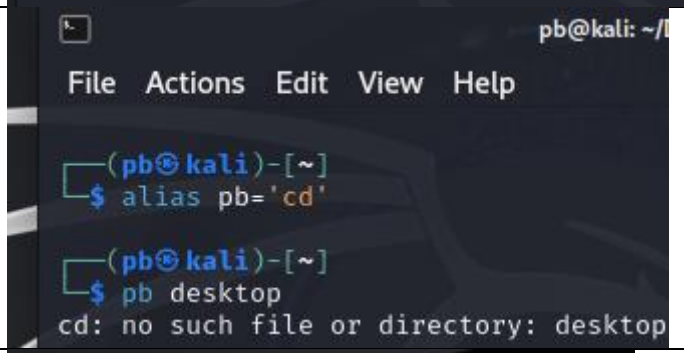
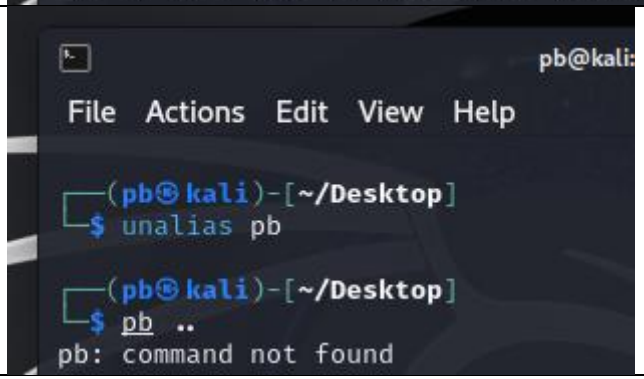
To get manual page for the unknown command	apropos	apropos keyword	apropos list	
To know the source file binary	whereis	whereis command_name	whereis ls	

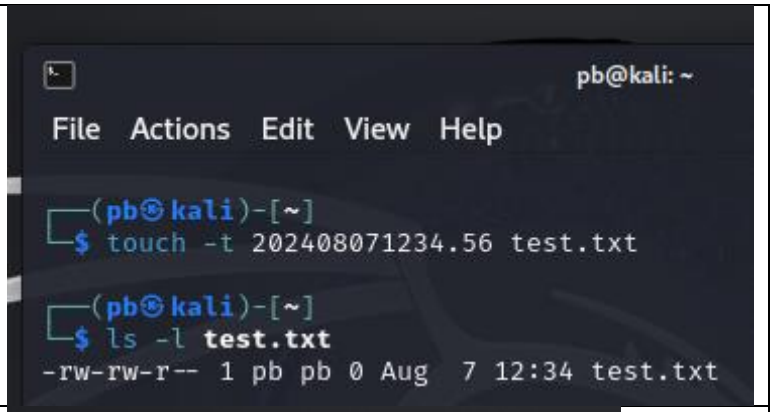
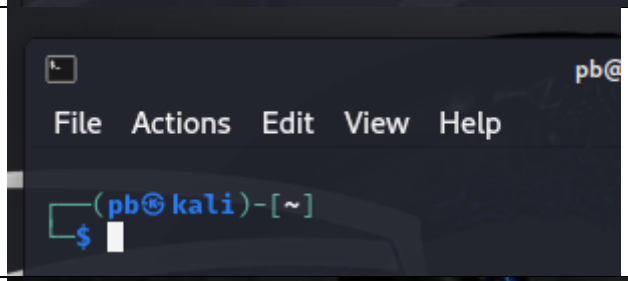
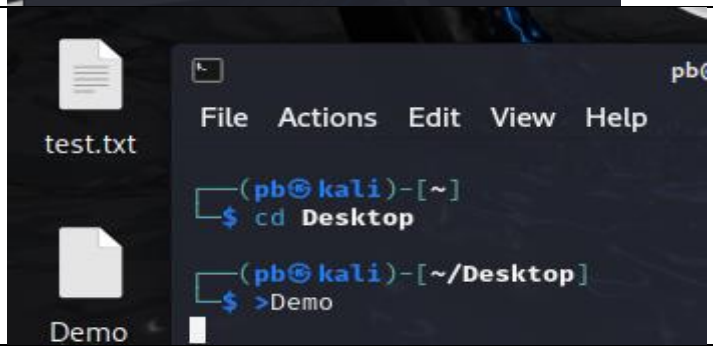
To know the path of the command	which	which command_name	which mv	
To know the command is external or internal	type	type command_name	type cd	
To get help for the internal command	help	help command_name	help cd	

