

1. System Commands:

a. whoami:

- Shows the current logged-in username.

```
File Actions Edit View Help
└─(cadet㉿kali)-[~]
└─$ whoami
cadet
```

b. hostname:

- Displays the system's hostname.

```
└─(cadet㉿kali)-[~]
└─$ hostname
kali
```

c. uname:

- Shows system information (use uname -a for all details).

```
└─(cadet㉿kali)-[~]
└─$ uname
Linux

└─(cadet㉿kali)-[~]
└─$ uname -a
Linux kali 6.12.33+kali1-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.33-1kali1 (2025-06-25) x86_64 GNU/Linux
```

d. uptime:

- Displays how long the system has been running.

```
└─(cadet㉿kali)-[~]
└─$ uptime
18:27:15 up 9 min,  2 users,  load average: 0.00, 0.10, 0.09
```

e. Date:

- Shows or sets the system date and time.

```
└─(cadet㉿kali)-[~]
└─$ date
Thu Aug 14 06:27:46 PM +0545 2025
```

f. Cal:

- Displays a calendar.

```
└─(cadet㉿kali)-[~]
└─$ cal
      August 2025
Su Mo Tu We Th Fr Sa
          1  2
3  4  5  6  7  8  9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31
```

g. Who:

- Shows who is logged in.

```
└─(cadet㉿kali)-[~]
└$ who
cadet      seat0          2025-08-14 18:21 (:0)
```

h. W:

- Displays logged-in users and their activities.

```
└─(cadet㉿kali)-[~]
└$ w
18:30:03 up 12 min,  2 users,  load average: 0.19, 0.12, 0.10
USER     TTY      FROM           LOGIN@    IDLE      JCPU      PCPU  WHAT
cadet      -          18:21           0.00s   0.02s  lightdm --session-child 12 24
```

i. Id:

- Shows user identity (UID, GID).

```
└─(cadet㉿kali)-[~]
└$ id
uid=1003(cadet) gid=1003(cadet) groups=1003(cadet),27(sudo),100(users)
```

j. Df:

- Shows disk usage by filesystem.

```
└─(cadet㉿kali)-[~]
└$ df
Filesystem  1K-blocks    Used Available Use% Mounted on
udev        2964580      0  2964580   0% /dev
tmpfs       606492    1380  605112   1% /run
/dev/sda1   82083148 18466012  59401588  24% /
tmpfs       3032440      4  3032436   1% /dev/shm
tmpfs       5120        0    5120   0% /run/lock
tmpfs       1024        0    1024   0% /run/credentials/systemd-journald.service
tmpfs       3032444     84  3032360   1% /tmp
tmpfs       1024        0    1024   0% /run/credentials/getty@tty1.service
tmpfs       606488     128  606360   1% /run/user/1000
tmpfs       606488     132  606356   1% /run/user/1003
```

k. Du:

- Shows disk usage of files and directories.

```
(cadet㉿kali)-[~]
$ du
4      ./Downloads
4      ./Videos
4      ./Desktop
4      ./gnupg/private-keys-v1.d
8      ./gnupg
4      ./Music
24     ./cache/xfce4/notifyd
28     ./cache/xfce4
4      ./cache/sessions
4      ./cache/obexd
1392   ./cache/gstreamer-1.0
1432   ./cache
4      ./Documents
8      ./local/state/wireplumber
12     ./local/state
12     ./local/share/keyrings
8      ./local/share/nautilus/scripts
12     ./local/share/nautilus
4      ./local/share/icc
32     ./local/share
4      ./local/bin
52     ./local
60     ./config/xfce4/xfconf/xfce-perchannel-xml
64     ./config/xfce4/xfconf
16     ./config/xfce4/panel/launcher-7
8      ./config/xfce4/panel/launcher-5
8      ./config/xfce4/panel/launcher-6
40     ./config/xfce4/panel
4      ./config/xfce4/xfwm4
12     ./config/xfce4/desktop
124    ./config/xfce4
8      ./config/pulse
8      ./config/qt6ct
16     ./config/Thunar
8      ./config/nautilus
8      ./config/dconf
```

i. Free:

- Displays memory usage.

```
(cadet㉿kali)-[~]
$ free
              total        used         free      shared  buff/cache   available
Mem:       6064884      953940      4387588      11468      999104      5110944
Swap:      976556          0      976556
```

m. Top:

