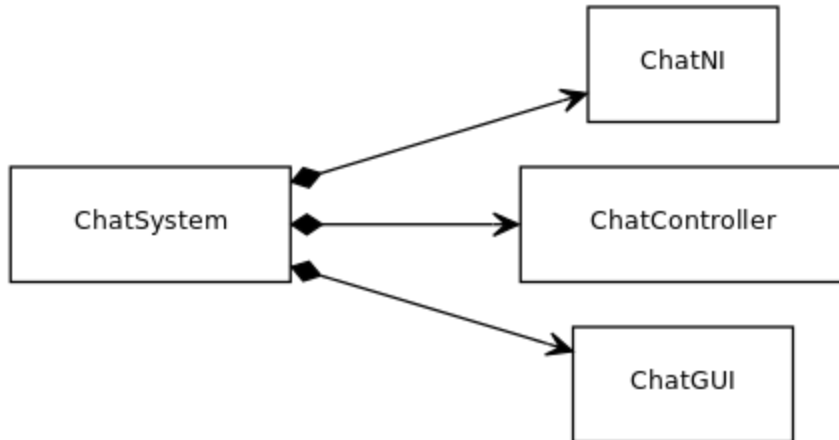# SOFTWARE DESIGN DESCRIPTION
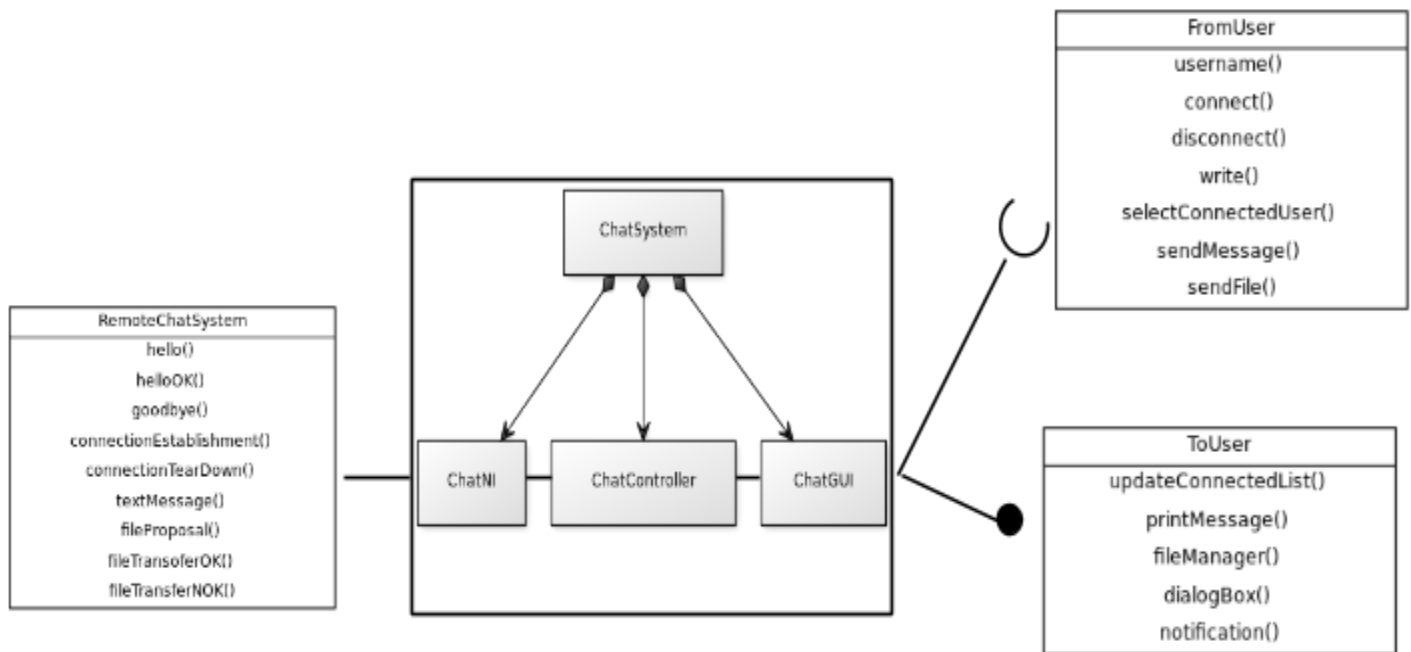
Sébastien Neumann, Rémi Thribhout, Mélina Manolias

COMPONENT DIAGRAM

[ChatSystem]++->[ChatGUI],
[ChatSystem]++->[ChatController],
[ChatSystem]++->[ChatNI]

# High level Decomposition diagram

WhiteBOX Sequence Diagram

LocalUser connecting SDD

LocalUser->ChatGUI : username(LocalUsername)
LocalUser->ChatGUI : connect()
activate ChatGUI
ChatGUI->ChatController : performConnect(LocalUsername)
activate ChatController
ChatController->ChatNI : sendHello(LocalUsername)
activate ChatNI
ChatNI->RemoteChatSystem : Hello(LocalUsername)
ChatNI->ChatController
deactivate ChatNI
ChatController->ChatGUI
deactivate ChatGUI
deactivate ChatController

