REPORT - MOBILE COMPUTING PROJECT
Video Meet Application : VIDMEET

Introduction

VidMeet has emerged as a solution to overcome geographical barriers and unite individuals in a digital realm, enabling seamless communication, collaboration, and connectivity. With its adaptable framework, VidMeet caters to a wide range of video conferencing needs, whether organizing professional gatherings, facilitating online educational sessions, or simply staying in touch with loved ones.

Activities

There are 4 activities :

1) Signup (Singp.kt) : Users can signup using their email ID and passwords
2) Login (MainActivity.kt) : Signed-up users can use their email id and password to login into the account
3) Home (Jitsi. kt) : Users can add a room name and join the respective meeting. To invite others users can communicate the room name The history of joined conferences is also visible.
4) Profile(Profile. kt) : Users can update their display name for the meeting, see their logged email id, and sign out.

Sensors

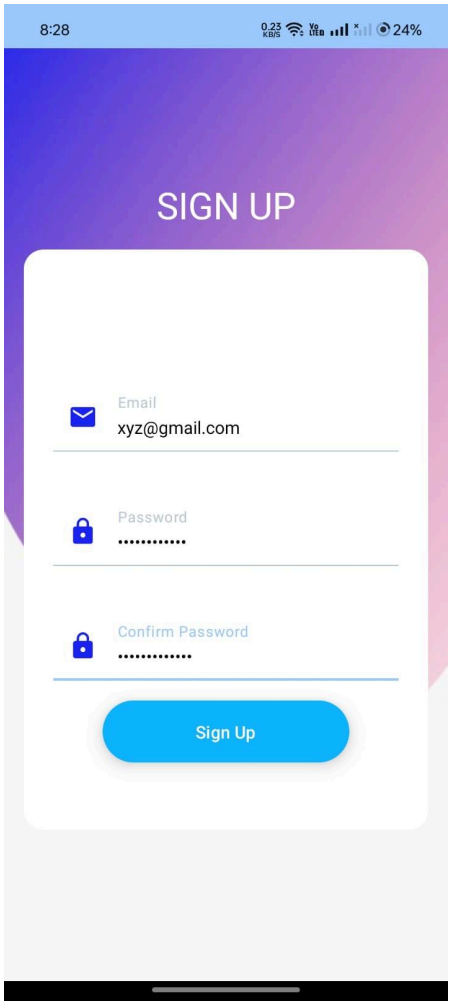
In our video meet app, we've implemented the fused location client to enhance user experience by providing real-time location data. This feature allows us to retrieve the current location of the user accurately, which we then store in the database for reference and display on the Home screen.

Database

We have utilized two databases:

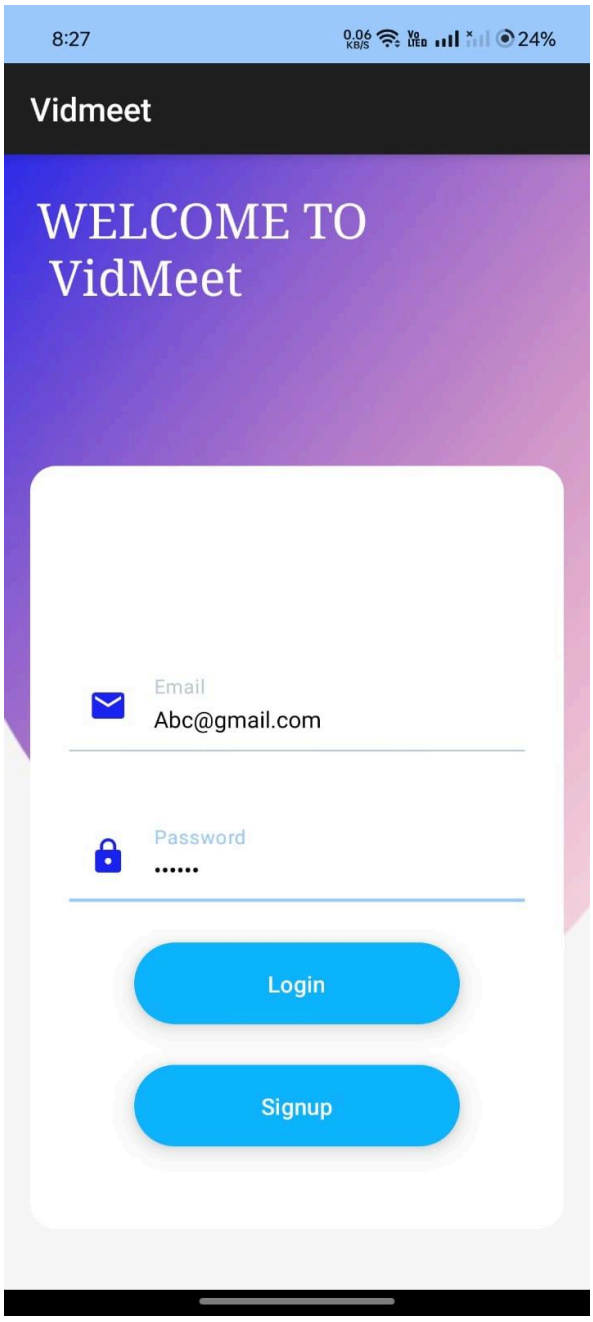
1) Authorization: For this, we have used the Firebase Authorization api, when a user signup, his credentials(email ID and password) are added to the database. Using this during login we can verify the user account.
2) Storing Joined meet conferences: We are using the usual Room Api, in which we have created a table/Entity “room”. In this, we are storing the Conference/Room name, time, date, and the location of the user when he joined the meeting.

