**// PRODUCER CONSUMER PROBLEM**

#include<stdio.h>

#include<semaphore.h>

#include<pthread.h>

#include<unistd.h>

sem\_t e,f,s;

int buffer[5], in=0, out=0;

void \*prod(void \*arg){

int data = \*(int\*)arg;

sem\_wait(&e);

sem\_wait(&s);

buffer[in]=data;

printf("\nProduced data %d", data);

in=(in+1)%5;

//printf("Produced data %d", data);

sem\_post(&s);

sem\_post(&f);

}

void \*cons(void \*arg){

int data;

do{

sem\_wait(&f);

sem\_wait(&s);

data = buffer[out];

printf("\nConsumed data %d", data);

out = (out+1) %5;

sem\_post(&s);

sem\_post(&e);

sem\_getvalue(&e, &data);

}while(data !=5);

}

void main(){

int i;

int cell=1;

pthread\_t p[10],c;

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

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

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

for(i=0; i<10; i++){

pthread\_create(&p[i], NULL, prod, (void \*) &i);

}

pthread\_create(&c, NULL, cons, (void \*) &cell);

for(i=0; i<10; i++){

pthread\_join(p[i],NULL);

}

pthread\_join(c,NULL);

}

**// OUTPUT**

[student@localhost ~]$ gcc a.c -lpthread

[student@localhost ~]$ ./a.out

Produced data 3

Produced data 4

Produced data 4

Produced data 4

Produced data 5

Consumed data 3

Produced data 6

Consumed data 4

Consumed data 4

Consumed data 4

Consumed data 5

Consumed data 6

Produced data 9

Produced data 8

Produced data 7

Consumed data 9

Consumed data 8

Consumed data 7

Produced data 10

Consumed data 10