#include<stdio.h>

#include<unistd.h>

#include<pthread.h>

#include<semaphore.h>

int buff[5],f,r;

sem\_t mutex,full,empty;

void\*produce(void\*arg){

int i;

for(i=0;i<5;i++){

sem\_wait(&empty);

sem\_wait(&mutex);

printf("Produced item is : %d\n",i);

buff[(++r)%5]=i;

sleep(5);

sem\_post(&mutex);

sem\_post(&full);

}

}

void \*consume(void \*arg){

int item,i;

for(i=0;i<5;i++){

sem\_wait(&full);

sem\_wait(&mutex);

item=buff[(++f)%5];

printf("Consumed item is %d\n",item);

sleep(2);

sem\_post(&mutex);

sem\_post(&empty);

}

}

int main(){

pthread\_t t1,t2;

sem\_init(&full,0,0);

sem\_init(&mutex,0,1);

sem\_init(&empty,0,5);

pthread\_create(&t1, NULL,produce,NULL);

sleep(5);

pthread\_create(&t2, NULL,consume,NULL);

pthread\_join(t1,NULL);

pthread\_join(t2,NULL);

sem\_destroy(&mutex);

sem\_destroy(&full);

sem\_destroy(&empty);

}