Practical 8

AIM: **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.**

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Subject: OOPS

Code:

```java
import java.util.concurrent.atomic.AtomicInteger;

class CricketScore {

private static final AtomicInteger score = new
AtomicInteger(100);

public static void main(String[] args) {
Thread serverThread = new Thread(() -> {
while (true) {
try {
Thread.sleep(1000);
} catch (InterruptedException e) {
e.printStackTrace();
}

score.incrementAndGet();
System.out.println("Server: Updated score to " + score);
}
```

```java
});

Thread clientThread = new Thread(() -> {
while (true) {
try {
Thread.sleep(1000);
} catch (InterruptedException e) {
e.printStackTrace();
}

System.out.println("Client: Read score as " + score);
}
});

serverThread.start();
clientThread.start();
}
}
```

Output:

Practical 8 ⟩ src ⟩ CricketScore ⟩ main

Main.java ×   client.java ×

Run: CricketScore ×

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:D:\IntelliJ\IntelliJ IDEA Community Edition
2023.1.2\lib\idea_rt.jar=57428:D:\IntelliJ\IntelliJ IDEA Community Edition 2023.1.2\bin" -Dfile
.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath "E:\RCOEM 4TH
Semester\Java VSC (Errors)\LabPracticals\Practical 8\Practical 8\out\production\Practical 8" CricketScore
Server: Updated score to 101
Client: Read score as 101
Server: Updated score to 102
Client: Read score as 101
Server: Updated score to 103
Client: Read score as 103
Client: Read score as 104
Server: Updated score to 104
Server: Updated score to 105
Client: Read score as 105
Server: Updated score to 106
Client: Read score as 105
Client: Read score as 106
```

Version Control   Run   TODO   Problems   Terminal   Services   Build

Build completed successfully in 4 sec, 858 ms (6 minutes ago)   33:30 LF UTF-8 4 spaces

27°C
Haze

ENG
US   20:16
               14-07-2023

Practical 8 ⟩ src ⟩ CricketScore ⟩ main

Main.java ×   client.java ×

Run: CricketScore ×

```
Server: Updated score to 104
Server: Updated score to 105
Client: Read score as 105
Server: Updated score to 106
Client: Read score as 105
Client: Read score as 106
Server: Updated score to 107
Client: Read score as 107
Server: Updated score to 108
Client: Read score as 108
Server: Updated score to 109
Client: Read score as 109
Server: Updated score to 110
Server: Updated score to 111
Client: Read score as 110
Server: Updated score to 112
Client: Read score as 112
```

Version Control   Run   TODO   Problems   Terminal   Services   Build

Build completed successfully in 4 sec, 858 ms (6 minutes ago)   33:30 LF UTF-8 4 spaces

AH43 / NH44 /...
Construction

ENG
US   20:17
               14-07-2023

