

C**KIE-APP**

**Convergent Capstone Design 1
Final Progress Report**

Group 5 Park JongBeum & Baek SeungHeon, June 20th 2023

Motivation

Why Cookie

Instagram

Problems with existing SNS

- Photo Based
- Ads
- Show Off
- Time Spending
- No Good for mental health
- Main Purpose of SNS blurred

KakaoTalk

Problems with existing SNS

- Chat Based
- Too many useless features
- Used also for Public Purpose

Our Goal

Our Goal

C🍪🍪KIE-APP

- Back to the ESSENCE of SNS
- Real Connection between actual “Friends”
 - Less Online, More Offline
 - What we need for “More Offline”?
 - Sharing Schedules & Location
 - Of course, private informations should be under user’s control

Challenges

Framework & Language

Frontend Framework

Challenges in Choosing Framework & Language

- Flutter (Dart)
- React Native (JavaScript / TypeScript)
- PWA (JavaScript / TypeScript)
- iOS Native (Swift / ObjC)
- Android Native (Java / Kotlin)

React Native

Pros & Cons

- Easy for React Developers
- Needs Lots of External Libraries
- Harder (than flutter) to develop Cross-Platform App
 - Platform-Dependent Logics

PWA (Progressive Web App)

Pros & Cons

- Easy to develop since it's just Web Programming
- Less Support for Hardware Control
- Still getting updates
 - Supported actions are still dependent on platform

Why Flutter?

Challenges in Choosing Framework & Language

- Easy to Design UI even for beginners
 - Similar to CSS
 - Pre-Defined design: material, cupertino etc.
- Less Platform-Dependent than React-Native
- Single Codebase for all Platforms
- Reduced Development Time
- Native-like Performance

Backend Framework

Challenges in Choosing Framework & Language

- nodeJS based (JavaScript / TypeScript)
 - Express
 - Koa
 - NestJS
- Flask (Python)
- Django (Python)
- Spring (Java)

Why Express?

Challenges in Choosing Framework & Language

- Large Community
- Lots of Libraries (npm community)
- Express Middlewares
- Easy to use & learn
- Faster Development

Building Test Server

Backend Specifications

Creating Backend Server

- Ubuntu 22.04
- NGINX
- HTTPS (Let's Encrypt)
- mongoDB cloud
 - [cookiecluster.vz4toss.mongodb.net](https://www.mongodb.com/cloud/atlas)
- AWS Route53
 - test.parkjb.com

Backend Reliability

TypeScript Migration

Backend Reliability

- Trial & Error
 - JavaScript → TypeScript Migration
- JavaScript will not warn you about Type Errors
 - Which leads to more critical Errors

JOI

Validate Requested Body / Query Type

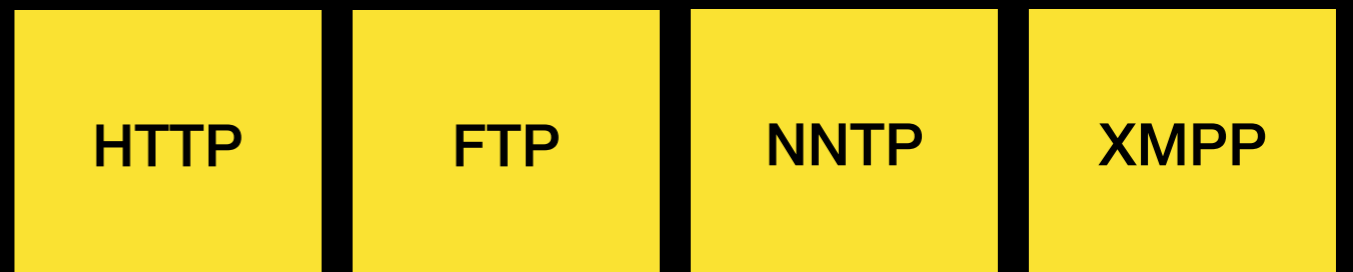
- JOI: Validation Library
- Validates if request is requested in proper type before running business logics
- Which leads to stability

Backend Security

HTTP

Backend Security - Layers in HTTP

Application Layer



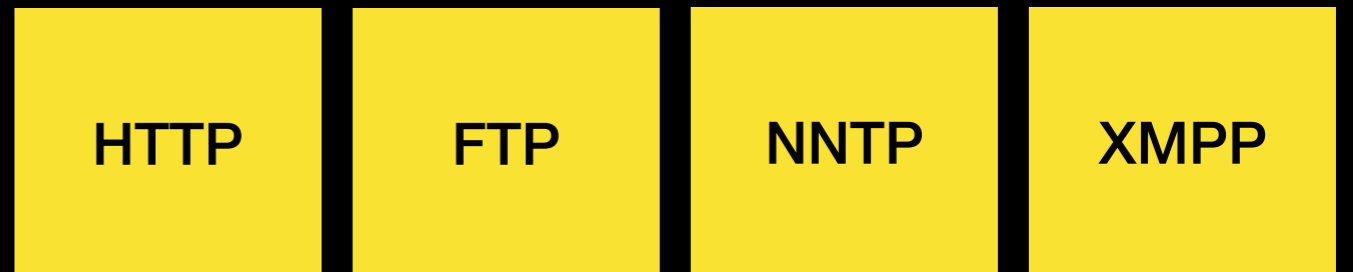
Transport Layer



HTTPS

Backend Security - Layers in HTTPS

Application Layer



Handshake Layer

SSL / TLS



Record Layer



Transport Layer



Results

Test from sslabs.com

The screenshot shows the SSL Labs report for test.parkjb.com. The overall rating is A+, which is displayed in a large green box. To the right of the rating is a horizontal bar chart showing the scores for different categories: Certificate (100%), Protocol Support (100%), Key Exchange (90%), and Cipher Strength (90%). Below the chart, there are four green bars with text indicating security features: 'This server supports TLS 1.3.', 'HTTP Strict Transport Security (HSTS) with long duration deployed on this server.', and 'DNS Certification Authority Authorization (CAA) Policy found for this domain.' The bottom section of the report is titled 'Certificate #1: EC 256 bits (SHA256withRSA)' and contains a table with details about the certificate, including the subject, common names, alternative names, serial number, validity dates, key type, and issuer.

Qualys. SSL Labs

Home Projects Qualys Free Trial Contact

You are here: [Home](#) > [Projects](#) > [SSL Server Test](#) > test.parkjb.com

SSL Report: test.parkjb.com (211.243.126.115)

Assessed on: Mon, 24 Apr 2023 18:22:07 UTC | [Hide](#) | [Clear cache](#) [Scan Another »](#)

Summary

Overall Rating

A+

Certificate	100
Protocol Support	100
Key Exchange	90
Cipher Strength	90

Visit our [documentation page](#) for more information, configuration guides, and books. Known issues are documented [here](#).