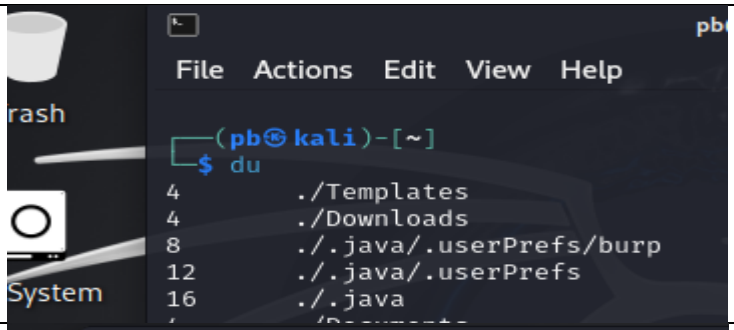
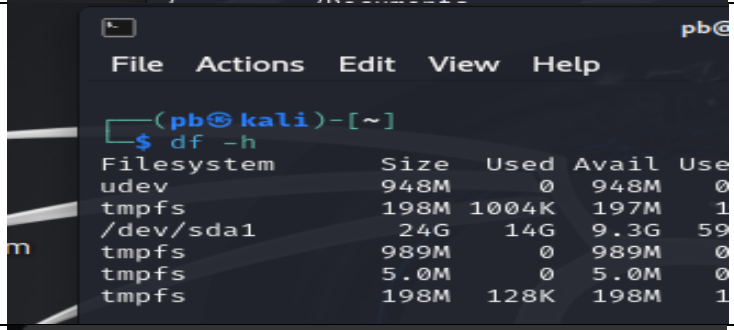
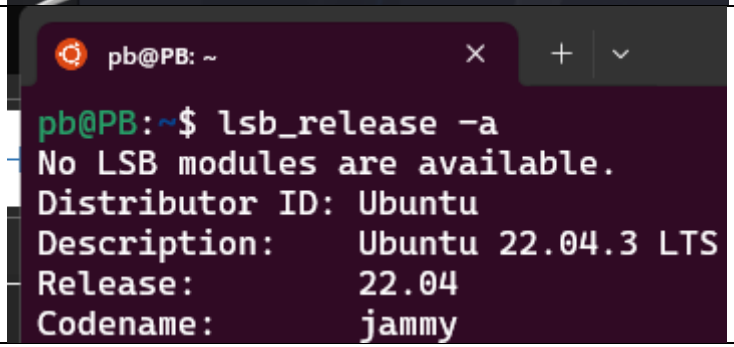
To list out bash commands	compgen	compgen -b	compgen -b	
To know the usage of the command	--help	command_name --help	mv --help	