```
Server: Updated score to 108
Client: Read score as 108
Server: Updated score to 109
Client: Read score as 109
Server: Updated score to 110
Server: Updated score to 111
Client: Read score as 110
Server: Updated score to 112
Client: Read score as 112
Client: Read score as 113
Server: Updated score to 113
Server: Updated score to 114
Client: Read score as 113
Client: Read score as 114
Server: Updated score to 115
Client: Read score as 115
Server: Updated score to 116
```
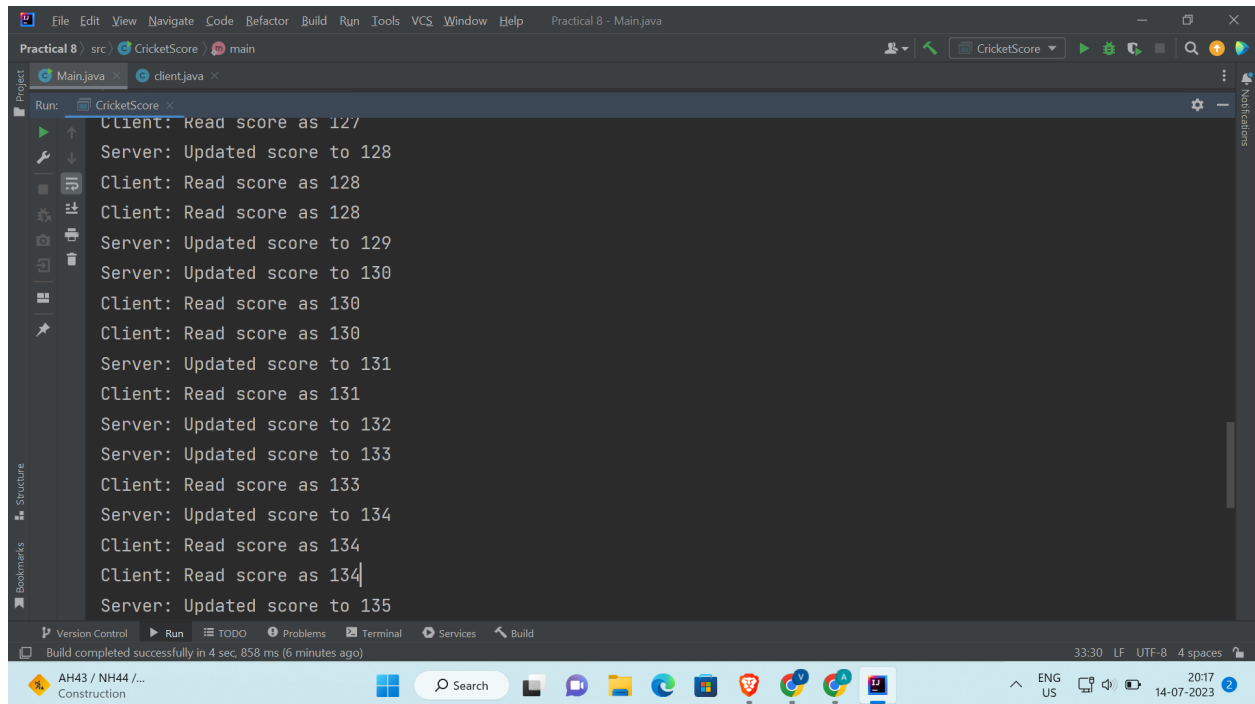
```
Client: Read score as 113
Server: Updated score to 113
Server: Updated score to 114
Client: Read score as 113
Client: Read score as 114
Server: Updated score to 115
Client: Read score as 115
Server: Updated score to 116
Server: Updated score to 117
Client: Read score as 116
Client: Read score as 117
Server: Updated score to 118
Client: Read score as 118
Server: Updated score to 119
Server: Updated score to 120
Client: Read score as 120
Client: Read score as 120
```

```
Server: Updated score to 118
Client: Read score as 118
Server: Updated score to 119
Server: Updated score to 120
Client: Read score as 120
Client: Read score as 120
Server: Updated score to 121
Server: Updated score to 122
Client: Read score as 122
Client: Read score as 122
Server: Updated score to 123
Server: Updated score to 124
Client: Read score as 124
Client: Read score as 124
Server: Updated score to 125
Server: Updated score to 126
Client: Read score as 125
```

```
Client: Read score as 122
Server: Updated score to 123
Server: Updated score to 124
Client: Read score as 124
Client: Read score as 124
Server: Updated score to 125
Server: Updated score to 126
Client: Read score as 125
Server: Updated score to 127
Client: Read score as 127
Server: Updated score to 128
Client: Read score as 128
Client: Read score as 128
Server: Updated score to 129
Server: Updated score to 130
Client: Read score as 130
Client: Read score as 130
```

Main.java ×   client.java ×

Run: CricketScore ×

Client: Read score as 127
Server: Updated score to 128
Client: Read score as 128
Client: Read score as 128
Server: Updated score to 129
Server: Updated score to 130
Client: Read score as 130
Client: Read score as 130
Server: Updated score to 131
Client: Read score as 131
Server: Updated score to 132
Server: Updated score to 133
Client: Read score as 133
Server: Updated score to 134
Client: Read score as 134
Client: Read score as 134
Server: Updated score to 135

Version Control   ▶ Run   TODO   Problems   Terminal   Services   Build
Build completed successfully in 4 sec, 858 ms (6 minutes ago)   33:30 LF UTF-8 4 spaces

Result:

Successful execution of Threads.