

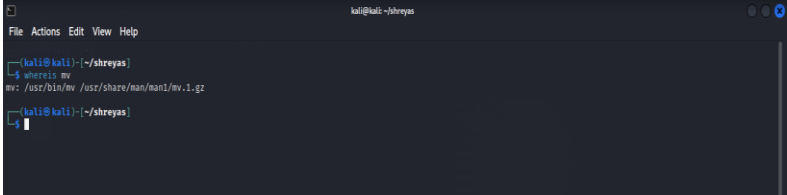
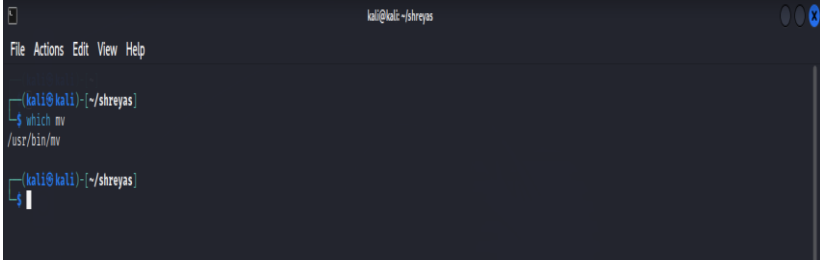
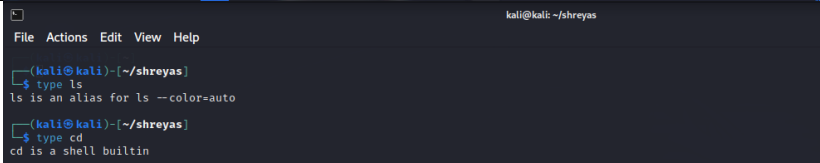

Topic Name:

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

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

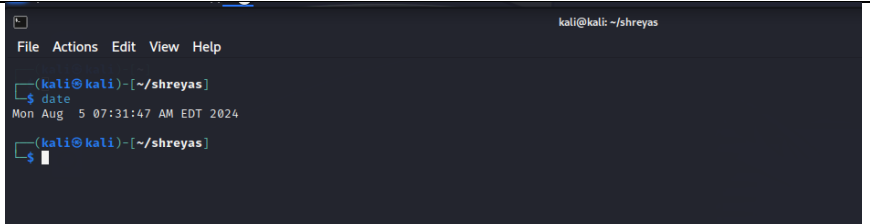
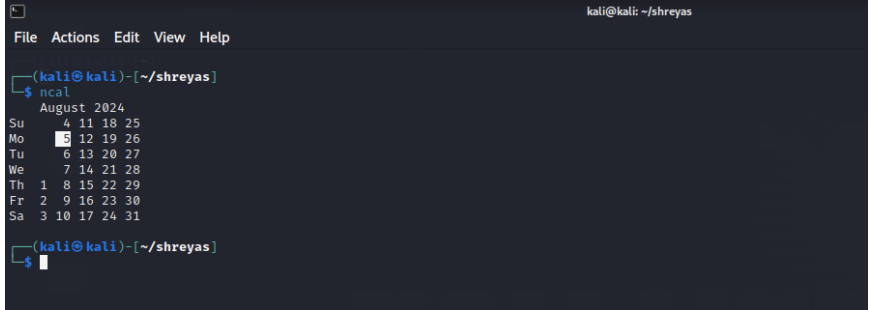
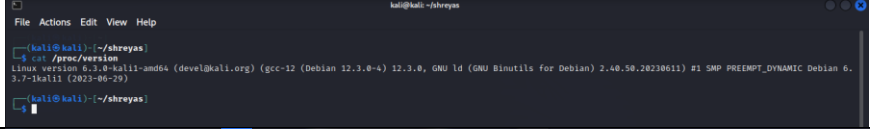
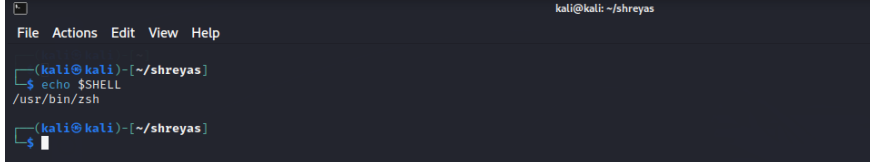
1. Getting Help

