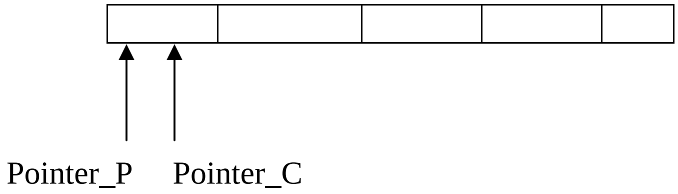
Handling the Buffer Array inside the Buffer Process

Consider an array of size 5 and say we have to produce 8 items. We will have 2 pointers called Pointer_P (Which has to be updated when the producer process sends any item) and Pointer_C (Which has to be updated when the consumer process consumes an item. This pointer is shared by both the consumers).

Initially Pointer_P = Pointer_C = 0;

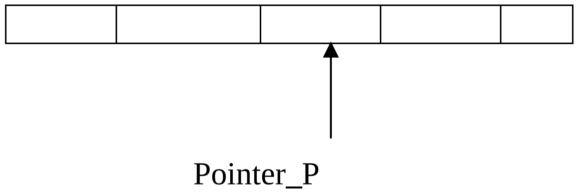


Now we will also use two counters. Counter_P and Counter_C which will be incremented by 1, each time the corresponding pointer loops back to position 0. (Example: say when Pointer_P inserts 5 items and then loops back to insert the 6th item, Counter_P is incremented by 1).

Thus the termination condition will be:

If ((Pointer_C+Counter_C*BuffSize) > (Pointer_P+(Counter_P*BuffSize)) then Buffer is empty.

As in the example, when the 8th element has been inserted, Pointer_P will be as follows



i.e. it will have a value 2. and at the same time, Counter_P will be 1.

Now once the consumer consumes the 8th item, its pointer will be incremented and it will have a value 3 and the Counter_C will have a value 1.

Now we have Pointer_C+(Counter_C*BuffSize) = 3+ 1*5 = 8
And Pointer_P+(Counter_P*BuffSize) = 2+1*5 = 7.

And at all other times, Pointer_C+(Counter_C*BuffSize) will be less than Pointer_P+(Counter_P*BuffSize).