SAFEPLAY — SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

Version 1.0
Prepared for: SafePlay Android Application
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1. Introduction

1.1 Purpose

This SRS describes all functional and non-functional requirements for the SafePlay Android application.
The purpose of SafePlay is to provide a secure, modern communication and account-management platform with advanced authentication, PIN systems, chat functionalities, admin controls, and user safety features, With Mini Games provided in it.

This SRS is intended for:

- Developers
- University project evaluators
- Future maintainers

1.2 Scope

SafePlay is a fully functional Android app built using **Kotlin + Jetpack Compose + Firebase**.
Core functionalities include:

- User registration and login
- OTP & email verification
- PIN system (4/6 digits)
- Biometric login
- Small Games
- Secure chat system
- Delay chat system
- Admin panel (master admin + admin + user roles)
- Ban/unban users
- User feedback system
- Upload wallpapers & profile photos
- Video/animated logos
- Settings & profile &Starred message screens
- Encrypted local storage
- Clean, modern UI with SafePlay glow animations

1.3 Definitions

Term	Meaning
OTP	One-Time Password for phone verification
PIN	Personal numeric key for app access
Firebase Auth	Authentication provider
Firestore	NoSQL database used
Master Admin	Highest level admin with full access
Admin	Limited admin functionalities
User	Normal application user

1.4 References

- Firebase Authentication documentation
- Firebase Firestore documentation
- Jetpack Compose docs
- Android Material 3 guidelines

2. Overall Description

2.1 Product Perspective

SafePlay is a standalone Android application built with:

- Firebase Authentication
- Firebase Firestore
- Firebase Storage
- Jetpack Compose
- Media3 / ExoPlayer
- EncryptedSharedPreferences

The app follows MVVM architecture and uses ViewModels.

2.2 Product Functions

Major modules:

1. **Authentication Module**

    - Signup (email + phone)
    - OTP verification (phone)
    - Email verification
    - Login system

2. **PIN Module**

    - Create PIN
Enter PIN (4/6 digits)
Change PIN
    - Support email for forgotten PIN
    - Firebase updates PIN fields

3. **Biometric Authentication**

    - Fingerprint/Face auto prompt
    - Automatically disables if device biometrics removed
    - Button to re-enable biometrics

4. **Chat System**

    - Send, delete, edit messages
    - Typing indicators
    - Delivered markers
    - Profile photo & name support
    - Reactions
    - Star/unstar messages
    - Pagination
    - Profanity filter
    - Glowing SafePlay UI

5. **User Dashboard**

    - Shows conversation list
    - Remove user from dashboard
    - Glow animation when user updates photo/name
    - Profile avatars
    - Search & open chats

6. **Admin Panel**

    - Master admin & admin login
    - Ban/unban users
      View feedback message
    - Admin feedback reply
    - User management
    - Promote user → admin (only master admin)

7. **Profile Module**

    - Upload profile photo
    - Video logo in top bar
    - Display name toggle
    - Gender
    - About

8. **Settings Module**

    - Change PIN
    - Password change (Only with email)
    - Change wallpaper
    - Support email

    - Delay Chat feature
    - Delete user account on their request
    - Video icons for each row
    - Feedback/reports

9. **Wallpaper System**

    - Upload custom wallpaper
    - Auto Delete old wallpaper on uploading new
    - Show preview
    - Animated progress bar

10. **Local Storage Module**

- Secure login persistence
- Uses EncryptedSharedPreferences

2.3 User Characteristics

User Type	Description
Normal User	Can chat, set wallpaper, set PIN, manage profile
Admin	Can ban/unban users, view feedback
Master Admin	Has full control, can promote admins
Guest	Not supported (must login), Games only support for Guest

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2.4 Constraints

- Requires Android 8.0+
- Firebase account required
- Internet required for major operations
- Authentication relies on Firebase OTP/email
- Heavy UI animations may need 4GB+ RAM devices

2.5 Assumptions

- Users have valid email & phone number
- Users will not share PIN publicly
- Admins will follow ethical moderation guidelines

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3. System Features (Functional Requirements)

3.1 User Registration

FR1: User must provide email, phone, password
FR2: Application verifies phone with OTP
FR3: Email verification is required before login
FR4: Store user info in Firestore (`email`, `phone`, `role=user`)

