Participation Activity 3

Jordan Taranto
Can find the code and report below at my github
https://github.com/Jordinaa/cs431/tree/main/Semaphore
CS431

```python
import threading
from CriticalSection import CriticalSection
from BoundedBuffer import BoundedBuffer

def test_critical_section():
    cs = CriticalSection() # create a CS instance
    threads = [] # create threads to simulate access to the CS

    for i in range(5):
        t = threading.Thread(target=cs.critical_section, args=(i,))
        threads.append(t)
        t.start()

    # wait for all threads to finish
    for t in threads:
        t.join()

def test_bounded_buffer():
    # create BoundedBuffer instance with buffer size 5
    bb = BoundedBuffer(5)

    # create produced and consumer threads
    producer_thread = threading.Thread(target=lambda: [bb.produce(i) for i in
range(10)])
    consumer_thread = threading.Thread(target=lambda: [bb.consume() for _ in range(10)])

    producer_thread.start()
    consumer_thread.start()

    producer_thread.join()
    consumer_thread.join()

# test_critical_section()
test_bounded_buffer()
```

```
Produced item 0
notified
Produced item 1
notified
Produced item 2
notified
Produced item 3
notified
Produced item 4
notified
Consumed item 0
notified
Consumed item 1
notified
Consumed item 2
notified
Consumed item 3
notified
Consumed item 4
notified
waiting
Produced item 5
notified
Produced item 6
notified
Produced item 7waiting
Consumed item 5
notified
Consumed item 6
notified

notified
Produced item 8
notified
Produced item 9
notified
waiting
Consumed item 7
notified
Consumed item 8
notified
Consumed item 9
notified
taranto@tarantos-MacBook-Air cs431 %
```