CSE 322
COMPUTER NETWORK SESSIONAL

ASSIGNMENT 1(A2/B1)

The assignment is to manage a simplified Weather Information Providing Facility using a Client-Server Model. There are two types of clients: Sensor and Subscriber. Server is responsible for managing the facility.

Sensor Responsibility

1. Connect to the server which runs at a predefined ip and port.
2. Register its location.
3. Sends the update of temperature and humidity of its location time to time to server. (Simulate the sensor activity by user intervention)
4. Disconnect

Subscriber Responsibility

1. Connect to the server which runs at a predefined ip and port.
2. Can register its preference of locations (one or more), for which it wants the weather update. If no preference is set, then the weather update of all the sensors are sent to them. Subscriber can change its preference in any time.
3. Disconnect

Server Responsibility

1. Runs prior to any client connection at a predefined ip and port.
2. When a sensor connects, it updates the sensor list with corresponding location.
3. When a subscriber connects, the server updates the subscriber connection list.
4. When a subscriber sends preference, it updates the preference list for that subscriber.
5. When a sensor sends an update, Server sends the update to each client which has subscribed for weather update of the location.
6. If a sensor disconnects, it updates the sensor list. Server also sends the update containing the current sensor list.
7. If a subscriber disconnects, Server has to update its subscriber connection list.

Prerequisites

1. Java Socket Programming (Ref: Deitel and Deitel)
2. Multithreading with synchronization.(Ref: Complete Reference: Herbert Schildt)
3. Graphical User Interface(Can use: NetBeans, JBuilder or similar IDE)

Note:
Both subscriber and server should be multithreaded.

- The server needs to process more than one subscriber and sensor at a time.
- A subscriber has to receive the update messages while sending any request to server.