3.2 Login

FR5: Login using email + password
FR6: After successful login, redirect to PIN entering screen if user generated if not redirect to PIN create screen
FR7: Allow user to resend email verification

3.3 PIN System

FR8: PIN must be 4 or 6 digits on creating user can set only 4 digit (later they can change from setting)
FR9: Save PIN & PIN length in Firestore
FR10: User must enter PIN before entering dashboard
FR11: If PIN wrong → show error
FR12: Email support option for forgotten PIN

3.4 Biometric Login

FR13: Auto shows biometric popup if enabled
FR14: Disable biometrics if device lock removed
FR15: User can re-enable biometrics

3.5 Chat System

FR16: Send text messages
FR17: Star/unstar messages
FR18: Mark messages delivered
FR19: Live typing indicator
FR20: Delete/edit anyone's messages
FR21: Load older messages (pagination)
FR22: Show avatars (default if none uploaded)
FR23: Message selection + neon glow

3.6 User Dashboard

FR24: Show list of conversations and user can remove other user from dashboard
FR25: Animate glow when user updates name/photo
FR26: Tap to open chat
FR27: Search for users using `publicId`

3.7 Admin Features

FR28: Show "Login as user/admin" dialog in condition of both roles
FR29: Master admin bypasses dialog
FR30: Admin can ban user (mail will be sent to banned user)
FR31: Admin can unban user (mail will be sent to unbanned user)
FR32: Ban status stored in Firestore
FR33: Admin can read/mark feedback

3.8 Feedback System

FR34: Users submit feedback with category and message
FR35: Admin sees feedback list
FR36: Mark as read/unread
FR37: Store reply in Firestore

3.9 Wallpapers

FR38: Upload wallpaper to Firebase Storage
FR39: Auto Delete old wallpaper on uploading new
FR40: Show upload progress
FR41: Display current wallpaper if user uploaded

3.10 Settings

FR42: Change PIN and enable/disable biomatric
FR43: Change Password (Only with email)
FR44: Delete User account on their request in 24 Hours
FR46: Small video icons for each row

3.11 Games

FR47: Mini games for user
FR48: no internet or login required for games
FR49: games will be accessed before login

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4. Non-Functional Requirements

4.1 Performance

- Smooth scrolling (40-60 FPS)
- Chat updates under 200ms
- Login response < 4 seconds

4.2 Security

- Firebase Authentication

- PIN stored securely (Firestore protected rules)
- Biometric authentication
- EncryptedSharedPreferences
- Firebase security rules + admin role-based access

4.3 Usability

- Clean UI with neon glow
- Video logos in top bars
- Small icons to maintain visual consistency

4.4 Reliability

- Auto retry message send
- Cache + Server fetch on PIN/Chat
- Fault tolerance for network errors

4.5 Maintainability

- MVVM architecture
- Modular code
- Separate screen files

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5. Database Requirements

5.1 Firestore Collections

`users/`

- uid
- email
- phone
- name
- publicId
- showDisplayName
- photoUrl
- pin
- pinLength
- role

- isBanned
- wallpaperUrl
- etc

`feedback/`

- id
- userPublicId
- message
- category
- adminReply
- isReadByAdmin

`chats/{conversationId}/messages/`

- messageId
- text
- senderId
- receiverId
- timestamp
- delivered
- reactions
- starredBy
- etc

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6. External Interface Requirements

6.1 UI Screens

- Login
- Signup
- OTP
- Create PIN
- Enter PIN
- Enter new PIN
- Dashboard
- Chat
- Profile
- Settings
- Starred messages
- Wallpaper picker

