UE18CS305 – Operating Systems Laboratory

WEEK 5: Process Synchronization

Due Date: 28/06/2021

OBJECTIVE:

Understanding the Process Synchronization.

Write a C Program to simulate race condition in Producer-Consumer Problem

- **THE CONCEPTS ARE ALREADY COVERED IN THEORY.**
- **STUDENTS ARE ADVISED TO REFER TO THE TEXT BOOK AND THE LECTURE MATERIAL SHARED IN THE CLASS TO IMPLEMENT THE GIVEN PROGRAMS.**
- **STUDENTS ARE REQUIRED TO PROVIDE PROOF OF CONDUCTION (AS PER SUBMISSION BELOW) FOR BOTH THE PROGRAMS.**

SUBMISSION:

1. **All the source code files for the actual programs should be uploaded to EDMODO separately in PDF FORMAT.**
2. **All the screenshots clearly showing the directory name as SRN_NAME_WEEK3, all the output, results for the actual programs and the answers to 5 QUESTIONS should be uploaded to EDMODO in a SEPARATE FILE (Word or PDF format only, Do NOT zip this file). So, even the answers to the questions asked at the end of this document should go into the same file.**

Contact me for any questions or clarifications needed.

PROGRAMS FOR EXECUTION AND SUBMISSION:

1. **Write a C program to Producer consumer problem**

Implement a main program that creates two threads: producer and consumer threads which execute producer and consumer functions respectively. The producer should produce an item and update the buffer. The consumer should consume an item and update the buffer. You can use bounded buffer and both the producer and consumer threads can be infinite loops. Show how race condition occurs between producer and consumer without mutual exclusion

Expected Output:

Job 1 started
Job 2 started
Job 3 started
2 finished Job
4 started Job
3 finished Job
1 finished Job
4 finished Job
…….

Outputs may vary

Deadline for Submission: 08/07/2021

NOTE:

Your programs can take input in the manner shown or in any other manner.