RemoteChatSystem->ChatNI : HelloOk(RemoteUsername)
activate ChatNI
ChatNI->ChatController : performHelloOk(RemoteUsername)
activate ChatController
ChatController->ChatGUI : addUser(RemoteUsername)
activate ChatGUI
ChatGUI->LocalUser : updateConnectedList()
ChatGUI->ChatController
deactivate ChatGUI
ChatController->ChatNI

deactivate ChatController
deactivate ChatNI
deactivate RemoteChatSystem
CREATE LOCAL INFOS CHAT_GUI -> CHATcONTROLER
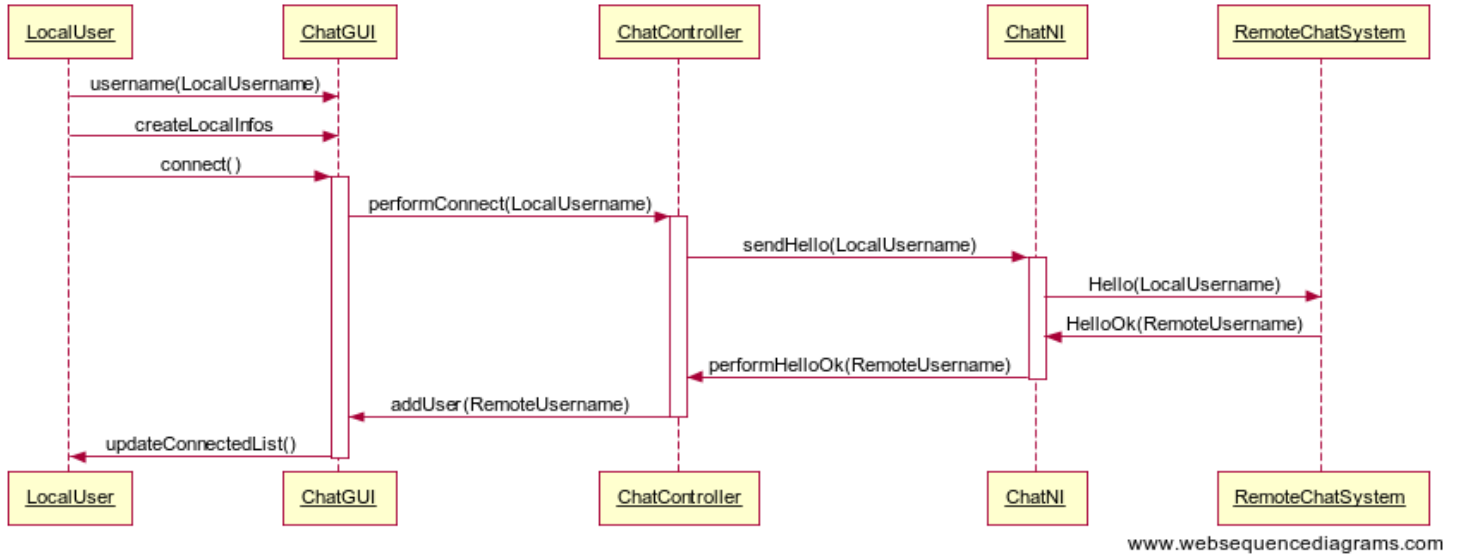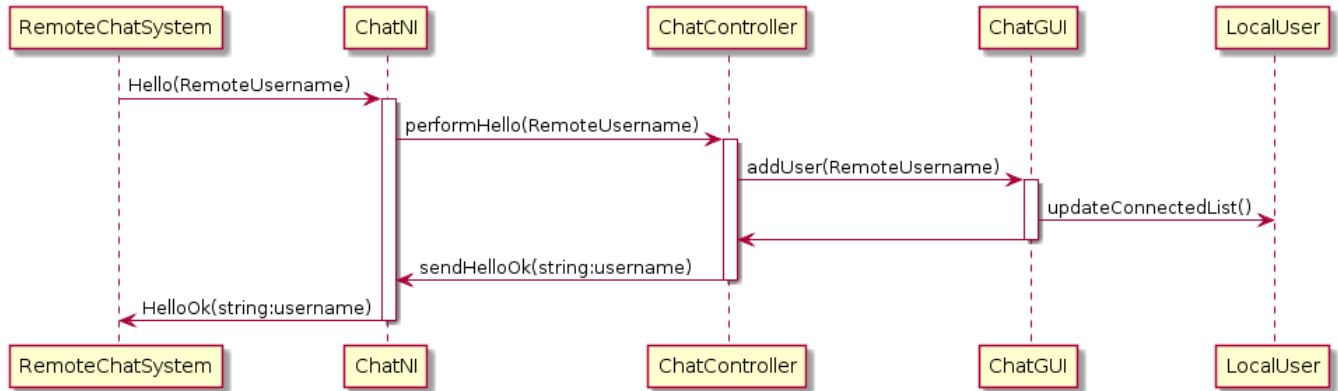

RemoteUser connecting SDD

RemoteChatSystem->ChatNI : Hello(RemoteUsername)
activate ChatNI
ChatNI->ChatController : performHello(RemoteUsername)
activate ChatController
ChatController->ChatGUI : addUser(RemoteUsername)
activate ChatGUI
ChatGUI->LocalUser : updateConnectedList()
ChatGUI->ChatController
deactivate ChatGUI
ChatController->ChatNI : sendHelloOk(string:username)
deactivate ChatController
ChatNI->RemoteChatSystem : HelloOk(string:username)
deactivate ChatNI

