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// C program for the above approach

#include <stdio.h>
#include <stdlib.h>

// Initialize a mutex to 1
int mutex = 1;

// Number of full slots as 0
int full = 0;

// Number of empty slots as size
// of buffer
int empty = 10, x = 0;

// Function to produce an item and
// add it to the buffer
void producer()
{
        // Decrease mutex value by 1
        --mutex;

        // Increase the number of full
        // slots by 1
        ++full;

        // Decrease the number of empty
        // slots by 1
        --empty;

        // Item produced
```

```
        x++;
        printf("\nProducer produces"
                "item %d",
                x);

        // Increase mutex value by 1
        ++mutex;
}

// Function to consume an item and
// remove it from buffer
void consumer()
{
        // Decrease mutex value by 1
        --mutex;

        // Decrease the number of full
        // slots by 1
        --full;

        // Increase the number of empty
        // slots by 1
        ++empty;
        printf("\nConsumer consumes "
                "item %d",
                x);
        x--;

        // Increase mutex value by 1
        ++mutex;
}
```

```
// Driver Code
int main()
{
	int n, i;
	printf("\n1. Press 1 for Producer"
		"\n2. Press 2 for Consumer"
		"\n3. Press 3 for Exit");

// Using '#pragma omp parallel for'
// can give wrong value due to
// synchronization issues.

// 'critical' specifies that code is
// executed by only one thread at a
// time i.e., only one thread enters
// the critical section at a given time
#pragma omp critical

	for (i = 1; i > 0; i++) {

		printf("\nEnter your choice:");
		scanf("%d", &n);

		// Switch Cases
		switch (n) {
		case 1:

			// If mutex is 1 and empty
			// is non-zero, then it is
			// possible to produce
```

```
            if ((mutex == 1)
                        && (empty != 0)) {
                        producer();
            }

            // Otherwise, print buffer
            // is full
            else {
                        printf("Buffer is full!");
            }
            break;

case 2:

            // If mutex is 1 and full
            // is non-zero, then it is
            // possible to consume
            if ((mutex == 1)
                        && (full != 0)) {
                        consumer();
            }

            // Otherwise, print Buffer
            // is empty
            else {
                        printf("Buffer is empty!");
            }
            break;

// Exit Condition
case 3:
```

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                exit(0);
                break;
            }
        }
}
```

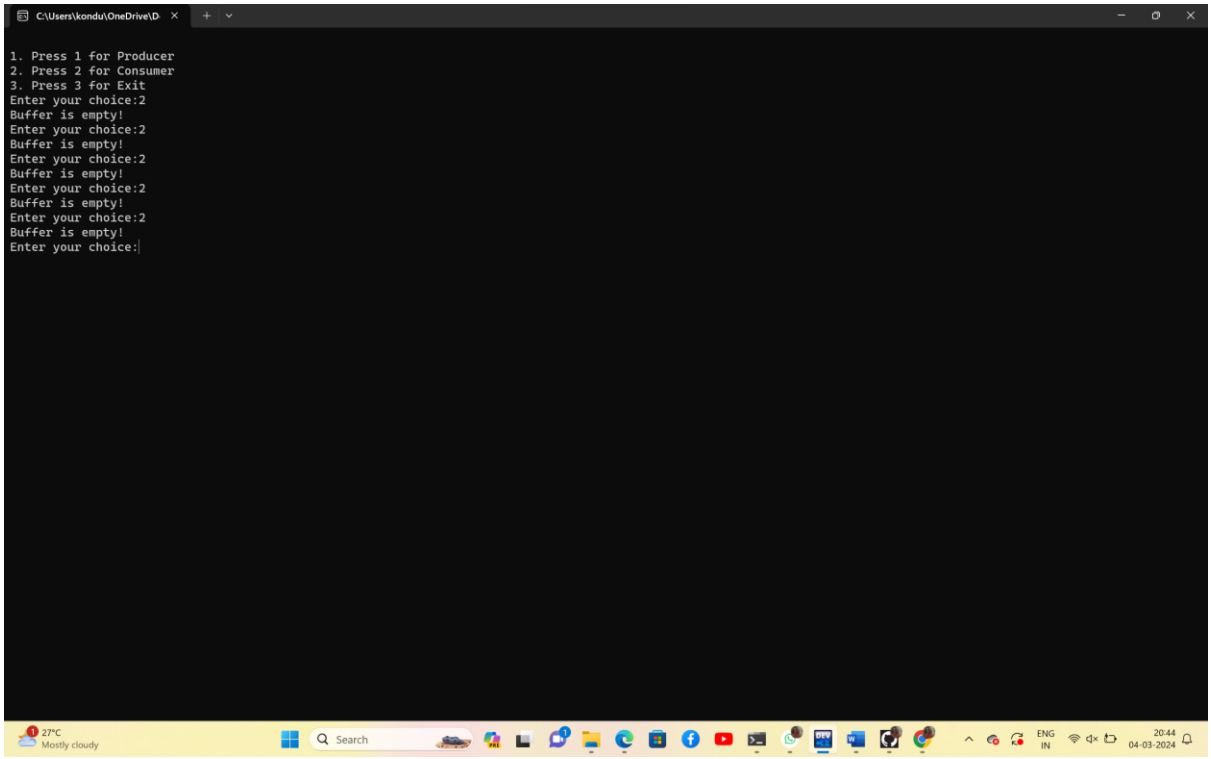
C:\Users\kondu\OneDrive\D
1. Press 1 for Producer
2. Press 2 for Consumer
3. Press 3 for Exit
Enter your choice:2
Buffer is empty!
Enter your choice:2
Buffer is empty!
Enter your choice:2
Buffer is empty!
Enter your choice:2
Buffer is empty!
Enter your choice:2
Buffer is empty!
Enter your choice:
27°C
Mostly cloudy
Search
ENG
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