SHIFA KHAN
21BBS0255

JAVA PROGRAMMING
LA - 5

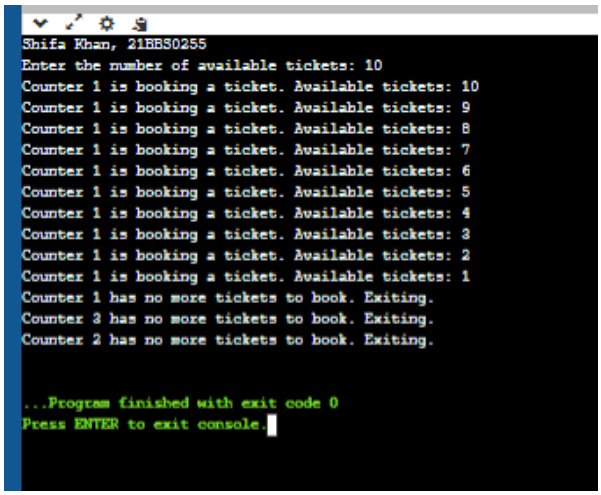
Q1 *Write a synchronization program for the ticket booking process in the theatre. Consider three counters for booking and have num_tickets as a common variable holding available tickets. When counter1 is using it others should not access variable num_tickets.*

CODE:

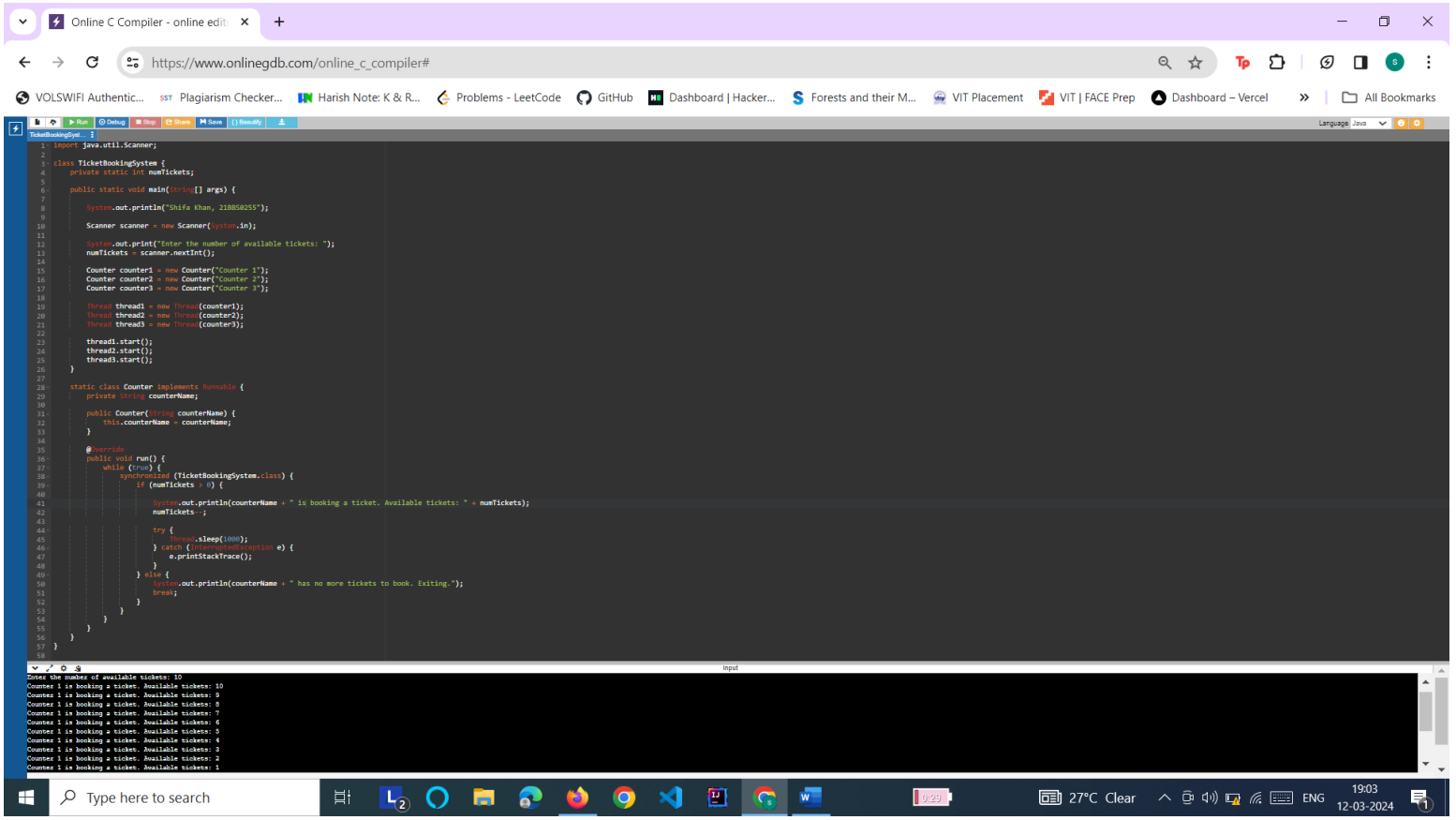
```
import java.util.Scanner;


class TicketBookingSystem {
   private static int numTickets;


   public static void main(String[] args) {


      System.out.println("Shifa Khan, 21BBS0255");


      Scanner scanner = new Scanner(System.in);


      System.out.print("Enter the number of available tickets: ");
      numTickets = scanner.nextInt();


      Counter counter1 = new Counter("Counter 1");
      Counter counter2 = new Counter("Counter 2");
      Counter counter3 = new Counter("Counter 3");


      Thread thread1 = new Thread(counter1);
      Thread thread2 = new Thread(counter2);
      Thread thread3 = new Thread(counter3);


      thread1.start();
      thread2.start();
      thread3.start();
   }


   static class Counter implements Runnable {
      private String counterName;
```

```
    public Counter(String counterName) {
        this.counterName = counterName;
    }

    @Override
    public void run() {
        while (true) {
            synchronized (TicketBookingSystem.class) {
                if (numTickets > 0) {

                    System.out.println(counterName + " is booking a ticket. Available tickets: " + numTickets);
                    numTickets--;

                    try {
                        Thread.sleep(1000);
                    } catch (InterruptedException e) {
                        e.printStackTrace();
                    }
                } else {
                    System.out.println(counterName + " has no more tickets to book. Exiting.");
                    break;
                }
            }
        }
    }
}
```