COMMUNICATION

LocalUser sending text message SDD

LocalUser->ChatGUI : selectConnectedUser(RName)
activate ChatGUI
deactivate ChatController
ChatGUI->LocalUser : DialogBox()
deactivate ChatGUI
LocalUser->ChatGUI : Send(message)
activate ChatGUI
ChatGUI->ChatController : performSendMessage(message)
activate ChatController
ChatController->ChatNI : processSendMessage(message,Lname,Rname)
activate ChatNI
ChatNI->RemoteChatSystem : TextMessage(message,Lname,Rname)
RemoteChatSystem->ChatNI :
ChatNI->ChatController :
deactivate ChatNI
ChatController->ChatGUI :
deactivate ChatController
ChatGUI->LocalUser : Notification()
deactivate ChatGUI
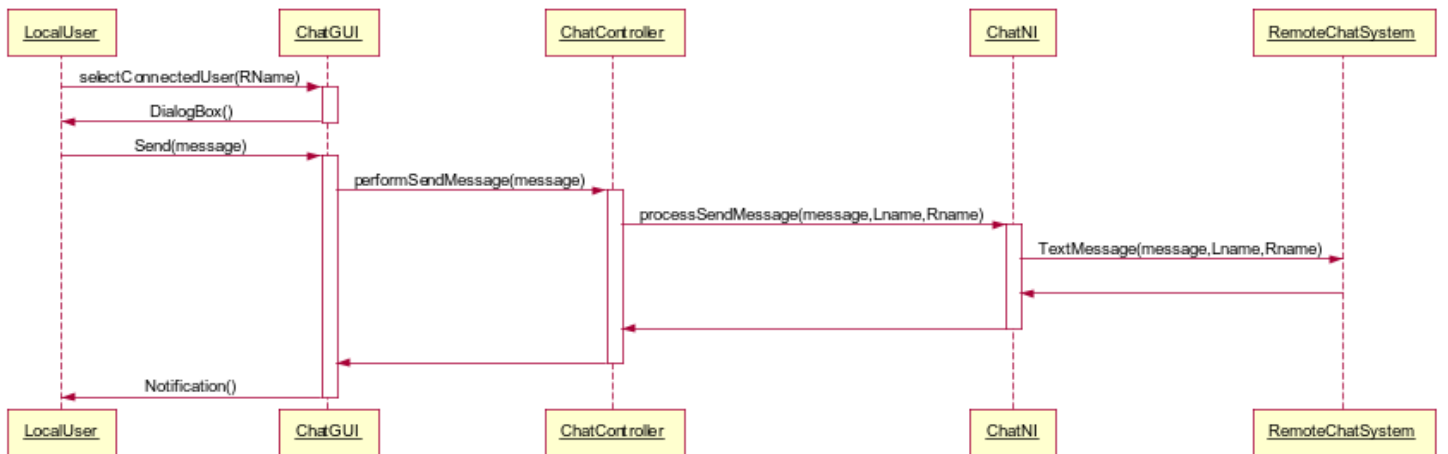
RemoteUser receiving text message SDD

RemoteChatSystem->ChatNI : textMessage(message,Rname,Lname)
activate ChatNI
ChatNI->ChatController : performTextMessage(message,Rname,Lname)
activate ChatController
ChatController->ChatGUI : processTextMessage(message,Rname)
activate ChatGUI
ChatGUI->LocalUser : PrintMessage(message,Rname)
ChatGUI->ChatController
deactivate ChatGUI
ChatController->ChatNI
deactivate ChatController
ChatNI->RemoteChatSystem
deactivate ChatNI
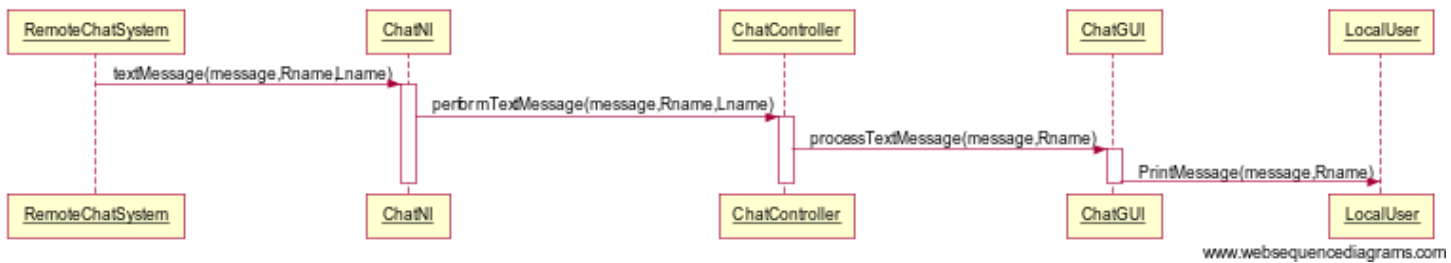
LocalUser sending file(s) SDD