This server supports TLS 1.3.

HTTP Strict Transport Security (HSTS) with long duration deployed on this server. [MORE INFO »](#)

DNS Certification Authority Authorization (CAA) Policy found for this domain. [MORE INFO »](#)

Certificate #1: EC 256 bits (SHA256withRSA)

Server Key and Certificate #1

Subject	parkjb.com Fingerprint SHA256: e34db6046f3f363c2c6d75b6e573aca571ece8a361dc9e8d6ea4e41aaccc3cf Pin SHA256: Y59oWUR7Ird6moqDurcp9Snm3+jYZwj4VUo3ygM5k=
Common names	parkjb.com
Alternative names	*,parkjb.com parkjb.com
Serial Number	046c3e58924af4b46995444ed5042eeebc98
Valid from	Sun, 16 Apr 2023 15:19:40 UTC
Valid until	Sat, 15 Jul 2023 15:19:39 UTC (expires in 2 months and 20 days)
Key	EC 256 bits
Weak key (Debian)	No
Issuer	R3 AIA: http://r3.i.lencr.org/
Signature algorithm	SHA256withRSA

JWT

Backend Security - JSON Web Token

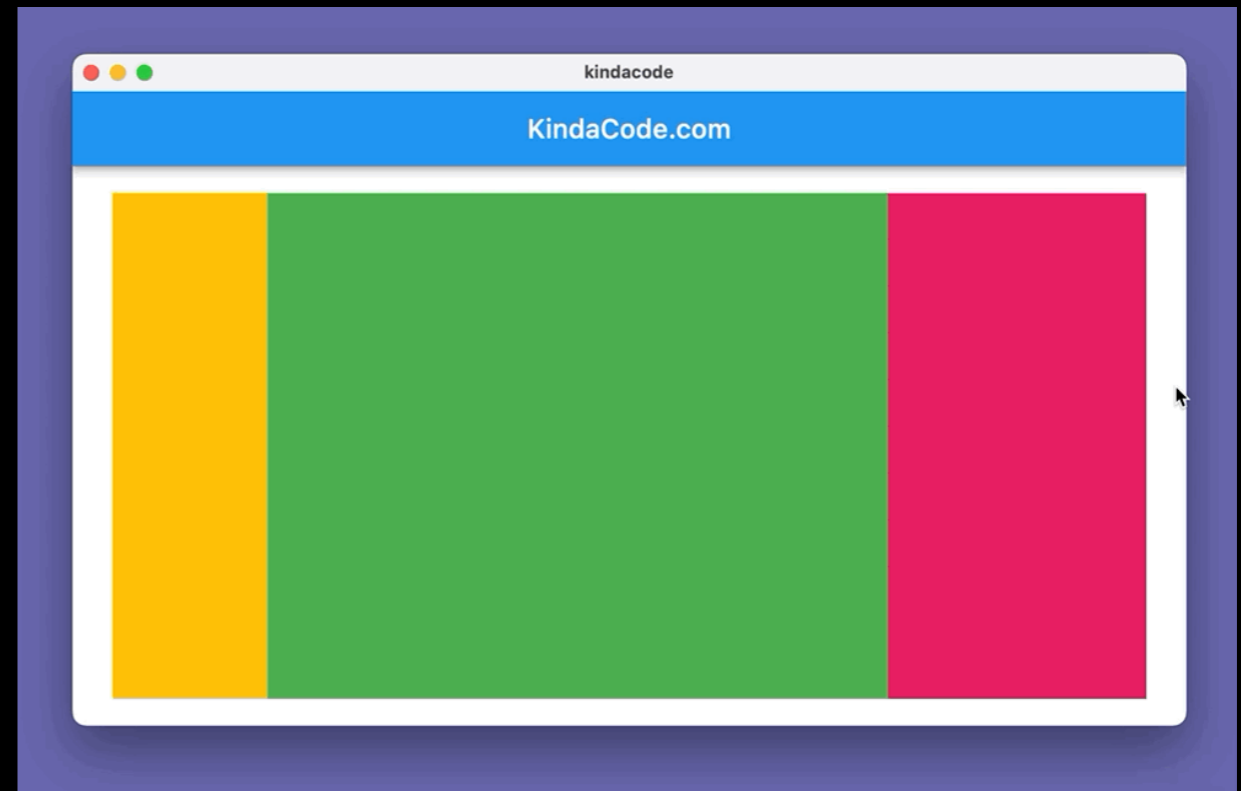
- Authorization Token
- Header
- Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1c2VyaWQiOiJ0ZXN0aWQiLCJlb2N0IjoiImhhdCI6MTY4NzE4Njk0OiwiaWF0IjoiNjAxODUyMjUyIn0.eyJ1c2VyaWQiOiJ0ZXN0aWQiLCJlb2N0IjoiImhhdCI6MTY4NzE4Njk0OiwiaWF0IjoiNjAxODUyMjUyIn0

UI Design

Can any device have the same ratio?

Applying Responsive Widget

- Automatically resize
 - Flexible widget
 - Expanded widget
- Indicates the screen size
 - Media Query



How should we manage the Theme?

Fonts, Colors, Border, Shapes...

- ThemeData()
 - Defines the configuration of the overall visual Theme within the app
 - No need to set each element one by one
 - Default theme
 - Dark mode theme

How should we manage the Theme?

Fonts, Colors, Border, Shapes...



```
1 ThemeData defaultThemeData = ThemeData(  
2   brightness: Brightness.light,  
3   appBarTheme: const AppBarTheme(  
4     backgroundColor: Colors.orangeAccent,  
5     iconTheme: IconThemeData(color: Colors.white),  
6     centerTitle: true,  
7     titleSpacing: 50.0,  
8   ),
```

Frontend Structure

Why Design Architecture is needed?

