

Net-centric Programming

Lab: Simple TCP Socket

I. Objective:

- Get familiar with TCP Socket Programming using Golang

II. Questions:

- Server maintain a list of user record, each user contains the following information: username, password, full name, list of email, list of address (home address, working address,...)
 - Password must be encrypted, Base64 (or any) can be used
 - All user record must be save in .JSON or .GOB file
 - Authentication is needed when client connect to the server
 - Server also generate a random integer value and send back to client after authentication is finished. This key is unique among clients
 - Message exchange between client server need to attach this key as a prefix. Example: 125_Hello server , 125_Hello client
1. Guessing game:
 - As the game start, server generates a random number between 1 and 100
 - Client sends a guessed number input by user
 - Server sends back the indication where as the guessed number is larger or smaller than the result
 - This progress stop when user input the exact number
 - The game can be repeated or ended
 2. Improve the game above to support authentication and prefix data
 3. File download:
 - Client send request for the file that need downloaded (i.e. file name)
 - Server read the file content and send back to client
 - Only simple text file is supported. The file size can be large, upto 10MB
 - Optional: The program support user authentication and prefix

The end.