

Technology Stack (Architecture & stack)

Technical Architecture:

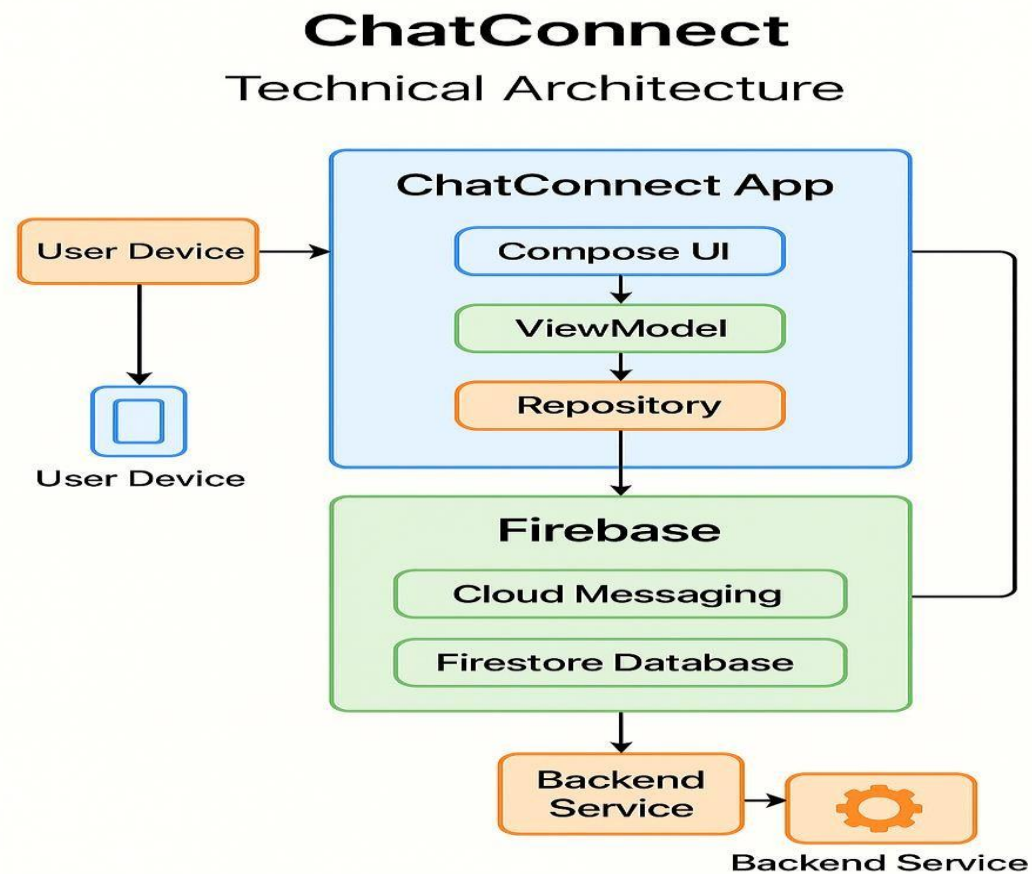


Table-1:Components&Technologies

S.No	Component Description	Technology
1	User Interface	Jetpack Compose (Android), Material UI
2	User Registration & Profile Creation	Firebase Authentication, Firestore
3	Real-Time Chat Messaging	Firebase Realtime Database / Firestore
4	Chat Room Creation & Management	Firebase Firestore, Jetpack Compose
5	Multimedia Sharing (Images/Videos)	Firebase Storage
6	Push Notifications	Firebase Cloud Messaging (FCM)
7	Chat History & Archives	Firestore (with timestamp-based message archiving)
8	State Management & Navigation	Jetpack Compose State, View Model, Navigation Component
9	Real-Time Updates	Firebase SDK with snapshot listeners
10	Customization & Preferences	Shared Preferences / Data Store (for storing local settings)
11	Feedback & Support	Firebase In-App Messaging / Google Forms / Dedicated Support Module

Table-2:ApplicationCharacteristics

S. No	Characteristics	Description	Technology
1	Open-Source Frameworks	Frontend and backend built with open-source technologies	Jetpack Compose, Kotlin, Firebase SDK, Android Jetpack
2	Security Implementations	User authentication, encrypted data transmission, access control	Firebase Authentication, Firestore Rules, HTTPS, OAuth 2.0
3	Scalable Architecture	Modular architecture for messaging, storage, and user management	Firebase (Cloud Firestore & Storage), MVVM, Repository Pattern
4	Availability	Real-time sync, offline support, multi-device access	Firebase Realtime Database, Firestore offline support, Cloud Functions
5	Performance	Cached messages, asynchronous UI updates, background message processing	Firebase Firestore caching, WorkManager, LiveData/StateFlow