
Practical - 08

=====

Student Name : Vinni Fengade
Roll No. : 67
Sem & Sec : 4 CSE [B]
Course Name : Object Oriented Programming (CSP256)
Date Compiled : 16-July-2022

=====

Problem Statements:

8.Demonstrate the use of Multithreading.

Consider a website publishes live cricket score. The server thread can change the contents of the website whereas all the client threads read the score. Write the code to demonstrate all the functionalities.

Code

File : **Project8 2.java**

```
package com.mycompany.project8_2;
import java.util.ArrayList;

public class Project8_2 {

    public static void main(String[] args) throws InterruptedException {
        ArrayList<Integer> Score=new ArrayList<>();
        Score.add(0);
        int update=0;

        Thread S=new Thread(new Server(Score,update));
        Thread c1 =new Thread(new Client(Score,update,1));
        Thread c2 =new Thread(new Client(Score,update,2));
        Thread c3 =new Thread(new Client(Score,update,3));

        S.start();
        Thread.currentThread().sleep(100);

        c1.start();
        Thread.currentThread().sleep(100);

        c2.start();
        Thread.currentThread().sleep(100);

        c3.start();
        Thread.currentThread().sleep(100);
    }
}
```

File : Server.java

```
package com.mycompany.project8_2;
import java.util.ArrayList;

public class Server implements Runnable{
    ArrayList<Integer> x;
    int update;
    public Server(ArrayList<Integer> x,int update) {
        this.x = x;
        this.update=update;
    }

    @Override
    public void run(){
        for(int i =0;i<10;i++)
        {
            try {
                Thread.sleep(1000);
            } catch (InterruptedException ex) {
                System.out.println("Interrupted");
            }
            synchronized(x){
                i+=1;
                update=0;
                x.set(0,i);
                System.out.println("\n Server "+"Score : "+x.get(0));
                x.notifyAll();
            }
        }
    }
}
```

File : Client.java

```
package com.mycompany.project8_2;

import java.util.ArrayList;

public class Client implements Runnable {
    ArrayList<Integer> x;
    int update,id;
    Client(ArrayList<Integer> Score, int update,int id) {
        this.x = Score;
        this.update=update;
        this.id=id;
    }

    @Override
    public void run(){
        for(int i =0;i<10;i++)
        {
            if(update!=0);
            {
                synchronized (x){
                    try {
                        x.wait();
//                        System.out.println("wait:"+id);
                    } catch (InterruptedException ex) {
                        System.out.println("fff");
                    }
                }
            }

            synchronized (x) {
                update+=1;
                System.out.println("Client "+id+" Score : "+x.get(0));
            }
        }
    }
}
```