

CHAT SYSTEM MODELLING

In this chat system I have identified **Message**, **User** as the most important objects. Where User can create **Contacts**, **GroupChats** and **PublicChats**.

PrivateChat and **GroupChat** can create **Messages** by extending **Message** class. But sending of message for **GroupChat** and **PrivateChat** differs by there way so both these classes impliments **Sendable** Interface and defines **send()** function as per there functionality.

Since reciving a message remains same for both that is GroupChat and PrivateChat so they both are extending the functionalty of receivable class to **receive()** a message.

1. **Message** (class)

protected sender : string	-	contains sender's user_id
protected reciver : string[]	-	contains receiver's user_id(s)
protected body : string	-	contains body of message

This class is being extended by GroupChat (class) and PrivateChat(class) to create/send/receive Message objects.

2. **User** (class)

user_id : string	-	contains unique ID for user
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this class is extending Contact(class),PublicChat(class) and PrivateChat().

3. **GroupChat**(class)

private users_id: string[]	-	conatins list of user_ids
private gruop_name : string	-	contains name of group
protected createGroup(string) : boolean	-	creates group
protected inviteUsers(string[]) : boolean	-	invites a user to a group
protected removeUser(string) : void	-	removes a user from a group
protected acceptGroup() : void	-	accepts invitation to join a group
protected leaveGroup(string) : void	-	leaves a group
protected deleteGroup(string) : void	-	deletes a group
protected send(string,Message):boolean	-	sends a message in broadcast way

This class is implementing Sendable and extending Message to perform its functions.

4. **PrivateChat(class)**

private user_id : string	-	contains user_id of single user
protected send(string,Message) :boolean	-	sends a message to a user

This class is implementing Sendable and extending Message to perform its functions.

5. **Receiveable (class)**

public msg : Message	-	contains a Message object
public receive() : message	-	receives a message

This class is being extended by PublicChat and PrivateChat to receive messages.

6. **Sendable (interface)**

public msg : Message	-	contains a Message object
public send(string, Message) : boolean	-	sends a message