Government Engineering College, Thrissur

CS331 – System Software Lab

Documentation –

Exp1 – CPU Scheduling Algorithm

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Submitted By

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TCR18CS053

GECT CSE S5

EXPERIMENT 1

Simulate the following non-pre-emptive CPU scheduling algorithms to find turnaround time and waiting time.

a) FCFS b) SJF c) Round Robin (pre-emptive) d) Priority

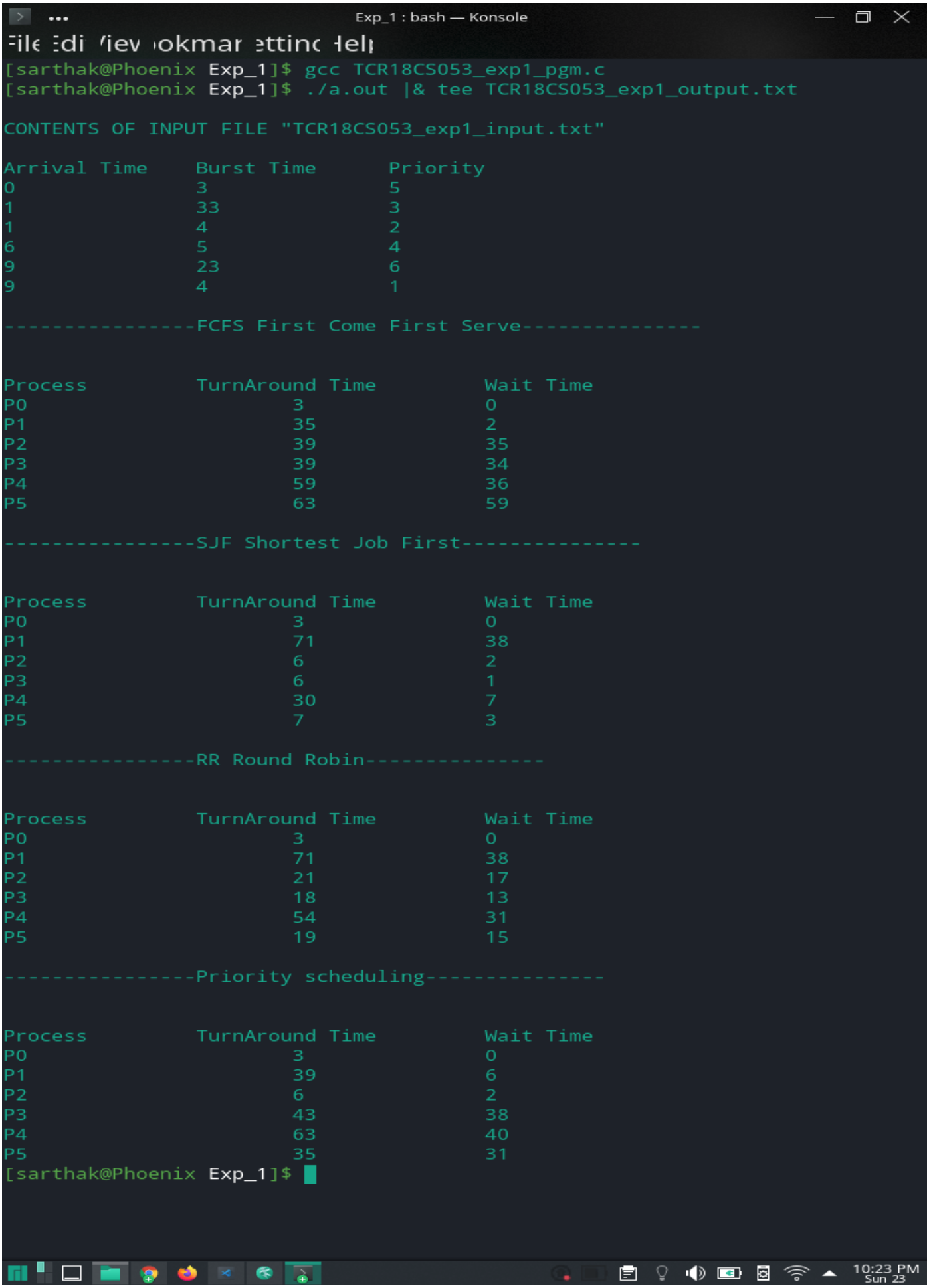
Compilation of Code

- The simulation is run with the help of C programming language.
- Details such as burst time, arrival time and priority of the process is stored in a text file named "TCR18CS053_exp1_input.txt".
- Inside text file values are tab separated
    - Format of values inside text file
    - Arrival Time<Tab>Burst Time<Tab>Priority
- The code is provided in "TCR18CS053_exp1_pgm.c"
    - Code is tested on
        - Windows 10 Version 2004 (OS Build 19041.450)
            - gcc version 8.1.0 (x86_64-posix-seh-rev0, Built by MinGW-W64 project)
        - Manjaro Linux 20.1 Mikah
            - gcc version 10.1.0 (GCC)
    - To compile the program, open a terminal and type
        - gcc TCR18CS053_exp1_pgm.c
    - To run the program, open a terminal and type
        - For windows
            - .\a.exe
        - For Linux shells (bash, zsh, etc.)
            - ./a.out
    - Time quantum for Round Robin is set as 3 can change it in line number 189 variable name "tc"
- "TCR18CS053_exp1_output.txt" is obtained using output redirection. The content of stdout and stderr is redirected to same file.
    - For windows
        - .\a.out | & tee TCR18CS053_exp1_output.txt
    - For Linux shells (bash, zsh, etc.)
        - ./a.out | & tee TCR18CS053_exp1_output.txt

Note

- A process with 0 burst time in input may lead to un expected output
- tee command will not work with windows command prompt but will work in windows PowerShell

Output Screenshot


Exp_1 : bash — Konsole
[sarthak@Phoenix Exp_1]$ gcc TCR18CS053_exp1_pgm.c
[sarthak@Phoenix Exp_1]$ ./a.out |& tee TCR18CS053_exp1_output.txt
CONTENTS OF INPUT FILE "TCR18CS053_exp1_input.txt"
Arrival Time Burst Time Priority
0 3 5
1 33 3
1 4 2
6 5 4
9 23 6
9 4 1
----------FCFS First Come First Serve----------
Process TurnAround Time Wait Time
P0 3 0
P1 35 2
P2 39 35
P3 39 34
P4 59 36
P5 63 59
----------SJF Shortest Job First----------
Process TurnAround Time Wait Time
P0 3 0
P1 71 38
P2 6 2
P3 6 1
P4 30 7
P5 7 3
----------RR Round Robin----------
Process TurnAround Time Wait Time
P0 3 0
P1 71 38
P2 21 17
P3 18 13
P4 54 31
P5 19 15
----------Priority scheduling----------
Process TurnAround Time Wait Time
P0 3 0
P1 39 6
P2 6 2
P3 43 38
P4 63 40
P5 35 31
[sarthak@Phoenix Exp_1]$