

Assignment 02

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Computer Networks

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Question 1

Explanation:

Teacher Client is asked to verify, once teacher is verified, he/she can update the database. Teacher clients (TCP) send requests to the server and the server saves those changes in the database. Whereas the Student clients (UDP) can only view his/her details. Thus, it can only request to view its details from the server.

Server:

```
Starting Teacher-Student Record Management Server...
Loaded 2 student records from database.
TCP server started on port 8888
UDP server started on port 8889
TCP client connected: 127.0.0.1:49872
TCP client connected: 127.0.0.1:49873
Database saved with 3 records.
Database saved with 3 records.
UDP request from 127.0.0.1:53671 - Student ID: S002
```

Teacher (UDP Client):

Teacher 1

```
Authentication successful. Welcome, Teacher T001!
```

1. Add a Student Record
2. Edit an Existing Record
3. View All My Student Records
4. Save Data to File
5. Exit

```
Enter your choice: 1
```

```
Enter student details in the following format:
```

```
(ID,Name,Course,Assignment,Quiz,Sessional,Final,Remarks)
```

```
S002,Beck,Physics,78,45,67,89,Good Efforts
```

```
Student record added successfully.
```

```
Enter your choice: 2
```

```
Enter student ID to edit: S002
```

```
Current data: S002,Beck,Physics,78,45,67,89,Good Efforts,T001
```

```
Enter updated details in the below format (leave empty to keep current value):
```

```
AssignmentMarks,QuizMarks,SessionalMarks,FinalMarks,Remarks
```

```
,23,,,
```

```
Student record updated successfully.
```

Teacher 2

```
Teacher Client for Record Management System
```

```
=====
```

```
Connecting to server at 127.0.0.1:8888...
```

```
Connected to server successfully.
```

```
Welcome to the Teacher Portal. Please authenticate.
```

```
Enter your Teacher ID: T004
```

```
Enter your password: 4444
```

```
Authentication successful. Welcome, Teacher T004!
```

1. Add a Student Record
2. Edit an Existing Record
3. View All My Student Records
4. Save Data to File
5. Exit

```
Enter your choice: 3
```

```
Student Records for Teacher T004:
```

```
ID,Name,Course,Assignment,Quiz,Sessional,Final,Remarks
```

```
S005,Alicia,Maths,89,65,56,43,Not really good
```

```
Enter your choice: 5
```

```
Thank you for using the system. Goodbye!Connection closed by server.
```

```
Teacher client application closed.
```

Student (TCP Client):

Student Client for Record Management System

=====

Enter your Student ID (or 'exit' to quit): S002

Sending request for student ID: S002

===== STUDENT RECORD =====

Student Record

ID: S002

Name: Beck

Course: Physics

Assignment Marks: 78

Quiz Marks: 45

Sessional Marks: 67

Final Marks: 89

Total Marks: 279

Remarks: Good Efforts

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