

Section B is of 10 marks.

There shall be a client and a server. Client always initiates the connection. This program requires reliable TCP communication to verify and mark attendance. Given below are the requirements of client and server.

Evaluation criteria:

1. Total exam is for 10 marks.
2. Server implementation of TCP Iterative server - 4 marks
3. Client implementation - 4 marks
4. Concurrency in server - 2 marks

Server :

1. Server maintains list of roll numbers. (Read the data.csv in this folder. First field contains roll number, second field contains secret question and third field contains answers to secret question)
2. Server also maintains puzzle / secret question that is associated with each roll number (along with correct answer).
3. Server is always in listening mode for potential attendance swipe/posts.
4. Server is equipped to handle multiple clients at same time.
5. Server responds to client requests based on keywords. Server needs to remember functionalities of each keyword.
6. When server receives MARK-ATTENDANCE, it looks up list of all roll numbers from the given file (data.csv). If roll number does not exists, server sends to client ROLLNUMBER-NOTFOUND. Other wise, server responds to client with secret question Syntax: SECRETQUESTION-Questionitself.
7. Server parses SECRETANSWER text, and verifies it with actual answer and responds ATTENDANCE FAILUE/SUCCESS depending on match with-in the given file.
8. If attendance status is ATTENDANCE-FAILURE, server re sends the secret question Syntax: SECRETQUESTION Questionitself.

Client :

1. Client program always initiates the connection by sending roll number. Syntax MARK-ATTENDANCE ROLLNUMBER
2. Client program responds when it sees SECRETQUESTION text, with answer to the puzzle Syntax: SECRETANSWER Answeritself
3. Client program receives status of attendance, if it is ATTENDANCE FAILURE then it receives server SECRETQUESTION, and responds with correct answer.
4. When Client program receives ATTENDANCE-SUCCESS client closes the connection.

Bonus:

1. You may implement timeout/number of client responses when ATTENDANCE-FAILURE is beyond a limit.
2. Display in server list of all roll numbers that are present.