LocalUser->ChatGUI : SelectConnectedUser(Rname)
activate ChatGUI
LocalUser->ChatGUI : SendFile()
ChatGUI->LocalUser : FileManager()
LocalUser->ChatGUI : SendFile(filename)
ChatGUI->ChatController : performSendFile(file)
activate ChatController
ChatController->ChatNI : processSendProposal(file,size,Rnames)
activate ChatNI
ChatNI->RemoteChatSystem : FileProposal(filename,size,Rnames)
ChatNI->ChatController
deactivate ChatNI
ChatController->ChatGUI
deactivate ChatController
ChatGUI->LocalUser
deactivate ChatGUI

alt accepted

activate ChatNI
RemoteChatSystem->ChatNI : FileTransferAccepted(fname,Rname)
ChatNI->ChatController : performFileAnswer(true)
activate ChatController
ChatController->ChatGUI : processFileAccepted()
activate ChatGUI
ChatGUI->LocalUser : print(filename,accepted)
ChatGUI->ChatController
deactivate ChatGUI
ChatController->ChatNI
deactivate ChatController
activate ChatNI
ChatNI->RemoteChatSystem : processSendFile(fproposal)
deactivate ChatNI
ChatNI->ChatController : performTransferNotification(boolean)

activate ChatController

      alt true
      ChatController->ChatGUI : notifyTransmitted()
      activate ChatGUI
      ChatGUI->LocalUser : print(Transmitted)
      ChatGUI->ChatController
      deactivate ChatGUI
      ChatController->ChatNI

      else false
      ChatController->ChatGUI : notifyNotTransmitted()
      activate ChatGUI
      ChatGUI->LocalUser : print(notTransmitted)
      ChatGUI->ChatController
      deactivate ChatGUI
      ChatController->ChatNI
      end

deactivate ChatController

else refused

RemoteChatSystem->ChatNI : FileTransferNotAccepted(fname,Rname)
ChatNI->ChatController : performFileAnswer(false)
activate ChatController
ChatController->ChatGUI : processFileNotAccepted()
activate ChatGUI
ChatGUI->LocalUser : print(filename,refused)
ChatGUI->ChatController
deactivate ChatGUI
ChatController->ChatNI
deactivate ChatController
deactivate ChatNI
end
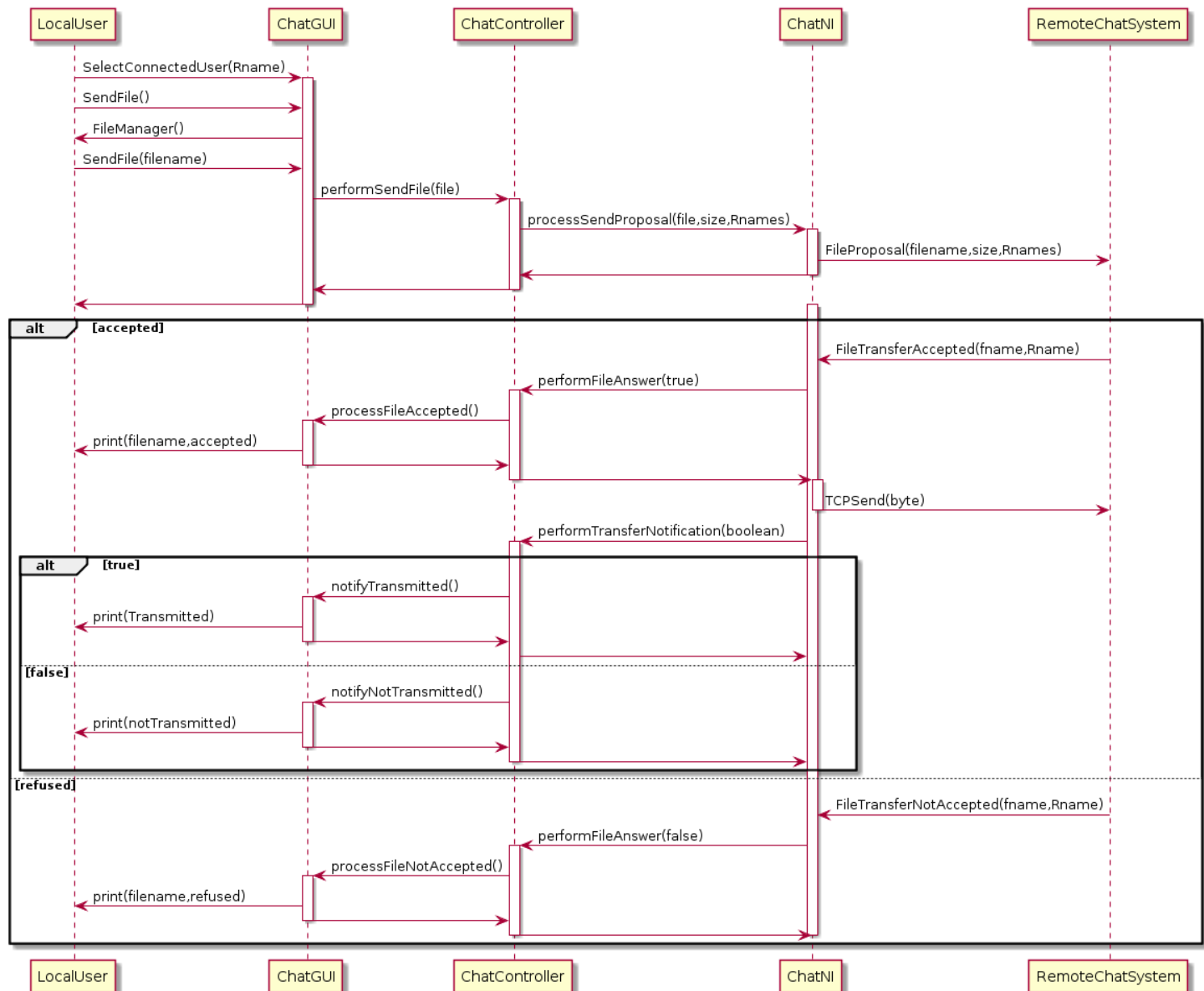
RemoteUser receiving file(s) SDD

