

# **Commands of Kali Linux**

## **Task I**

Created By:

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### 1. su:

Allows a user to switch to another user account, usually the root user, without logging out of the current session.

#### Output :

```
(kali㉿kali)-[~]  
$ su - mrunmayee  
Password:  
(mrunmayee㉿kali)-[~]  
$
```

### 2. date:

Displays the current system date and time and can also be used to format or set date and time values.

#### Output :

```
(mrunmayee㉿kali)-[~]  
$ date  
Sun Dec 28 03:46:59 AM EST 2025
```

### 3. mkdir:

Creates a new directory with the given name and helps in organizing files and projects in a structured manner.

#### Output:

```
(mrunmayee㉿kali)-[~]  
$ mkdir project
```

#### 4. rmdir:

Removes an empty directory safely from the system and is mainly used for cleaning unnecessary folders.

##### Output:

```
(mrunmayee@kali)-[~]  
$ rmdir project
```

#### 5. touch:

Creates a new empty file instantly and is commonly used for creating configuration or test files.

##### Output:

```
(mrunmayee@kali)-[~]  
$ touch file1.txt
```

#### 6. echo:

Displays text or variable values on the terminal and is commonly used in shell scripts for output and debugging.

##### Output:

```
(mrunmayee@kali)-[~]  
$ echo "Hello friends myself Mrunmayee Shirodkar">>file1.txt
```

## 7. cat:

Displays the full content of a file directly on the terminal which is useful for reading small text files quickly.

### Output:

```
(mrunmayee@kali)-[~]  
$ cat file1.txt  
Hello friends myself Mrunmayee Shirodkar
```

## 8. pwd:

Displays the complete path of the present working directory which helps users know their exact location in the file system.

### Output:

```
(mrunmayee@kali)-[~]  
$ pwd  
/home/mrunmayee
```

## 9. ls:

Lists all files and directories in the current folder and shows their names clearly so users can understand the directory structure.

### Output:

```
(mrunmayee@kali)-[~]  
$ ls  
file1.txt  mrun  mrunmayi  myfolder
```

## 10. whoami:

Shows the name of the currently logged-in user and helps verify user permissions.

### Output:

```
(mrunmayee@kali)-[~]  
$ whoami  
mrunmayee
```

## 11. history:

Displays a list of previously executed commands in the terminal and helps users quickly reuse or review past commands.

### Output:

```
(mrunmayee@kali)-[~]  
$ history  
1  whoami  
2  pwd  
3  date  
4  date +%D  
5  date +%T  
6  ls  
7  ls/media/  
8  cp  
9  .clear  
10 cls  
11 clear  
12 ls  
13 pwd  
14 cd documents  
15 pwd mrunmayee  
16 echo "To print something on terminal"  
17 echo "TO PRINT SOMETHING ON TERMINAL"  
18 sudo apt install netcat  
19 pwd  
20 ls  
21 cd  
22 grep keyword filename  
23 mkdir mrunm  
24 pwd  
25 cd  
26 cd mrunmayee
```

## 12. cp:

Copies files or directories from one location to another while keeping the original file unchanged.

### Output:

```
(mrunmayee@kali)-[~]  
$ cp file1.txt backup.txt
```

## 13. mv:

Moves files or directories from one location to another and is also used to rename files or folders.

### Output:

```
(mrunmayee@kali)-[~]  
$ mv backup.txt newfile.txt
```

## 14. rm:

Deletes files or directories permanently from the system and should be used carefully as removed data cannot be recovered easily.

### Output:

```
(mrunmayee@kali)-[~]  
$ rm newfile.txt
```

## 15. uname -a:

Displays complete system information including kernel name, version, architecture, and operating system details.

### Output:

```
(mrunmayee@kali)-[~]  
$ uname -a  
Linux kali 6.16.8+kali-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.16.8-1kali1 (2025-09-24) x86_64 GNU/Linux
```

## 16. who:

Displays a list of users currently logged into the system along with their login time and terminal information.

### Output:

```
(mrunmayee@kali)-[~]  
$ who  
kali      seat0      2025-12-28 03:41 (:0)
```

## 17. df -h:

Displays disk space usage in a human-readable format with sizes in KB, MB, or GB for easier understanding.