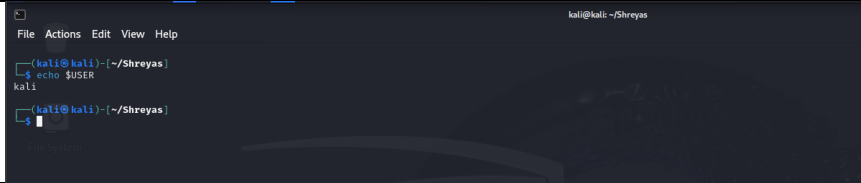
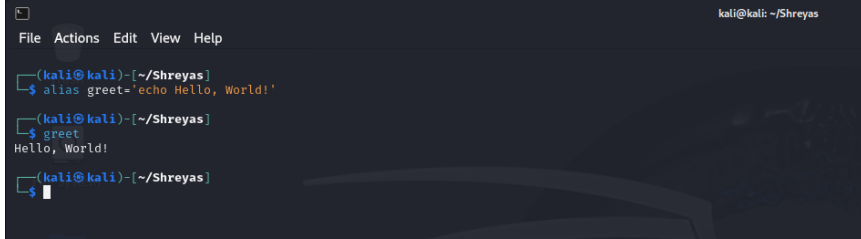
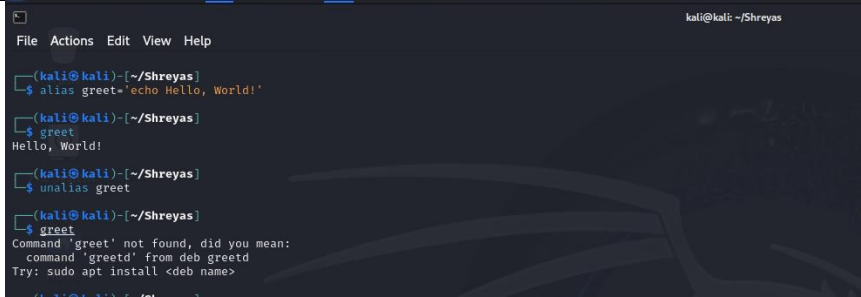
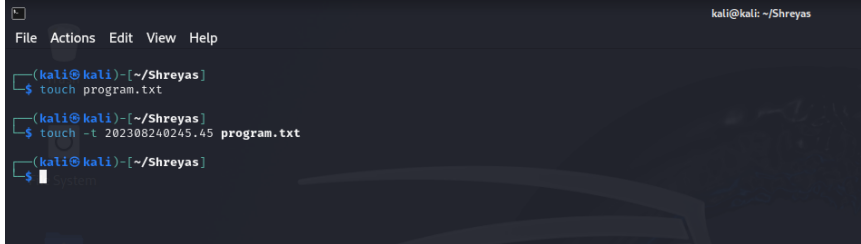
[illegible]

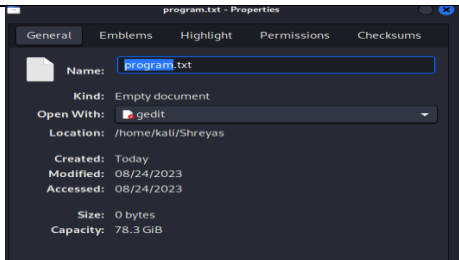
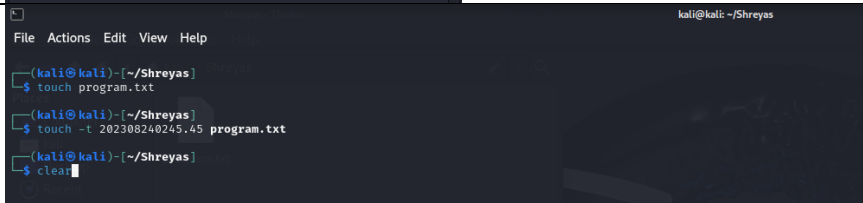
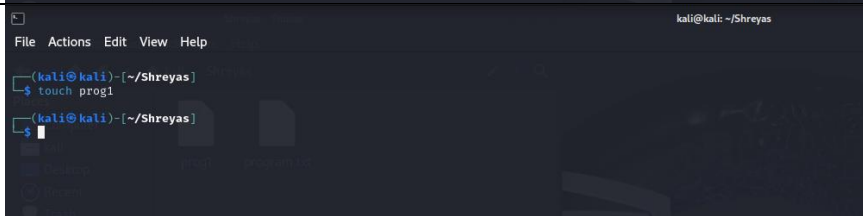
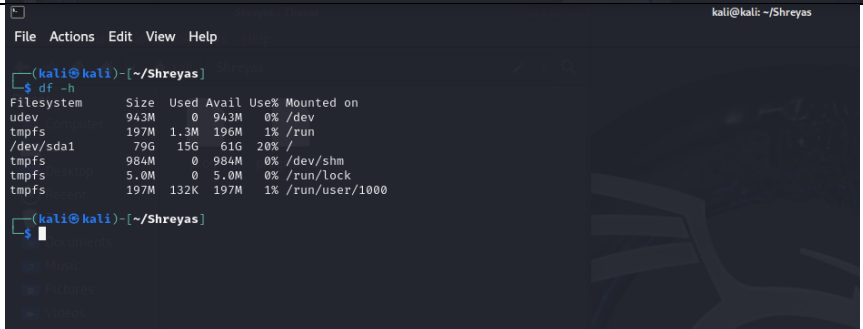
To know the source file binary	Command name is “whereis”	whereis command_name	Whereis mv	
To know the path of the command	Command name is “which”	Which command_name	Which mv	
To know the command is external or internal	Command name is “type”	Type command_name	type ls type cd	
To get help for the internal command	help	help command_name	help -v cd	

