Operating Systems
Tutorial : Semaphores
October 2018

Write a C program that simulates the following situation using Semaphore and Mutex :

- There are 2 Producers and 2 Consumers and a buffer of size 6
- 1st Consumer (ConsE)will only consume even numbered products, 2nd consumer (ConsO) will only consume odd numbered products.
- If there is no even numbered product, ConsE can't consume.
- If there is no odd numbered product, ConsO can't consume.
- If there is no product in the buffer , both the consumers will have to wait (Ob !!).
- Two producers can produce both odd and even products without any restriction.
- If the buffer size is full, none of the producers can produce.
- The producers try produce every 1 second interval.
- The consumers try to consume every 1 second.

Print the every activity that happens :
Eg:
Producer produced object 5
Producer produced object 2
ConsE consumed object 2
Producer produced object 1
ConsO consumed object 5

Useful header files for you :

```
#include <stdlib.h>
#include <stdio.h>
#include <pthread.h>
#include <semaphore.h>
#include <unistd.h>
```