

COMPSCI 3SH3 Winter, 2021

March 18, 2021

Lab report due date: Apr. 2nd 2021, 11:59:59 pm

Lab 5: Practice and Assignment - Scheduling Algorithms

The implementation has to be completed during lab time.

You can present your assignment to TA in any of four lab sessions.

To get full mark you have to:

- a) Show your solution to TA and run it on Linux VM
- b) Answer all questions related to the implementation details
- c) Submit your lab report with source codes to Avenue on time (before due date)

This project involves implementing several different process scheduling algorithms. The scheduler will be assigned a predefined set of tasks and will schedule the tasks based on the selected scheduling algorithm. Each task is assigned a priority and CPU burst. The following scheduling algorithms will be implemented:

- **First-come, first-served (FCFS)**, which schedules tasks in the order in which they request the CPU (source code provided).
- **Shortest-job-first (SJF)**, which schedules tasks in order of the length of the tasks' next CPU burst.
- **Priority scheduling**, which schedules tasks based on priority (source code provided).
- **Round-robin (RR)** scheduling, where each task is run for a time quantum, or for the remainder of its CPU burst (source code provided).

- **Priority with round-robin**, which schedules tasks in order of priority and uses round-robin scheduling for tasks with equal priority.

Practice Time

Download all lab5 project files (Lab5Project.zip). Review, compile and run

1. FCFS scheduler
2. Priority scheduler
3. RR scheduler

To build the FCFS scheduler, enter

make fcfs

which builds the **fcfs** executable file.

Look at **Makefile** to find out how to build and clean other projects.

Assignment Questions

Write the following C files and build two schedulers:

1. Shortest-job-first (SJF), scheduler
schedule_sjf.c
2. Priority with round-robin scheduler
schedule_priority_rr.c