National University
of computer and emerging sciences

Course Name:	**Operating System**	**Course Code:**	**CS2006**
Degree Program:	**BS-CS**	**Semester:**	**Spring 2024**
Exam Duration:	**30 Minutes + 5 Minutes for submission**	**Total Marks:**	**10**
Paper Date:	**21-Feb-2023**	**Weight**	**10**
Section:	**BCS-4A**	**Page(s):**	2
Exam Type:	**Quiz-I**		

Exam instructions: READ ALL INSTRUCTIONS CAREFULLY.

1. Understanding the question is also part of the quiz , so do not ask for any clarification. Make suitable ASSUMPTIONS in case of any issues.
2. Questions must be saved with your roll no e.g: “”20L-4444”. Multiple submissions are not allowed (if done, only the first one will be considered). In case of missing or corrupt file submission, all the responsibility will be on the student himself.
3. Your cell phones/smart watches MUST be turned off and placed far away from t he PCs.
4. It is your responsibility to protect your code and save it from being copied. If you don’t protect it, all matching codes will be considered copy/cheating cases. No leniency on plagiarism.
5. Any kind of cheat sheet/code if found in your PC will result in immediate disqualification from Quiz and it will be marked as 0. So, make sure you delete everything from the Desktop of your windows. Also delete all the files permanently from Recycle Bin and Trash respectively for Windows.

Question 1

Develop a stopwatch with a variable lap time. The program will create two processes and they will start calculating time. Process 1 will be used to calculate total time (i.e if lap time is 2, this process will display "1 Lap completed" after second r process count 2s) and the other will calculate lap time i.e. 2s in this case. Your code should work on different values of laps and lap time. The total time calculator process will keep on calculating time until required laps are completed. In the lap time calculator process, when it reaches the lap time limit, the process will display the lap number and set its counter to zero and start calculating again. Take input of lap time and number of laps from the user via command line arguments. At the end, display total time from total time calculator process. Note: You can use sleep(seconds) for time calculation.

Hint: You can use ordinary pipes between 2 child processes

Output:

./quiz1.out 2 3

Lap 0 completed

1 2 3

Lap 1 completed

1 2 3

Lap 2 completed