

Problem Discussion

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Firstly, in producer.c, the number of producers will be increased at the beginning, showing that one more producer is accessing. A while loop is used to read characters until the end of the file, then we used an inner while loop to decide if a process is allowed to enter the critical section. If stored is False, meaning nothing is stored, a process is then safe to enter the critical section. We used getMutex to help the process get access, when it is accessing and reading the character, stored is set to True, saying that one process is in critical section and it is not safe to enter now. After everything is done, we decrement the number of producers.

Secondly, in consumer.c, we set the number of producers to be N and the initial value of readC to be True, a big while loop is then used to transfer characters. When N is not 0 (number of producers is not 0) and readC is true, we set readC to be False, and use an inner while loop to transfer characters until the count is 0.