Signup Page:



This consists of a simple signup page,
There are 3 text fields: Username, Password and Confirm
After entering the credentials, Firebase Api is used for authorization and the user is added to the user's list in the Firebase database using the createUserWithEmailAndPassword function.

Login Page:



This is the starting screen of the app.
After signing up, users can use their email ID and password to login to the application. Here, auth.signInWithEmailAndPassword is used for login using Firebase. After login, the user is sent to the jitsi screen.

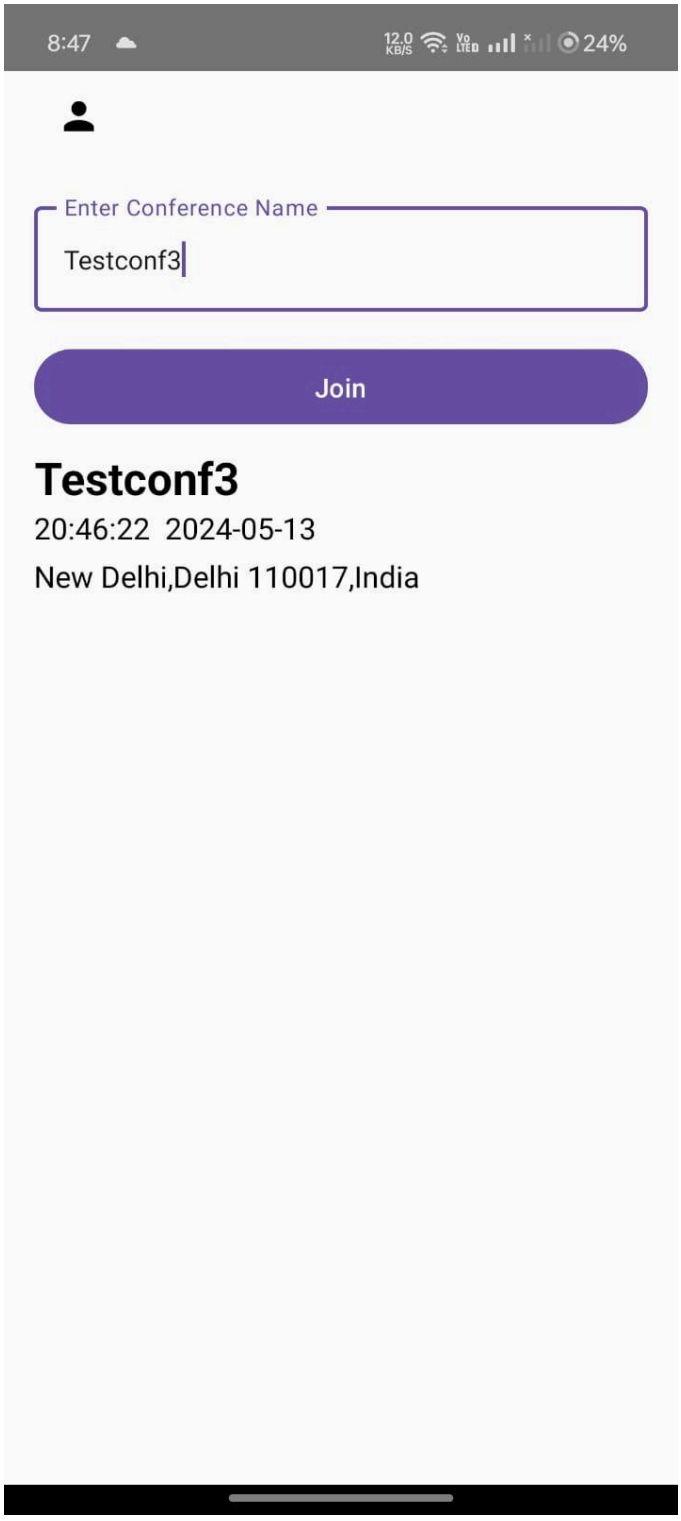
Jitsi.kt (home/meet screen)

