**Project Title:** Android & iOS SIP application.

**Aim:** The aim of this project is to develop a mobile application for Android and iOS platforms using an open-source SIP client called Linphone, integrated with Firebase Cloud Messaging (FCM) to enable push notifications.

**Methods:**

**Client Application (Linphone VoIP):**

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* The Linphone VoIP client application running on Android devices will be Integrated with Firebase Cloud Messaging (FCM) SDK to receive push notifications.
* Registers with FCM to obtain a device registration token.
* When the application is in the background, it relies on push notifications from the server to wake up and handle incoming calls.

**Server Side:**

Spring Boot Application:

* Acts as the backend server responsible for sending push notifications to client devices.
* Handles registration of device tokens and sends notifications when there's an incoming call.
* Consists of the following components: Controller Layer: Defines RESTful endpoints for handling device token registration and notification sending.

Service Layer: Implements business logic for interacting with Firebase Cloud Messaging and managing device tokens.

Firebase Admin SDK Integration: Integrated with the Firebase Admin SDK to send push notifications to client devices via FCM.

Database (Optional): Stores device tokens for registered users, allowing the server to target specific devices with notifications.

Notification Handling:

When an incoming call event occurs in the Linphone VoIP server, it triggers a notification to be sent via the Spring Boot backend.

The Spring Boot server receives the call event notification and identifies the target devices (using stored device tokens).

It then sends push notifications to the targeted devices using the Firebase Admin SDK.

The push notification contains data indicating that there's an incoming call, prompting the Linphone VoIP client application to wake up and handle the call.

Client Interaction:

Upon receiving the push notification, the Linphone VoIP client application wakes up or is brought to the foreground.

It processes the notification and handles the incoming call, allowing the user to answer or reject the call as appropriate.

Deployment:

Deploy the Spring Boot backend to a server or cloud platform capable of running Java applications.

Ensure that the Linphone VoIP client application is configured to handle push notifications from FCM and that the necessary permissions are granted.

**Deliverables and Milestones:**