OUTPUT:



SCREENSHOT:


Online C Compiler - online edit
https://www.onlinegdb.com/online_c_compiler#
VOLSWIFI Authentic...
Plagiarism Checker...
Harish Note: K & R...
Problems - LeetCode
GitHub
Dashboard | Hacker...
Forests and their M...
VIT Placement
VIT | FACE Prep
Dashboard – Vercel
All Bookmarks
Run
Debug
Stop
Share
Save
Beautify
Language Java
TicketBookingSyst...
import java.util.Scanner;
class TicketBookingSystem {
private static int numTickets;
public static void main(String[] args) {
System.out.println("Shifa Khan, 21BBS0255");
Scanner scanner = new Scanner(System.in);
System.out.print("Enter the number of available tickets: ");
numTickets = scanner.nextInt();
Counter counter1 = new Counter("Counter 1");
Counter counter2 = new Counter("Counter 2");
Counter counter3 = new Counter("Counter 3");
Thread thread1 = new Thread(counter1);
Thread thread2 = new Thread(counter2);
Thread thread3 = new Thread(counter3);
thread1.start();
thread2.start();
thread3.start();
}
static class Counter implements Runnable {
private String counterName;
public Counter(String counterName) {
this.counterName = counterName;
}
@Override
public void run() {
while (true) {
synchronized (TicketBookingSystem.class) {
if (numTickets > 0) {
System.out.println(counterName + " is booking a ticket. Available tickets: " + numTickets);
numTickets--;
try {
Thread.sleep(1000);
} catch (InterruptedException e) {
e.printStackTrace();
}
} else {
System.out.println(counterName + " has no more tickets to book. Exiting.");
break;
}
}
}
}
}
Input
Enter the number of available tickets: 10
Counter 1 is booking a ticket. Available tickets: 10
Counter 1 is booking a ticket. Available tickets: 9
Counter 1 is booking a ticket. Available tickets: 8
Counter 1 is booking a ticket. Available tickets: 7
Counter 1 is booking a ticket. Available tickets: 6
Counter 1 is booking a ticket. Available tickets: 5
Counter 1 is booking a ticket. Available tickets: 4
Counter 1 is booking a ticket. Available tickets: 3
Counter 1 is booking a ticket. Available tickets: 2
Counter 1 is booking a ticket. Available tickets: 1
Type here to search
27°C Clear
ENG
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12-03-2024