To list out bash commands	compn	Compn -c	Compn -c	<pre> kali@kali: ~/Shreyas File Actions Edit View Help Exit Status: Returns 0 if the directory is changed, and if \$PWD is set successfully when -p is used; non-zero otherwise. (kali@kali) ~/Shreyas \$ compn -c diff egrep fgrep grep ip ls ls ll ls if then else elif fi case esac for select while until do done in function { } ! [[]] coproc __expand_tilde_by_ref __git_eread __git_psi __git_psi_colorize_gitstring __git_psi_show_upstream __git_sequencer_status __load_completion __ltrim_colon_completions __parse_options __python_argcomplete_expand_tilde_by_ref __python_argcomplete_run __python_argcomplete_run_inner __python_argcomplete_scan_head __python_argcomplete_scan_head_noerr __python_argcomplete_upshift_bash_rematch </pre>
To know the usage of the command	Command name is “man”	man command_name	man ls	<pre> kali@kali: ~/Shreyas File Actions Edit View Help My(1) User Commands My(1) NAME mv - move (rename) files SYNOPSIS mv [OPTION]... [-t] SOURCE DEST mv [OPTION]... SOURCE... DIRECTORY mv [OPTION]... -t DIRECTORY SOURCE... DESCRIPTION Rename SOURCE to DEST, or move SOURCE(s) to DIRECTORY. Mandatory arguments to long options are mandatory for short options too. --backup[=CONTROL] make a backup of each existing destination file -b like --backup but does not accept an argument -f, --force do not prompt before overwriting -i, --interactive prompt before overwrite -n, --no-clobber do not overwrite an existing file If you specify more than one of -i, -f, -n, only the final one takes effect. --strip-trailing-slashes remove any trailing slashes from each SOURCE argument -S, --suffix=SUFFIX override the usual backup suffix </pre>

2. Basic Commands

Task	Command Name	Syntax	Example	Screenshots
To know today's date	Command is "date"	date	date	
To print calendar	Command is "ncal"	ncal	ncal	
To print kernel version	Command is "cat"	cat version filepath	cat /proc/version	
To print default shell	Command is "shell"	echo \$SHELL	echo \$SHELL	

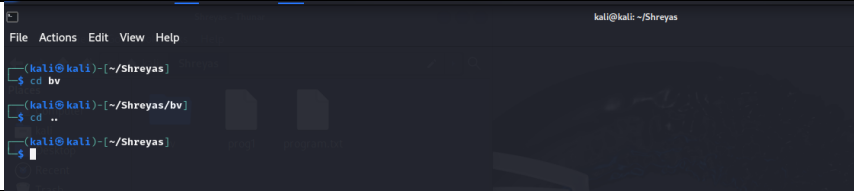
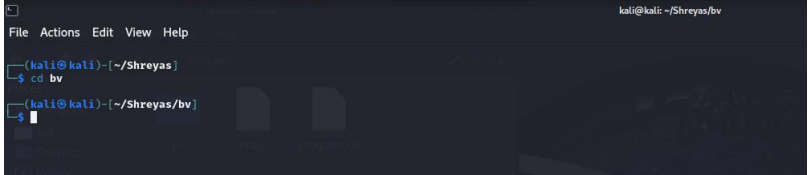
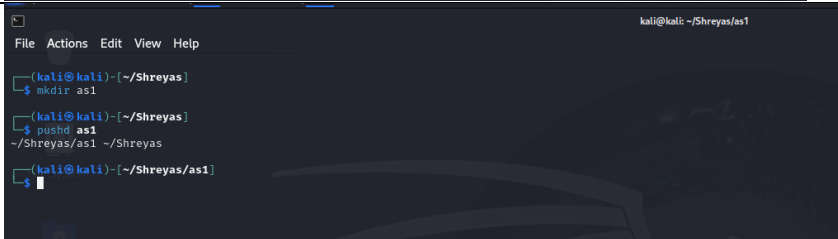
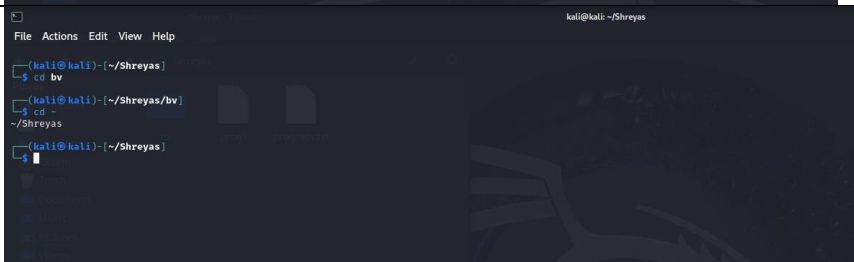
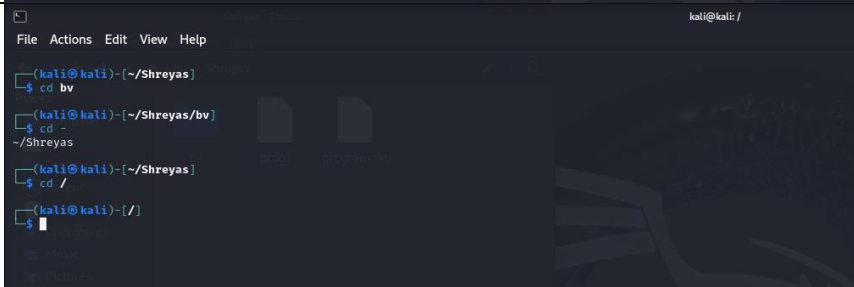
To print currently logged in user	Command is "echo"	echo \$USER	echo \$USER	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ echo \$USER kali (kali@kali)-[~/Shreyas] \$ </pre>
To create shortcut for command	alias	alias shortcut_name=command	alias greet='echo Hello , World!'	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ alias greet='echo Hello, World!' (kali@kali)-[~/Shreyas] \$ greet Hello, World! (kali@kali)-[~/Shreyas] \$ </pre>
To delete shortcut	unalias	unalias shortcut_name	unalias greet	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ alias greet='echo Hello, World!' (kali@kali)-[~/Shreyas] \$ greet Hello, World! (kali@kali)-[~/Shreyas] \$ unalias greet (kali@kali)-[~/Shreyas] \$ greet Command 'greet' not found, did you mean: command 'greetd' from deb greetd Try: sudo apt install <deb name> (kali@kali)-[~/Shreyas] \$ </pre>
To change the timestamp of the file	Command is "touch -t"	touch -t YYYYMMDDhhmm.ss filename	touch -t 202308240245.45 program.txt	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ touch program.txt (kali@kali)-[~/Shreyas] \$ touch -t 202308240245.45 program.txt (kali@kali)-[~/Shreyas] \$ </pre>

