Milestone 1
Low Level Design

Presentation

CLI

- **Attributes:**
  - **bollean running** – Stores true if the system is running or false otherwise.
  - **Chatroom myChatRoom** – Stores the chatroom object in use.
  - **ChatroomMenu menu** – Stores the menu object.
- **Methods:**
  - **void showMenu()** – shows the menu as long as running.
  - **char getKey()** – used by the showMenu function to get a single key as input.
  - **void LoginLogout()** – calls Logout function and then Login function if received false.
  - **void register()** – Calls register function.
  - **void retrive10Messages()** – calls retrive10 function on the chatroom.
  - **void display20Messages()** – calls the display20Message function on the chatroom.
  - **void displayAllByUser()** – calls the displyAllByUser function on the chatroom.
  - **void writeMessages()** – calls the writeMessage function on the chatroom.
  - **void exit()** – closes the program.

Logic

ChatRoom

- **Attributes:**
  - **user _loggedInUser – Stores the data of the user currently used in or NULL otherwise.**
  - **Dictionary<Guid, Message> recivedMessages – Stores all previously received messages.**
  - **Dictionary<String, User> registeredUsers – Stores all registered users.**
  - **String URL – Stores the URL for the server.**
  - **messagesHandler messHandler – Stores the Masseges Handler used to save and load messages on disk.**
  - **usersHandler userHandler – Stores the Users Handler used to save and load users on disk.**
  - **Logger mLogger – Logger object used by the logger.**
  - **FileLogger mFileLogger – FileLogger object used by the logger.**
  - **ChatroomMenu _ChatroomMenu – Stores the chatroomMenu in use.**
- **Methods:**
  - **boolean Login(string nickname) – gets a user nickname and loges him in to the system, return false if user non-exists.**
  - **boolean Logout() – loges the user out, returns false if no user is logged in.**
  - **boolean register(string nickname) – Creates a user.**
  - **int retrive10Messages() – Returns last 10 messages.**
  - **List<Message> retrive20Messages() – Returns last 20 messages.**
  - **List<Message> retriveAllByUser(String nickname, String g_id) – Returns all messages by the user given.**
  - **boolean writeMessages(String message) – sends message, returns true if successful.**
  - **Boolean CheckMessageValidity(String content) – gets a new message content and return whether or not its valid before sending it.**
  - **void exit() – terminates logger.**
  - **void ProcessLogMessage(String message) – useless function needed to implement the logger.**

User

- **Attributes:**
  - **string nickname – Stores the unique nickname for the user.**
  - **int groupID – Stores the gourp ID of the user.**
- **Methods:**
  - **Imessage writeMessage(string message, string url) – askes communication to send a new message to the server.**
  - **List<Imessage> retrive10Messages(string url) – askes communication to retrieve the 10 latest messages from the server.**

Message

- **Attributes:**
  - **Guid _id – Stores the unique id assigned by the server.**
  - **string _messageContent – Stores the content of the message.**
  - **string _userName – Stores the nickname of the user that as written the message.**
  - **DateTime _date – Stores the time when the message was received by the server.**
  - **string _groupID – Stores the id of the user that wrote the message.**
- **Methods:**
  - **String ToString() – returns the messages representation as string.**

ChatroomMenu

- **Attributes:**
  - **List<MenuItem> menuItems – List of the menu items in the menu.**
  - **XMLHandler xmlHandler – Stores the xml Handler used to load the menu items from the disk.**
  - **Boolean _login – Stores bool value of whether a user is logged in to the system or not.**
- **Methods:**
  - **String getFunction(char key) – gets a key and returns the function of the menu item it represents.**
  - **String ToString() – returns the menu representation as string.**

MenuItem

- **Attributes:**
  - **bool _loginRequierd** – bool value representing whether the option requires login.
  - **char _optionKey** – stores the options key.
  - **string _message** – stores the options message.
  - **string _itemFunctions** – stores the name of the function to be run.
  - **int _order** – stores the number representing the order of the option.
- **Methods:**
  - **string ToString()** – returns a string representation of the item.

Persistence

Abstract fileHandler

- **Attributes:**
  - **string binPath – Stores the path to the bin file.**
- **Methods:**
  - **void save(object o) – saves the item to the disk .**
  - **object load() – Returns the items in the bin file.**

messagesHandler : fileHandler

- **Attributes:**
  - **string binPath – Stores the path to the bin file.**
- **Methods:**
  - **void save(object o – saves the item to the disk .**
  - **object load() – Returns the items in the bin file.**

usersHandler : fileHandler

- **Attributes:**
  - **string binPath – Stores the path to the bin file.**
- **Methods:**
  - **void save(object o) – saves the item to the disk .**
  - **object load() – Returns the items in the bin file.**

xmlHandler

- **Attributes:**
  - **string xmlPath – Stores the path to the xml file.**
- **Methods:**
  - **XDocument load() – Returns the items in the xml file.**

ILogger - **downloaded**

Logger - **downloaded**

FileLogger - **downloaded**