Bounded Buffer Problem Structure:

* The structure of the producer process

**while (true) {**

**.../\* produce an item in next produced\*/**

**...**

**wait(empty);**

**wait(mutex);**

**.../\* add next produced to the buffer \*/**

**...**

**signal(mutex);**

**signal(full);**

**}**

* The structure of the consumer process

**while (true) {**

**wait(full);**

**wait(mutex);**

**.../\* remove an item from buffer to next consumed\*/**

**...**

**signal(mutex);**

**signal(empty);**

**.../\* consume the item in next consumed \*/**

**...}**

Bounded Buffer Problem Pseudocode:

|  |  |
| --- | --- |
| **Producer** | **Consumer** |
| **repeat**          . . .         #produce an item in nextp         . . .         wait(empty);         wait(mutex);         . . .         #add nextp to buffer         . . .         signal(mutex);         signal(full);  **until** false; | **repeat**          wait(full);         wait(mutex);         . . .        # remove item from buffer to nextc         . . .         signal(mutex);         signal(empty);         . . .         #consume the item in nextc         . . .  **until** false; |

Semaphore Pseudocode:

**Semaphore operations on variable S are now defined as,**

***wait*(*S*){**

**S.value--;**

**if (S.value< 0) {**

**add this process to S.List;block();//suspends,**

**waiting state**

**}**

**}**

***signal*(*S*) { S.value++;**

**if (S.value<= 0) {**

**remove a process P from S.List;wakeup(P);//resumes, ready state**

**}**

**}**

Producer class:

We have here cook shelf(shared variable between producer and consumer) variable which is initially null(free) and limit variable which is initially indicated the max size that can the shelf take

And meal number which describe the number of meal is produced

So in the constructor we send our producer to initial the list.Function get cook list take cook number that that will produce and we put synchronized block to protect our shared variable and make a while loop if it’s reached the max size (limit) of the shelf ..print that the shelf is full and use wait() to cook shelf which mean that wait until the consumer to serve customers ,so print the number of pizza is produced and put it to shelf to be served then then notify(wakeup) consumer to serve the meals

And wait until he serve some meals

Text

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