This design comprises a straightforward text field where users can input the room name and subsequently join by activating the join button. The video conferencing service utilized is Jaas (Jitsi as a Service). Initially, API keys were generated for our server on the Jaas webpage. The construction of a Jitsi Meet conference necessitates a JWT token builder, which is encapsulated within the Main.java class, and sourced from the official Jitsi GitHub repository. The JwtBuilder facilitates the generation of respective tokens for users. For creating a JWT Token, we are required to Apikey a username, email, and other information modifiable such as moderator, and transcription, but we have hard-coded them for now.
Then we sign our token with our private key.

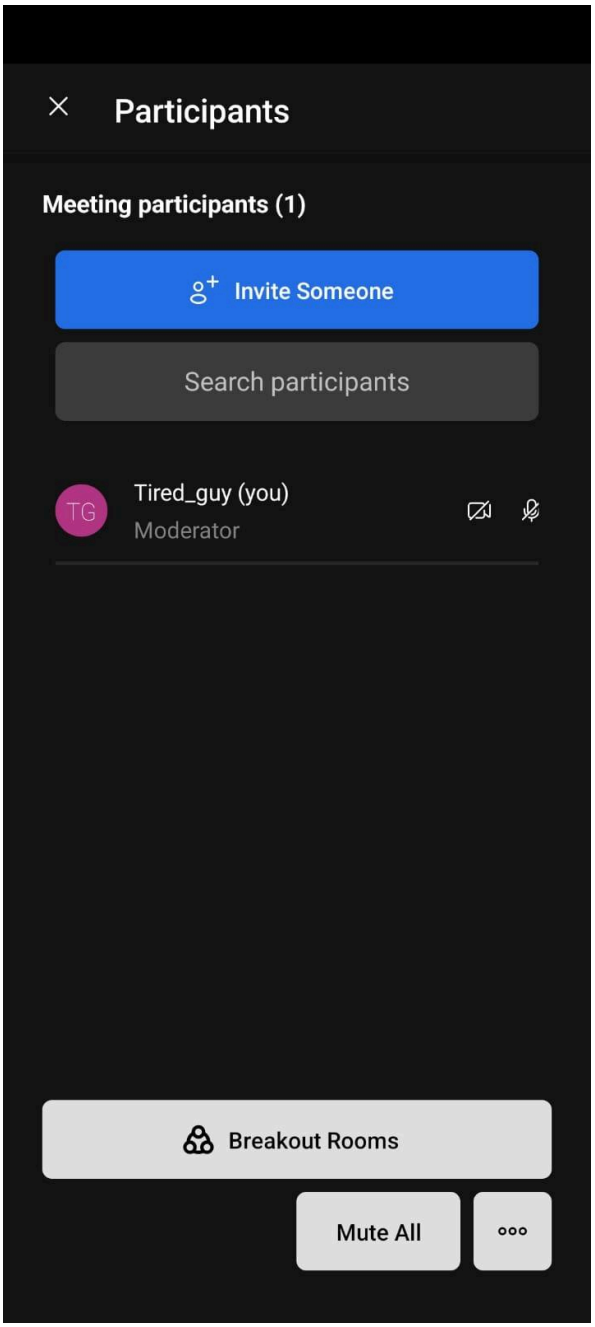
Upon pressing the join button, the JitsiMeetActivity is instantiated with predefined parameters such as the JWTToken, room name.
We have the microphone and camera turned on at the start of the meeting.
Subsequently, user entry into a conference triggers the addition of pertinent details to a database roomdb. Within this database, entries encompass the room name, time, date, and the user's location at the time of joining the meeting.

