

**Course Name: A Level (2nd Sem)**

**Topic : Synchronization in Java**

**Subject: JAVA**

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## **Synchronization in Java:**

Synchronization is a process when we make sure that resource will be used by only one thread at a time. We use thread synchronization to prevent thread interference. If we do not use synchronization, and let two or more threads access a shared resource at the same time, it will lead to distorted results.

The synchronization keyword in java creates a block of code referred to as critical section.

thread synchronization can be implemented by using following methods:

### **1) Synchronized method:**

Synchronized method is used to lock an object for any shared resource. To synchronize the below mentioned program, we must synchronize access to the shared printTable() method, making it available to only one thread at a time. This is done by using keyword synchronized with printTable() method.

```
class Table{
    synchronized void printTable(int n){
        for(int i=1;i<=4;i++){
            System.out.println(n*i);
        }
        try
        {
            Thread.sleep(400);
        }
        catch(Exception e)
        {
            System.out.println(e);
        }
    }
}
```

This method  
is made  
synchronized  
to avoid  
inconsistent  
result

```
class Thread1 extends Thread{
    Table t;
    Thread1(Table t){
        this.t=t;
    }
}
```

```

    }
    public void run(){
    t.printTable(3);
    }

}

class Thread2 extends Thread{
    Table t;
    Thread2(Table t){
    this.t=t;
    }
    public void run(){
    t.printTable(7);
    }
}

public class Main{
    public static void main(String args[]){
    Table alo = new Table();
    Thread1 t1=new Thread1(alo);
    Thread2 t2=new Thread2(alo);
    t1.start();
    t2.start();
    }
}

```

### **Exercise:**

1. What is Synchronization in java?Explain.
2. Why is synchronized method used in java?what will happen if we do not synchronize a method?