				
To clear the screen	Command is "clear"	clear	clear	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ touch program.txt (kali@kali)-[~/Shreyas] \$ touch -t 202308240245.45 program.txt (kali@kali)-[~/Shreyas] \$ clear </pre>
To create empty files	Command is "touch"	Touch filename	Touch prog1	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ touch prog1 (kali@kali)-[~/Shreyas] \$ </pre>
To know disk usage	df	df -h	df -h	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ df -h Filesystem Size Used Avail Use% Mounted on udev 943M 0 943M 0% /dev tmpfs 197M 1.3M 196M 1% /run /dev/sda1 79G 15G 61G 20% / tmpfs 984M 0 984M 0% /dev/shm tmpfs 5.0M 0 5.0M 0% /run/lock tmpfs 197M 132K 197M 1% /run/user/1000 (kali@kali)-[~/Shreyas] \$ </pre>

To know free space in the system	df	df -h	df -h	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)~\$ df -h Filesystem Size Used Avail Use% Mounted on udev 943M 0 943M 0% /dev tmpfs 197M 1.3M 196M 1% /run /dev/sda1 79G 15G 61G 20% / tmpfs 984M 0 984M 0% /dev/shm tmpfs 5.0M 0 5.0M 0% /run/lock tmpfs 197M 132K 197M 1% /run/user/1000 </pre>
To know about the Linux release	lsb_release	lsb_release -a	lsb_release -a	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)~\$ lsb_release -a No LSB modules are available. Distributor ID: Kali Description: Kali GNU/Linux Rolling Release: 2024.2 Codename: kali-rolling </pre>

3. Navigation

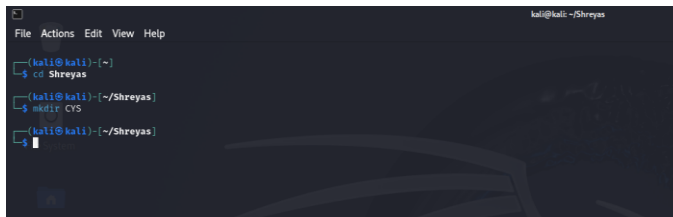
Task	Command	Syntax	Screenshots
To navigate home directory	cd	cd	 <pre> kali@kali: ~ File Actions Edit View Help (kali@kali)~\$ cd (kali@kali)~\$ </pre>

To navigate to the parent directory	cd ..	cd ..	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ cd bv (kali@kali)-[~/Shreyas/bv] \$ cd .. (kali@kali)-[~/Shreyas] \$ </pre>
To navigate to the child directory	cd	cd child_directory_name	 <pre> kali@kali: ~/Shreyas/bv File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ cd bv (kali@kali)-[~/Shreyas/bv] \$ </pre>
Alternate command to cd	pushd	pushd <directory name>	 <pre> kali@kali: ~/Shreyas/as1 File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ mkdir as1 (kali@kali)-[~/Shreyas] \$ pushd as1 ~/Shreyas/as1 ~/Shreyas (kali@kali)-[~/Shreyas/as1] \$ </pre>
To go back to the previous directory	cd	cd -	 <pre> kali@kali: ~/Shreyas File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ cd bv (kali@kali)-[~/Shreyas/bv] \$ cd - ~/Shreyas (kali@kali)-[~/Shreyas] \$ </pre>
To go to the root directory	cd	cd /	 <pre> kali@kali: / File Actions Edit View Help (kali@kali)-[~/Shreyas] \$ cd bv (kali@kali)-[~/Shreyas/bv] \$ cd - ~/Shreyas (kali@kali)-[~/Shreyas] \$ cd / (kali@kali)-[/] \$ </pre>

4. File System

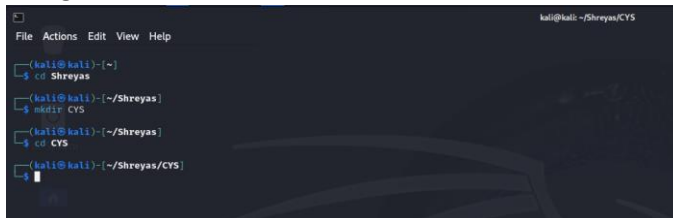
Task	Syntax	Command
How to identify the file system	df -T	df -T

a. Create Folder “CYS”