- Shows running processes and system resource usage.

```
(cadet㉿kali)-[~]
└$ top
top - 18:31:06 up 13 min, 2 users, load average: 0.15, 0.11, 0.09
Tasks: 243 total, 2 running, 241 sleeping, 0 stopped, 0 zombie
%CPU(s): 2.2 us, 0.7 sy, 0.0 ni, 96.9 id, 0.0 wa, 0.0 hi, 0.2 si, 0.0 st
MiB Mem : 5922.7 total, 4281.4 free, 934.6 used, 976.0 buff/cache
MiB Swap: 953.7 total, 953.7 free, 0.0 used. 4988.1 avail Mem

      PID USER      PR  NI    VIRT    RES    SHR S %CPU %MEM TIME+ COMMAND
 3359 root      20   0 365524 112220 58636 R  7.0  1.9  0:08.96 Xorg
 4008 cadet    20   0  721672 58964 49932 S  1.3  1.0  0:00.99 qterminal
 332 root      20   0      0     0     0 I  0.3  0.0  0:00.27 kworker/1:2-events
 629 root      20   0 113860  9520  8240 S  0.3  0.2  0:02.14 vmtoolsd
 3633 cadet    20   0 297812 49588 30944 S  0.3  0.8  0:02.64 xfwm4
 3687 cadet    20   0 587108 43520 34952 S  0.3  0.7  0:00.10 nm-applet
 3717 cadet    20   0 236552 60160 19432 S  0.3  1.0  0:01.90 wrapper-2.0
 3736 cadet    20   0 273968 28216 21312 S  0.3  0.5  0:01.66 wrapper-2.0
 8953 cadet    20   0 10460  5764  3588 R  0.3  0.1  0:00.03 top
 1 root       20   0 23924 14272 10600 S  0.0  0.2  0:01.53 systemd
 2 root       20   0      0     0     0 S  0.0  0.0  0:00.02 kthread
 3 root       20   0      0     0     0 S  0.0  0.0  0:00.00 pool_workqueue_release
 4 root      0 -20      0     0     0 I  0.0  0.0  0:00.00 kworker/R-kvfree_rcu_reclaim
 5 root      0 -20      0     0     0 I  0.0  0.0  0:00.00 kworker/R-rcu_gp
 6 root      0 -20      0     0     0 I  0.0  0.0  0:00.00 kworker/R-sync_wq
 7 root      0 -20      0     0     0 I  0.0  0.0  0:00.00 kworker/R-slub_flushwq
 8 root      0 -20      0     0     0 I  0.0  0.0  0:00.00 kworker/R-netns
11 root      0 -20      0     0     0 I  0.0  0.0  0:00.00 kworker/0:0H-events_highpri
12 root     20   0      0     0     0 I  0.0  0.0  0:00.00 kworker/u128:0-ipv6_addrconf
13 root      0 -20      0     0     0 I  0.0  0.0  0:00.00 kworker/R-mm_percpu_wq
14 root     20   0      0     0     0 I  0.0  0.0  0:00.00 rcu_tasks_kthread
15 root     20   0      0     0     0 I  0.0  0.0  0:00.00 rcu_tasks_rude_kthread
16 root     20   0      0     0     0 I  0.0  0.0  0:00.00 rcu_tasks_trace_kthread
17 root     20   0      0     0     0 S  0.0  0.0  0:00.03 kssoftirqd/0
18 root     20   0      0     0     0 I  0.0  0.0  0:00.22 rcu_preempt
19 root     20   0      0     0     0 S  0.0  0.0  0:00.00 rcu_exp_par_in_kthread_worker/1
```

n. Uptime:

- Displays system running time and load average.

```
(cadet㉿kali)-[~]
└$ uptime
18:31:16 up 13 min, 2 users, load average: 0.12, 0.11, 0.09
```

o. Ps:

- Displays running processes.

```
(cadet㉿kali)-[~]
└$ ps
      PID TTY          TIME CMD
 4041 pts/0    00:00:00 bash
 9091 pts/0    00:00:00 ps
```

p. History:

- Shows command history.

```
(cadet㉿kali)-[~]
└─$ history
 1 whoami
 2 hostname
 3 uname
 4 uname -a
 5 uptime
 6 date
 7 sScal
 8 cal
 9 who
10 w
11 id
12 df
13 du
14 free
15 top
16 uptime
17 ps
```

- q. Clear:
 - Clears the terminal screen.
- r. shutdown
 - Shuts down or reboots the system.
- s. reboot
 - Reboots the system.

