Assignment 5

Operating System Lab (CS341)

Department of CSE, IIT Patna

Date:- 04-Feb-2020 Time:- 3 hours

Instructions:

1. All the assignments should be completed and uploaded by 5.30 pm. Marks will be deducted for the submissions made after 5.30 pm.
2. Markings will be based on the correctness and soundness of the outputs. Marks will be deducted in case of plagiarism. All questions are of equal marks.
3. Proper indentation and appropriate comments (if necessary) are mandatory. [2+2 marks]
4. You should zip all the required files and name the zip file as roll_no.zip, eg. 1501cs11.zip.
5. Code for each question should be named as Q1.c, Q2.c, Q3.c, Q4.c etc..
6. Each question will be evaluated on 10 test cases and marks will be given accordingly.
7. Upload your assignment (the zip file) in the following link:
https://www.dropbox.com/request/OcloHvoQJ1e1PVyLYifO

There are changes in the submission format. Please read all instructions carefully.

For each question input and output format will be same:

The First line of input will contain a number specifying total processes (n). n line follows, ith line contains two space separated integers specifying arrival_time and burst_time of ith process.
Your program should output two lines. First line contains two space separated values (rounded off to 2 decimal places) specifying average waiting time (WT) and the turn-around time(TAT).
Second line contains space separated process ids of n processes, specifying completion order of the processes.

Ex:
Input:
3
0 5

1 7
3 4

Output:
4.33 11.00
P1 P2 P3

Q1. Consider the n processes, P1, P2.. Pn. Write a program to find out the average waiting time (WT), turn-around time(TAT) and the completion order of the processes using **FCFS scheduling** algorithm (in case of conflict, the process with smaller **process id** will execute first).

Q2. Consider n processes, P1, P2 .. Pn. Write a program to find out the average waiting time (WT), the turn-around time(TAT) and the completion order of the processes using the **shortest job first** scheduling algorithm (in case of conflict, the process with smaller **process id** will execute first).

Q3. Consider n processes, P1, P2 .. Pn. Write a program to find out the average waiting time (WT), the turn-around time(TAT) and the completion order of the processes using the **shortest remaining job first** scheduling algorithm (in case of conflict, the process with smaller **process id** will execute first).

Q4. Consider n processes, P1, P2 .. Pn. Write a program to find out the average Waiting Time (WT), the Turn-around Time(TAT) and the completion order of the processes using **Highest remaining time first (preemptive)** scheduling algorithm (in case of conflict, the process with smaller **process id** will execute first).