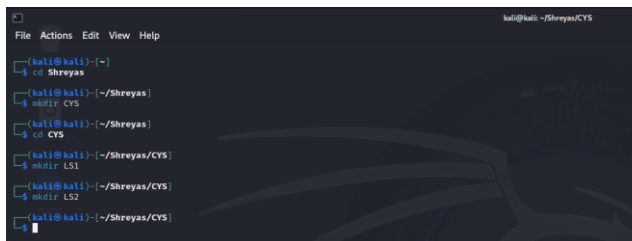
```
kali@kali: ~/Shreyas
File Actions Edit View Help
(kali@kali)~$ cd Shreyas
(kali@kali)~/Shreyas$ mkdir CYS
(kali@kali)~/Shreyas$
```

b. Navigate to CYS



```
kali@kali: ~/Shreyas/CYS
File Actions Edit View Help
(kali@kali)~$ cd Shreyas
(kali@kali)~/Shreyas$ mkdir CYS
(kali@kali)~/Shreyas$ cd CYS
(kali@kali)~/Shreyas/CYS$
```

c. Create folder LS1 and LS2 under CYS



```
kali@kali: ~/Shreyas/CYS
File Actions Edit View Help
(kali@kali)~$ cd Shreyas
(kali@kali)~/Shreyas$ mkdir CYS
(kali@kali)~/Shreyas$ cd CYS
(kali@kali)~/Shreyas/CYS$ mkdir LS1
(kali@kali)~/Shreyas/CYS$ mkdir LS2
(kali@kali)~/Shreyas/CYS$
```

d. Go back to CYS

```
kali@kali: ~/Shreyas/CYS
File Actions Edit View Help
(kali@kali)~[~/Shreyas]
$ cd CYS
(kali@kali)~[~/Shreyas/CYS]
$ cd LS1
(kali@kali)~[~/Shreyas/CYS/LS1]
$ cd -
~/Shreyas/CYS
(kali@kali)~[~/Shreyas/CYS]
```

e. Working with Files

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

```
Open commands.txt
~/Shreyas/CYS
1 pwd,ls -l,ls -ly,ls -a,which ls, whatis ls ,man --help, cd , chmod
```

ii. Change the timestamp of the file to yesterday

```
(kali@kali)~[~/Shreyas/CYS]
$ touch -t 202408050545.22 commands.txt
```

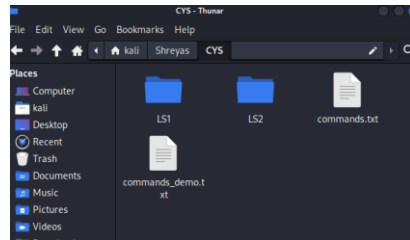
commands.txt - Properties

General	Emblems	Highlight	Permissions	Checksums
Name: commands.txt				
Kind: Plain text document				
Open With: gedit				
Location: /home/kali/Shreyas/CYS				
Created: Today				
Modified: Yesterday				
Accessed: Yesterday				
Size: 67 bytes				
Capacity: 78.3 GiB				

Help Close

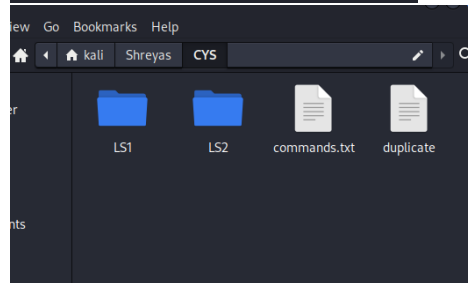
iii. Copy the contents from the file commands.txt to commands_demo.txt

```
(kali@kali)~[~/Shreyas/CYS]
$ cp commands.txt commands_demo.txt
```



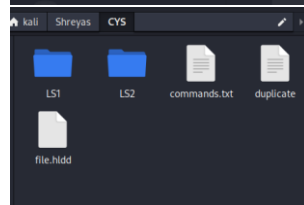
- iv. Rename the file `commands_demo.txt` to duplicate

```
(kali@kali)~[/Shreyas/CYS]
$ mv commands_demo.txt duplicate
```



- v. Rename all `.html` to `.hidd`

```
(kali@kali)~[/Shreyas/CYS]
$ gedit file.html
(gedit:23000): tepl-WARNING **: 06:29:18.976
(gedit:23000): tepl-WARNING **: 06:29:18.976
(kali@kali)~[/Shreyas/CYS]
$ mv file.html file.hidd
```



- vi. Delete the file duplicate

```
(kali㉿kali)-[~/Shreyas/CYS]
$ rm duplicate
```

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

```
(kali㉿kali)-[~/Shreyas/CYS]
$ cp commands.txt ../LS1/unit4.txt

(kali㉿kali)-[~/Shreyas/CYS]
$ cp commands.txt ../LS2/unit5.txt
```

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

```
(kali㉿kali)-[~/Shreyas/CYS]
$ echo -n > /home/kali/Shreyas/CYS/LS2/unit5.txt
```

- ix. Navigate to root

```
(kali㉿kali)-[~/Shreyas/CYS]
$ cd /

(kali㉿kali)-[/]
$
```

