PART3

On windows cmd

Part3

Result pf ps -aux

```
nancy@DESKTOP-9O2BIGV:~/Desktop$ gcc Task_Manager.c -o Task_Manager
nancy@DESKTOP-9O2BIGV:~/Desktop$ ./Task_Manager
Linux 6.6.87.2-microsoft-standard-WSL2 (DESKTOP-9O2BIGV)        08/27/25        _x86_64_        (8 CPU)
USER        PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root          1  0.1  0.3  22232 12616 ?        Ss   12:29   0:05 /sbin/init
root          2  0.0  0.0   3060  1664 ?        Sl   12:29   0:00 /init
root          6  0.0  0.0   3076  1916 ?        Sl   12:29   0:00 plan9 --control-socket 7 --log-level 4 --server-fd 8 --pipe-fd 10
root         59  0.0  0.4  58632 18736 ?        S<<  12:29   0:01 /usr/lib/systemd/systemd-journald
root        107  0.0  0.1  25136  6016 ?        Ss   12:29   0:01 /usr/lib/systemd/systemd-udevd
systemd+    166  0.0  0.3  21452 12544 ?        Ss   12:29   0:00 /usr/lib/systemd/systemd-resolved
systemd+    170  0.0  0.1  91020  7680 ?        Ssl  12:29   0:00 /usr/lib/systemd/systemd-timesyncd
root        181  0.0  0.0   4236  2432 ?        Ss   12:29   0:00 /usr/sbin/cron -f -P
message+    182  0.0  0.1   9664  4608 ?        Ss   12:29   0:00 @dbus-daemon --system --address=systemd: --nofork --nopidfile --sy
root        195  0.0  0.2  17964  8320 ?        Ss   12:29   0:00 /usr/lib/systemd/systemd-logind
root        197  0.0  0.3 1756096 12928 ?       Ssl  12:29   0:00 /usr/libexec/wsl-pro-service -vv
syslog      211  0.0  0.1 222508  5248 ?        Ssl  12:29   0:00 /usr/sbin/rsyslogd -n -iNONE
root        217  0.0  0.0   3160  1920 hvc0     Ss+  12:29   0:00 /sbin/agetty -o -p -- \u --noclear --keep-baud - 115200,38400,9600
root        220  0.0  0.0   3116  1792 tty1     Ss+  12:29   0:00 /sbin/agetty -o -p -- \u --noclear - linux
root        229  0.0  0.5 107024 22144 ?        Ssl  12:29   0:00 /usr/bin/python3 /usr/share/unattended-upgrades/unattended-upgrade
root        329  0.0  0.0   3064   896 ?        Ss   12:29   0:00 /init
root        332  0.0  0.0   3080  1024 ?        S    12:29   0:00 /init
nancy       335  0.0  0.1   6204  4992 pts/0    Ss   12:29   0:00 -bash
root        338  0.0  0.1   6820  4480 pts/1    Ss   12:29   0:00 /bin/login -f
nancy       429  0.0  0.2  20296 11264 ?        Ss   12:29   0:00 /usr/lib/systemd/systemd --user
nancy       430  0.0  0.0  21144  3516 ?        S    12:29   0:00 (sd-pam)
nancy       443  0.0  0.1   6072  5248 pts/1    S+   12:29   0:00 -bash
root        511  0.0  0.1  12020  7808 ?        Ss   12:30   0:00 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
root        909  0.1  0.5 370076 20096 ?        Ssl  13:34   0:00 /usr/libexec/packagekitd
polkitd     914  0.0  0.1 308164  7680 ?        Ssl  13:34   0:00 /usr/lib/polkit-1/polkitd --no-debug
nancy      1439  0.0  0.0   2548  1152 pts/0    S+   13:36   0:00 ./Task_Manager
nancy      1440  0.0  0.0   3108  1920 pts/0    S+   13:36   0:00 /usr/bin/mpstat 1 1
nancy      1441 66.6  0.1   9580  4864 pts/0    R+   13:36   0:00 /bin/ps -aux
```

Result of mpstat

```
13:36:53    CPU    %usr   %nice   %sys %iowait    %irq   %soft  %steal  %guest  %gnice   %idle
13:36:54    all    0.12    0.00   0.50    0.12    0.00    0.12    0.00    0.00    0.00   99.13
Average:    all    0.12    0.00   0.50    0.12    0.00    0.12    0.00    0.00    0.00   99.13

Both worker processes finished.
```

Task_Manager.c

```c
        pid1 = fork();
        if (pid1 == 0){
                char *args[] = {"/usr/bin/mpstat","1","1",NULL};
                execv("/usr/bin/mpstat",args);
                exit(1);
        } else if(pid1 < 0){
                perror("Fork 1 Failed!!");
                exit(1);
        }
        pid2 = fork();
        if(pid2 == 0){
                char *args[] = {"/bin/ps","-aux",NULL};
                execv("/bin/ps", args);
                exit(1);
        }else if(pid2 < 0){
                perror("Fork 2 Failed!!");
                exit(1);
        }

        int status;
        waitpid(pid1, &status, 0);
        waitpid(pid2, &status, 0);
        printf("\nBoth worker processes finished.\n");

    return 0;
```

