CHAT SERVER APPLICATION

Software Requirement Specification (SRS)

Document

Sprint 2 Implementation

Project Timeline: 12/10/2022 TO 19/10/2022

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1. Introduction

The introduction of the software requirement specification provides an overview of the entire software. The entire SRS with overview description purpose, scope, tools used and basic description. The Instant Chatter Application is a system in which the user can register and afterwards login into the system using the valid username and password. After successful login attempt, the user will able to view rest of the users that are also logged in at that particular time. Once the user is registered, their data i.e username and password is stored on the server in a structured format.

1.1 Purpose

The target audience set for this project is can be identified as an office management or any other organization who are willing to share their data and messages among their registered users.

1.2 Intended Audience

This SRS is intended to be read by the users on both Server and Client side.

1.3 Intended Use

- Development Team
- Maintenance Team
- Clients

Since this is a general purpose software , it can be used by anyone , anytime .

1.4 Project Scope

The project aims to create and develop a server to client chat application. While registration it ask for the username and password from the user along with other valuable information like name etc. It stores all this data into the server for validation part later on. The messages can very efficiently be transferred among the users into this system. This function also provide the function of searching a chat done earlier. Chat backup is done on the server and user can very easily search the chat done by them.

2. Overall Description

This application is used to connect to multiple clients at the same time and exchange messages. The first and foremost step in the efficient and smooth use of this application is the establishment of a server on one of the terminals. Users can then access this server accordingly as per their requirements. Users can get connected to the server once the server is established . Multiple users can connect to this server at the very same time.

For the users who trying to get connected for the very first time , they need to register themselves using a particular username and password. They can use this credential when they login again into the system. After Successful login attempt, the clients enter the chatroom , where they are along with other clients who have also logged into the server at that particular time. This list of active users is displayed to the newly logged in user and also on the server side.

When a user sends a message, the message is broadcasted to the other currently active users through the server. This way the multiple clients who have connected to the server can communicate among one another. When a user wants to log off from the system, they have to simply write EXIT in the chatroom. After this they are disconnected from the server and their name also gets removed from the active user list.

This application is written taking into account the small organization working over Local Area Network. As per their requirement they can use this application and have an efficient communication. Preferably the banks, small stores etc can be the most benefitted user of this application.

2.1 Assumptions and Dependency :-

- System should have **Linux Ubuntu** installed.
- System should have either 4 GB or more RAM
- The service is used preferably on Desktop or Laptop.

3. System Features and Requirements

3.1 Server Side Interface

All the below mentioned functions can be executed along the server side.

3.1.1 User Registration

This module is used for the users who have logged into the application for the very first time. They need to provide their username and create a password for the purpose of registration into the server.

3.1.2 User validation

After successful registration, this module is executed when a user enter his credentials into the system. The credentials are verified and if they are satisfactory and matches with the record on the server, the user is validated by the server and logged into the chatroom , connected to the server.

3.1.3 Active User List

After validation process , this module displays the list of the other users who are currently also validated and connected to the server.

3.1.4 Message Exchanges

The user is now able to send and receive messages to and from the other connected users though the server.

3.2 Client Side Interface

3.2.1 User Login

User is asked to enter his username and password after successful registration.

3.2.2 Registered User

If the user has entered correct credentials, he is directed to the chatroom , which shows that the user is already registered into the server

3.2.3 Failure Login

If the User fails to provide Correct credentials, he/she is not allowed into the chatroom and failure login message is displayed on the clients side.

3.2.4 Sending and Receiving message

User is allowed into the chat room and is able to send and receive message in his terminal.

3.2.5 Search Chat Aplication

The chat history is stored in the servers side in a text file and can be accessed by the registered users in read only mode.

3.2.6 Sign out

Once the user is finished his conversation he can simply leave the chat room by giving EXIT message into the server.

3.3 System Requirements

3.3.1. Tools to be used:

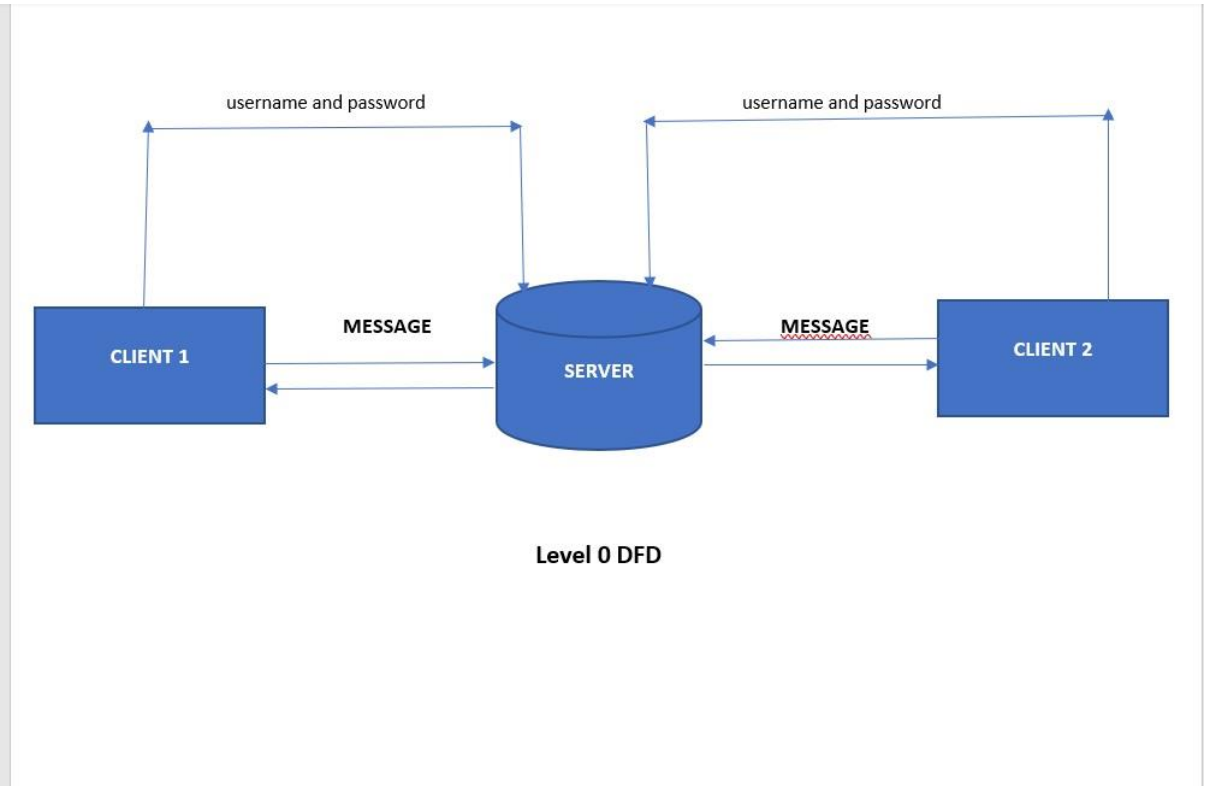
- Pthread Library
- Gcov
- Splint
- C Unit Testing
- Valgrind

3.4 System Features

- Supportability: The system is easy to use.
- Design Constraints: The system is built using only C language.
- Usability:
- Reliability & Availability**:** The system is available 24/7 that is whenever the user would like to use the system, they can use it up to its functionalities.
- Performance: The system will work on the server and client's terminal**.**

4. Data Flow Diagrams

4.1 Level 0 DFD



Level 0 DFD

4.2 Level 1 DFD