National Textile University

Department of Computer Science

Subject:

Operating Systems

Submitted To:

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Registration No:

23-NTU-CS-1135

Lab No:

3

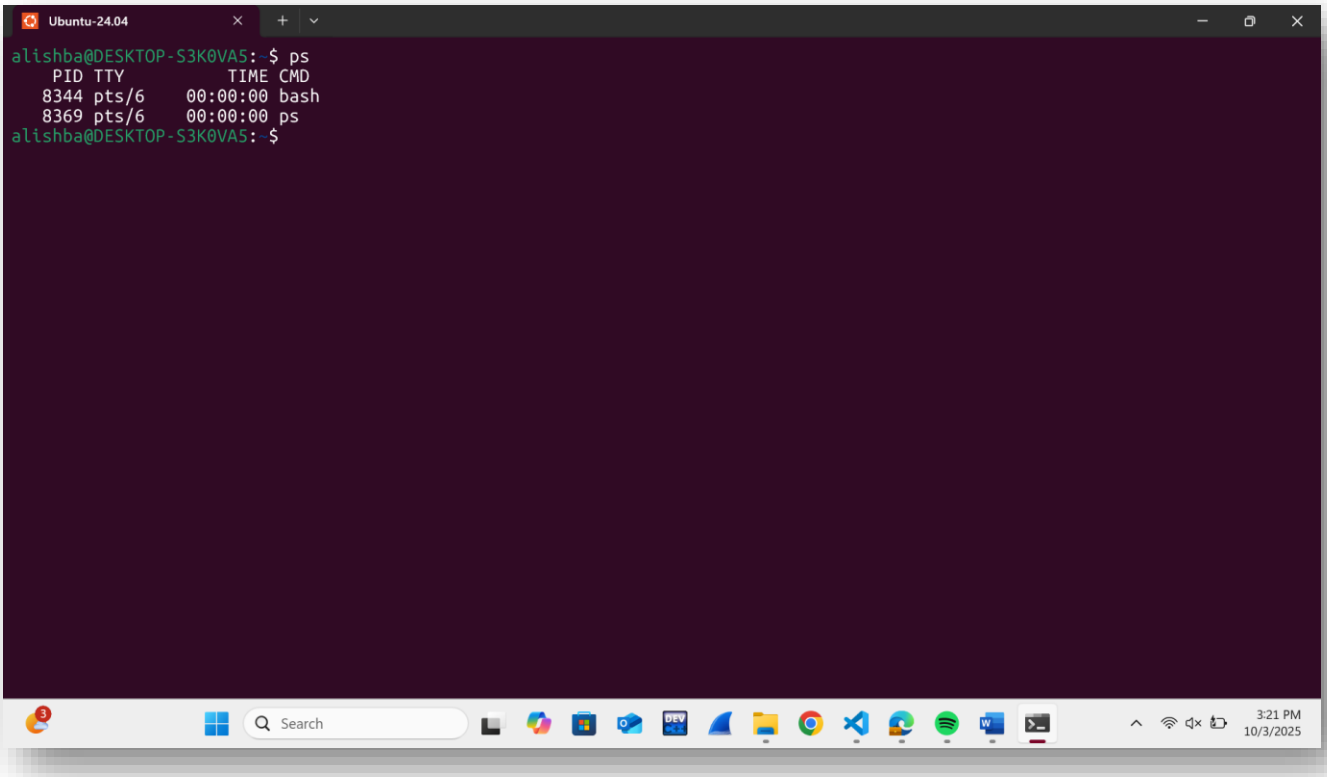
Semester:

5th

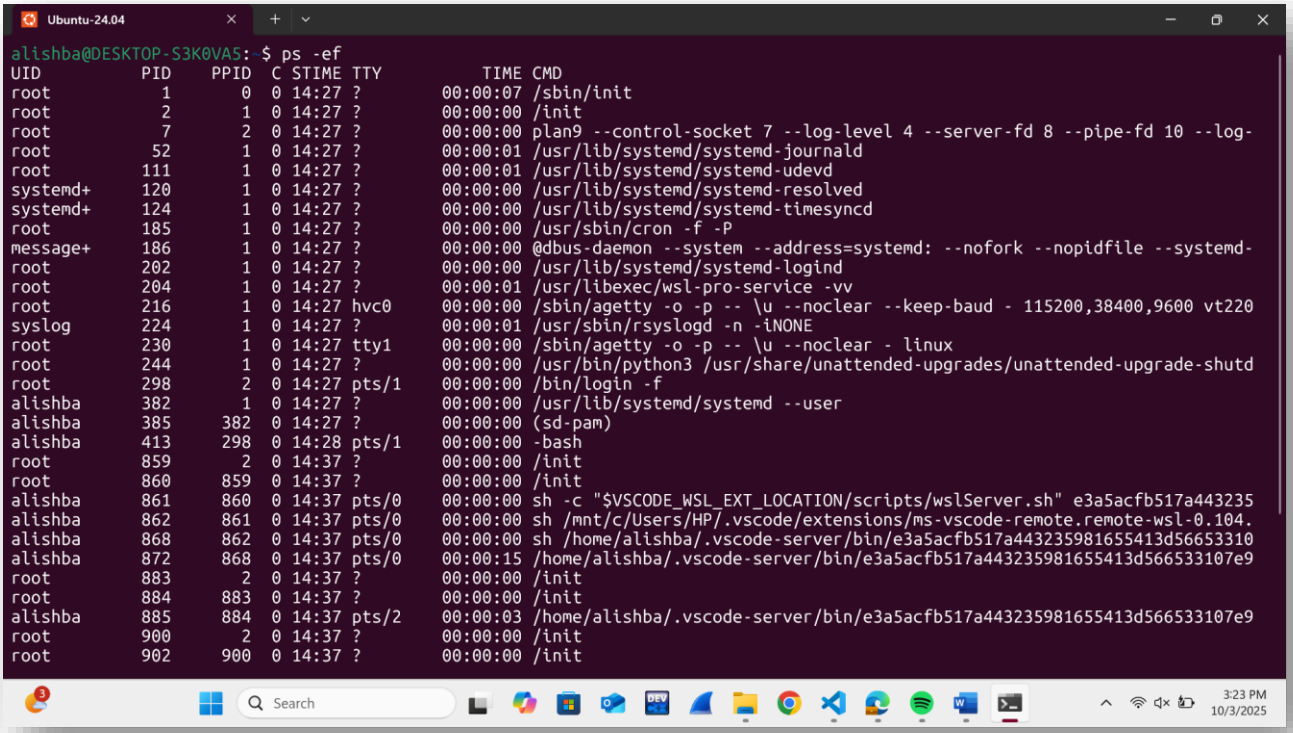
2. Linux Process Commands

2.1 Viewing Processes

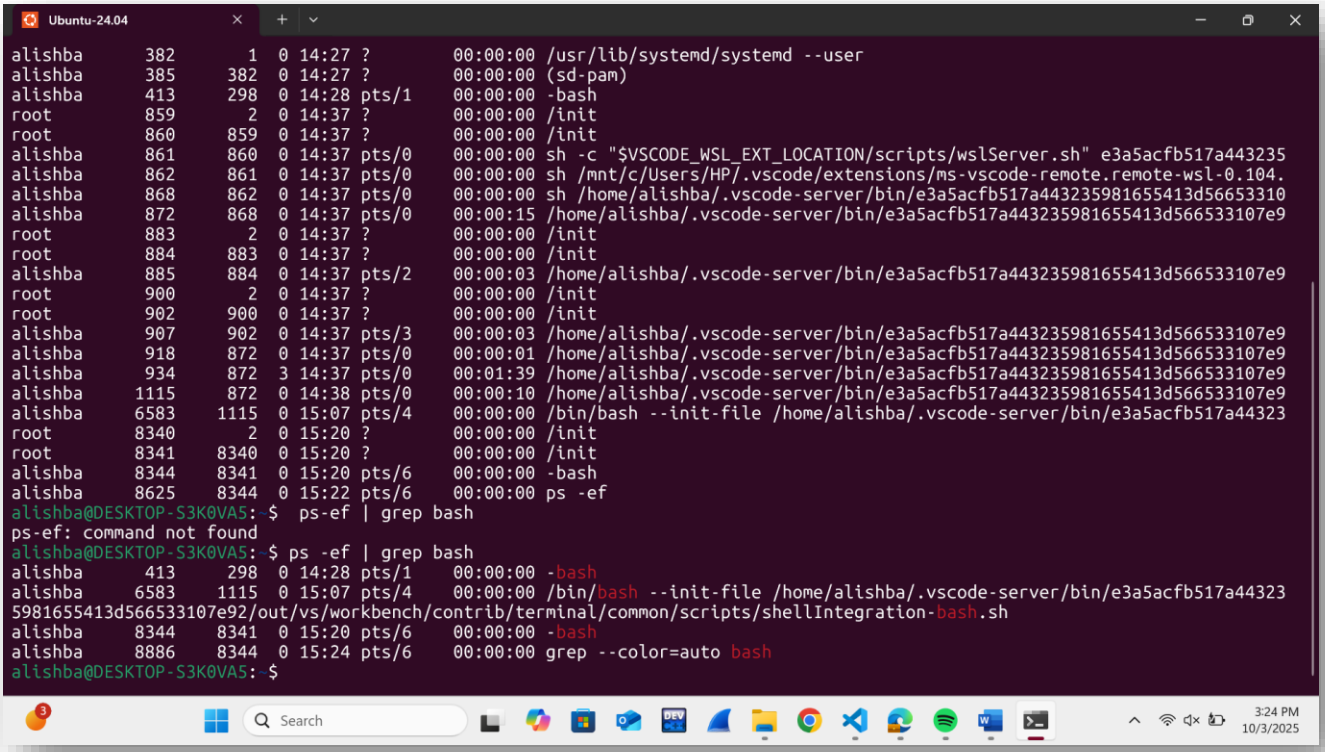
ps → Process Status



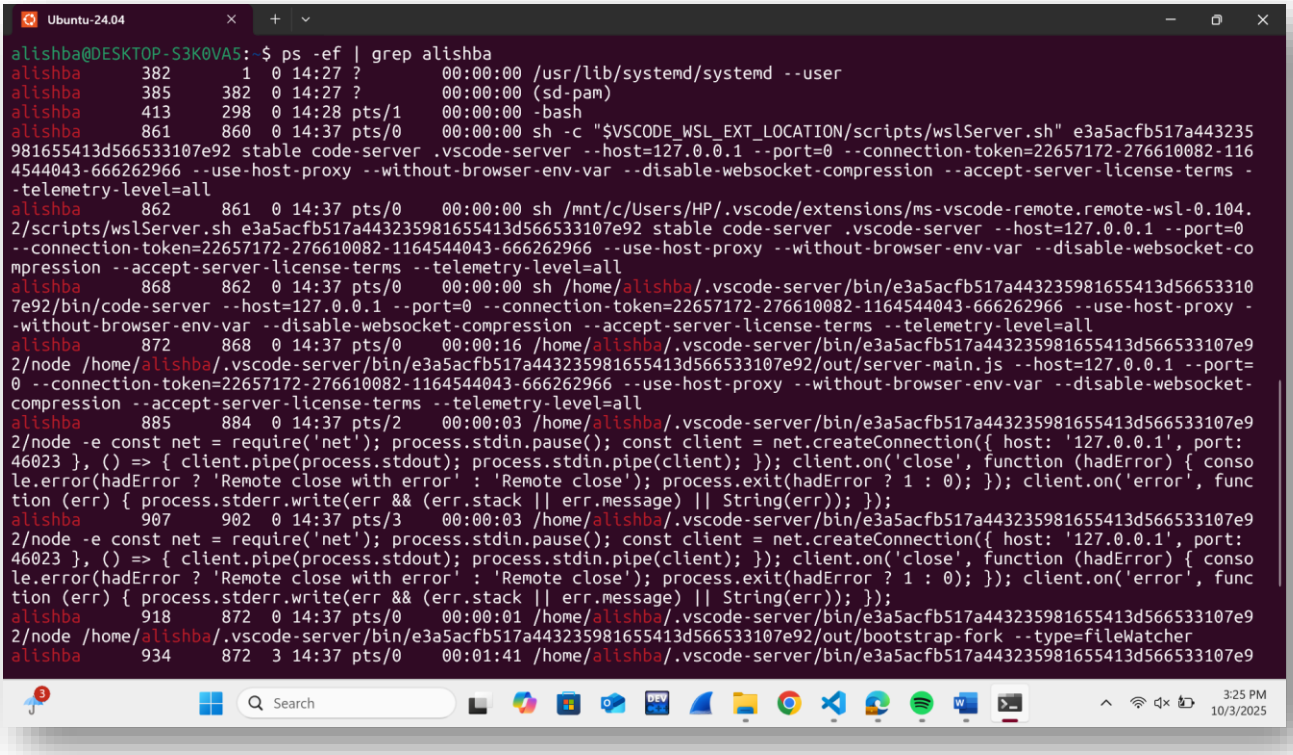
ps-ef command



ps-ef | grep bash

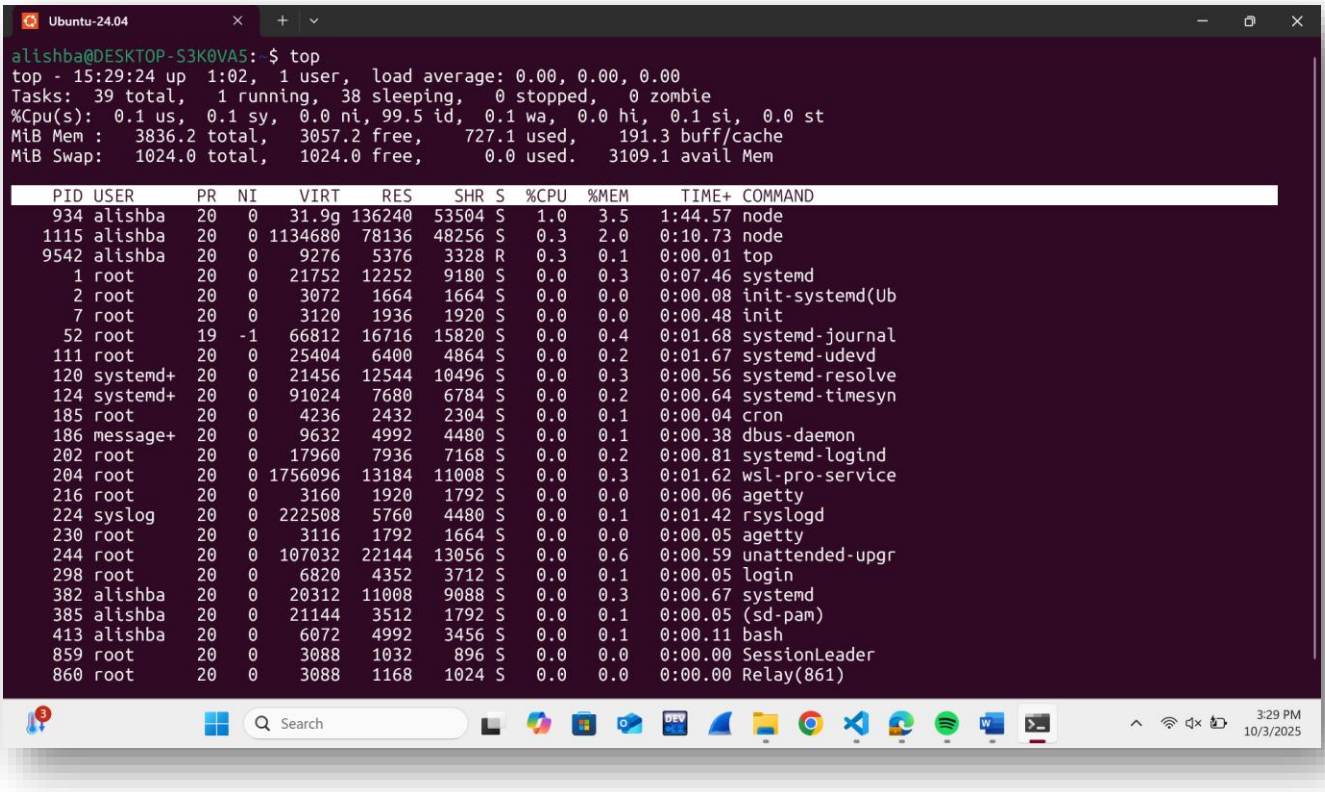


ps-ef | grep alishba



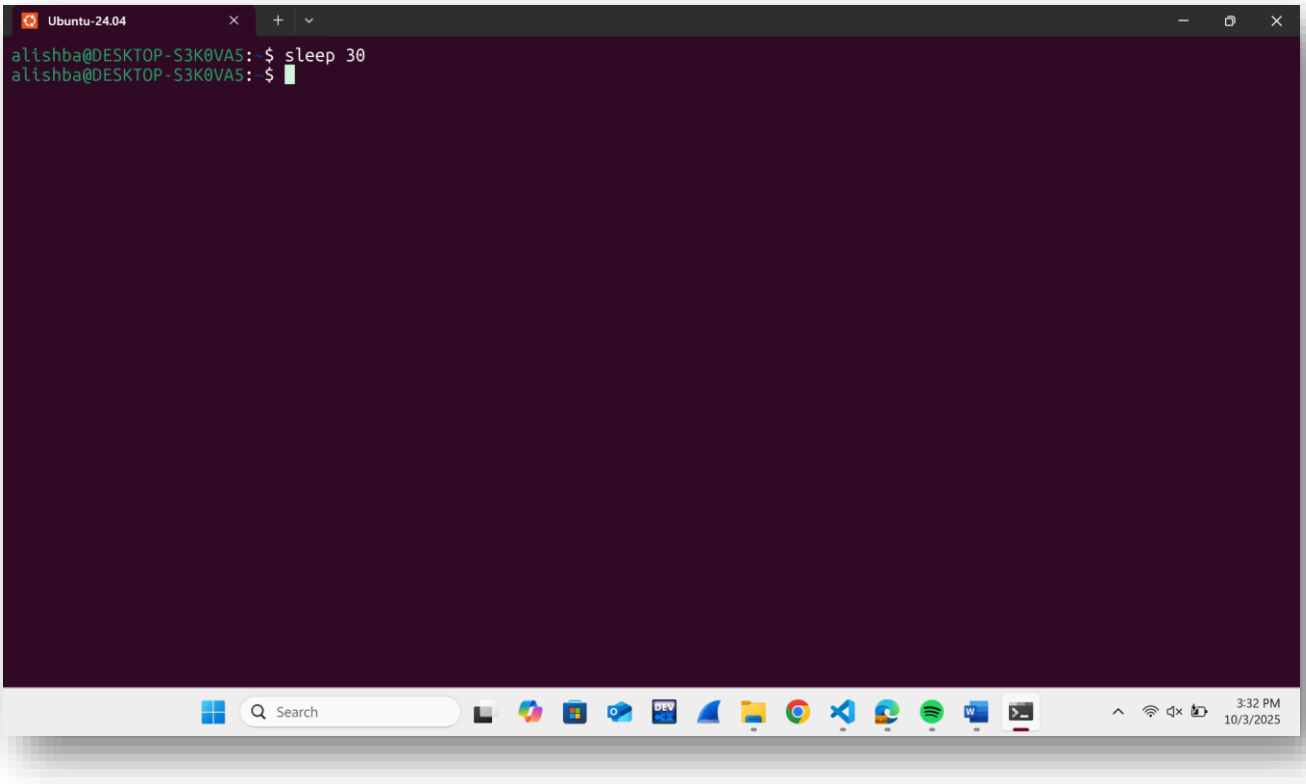
2.2 Monitoring Processes Interactively

top command

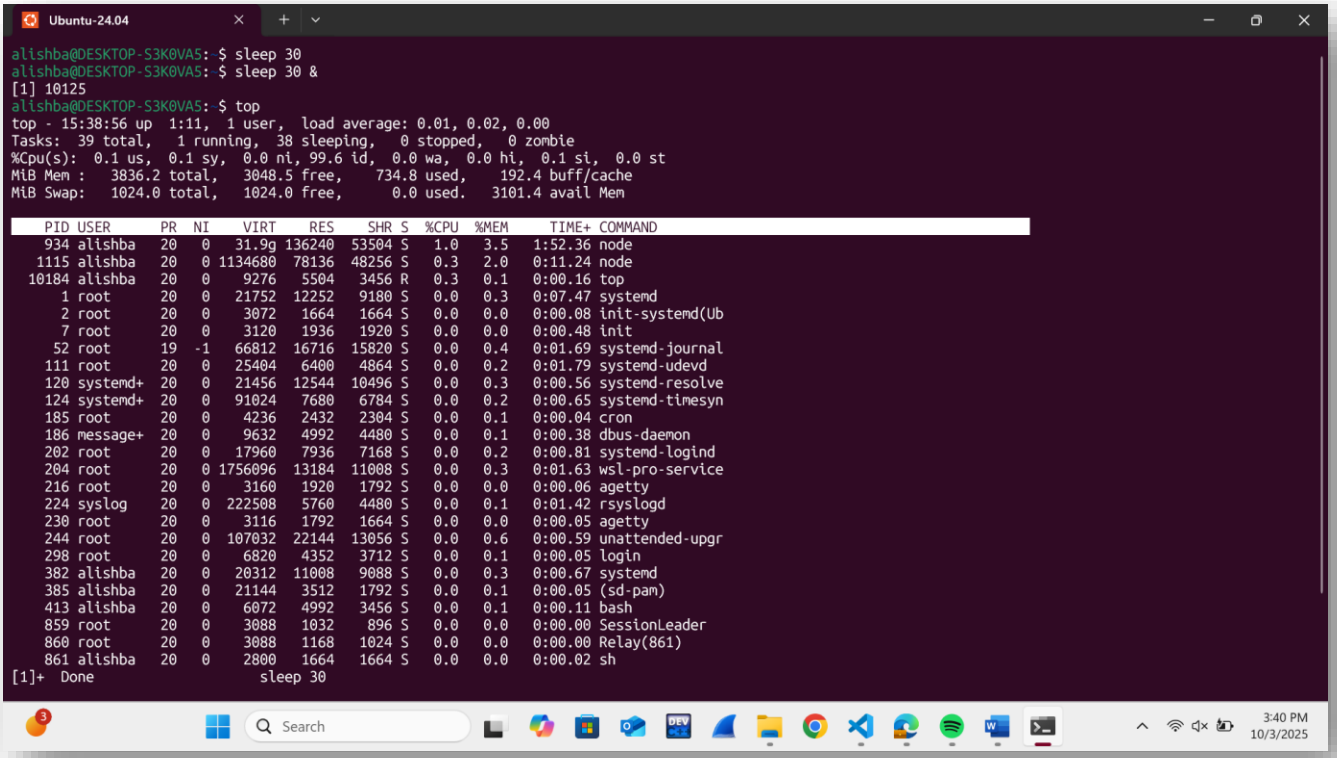


2.3 Foreground and Background Job

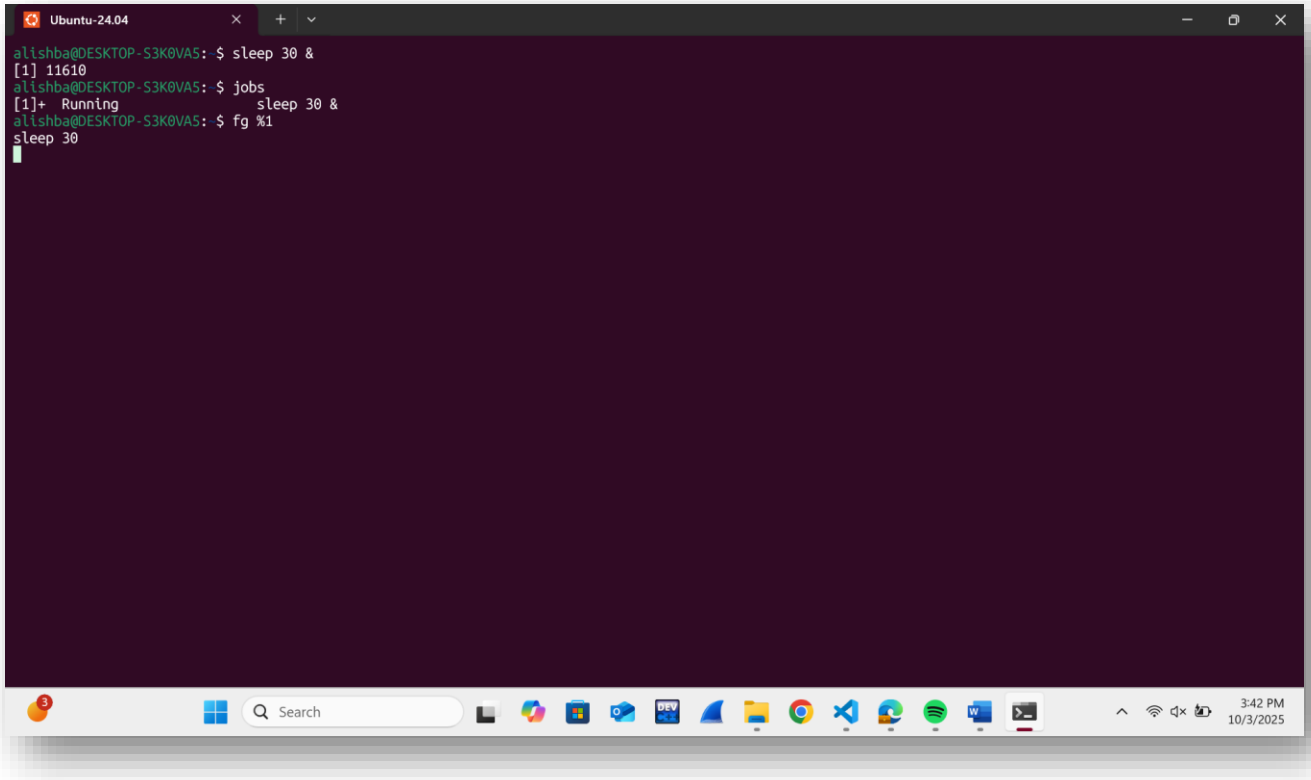
Foreground:



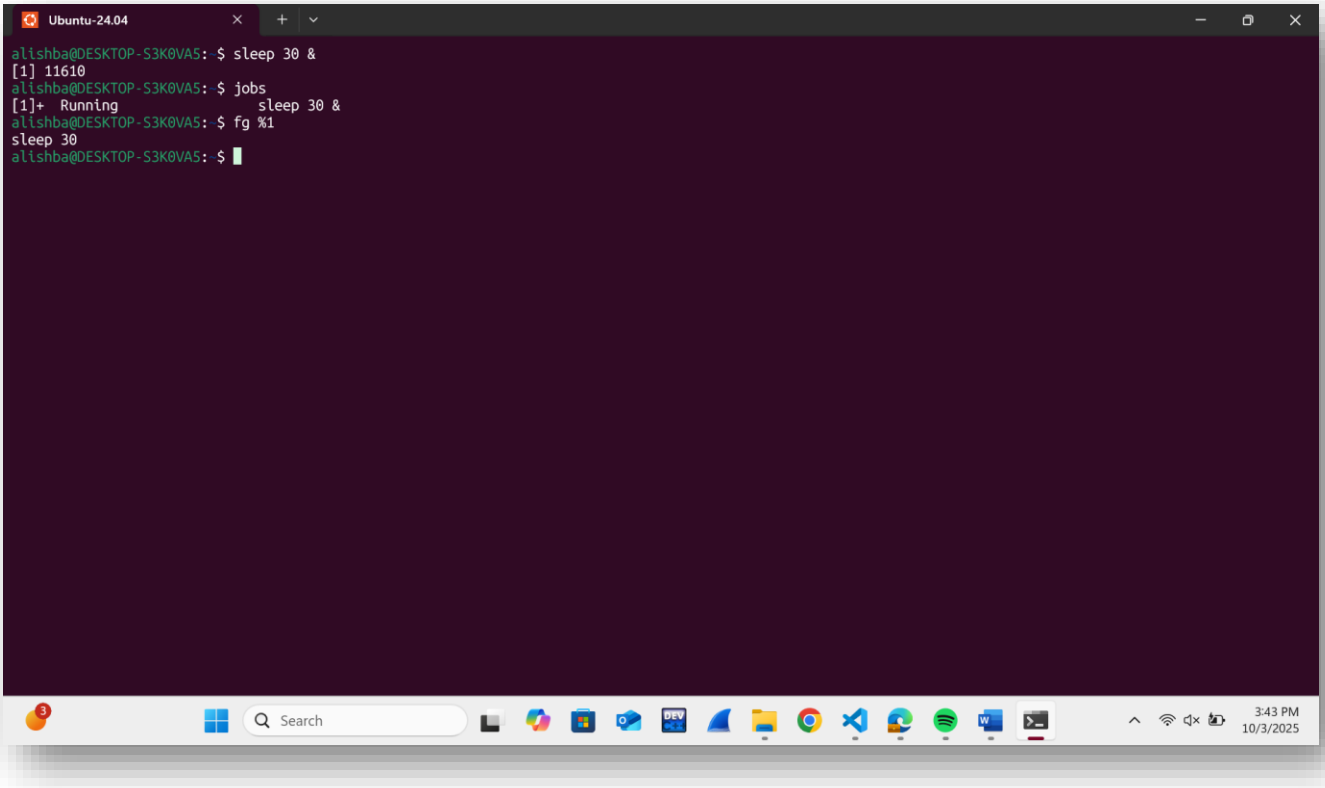
Background:


Ubuntu-24.04
alishba@DESKTOP-S3K0VA5:~$ sleep 30
alishba@DESKTOP-S3K0VA5:~$ sleep 30 &
[1] 10125
alishba@DESKTOP-S3K0VA5:~$ top
top - 15:38:56 up 1:11, 1 user, load average: 0.01, 0.02, 0.00
Tasks: 39 total, 1 running, 38 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.1 us, 0.1 sy, 0.0 ni, 99.6 id, 0.0 wa, 0.0 hi, 0.1 si, 0.0 st