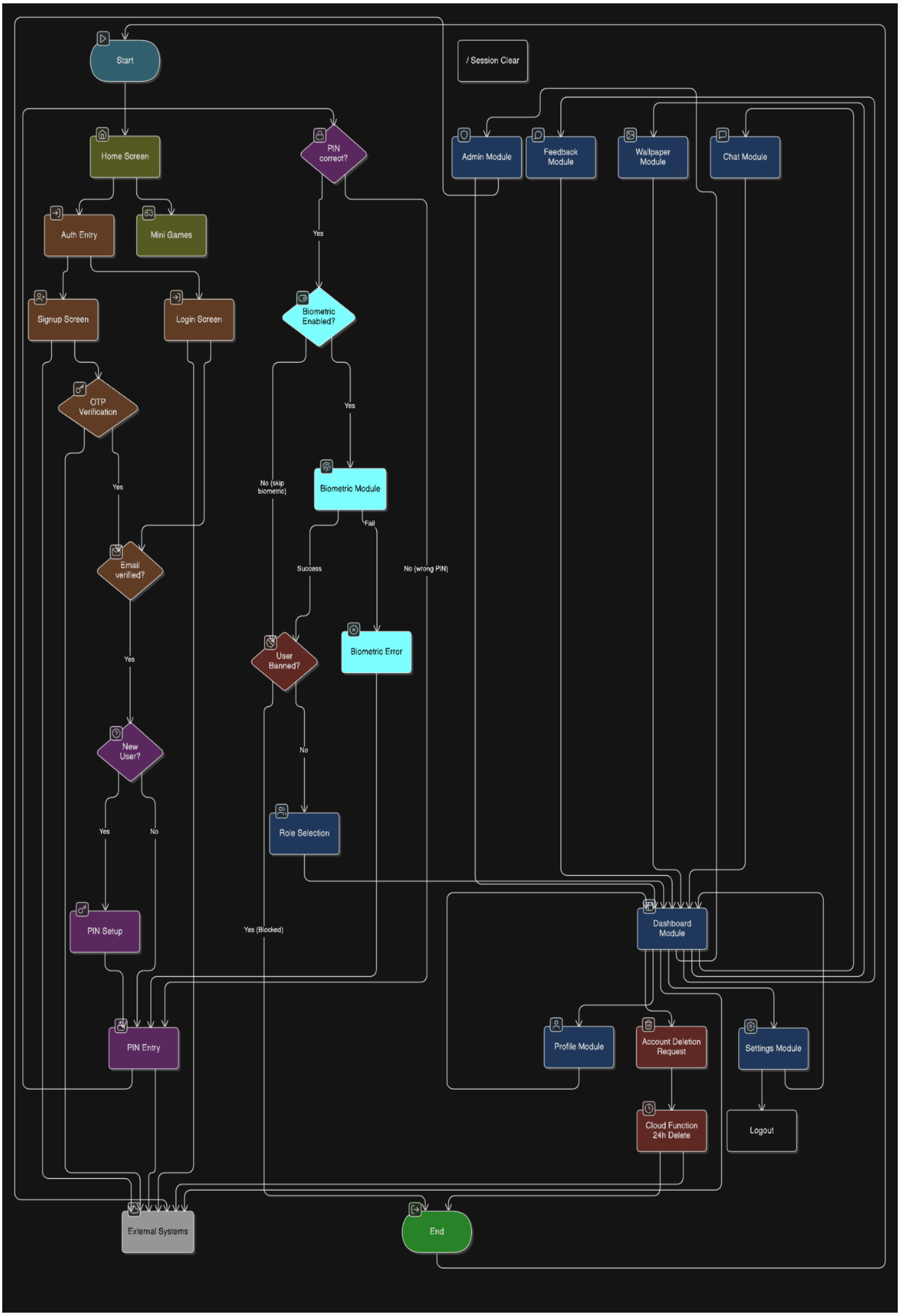
- Feedback form
- Admin panel
- Ban/unban screen
- User Management Screen
- Feedback viewer
- etc