Importance of Design Architecture

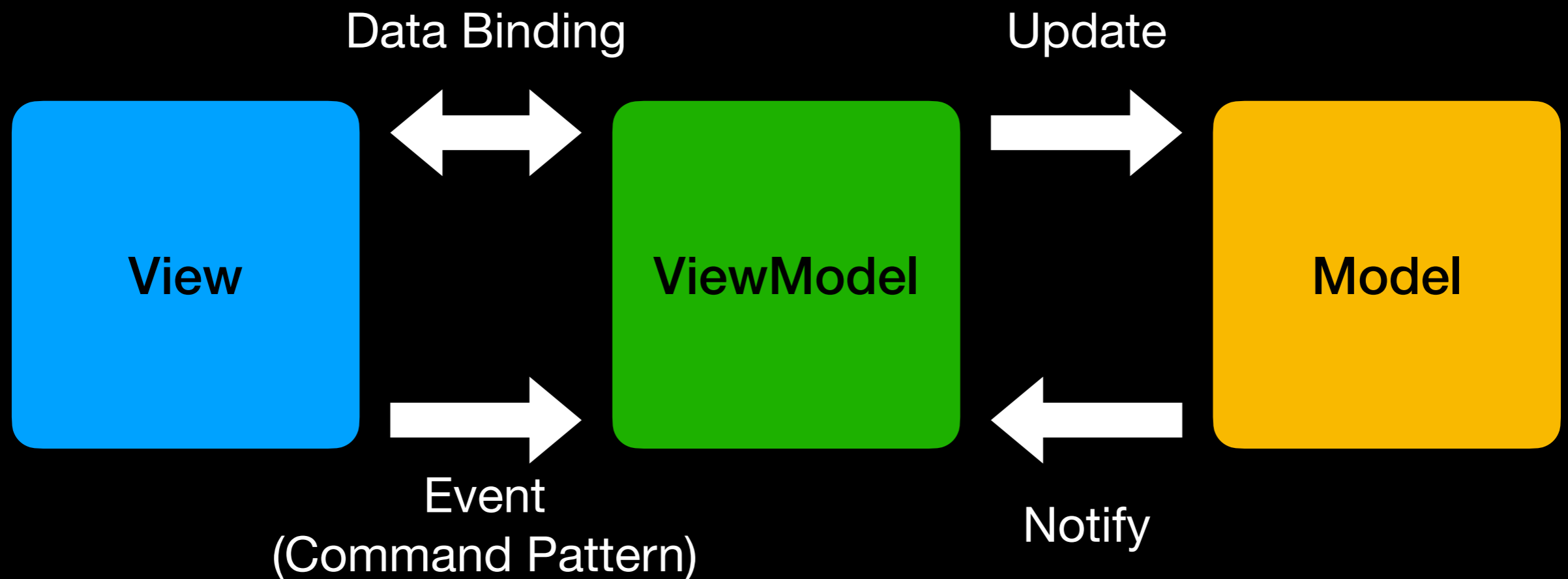
- Improved Code Maintenance
- Increased Reusability
- Clarity of Code Structure
- Flexibility and Scalability

Before MVVM

- UI & Business Logics are combined
 - Hard to modify the logics
- Copy & Pasted for same components
 - Low Reusability
- Types were not defined clearly

MVVM

Applying Model-View-ViewModel Structure



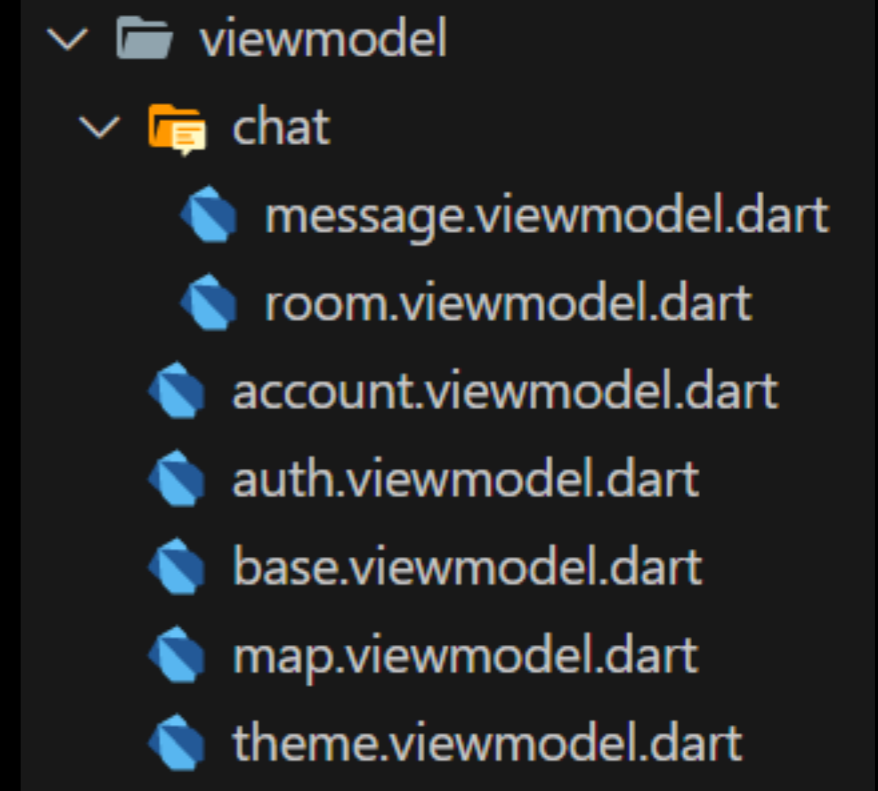
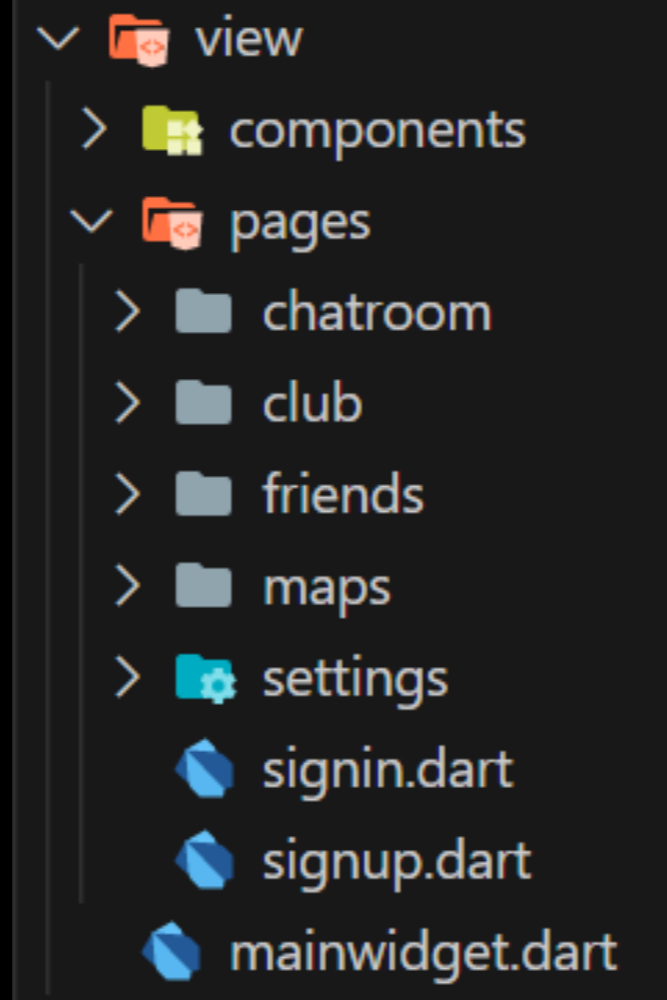
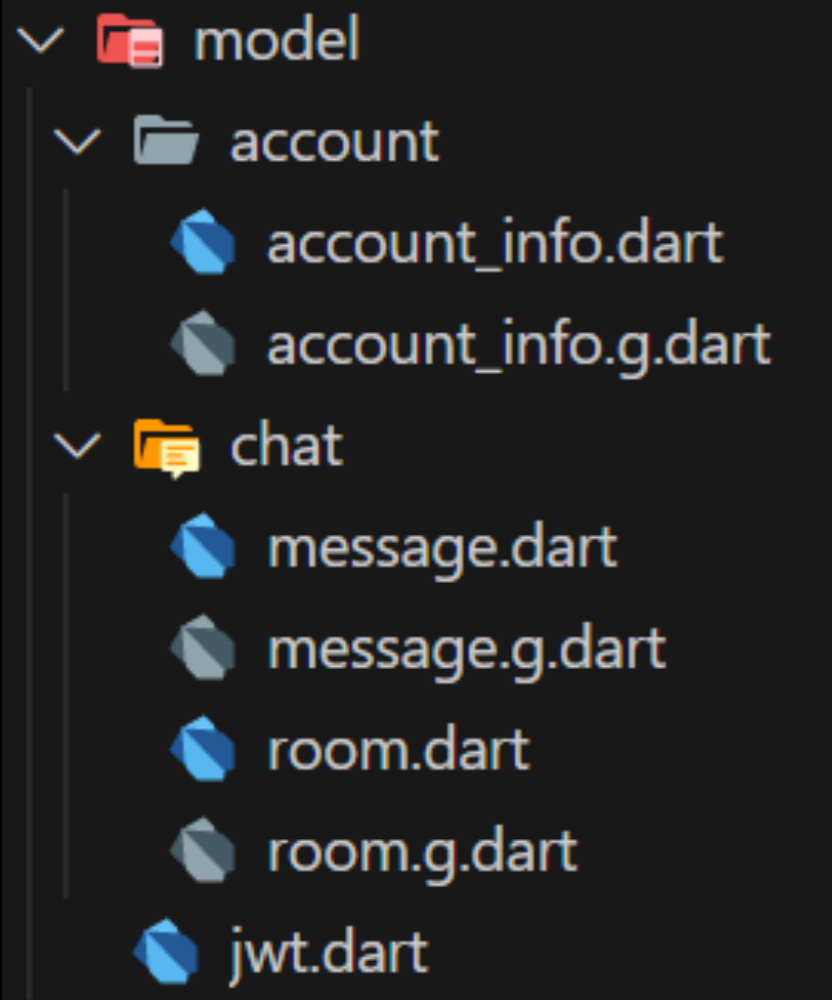
MVVM

