

CSIS310 – Summer 2018

Computer Science and Information Systems Department

Team work Assignment - 10 points

Due on July 13 2019



Process scheduling algorithms

You are about to write a program that performs runs of the following process scheduling algorithms using C or C++ programming languages.

- First-come first-served (**FCFS**)
- Shortest job first (**SJF**)

Generate a set of simulated processes. Each simulated process is simply a small data structure that stores information about the process that it represents.

For each process, randomly generate:

- An **arrival time**
- An **burst time**

Assume only **one CPU** and **one ready queue**. Sort the simulated processes so that they enter the queue in arrival time order. For this assignment, only consider CPU time for each process (no I/O wait times).

Each simulation run should last until the completion of the last process.

Run each algorithm **3 times** to get averages for the statistics below.

Outputs for each algorithm run (total 6 runs)

- Create **7** processes.
- Each created process's name (such as A, B, C, D, E, F, G), arrival time, burst time
- Calculated statistics for the processes for the run:
 - **Average waiting time for each run**
 - **Average waiting time for all runs**
- Calculated statistic for the algorithm for the run:
 - **Average turnaround time for each run**
 - **Average turnaround time for all runs**

Final output and report

Final output should be the average statistics over 3 runs for each scheduling algorithm.

In a short report (1 or 2 pages), discuss which algorithm appears to be best for each of the calculated statistics.

What to turn in

Create a zip file containing:

- Your C++ or C source files.
- A text file containing your output from your simulation runs.
- Word document containing your **team names** and you report.

Upload your zip file into moodle.

Notes:

- 1- Students work will be graded during class time
- 2- Students must be able to explain their work

Grading Criteria

C orrectness	50 %
R eadability	10 %
D ocumentation	10 %
O utput	10 %
O rganization	20 %