

EXP 18

```
#include<stdio.h>
#include<stdlib.h>
int mutex=1,full=0,empty=3,x=0;
int main()
{
    int n;
    void producer();
    void consumer();
    int wait(int);
    int signal(int);
    printf("\n1.Producer\n2.Consumer\n3.Exit");
    while(1)
    {
        printf("\nEnter 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;
        }
    }
    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);  
}
```

1.Producer

2.Consumer

3.Exit

Enter your choice:1

Producer produces the item 1

Enter your choice:2

Consumer consumes item 1

Enter your choice:3

Process exited after 6.89 seconds with return value 0

Press any key to continue . . .