Applying Model-View-ViewModel Structure

- ✓ Faster Screen Loading
- ✓ Improved Performance
- ✓ Reusable Components
- ✓ Testability
- ✗ Overkilling for simple UI operation
- ✗ Higher Learning Curve

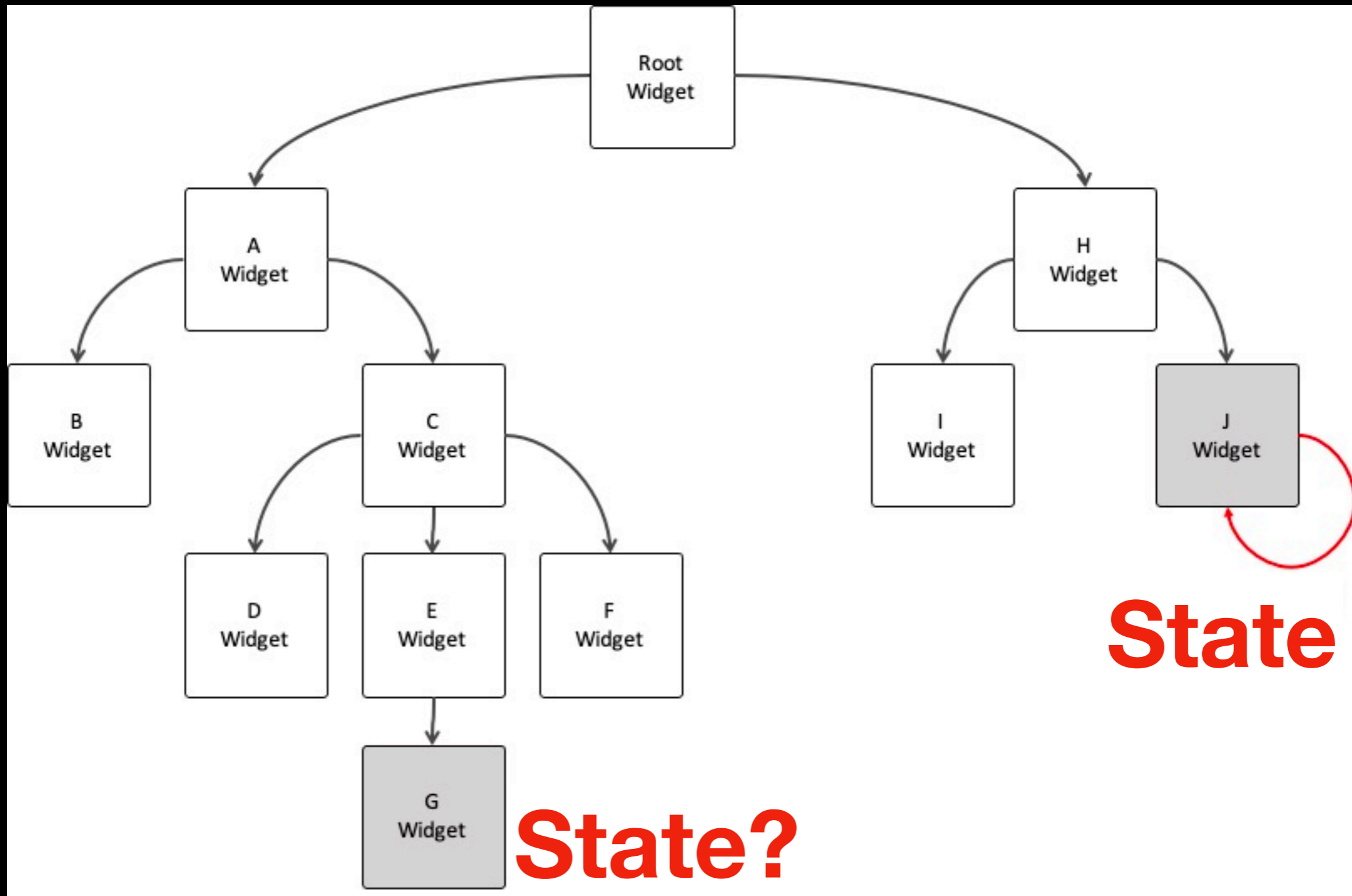
MVVM

Applying Model-View-ViewModel Structure



