**GROUP 16- MULTI-USER CHAT APP (Local Network)**

Group 16 proposes to develop a Python Multi-User Chat App with a Tkinter GUI that allows users on the same local network to connect, choose usernames, and exchange messages in real time. The app will be structured with separate classes for the server and clients, include custom exceptions for network errors, and provide a simple Tkinter interface with a message area, input box, user list, and timestamps. Automated tests will verify networking reliability and error handling. Our team will collaborate via GitHub with defined roles: the Networking Team will implement the socket-based server and client communication, the GUI Team will design the interface, the Testing Team will write unit tests and document network procedures, the Docs/Media Team will prepare README files, reports, and demo videos, and the coordinator will oversee integration and submission. To achieve the MVP, we will implement a functioning server that accepts multiple clients, broadcasts messages, and handles disconnects gracefully, along with a basic client GUI and corresponding tests, ensuring a reliable and minimal chatroom.  
  
By Day 7, we will expand the app with stretch goals including private messaging between users, chat history stored on the server, and basic message encryption for added security. This will ensure the app not only meets the functional requirements but also demonstrates scalability and innovation. The project will use Python 3, Tkinter, sockets, pytest, pipenv, and GitHub, resulting in a simple yet fully functional chatroom application with a user-friendly interface, reliable communication, and tested stability.