

# PRODUCER CONSUMER PROBLEM

```
#include<stdio.h>
#include<stdlib.h>
int mutex=1,full=0,empty=3,x=0;
void producer();
void consumer();
int wait(int);
int signal(int);
int main(){
int n;
printf("\n 1.Producer\n 2.Consumer\n");
while(1){
    printf("\nEnter your choice\t");
    scanf("%d",&n);
    switch(n){
    case 1:if((mutex==1)&&(empty==0))
        printf("Buffer is full");
        else
            producer();
        break;
    case 2:if((mutex==1)&&(full!=0))
        consumer();
        else
            printf("Buffer is empty");
        break;
    case 3:exit(0);
        break;
    }
}
return 0;
}

int wait(int s){
return(--s);
}
```

```
int signal(int s){  
    return(++s);  
}
```

```
void producer(){  
    mutex=wait(mutex);  
    full=signal(full);  
    empty=wait(empty);  
    x++;  
    printf("\nProducer produces the item %d",x);  
    mutex=signal(mutex);  
}
```

```
void consumer(){  
    mutex=wait(mutex);  
    full=wait(full);  
    empty=signal(empty);  
    printf("\nConsumer consumes item %d",x);  
    x--;  
    mutex=signal(mutex);  
}
```

## OUTPUT:

```
1.Producer
2.Consumer

Enter your choice      1
Producer produces the item 1
Enter your choice      1
Producer produces the item 2
Enter your choice      1
Producer produces the item 3
Enter your choice      1
Buffer is full
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      3

Process returned 0 (0x0)   execution time : 19.197 s
Press any key to continue.
```