Today's Agenda :-

Hey everyone!!

Producer Consumer using Semaphores.

Leetcode Problem -1

Leetcode Problem -2

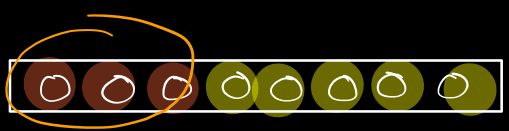
1:40 Min

Producers

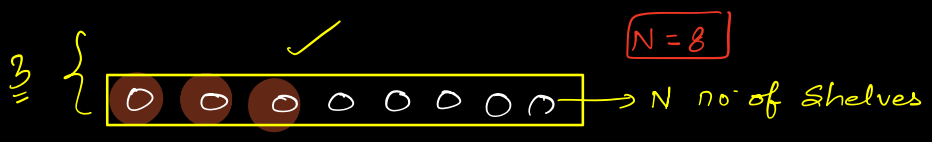
```
while (true) {
    if (store.items.size() < maxSize) {
        store.add(items)
    }
}
```

Consumers

```
while (true) {
    if (store.items.size() > 0) {
        one.remove(items)
    }
}
```



Semaphores :- Mutex + Limit on No of threads.

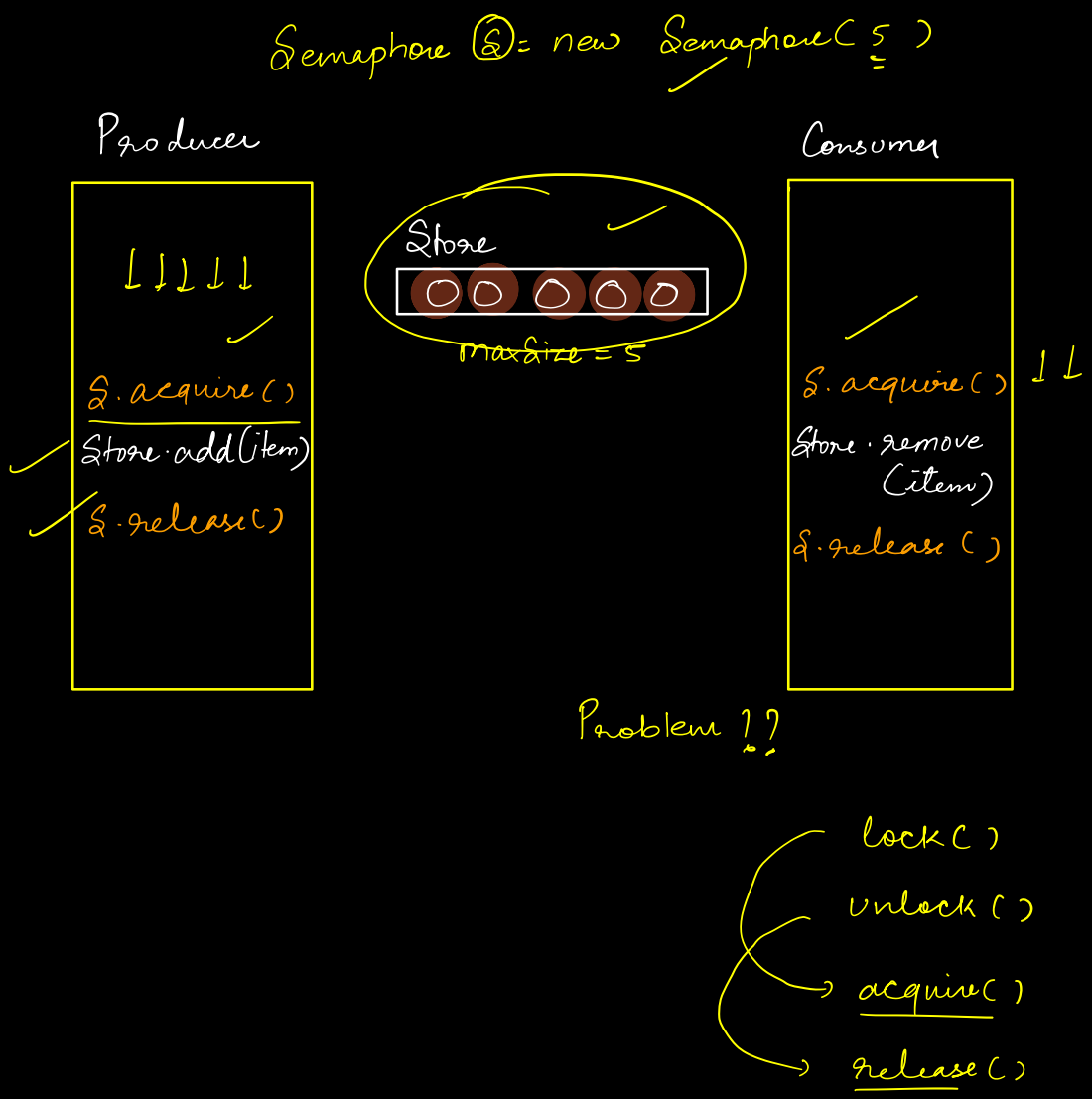


No of producers = No of empty shelves

No of consumers = No of actual items at that points.