RemoteChatSystem->ChatNI : FileProposal(filename,size,Rname,Lname)
activate ChatNI
ChatNI->ChatController : ProcessFileQuery(filename,size,Rname,Lname)
activate ChatController
ChatController->ChatGUI : PerformFileQuery(filename,size,Rname)
activate ChatGUI
ChatGUI->LocalUser : FileTransferQuery(filename,size,Rname)

alt OK

ChatGUI->ChatController : performAcceptTransfer()

deactivate ChatGUI
ChatController->ChatNI : processAcceptTransfer()
deactivate ChatController
ChatNI->RemoteChatSystem : FileTransferOK()
RemoteChatSystem->ChatNI : TCPreceive(byte)

ChatNI->ChatController : performTransmission(byte,fileName)
activate ChatController

  alt filecreated

  ChatController->ChatGUI : notifyReceived(filename)
  activate ChatGUI
  ChatGUI->LocalUser : print(received)
  ChatGUI->ChatController
  deactivate ChatGUI
  ChatController->ChatNI

  else filenotcreated

  ChatController->ChatGUI : NotifyNotReceived(filename)
  activate ChatGUI
  ChatGUI->LocalUser : print(received)
  ChatGUI->ChatController
  deactivate ChatGUI
  ChatController->ChatNI
  deactivate ChatController
  end

else NONOK

activate ChatGUI
ChatGUI->ChatController : performRefuseTransfer()
deactivate ChatGUI
activate ChatController
ChatController->ChatNI : processRefuseTransfer()
deactivate ChatController
ChatNI->RemoteChatSystem : FileTransferNotAccepted()
end
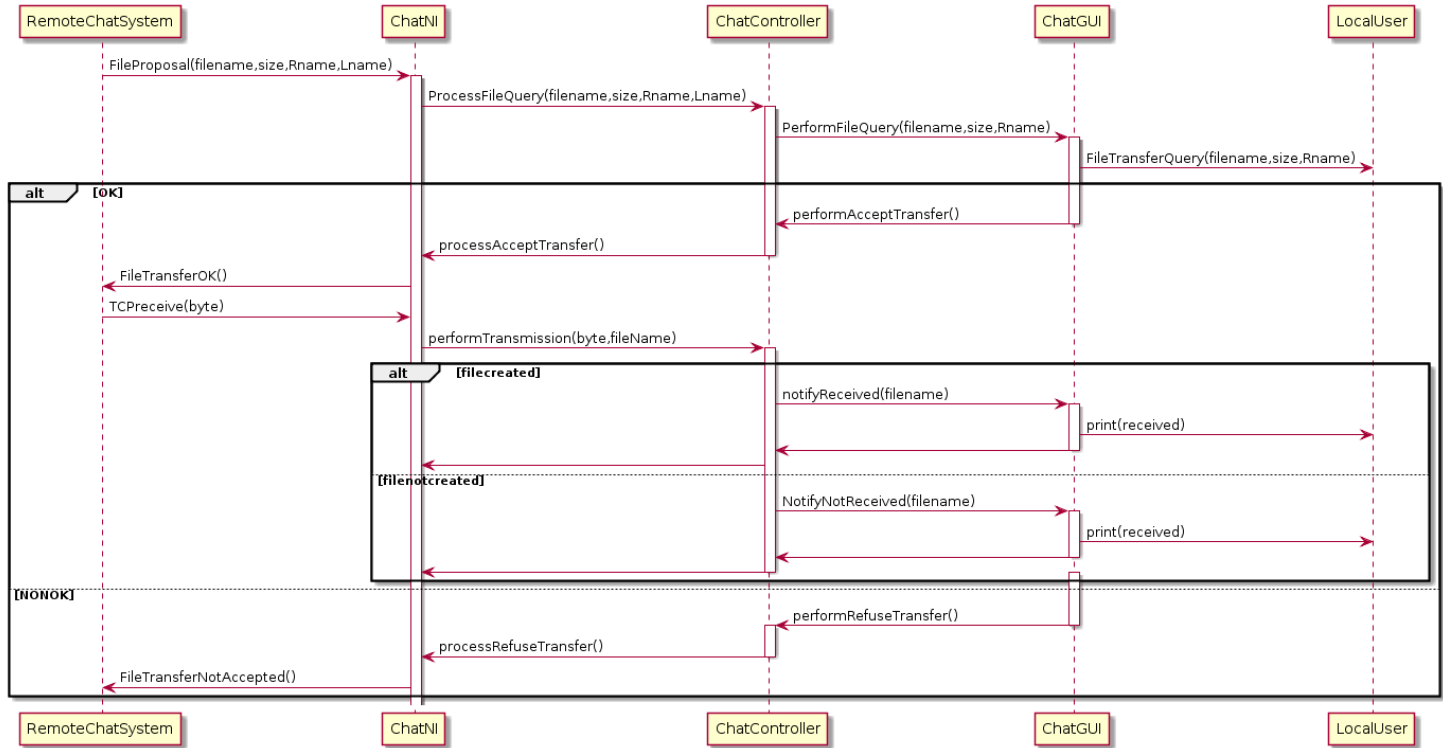
LocalUser disconnecting SDD