State management

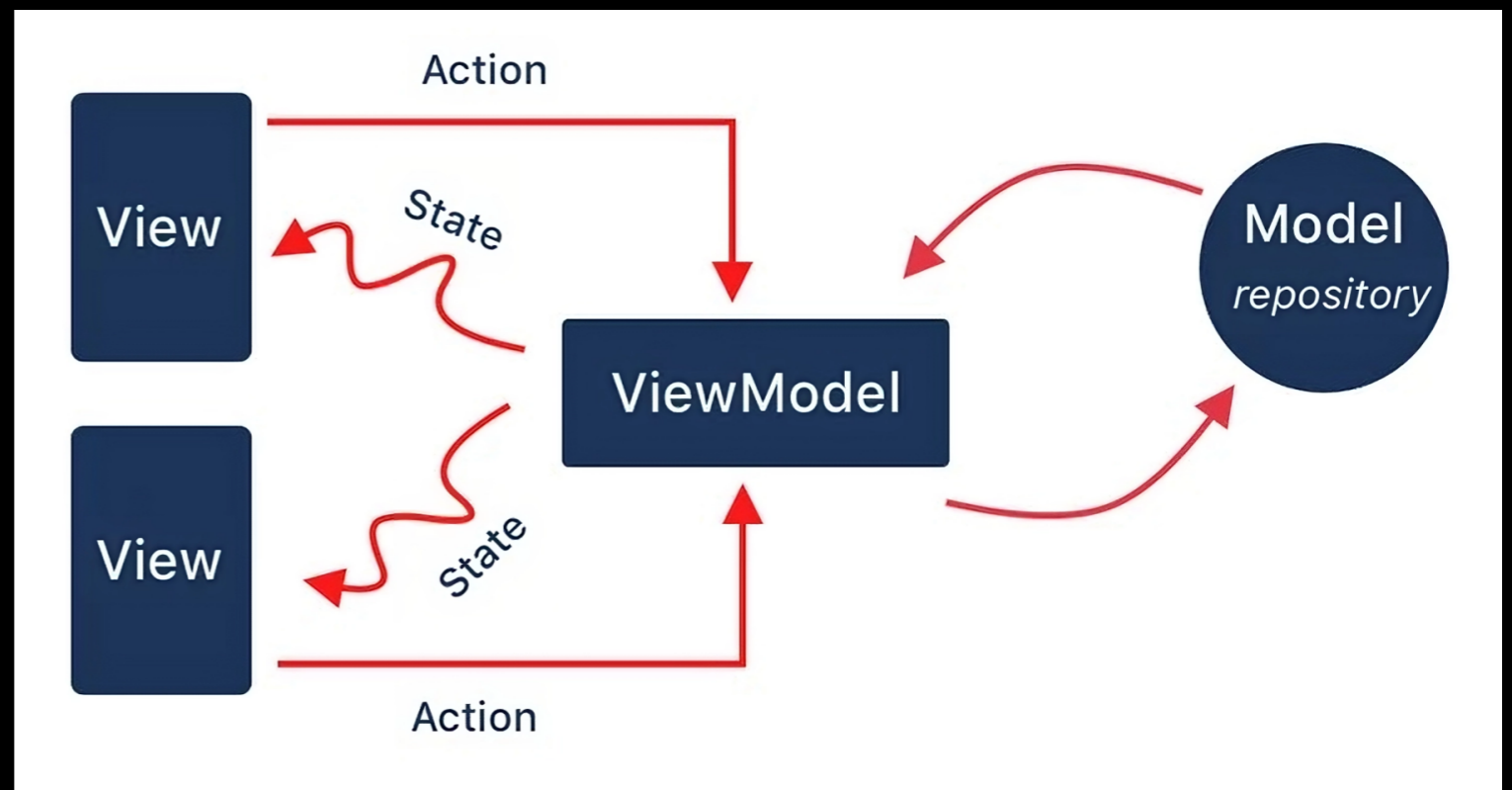
Why we need State management?



State management

Centralize your data & Improve performance

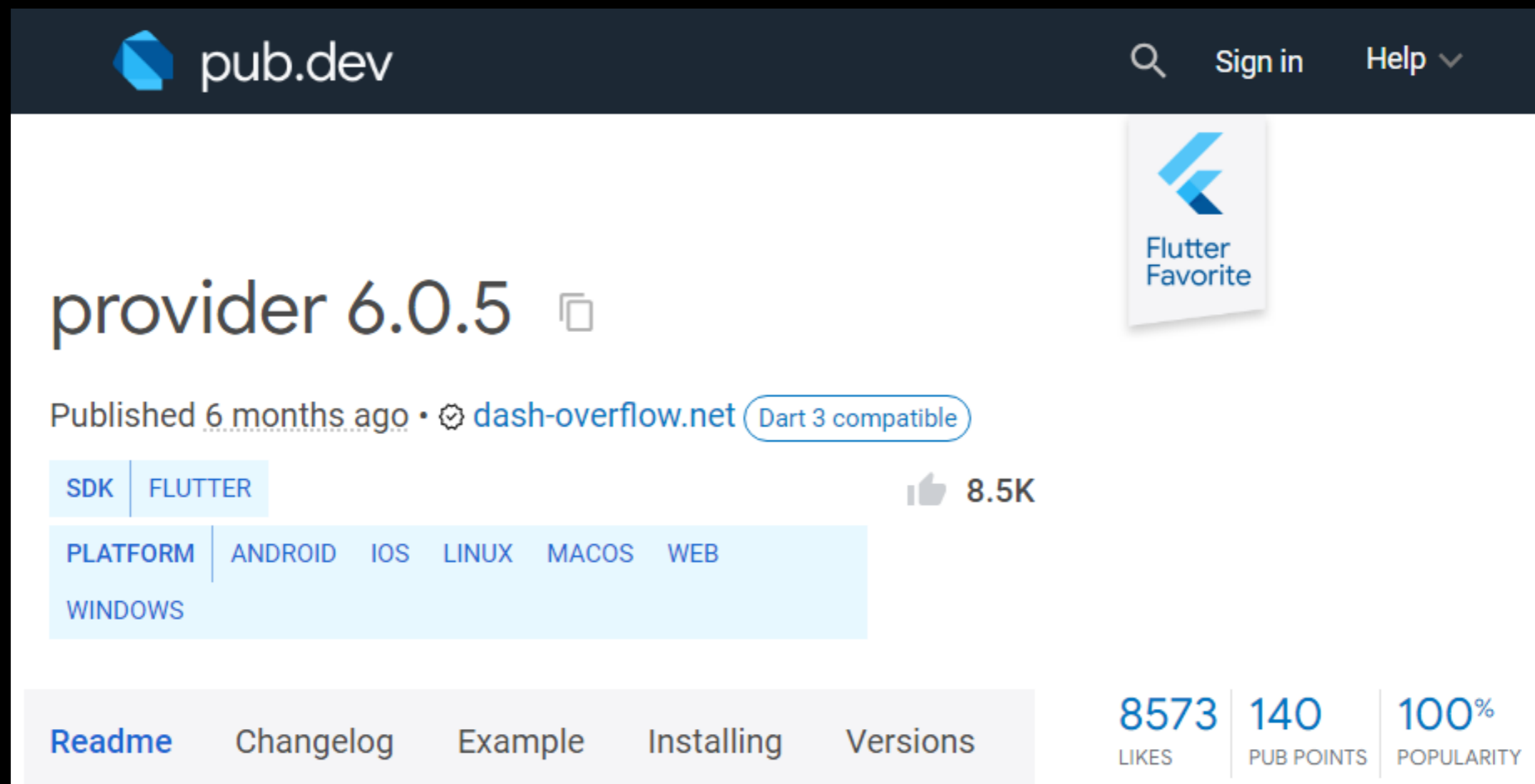
- Some packages
 - BLoC
 - Provider
 - Redux
 - GetX
 - RiverPod



