Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	27 October 2023
Team ID	Team-590882
Project Name	ChatConnect- A Real-Time Chat And Communication App
Maximum Marks	4 Marks

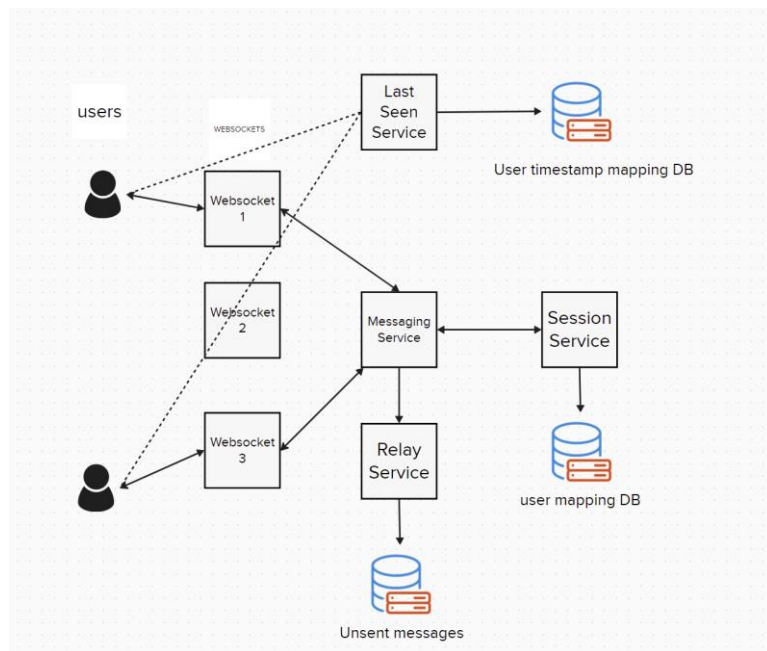**Technical Architecture:**
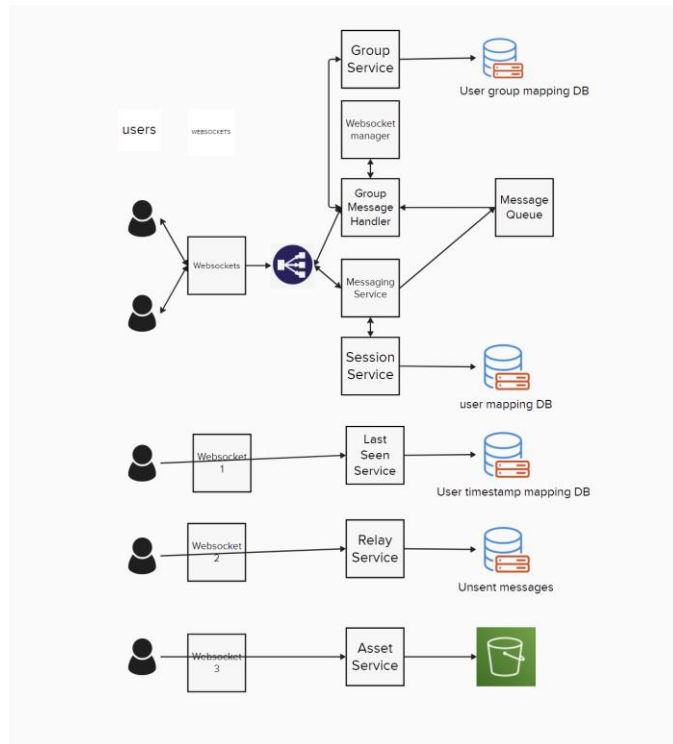

Figure 1: One to One chat app architecture

Figure 2: Chat App Architecture if Group chat is involved

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Mobile App (Android)	Xml(for layout), Kotlin/java(for code), Android Studio
2.	Application Logic-1	Android app Logic	Java/Kotlin
3.	Database	Real time Chat Data, User Profiles	Firebase Firestore(NoSQL)

4.	File Storage	User Profile Pictures and Media Files	Firebase Storage
5.	Infrastructure (Server / Cloud)	Deployment on Cloud Servers	Firebase Cloud Firestore, Firebase Services, Google Platform.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	No open-source frameworks are used in this app. It is developed using Kotlin as the primary programming language in Android Studio.	Kotlin, Android Studio
2.	Security Implementations	Firebase Authentication for user login, providing secure email/password authentication	Firebase Authentication
3.	Scalable Architecture	The architecture is designed for horizontal scalability. Firebase services auto-scale to accommodate user demand. Firestore and Firebase Realtime Database support real-time scaling of data.	Firebase Firestore, Firebase Realtime Database, Firebase Cloud Functions for scalability
4.	Availability	Availability is ensured through Firebase's managed services,(Firebase uses load balancing and distributed servers to handle traffic efficiently).	Firebase Realtime Database, Firebase Cloud FireStore, Load Balancers
5.	Performance	Firebase's serverless architecture allows handling a high number of requests per second. Firebase Hosting and CDN integration for fast content delivery.Caching mechanisms can be implemented to enhance app performance.	Firebase Realtime Database, Firebase Cloud FireStore, Firebase Hosting, Content Delivery Network.