2. File commands:

Basic Navigation

- a. Pwd
 - Shows the current working directory.

```
(cadet㉿kali)-[~]
└─$ pwd
/home/cadet
```

- b. Cd
 - Changes to the home directory.

```
└─(cadet㉿kali)-[~/Desktop]
└─$ cd
└─(cadet㉿kali)-[~]
```

- c. Cd/path/to/dir
➤ Changes to a specific directory.

```
└─(cadet㉿kali)-[~]
└─$ cd Desktop
└─(cadet㉿kali)-[~/Desktop]
```

- d. Cd..
➤ Moves up one directory level.

```
└─(cadet㉿kali)-[~/Downloads/Hlo]
└─$ cd ..
└─(cadet㉿kali)-[~/Downloads]
```

- e. Cd –
➤ Returns to the previous directory.

```
└─(cadet㉿kali)-[~/Downloads]
└─$ cd -
/home/cadet/Downloads/Hlo
└─(cadet㉿kali)-[~/Downloads/Hlo]
```

- f. Cd ~
➤ Jumps to the home directory.

```
└─(cadet㉿kali)-[~/Downloads/Hlo]
└─$ cd ~
└─(cadet㉿kali)-[~]
```

Listing Files and Info:

a. Ls

- Lists directory contents.

```
└─(cadet㉿kali)-[~]
└─$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
```

b. Ls -a

- Includes hidden files.

```
└─(cadet㉿kali)-[~]
└─$ ls -a
. .bashrc .config Documents .face.icon .java Pictures .sudo_as_admin_successful .Xauthority .zshrc
.. .bashrc.original Desktop Downloads .gnupg .local .profile Templates .xsession-errors
.bash_logout .Cache .dmrc .face .ICEAuthority Music Public Videos .zprofile
```

c. Ls -l

- Shows long listing with details.

```
└─(cadet㉿kali)-[~]
└─$ ls -l
total 32
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Desktop
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Documents
drwxr-xr-x 3 cadet cadet 4096 Aug 14 18:44 Downloads
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Music
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Pictures
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Public
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Templates
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Videos
```

d. Ls -la

- Shows long listing including hidden files.

```
(cadet㉿kali)-[~]
$ ls -la
total 128
drwx——— 15 cadet cadet 4096 Aug 14 18:28 .
drwxr-xr-x 6 root root 4096 Aug 14 18:19 ..
-rw-r--r-- 1 cadet cadet 220 Aug 14 18:19 .bash_logout
-rw-r--r-- 1 cadet cadet 5551 Aug 14 18:19 .bashrc
-rw-r--r-- 1 cadet cadet 3526 Aug 14 18:19 .bashrc.original
drwxrwxr-x 6 cadet cadet 4096 Aug 14 18:21 .cache
drwxr-xr-x 13 cadet cadet 4096 Aug 14 18:31 .config
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Desktop
-rw-r--r-- 1 cadet cadet 35 Aug 14 18:21 .dmrc
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Documents
drwxr-xr-x 3 cadet cadet 4096 Aug 14 18:44 Downloads
-rw-r--r-- 1 cadet cadet 11759 Aug 14 18:19 .face
lrwxrwxrwx 1 cadet cadet 5 Aug 14 18:19 .face.icon → .face
drwx——— 3 cadet cadet 4096 Aug 14 18:21 .gnupg
-rw——— 1 cadet cadet 0 Aug 14 18:21 .ICEauthority
drwxr-xr-x 3 cadet cadet 4096 Aug 14 18:19 .java
drwxr-xr-x 5 cadet cadet 4096 Aug 14 18:21 .local
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Music
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Pictures
-rw-r--r-- 1 cadet cadet 807 Aug 14 18:19 .profile
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Public
-rw-r--r-- 1 cadet cadet 0 Aug 14 18:28 .sudo_as_admin_successful
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Templates
drwxr-xr-x 2 cadet cadet 4096 Aug 14 18:21 Videos
-rw——— 1 cadet cadet 49 Aug 14 18:21 .Xauthority
-rw——— 1 cadet cadet 9745 Aug 14 18:21 .xsession-errors
-rw-r--r-- 1 cadet cadet 336 Aug 14 18:19 .zprofile
-rw-r--r-- 1 cadet cadet 10856 Aug 14 18:19 .zshrc
```