Why Provider?

Challenges in Choosing State management package

- Simple and readable & Easy to use
- Widely used package in the Flutter ecosystem



The screenshot shows the pub.dev page for the 'provider 6.0.5' package. The page features a dark blue header with the pub.dev logo, a search icon, and links for 'Sign in' and 'Help'. The main content area is white and displays the package name 'provider 6.0.5' with a copy icon. Below the name, it indicates the package was published '6 months ago' by 'dash-overflow.net' and is 'Dart 3 compatible'. A 'Flutter Favorite' badge is visible in the top right corner. The package is categorized under 'SDK' and 'FLUTTER', with a thumbs-up icon and '8.5K' likes. The 'PLATFORM' section lists 'ANDROID', 'IOS', 'LINUX', 'MACOS', 'WEB', and 'WINDOWS'. At the bottom, there are links for 'Readme', 'Changelog', 'Example', 'Installing', and 'Versions'. On the right side, statistics are shown: 8573 LIKES, 140 PUB POINTS, and 100% POPULARITY.

pub.dev

Flutter Favorite

provider 6.0.5

Published 6 months ago • dash-overflow.net (Dart 3 compatible)

SDK | FLUTTER

8.5K

PLATFORM | ANDROID | IOS | LINUX | MACOS | WEB | WINDOWS

Readme | Changelog | Example | Installing | Versions

8573 LIKES | 140 PUB POINTS | 100% POPULARITY

Outputs

github

cookie-devel (cookie_app & cookie_server)

