```c
#include<stdio.h>
#include<semaphore.h>
#include<pthread.h>

int buffer[10],tid1,tid2,cnt = 0;
void *producer();void *consumer();
void *ret;
sem_t s1,s2;
pthread_t pro,con;

void main()
{
      sem_init(&s1,0,0);
      sem_init(&s2,0,1);
      tid1 = pthread_create(&pro,NULL,&producer,NULL);
      if(tid1 == 0)
            printf("\nproducer created successfully");
      tid2 = pthread_create(&con,NULL,&consumer,NULL);
      if(tid2 == 0)
            printf("\nconsumer created successfully");
      pthread_join(pro,NULL);
      pthread_join(con,NULL);
      sem_destroy(&s1);
      sem_destroy(&s2);
}

void *producer()
{
      int item_produced = 0,i;
      while(1)
      {
            printf("\nproducing..");
            sem_wait(&s2);
            while(cnt < 10)
            {
                  item_produced++;
                  buffer[cnt] = item_produced;
                  printf("\nitem produced : %d",item_produced);
                  cnt++;
            }
            sem_post(&s1);
            sleep(1);
      }
      return(&ret);
}

void *consumer()
{
      int item_consumed;
      printf("\nconsuming..");
      while(cnt >= 0)
      {
            sem_wait(&s1);
            cnt--;
            item_consumed = buffer[cnt];
            printf("\nitem consumed : %d",item_consumed);
            sem_post(&s2);
            sleep(1);
      }
      return(&ret);
}
```