e. Ls -lh

- Displays long listing with human-readable sizes.

```
(cadet㉿kali)-[~]
$ ls -lh
total 32K
drwxr-xr-x 2 cadet cadet 4.0K Aug 14 18:21 Desktop
drwxr-xr-x 2 cadet cadet 4.0K Aug 14 18:21 Documents
drwxr-xr-x 3 cadet cadet 4.0K Aug 14 18:44 Downloads
drwxr-xr-x 2 cadet cadet 4.0K Aug 14 18:21 Music
drwxr-xr-x 2 cadet cadet 4.0K Aug 14 18:21 Pictures
drwxr-xr-x 2 cadet cadet 4.0K Aug 14 18:21 Public
drwxr-xr-x 2 cadet cadet 4.0K Aug 14 18:21 Templates
drwxr-xr-x 2 cadet cadet 4.0K Aug 14 18:21 Videos
```

f. File filename

- Determines the file type.

```
└─(cadet㉿kali)-[~/Downloads/Hlo]
└─$ file file.txt
file.txt: empty
```

g. Stat file.txt

- Displays detailed file information.

```
└─(cadet㉿kali)-[~/Downloads/Hlo]
└─$ stat file.txt
  File: file.txt
  Size: 0          Blocks: 0          IO Block: 4096   regular empty file
Device: 8,1      Inode: 3027021      Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1003/    cadet)  Gid: ( 1003/    cadet)
Access: 2025-08-14 18:49:33.245209433 +0545
Modify: 2025-08-14 18:49:33.245209433 +0545
Change: 2025-08-14 18:49:33.245209433 +0545
 Birth: 2025-08-14 18:49:33.245209433 +0545
```

h. Ls -R

- Recursively lists directory contents.

```
└─(cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls -R
.:
file.txt
```

Creating, Copying, Moving:

a. Touch file.txt

- Creates an empty file.

```
└─(cadet㉿kali)-[~/Downloads/Hlo]
└─$ touch file.txt

└─(cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls
file.txt

└─(cadet㉿kali)-[~/Downloads/Hlo]
```

b. Mkdir newdir

- Creates a directory.

```
(cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls
file.txt

(cadet㉿kali)-[~/Downloads/Hlo]
└─$ mkdir world

(cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls
file.txt  world

(cadet㉿kali)-[~/Downloads/Hlo]
└─$ █
```

c. Cp file1 file2

➤ Copies file1 to file2.

```
(cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls
file.txt  world

(cadet㉿kali)-[~/Downloads/Hlo]
└─$ cp file.txt  file1.txt

(cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls
file1.txt  file.txt  world
```

d. Mv file1 file2

➤ Renames a file.

```
(cadet㉿kali)-[~/Downloads/Hlo]
└─$ mv file1.txt  hlo

(cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls
file.txt  hlo  world
```

Deleting:

a. Rm file.txt

➤ Deletes a file.

```
[cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls
file.txt  hlo  world

[cadet㉿kali)-[~/Downloads/Hlo]
└─$ rm file.txt

[cadet㉿kali)-[~/Downloads/Hlo]
└─$ rm hlo

[cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls
world
```

b. Rmdir dir

- Removes an empty directory.

```
[cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls
world

[cadet㉿kali)-[~/Downloads/Hlo]
└─$ rmdir world

[cadet㉿kali)-[~/Downloads/Hlo]
└─$ ls

[cadet㉿kali)-[~/Downloads/Hlo]
```

