

# Lab

## Pre-class exercise

- bash < mate-terminal < mate-panel < mate-session < lightdm < lightdm < systemd

## Task 1

- Pattern: As n decreases, there is less delay and more time for the parent process to do more tasks before the interleaving begins
- After adding sleep(2) → There is a considerable delay between each iteration (i.e. parent and child both executes the nth iteration and outputs at the same time → Sleep 2 seconds → n+1th iteration)

## Task 2

```
→ PRAC03 git:(master) X ./fork-ex2
F S   UID    PID  PPID  C PRI  NI ADDR SZ WCHAN  TTY          TIME CMD
4 S     0      1     0  0  80   0 -   310 -      ?         00:00:00 init
5 S     0      7     1  0  80   0 -   312 -      ?         00:00:00 init
1 S     0      8     7  0  80   0 -   314 -      ?         00:00:00 init
4 S   1000     9     8  0  80   0 -  4363 sigsus pts/0    00:00:04 zsh
5 S     0    653     1  0  80   0 -   293 -      ?         00:00:00 init
1 S     0    654   653  0  80   0 -   293 -      ?         00:00:00 init
4 S   1000   655   654  0  80   0 -   653 do_wai pts/1    00:00:00 sh
0 S   1000   656   655  0  80   0 -   653 do_wai pts/1    00:00:00 sh
0 S   1000   661   656  0  80   0 -   653 do_wai pts/1    00:00:00 sh
0 S   1000   663   661  0  80   0 - 242852 do_epo pts/1    00:00:04 node
0 S   1000   709   663  0  80   0 - 212187 do_epo pts/1    00:00:00 node
0 S   1000  1090   663  0  80   0 - 282565 do_epo pts/1    00:00:07 node
0 S   1000  1124  1090  0  80   0 - 138482 do_epo pts/1    00:00:00 node
0 S   1000  1722  1090  0  80   0 - 344918 -      pts/1    00:00:05 cpptools
0 S   1000  1768  1722  0  80   0 - 1220302 pipe_w pts/1    00:00:00 cpptools-srv
0 S   1000  3647  1722  0  80   0 - 1220269 pipe_w pts/1    00:00:00 cpptools-srv
0 S   1000  3694     9  0  80   0 -   590 hrtime pts/0    00:00:00 fork-ex2
1 S   1000  3695  3694  0  80   0 -   590 do_wai pts/0    00:00:00 fork-ex2
0 S   1000  3696  3695  0  80   0 -   653 do_wai pts/0    00:00:00 sh
0 R   1000  3697  3696  0  80   0 -  2631 -      pts/0    00:00:00 ps
Message from P at the 0th iteration
Message from C at the 0th iteration
Message from P at the 1th iteration
Message from C at the 1th iteration
Message from P at the 2th iteration
Message from C at the 2th iteration
```

```
Message from P at the 3th iteration
Message from C at the 3th iteration
Message from P at the 4th iteration
Message from C at the 4th iteration
Message from P at the 5th iteration
Message from C at the 5th iteration
Message from P at the 6th iteration
Message from C at the 6th iteration
Message from P at the 7th iteration
Message from C at the 7th iteration
Message from P at the 8th iteration
Message from C at the 8th iteration
Message from P at the 9th iteration
Message from C at the 9th iteration
→ PRAC03 git:(master) X
```

- PID: 3695
  - PPID: 3694
    - PPID: 9
      - PPID: 8
        - PPID: 7
          - PPID: 1