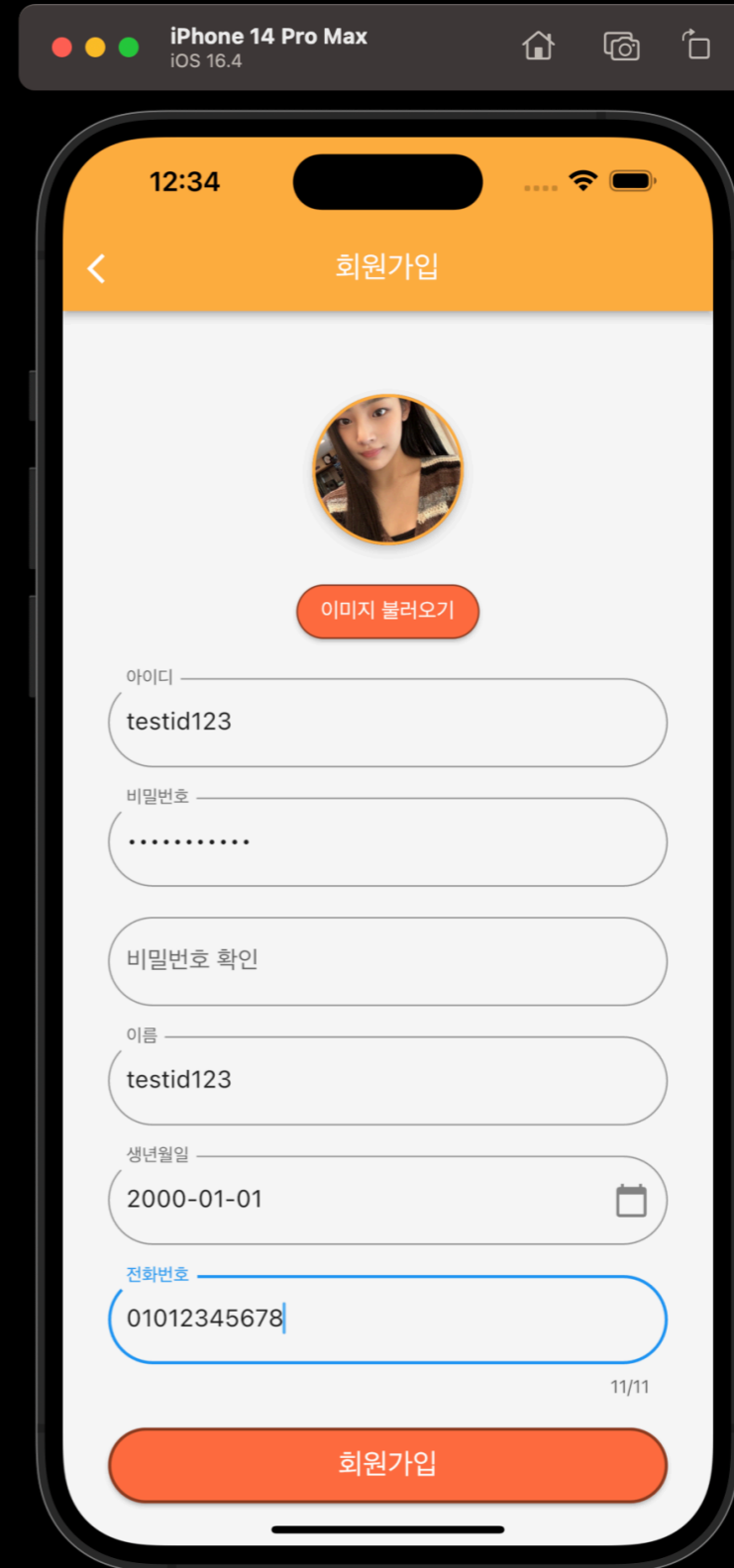
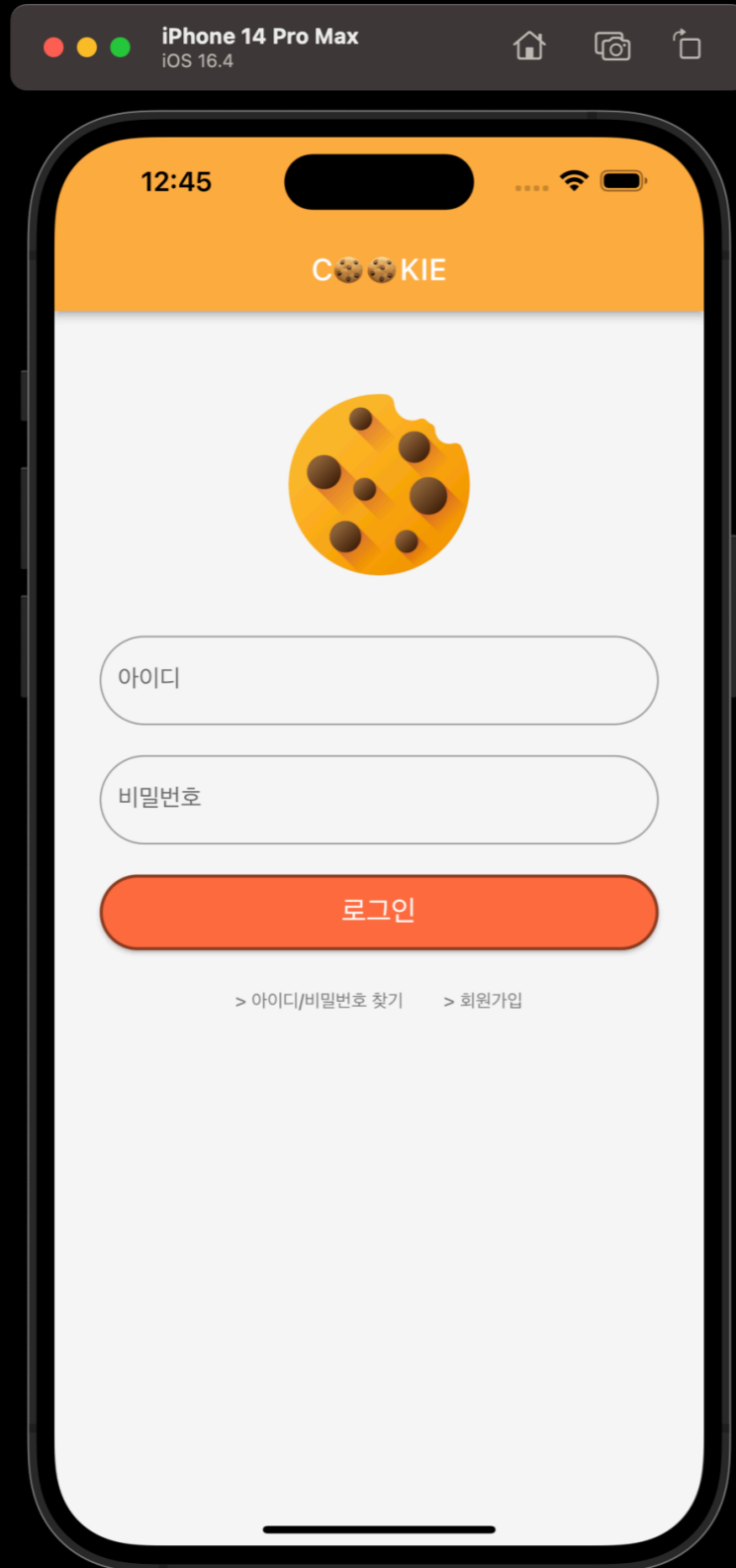
The screenshot shows the GitHub repository page for 'cookie_app', which is marked as 'Private'. The repository has 2 watchers and is currently on the 'main' branch. The page includes navigation buttons for 'Go to file', 'Add file', and 'Code'. Below the navigation, there are links for 'Branches' and 'Tags'. The commit history is displayed as follows:

Commit	Author	Message	Time
enable: settings	parkjbdev	...	7 hours ago (188)
android	bugfix: chat disconnection		2 months ago
assets	Apply Account related ViewModels to View		last week
ios	refactor: create ChatRoomListEntry compo...		last month
lib	enable: settings		7 hours ago
web	Initial Commit		3 months ago
.env	reformat: FriendInfo schema		last month
.gitignore	add .env to .gitignore		last month
.metadata	Initial Commit		3 months ago
README.md	Initial Commit		3 months ago
analysis_options.yaml	refactor: FriendInfo & bugfix: chat sample ...		last month
flutter_launcher_ico...	update 230409 18:22		2 months ago
flutter_native_splash....	update 230409 18:22		2 months ago
pubspec.lock	MVVM TRANSITION		last week
pubspec.yaml	MVVM TRANSITION		last week

