Computer Networks FALL 2020
Assignment No 2

Submission Deadline: 29/10/2020

Note:

- **This is individual assignment.**
- **If there is any kind of plagiarism, then you will be awarded with zero.**
- **C++ is preferred language for this assignment.**
- **Submission should be in Zip form with following format**
    - **I17-1011_Name_SECTION**

Question No 1:

Apart of their normal duty, Security guards of FAST-NU have to perform another task. That is, they have to mark attendance of all the faculty members at the time of their arrival. This certainly affects their job. FAST admin decided to adopt the solution proposed by a student of computer network class and the solution is explained below.

Every time when a faculty member enters his/her room and turned on his PC, a running program should send a message signal to the attendance server. And the attendance server should reply back with the current time. Attendance sever will also maintain the record of the attendance.

Being students of computer networks you learned how to write a simple TCP server and client. All you have to do is to write a server which should respond to the client's request in the following way.

1.Client will run a program and just provide his password.

2. There will be already available 1 txt file that contains following information

Name of Faculty Member and Subject he/she is currently teaching

*Client will send a message to Server in this format "**TIME IN: Ali Hassan PF**"*

*Server will respond with message "**TIME IN NOTED: 9/17/12 9:00:00 am**"*

Maximum no of pending clients could be 5

Server will also maintain the record of attendance in text files department wise. Currently you can consider 6 subjects (PF, OOP, Data Structure, Algo, CNET, COAL) so you have to create 6 different files for each subject and save attendance record of each faculty member in respective file. Output Format of each text File will be like this.

Serial No	Subject	Date	Time	Name
1	PF	9/17/12	12:35:00 pm	Ali Hassan

Server should keep running until all 10 clients have marked their attendance. After that it should terminate gracefully.

Note: Time format could vary depending on your implementation.

Question No 2:
Considering the centralized database server. You are provided by the sample dataset of the shopping store which will be on the server. Client can access that server and ask the query about the different invoice number and their respective values available in the given dataset. Server should maintain a log of access time of clients.

You need to create a connectionless client server model in which client will establish a connection with server. Client will ask about the specific invoice number and its attribute those client want to know. Server will send back that respective information to the client. The client can ask more than one query in a single connection.

If a client wants to delete some record, then one authentication message should be sent to all other clients if they allow it then he/she can delete the record otherwise you can print NOT ALLOWED. After record deletion a message about update of file should be sent to every client.

Client can do following tasks.

1. Reading
2. Delete some record (after permission from other clients).
3. Add new record (Provide update message to all other clients).
4. Client can request log of server access.