MiB Mem : 3836.2 total, 3048.5 free, 734.8 used, 192.4 buff/cache
MiB Swap: 1024.0 total, 1024.0 free, 0.0 used. 3101.4 avail Mem
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
934 alishba 20 0 31.9g 136240 53504 S 1.0 3.5 1:52.36 node
1115 alishba 20 0 1134680 78136 48256 S 0.3 2.0 0:11.24 node
10184 alishba 20 0 9276 5504 3456 R 0.3 0.1 0:00.16 top
1 root 20 0 21752 12252 9180 S 0.0 0.3 0:07.47 systemd
2 root 20 0 3072 1664 1664 S 0.0 0.0 0:00.08 init-systemd(Ub
7 root 20 0 3120 1936 1920 S 0.0 0.0 0:00.48 init
52 root 19 -1 66812 16716 15820 S 0.0 0.4 0:01.69 systemd-journal
111 root 20 0 25404 6400 4864 S 0.0 0.2 0:01.79 systemd-udevd
120 systemd+ 20 0 21456 12544 10496 S 0.0 0.3 0:00.56 systemd-resolve
124 systemd+ 20 0 91024 7680 6784 S 0.0 0.2 0:00.65 systemd-timesyn
185 root 20 0 4236 2432 2304 S 0.0 0.1 0:00.04 cron