Semaphore s = new Semaphore(2);

2 = count of threads you can have inside the critical section at the same time.



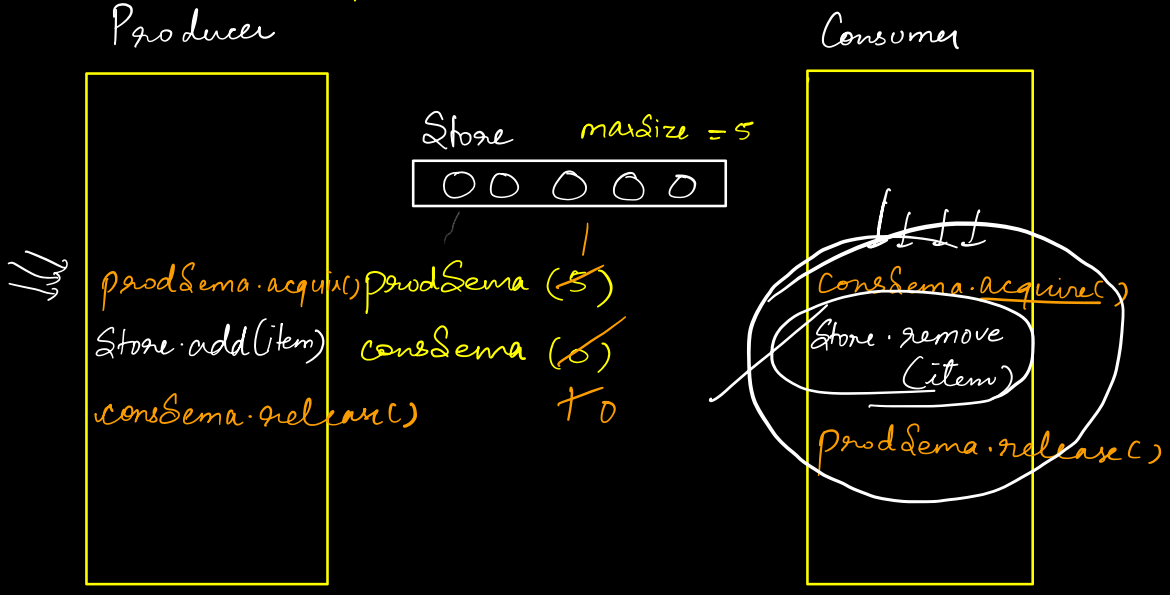
We should use one semaphore for only 1 task.

Semaphore prodSema = new Semaphore( )

Semaphore consSema = new Semaphore( )

Semaphore prodSema = new Semaphore(5)

Semaphore consSema = new Semaphore(0)



acquire() → − −

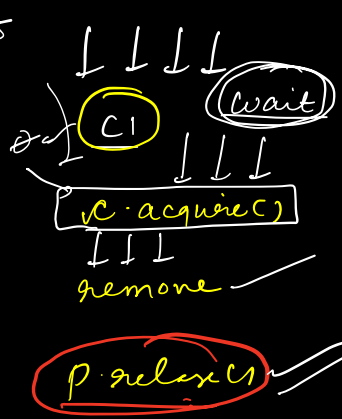
release() → + +

Consumer : 0 1 2 3 2

Producer : 4 1 2 0 1

C2

P4 P5



P1 P2 P3

p.acquire() p.acquire() p.acquire()

add add add

c.release() c.release() c.release()

P1	C
p1	Con
—	✓