**Program 3**

**AIM:** To Write a C program to simulate producer-consumer problem using semaphores.

#include <stdio.h>

int buffer[10], bufsize = 10, in = 0, out = 0;

void produce()

{

int produce;

if ((in + 1) % bufsize == out)

{

printf("\nBuffer is Full");

return;

}

printf("\nEnter the value: ");

scanf("%d", &produce);

buffer[in] = produce;

in = (in + 1) % bufsize;

}

void consume()

{

int consume;

if (in == out) {

printf("\nBuffer is Empty");

return;

}

consume = buffer[out];

printf("\nThe consumed value is %d", consume);

out = (out + 1) % bufsize;

}

int main()

{

int choice = 0;

while (choice != 3)

{

printf("\n1. Produce\t2. Consume\t3. Exit");

printf("\nEnter your choice: ");

scanf("%d", &choice);

switch (choice)

{

case 1:

produce();

break;

case 2:

consume();

break;

case 3:

break;

default:

printf("\nInvalid choice! Enter again.");

}

}

return 0;

}