BLG312E – Computer Operating Systems, Spring 2021

Assignment 3

Deadline: 09.06.2021

In an environment with "*m*" **news source proccesses** and "*n*" **subscriber processes**, each news source process delivers data "*d*" to all subscriber processes by calling *publish(d)* function. Meanwhile, every subscriber process can call *read_news()* function in order to fetch the copy of the published data "*d*". During this operation, the processes follow the rules given below:

> i. A subscriber can only fetch a copy of a news once. When *read_news()* is called by a subscriber, if there is not any published news yet, the subscriber process should be suspended until there is a news available to fetch.

> ii. A news source cannot publish a new data, until the previously published one is fetched by all subscribers. If a news source calls **publish()** function, before all subscribers fetch the copy of previous news, it should wait inside the function until all copies belong to previous news are delivered.

Implement *publish()* and *read_news()* functions by using semaphores. In addition, provide an output of your implementation with a number of **news source** and **subscriber processes**, showcasing your implementation follows the given rules above.

IMPORTANT NOTICE:

Your submission will be evaluated by examining the solution you design and provide in order to solve the given problem, not by the use of Unix system calls or code pieces.