### Output:

```
(mrunmayee@kali)-[~]  
$ df -h  
Filesystem      Size  Used Avail Use% Mounted on  
udev            883M   0    883M   0% /dev  
tmpfs           198M  964K  197M   1% /run  
/dev/sda1       79G   16G   59G  21% /  
tmpfs           986M  4.0K  986M   1% /dev/shm  
none            1.0M   0    1.0M   0% /run/credentials/systemd-journald.service  
tmpfs           986M  152K  986M   1% /tmp  
shared          476G  214G  263G  45% /media/sf_shared  
none            1.0M   0    1.0M   0% /run/credentials/getty@tty1.service  
tmpfs           198M  104K  198M   1% /run/user/1000
```

## 18. du -h:

Shows the size of files and directories in a human-readable format, making it easier to identify space usage.

### Output:

```
(mrunmayee@kali)-[~]
$ du -h
4.0K    ./mrunmayi
4.0K    ../local/share/nano
8.0K    ../local/share/nautilus/scripts
12K     ../local/share/nautilus
20K     ../local/share
4.0K    ../local/bin
28K     ../local
8.0K    ../.java/.userPrefs/burp
12K     ../.java/.userPrefs
16K     ../.java
4.0K    ./mrun
8.0K    ./myfolder
8.0K    ../config/xfce4/panel
12K     ../config/xfce4
8.0K    ../config/powershell
8.0K    ../config/cherrytree
8.0K    ../config/nautilus
40K     ../config
164K    .
```

## 19. free -h:

Shows memory and swap usage in a human-readable format with sizes in KB, MB, or GB for easier interpretation.

### Output:

```
(mrunmayee@kali)-[~]
$ free -h
              total        used        free      shared  buff/cache   availa
ble: Mem: 1.9Gi 774Mi 856Mi 10Mi 491Mi 1.
2Gi
Swap: 953Mi 0B 953Mi
```

## 20. ps:

Displays a snapshot of currently running processes along with their process IDs, user, and resource usage.

### Output:

```
(mrunmayee@kali)-[~]  
$ ps  
  PID TTY          TIME CMD  
 20308 pts/0    00:00:00 bash  
 22543 pts/0    00:00:00 ps
```

## 21. top:

Shows real-time information about running processes, CPU, and memory usage, allowing users to monitor system performance.

### Output:

```
(mrunmayee@kali)-[~]  
$ top  
top - 04:26:07 up 45 min, 1 user, load average: 0.35, 0.31, 0.30  
Tasks: 173 total, 1 running, 172 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 1.0 us, 1.5 sy, 0.0 ni, 97.3 id, 0.0 wa, 0.0 hi, 0.2 si, 0.0  
MiB Mem : 1971.1 total, 856.5 free, 773.6 used, 492.2 buff/cache  
MiB Swap: 953.7 total, 953.7 free, 0.0 used. 1197.5 avail Mem  


| PID   | USER     | PR | NI  | VIRT   | RES    | SHR   | S | %CPU | %MEM | TIME+   |
|-------|----------|----|-----|--------|--------|-------|---|------|------|---------|
| 650   | root     | 20 | 0   | 732424 | 150868 | 77476 | S | 1.3  | 7.5  | 1:03.58 |
| 932   | kali     | 20 | 0   | 215396 | 3268   | 2856  | S | 0.7  | 0.2  | 0:11.13 |
| 20220 | kali     | 20 | 0   | 646092 | 57620  | 48332 | S | 0.7  | 2.9  | 0:01.28 |
| 22584 | mrunmay+ | 20 | 0   | 10396  | 5740   | 3604  | R | 0.7  | 0.3  | 0:00.03 |
| 1002  | kali     | 20 | 0   | 888816 | 131860 | 89460 | S | 0.3  | 6.5  | 0:13.14 |
| 1061  | kali     | 20 | 0   | 296608 | 49072  | 21144 | S | 0.3  | 2.4  | 0:13.42 |
| 1063  | kali     | 20 | 0   | 272760 | 28736  | 21496 | S | 0.3  | 1.4  | 0:10.89 |
| 1136  | kali     | 20 | 0   | 281560 | 36860  | 20360 | S | 0.3  | 1.8  | 0:01.12 |
| 1     | root     | 20 | 0   | 24356  | 15232  | 10936 | S | 0.0  | 0.8  | 0:01.06 |
| 2     | root     | 20 | 0   | 0      | 0      | 0     | S | 0.0  | 0.0  | 0:00.00 |
| 3     | root     | 20 | 0   | 0      | 0      | 0     | S | 0.0  | 0.0  | 0:00.00 |
| 4     | root     | 0  | -20 | 0      | 0      | 0     | I | 0.0  | 0.0  | 0:00.00 |
| 5     | root     | 0  | -20 | 0      | 0      | 0     | I | 0.0  | 0.0  | 0:00.00 |
| 6     | root     | 0  | -20 | 0      | 0      | 0     | I | 0.0  | 0.0  | 0:00.00 |
| 7     | root     | 0  | -20 | 0      | 0      | 0     | I | 0.0  | 0.0  | 0:00.00 |
| 8     | root     | 0  | -20 | 0      | 0      | 0     | I | 0.0  | 0.0  | 0:00.00 |
| 12    | root     | 20 | 0   | 0      | 0      | 0     | I | 0.0  | 0.0  | 0:00.00 |
| 13    | root     | 0  | -20 | 0      | 0      | 0     | I | 0.0  | 0.0  | 0:00.00 |
| 14    | root     | 20 | 0   | 0      | 0      | 0     | S | 0.0  | 0.0  | 0:00.61 |
| 15    | root     | 20 | 0   | 0      | 0      | 0     | I | 0.0  | 0.0  | 0:01.75 |
| 16    | root     | 20 | 0   | 0      | 0      | 0     | S | 0.0  | 0.0  | 0:00.00 |


