

Output:-

1. Adam is working in an it company. He has been given a task to reduce the load of a system by killing some of the processes running in the LINUX operating system. Which commands will he use to complete the given task with the help of the following operation?

- **Kill Processes by name**

```
m309@m309-BY-OEM:~$ sleep 500 &
[1] 6500
m309@m309-BY-OEM:~$ pkill sleep
pkill: killing pid 6479 failed: Operation not permitted
[1]+  Terminated                  sleep 500
```

- **Kill a single process at a time with the given process ID**

```
m309@m309-BY-OEM:~$ kill 6481
m309@m309-BY-OEM:~$ ps -ef | grep sleep
root      6479    1663  0 17:20 ?        00:00:00 sleep 3600
m309      6498    3124  0 17:22 pts/0    00:00:00 grep --color=auto sleep
[1]+  Terminated                  sleep 500
m309@m309-BY-OEM:~$ sleep 500 &
[1] 6500
```

- Kill a process based on the process name

```
m309@m309-BY-OEM:~$ killall sleep
sleep(6479): Operation not permitted
[1]+  Terminated                  sleep 500
m309@m309-BY-OEM:~$ ls
Desktop  Downloads  fork      Music     orphan.c  Public  Templates  zombie
Documents  file.txt  fork.c   orphan   Pictures  snap    Videos     zombie.c
m309@m309-BY-OEM:~$
```

2. Write a program for process creation using C

- **Orphan Process**

```
m309@m309-BY-OEM:~$ nano fork.c
m309@m309-BY-OEM:~$ nano orphan.c
m309@m309-BY-OEM:~$ ./orphan
bash: ./orphan: No such file or directory
m309@m309-BY-OEM:~$ gcc orphan.c -o orphan
m309@m309-BY-OEM:~$ ./orphan
Parent exiting
m309@m309-BY-OEM:~$ Child Process
PID: 6313
PPID: 2095
```

- **Zombie Process**

```
m309@m309-BY-OEM:~$ nano orphan.c
m309@m309-BY-OEM:~$ nano zombie.c
m309@m309-BY-OEM:~$ gcc zombie.c -o zombie
m309@m309-BY-OEM:~$ ./zombie
Child exiting
Parent sleeping
```

3. Create the process using fork 0 system call

- Child Process creation
- Parent Process creation

```
m309@m309-BY-OEM:~$ nano fork.c
m309@m309-BY-OEM:~$ gcc fork.c -o fork
m309@m309-BY-OEM:~$ ./fork
Parent Process
Parent PID: 5245
Child Process
Child PID: 5246
Parent PID: 5245
m309@m309-BY-OEM:~$
```

- PID and PPID

```
m309@m309-BY-OEM:~$ sleep 500 &
[1] 6481
m309@m309-BY-OEM:~$ kill 6481
m309@m309-BY-OEM:~$ ps -ef | grep sleep
root      6479    1663  0 17:20 ?        00:00:00 sleep 3600
m309      6498    3124  0 17:22 pts/0    00:00:00 grep --color=auto sleep
[1]+  Terminated                  sleep 500
m309@m309-BY-OEM:~$ sleep 500 &
[1] 6500
m309@m309-BY-OEM:~$ pkill sleep
pkill: killing pid 6479 failed: Operation not permitted
[1]+  Terminated                  sleep 500
m309@m309-BY-OEM:~$ pgrep sleep
6479
m309@m309-BY-OEM:~$ sleep 500 &
[1] 6507
m309@m309-BY-OEM:~$ killall sleep
sleep(6479): Operation not permitted
[1]+  Terminated                  sleep 500
m309@m309-BY-OEM:~$ ls
Desktop  Downloads  fork      Music     orphan.c  Public  Templates  zombie
Documents  file.txt  fork.c   orphan    Pictures  snap    Videos    zombie.c
m309@m309-BY-OEM:~$
```