HOMEWORK 3, CS350 – Operating Systems

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Due Date: 11. May.2019, Saturday, 23:55

Restaurant Order Application

After solving the problems in the kitchen, OzU-Rest restaurant became quite popular among the campus. This increase in popularity however, brought another problem along. Now, they need to find a way to take orders from the customers beforehand, so that meal can be ready when they arrive. You are hired to implement a program that will be used to handle orders.

- There will be 2 parts of the program, **server** and the **client**.
- Server is responsible for **taking orders** from the customer and then **informing the kitchen**.
- Server should first send the **menu** *(Menemen, Chicken Pasta, Beef Steak, Ali Nazik)* to customer and wait for the choice.
- Customer can pick one of 4 available meals from the menu. Customer can only answer in given options (1, 2, 3, 4).
- After server is done with taking the order, it should start the kitchen process from **HW2** and the requested meal should be prepared in the kitchen. The process should only be seen in the server terminal.
- When the meal becomes ready, server should send the final message to customer and close the connection.

SUBMISSION

You should write **server.c** and **client.c** programs. You should use kitchen program from HW2 however, you need to modify it a bit for this homework. You can also integrate the modified version into **server.c** file if you want.

A. **Server.c** program (12 Pts):
   a. Binds a socket and starts listening incoming connections (2 pts)
   b. Accepts an incoming connection (2 pts)
   c. Once the connection is initialized with client, it should send the menu and handle incoming messages from client. (4 pts)
   d. Once the order is complete, it should start kitchen simulation from HW2 for the requested meal. (4 pts)

B. **Client.c** program (6 pts):
   a. Connects to the given server address and port (2 pts)
   b. Once the connection is initialized, it should exchange messages with the server (4 pts)

C. Write a **Makefile** that you can use to: (2 Pts)
   - Easily compile kitchen program (using "**`make`**" command)
   - Define dependencies such that if any of the ".c or .h" files change it should only recompile the modified files.
   - Clean all object files, server and client programs with "**`make clean`**" command.

SUBMISSION GUIDE: You will upload a single <*studentid*>*_hw3.tar.zip* file

1- Write your name in all of your source files, e.g. /* Ismail Ari, S0001 */
2- Make sure all codes compile and work properly. I will type only 3 commands: "make", "server", "client"
3- Put all files (*.c, *.h, Makefile,) in a **<studentid>_hw3** directory and use **tar** to package the files as ***<studentid>_hw3.tar*** (`tar -cvf <studentid>_hw3.tar <studentid>_hw3/`). **gzip hw3.tar** file to obtain ***<studentid>_hw3.tar.zip*** and upload this file. Replace <studentid> parts with your student id.