186 message+ 20 0 9632 4992 4480 S 0.0 0.1 0:00.38 dbus-daemon
202 root 20 0 17960 7936 7168 S 0.0 0.2 0:00.81 systemd-logind
204 root 20 0 1756096 13184 11008 S 0.0 0.3 0:01.63 wsl-pro-service
216 root 20 0 3160 1920 1792 S 0.0 0.0 0:00.06 agetty
224 syslog 20 0 222508 5760 4480 S 0.0 0.1 0:01.42 rsyslogd
230 root 20 0 3116 1792 1664 S 0.0 0.0 0:00.05 agetty
244 root 20 0 107032 22144 13056 S 0.0 0.6 0:00.59 unattended-upgr
298 root 20 0 6820 4352 3712 S 0.0 0.1 0:00.05 login
382 alishba 20 0 20312 11008 9088 S 0.0 0.3 0:00.67 systemd
385 alishba 20 0 21144 3512 1792 S 0.0 0.1 0:00.05 (sd-pam)
413 alishba 20 0 6072 4992 3456 S 0.0 0.1 0:00.11 bash
859 root 20 0 3088 1032 896 S 0.0 0.0 0:00.00 SessionLeader
860 root 20 0 3088 1168 1024 S 0.0 0.0 0:00.00 Relay(861)
861 alishba 20 0 2800 1664 1664 S 0.0 0.0 0:00.02 sh
[1]+ Done sleep 30
Search
3:40 PM
10/3/2025

