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Implementation of Classical problems Producer Consumer using Threads and Semaphore.

Code :-

```
import threading
import time

semaphore = threading.Semaphore(5)
q = []

def consumer():
    if len(q):
        print("Element readed is: ",q[len(q)-1])
        q.pop()
        semaphore.release()
    else:
        print("Element no element found ")
        time.sleep(2)

def producer():
    semaphore.acquire()
    q.append(len(q))
    print("Element Appended is: ",len(q)-1)
    time.sleep(1)

class thp(threading.Thread):
    def __init__(self):
        threading.Thread.__init__(self)
    def run(self):
        for i in range(50):
            producer()

class thc(threading.Thread):
    def __init__(self):
        threading.Thread.__init__(self)
```

```
def run(self):
    for i in range(50):
        consumer()

producerThread1 = thp()
consumerThread2 = thc()

consumerThread2.start()
producerThread1.start()
consumerThread2.join()
producerThread1.join()
```

Output :-

```
Element no element found
Element Appended is: 0
Element Appended is: 1
Element readed is: 1
Element Appended is: 1
Element Appended is: 2
Element readed is: 2
Element Appended is: 2
Element Appended is: 3
Element readed is: 3
Element Appended is: 3
```

```
Element Appended is: 4
Element readed is: 4
Element Appended is: 4
Element readed is: 4
Element Appended is: 4
Element readed is: 4
Element Appended is: 4
Element readed is: 4
Element Appended is: 4
Element readed is: 4
Element Appended is: 4
Element readed is: 4
Element Appended is: 4
Element readed is: 4
Element Appended is: 4
Element readed is: 4
Element Appended is: 4
Element readed is: 4
Element readed is: 3
Element readed is: 2
Element readed is: 1
```