3. Networking commands:

Basic Network Info:

a. Ip a

- Shows IP addresses and network interfaces.

```
(cadet㉿kali)-[~/Downloads/Hlo]
$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
        inet6 ::1/128 scope host noprefixroute
            valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 00:0c:29:d4:97:8d brd ff:ff:ff:ff:ff:ff
        inet 192.168.150.128/24 brd 192.168.150.255 scope global dynamic noprefixroute eth0
            valid_lft 1670sec preferred_lft 1670sec
        inet6 fe80::8d35:f67d:358f:7fed/64 scope link noprefixroute
            valid_lft forever preferred_lft forever
```

b. Ifconfig

- Displays network interface details.

```
(cadet㉿kali)-[~/Downloads/Hlo]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.150.128 netmask 255.255.255.0 broadcast 192.168.150.255
        inet6 fe80::8d35:f67d:358f:7fed prefixlen 64 scopeid 0x20<link>
            ether 00:0c:29:d4:97:8d txqueuelen 1000 (Ethernet)
            RX packets 195 bytes 37672 (36.7 KiB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 209 bytes 18296 (17.8 KiB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
            loop txqueuelen 1000 (Local Loopback)
            RX packets 16 bytes 960 (960.0 B)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 16 bytes 960 (960.0 B)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

c. Hostname

- Shows the system hostname.

```
(cadet㉿kali)-[~/Downloads/Hlo]
$ hostname
kali
```

Connectivity and Diagnostics:

a. Ping host

- Tests connectivity to a host (e.g., ping google.com).

```

└──(cadet㉿kali)-[~/Downloads/Hlo]
$ hostname
kali

└──(cadet㉿kali)-[~/Downloads/Hlo]
$ ping google.com
PING google.com (142.251.43.110) 56(84) bytes of data.
64 bytes from tzdela-bd-in-f14.1e100.net (142.251.43.110): icmp_seq=1 ttl=128 time=21.9 ms
64 bytes from tzdela-bd-in-f14.1e100.net (142.251.43.110): icmp_seq=2 ttl=128 time=22.5 ms
64 bytes from tzdela-bd-in-f14.1e100.net (142.251.43.110): icmp_seq=3 ttl=128 time=23.7 ms
64 bytes from tzdela-bd-in-f14.1e100.net (142.251.43.110): icmp_seq=4 ttl=128 time=24.1 ms
64 bytes from tzdela-bd-in-f14.1e100.net (142.251.43.110): icmp_seq=5 ttl=128 time=25.1 ms
64 bytes from tzdela-bd-in-f14.1e100.net (142.251.43.110): icmp_seq=6 ttl=128 time=24.2 ms
64 bytes from tzdela-bd-in-f14.1e100.net (142.251.43.110): icmp_seq=7 ttl=128 time=29.2 ms
^C
--- google.com ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 6011ms
rtt min/avg/max/mdev = 21.850/24.399/29.223/2.215 ms

```

b. Ping -c 4 host

- Sends 4 ping requests.

```

└──(cadet㉿kali)-[~/Downloads/Hlo]
$ ping -c 4 google.com
PING google.com (142.251.43.110) 56(84) bytes of data.
64 bytes from bkk02s03-in-f14.1e100.net (142.251.43.110): icmp_seq=1 ttl=128 time=19.6 ms
64 bytes from bkk02s03-in-f14.1e100.net (142.251.43.110): icmp_seq=2 ttl=128 time=20.3 ms
64 bytes from bkk02s03-in-f14.1e100.net (142.251.43.110): icmp_seq=3 ttl=128 time=21.2 ms
64 bytes from bkk02s03-in-f14.1e100.net (142.251.43.110): icmp_seq=4 ttl=128 time=23.6 ms

--- google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 19.624/21.165/23.569/1.497 ms
└──(cadet㉿kali)-[~/Downloads/Hlo]
$ █

```

4. Basic shell scripting:

Shebang & Execution:

- a. `#!/bin/bash`
 - Defines the script interpreter.
- b. `chmod +x script.sh`
 - Makes the script executable.
- c. `./script.sh`
 - Runs the script.

Script.sh:

```

#!/bin/bash

# =====

# Basic Shell Scripting Examples (Corrected)

# =====

```

```
# 1. Hello World and Variables
```

```
echo "Hello World"
```

```
name="Sulav"
```

```
echo "Hello, $name"
```

```
# 2. Arithmetic
```

```
a=10
```

```
b=5
```

```
sum=$((a + b))
```

```
echo "Sum = $sum"
```

```
# 3. User Input
```

```
read -p "Enter your name: " username
```

```
echo "Welcome, $username"
```

```
# 4. If-Else Condition (with input check)
```

```
read -p "Enter a number: " num
```

```
if [[ -z "$num" ]]; then
```

```
    echo "No number entered. Using 0."
```

```
    num=0
```

```
fi
```

```
if [ "$num" -gt 10 ]; then
```

```
    echo "Number is greater than 10"
```

```
else
```

```
    echo "Number is 10 or less"
```

```
fi
```

```
# 5. Even or Odd (with input check)
```

```

read -p "Enter another number: " n
if [[ -z "$n" ]]; then
    echo "No number entered. Using 0."
    n=0
fi
if (( n % 2 == 0 )); then
    echo "The number is even"
else
    echo "The number is odd"
fi

```