2. Basic Commands

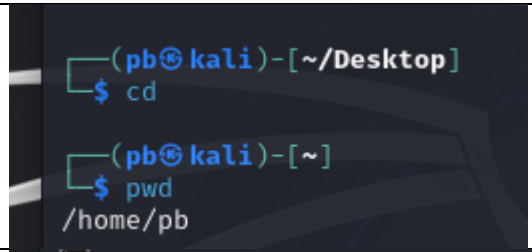
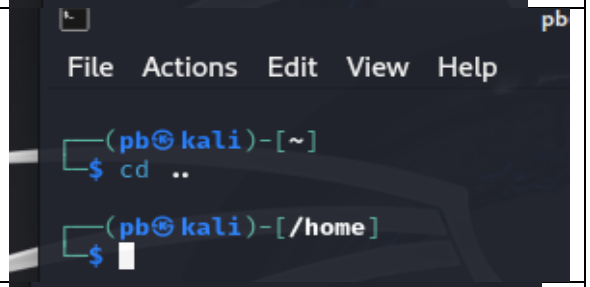
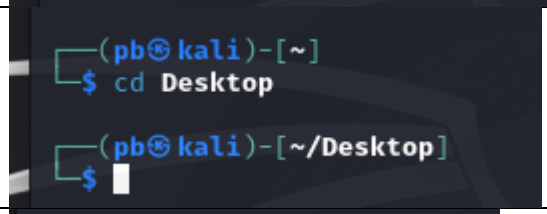
Task	Command Name	Syntax	Example	Screenshots
To know today's date	date	date	date	
To print calendar	cal	cal	cal	
To print kernel version	uname	uname -r	uname-r	
To print default shell	echo	echo $SHELL	echo $SHELL	

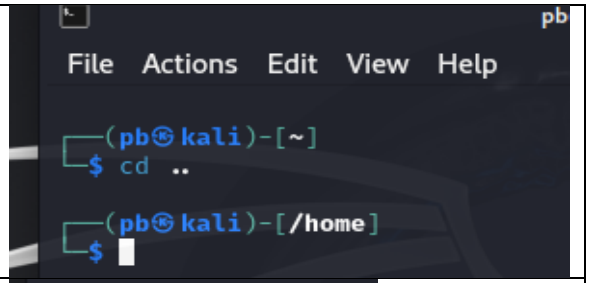
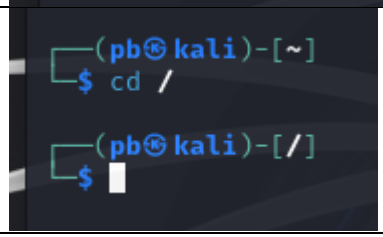
To print currently logged in user	whoami	whoami	whoami	
To create shortcut for command	alias	alias shortcut='command'	alias pb='cd'	
To delete shortcut	unalias	unalias shortcut_name	unalias pb	

To change the timestamp of the file	touch	touch -t YYYYMMDDHHMM.SS filename	touch -t 202408071234.56 filename	
To clear the screen	clear	clear	clear	
To create empty files	redirection ‘>’	> filename	>demo	

To know disk usage	du	du	du	
To know free space in the system	df	df-h	df-h	
To know about the Linux release	lsb_release	lsb_release -a	lsb_release -a	

3. Navigation

Task	Syntax	Command	Screenshots
To navigate home directory	cd	cd	
To navigate to the parent directory	cd ..	cd ..	
To navigate to the child directory	cd child_directory_name	cd Desktop	
Alternate command to cd	pushd file_name & popd		

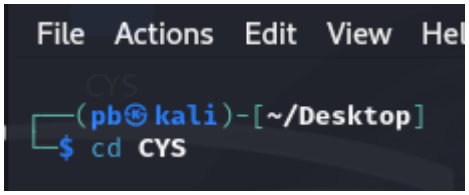
To go back to the previous directory	cd ..	cd ..	
To go to the root directory	cd /	cd /	

4. **File System**

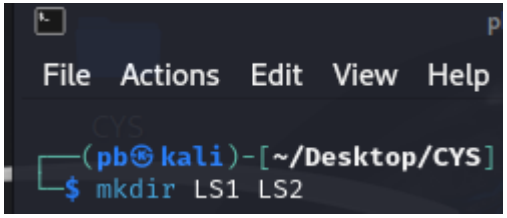
Task	Syntax	Command
How to identify the file system	**mount**	**mount**

a. Create Folder “CYS”

