OS Experiment 01

实验报告

***16301124 梁博泓***

**1.设计思路**

在这个“生产者-消费者”问题中，在实验中使用了java的多线程。

1. 在主线程下，确定代表16个缓冲区状态的数组bufferList[],以及代表32个商品状态的数组commodityStatus[]
2. 开辟producer和consumer线程
3. 将上述线程在一个无限的while循环中运行，当且仅当commodityStatus[]中的所有值都为2（32个商品都被生产且消费了）的时候，循环停止，程序结束
4. producer和consumer线程运行示意图（↓↓↓）：
5. 

**2.代码**

（详见压缩文件中目录 ***\16301124\_上机作业\实验1：通过共享存储区机制实现进程间通信\实验源码\OS\_Experiment\_01\src\ex\_01\_producer$consumer\*** 中的下述文件）

(Tips: OS\_Experiment\_01 为eclipse单独的工程文件夹)

run.java

Producer.java

Consumer.java

**3.运行结果**

Produce product\_1 into 1st buffer block

Exception in thread "main" java.lang.IllegalThreadStateException

at java.base/java.lang.Thread.start(Thread.java:795)

Consume product\_1 from 1st buffer block

at ex\_01\_producer$consumer.run.main(run.java:22)

!!!!!There isn't full buffer area,Consumer Sleep 0.5 seconds.

Produce product\_2 into 1st buffer block

Produce product\_3 into 2st buffer block

Produce product\_4 into 3st buffer block

Produce product\_5 into 4st buffer block

Produce product\_6 into 5st buffer block

Produce product\_7 into 6st buffer block

Produce product\_8 into 7st buffer block

Produce product\_9 into 8st buffer block

Produce product\_10 into 9st buffer block

Produce product\_11 into 10st buffer block

Consume product\_2 from 1st buffer block

Produce product\_12 into 1st buffer block

Consume product\_12 from 1st buffer block

Produce product\_13 into 1st buffer block

Consume product\_13 from 1st buffer block

Produce product\_14 into 1st buffer block

Consume product\_14 from 1st buffer block

Produce product\_15 into 1st buffer block

Consume product\_15 from 1st buffer block

Produce product\_16 into 1st buffer block

Consume product\_16 from 1st buffer block

Produce product\_17 into 1st buffer block

Consume product\_17 from 1st buffer block

Produce product\_18 into 1st buffer block

Consume product\_18 from 1st buffer block

Produce product\_19 into 1st buffer block

Consume product\_19 from 1st buffer block

Produce product\_20 into 1st buffer block

Consume product\_20 from 1st buffer block

Produce product\_21 into 1st buffer block

Consume product\_21 from 1st buffer block

Produce product\_22 into 1st buffer block

Consume product\_22 from 1st buffer block

Produce product\_23 into 1st buffer block

Consume product\_23 from 1st buffer block

Produce product\_24 into 1st buffer block

Consume product\_24 from 1st buffer block

Produce product\_25 into 1st buffer block

Consume product\_25 from 1st buffer block

Produce product\_26 into 1st buffer block

Consume product\_26 from 1st buffer block

Produce product\_27 into 1st buffer block

Consume product\_27 from 1st buffer block

Produce product\_28 into 1st buffer block

Consume product\_28 from 1st buffer block

Produce product\_29 into 1st buffer block

Consume product\_29 from 1st buffer block

Produce product\_30 into 1st buffer block

Consume product\_30 from 1st buffer block

Produce product\_31 into 1st buffer block

Consume product\_31 from 1st buffer block

Produce product\_32 into 1st buffer block

Consume product\_32 from 1st buffer block

Consume product\_3 from 2st buffer block

Consume product\_4 from 3st buffer block

Consume product\_5 from 4st buffer block

Consume product\_6 from 5st buffer block

Consume product\_7 from 6st buffer block

Consume product\_8 from 7st buffer block

Consume product\_9 from 8st buffer block

Consume product\_10 from 9st buffer block

Consume product\_11 from 10st buffer block

**4.错误总结**

本实验中由于对语言的掌握有限，输出结果发生了不可控的错误，未能找出错误的合理解决方案。