

Low Level Design - MileStone 1

Detailed description of the Classes (fields and methods):

Presentation Layer

GUI

Methods:

- **void menu()** : prints the user menu.
- **void errorLogin()** : if the login input is not valid, prints error message.
- **void errorRegister()** : if the register input is not valid, prints error message.
- **void displayMessages(string output)** : prints messages string on screen.
- **void writeSend()** : gets message user input and sends it to the ChatRoom.
- **void registerLogin()** : gets username and password input from user and calls the ChatRoom.
- **void errorMsg()** :

Business (logic) Layer

ChatRoom

Fields:

- **User loggedInUser** : the current user using the system.
- **MessageFrame messages** : A Type that will handle user messages.
- **ErrorLogger logger** : manages ChatRoom error log.
- **string url** : Chat room IP\http address.

Methods:

- **boolean login(string username, string password)** : receives the username and password from GUI, checks if the details are correct and changes the status of the user accordingly.
- **boolean register(string username, string password)** : receives the username and password from GUI, checks if the details are correct and adds the new user, if not already registered, to the users file.
- **void exit()** : performs logout(if user is signed in) and closes the chat window.
- **void sendMsg(string message)** : receives a user message from the GUI checks validity of the message, sends the message to the communication layer and adds the message to the MessageFrame and to the messages Handler.
- **void getMessages(int number)** : retrieves a specified number of last messages from the server.
- **void displayMessages(int number)** : gets from the MessageFrame the number of messages to display and calls the GUI displayMessages method.
- **void displayAllMessages()** : gets from the MessageFrame All of messages and calls the GUI displayMessages method.
- **boolean checkUserValidity()** : checks validity of user details.

MessageFrame

Fields:

- **Stack<Message> messages** : a stack type that contains all current messages saved in RAM.

Methods:

- **string displayMessages(int number)** : sorts the number of messages to display from messages stack and returns the message string.
- **string displayAllMessages()** : sorts all of the messages to display from messages stack and returns the message string.

User

Fields:

- **string nickname** : a chosen name for the user.
- **boolean status** : users status(offline\online)
- **Int g_id** : group ID
- **UserHandler handler** : local drive users management.

Methods:

- **void sendMsg(string msg)** : receives the user message from the ChatRoom creates an new message and calls MessageHandler.
- **void logout()** : if the users is connected, changes the status of the user and logout from the system.
- **void saveUser()** : saves a new registered user using the UserHandler.

Message

Fields:

- **string body** : the message body.
- **User user** : the user associated with the message.
- **MessageHandler handler** : local drive message management.

Methods:

- **boolean checkValidity(string msg)** : checks legal message body input.
- **void saveMessage()** : saves a new sent message using the MessageHandler.

Persistent Layer

Handler <<interface>>

- **void add(Type T)** : implementation varies.
- **void load()** : implementation varies.

MessageHandler

Methods:

- **void add(Message msg)** : adds a new message data to a local file.
- **void load()** : loads message data from a local file.

UserHandler

Methods:

- **void add(User user)** : adds a new user data to a local file.
- **void load()** : loads user data from a local file.

ErrorLogger

Fields:

- **string severity** : describes severity of the error.

Methods:

- **void logError(string error)** : uses the logger class to log the error.

Logger

Fields:

- **FileStream logStream**: a consistent stream that logs system events.

Methods:

- **void addLog (string log)** : adds a new log event to the local log file.

UML LLD FlowChart - MileStone1

Presentation Layer

Communication Layer

Business (logic) Layer

Persistent Layer