- x. List all the files under root

```
(kali㉿kali)-[/]
$ ls -la
total 1048656
drwxr-xr-x 18 root root      4096 May 28 02:23 .
drwxr-xr-x 18 root root      4096 May 28 02:23 ..
lrwxrwxrwx  1 root root         7 May 28 01:40 bin -> usr/bin
drwxr-xr-x  3 root root      4096 May 28 02:24 boot
drwxr-xr-x 17 root root     3380 Aug  6 05:46 dev
drwxr-xr-x 187 root root    12288 Aug  6 05:46 etc
drwxr-xr-x  3 root root      4096 May 28 02:01 home
lrwxrwxrwx  1 root root         28 May 28 02:23 initrd.img -> boot/initrd.img-6.6.15-amd64
lrwxrwxrwx  1 root root         28 May 28 02:23 initrd.img.old -> boot/initrd.img-6.6.15-amd64
lrwxrwxrwx  1 root root         7 May 28 01:40 lib -> usr/lib
lrwxrwxrwx  1 root root         9 May 28 01:52 lib32 -> usr/lib32
lrwxrwxrwx  1 root root         9 May 28 01:40 lib64 -> usr/lib64
drwx-----  2 root root    16384 May 28 02:18 lost+found
drwxr-xr-x  2 root root      4096 May 28 01:40 media
drwxr-xr-x  2 root root      4096 May 28 01:40 mnt
drwxr-xr-x  3 root root      4096 May 28 01:52 opt
dr-xr-xr-x 262 root root         0 Aug  6 05:46 proc
drwx-----  4 root root      4096 May 28 01:46 root
drwxr-xr-x 34 root root      840 Aug  6 05:46 run
lrwxrwxrwx  1 root root         8 May 28 01:40 sbin -> usr/sbin
drwxr-xr-x  3 root root      4096 May 28 01:56 srv
-rw-r--r--  1 root root    1073741824 May 28 02:22 swapfile
dr-xr-xr-x 13 root root         0 Aug  6 05:46 sys
drwxrwxrwt 15 root root      4096 Aug  6 06:39 tmp
drwxr-xr-x 16 root root      4096 May 28 01:53 usr
drwxr-xr-x 12 root root      4096 Aug  3 13:13 var
lrwxrwxrwx  1 root root         25 May 28 02:23 vmlinuz -> boot/vmlinuz-6.6.15-amd64
lrwxrwxrwx  1 root root         25 May 28 02:23 vmlinuz.old -> boot/vmlinuz-6.6.15-amd64
```

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

```
(kali@kali)-[~]$ ls -la
total 184856
drwxr-xr-x 18 root root      4096 May 28 02:23 .
drwxr-xr-x 18 root root      4096 May 28 02:23 ..
lrwxrwxrwx 1 root root          2 May 28 01:40 bin -> usr/bin
lrwxrwxrwx 1 root root          2 May 28 01:40 boot -> boot
drwxr-xr-x 17 root root     3388 Aug  6 05:46 dev
drwxr-xr-x 127 root root    12288 Aug  6 05:46 etc
drwxr-xr-x  3 root root      4096 May 28 02:01 home
lrwxrwxrwx 1 root root          2 May 28 02:23 initrd.img -> boot/initrd.img-6.6.15-amd64
lrwxrwxrwx 1 root root          2 May 28 02:23 initrd.img.xz -> boot/initrd.img-6.6.15-amd64
lrwxrwxrwx 1 root root          7 May 28 01:40 lib -> usr/lib
lrwxrwxrwx 1 root root          9 May 28 01:53 lib32 -> usr/lib32
lrwxrwxrwx 1 root root          9 May 28 01:40 lib64 -> usr/lib64
drwxr-xr-x  2 root root    16384 May 28 02:18 lost+found
drwxr-xr-x  2 root root      4096 May 28 01:40 media
drwxr-xr-x  2 root root      4096 May 28 01:40 mnt
drwxr-xr-x  3 root root      4096 May 28 01:53 opt
drwxr-xr-x 282 root root      4096 Aug  6 05:46 proc
drwxr-xr-x  4 root root      4096 May 28 01:46 root
drwxr-xr-x 34 root root      848 Aug  6 05:46 run
lrwxrwxrwx 1 root root          8 May 28 01:40 sbin -> usr/sbin
drwxr-xr-x  3 root root      4096 May 28 01:56 srv
-rw-r--r-- 1 root root 1073741824 May 28 02:22 swapfile
drwxr-xr-x 13 root root      4096 Aug  6 05:46 sys
drwxrwxrwt 15 root root      4096 Aug  6 06:39 tmp
drwxr-xr-x 16 root root      4096 May 28 01:53 usr
drwxr-xr-x 12 root root      4096 Aug  3 13:53 var
lrwxrwxrwx 1 root root      25 May 28 02:23 vmlinuz -> boot/vmlinuz-6.6.15-amd64
lrwxrwxrwx 1 root root      25 May 28 02:23 vmlinuz.xz -> boot/vmlinuz-6.6.15-amd64
```

