

Chat App

Requirements Document

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1 Introduction

This document provides the requirements for the class project which is to design and create a chat application in Java that supports multiple users and chat groups. In this document is the list of functional and nonfunctional requirements for this project as well as a description of who the users are, who the stakeholders are and the use cases for this project. Lastly there is a list of milestones that describe the goals of each phase of the project.

1.1 Purpose and Scope

The purpose of this document is to solidify the requirements of the project and ensure that the goals for the project and the people involved are clearly defined as well as showing a path to completion for this project.

1.2 Target Audience

This document is targeted toward teachers to help asses if the requirements laid out in this document were met by me the student once the program is finished.

1.3 Terms and Definitions

- User – non-technical person who wants to use a chat app to talk with people
- stakeholder- person who is involved or has an investment in this project
- GUI- graphical user interface
- server- central computer that process and manages users and messages sent from the client applications
- client application- the chat program that the user will see and interact with.

2 Product Overview

The project is two programs a chat server program and a chat client program that can connect to the server. From a users perspective (that is someone who is using the client side program), they need to be able to create a user name and password and be able to log into a chat application where they can either enter a new channel, chat in a previously opened channel or send messages to a friend. They also need to be able to see their friends that are online. The server from a non-user perspective needs to accept connections from clients, create groupings of users in channels and accept data from clients and send it to all the members of the intended grouping. It also must have a record of users and password as to allow users to login with their credentials. This section is dedicated to explaining the users, stakeholders (that is people with an investment in this project), and use cases for this application.

2.1 Users and Stakeholders

The users of this application will be average people who may not know much about how computers work, but have interacted with a program that requires account information before. The stakeholders are myself as a student and the teacher and teachers assistant who will be grading this.

2.1.1 Me

I am solely responsible for designing and creating this application.

2.1.2 The Teacher and assistant

The teacher and assistant are responsible for quality assurance testing and my grade.

2.2 Use cases

Below is a list of the expected use cases for this application.

2.2.1 Chat Room

In this use case the users are people who share some common interest and want to discuss it in a non-private group setting. In this scenario a user should be able to log into the client application with the user name and password that they created the first time that they started the application and then connect to a channel that they are interested in like “bowling” and start talking to all of the other people that are online and in the channel “bowling”. In this case the server will have a list of users that are in the channel keyed to a channel identifier and be receiving and sending messages to all of those people to show up in that chat box on the client.

2.2.2 Personal messages

In this use case the users are people who want to send a private message to each other. In this case the user will type a special character followed by the users name that they want to send the message to and then the message. The server will treat this the same as a chat room except that it will be a chat room with only 2 people the sender and receiver.

2.2.3 Notifications

In this case a user may want to be alerted to a post in one of the open chat rooms they have if a certain word or phrase is mentioned like “were all going to die”. In this case the user will be able to click the alerts button and type in the phrase or word they are looking for. This will store that information in a list of keys associated with that user on the server, then when messages are being sent in any of the chat groups that the user is a part of the messages will be scanned for those keys and if found an alert will appear on the users client program letting them know what chat room the key matched.

3 Functional Requirements

Listed below are the major functional requirements for this application.

3.1 Server Client Connection

The first functional requirement for this application is that there needs to be a server and a client that can communicate with each other, this can be broken down into several sub-requirements:

- The client must attempt to connect to the server knowing its ip and having a mutually agreed upon port for communication.
- The server must then accept the client on the condition that a valid user name and password is presented
- Next the server must send a ready signal to the client saying that it can accept data
- Then the client can send messages that the server can receive and transmit to the appropriate locations.

3.2 Usernames

The server must hold a list of all of the currently online users that it updates frequently and pushes out to all of the clients that are connected so that each user knows all of the other users online.

3.3 Graphical User Interface

The client program must have a graphical user interface that is user-friendly and provides the ability to log in. Send messages to people, receive messages from people, and chat to groups.

4 Nonfunctional Requirements

Below is a list of the nonfunctional requirements for this application and project.

4.1 Time line

This application and all of its documentation must be finished and turned in by June 8th with the due dates as follows:

- April 25th requirements documentation
- May 9th design documentation
- May 30th test plan
- June 8th report and deliverable

4.2 Programming Language

The whole project must be written in Java with no other languages used for all or part of the project.

5 Milestones and Deliverables

Below is a list of the milestones and deliverables for this projects as well as a short description of how they will be achieved.

5.1 Design and Design Document

Durring this first phase the bulk of the work will be spent coming up with a solid object oriented design for the client and server programs. This design will include the specifics on how the client server communication will be handled as well as how messages will be transmitted and how the server will store data on users and groups. It will also include the GUI layout. The deliverables will be a design document containing all of the information on the design as well as UML diagrams of classes and hierarchies.

5.2 Test Plan

This stage will consist of coming up with tests to prove the design and test the functionality of the application. The tests will need to:

- verify client server connections
- ensure messages can be sent and received
- test that messages can be sent from one client to another different client
- test that messages can be sent from one client to a group of clients
- verify that users can create an account and log in with it
- ensure that the features of the GUI are working properly

At the end of this stage a detailed test plan will be written up as a deliverable.

5.3 Coding

This stage is where the application will actually be made using the design document and the test plan each piece of the program will be created and tested. The final report on the project will be delivered along with the programs and code at the end of this phase.