LocalUser->ChatGUI : disconnect()
activate ChatGUI
ChatGUI->ChatController : performDisconnect()
activate ChatController
ChatController->ChatNI : sendGoodbye(Lname)
activate ChatNI
ChatNI->RemoteChatSystem : Goodbye(Lname)
ChatNI->ChatController
deactivate ChatNI
ChatController->ChatGUI
deactivate ChatController
ChatGUI->LocalUser
deactivate ChatGUI
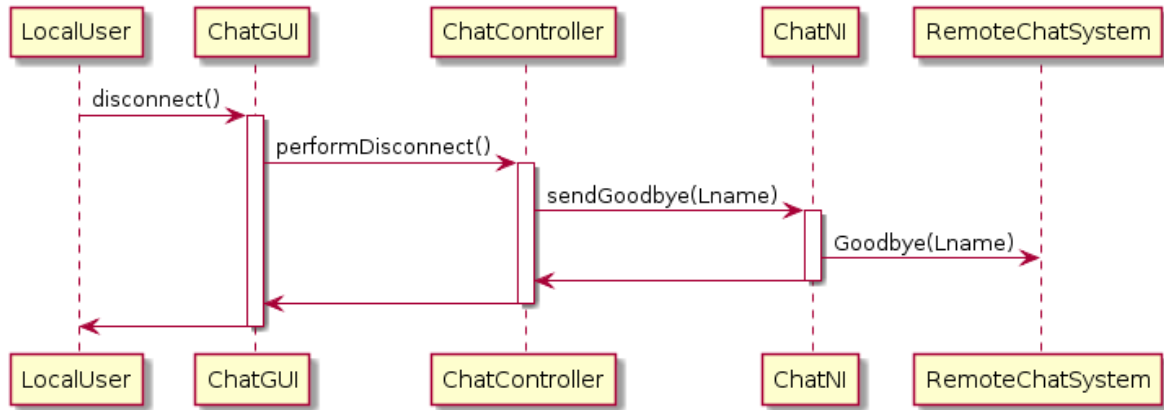
RemoteUser disconnecting SDD

RemoteChatSystem->ChatNI : goodbye(RemoteUserName)
activate ChatNI
ChatNI->ChatController : performGoodbye(RemoteUserName)
activate ChatController
ChatController->ChatGUI : DeleteUser(RemoteUserName)
activate ChatGUI
ChatGUI->LocalUser : updateConnectedList()
ChatGUI->ChatController
deactivate ChatGUI
ChatController->ChatNI
deactivate ChatController
ChatNI->RemoteChatSystem
deactivate ChatNI
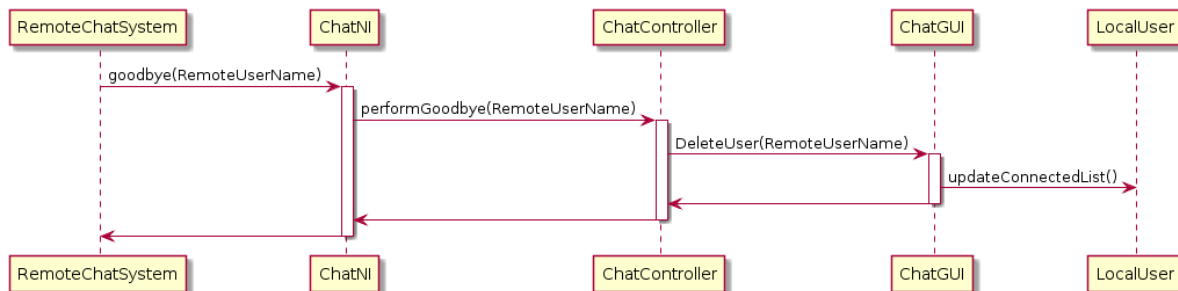
WHITE BOX CLASS DIAGRAM

ChatNI

[FROMChatCtrl | sendHello(); sendHelloOk(); processTextMessage() ; processSendFile() ; performRefusetransfer() ; performAcceptTransfer() ;   sendGoodbye() ;]
[ToChatCtrl | performHelloOk() ; performHello() ; performTextMessage() ; processTransmission() ; processFileQuery() ; processReceipt() ; performGoodbye()]
[RemoteChatSystem | hello() ; helloOk() ; TextMessage() ; connectionEstablishment() ; fileProposal() ; fileTransferOK() ; fileTransferNOK() ; fileTransfer() ; connectionTearDown() ; goodBye()]

FROMChatCtrl	ToChatCtrl	RemoteChatSystem
sendHello()	performHelloOk()	hello()
sendHelloOk()	performHello()	helloOk()
processTextMessage()	performTextMessage()	TextMessage()
processSendFile()	processTransmission()	connectionEstablishment()
performRefusetransfer()	processFileQuery()	fileProposal()
performAcceptTransfer()	processReceipt()	fileTransferOK()
sendGoodbye()	performGoodbye()	fileTransferNOK()
		fileTransfer()
		connectionTearDown()
		goodBye()

FROMChatCtrl
sendHello()
sendHelloOk()
processTextMessage()
processSendFile()
performRefusetransfer()
performAcceptTransfer()
sendGoodbye()

RemoteChatSystem
hello()
helloOk()
TextMessage()
connectionEstablishment()
fileProposal()
fileTransferOK()
fileTransferNOK()
fileTransfer()
connectionTearDown()
goodBye()

ChatNI

ToChatCtrl
performHelloOk()
performHello()
performTextMessage()
processTransmission()
processFileQuery()
processReceipt()
performGoodbye()

