IT-314 Software Engineering

Lab - 5

Group - 12

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Develop the Class diagram for Sprint 1/2 (first derive the sequence diagram by identifying entity/boundary/control objects).

- **Identify Entity/Boundary/Control Objects**
- **Develop Sequence Diagram**
- **Develop Analysis Domain Model (i.e., Class Diagram)**

Sprint Details

Sprint 3: Real-Time Chat & Media Sharing (4 weeks)
- ➔ **Goal:** Implement real-time chat functionality and media sharing.
- ➔ **User Stories:**
    - ◆ **Realtime Chat**
        - $[(1*3) + (1*4) + (0*3) + (1*7) + (0*5)] * 0.65 = 9.1$
        - Estimate: 9.1 FP
    - ◆ **Group Chat Room**
        - $[(1*3) + (1*4) + (0*3) + (1*7) + (0*5)] * 0.65 = 9.1$
        - Estimate: 9.1 FP
    - ◆ **Media Sharing**
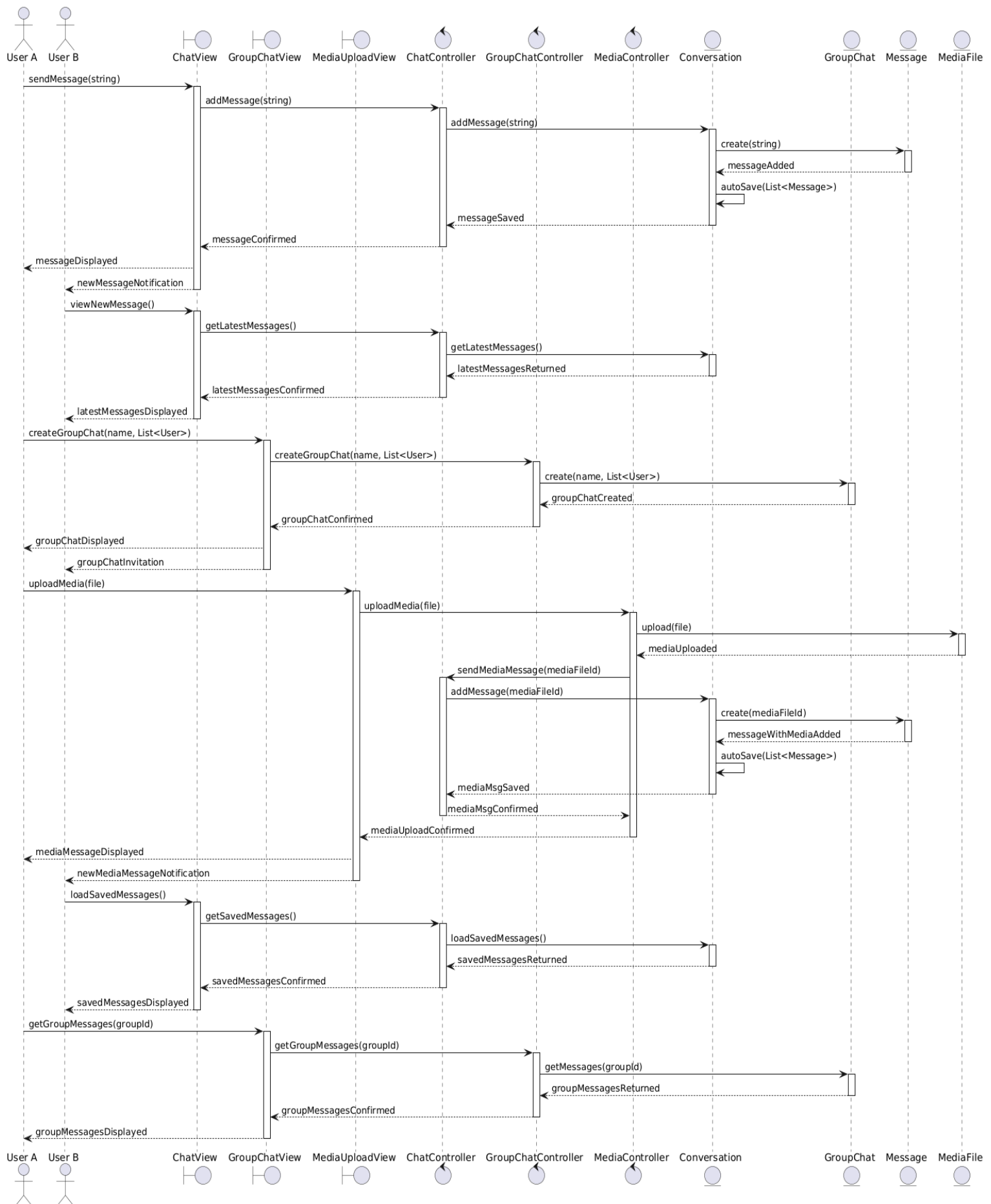   - $[(1*3) + (1*4) + (0*3) + (1*7) + (1*5)] * 0.65 = 12.35$
        - Estimate: 12.35 FP
    - ◆ **Auto-Save Conversations**
        - $[(0*3) + (0*4) + (0*3) + (1*7) + (0*5)] * 0.65 = 4.55$
        - Estimate: 4.55 FP

