S.No: 27	Exp. Name: ***Program that correctly implements Producer Consumer problem using the concept of Inter Thread communication.***	Date:2023-12-01

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)
         wait();
      }
      catch(InterruptedException e){}
      statusFlag=false;
      System.out.println("GET:"+n);
      notify();
      return n;
   }
```

```
}
      class Procedure implements Runnable
      {
         Q q;
         Procedure(Q q)
         {
            this.q=q;
            new Thread(this,"Procedure").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();
         Procedure p=new Procedure(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

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PUT:3
GET:3
PUT:4
GET:4
PUT:5
GET:5