Object-Oriented Programming and Design (CSE600A-ECE600A)

LAB ASSIGNMENT 4

This time you have to develop a group chatting application. You have to write a console based menu-driven program.

1. There will be 2 types of entities with a common abstract class. You will inherit two classes, Admin and User from this.
2. Entities (both Admin and user) can chat with each other on different groups (Class).
3. A User first have to request to become a member of that Group (Class). Only Admin can create a group and accept request of user to join in.
4. Entities send messages (Class) to each other on certain group.
5. Only Admin can create or delete a group.
6. A User can remove itself from any group.
7. An Entity can view all messages posted in a group.

There will be following fields in various entities:

1. User class will have username (UNIQUE), phone number and address and list of group attribute field.
2. User class will have function to send message, and to request to add or remove from a group.
3. Admin class will have function to send message as well as ability to create or delete group and accept pending user request to add.
4. Message class should have a message field, sender entity and group information in which it was posted.
5. Group class will have name and other relevant fields and functions to satisfy the requirement in the problem statement.

This time we are not giving you command line texts for the interface. You are free to design your own set of commands for the functionality required. In general each command should have a string id followed by parameters.

Trivia:

1. You should add methods in these classes for writing good object oriented code. Try to write a modular code.

2. You can create commands as you like but all functionalities should be implemented and should be accessible in a non-redundant way.

3. Handle all corner cases such as adding in the group in which entity is already added or accessing a group in which entity is not a member, etc.

4. Make any assumptions which are not mentioned in the problem statement and submit it in a separate file along with your assignment.

5. Assignment should be submitted on backpack and contain all binaries as well as source code in a single zip file.

BONUS: (10% of the assignment marks)

1. Implement feature to share a message from one group to another group. Entity sharing the message should be a member of both the groups.

2. Implement feature to reply to a certain message in a group. For this you will have to create a Reply class and an appropriate command to add/view the Reply.