1> Demonstrate Inter process Communication and deadlock.

```java
class Q {
    int n;
    boolean valueSet = false;
    synchronized int get() {
        while (!valueSet) {
            try {
                System.out.println(" In Consumer waiting In");
                wait();
            }
            catch (InterruptedException e)
            {
                System.out.println("Interrupted Exception caught");
            }
        System.out.println("Got: " + n);
        valueSet = false;
        System.out.println("InIntimate Producer In");
        notify();
        return n;
    }
    }
        synchronized void put(int n) {
            while (valueSet)
                try {
                    System.out.println("InProducer waiting In");
                    wait();
                }
                catch (InterruptedException caught e) {
                    System.out.println("Interrupted Exception caught");
                }
                this.n = n;
                valueSet = true;
```

```java
        System.out.println("Put:"+n);
        System.out.println("In Intimate Consumer\n");
        notify();
        }
    }

class Producer implements Runnable{
        Q q;
        Producer(Q q){
            this.q=q;
            new Thread(this,"Producer").start();
        }
        public void run(){
            int i=0;
            while(i<15){
                q.put(i++);
            }
        }
    }

class Consumer implements Runnable{
        Q q;
        Consumer(Q q){
            this.q=q;
            new Thread(this,"consumer").start();
        }
        public void run(){
            int i=0;
            while(i<15){
                int r=q.get();
                System.out.println("consumed:"+r);
                i++;
            }
        }
    }
```

```
class PCFixed{
        public static void main(String args[]){
                Q q=new Q();
                new Producer(q);
                new Consumer(q);
                System.out.println("Press Control-C to stop.");
        }
}
```

Output:
Put : 0
Intimate Consumer
Producer waiting
Press Control-C to stop
Got : 0
Intimate Producer
consumed : 0
Put : 1
Intimate Producer
Producer waiting
Got : 1
Intimate Producer
consumed : 1
Got : 2
Intimate Consumer
Producer waiting
Got : 2
Intimate Producer
consumed : 2
Put : 3