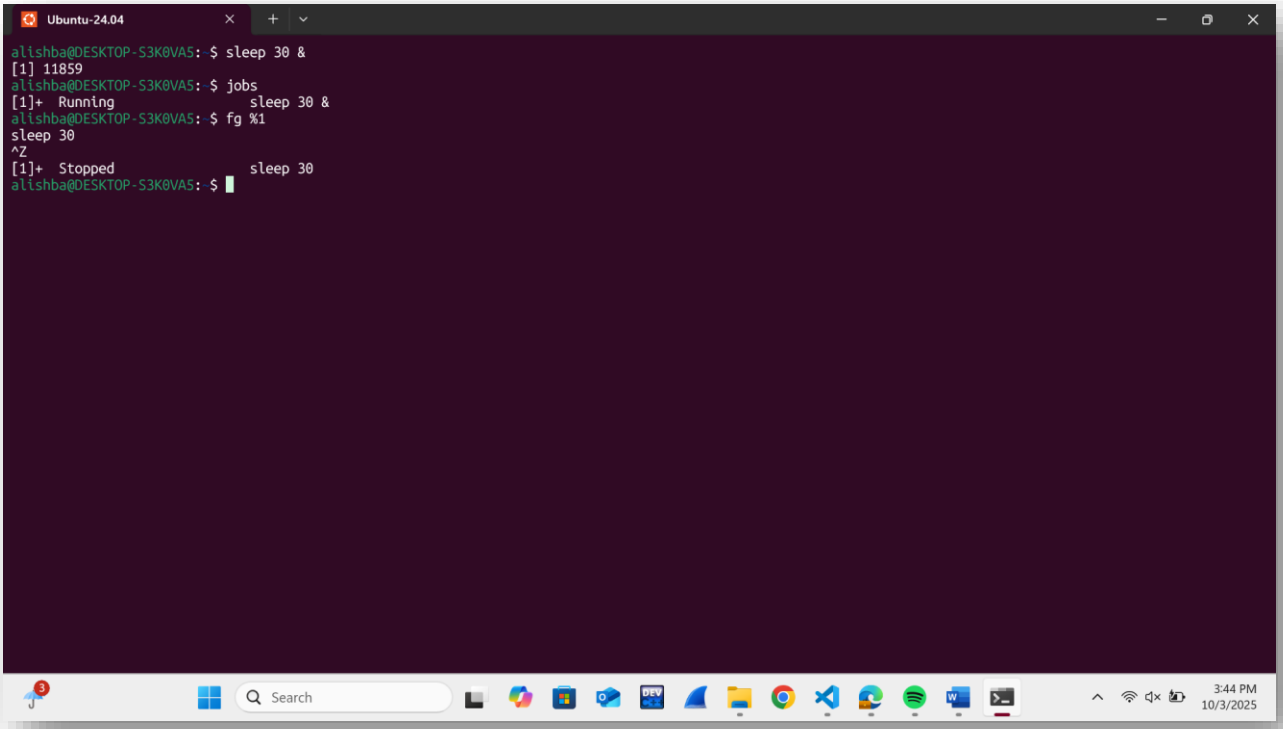
Check Background Jobs:



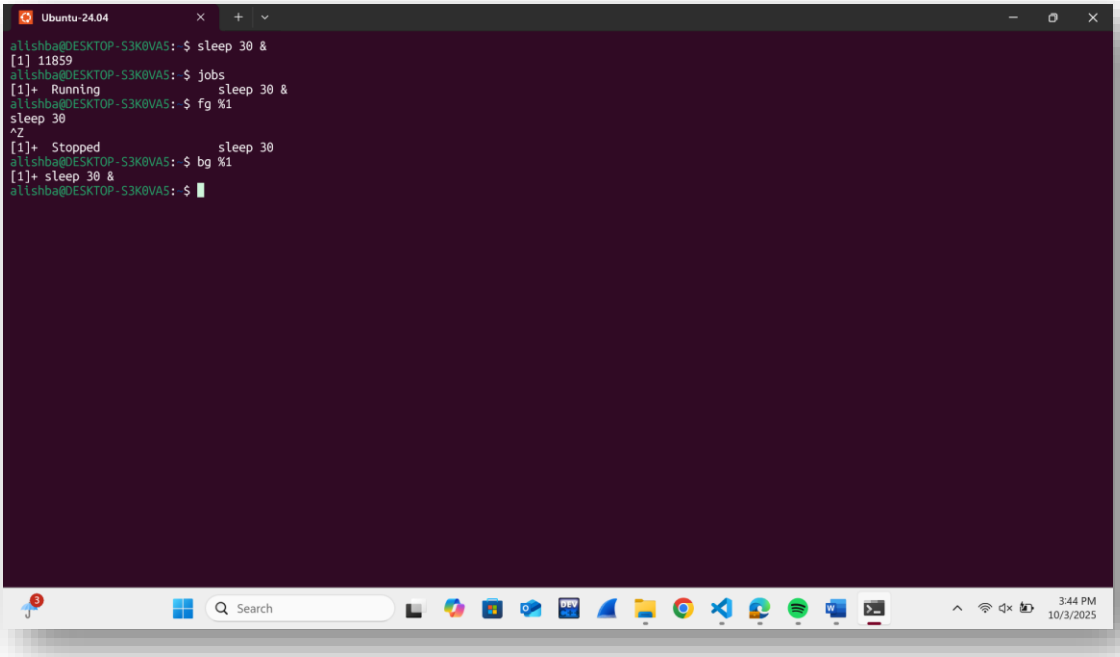
Bring a job to foreground



Suspend a job:

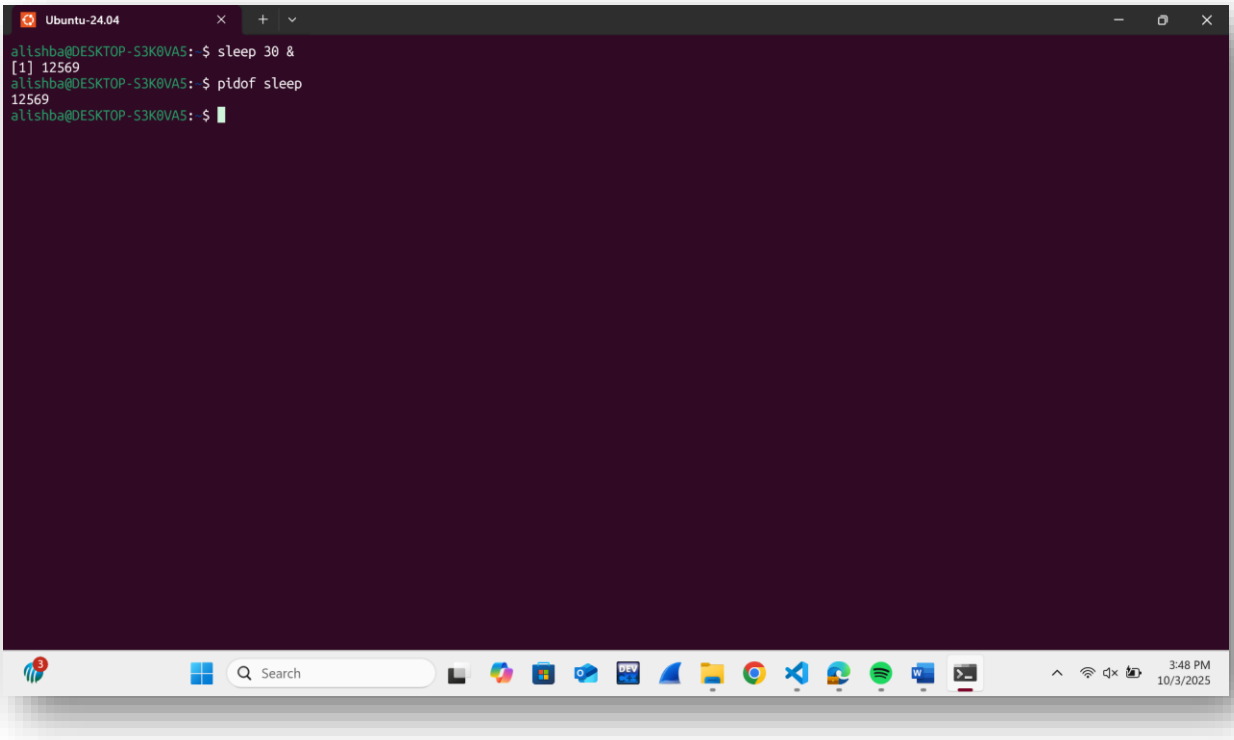


Resume suspended job in background:

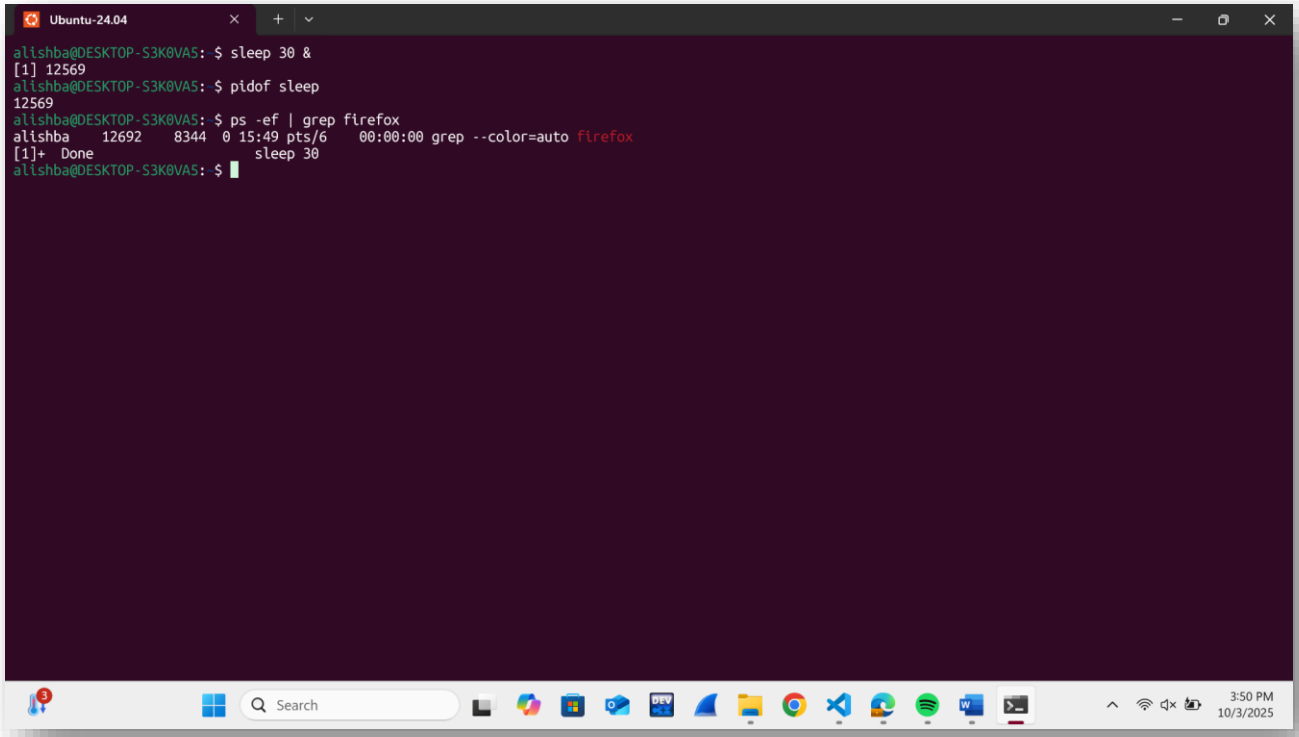


2.4 Process Identification

Get PID of a process by name:

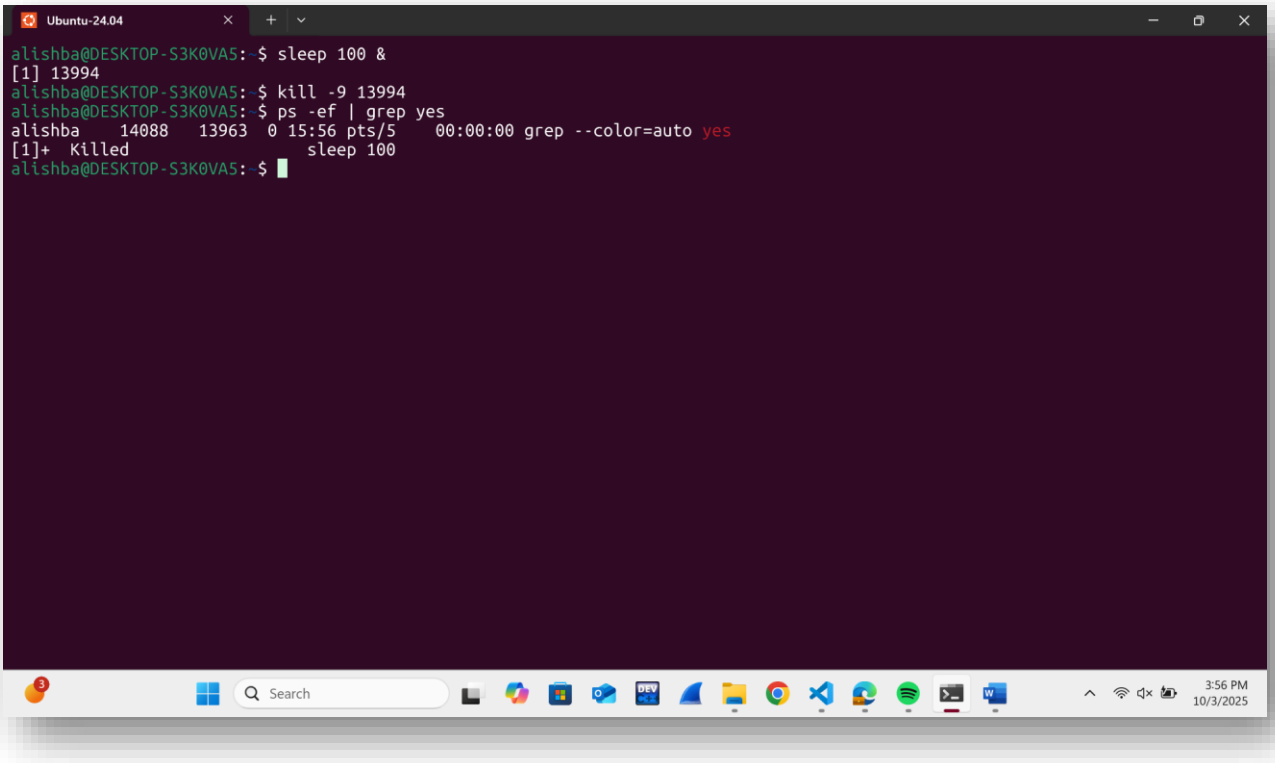


Search using ps and grep :