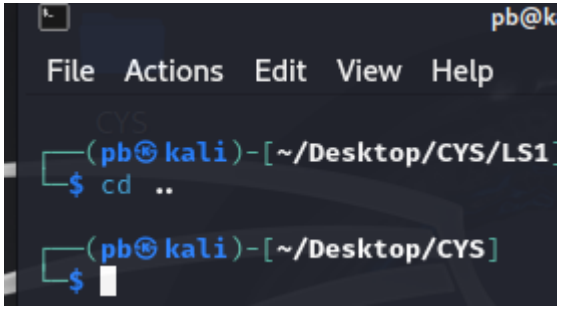
b. Navigate to CYS



c. Create folder LS1 and LS2 under CYS

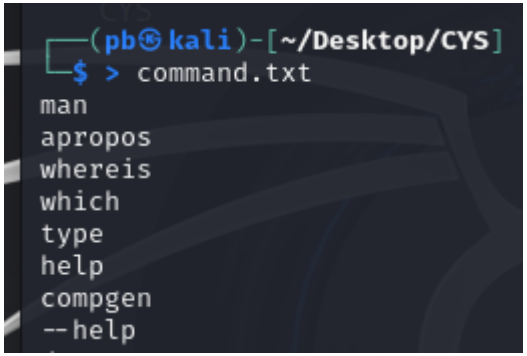


d. Go back to CYS

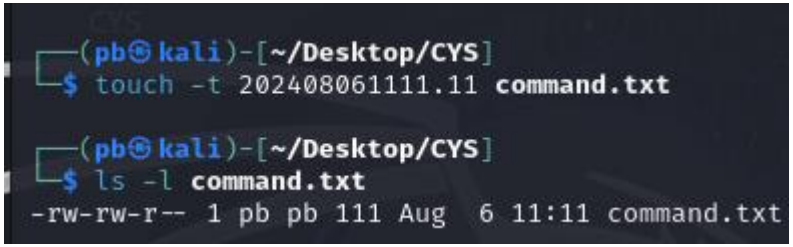


e. Working with Files

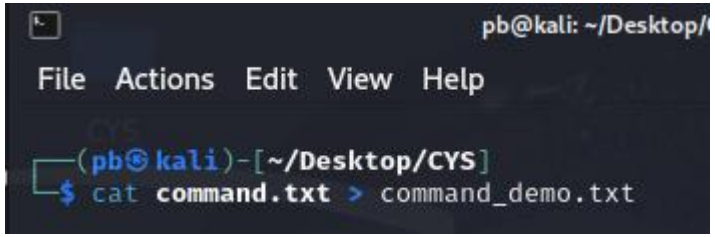
i. Add commands which you learnt during lab session in the file commands.txt



