

OSLAB 06
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PRODUCER CONSUMER PROBLEM:

CODE:

```
#include<stdio.h>
#include<stdlib.h>
int mutex=1,full=0,empty,x=0;
int main()
{
    int n;
    void producer();
    void consumer();
    int wait(int);
    int signal(int);
    printf("enter buffer size\n");
    scanf("%d",&empty);
    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!!\n");
                        break;
            case 2:    if((mutex==1)&&(full!=0))
                        consumer();
                        else
                        printf("Buffer is empty!!\n");
                        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("Producer produces the item %d\n",x);
    mutex=signal(mutex);
}
void consumer()
{
    mutex=wait(mutex);
    full=wait(full);
    empty=signal(empty);
    printf("Consumer consumes item %d\n",x);
    x--;
    mutex=signal(mutex);
}

```

OUTPUT:

```
ushasree@ushasree:~$ subl OSLAB6.c
ushasree@ushasree:~$ cc OSLAB6.c
ushasree@ushasree:~$ ./a.out
enter buffer size
4

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:2
Buffer is empty!!

Enter your choice:3
ushasree@ushasree:~$
```