Beneath the join button, a lazy column is employed to display a list of rooms/conferences with their respective details, that users have previously participated in.

Located in the top-right corner, a profile button offers users a pathway to access their respective profiles.




00:07
Testconf...
1
TG
You are the only one in the meeting
Invite Others


Participants
Meeting participants (1)
Invite Someone
Search participants
TG
Tired_guy (you)
Moderator
Breakout Rooms
Mute All

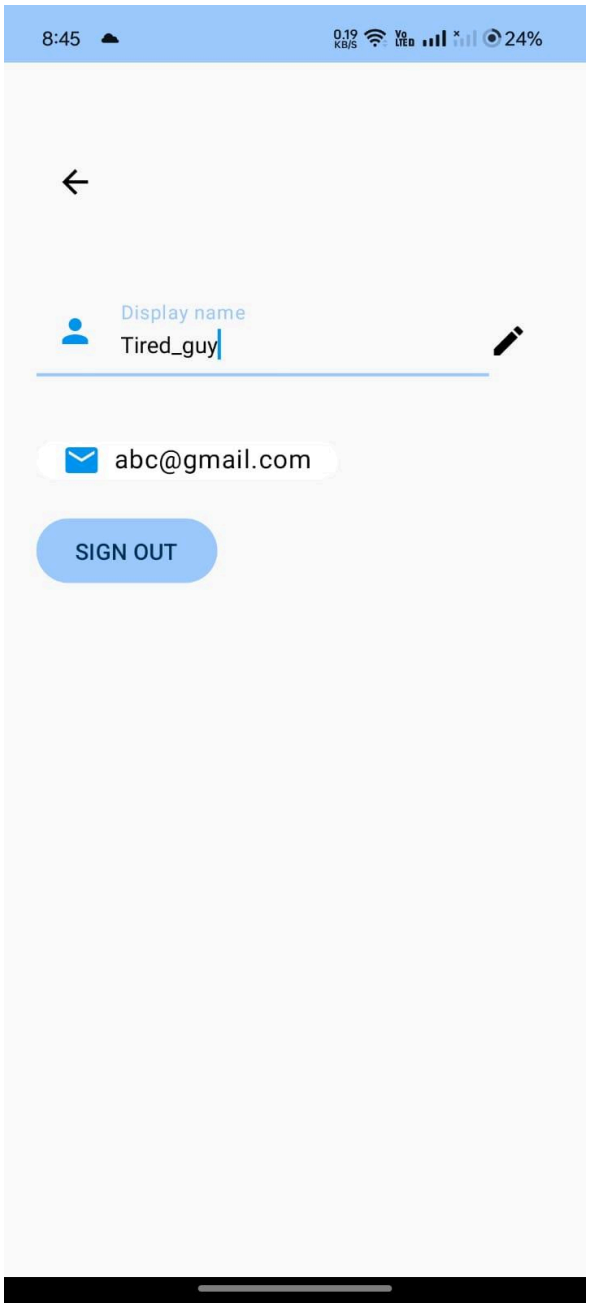
Profile page

This is a simple screen where we are showing the details of the user

Display name: Name visible in the meet

Email ID: Email ID of the user account

And below there is a sign-out button.



Project by

Vianshu Shalyan (2021298)

Devansh Singh (2021250)

Resources:

Youtube

Android documentation

Jitsi Sample on github

Jaas documentaion

Vidmeet:

Empowering Your Presence, Virtually Everywhere