

Chat room High Level Design

Terminology

Chat Room

A virtual environment in which users can post their messages and read the messages written by other users.

User

A person who interacts with the system.

Nickname

A familiar or humorous name the user uses to identify himself.

Registration

The act of recording user details.

Login

The act of signing into the system by the user.

Message

The text which the user delivers. Message content is limited to 150 characters.

Message Frame

A written communication sent between the users of the system. A wrapper for a message.

Communication model (SQL)

Requests

Send message request

A send message request is initiated by the user, the request is sent to the persistence layer, which saves the message in the correct table;

Get messages request

A get message request is initiated every two seconds by the system. and potentially can be initiated at any time. This type of request is intended to receive all the newest messages that hasn't already been retrieved from the correct sql table .

Chat Room Client

Requests

Display messages request

A display messages request is initiated by the system every two seconds. This type of request intended to display all the messages that already been saved in the server in addition to the newest one.

Register request

A register request is initiated by the user , and shows the user's will to save his data into the system and use the Chatroom functionality, this type of request contains group id and nickname that the user want to be identify by.

Login request

A login request is initiated by the user, and shows his will to gain access to the system , the request contain the user's group id and nicknames witch identifies him.

Logout request

A logout request is initiated by the user, and shows his will to end the login session and his access to the system.

Sort request

This request is initiated by the user and shows his will to sort the messages that are displayed to him by a certain order such as: time, nickname, group id or combination of those three. In addition the user will have the option to choose if he wants the messages to be sorted reverse or not.

Filter request

This type of request is initiated by the user, and shows his will to filter the displayed messages list to show only messages written by a certain user or by a certain group, combination of both is optional. this request contains a user's group id and/or nickname , and will display the last messages written by that user/group.

Data structures

The Chat room contains a List of all the messages that currently displayed to the user .

Chatroom history

the chat room maintains a history of data about the users and the messages. this allows it to support functions for the use of the client, regarding other users and messages from the past.

Actors

Users

A person connected to the chatroom using a client software, for sending and receiving messages. A user is identified by her group ID and a nickname that is unique to her group.