ii. Change the timestamp of the file to yesterday

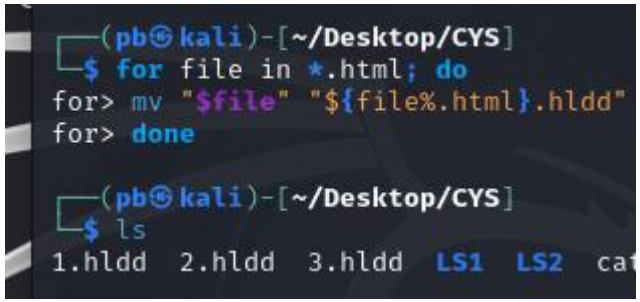


iii. Copy the contents from the file commands.txt to commands_demo.txt

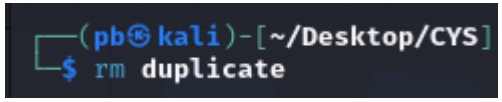


iv. Rename the file commands_demo.txt to duplicate

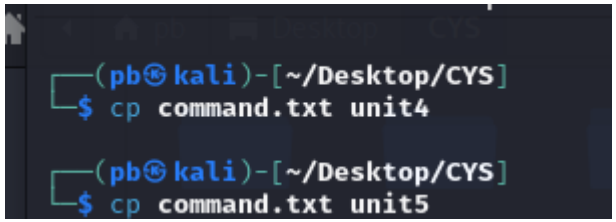
v. Rename all .html to .hldd



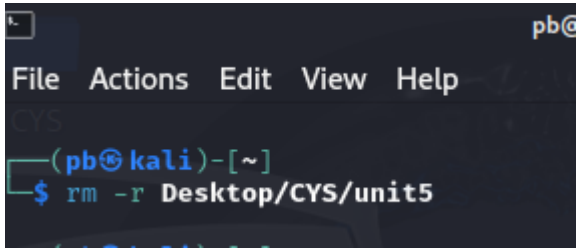
vi. Delete the file duplicate



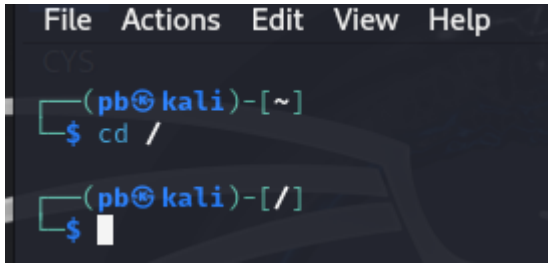
vii. Copy the contents commands.txt to unit4 and unit5 (using relative path)



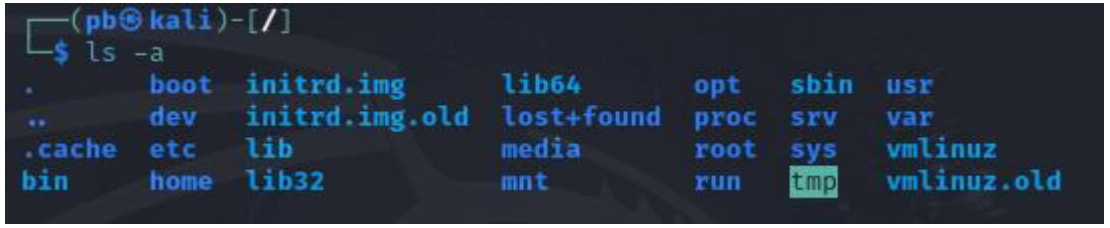
viii. Delete the contents from unit5 (using absolute path)



