

CLIENT-SIDE DESKTOP APPLICATION OF A CHAT ROOM – LLD

Client-side structure:

Namespace - Presentation layer-CLI (command line interface):

❖ **Class ActionListener:**

- Functionality- connects between the controls on the screen(ChatRoomWindow and FirstWindow) , and the code behind.
- Implements MVVM Architecture.
- Allows to make the data property of one object to be linked to the data property of a another.
- Used to populate elements on a screen

❖ **Class ChatRoomWindow:**

- Part of the GUI ,the design contains the buttons, Labels, Text Boxes etc.
- Functionality- hosting a chat room that supports sending message, displaying messages, filtering and sorting procedures.

❖ **Class FirstWindow:**

- Part of the GUI ,the design contains the buttons, Labels, Text Boxes etc.
- Functionality- presenting the log in and register to the Chat Room screen.

Namespace - Business (Logic) layer:

❖ Entity –class User

- Functionality- class per user, all the users identified by a nickname and group id. The user communicates with other users in the chatroom by sending messages.

❖ Entity – class Message

- Functionality- performs actions dictated by a request. A message is limited to 150 characters, identified by GUID and the user who sent it.

❖ Entity -class Chatroom

- Functionality- the chat room manages the interactions with the presentation layer. user and message classes, registers and online users. The chat room holds the URL for server request through communication layer, nicknames list in for duplicates prevention and messages list for efficient message retrieving.

Namespace - Persistent layer:

❖ Class MessageHandler

- Functionality- manages all the data documenting and file handling regarding messages.
- File-Messages- at each message request documents its details, including the message's body.

❖ Class UserHandler

- Functionality- manages all the data documenting and file handling regarding users.
- File-Users- contains all registered users.

❖ Class LogHandler

- Functionality- manages all the operations and errors documenting. In case of errors and exceptions documents the details.
- Files- log- contains all data transitions and system operations.

Namespace - Communication layer:

for communicating with the server.

Requests from server-

- Send message request
A send message request is initiated by the user, the request is sent to the server, which assigns the message with a unique ID (GUID) and the server's timestamp.
- Get 10 messages request
A get message request is initiated after each "send message request" and potentially can be initiated at any time. This type of request is intended to receive the last 10 messages stored on the server.