Total Estimate: 35 FP **Sprint Duration:** 4 weeks

Sequence Diagram for the above sprint:

Participants: User A, User B, ChatView, GroupChatView, MediaUploadView, ChatController, GroupChatController, MediaController, Conversation, GroupChat, Message, MediaFile

- User A → ChatView: sendMessage(string)
- ChatView → ChatController: addMessage(string)
- ChatController → Conversation: addMessage(string)
- Conversation → Message: create(string)
- Message --> Conversation: messageAdded
- Conversation → Conversation: autoSave(List<Message>)
- Conversation --> ChatController: messageSaved
- ChatController --> ChatView: messageConfirmed
- ChatView --> User A: messageDisplayed
- ChatView --> User B: newMessageNotification
- User B → ChatView: viewNewMessage()
- ChatView → ChatController: getLatestMessages()
- ChatController → Conversation: getLatestMessages()
- Conversation --> ChatController: latestMessagesReturned
- ChatController --> ChatView: latestMessagesConfirmed
- ChatView --> User B: latestMessagesDisplayed
- User A → GroupChatView: createGroupChat(name, List<User>)
- GroupChatView → GroupChatController: createGroupChat(name, List<User>)
- GroupChatController → GroupChat: create(name, List<User>)
- GroupChat --> GroupChatController: groupChatCreated
- GroupChatController --> GroupChatView: groupChatConfirmed
- GroupChatView --> User A: groupChatDisplayed
- GroupChatView --> User B: groupChatInvitation
- User A → MediaUploadView: uploadMedia(file)
- MediaUploadView → MediaController: uploadMedia(file)
- MediaController → MediaFile: upload(file)
- MediaFile --> MediaController: mediaUploaded
- MediaController → ChatController: sendMediaMessage(mediaFileId)
- ChatController → Conversation: addMessage(mediaFileId)
- Conversation → Message: create(mediaFileId)
- Message --> Conversation: messageWithMediaAdded
- Conversation → Conversation: autoSave(List<Message>)
- Conversation --> ChatController: mediaMsgSaved
- ChatController --> MediaController: mediaMsgConfirmed
- MediaController --> MediaUploadView: mediaUploadConfirmed
- MediaUploadView --> User A: mediaMessageDisplayed
- MediaUploadView --> User B: newMediaMessageNotification
- User B → ChatView: loadSavedMessages()
- ChatView → ChatController: getSavedMessages()
- ChatController → Conversation: loadSavedMessages()
- Conversation --> ChatController: savedMessagesReturned
- ChatController --> ChatView: savedMessagesConfirmed
- ChatView --> User B: savedMessagesDisplayed
- User A → GroupChatView: getGroupMessages(groupId)
- GroupChatView → GroupChatController: getGroupMessages(groupId)
- GroupChatController → GroupChat: getMessages(groupId)
- GroupChat --> GroupChatController: groupMessagesReturned
- GroupChatController --> GroupChatView: groupMessagesConfirmed
- GroupChatView --> User A: groupMessagesDisplayed

Class Diagram for the above sprint:

User

- id: int
- username: string
- email: string
- password: string

+ register()
+ login()
+ logout()
+ updateProfile()

participates in   1   1   sends

0..*

Chat

- id: int
- createdAt: datetime

+ sendMessage(string)
+ receiveMessage(string)
+ getHistory()
+ autoSave(List<Message>)

1   contains

0..*

Message

- id: int
- sender: User
- content: string
- timestamp: datetime

+ edit(string)
+ delete(List<Message>)

GroupChat

- name: string
- members: List<User>

+ addMember()
+ removeMember()

IndividualChat

- participant1: User
- participant2: User

0..*

MediaFile

- fileUrl: string
- fileSize: int

+ upload()
+ download()

Image

- width: int
- height: int

+ resize()

Video

- duration: int
- format: string

+ play()
+ pause()

Mp3

- duration: int
- bitrate: int

+ play()
+ pause()