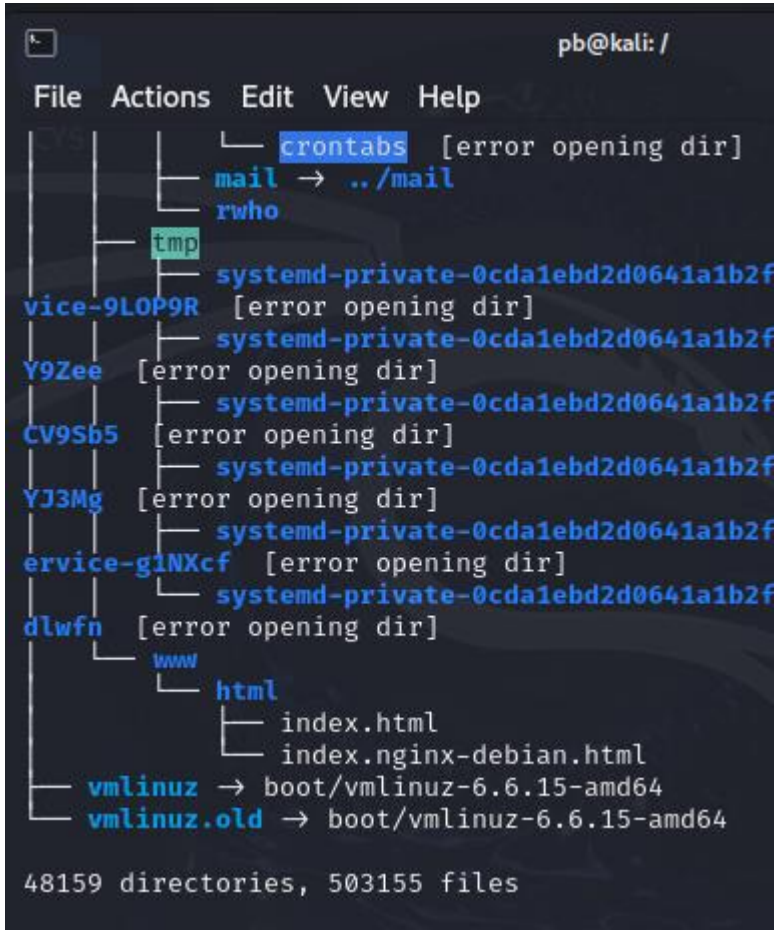
ix. Navigate to root



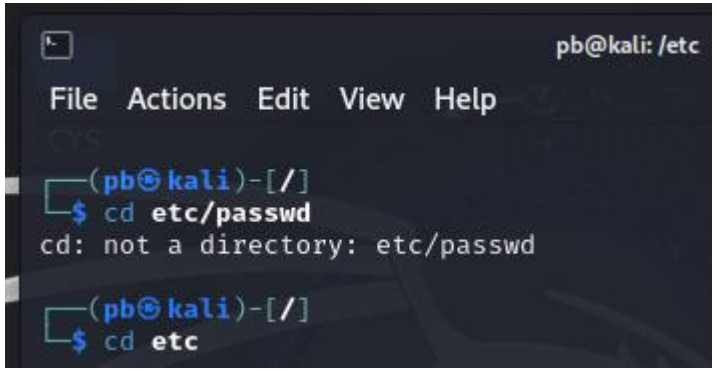
x. List all the files under root



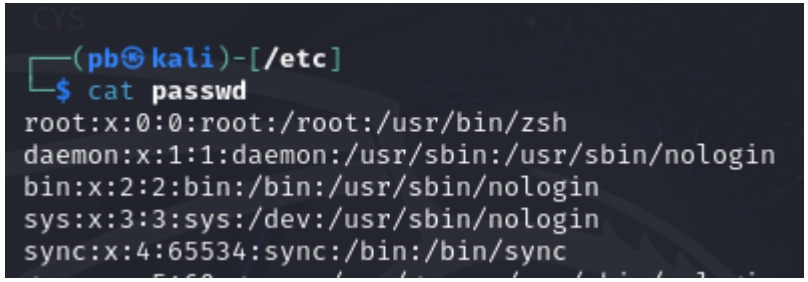
xi. Explore all the folders (Do not delete any folder)



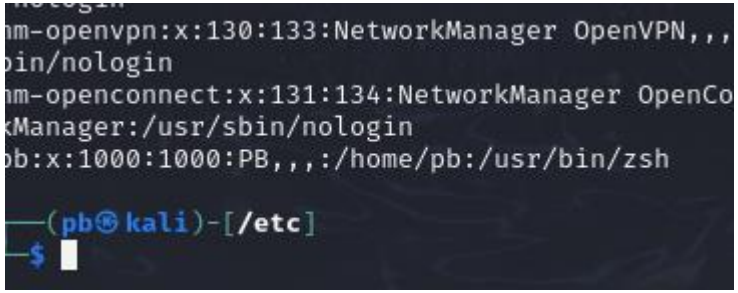
xii. Navigate to /etc/passwd



xiii. Open the file passwd



xiv. Explore the file passwd



xv. Navigate to /etc/group and explore

f. Difference between

i. GUI vs. CLI

GUI (Graphical User Interface):

- **Definition:** A visual interface where users interact with the system through graphical elements like windows, icons, and buttons.
- **User Interaction:** Click, drag, drop, and point.
- **Ease of Use:** More user-friendly, especially for beginners.
- **Efficiency:** Generally slower for performing repetitive tasks but easier for complex operations.
- **Flexibility:** Limited to the options presented by the graphical elements.
- **Examples:** Windows, macOS, GNOME, KDE.