7. System Evolution

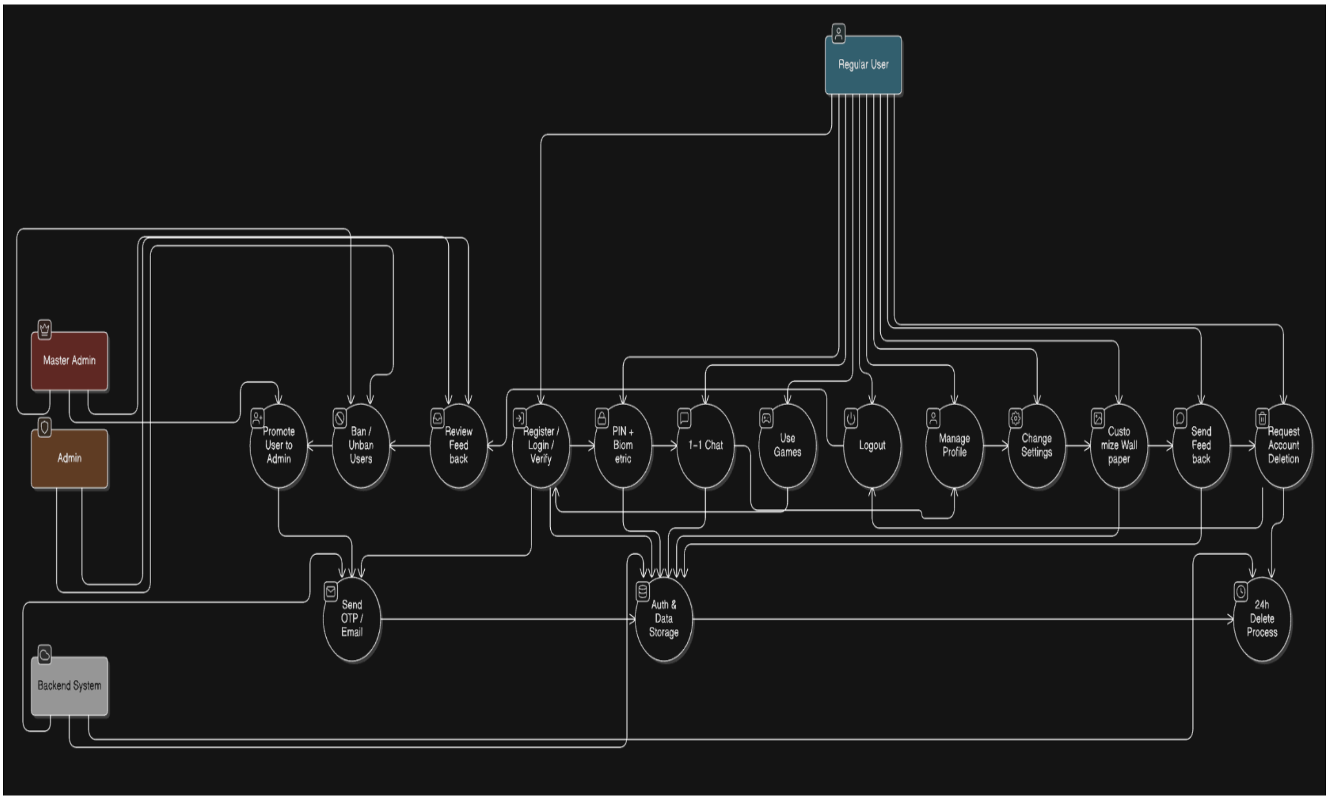
Possible future upgrades:

- Chat with AI
- Payment option for more functions
- Group chats

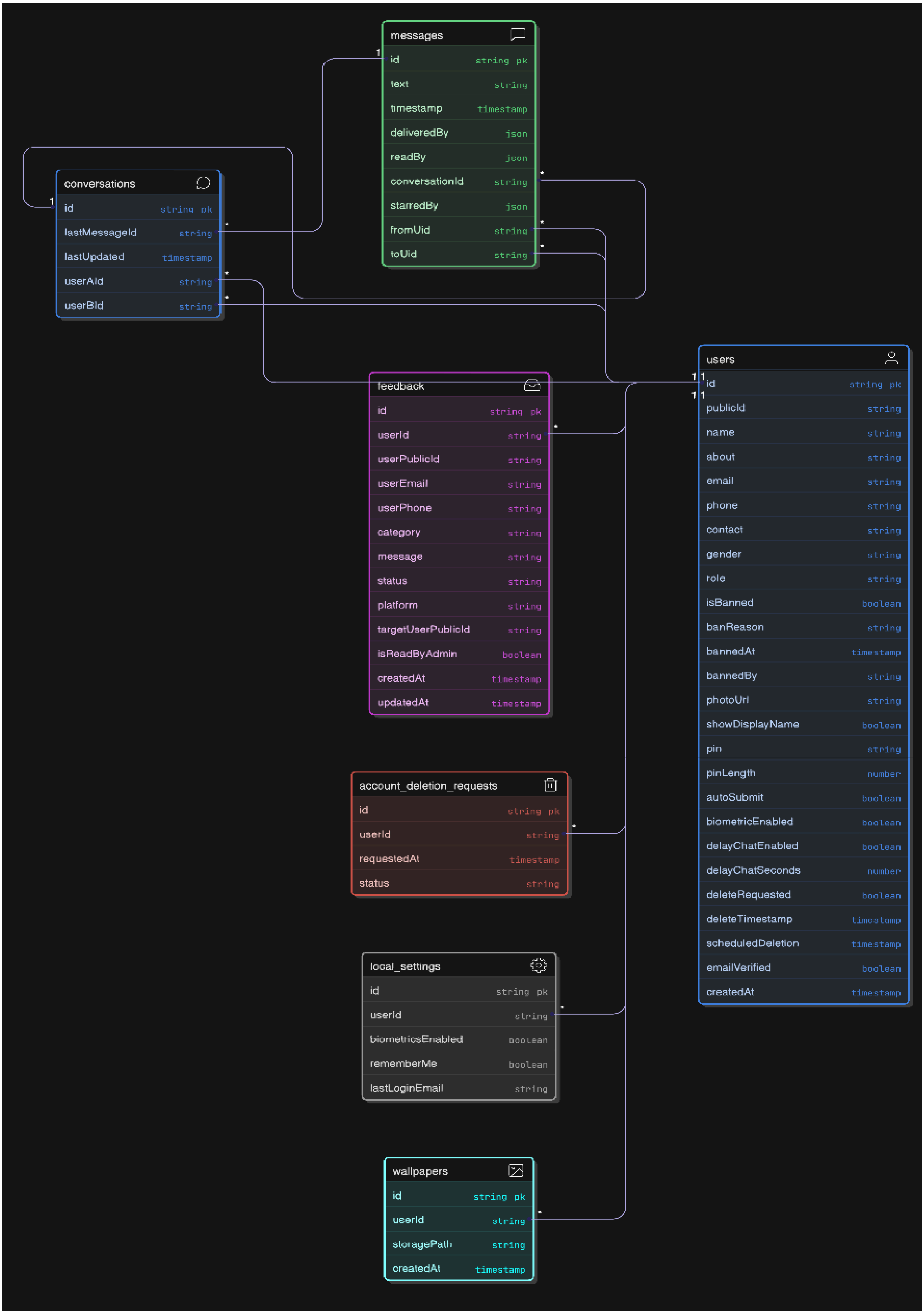
Flowchart:


Start
/ Session Clear
Home Screen
PIN correct?
Admin Module
Feedback Module
Wallpaper Module
Chat Module
Auth Entry
Mini Games
Yes
Signup Screen
Login Screen
Biometric Enabled?
OTP Verification
Yes
Yes
No (skip biometric)
Biometric Module
Fail
Email verified?
Success
No (wrong PIN)
Yes
User Banned?
Biometric Error
New User?
No
Yes
No
Role Selection
Yes (Blocked)
PIN Setup
Dashboard Module
PIN Entry
Profile Module
Account Deletion Request
Settings Module
Cloud Function 24h Delete
Logout
External Systems
End

Use Case:



Class Diagram:



messages	
id	string pk
text	string
timestamp	timestamp
deliveredBy	json
readBy	json
conversationId	string
starredBy	json
fromUid	string
toUid	string

conversations	
id	string pk
lastMessageId	string
lastUpdated	timestamp
userAId	string
userBId	string

users	
id	string pk
publicId	string
name	string
about	string
email	string
phone	string
contact	string
gender	string
role	string
isBanned	boolean
banReason	string
bannedAt	timestamp
bannedBy	string
photoUrl	string
showDisplayName	boolean
pin	string
pinLength	number
autoSubmit	boolean
biometricEnabled	boolean
delayChatEnabled	boolean
delayChatSeconds	number
deleteRequested	boolean
deleteTimestamp	timestamp
scheduledDeletion	timestamp
emailVerified	boolean
createdAt	timestamp

feedback	
id	string pk
userId	string
userPublicId	string
userEmail	string
userPhone	string
category	string
message	string
status	string
platform	string
targetUserPublicId	string
isReadByAdmin	boolean
createdAt	timestamp
updatedAt	timestamp

account_deletion_requests	
id	string pk
userId	string
requestedAt	timestamp
status	string

local_settings	
id	string pk
userId	string
biometricsEnabled	boolean
rememberMe	boolean
lastLoginEmail	string

wallpapers	
id	string pk
userId	string
storagePath	string
createdAt	timestamp