Final Exam [AsType: HomeWork]

| Name | Cins Apartment Management System |
|---|---|
| Domain | TCP-UDP/IP Socket Programming |
| Canonical Name | CinsApMaSys |
| Team Size | Max 2 students. |
| Start Date | 29 Dec 2022, 10:00 |
| Due Date | 12 Jan 2023, 23:50 |
| Assesment | Muhammet Erdem + Res.Asst. |
| Grading | Code [70] + Report described below [30] |

**Objective:**
In this homework, we are going to learn TCP-UDP/IP Programming for Client/Server Models.
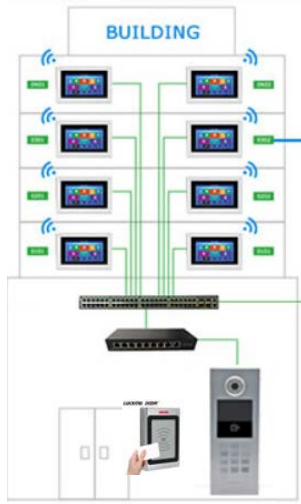
**Instruction Rules**:
**IR0**: Suppose, 8 families live in CinsApartment(No:101). All families have a computer/laptop that are connected to the same "IP Subnet" (There is no restriction in the communication base, such as firewall or another filter)
**IR1**: There is a single server (in the same Subnet) at the CinsAparment IT Room.
**IR2**: There is a single outer-gate of CinsApartment controlled by Card Reader (connected to Server).
**IR3**: You are supposed to develop CinsApMaSys that each computer and server. Each has a GUI based interface.
**IR4**: Server is responsible to collect weather/currency exchange info from internet servers weather.com and imkb.gov.tr respectively (Alternatives are going to be accepted).
**IR5**: The families side software GUI should be divided into continuously updated parts of;
  a. Weather Info division (updated from Server)
  b. Currency Exchange Info division (updated from Server)
  c. CardReader Info division (updated from Server) (i.e. Muhammed unlock the outer gate of CinsAparment with date/time record)
  d. Chat division (All families can join/write/read the chat on the screen in this division)

**IR4**: You are responsible for developing the necessary Server/Client systems (Card Reader Info can be manually added to a file (!) or physically card reader can be used. In reality CardReader part is not expected to be developed in this Hmw).
**IR5**: Asynchronous Sockets usage is expected.

**Materials:**
**M0**: Codes are written with C# using Asynchronous Sockets.
**M1**: TCP or UDP protocols can be used in the software development phase.
**M2**: Free to design the GUI (No need for professional looking screens).
**M3**: Your final report for FINAL HOMEWORK should be in the format of the following ***;
   **[****]D. B. Sam, S. Surya, and R. V. Babu, "Switching convolutional neural network for crowd counting," Proc. - 30th IEEE Conf. Comput. Vis. Pattern Recognition, CVPR 2017, vol. 2017-January, pp. 4031–4039, 2017, doi: 10.1109/CVPR.2017.429.**

**Warning:**
W1  : Late submittion (violation of Due date) is not accepted.
W2  : Homework must be prepared by max two-students. Otherwise it is not accepted.
W3  : If the following copyright issues are recognized, submittion is not accepted.
     a. Copy/paste from Internet
       b. Clone code from classmate
       c. Cheating from another team work.
W4  : Homework submission has to be done only through the Teams Platform (No need to present the homework).
W5  : Homeworks submitted via email are not accepted.

**Good Luck…..**