

Qzone

Nov 11, 2025

A Location Based Survey Platform

Team member: Zhenyang Qian, Xuetong Fu, Yifei Bao

Live Demo

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Recap of proposal

What do we implement?

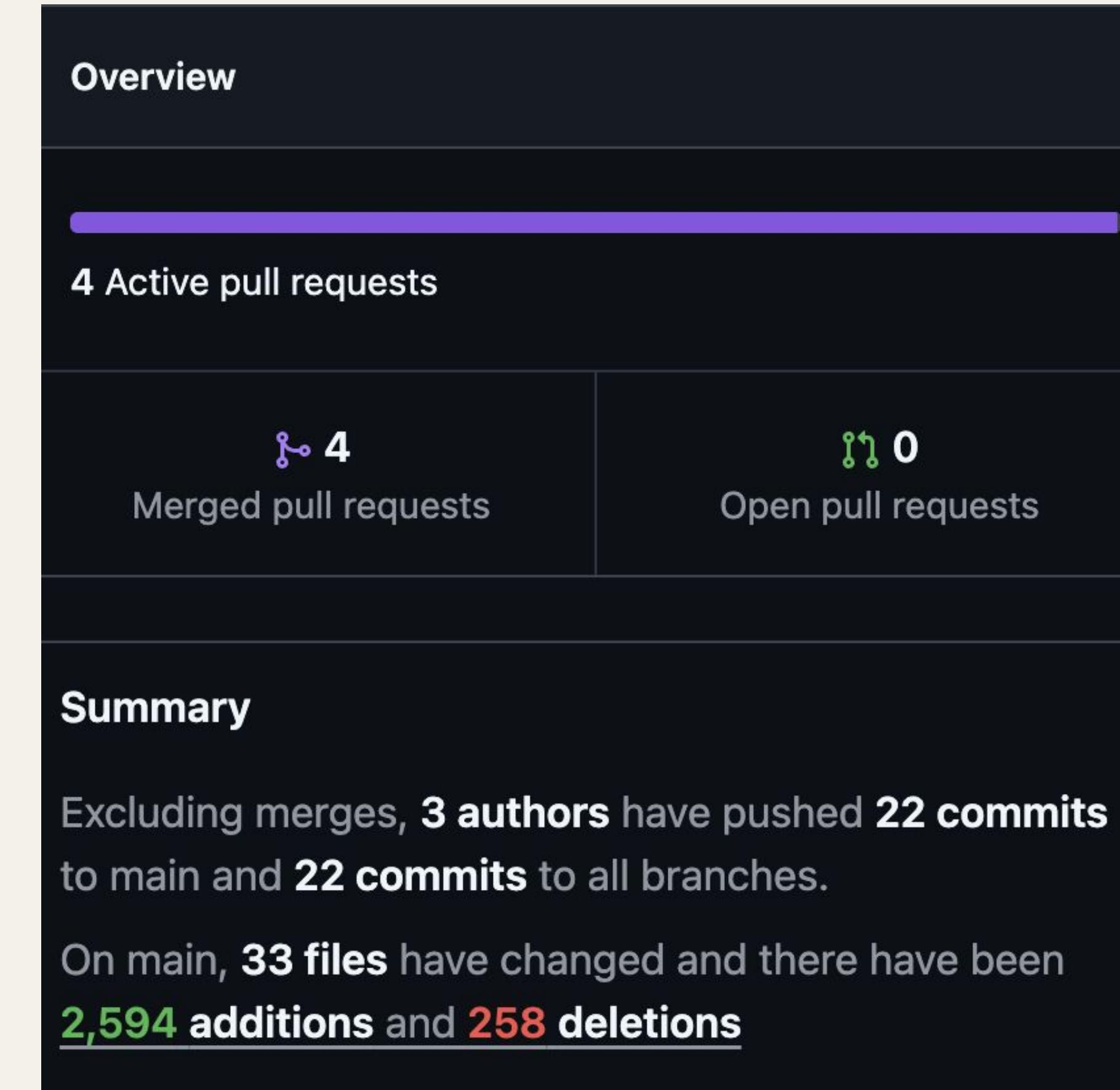
1. **Login/Register**: Firebase Email/Password authentication (no on device data persistence yet)
2. **Access**: Backend token system
3. **Location**: Real-time GPS location
4. **Survey**: Survey response submitted to backend
5. **Design**: Material 3 UI/UX

What's changed from proposal?

