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#include<stdio.h>
#include<stdlib.h>
int mutex=1,full=0,empty=3,x;
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);
    printf("Enter the value:");

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scanf("%d",&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);
}
```