- xii. Navigate to /etc/passwd

```
(kali@kali)-[~]$ cd /etc
```

- xiii. Open the file passwd

```
(kali@kali)-[~]$ cd /etc
(kali@kali)-[/etc]$ cat passwd
root:x:0:0:root:/root:/usr/bin/zsh
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:40:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
_ftp:x:14:14:ftp:/var/ftp:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
lirc:x:38:38:lirc:/etc/lirc:/usr/sbin/nologin
irc:x:39:39:ircd:/usr/sbin/nologin
_apt:x:42:42:apt:/var/lib/apt:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:998:998:systemd Network Management:/usr/sbin/nologin
systemd-timesync:x:992:992:systemd Time Synchronization:/usr/sbin/nologin
messagebus:x:180:180:/nonexistent:/usr/sbin/nologin
twix:x:101:101:TPM software stack,,/var/lib/tpm:/bin/false
strongswan:x:102:65534:/var/lib/strongswan:/usr/sbin/nologin
tcpdump:x:103:103:/nonexistent:/usr/sbin/nologin
sshd:x:104:65534:/run/sshd:/usr/sbin/nologin
usbmuxd:x:105:46:usbmuxd daemon,,/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin
avahi:x:106:106:Avahi mDNS daemon,,/run/avahi-daemon:/usr/sbin/nologin
speech-dispatcher:x:107:29:Speech Dispatcher,,/run/speech-dispatcher/bin/false
pulse:x:108:108:PulseAudio daemon,,/run/pulse:/usr/sbin/nologin
lightdm:x:109:111:Light Display Manager:/var/lib/lightdm:/bin/false
samba:x:110:110:/var/lib/samba:/usr/sbin/nologin
polkitd:x:991:991:user for polkitd:/usr/sbin/nologin
rtkit:x:111:115:RealtimeKit,,/proc:/usr/sbin/nologin
colord:x:112:115:colord color management daemon,,/var/lib/colord:/usr/sbin/nologin
nm-openvpn:x:113:117:NetworkManager OpenVPN,,/var/lib/openvpn/chronet:/usr/sbin/nologin
nm-openconnect:x:114:116:NetworkManager OpenConnect plugin,,/var/lib/NetworkManager:/usr/sbin/nologin
galera:x:115:65534:/nonexistent:/usr/sbin/nologin
mysql:x:116:120:MariaDB Server,,/nonexistent:/bin/false
stunnel:x:998:998:system account service system account:/var/run/stunnel4:/usr/sbin/nologin
_ftp:x:117:65534:/run/rpcbind:/usr/sbin/nologin
geoclue:x:118:122:/var/lib/geoclue:/usr/sbin/nologin
Debian-smp:x:119:123:/var/lib/smp:/bin/false
slsh:x:120:124:/nonexistent:/usr/sbin/nologin
ntpsvc:x:121:127:/nonexistent:/usr/sbin/nologin
redbooks:x:122:128:/var/run/redbooks:/usr/sbin/nologin
```

xiv. Explore the file passwd

```
File Actions Edit View Help
kali@kali:~$ cat /etc/passwd
root:x:0:0:root:/root:/usr/bin/sh
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
nobody:x:11:11:nobody:/var/cache/nobody:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mail Manager:/var/lib/mail:/usr/sbin/nologin
irc:x:39:39:irc:/var/lib/irc:/usr/sbin/nologin
_apt:x:42:65534:./nonexistent:/usr/sbin/nologin
nogroup:x:65534:65534:nogroup:/nonexistent:/usr/sbin/nologin
system-network:x:998:998:system Network Management:/usr/sbin/nologin
system-timesync:x:999:999:system Time Synchronization:/usr/sbin/nologin
messagebus:x:180:180:./nonexistent:/usr/sbin/nologin
tss:x:181:181:Time Syncing Service:/var/lib/chrony:/usr/sbin/nologin
strongswan:x:182:65534:./usr/lib/strongswan:/usr/sbin/nologin
topologyd:x:183:183:./nonexistent:/usr/sbin/nologin
sshd:x:184:184:./usr/sbin/sshd:/usr/sbin/nologin
sblm:x:185:64:sblm-damned:/var/lib/sblm-damned:/usr/sbin/nologin
sblm:x:186:65534:./nonexistent:/usr/sbin/nologin
avahi:x:189:189:Avahi mDNS daemon:/usr/sbin/nologin
speech-dispatcher:x:187:187:Speech Dispatcher:/usr/bin/speech-dispatcher:/usr/sbin/nologin
pulse:x:188:110:pulseaudio-damned:/usr/bin/pulse:/usr/sbin/nologin
lightdm:x:189:112:lightdm:/usr/lib/lightdm:/usr/sbin/nologin
sawd:x:118:118:./usr/lib/sawd:/usr/sbin/nologin
polkit:x:101:101:./usr/bin/polkitd:/usr/sbin/nologin
rtkit:x:111:115:RealtimeKit:/usr/bin/rtkit:/usr/sbin/nologin
colord:x:112:115:colord color management daemon:/usr/lib/colord:/usr/sbin/nologin
n-m-smb:x:113:117:NetworkManager Quota:/usr/lib/NetworkManager/Quota:/usr/sbin/nologin
n-m-openvpn:x:114:118:NetworkManager OpenVPN:/usr/lib/openvpn/krnl:/usr/sbin/nologin
n-m-openvpn:x:115:118:NetworkManager OpenVPN:/usr/lib/openvpn/krnl:/usr/sbin/nologin
gdm-x11:x:115:65534:./nonexistent:/usr/sbin/nologin
gnome-x11:x:116:65534:./nonexistent:/usr/sbin/nologin
stunnel:x:998:998:stunnel service system account:/usr/bin/stunnel:/usr/sbin/nologin
cpe:x:117:65534:./usr/bin/cpe:/usr/sbin/nologin
gnomec:x:118:112:./usr/lib/gnomec:/usr/sbin/nologin
nmap-x11:x:119:112:./usr/lib/nmap:/usr/sbin/nologin
nmap-x11:x:120:122:./nonexistent:/usr/sbin/nologin
nmap-x11:x:121:122:./nonexistent:/usr/sbin/nologin
redsocks:x:122:128:./usr/bin/redsocks:/usr/sbin/nologin
```