CLI (Command-Line Interface):

- **Definition:** A text-based interface where users interact with the system by typing commands into a terminal.
- **User Interaction:** Typing commands and scripts.
- **Ease of Use:** Steeper learning curve but more powerful once mastered.
- **Efficiency:** Faster for repetitive tasks and automation through scripting.
- **Flexibility:** Highly flexible, allowing for complex and custom commands.
- **Examples:** Bash, PowerShell, Zsh.

ii. man vs info

man (Manual Pages):

- **Purpose:** Provides detailed documentation on commands, system calls, configuration files, and other aspects of the system.
- **Structure:** Usually organized into sections like Name, Synopsis, Description, Options, Examples, and See Also.
- **Interface:** Simple and straightforward, accessed via the man command followed by the topic (e.g., man ls).
- **Usage:** Best for quick reference to learn about command syntax and options.
- **Navigation:** Uses less as the pager, navigated with basic keyboard commands (e.g., space to scroll, q to quit).

info:

- **Purpose:** Provides more detailed and structured documentation, often including tutorials, examples, and hypertext links.
- **Structure:** Organized into nodes with hyperlinks, allowing for navigation between different parts of the documentation.
- **Interface:** Accessed via the info command followed by the topic (e.g., info ls).
- **Usage:** Better for in-depth learning and exploring related topics.
- **Navigation:** More complex, with options to follow links, go back, and move between sections.

iii. which vs. whereis

which:

- **Purpose:** Locates the path of an executable that would be run if the command were entered in the terminal.
- **Output:** Returns the path of the command found in the directories listed in the $PATH environment variable.
- **Usage:** Useful to determine which version of a command is being used (e.g., which python).

whereis:

- **Purpose:** Locates the binary, source, and manual page files for a command.
- **Output:** Provides paths to the binary, source code, and man pages of the command.
- **Usage:** More comprehensive than which, useful for finding not just the executable but also related files (e.g., whereis ls).

iv. Terminal vs shell

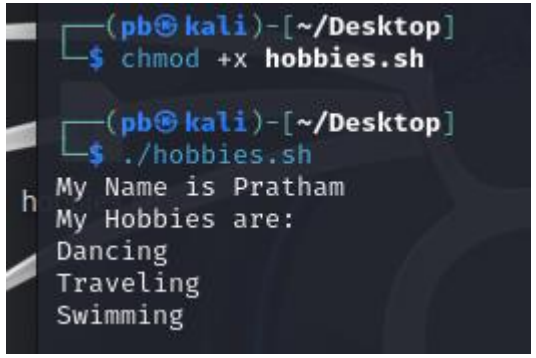
Terminal:

- **Definition:** A software application that provides a text-based interface for interacting with the shell.
- **Role:** Acts as an interface to access the shell, displaying text input and output.
- **Usage:** Can run multiple shells or other command-line programs.
- **Examples:** GNOME Terminal, xterm, PuTTY.

Shell:

- **Definition:** A command interpreter that executes commands typed by the user or read from a script.
- **Role:** The shell processes commands, executes programs, and handles command-line operations.
- **Usage:** Provides the command-line interface and scripting environment.
- **Examples:** Bash, Zsh, Fish, PowerShell.

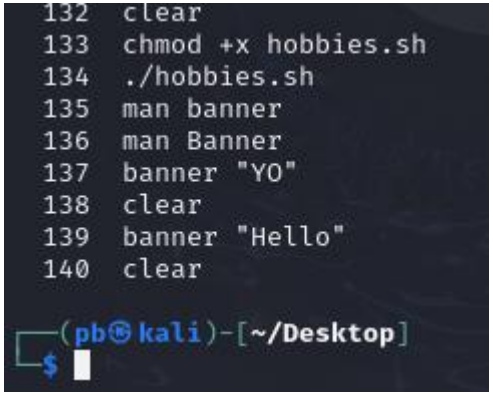
g. Write a simple shell script to print your name and your hobbies!



Interesting commands to Explore

Banner

History



Note: Include your screenshots

Evaluation :

Marks : 10 (Deadline : 4 – Originality :3 – Completeness :3)

Deadline: 06.08.2024

“All our dreams can come true if we have the courage to pursue them.”

- Walt Disney