ChatGUI

[FromChatCTRL | addUser() ; processTextMEssage() ; NotifyTransmitted() ; NotifyNotTransmitted() ;
performFileQuery() ; notifyReceipt() ; notifyNotReceipt() ; deleteUser();]
[TOChatCTRL | performConnect() ; performSendMessage() ; performSendFile(); processAcceptTransfer() ;
processRefuseTransfer() ; performDisconnect()]
[FROMuser | username() ; connect() ; selectConnectedUser ; write() ; sendMessage() ; SelectFile() ;
sendFile() ; fileDownloadOk() ; fileDownloadNOk() ; Disconnect()]
[TOuser | UpdateConnectedList() ; dialogBox() ; notification() ; printMessage() ; fileManager() ;
fileDownloadQuery()]

FromChatCTRL
addUser()
processTextMEssage()
NotifyTransmitted()
NotifyNotTransmitted()
performFileQuery()
notifyReceipt()
notifyNotReceipt()
deleteUser()

TOChatCTRL
performConnect()
performSendMessage()
performSendFile()
processAcceptTransfer()
processRefuseTransfer()
performDisconnect()

FROMuser
username()
connect()
selectConnectedUser
write()
sendMessage()
SelectFile()
sendFile()
fileDownloadOk()
fileDownloadNOk()
Disconnect()

TOuser
UpdateConnectedList()
dialogBox()
notification()
printMessage()
fileManager()
fileDownloadQuery()

FROMuser

- username()
- connect()
- selectConnectedUser
- write()
- sendMessage()
- SelectFile()
- sendFile()
- fileDownloadOk()
- fileDownloadNOk()
- Disconnect()

FromChatCTRL

- addUser()
- processTextMEssage()
- NotifyTransmitted()
- NotifyNotTransmitted()
- performFileQuery()
- notifyReceipt()
- notifyNotReceipt()
- deleteUser()

ChatGUI

TOuser

- UpdateConnectedList()
- dialogBox()
- notification()
- printMessage()
- fileManager()
- fileDownloadQuery()

TOChatCTRL

- performConnect()
- performSendMessage()
- performSendFile()
- processAcceptTransfer()
- processRefuseTransfer()
- performDisconnect()

ChatCtrl

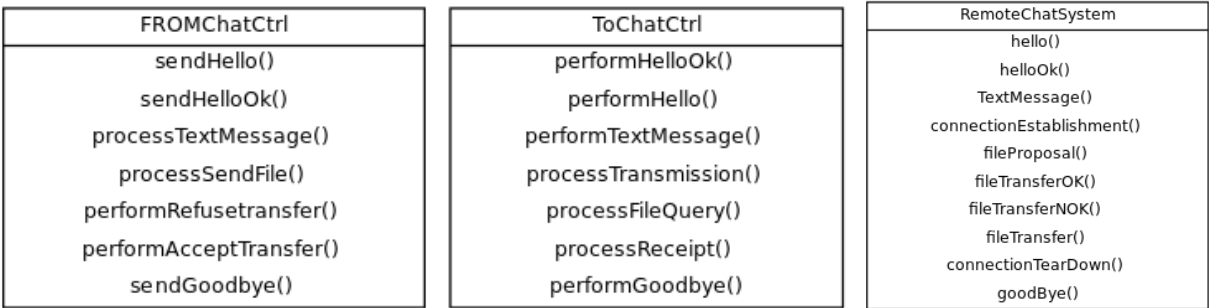[TOChatNI | sendHello(); sendHelloOk(); processTextMessage() ; processSendFile() ; performRefusetransfer() ; performAcceptTransfer() ;   sendGoodbye()]

[FromChatNI | performHelloOk() ; performHello() ; performTextMessage() ; processTransmission() ; processFileQuery() ; processReceipt() ; performGoodbye()]

