

EXPERIMENT NO. 5

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PROGRAM:

```
#include<stdio.h>
#include<stdlib.h>
int mutex =1;
int full = 0;
int empty = 5,x = 0;
void producer()
{
    --mutex;
    ++full;
    --empty;
    x++;
    printf("\n Producer produces item %d",x);
    ++mutex;
}
void consumer()
{
    --mutex;
    --full;
    ++empty;
    printf(" \n Consumer consumes item %d",x);
    x--;
    ++mutex;
}
int main()
{
    int n,i;
    printf(" \n1. Press 1 for Producer \n2 Press 2 for Consumer \n3. Press 3 for Exit");
    for(i=1;i>0;i++)
    {
        printf("\n Enter your choice:");
        scanf("%d", &n);
        switch (n)
        {
            case 1:
                if ((mutex == 1)
                    && (empty != 0))
                {
                    producer();
                }
                else
                {
                    printf("Buffer is full!");
                } break;
        }
    }
}
```

```

case 2:
if((mutex == 1)&&(full != 0))
{
    consumer();
}
else

{
    printf("Buffer is empty!");
}
break;
case 3:
    exit(0);
break;

}

}

}

```

OUTPUT:

```

komalchitnis02@komal-virtual-machine:~$ gcc -o komals komals.c
komalchitnis02@komal-virtual-machine:~$ ./komals
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:1
Producer produces item 1
Enter your choice:1
Producer produces item 2
Enter your choice:2
Consumer consumes item 2
Enter your choice:2
Consumer consumes item 1
Enter your choice:2
Buffer is empty!
Enter your choice:1
Producer produces item 1
Enter your choice:1
Producer produces item 2
Enter your choice:1
Producer produces item 3
Enter your choice:1
Producer produces item 4
Enter your choice:1
Producer produces item 5
Enter your choice:1
Buffer is full!
Enter your choice:2
Consumer consumes item 5
Enter your choice:2
Consumer consumes item 4
Enter your choice:2
Consumer consumes item 3
Enter your choice:2

```

```

Producer produces item 1
Enter your choice:1
Producer produces item 2
Enter your choice:2
Consumer consumes item 2
Enter your choice:2
Consumer consumes item 1
Enter your choice:2
Buffer is empty!
Enter your choice:1
Producer produces item 1
Enter your choice:1
Producer produces item 2
Enter your choice:1
Producer produces item 3
Enter your choice:1
Producer produces item 4
Enter your choice:1
Producer produces item 5
Enter your choice:1
Buffer is full!
Enter your choice:2
Consumer consumes item 5
Enter your choice:2
Consumer consumes item 4
Enter your choice:2
Consumer consumes item 3
Enter your choice:2
Consumer consumes item 2
Enter your choice:2
Consumer consumes item 1
Enter your choice:2
Buffer is empty!
Enter your choice:1

```