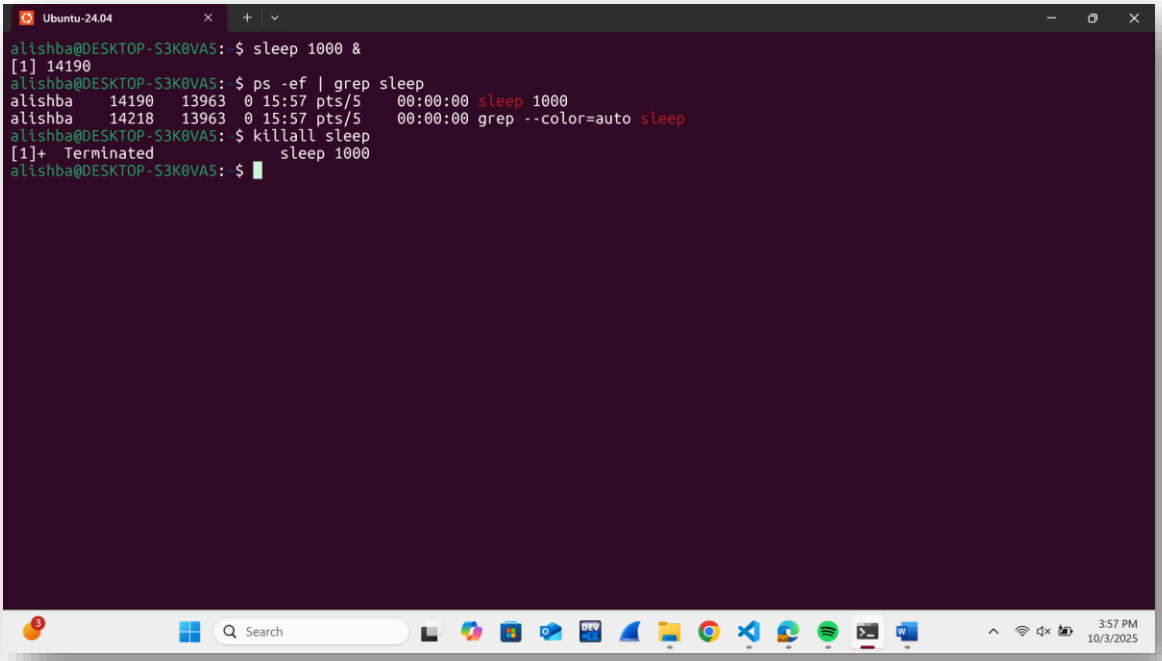


2.5 Killing Processes

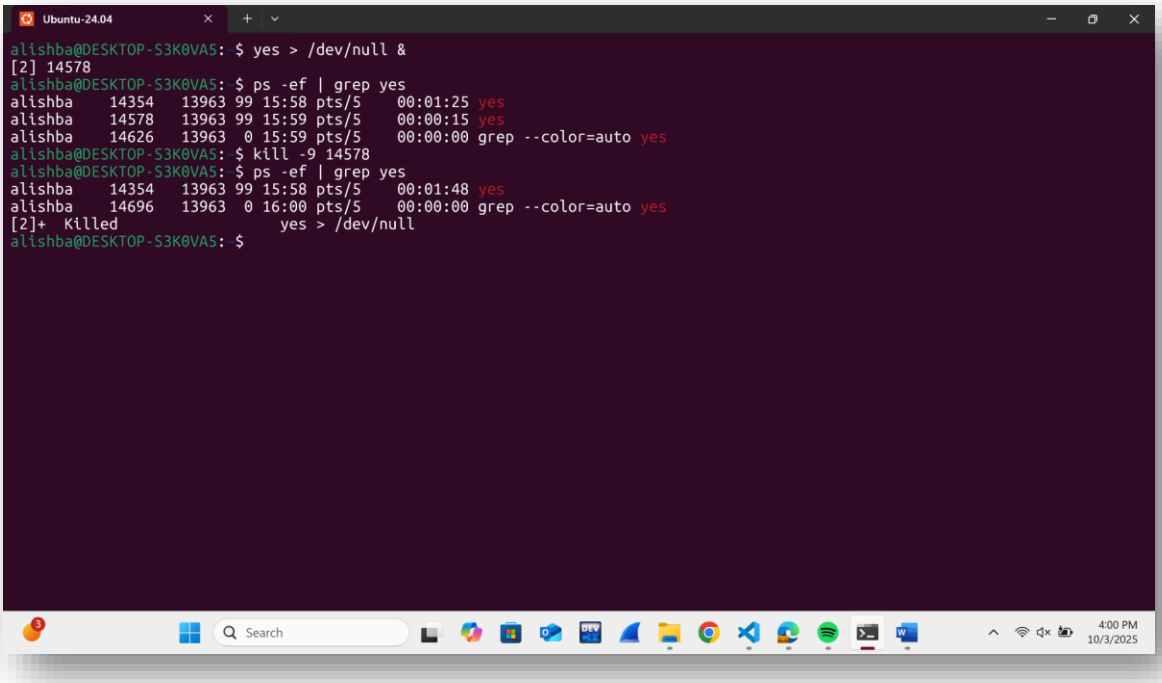
Kill by PID:



Kill all processes by name:

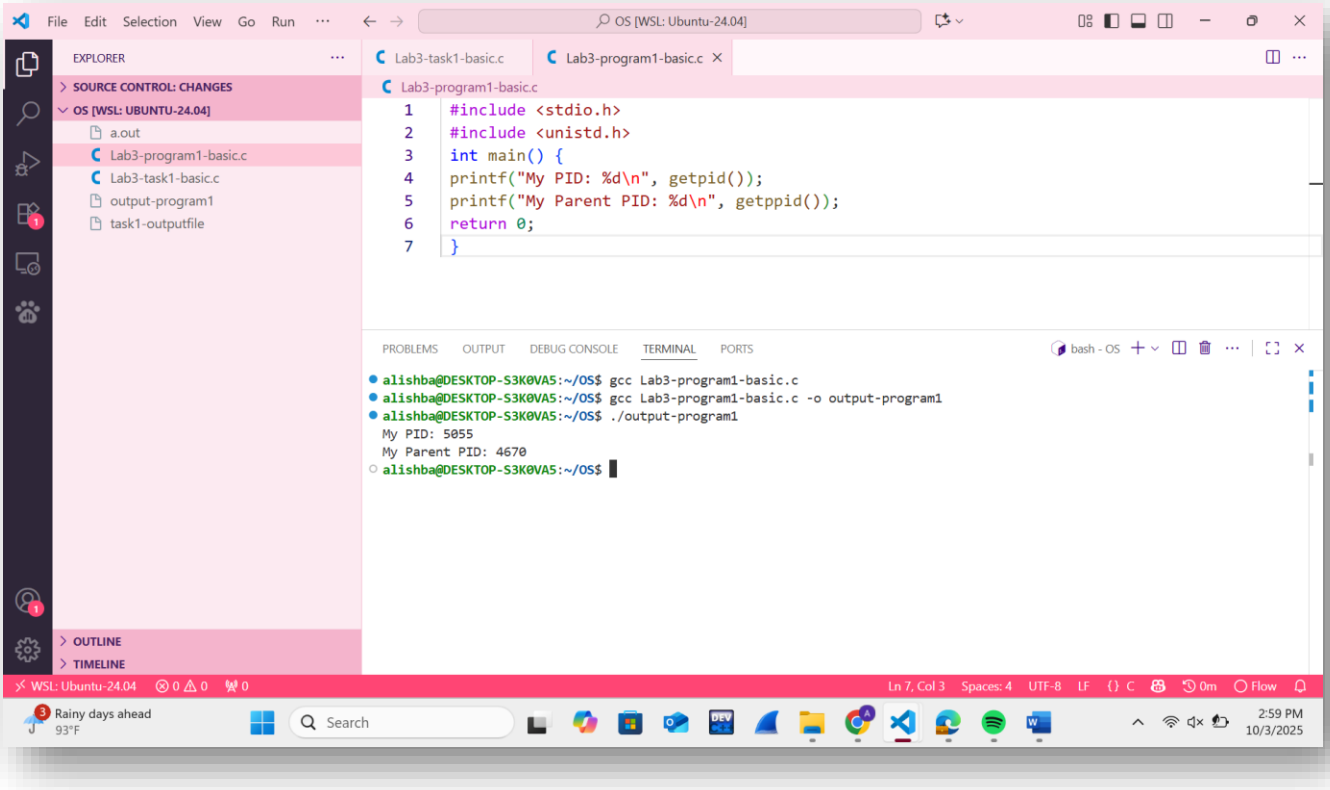


Practice Task

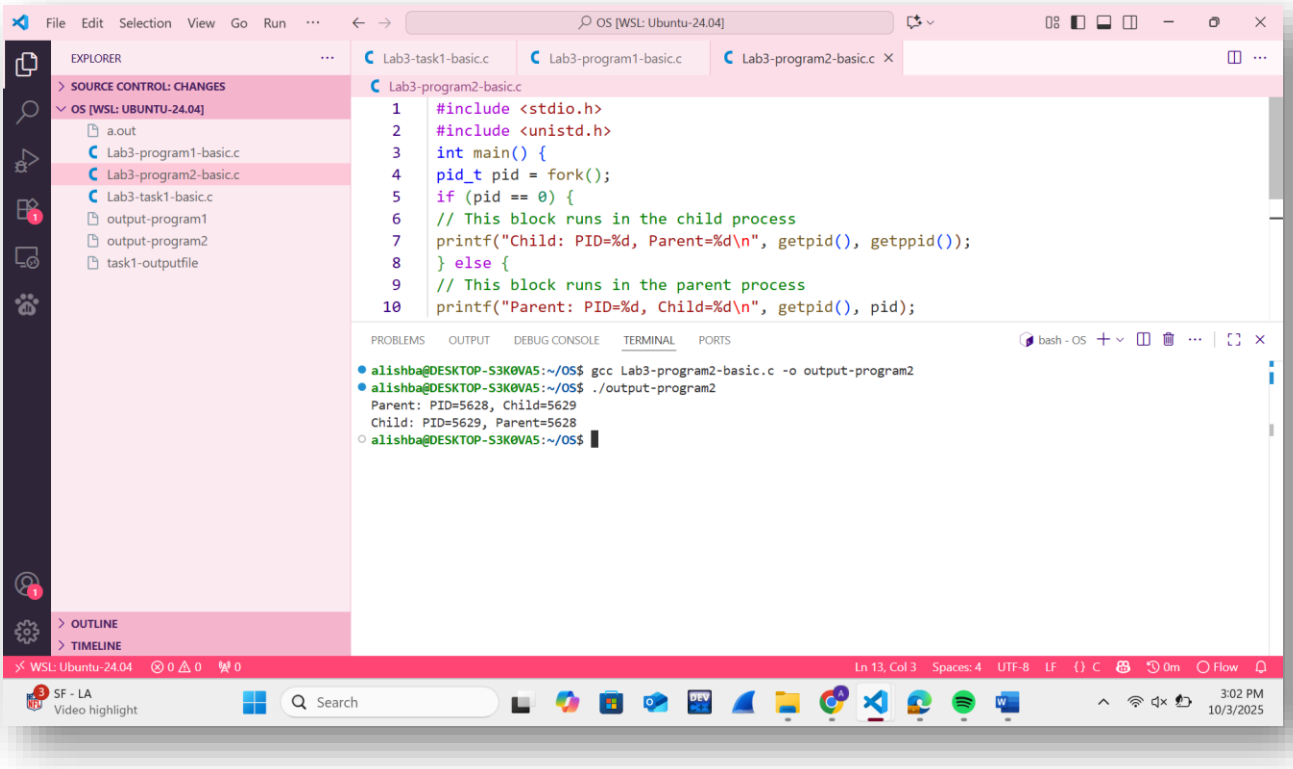


3. C Programs on Processes

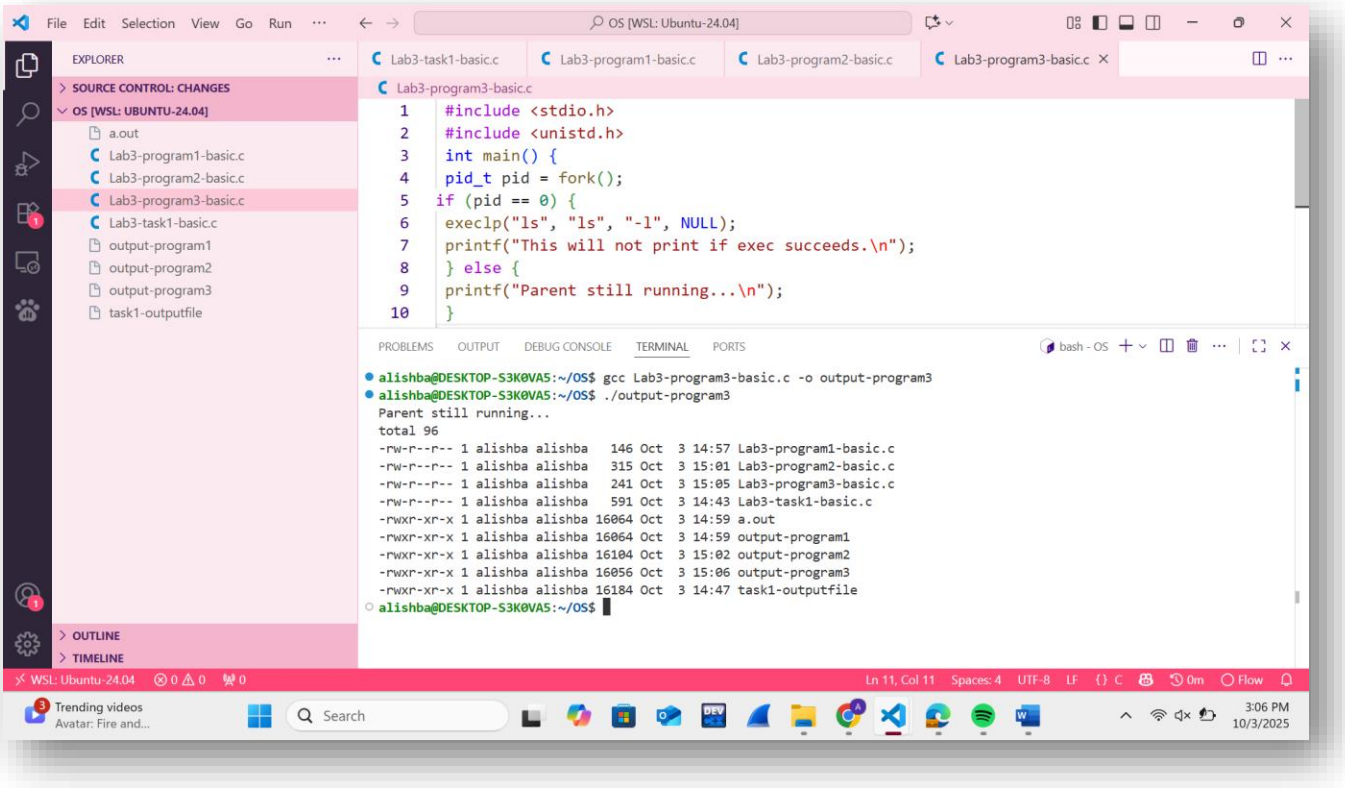
Program 1: Print PID and PPID



Program 2: Fork – Creating Child Process



Program 3: Execl – Replacing a Process



Program 4: Wait – Synchronization