```

## 22. sort:

Sorts the lines of a text file or output alphabetically or numerically, making it easier to organize data.

### Output:

```
(mrunmayee@kali) - [~/myfolder]
$ sort file1.txt
Mrunmayee
my
```

## 23. whereis ls:

Displays the location of the binary, source, and manual files for the ls command, helping users find command-related files.

### Output:

```
(mrunmayee@kali) - [~/myfolder]
$ whereis ls
ls: /usr/bin/ls /usr/share/man/man1/ls.1.gz
```

## 24. wc -w:

Counts the number of words in a file or input, helping users quickly analyze text content.

### Output:

```
(mrunmayee@kali) - [~/myfolder]
$ wc -w file1.txt
2 file1.txt
```

## 25. ln -s:

Creates a symbolic (soft) link to a file or directory, allowing access to the original item from a different location.

### Output:

```
(mrunmayee@kali)~[~/myfolder]
$ ln -s file1.txt link1.txt

(mrunmayee@kali)~[~/myfolder]
$ ls
file1.txt  file2.txt  link1.txt
```

## 26. ifconfig:

Displays network interface information including IP addresses, MAC addresses, and interface status. It is used to configure or troubleshoot network settings on the system.

### Output:

```
(mrunmayee@kali)~[~]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.1.18 netmask 255.255.255.0 broadcast 192.168.1.255
    inet6 2401:4900:1c20:57f4:493b:2ddd:3bdd:31b prefixlen 64 scopeid 0<global>
    inet6 fe80::369e:e89b:179d:3100 prefixlen 64 scopeid 0<link>
    ether 08:00:27:63:b0:05 txqueuelen 1000 (Ethernet)
    RX packets 10810 bytes 13015742 (12.4 MiB)
    RX errors 1935 dropped 0 overruns 0 frame 1935
    TX packets 7163 bytes 692844 (676.6 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 0<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 8 bytes 480 (480.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 8 bytes 480 (480.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

## 27. id:

Displays the user ID (UID), group ID (GID), and group memberships of the current or specified user.

### Output:

```
(mrunmayee@kali)~[~]
$ id
uid=1001(mrunmayee) gid=1001(mrunmayee) groups=1001(mrunmayee),100(users)
```

## 28. nslookup:

Queries DNS servers to find the IP address associated with a domain name or vice versa. It is used for troubleshooting and verifying DNS configurations.

### Output:

```
(mrunmayee@kali)-[~]  
$ nslookup google.com  
Server:      192.168.1.1  
Address:     192.168.1.1#53  
  
Non-authoritative answer:  
Name:   google.com  
Address: 142.250.192.78  
Name:   google.com  
Address: 2404:6800:4009:80e::200e
```

## 29. head:

Displays the first few lines (default 10) of a file or output, helping users quickly view the beginning content.

### Output:

```
(mrunmayee@kali)-[~]  
$ head -c 5 file1.txt  
Hello
```

## 30. tail:

Shows the last few lines (default 10) of a file or output, often used to monitor log files in real time.

### Output:

```
(mrunmayee@kali)-[~]  
$ tail -c 10 file1.txt  
Shirodkar
```

### 31. netstat -at:

Displays all active TCP connections on the system, showing source and destination addresses and ports. It helps monitor network activity and troubleshoot connectivity issues.

#### Output:

```
(mrunmayee@kali)-[~]
$ netstat -at
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp      0      0 192.168.1.18:34596      93.243.107.34.bc.:https ESTABLISHED
tcp      0      0 192.168.1.18:58776      bom12s07-in-f10.1:https TIME_WAIT
tcp      0      0 192.168.1.18:34598      93.243.107.34.bc.:https ESTABLISHED
```

### 32. tree:

Displays the directory structure in a hierarchical tree format, showing all files and subdirectories clearly. It helps users quickly understand the organization and layout of folders on the system.

#### Output:

```
(mrunmayee@kali)-[~]
$ tree
.
├── file1.txt
├── mrun
├── mrunmayi
└── myfolder
    ├── file1.txt
    ├── file2.txt
    └── link1.txt → file1.txt

4 directories, 4 files
```

### 33. route:

Displays the system's routing table, showing network destinations, gateways, and interface information. It is used to view or troubleshoot how network traffic is directed on the system.

#### Output:

```
(mrunmayee@kali)-[~]
$ route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default 192.168.1.1 0.0.0.0 UG 100 0 0 eth0
192.168.1.0 0.0.0.0 255.255.255.0 U 100 0 0 eth0
```

### 34. finger:

Displays information about system users, including login name, full name, home directory, and shell. It is used to get details about users currently on the system or to check account information.

#### Output:

```
(mrunmayee@kali)-[~]
$ finger mrunmayee
Login: mrunmayee                Name: mrunmayee
Directory: /home/mrunmayee      Shell: /bin/bash
Never logged in.
No mail.
No Plan.
```

### 35. uptime:

Shows how long the system has been running along with the current time, number of users, and load averages. It helps monitor system stability and performance over time.

#### Output:

```
(mrunmayee@kali)-[~/projects]
$ uptime
06:28:03 up 2:46, 1 user, load average: 0.03, 0.07, 0.12
```

### 36. w:

Displays a list of users currently logged in along with their activity, login time, and the processes they are running. It helps monitor user activity and system usage in real time.

#### Output:

```
(mrunmayee@kali)-[~]
$ w
06:35:03 up 2:53, 1 user, load average: 0.38, 0.22, 0.15
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
kali - 03:41 0.00s 0.01s lightdm --session-child 13 24
```

### 37. hostnamectl:

Displays system hostname and related settings such as static, transient, and pretty hostnames. It is used to view or change the system's hostname and manage basic system information.

#### Output:

```
(mrunmayee@kali)-[~/projects]
$ hostnamectl
Static hostname: kali
Icon name: computer-vm
Chassis: vm
Machine ID: b69758c0cad3481e967dcad827001d56
Boot ID: 676f7d2c16fc42fdb449378702207ce3
Virtualization: oracle
Operating System: Kali GNU/Linux Rolling
Kernel: Linux 6.16.8+kali-amd64
Architecture: x86-64
Hardware Vendor: innotek GmbH
Hardware Model: VirtualBox
Hardware Version: 1.2
Firmware Version: VirtualBox
Firmware Date: Fri 2006-12-01
Firmware Age: 19y 3w 6d
```

### 38. timedatectl:

Displays and allows management of the system's date, time, and time zone settings. It is used to view current time settings or change the system clock and time zone configuration.

#### Output:

```
(mrunmayee@kali)-[~]
$ timedatectl
Local time: Sun 2025-12-28 06:35:34 EST
Universal time: Sun 2025-12-28 11:35:34 UTC
RTC time: Sun 2025-12-28 11:19:59
Time zone: America/New_York (EST, -0500)
System clock synchronized: no
NTP service: inactive
RTC in local TZ: no
```

### 39. lsblk:

Lists all available block devices such as hard drives, partitions, and USB drives in a tree-like format. It helps users understand storage devices and their mount points on the system.

#### Output:

```
(mrunmayee@kali)-[~]
$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sda           8:0    0 80.1G  0 disk
└─sda1        8:1    0 80.1G  0 part /
sr0          11:0    1 1024M  0 rom
```

### 40. last:

Shows a list of the most recent user logins on the system along with login time, duration, and terminal used. It is useful for tracking user activity and auditing system access.

#### Output:

```
(mrunmayee@kali)-[~]
$ last
mrunmaye pts/0          Sun Dec 28 04:21 - still logged in
mrunmaye pts/0          Sun Dec 28 04:20 - 04:20 (00:00)
mrunmaye pts/0          Sun Dec 28 03:42 - 04:20 (00:37)
mrunmaye pts/0          Sun Dec 28 03:41 - 03:42 (00:00)
kali     tty7            :0          Sun Dec 28 03:41 - still logged in
lightdm  tty7            :0          Sun Dec 28 03:41 - 03:41 (00:00)
mrunmaye pts/0          Sun Dec 28 03:40 - still logged in
kali     pts/1            Sun Dec 28 03:39 - 03:39 (00:00)
mrunmaye pts/1            Sun Dec 28 03:38 - 03:39 (00:00)
kali     tty7            :0          Sun Dec 28 03:38 - still logged in
lightdm  tty7            :0          Sun Dec 28 03:38 - 03:38 (00:00)
lightdm  tty8            :1          Sun Dec 28 03:36 - 03:36 (00:00)
mrunmaye pts/0          Sun Dec 28 02:28 - still logged in
mrunmaye pts/0          Sun Dec 28 02:14 - 02:27 (00:13)
kali     tty7            :0          Sun Dec 28 02:13 - still logged in
lightdm  tty7            :0          Sun Dec 28 02:13 - 02:13 (00:00)
mrunmaye pts/0          Sun Dec 28 01:46 - still logged in
mrunmaye pts/0          Sun Dec 28 01:38 - 01:45 (00:06)
kali     tty7            :0          Sun Dec 28 00:51 - still logged in
lightdm  tty7            :0          Sun Dec 28 00:51 - 00:51 (00:00)
postgres Tue Dec  2 21:35 - 21:35 (00:00)

wtmpdb begins Tue Dec  2 21:35:30 2025
```

## 41. iostat:

Displays CPU and input/output statistics for devices and partitions, helping monitor system performance. It is commonly used to analyze disk usage, throughput, and identify potential bottlenecks.

### Output:

```
(mrunmayee@kali)-[~]
$ iostat
Linux 6.16.8+kali-amd64 (kali) 12/28/2025      _x86_64_      (2 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           1.78    0.00    2.41    0.05    0.00   95.76

Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
sda                2.43        68.76        23.01         0.00     757070     253374         0
```

## 42. stat:

Displays detailed information about a file or directory, including size, permissions, and timestamps. It helps users understand file properties and track changes over time.

### Output:

```
(mrunmayee@kali)-[~]
$ stat mrunmayi
File: mrunmayi
Size: 4096      Blocks: 8      IO Block: 4096   directory
Device: 8,1    Inode: 4194497 Links: 2
Access: (0775/drwxrwxr-x)  Uid: ( 1001/mrunmayee)   Gid: ( 1001/mrunmayee)
Access: 2025-12-28 03:10:56.579221553 -0500
Modify: 2025-12-28 02:55:35.359185558 -0500
Change: 2025-12-28 02:55:35.359185558 -0500
Birth: 2025-12-28 02:55:35.359185558 -0500
```

## 43. ip route:

Shows the system's routing table, including network destinations, gateways, and interface details. It is used to view and troubleshoot how network traffic is directed on the system.

### Output:

```
(mrunmayee@kali)-[~]
$ ip route
default via 192.168.1.1 dev eth0 proto dhcp src 192.168.1.18 metric 100
192.168.1.0/24 dev eth0 proto kernel scope link src 192.168.1.18 metric 100
```

#### 44. passwd:

Changes the password of the current or specified user account to enhance security. It prompts for the old password and then allows setting a new password.

#### Output:

```
(mrunmayee@kali)-[~]  
$ passwd  
Changing password for mrunmayee.  
Current password:  
New password:  
Retype new password:  
passwd: password updated successfully
```

#### 45. hostname -i:

Displays the IP address associated with the system's hostname. It is used to quickly find the machine's network address on the local network.

#### Output:

```
(mrunmayee@kali)-[~]  
$ hostname -i  
127.0.1.1
```

#### 46. hostname:

Displays the current system hostname, which identifies the machine on a network. It can also be used to set or change the system's hostname.

#### Output:

```
(mrunmayee@kali)-[~]  
$ hostname  
kali
```