xv. Navigate to /etc/group and explore

```
File Actions Edit View Help
kali@kali:~$ cd /etc
kali@kali:/etc$ cat group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:kali
tty:x:5:
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:kali
fax:x:21:
voice:x:22:
cdrom:x:24:kali
floppy:x:25:kali
tape:x:26:
sudo:x:27:kali
audio:x:29:pulse,kali
digi:x:30:kali
www-data:x:33:
bakcup:x:34:
operator:x:37:
list:x:38:
irc:x:39:
src:x:40:
shadow:x:42:
utmp:x:43:
video:x:44:kali
sasl:x:45:
plugdev:x:46:kali
staff:x:50:
games:x:60:
users:x:100:kali
nogroup:x:65534:
system-journal:x:999:
system-network:x:998:
crontab:x:997:
linput:x:996:
sgx:x:995:
kvm:x:994:
render:x:993:
netdev:x:101:kali
system-timex:x:992:
mesa-egl:x:102:
_ssh:x:103:
tss:x:181:
xrdp:x:188:
```

f. Difference between

i. GUI vs. CLI

GUI (Graphical User Interface):

- Interface Type: Uses graphical elements like windows, icons, and buttons
- User Interaction: Primarily interacts with the system using a mouse and keyboard to click on visual elements.
- Ease of Use: Generally considered more intuitive and easier for beginners because of the visual representation of tasks and options.
- Examples: Windows Explorer, macOS Finder, GNOME desktop environment

CLI (Command Line Interface):

- Interface Type: Uses text-based commands and output in a terminal or console window.
- User Interaction: Interacts with the system by typing commands into a terminal.
- Power and Flexibility: Offers more control and flexibility for advanced users and is often used for scripting and automation.
- Examples: Bash, PowerShell, Command Prompt.

ii. man vs info

man (Manual):

- Purpose: Provides a manual page for a command or function.
- Content: Usually includes a brief description, usage, options, and examples.
- Format: Traditional format with sections like NAME, SYNOPSIS, DESCRIPTION, OPTIONS, and EXAMPLES.
- Usage: `man command_name` (e.g., `man ls`).

info:

- Purpose: Provides a more detailed and structured documentation format, often including hypertext links.
- Content: More extensive than man pages, often organized in a hierarchical structure with cross-references and detailed explanations.
- Format: Uses a hypertext-like navigation system with nodes and links.

- Usage: info command_name (e.g., info ls).

iii. which vs whereis

which:

- Purpose: Shows the full path of the executable file associated with a command.
- Function: Searches the directories listed in the PATH environment variable.
- Usage: which command_name (e.g., which ls).

whereis:

- Purpose: Finds the locations of the binary, source, and manual page files for a command.
- Function: Searches standard directories and provides multiple locations, including binary files, source code, and documentation.
- Usage: whereis command_name (e.g., whereis ls)

iv. Terminal vs shell

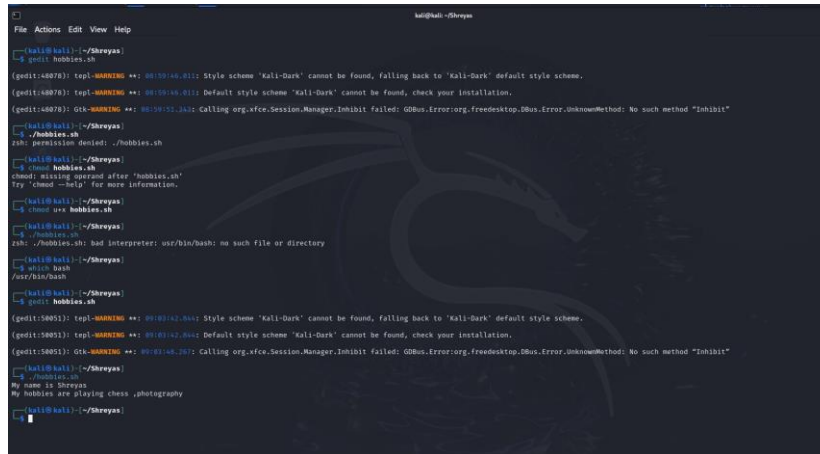
Terminal:

- Purpose: A program or window that provides a command-line interface to interact with the operating system.
- Function: Acts as an interface for inputting commands and displaying output.
- Examples: GNOME Terminal, xterm, macOS Terminal.

Shell:

- Purpose: A command-line translator that translates user-inputted commands into action.
- Function: The application that decodes and executes commands from the terminal.
- Examples: Bash, Zsh, Fish, PowerShell.

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



```
kali@kali:~/Shreyas$ cat hobbies.sh
#!/bin/bash
echo "My name is Shreyas"
echo "My hobbies are playing chess ,photography"
```

The screenshot shows a terminal window with the following commands and output:

```
kali@kali:~/Shreyas$ cat hobbies.sh
#!/bin/bash
echo "My name is Shreyas"
echo "My hobbies are playing chess ,photography"
```

The output of the script is:

```
My name is Shreyas
My hobbies are playing chess ,photography
```

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