PRACTICAL NO. 1

Aim: Process Communication

```
public class Pc{
	public static void main(String[] args){
		Shop c = new Shop();
		Producer p1 = new Producer(c, 1);
		Consumer c1 = new Consumer(c, 1);
		p1.start();
		c1.start();
	}
}
class Shop{
	private int materials;
	private boolean available = false;
	public synchronized int get(){
		while (available == false){
			try {
				wait();
			}
			catch (InterruptedException ie){}
		}
		available = false;
		notifyAll();
		return materials;
	}
	public synchronized void put(int value){
		while (available == true){
			try {
				wait();
			}
			catch (InterruptedException ie){
				ie.printStackTrace();;
			}
		}
		materials = value;
		available = true;
		notifyAll();
	}
}
class Consumer extends Thread{
	private Shop Shop;
	private int number;
	public Consumer(Shop c, int number){
		Shop = c;
```

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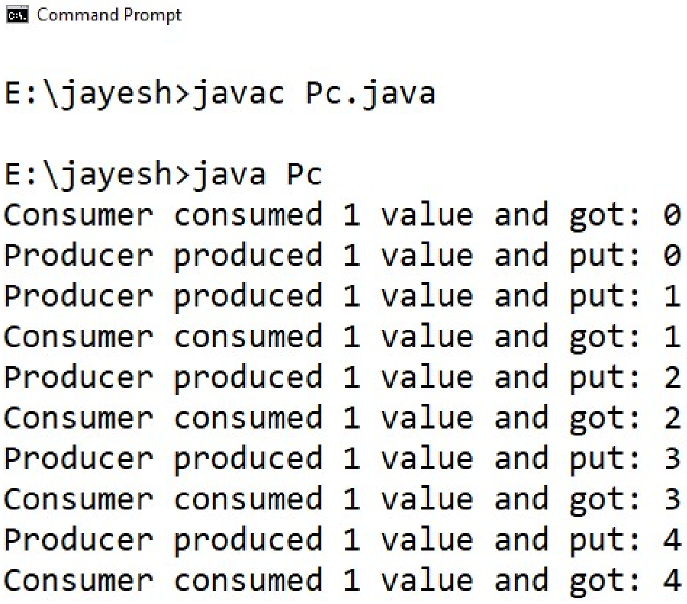
        this.number = number;
    }
    public void run(){
        int value = 0;
        for (int i = 0; i < 10; i++){
            value = Shop.get();
            System.out.println("Consumer consumed "+this.number+" value and got:
"+value);
        }
    }
}
class Producer extends Thread{
    private Shop Shop;
    private int number;
    public Producer(Shop c, int number){
        Shop = c;
        this.number = number;
    }
    public void run(){
        for(int i =0;i < 10; i++){
            Shop.put(i);
            System.out.println("Producer produced "+this.number+" value and put: "+i);
            try{
                sleep((int)(Math.random() *100));
            }
            catch(InterruptedException ie){
                ie.printStackTrace();
            }
        }
    }
}
```



```
E:\jayesh>javac Pc.java

E:\jayesh>java Pc
Consumer consumed 1 value and got: 0
Producer produced 1 value and put: 0
Producer produced 1 value and put: 1
Consumer consumed 1 value and got: 1
Producer produced 1 value and put: 2
Consumer consumed 1 value and got: 2
Producer produced 1 value and put: 3
Consumer consumed 1 value and got: 3
Producer produced 1 value and put: 4
Consumer consumed 1 value and got: 4
```