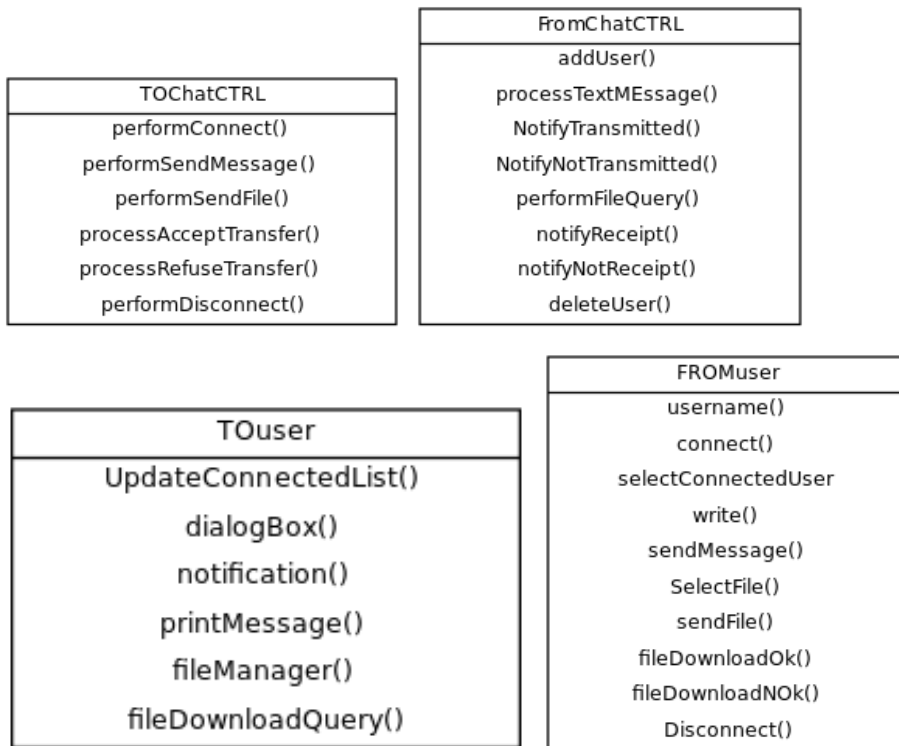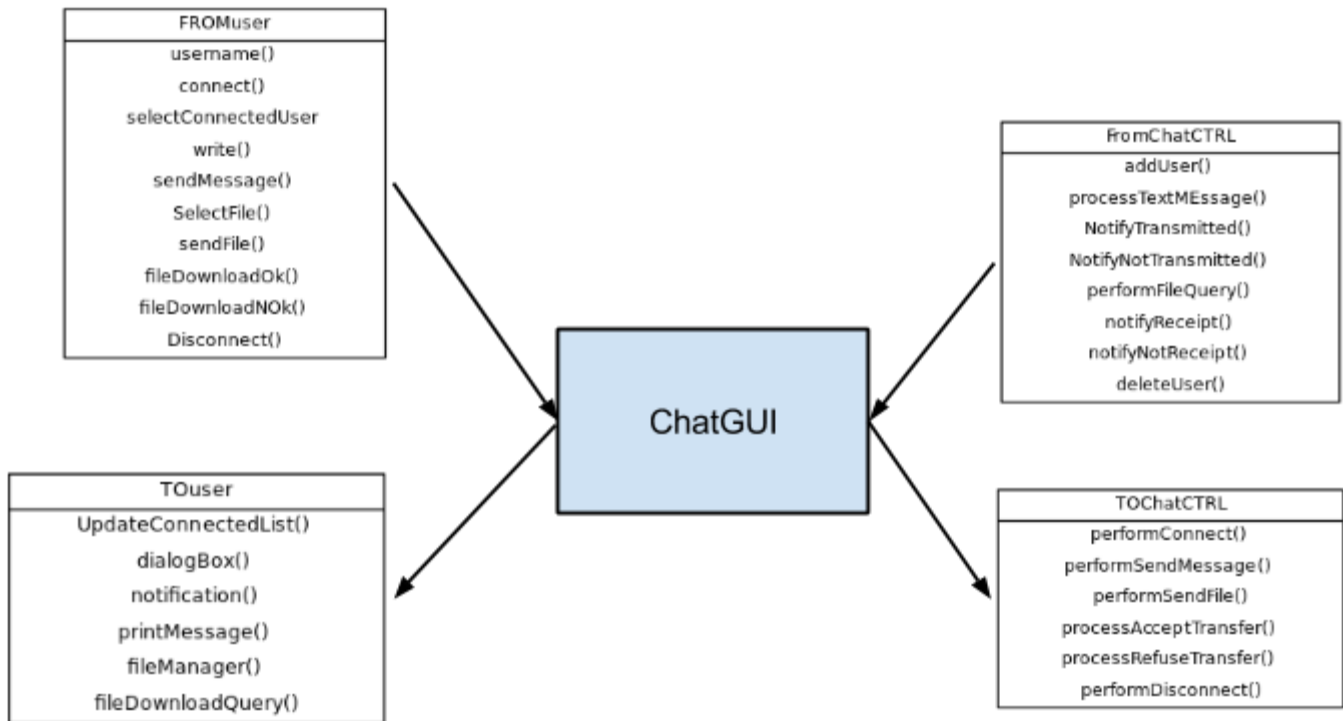[ToChatGUI | addUser() ; processTextMEssage() ; NotifyTransmitted() ; NotifyNotTransmitted() ; performFileQuery() ; notifyReceipt() ; notifyNotReceipt() ; deleteUser();]

[FromChatGUI | performConnect() ; performSendMessage() ; performSendFile(); processAcceptTransfer() ; processRefuseTransfer() ; performDisconnect()]

TOChatNI

- sendHello()
- sendHelloOk()
- processTextMessage()
- processSendFile()
- performRefusetransfer()
- performAcceptTransfer()
- sendGoodbye()

FromChatNI

- performHelloOk()
- performHello()
- performTextMessage()
- processTransmission()
- processFileQuery()
- processReceipt()
- performGoodbye()

ToChatGUI

addUser()

processTextMEssage()

NotifyTransmitted()

NotifyNotTransmitted()

performFileQuery()

notifyReceipt()

notifyNotReceipt()

deleteUser()

FromChatGUI

performConnect()

performSendMessage()

performSendFile()

processAcceptTransfer()

processRefuseTransfer()

performDisconnect()

FromChatGUI

performConnect()

performSendMessage()

performSendFile()

processAcceptTransfer()

processRefuseTransfer()

performDisconnect()

FromChatNI

performHelloOk()

performHello()

performTextMessage()

processTransmission()

processFileQuery()

processReceipt()

performGoodbye()

ChatCTRL

ToChatGUI

addUser()

processTextMEssage()

NotifyTransmitted()

NotifyNotTransmitted()

performFileQuery()

notifyReceipt()

notifyNotReceipt()

deleteUser()

TOChatNI

sendHello()

sendHelloOk()

processTextMessage()

processSendFile()

performRefusetransfer()

performAcceptTransfer()

sendGoodbye()