Lab No. 15   **Date: 2025/09/09**

Title: Prepare a lab report to create and terminate process.

Introduction:

A process is an instance of a program running, and its lifecycle includes various stages such as creation, execution, and deletion.

- The operating system handles process creation by allocating necessary resources and assigning each process a unique identifier.

- Process deletion involves releasing resources once a process completes its execution.

- Processes are often organized in a hierarchy, where parent processes create child processes, forming a tree-like structure.

Process Concepts:

- Process**:** An executing program with its own memory space
- Process ID (PID)**:** Unique identifier assigned to each process
- Parent Process**:** Process that creates another process
- Child Process**:** Process created by another process
- Process State**:** Current status of a process (running, sleeping, stopped, zombie)

Process Termination Methods:

1. Natural Termination**:** Process completes execution
2. Signal Termination**:** Using kill signals
3. Force Termination**:** Forceful process killing
4. Parent Termination**:** When parent process ends

Operating System: Ubuntu

1. Process creation

sleep 300 &   *# Create a sleep process for 300 seconds*

[1] 570   *# Process id*

```
jonash_chataut@LAPTOP-LA4DFAI2:~$ sleep 300 &
[1] 570
```

2. Viewing Processes

ps aux | grep sleep   *# Find specific process*

jonash_+   570 0.0 0.0   3128 1664 pts/0   S   05:34   0:00 sleep 300 #process info

jonash_+   572 0.0 0.0   4092 1920 pts/0   S+   05:34   0:00 grep --color=auto sleep

```
jonash_chataut@LAPTOP-LA4DFAI2:~$ ps aux | grep sleep
jonash_+      570  0.0  0.0    3128  1664 pts/0     S     05:34    0:00 sleep 300
jonash_+      572  0.0  0.0    4092  1920 pts/0     S+    05:34    0:00 grep --color=auto sleep
```

3. Terminating the process

kill 570   *# Stop process by ID number*

```
jonash_chataut@LAPTOP-LA4DFAI2:~$ kill 570
```

4. Checking if the process is terminated or not

```
jonash_chataut@LAPTOP-LA4DFAI2:~$ ps aux | grep sleep
jonash_+      574  0.0  0.0    4092  1920 pts/0     S+    05:34    0:00 grep --color=auto sleep
[1]+  Terminated              sleep 300
jonash_chataut@LAPTOP-LA4DFAI2:~$
```