



National University
of computer and emerging sciences

Computer Networks - Fall 2021

Assignment No. 1

Submission Deadline: 6th October 2021 - 11:59pm (on google classroom)

Submission Guidelines

1. You can code your programs in either c or c++.
2. Late submissions will be marked zero.
3. Only zipped files are acceptable. Any other format will be marked zero.
4. Submit your zipped file with the naming convention: RollNo_YourName_Section.zip. The zipped file should contain two folders named Q1 and Q2 (containing server and client files).
5. Plagiarism in any of the questions will lead to zero marks in the whole assignment category.

Question No. 1:

In the Covid situation, the cafe of Fast University is too crowded which increases the risk of spreading covid among students. The administration of Fast decides to automate the process and adopt the solution proposed by a student of Computer Networks class which is explained below.

“They decide to install PCs at every table. The menu is also placed on every table. Every time the students enter the café, they get seated at a table and enter their order on the PC along with their name, roll number, and department. A running program should send a message to the cafe station server. The server will return the serving time of the order and after that time passes, the waiter will serve the order on the given table number.”

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

Input from user:

Department: “CS”

Name: “Maria Ali”

Roll number: “19I-0xxx”

Order: “1 roll paratha, 1 coke can”

Table number: 16

The client will send a message to the server in the following format:

“Order By: CS-Maria Ali-19I-0123-16

Order Item: 1 roll paratha-1 coke can”

The server will respond with the message:

“Order Noted: 9/17/12 9:00:00 am

Serving Time: 9/17/12 9:15:00 am”

The maximum no of pending clients could be 5.

As an additional feature, the university decides that the bills should be stored in files automatically in the backend so that a monthly bill is created for every member. Therefore, the server will also maintain the record of the order in text files department-wise. Currently, there are 4 Departments (CS, SE, AI, DS) so you have to create four different files for each department and save order records of each student in their particular file.

The output format of each text File will be like this.

Serial No	Department	Date	Time	Name	Order
1	CS	9/17/12	12:35:00 pm	Maria Ali	1 roll paratha , 1 coke can

The server should keep running until all 5 clients have placed their orders. After that, it should terminate gracefully.











Note: Time format could vary depending on your implementation.

Question No. 2:




Consider a centralized database server of movie ratings. You are provided by the sample dataset of the sentiments, polarity, and ratings of movies that will be present on the server. A client can access that server and ask the query about different movies. You need to create a connectionless client-server model in which the client will establish a connection with the server. The client will ask about the specific movie name and its attributes like sentiments, polarity, and ratings that the client wants to know. The server will send back that respective information to the client. The client can ask more than one query in a single connection.

The structure is as given below:

Movie Names

 2012	9/27/2021 3:18 PM	File folder
 A Beautiful Mind	9/27/2021 3:18 PM	File folder
 Amadeus	9/27/2021 3:18 PM	File folder
 Avatar	9/27/2021 3:18 PM	File folder
 Clash of the Titans	9/27/2021 3:18 PM	File folder
 Les Miserables	9/27/2021 3:18 PM	File folder
 Star Wars Episode I - The Phantom Mena...	9/27/2021 3:18 PM	File folder
 The Expendables I	9/27/2021 3:17 PM	File folder
 The Godfather	9/27/2021 3:17 PM	File folder
 The Matrix Revolutions	9/27/2021 3:17 PM	File folder

Their attributes

 polarity	2/28/2019 11:19 PM	Text Document	1 KB
 rating	8/5/2017 4:48 PM	Text Document	1 KB
 sentiments	8/5/2017 3:46 PM	Text Document	3 KB

Good Luck! :)