Project Design Phase-I

Proposed Solution Template

Proposed Solution Template:

Sr.No	Parameters	Description
1	**Project Title**	ChatConnect – A Real-Time Chat and Communication App.
2	**Objective / Goal**	To build a secure, fast, and scalable real-time messaging platform that enhances collaboration among students and users through chat rooms, personalized profiles, and instant communication.
3	**Key Features**	-User Registration and Profile Creation - Join/Create Chat Rooms - Real-Time Messaging (Text, Emojis, Media) - Notifications - Chat History - Feedback and Support
4	**Technology Stack**	- Frontend: Jetpack Compose (Android) - Backend: Firebase Authentication, Firestore (NoSQL DB), Firebase Cloud Messaging - Cloud: Google Firebase
5	**Target Users**	- Students (like Sophie) - Remote teams - Academic groups - Social and hobby communities
6	**Architecture Overview**	-Frontend (Android Jetpack Compose) handles UI and user state - Firebase Authentication manages login & signup - Firestore stores chats, user data - FCM pushes real-time message updates
7	**Innovation / Uniqueness**	- No need for custom backend – Firebase handles everything in real-time - Personalized experience with profile, status, preferences - Minimal development effort but maximum scalability
8	**Scalability and Performance**	Firebase provides real-time sync and horizontal scaling for high user traffic. Compose ensures smooth UI even with dynamic data updates.
9	**Future Enhancements**	- Voice/video calls - AI chatbot integration - Admin tools (mute, pin messages, analytics) - iOS/Web version