(B1 - 30 min)

Multiple producer - one consumer

Implement a variation of producer consumer problem. In this problem, there is only one consumer thread and multiple (M) producer threads. Suppose the buffer size is N = 2M.

Consumer: The consumer sleeps until the buffer is full. When the buffer is full, the consumer wakes up and removes all items from the buffer. Each time the consumer empties the buffer, it prints the elements in the console and goes back to sleep.

Producer: A producer considers an empty buffer as a new buffer. The constraints for the producers is, in each buffer a producer inserts 2 items, one at a random time. If a producer has already produced 2 times in the current buffer, it will sleep until the buffer is empty.

Terminating Condition: You can keep track of iterations. Your program can stop after 3 iterations.

Input: N = 10, M = 5
[Suppose, IDs of 5 producers are 1, 2, 3,4, 5. Producer i generates an item = (i*10)+randomly select a digit from 0-9]

Output:
Buffer: 22 13 15 25 56 38 35 49 55 47
Buffer: 57 38 45 21 47 24 39 12 14 55
Buffer: 16 27 19 39 21 40 57 33 44 53