

Assignment 3 – Extension: Application development using TCP Socket

Time: 2 weeks

Write all the code using C/C++ programming languages. If you use C++, try avoiding any library support of Socket and Thread (if any).

Note: Once problems 1, 2 and 3 of Assignment-3 are completed, and then attempt the following problems

Problem-4: Enhanced Chat Application

This problem aims to get rid of the imitation stated in Problem-1. The chatting mechanism should be flexible, so sending and receiving messages should be concurrent. In other words, sending and receiving messages should not block each other. Users may send no or multiple messages before receiving a response from another party.

It can be achieved using the Process or Thread concept, where "reading a text from a user and sending" job can be given to a Process or a Thread. Again, the "receiving a text message and printing it in the console" job can be given to another Process or a Thread. In this assignment, you are encouraged to use the Thread concept instead of Process.

You are suggested to make sure that the termination of the chat session happens *gracefully!!*

Problem-5: Getting the date, time and other information from Server

Enhance the code of Problem-2 (keep the copy of problem-2 unchanged) to have the following support:

The client sends an integer value to the server, where each number has a different meaning.

- 1: Query for the time of the Server
- 2: Query for time date of the Server
- 3: Server Name

Other than these values, it is not unsupported by the server.

Problem-6: Enhanced Sorter Application

The TCP server application should be capable of accepting many TCP connections from multiple clients so that multiple sorting can happen concurrently at the Server.

Ask your instructors for some more improvements 😊