```

# 6. Simple Calculator

read -p "Enter first number: " n1
read -p "Enter second number: " n2
read -p "Choose operation (+ - * /): " op

if [[ -z "$n1" ]]; then n1=0; fi
if [[ -z "$n2" ]]; then n2=0; fi

if [ "$op" = "+" ]; then
    result=$((n1 + n2))
elif [ "$op" = "-" ]; then
    result=$((n1 - n2))
elif [ "$op" = "*" ]; then
    result=$((n1 * n2))
elif [ "$op" = "/" ]; then
    if [ "$n2" -ne 0 ]; then
        result=$((n1 / n2))
    else
        echo "Error: Division by zero"
    fi
fi

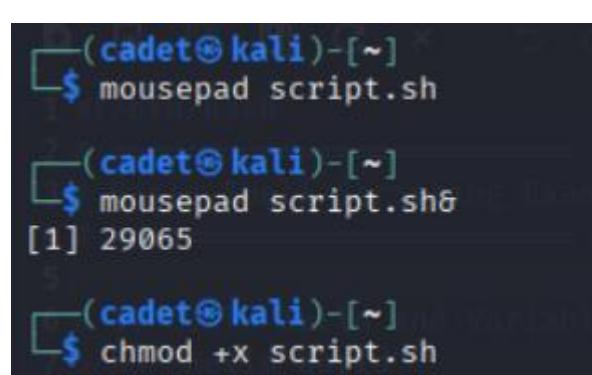
```

```
else
    result="Error: Division by zero"
fi
else
    result="Invalid operator"
fi
echo "Result: $result"
```

```
# 7. System Info
echo "Username: $(whoami)"
echo "Hostname: $(hostname)"
echo "OS Info: $(uname -a)"
```

```
# 8. File Exists Check
read -p "Enter a file name: " filename
if [ -e "$filename" ]; then
    echo "$filename already exists."
else
    echo "Creating $filename..."
    echo "This is a new file." > "$filename"
    echo "$filename created."
```

Fi



A terminal session showing the creation and execution of a shell script named 'script.sh'. The session starts with the user 'cadet' at a Kali Linux prompt. They use 'mousepad' to edit 'script.sh', which contains the division and operator validation code shown above. After saving, they run the script with 'sh script.sh'. The output shows the error message for division by zero.

```
(cadet㉿kali)-[~]
$ mousepad script.sh

(cadet㉿kali)-[~]
$ mousepad script.sh&
[1] 29065
$ 
(cadet㉿kali)-[~]
$ chmod +x script.sh
```

```
[~] cadet@kali:~/Desktop$ chmod +x script.sh
[~] cadet@kali:~/Desktop$ ./script.sh
Hello World
Hello, Sulav
Sum = 15
Enter your name: Sulav
Welcome, Sulav
Enter a number:
./script.sh: line 23: [: -gt: unary operator expected
Number is 10 or less
Enter another number: 10
The number is even
Enter first number: 6
Enter second number: 5
Choose operation (+ - * /): +
Result: 11
Username: cadet
Hostname: kali
OS Info: Linux kali 6.12.33+kali-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.33-1kali1 (2025-06-25) x86_64 GNU/Linux
Enter a file name: file
Creating file ...
file created.
```

```
[~] cadet@kali:~/Desktop$ ./script.sh
Hello World
Hello, Sulav
Sum = 15
Enter your name: Cadet
Welcome, Cadet
Enter a number: 10
Number is 10 or less
Enter another number: 5
The number is odd
Enter first number: 6
Enter second number: 3
Choose operation (+ - * /): +
Result: 9
Username: cadet
Hostname: kali
OS Info: Linux kali 6.12.33+kali-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.33-1kali1 (2025-06-25) x86_64 GNU/Linux
Enter a file name: file
file already exists.
```