

Write a C program to implement producer /consumer problem.

```
#include<stdio.h>

#include<stdlib.h>

int mutex=1, full=0, empty=3, x=0, i=1;

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("\n Producer produces the item = %d", x);
    mutex = signal(mutex);
    consumer();
}

void consumer()
{
    mutex = wait(mutex);
    full = wait(full);
    empty = signal(empty);
    printf("\n Consumer consumes item = %d", x);
    while(i<=x)
```

```

{
printf("\n Consumer consumes item %d", i);

i++;

full = wait(full);

empty = signal(empty);
}

mutex = signal(mutex);
}

void main()

{
int n;

printf("\n 1. Producer \n 2. Consumer \n 3. Exit");

while(1)

{
printf("Enter your Choice:\n");

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;

}
}

```

}

}