**Assignment 7**

**Due**: 11:55PM November 13, 2023

**Submission**: Complete your submission on Blackboard.

Email submission will NOT be accepted. If you cannot complete the assignment before the deadline due to Covid-19, you must contact the instructor **BEFORE** the deadline. Otherwise, **late submission will NOT be accepted**.

**Total points**: 20 points

1. Use semaphore to enforce mutual exclusion.

1.1. Define semaphores and their initial values. (2 points)

**Semaphore S\_A = 1;**

**Semaphore S\_B = 1;**

1.2. Complete the following code. (8 points)

T1 ()

{

**wait(S\_A);**

//access Resource A

**signal(S\_A);**

**wait(S\_B);**

//access Resource B

**signal(S\_B);**

}

T2 ()

{

**wait(S\_B);**

//access Resource B

**signal(S\_B);**

}

T3 ()

{

**wait(S\_A);**

//access Resource A

**signal(S\_A);**

}

2. Use semaphore to enforce event ordering.

2.1. Define semaphores and their initial values. (2 points)

**Semaphore S\_1 = 0;**

**Semaphore S\_2 = 0;**

2.2. Complete the following code. (8 points)

T1 ()

{

//Read data

**signal(S\_1);**

}

T2 ()

{

**wait(S\_1);**

//Preprocess Data

**signal(S\_2);**

}

T3 ()

{

**wait(S\_2);**

//Process Data

}

END