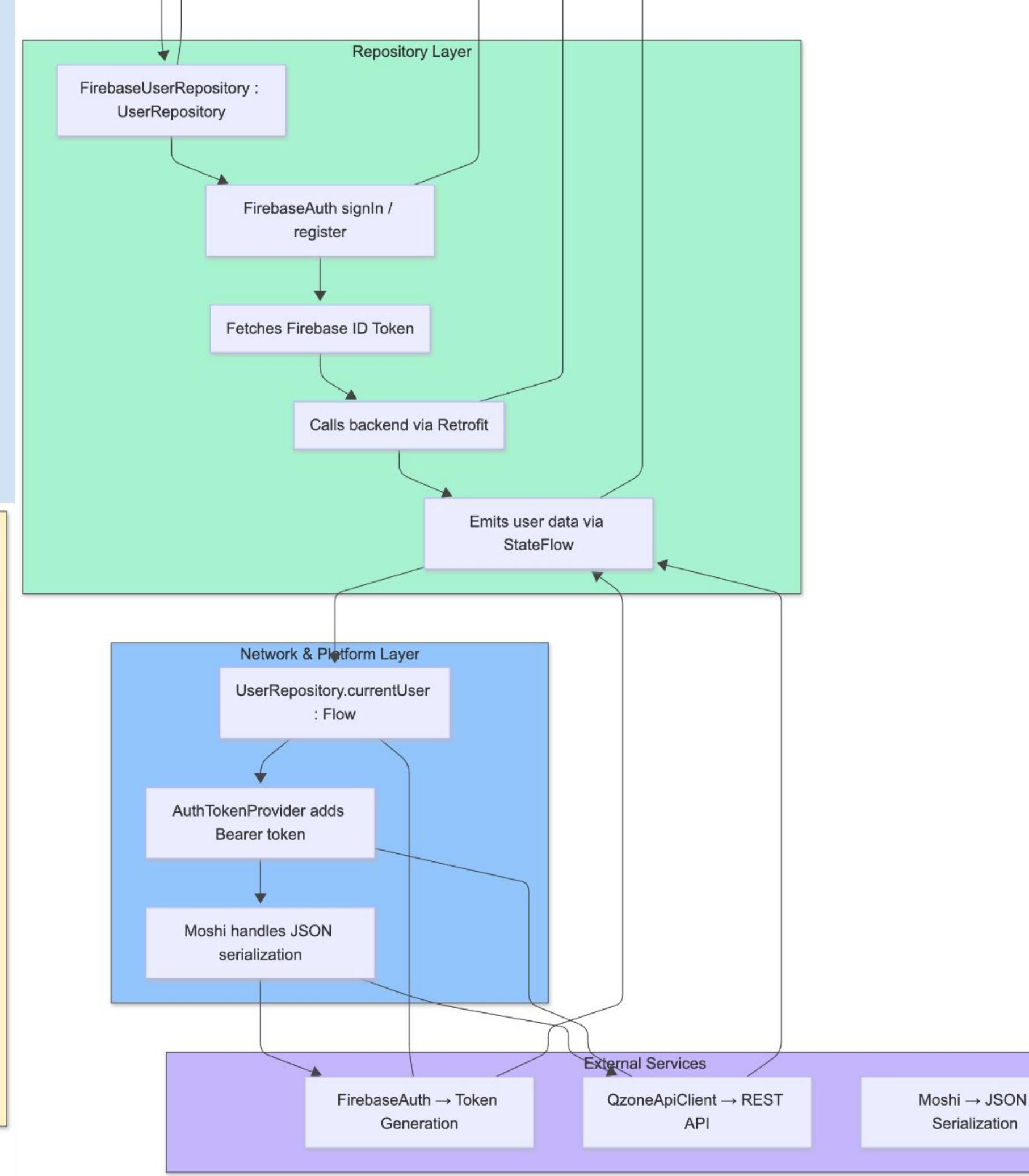
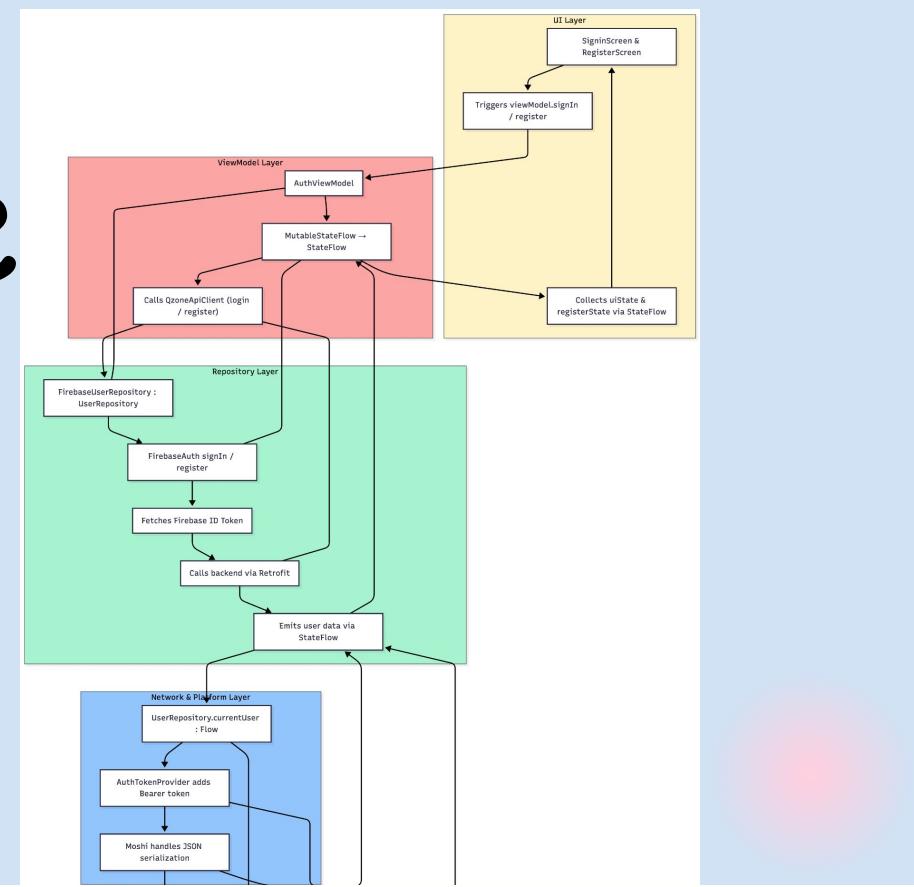
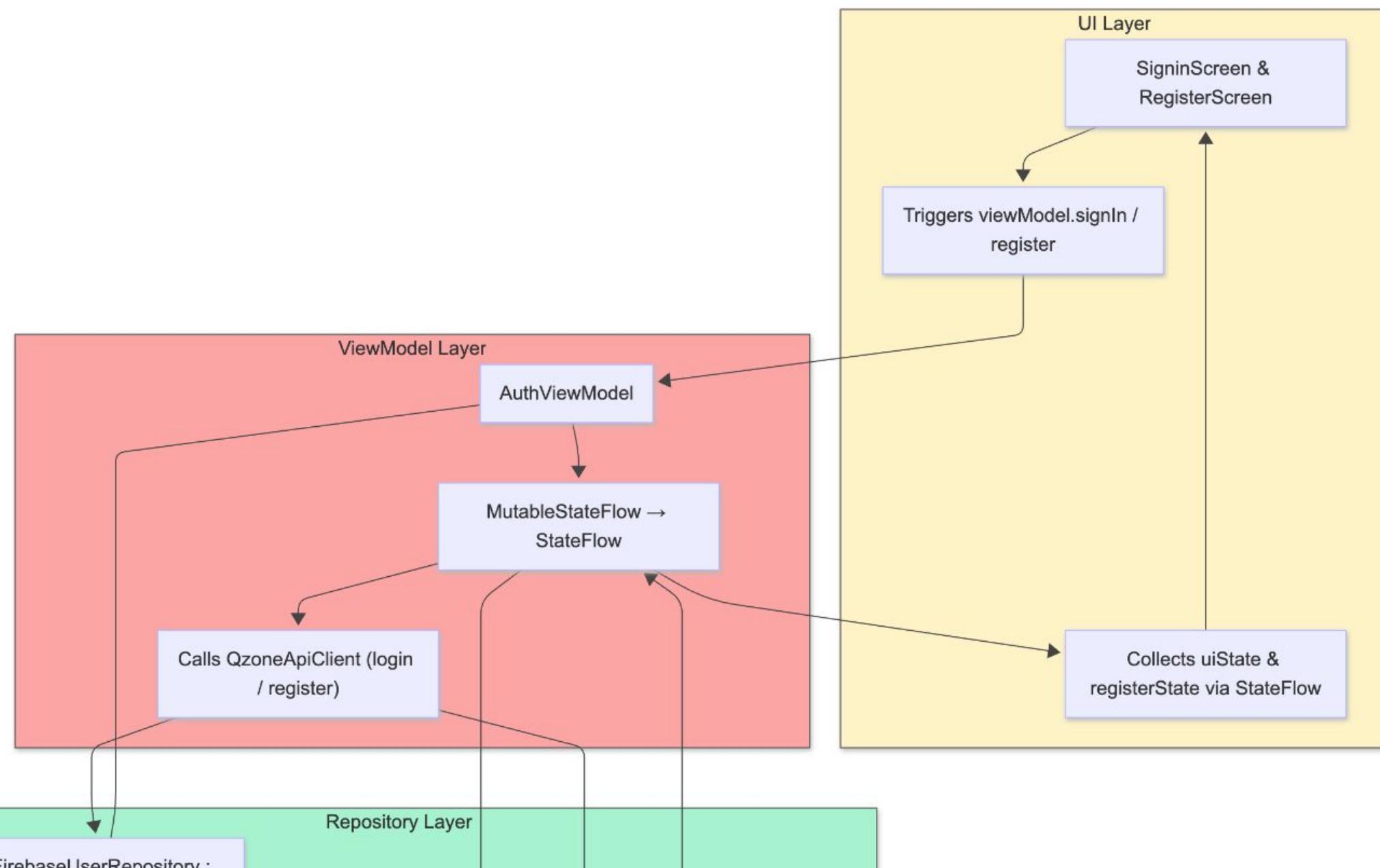
1. Change of reward system(todo.)
2. Backend Implemented: login/register, survey CRUD, get nearby location

Team Workflow

- Github Repo
- Branching
 - Each feature (e.g., Auth, Feed, Survey, Profile, Rewards) is developed on a separate branch named.
 - All branches are merged into main via Pull Requests after code review.



Architecture Overview



Challenges faced + solutions tried

State Management Complexity

- Challenge: Managing complex UI state across multiple screens
- Solution: Implemented MVVM architecture with StateFlow.

Firebase Authentication Integration

- Challenge: Integrating Firebase Authentication with a custom Java backend requiring token exchange
- Solution: Created FirebaseUserRepository with authentication flow

Frontend + backend development

- Challenge: The team needs to start Android development before the Java backend API is completed
- Solution: Use mock data during development by creating a placeholder/abstraction layer