

NYU School of Continuing and Professional Studies
Course Title: Object Oriented Analysis and Design
Fall 2011

Homework #6:

For this assignment, you will create an object-oriented design for an instant-messaging (IM) system, based on the requirements below.

System Requirements

You are to design a simple web-based instant-messaging system that is comprised of two parts – a desktop-based client component and a server-based back-end component.

Each user of the IM system will first have to register. Registration will be done via the Client. The user will submit their first name, last name, street, city, state, zip, work phone number and home phone number. Once approved by an administrative user in the Server, each user will receive a login name and password. When they log-in to the client, the Client will submit their credentials to the server for authentication. Once validated, the Client will display all users logged on or display an error message if their user id or password was incorrect. The system will track all user logins.

To send an instant message, a user will select one or more users from the list of logged-in users displayed by the client. The user will enter their message and send. The Client will then transmit the message to the Server. When the Server receives the transmission from the Client, the server looks for the intended recipient(s) and sends the message to them. The Client also allows users to create and maintain a log of their activity.

The Server is managed by one or more administrators. Administrators add, update and delete users, including approving user requests and adding administrators. Administrators can also monitor the communication between users. Administrators may also terminate conversations. Administrators are able to log into the Server component and are able to see a list of all users, users current logged in to the Client and to the Server, terminate connections and generate usage reports, i.e. who logged in, from where, who was the conversation with and for how long.

At the end of a “session”, a user can exit by logging out, either from the Client or Server components.

Your system will store all of its data in a relational database. You must incorporate the relational database into your OO design.

Project Requirements

This is not an implementation exercise. This project assumes you are all familiar with instant messages work. There is no requirement for any HTML or Java etc. Likewise, issues such as detailed session management, security; etc. are to be ignored.

The description above is limited to the user interaction. You should ignore details such as protocol(s), platform(s), language(s), network communications, etc.

The object of the exercise is for you to do the analysis (based on the requirements) and create a design. As a result, you will have to make certain assumptions regarding the screen elements that would need to be present if you were actually going to implement this. Hint: define methods to be triggered by user selections. Assume that as a result of these methods, data is made available from the user interface to wherever it is required. Also, define methods that will present your user interface.

You may need to supplement the information in the requirements. Feel free to add information that will make your design more complete, without changing the requirements. Any such additions should be outlined in your overview.

You should submit the following:

1. Class diagram(s): diagrams should show all relationships between the classes in your system