BLM3011 Operating Systems Project – V0

(Due 29/12/2023, 10.00)

Schedule about demo or control will be announced. You should follow the announcements from WhatsApp channel and e-mail.

Updates and additional explanations about the project will be announced from the link below until December 12. After, no questions will be accepted and no additional explanations will be added.

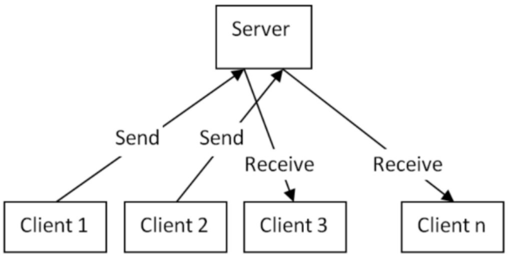
https://docs.google.com/document/d/e/2PACX-1vSIhagNMN6FODxzMnnCG-Rtd6wbJyRNZqiBJtyg_9bAQ1looSSbEwPq6RPcNINfyw/pub

ADDITIONAL EXPLANATIONS AND UPDATES:

1- …… (Added on xx.12.2023)

SUBJECT

You are required to implement a Multi-User MESSAGING application **without any graphical user interface(GUI) using C language.** The project should include 2 different programs which run independently on server-side and client-side. The server-side program would **listen to the clients** and capture messages and then deliver them to the corresponding client (user). The client-side programs would react like users and these programs could be run on different terminals simultaneously. The details of the system are given below. Please read them carefully and strictly conform to these details while implementing the system.



1. System Details

The server-side program would have the following capabilities:

It would

- listen to the clients continuously.

- deliver the messages to the corresponding user

- store all the user list of each client

- deliver the alert messages to the corresponding user

The client-side program would have the following capabilities:

User would

- display their contact list

- add/delete a user to/from contact list

- check message(s)

- write a message and send it to one of the users within the contact list

- receive a message and read it

- display the message history of each user within his/her contact list

(should be ordered by date ascending)

- delete corresponding message(s)

- see alert messages including "Message Received", "Message Sent",

2. TIPS AND HINTS

This project should be partitioned into several modules and each module should be implemented separately. You should also clearly define inputs and outputs of each module.

- There would be two separate programs. server.c and client.c

- Both programs should run on localhost but separately.

- **Only one server.exe would run at the same time whereas many clients.exe would run on different terminals simultaneously.**

- Each client should login to the system by sending his/her unique userid. □ .\client userid

- The server-side program should compare the userid to the userlist saved on the server-side. If the user does not exist within the list, the server should add the user to the list and create a contact list for that user.

- Each client should send a request to the server by selecting "CHECK MESSAGES" item in the menu in order to get new message(s).

- There will be 3 different types of messages.
  - Request for Login
  - Request for Sending a Message
  - Request for Receiving a Message

- The following information of the users should also be stored at server side: **UserID(unique), Mobile Phone Number, Name, Surname**

Do not forget to read documents about socket programming. Some pages regarding Socket programming.

-https://www.geeksforgeeks.org/socket-programming-cc/
-https://www.binarytides.com/socket-programming-c-linux-tutorial/
-https://www.csd.uoc.gr/~hy556/material/tutorials/cs556-3rd-tutorial.pdf

IMPORTANT NOTES REGARDING SUBMISSION

*** You should submit your project via online.yildiz.edu.tr. Other ways such as e-mail are prohibited. In case of negligence and violation of the rules, excuses will not be taken into consideration.

***** Project submission format for code and report** □ inside a rar file : **StudentID.rar. It must contain** □

(StudentID_Client.c, StudentID_Server.c and StudentID.pdf)

*** Only .c file is accepted, other languages including C++ are not acceptable. In this case, your project will be evaluated as 0.

*** You should analysis and design your project on basis of modular programming approach. In other words, your program is supposed to be divided into meaningful modules for every operation.

***** You must obey these rules about the content of the report**

1- Add your student ID, Name, Surname and Email address at the cover of your report.

2- Add your brief explanations about solving of the problem. If necessary for you, you can add a block scheme or flow chart showing your problem-solving approach.

3- Add function prototypes and their concise explanations regarding what inputs and outputs. are

4- Add program screen shots to show the running of your modules, such as sending or receiving of message, adding or removing of your contacts.

5- Don't add whole program code, pseudo-code or flow chart in your report.

***** Except for Socket programming issues, you CANNOT copy any code snippets from Internet and/or your friends. Otherwise, your project will be graded as zero.**

***** All submitted codes and report will be compared by Plagiarism programs. In case of high similarity, each of similar projects will be graded as zero.**

***** After submission, assessment and control list of the project will be announced via e-mail and WA Channel.**

***** You should conform to the general rules about project/homework submission and implementation detailed below**

https://docs.google.com/document/d/1pubjs8rWaKcbwgGaB6knu33yekZo-7hXpknUfMCEIfY/edit?usp=sharing

EXAMPLE

Each user should login to the system by typing UserID from terminal.

.\client 1

Client should send a message using the following format:

UserID of the receiver, message body.

For example in order to send a message to the user with UserID2, the client

should type:

□ 2 Nasilsin?

Your client program should have such a menu and should give the following

outputs for the given inputs:

1. List Contacts

2. Add User

3. Delete User

4. Send Message

5. Check Messages

…

□ Please type your choice? 1

Your contacts:

Userid	PhoneNumber	Name	Surname
1	555555555	Ali	Ates
2	666666666	Derin	Deniz
3	777777777	Demir	Bilek

□ Please type your choice? 4

2 Nasilsin?

□ Please type your choice? 5

You have messages from User 3

You have messages from User 2

Whose messages do you want to read? 3

Biraz gecikecegim.

Sen neredesin?