S.No: 27	Exp. Name: ***Program that correctly implements Producer Consumer problem using the concept of Inter Thread communication.***	Date:2023-09-25

Aim:

Write a **Java** program that correctly implements **Producer Consumer** problem using the concept of **Inter Thread communication**.

Sample Input and Sample Output:

```
PUT:0
GET:0
PUT:1
GET:1
PUT:2
GET:2
PUT:3
GET:3
PUT:4
GET:4
PUT:5
GET:5
```

Note: Iterate the **while-loop** in **run()** method upto **5** times in **Producer** and **Consumer** Class.

Source Code:

ProdCons.java

```
class Q
{
   int n;
   boolean statusFlag=false;
   synchronized void put(int n)
   {
      try
      {
         while(statusFlag)
         {
            wait();
         }
      }
      catch(InterruptedException e)
      {

      }
      this.n=n;
      System.out.println("PUT:"+n);
      statusFlag=true;
      notify();
   }
   synchronized int get()
   {
     try
      {
         while(!statusFlag)
```

```
         }
      }
   catch(InterruptedException e)
   {

   }
   statusFlag=false;
   System.out.println("GET:"+n);
   notify();
   return n;
   }
}
class Producer implements Runnable
{
   Q q;
   Producer(Q q)
   {
      this.q=q;
      new Thread(this,"Producer").start();
   }
   public void run()
   {
      int i=0;
      while(true)
      {
         q.put(i++);
         if(i==6)
            System.exit(0);
         }
      }
   }
class Consumer implements Runnable
{
   Q q;
   Consumer(Q q)
   {
      this.q=q;
      new Thread(this,"Consumer").start();
   }
   public void run()
   {
      while(true)
      {
         q.get();
      }
   }
}
public class ProdCons
{
   public static void main(String args[])
   {
      Q q=new Q();
      Producer p=new Producer(q);
      Consumer c=new Consumer(q);
   }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
PUT:0
GET:0
PUT:1
GET:1
PUT:2
GET:2
PUT:3
GET:3
PUT:4
GET:4
PUT:5
GET:5