**EXPERIMENT 10**

**Aim :**

Write a program to implement Producer-Consumer problem using Threads.

**Code :**

import java.util.LinkedList;

public class Threadexample {

    public static void main(String[] args) {

        throws InterruptedException {

            final PC pc = new PC();

            Thread t1 = new Thread(new Runnable() {

                @Override

                public void run() {

                    try {

                        pc.produce();

                    }

                catch (InterruptedException e) {

                    e.printStackTrace();

                }

                }

            });

            Thread t2 = new Thread(new Runnable() {

                @Override

                public void run(){

                    try {

                        pc.consume();

                    }

                catch (InterruptedException e) {

                    e.printStackTrace();

                }

                }

            });

            t1.start();

            t2.start();

            t1.join();

            t2.join();

        }

        public static class PC {

            LinkedList<Integer> list = new LinkedList<>();

            int capacity = 2;

            public void produce() throws InterruptedException {

                int value = 0;

                while (true) {

                    synchronized (this) {

                        while (list.size() == capacity)

                            wait();

                        System.out.println("Producer produced-"+ value);

                        list.add(value++);

                        notify();

                        Thread.sleep(1000);

                    }

                }

            }

            public void consume() throws InterruptedException {

                while (true) {

                    synchronized (this) {

                        while (list.size() == 0)

                            wait();

                        int val = list.removeFirst();

                        System.out.println("Consumer consumed-"+ val);

                        notify();

                        Thread.sleep(1000);

                    }

                }

            }

        }

    }

}

**Output Screenshot :**