Now, I Ran the app from the cmd of windows after login from ssh process

```
Microsoft Windows [Version 10.0.26100.4946]
(c) Microsoft Corporation. All rights reserved.

C:\Users\dell>ssh nancy@172.29.94.113
nancy@172.29.94.113's password:
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.6.87.2-microsoft-standard-WSL2 x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Wed Aug 27 13:46:00 EEST 2025

  System load:  0.02              Processes:             30
  Usage of /:   0.2% of 1006.85GB Users logged in:       1
  Memory usage: 10%               IPv4 address for eth0: 172.29.94.113
  Swap usage:   0%

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge
Last login: Wed Aug 27 13:46:00 2025 from 172.29.80.1
nancy@DESKTOP-9O2BIGV:~$ cd Desktop
```

```
nancy@DESKTOP-9O2BIGV:~/Desktop$ gcc Task_Manager.c -o Task_Manager
nancy@DESKTOP-9O2BIGV:~/Desktop$ ./Task_Manager
Linux 6.6.87.2-microsoft-standard-WSL2 (DESKTOP-9O2BIGV)     08/27/25     _x86_64_     (8 CPU)
USER       PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.1  0.3  22232 12616 ?        Ss   12:29   0:05 /sbin/init
root         2  0.0  0.0   3060  1664 ?        Sl   12:29   0:00 /init
root         6  0.0  0.0   3076  1916 ?        Sl   12:29   0:00 plan9 --control-socket 7 --log-level 4 --server-fd 8
root        59  0.0  0.4  66828 18716 ?        S<s  12:29   0:01 /usr/lib/systemd/systemd-journald
root       107  0.0  0.1  25136  6016 ?        Ss   12:29   0:01 /usr/lib/systemd/systemd-udevd
systemd+   166  0.0  0.3  21452 12544 ?        Ss   12:29   0:00 /usr/lib/systemd/systemd-resolved
systemd+   170  0.0  0.1  91020  7680 ?        Ssl  12:29   0:00 /usr/lib/systemd/systemd-timesyncd
root       181  0.0  0.0   4236  2432 ?        Ss   12:29   0:00 /usr/sbin/cron -f -P
message+   182  0.0  0.1   9664  4608 ?        Ss   12:29   0:01 @dbus-daemon --system --address=systemd: --nofork --n
root       195  0.0  0.2  18180  8320 ?        Ss   12:29   0:00 /usr/lib/systemd/systemd-logind
root       197  0.0  0.3 1756096 12928 ?       Ssl  12:29   0:00 /usr/libexec/wsl-pro-service -vv
syslog     211  0.0  0.1 222508  5248 ?        Ssl  12:29   0:00 /usr/sbin/rsyslogd -n -iNONE
root       217  0.0  0.0   3160  1920 hvc0     Ss+  12:29   0:00 /sbin/agetty -o -p -- \u --noclear --keep-baud - 1152
root       220  0.0  0.0   3116  1792 tty1     Ss+  12:29   0:00 /sbin/agetty -o -p -- \u --noclear - linux
root       229  0.0  0.5 107024 22144 ?        Ssl  12:29   0:00 /usr/bin/python3 /usr/share/unattended-upgrades/unatt
root       329  0.0  0.0   3064   896 ?        Ss   12:29   0:00 /init
root       332  0.0  0.0   3080  1024 ?        S    12:29   0:00 /init
nancy      335  0.0  0.1   6204  4992 pts/0    Ss+  12:29   0:00 -bash
root       338  0.0  0.1   6820  4480 pts/1    Ss   12:29   0:00 /bin/login -f
nancy      429  0.0  0.2  20296 11264 ?        Ss   12:29   0:00 /usr/lib/systemd/systemd --user
nancy      430  0.0  0.0  21144  3516 ?        S    12:29   0:00 (sd-pam)
nancy      443  0.0  0.1   6072  5248 pts/1    S+   12:29   0:00 -bash
root       511  0.0  0.1  12020  7808 ?        Ss   12:30   0:00 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startu
polkitd    914  0.0  0.1 308164  7680 ?        Ssl  13:34   0:00 /usr/lib/polkit-1/polkitd --no-debug
root      1593  1.0  0.2  14960 10344 ?        Ss   13:46   0:00 sshd: nancy [priv]
nancy     1622  0.7  0.1  15120  6832 ?        S    13:46   0:00 sshd: nancy@pts/2
nancy     1623  0.8  0.1   6204  5248 pts/2    Ss   13:46   0:00 -bash
nancy     1641  0.0  0.0   2548  1152 pts/2    S+   13:46   0:00 ./Task_Manager
nancy     1642  0.0  0.0   3108  1920 pts/2    S+   13:46   0:00 /usr/bin/mpstat 1 1
nancy     1643  100  0.1   9580  4736 pts/2    R+   13:46   0:00 /bin/ps -aux
```

```
13:46:41     CPU    %usr   %nice   %sys %iowait    %irq   %soft  %steal  %guest  %gnice   %idle
13:46:43     all    0.00    0.00   0.37    0.00    0.00    0.00    0.00    0.00    0.00   99.63
Average:     all    0.00    0.00   0.37    0.00    0.00    0.00    0.00    0.00    0.00   99.63

Both worker processes finished.
```

Running pstree -p | grep Task_Manager -A 3

This command was used to just get the hierarchy of the Task_ManagerG

```
nancy@DESKTOP-902BIGV:~$ pstree -p | grep Task_Manager -A 3
        |-init-systemd(Ub(2)-+-SessionLeader(329)---Relay(335)(332)---bash(335)---Task_Manager(1722)-+-mpstat(1723)
        |                     |                                                                       `-ps(1724)
        |                     |-SessionLeader(1679)---Relay(1686)(1681)---bash(1686)-+-grep(1726)
        |                     |                                                      `-pstree(1725)
```