CSE 321

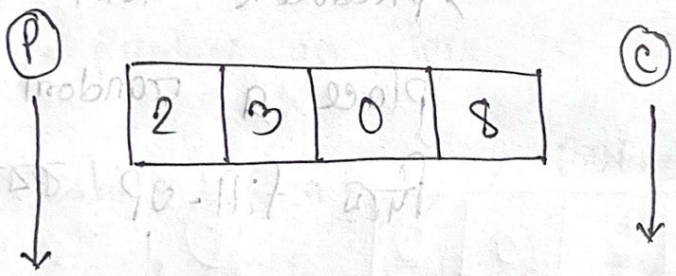
Date: 01/07/25

Shared memory System

Producer - consumer problem

Producer → produces products for consumer

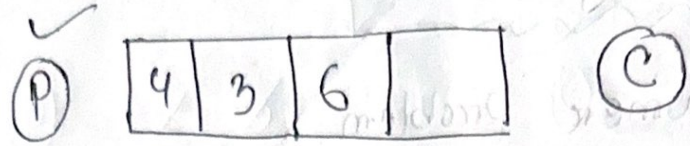
Consumer → consumes products provided by producer.

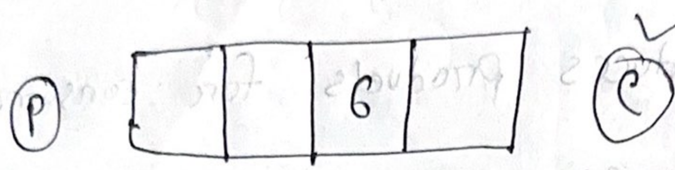


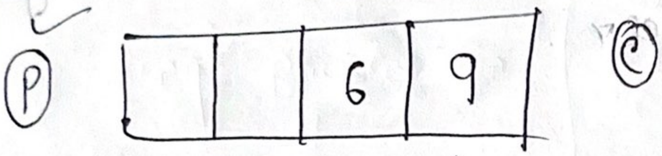
fill array with integers until array is full.

read elements one by one and remove from array. until array is empty.

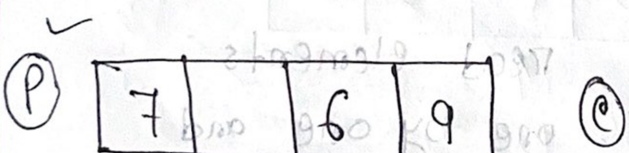
Producer and consumer is done simultaneously.



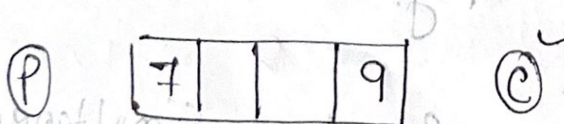




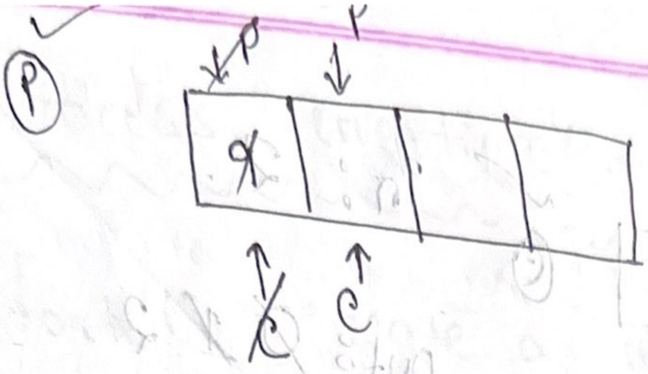
→ producer next available place এ random integer দিয়ে fill-up করবে।



→ circular motion এ first এ এসে fill up করবে



→ last বার first শুরুটা erase করছি, এখন আবার ধরে erase করবে consumer.



Code

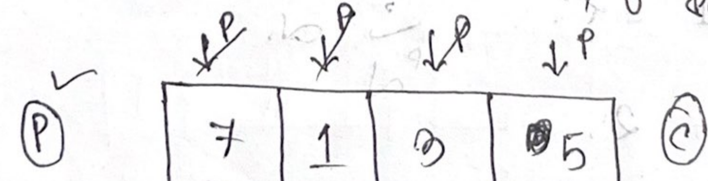
```
item next-producer;

while (true){
    /* Produce an item in next-produced */

    while (((in + 1) % BUFFER-SIZE) == out)
        ; /* do nothing */

    buffer [in] = next-produced;
    in = (in + 1) % BUFFER-SIZE;
}
```

→ 0 হবে নিবে।

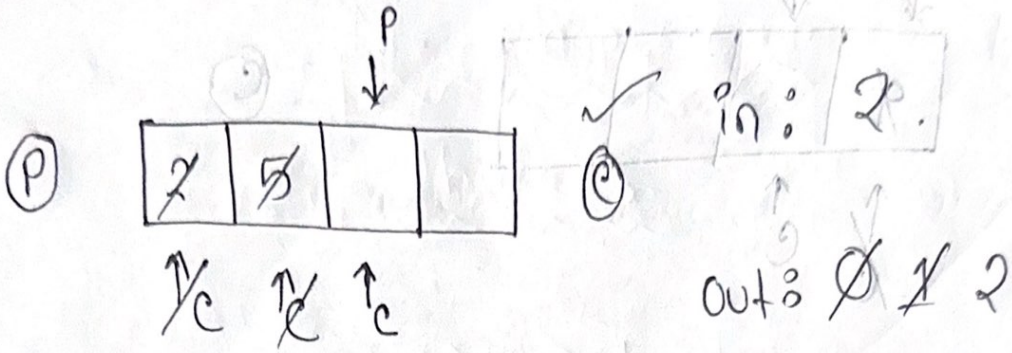


in = 0 1 2 3

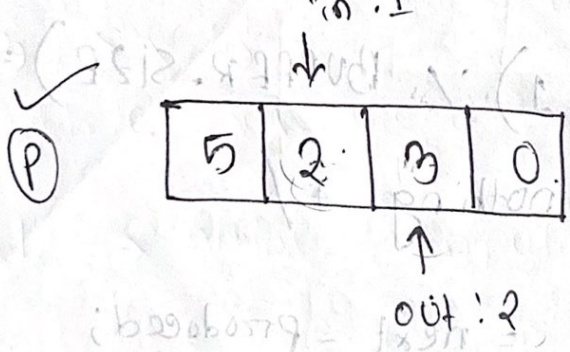
out = 0

0 তে produce করলাম 7.

then, index+1



in == out মানে array empty. Forcefully being paused in while loop. By doing nothing.



in + 1 = 2.

out = 2.

if (in + 1) % Buffer size == out

means the array is full.

Process creation in UNIX

fork(): create a new process.

exec(): run an executable file, replacing the previous executable.

wait(): suspends execution of the current process until one of its children terminates.