**SDS**

1. **Introduction**
   * This document describes the design specifications of an application that provides the user a service of chatting with another
2. **System overview**

* The application provides an interface where a user can login and start chatting with any registered user once they get connected to the server.

1. **Design considerations**

* Assumptions:
  + The client is connected to the server
  + The client’s device can execute a python script
* Constraints:
  + The server must be running at all times or at least be switched on before a client tries to connect with it
* System Environment:
  + The application will run on the windows terminal

1. **Architectural Design:**
   * **Components:**
     + There will be two major components in the application: Server and Client
     + The Server’s job is to connect with multiple clients simultaneously and also receiving and sending messages to them
     + The client must connect to the server to send messages
   * Communication:
     + An indirect Client to Client connection will be established through the Server
     + Each Server-Client connection will work on TCP/IP protocol
     + Client will send the message meant for another client to the server and then the server will send it to the destined Client
   * Flow of Application:
     + Login-> Enter Different user’s Username-> Start of chat-> Enter message-> Message goes to server-> Server receives the message-> Server sends the message to destined Client
     + After the chat starts, remaining process runs in a loop and both the clients can send and receive messages
2. **Module Design:**
   * The whole application will be divided in two modules: Server and Client and they’ll be working on server and client machine respectively
3. **Data Design:**
   * The messages will be strings that will be shared amongst devices
4. **Security measures:**
   * The passwords are mandatory for each user to use the application
   * A password once set cannot be changed
   * Tshe data sent by a client will be received only by the authorized server and then will be sent to targeted client only.