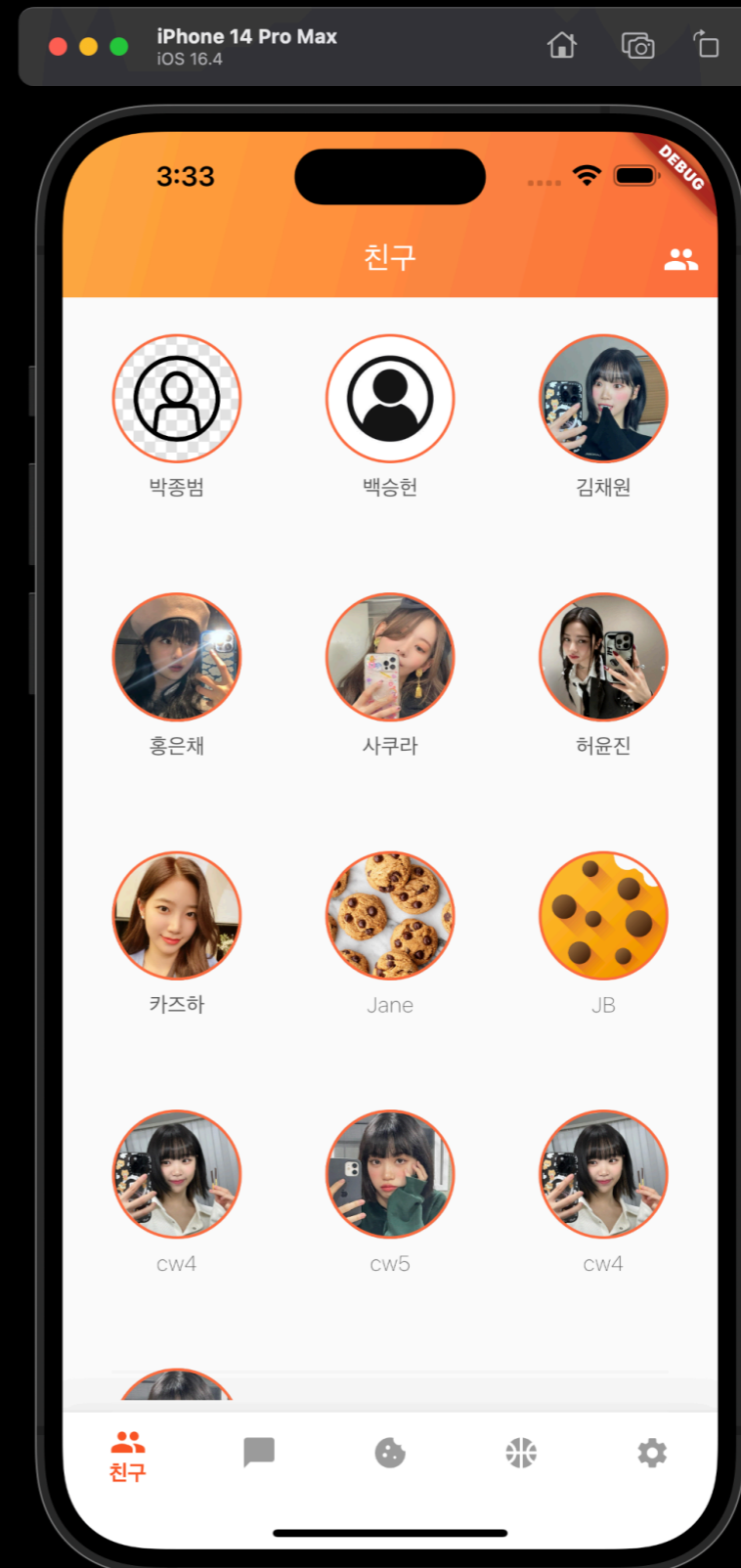
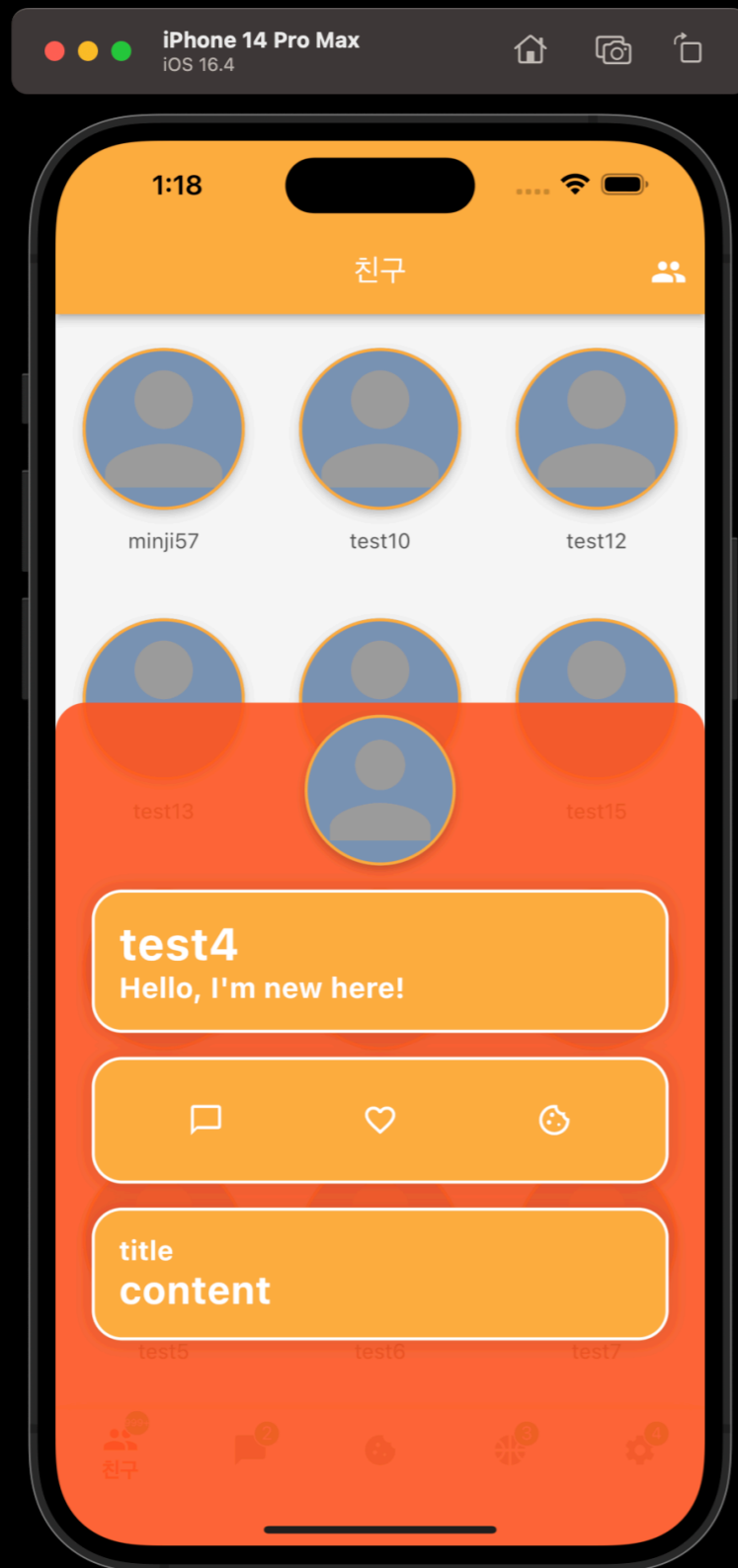
The screenshot shows the GitHub repository page for 'cookie_server', which is marked as 'Private'. The repository has 1 watcher and is currently on the 'main' branch. The page includes navigation buttons for 'Go to file', 'Add file', and 'Code'. Below the navigation, there are links for 'Branches' and 'Tags'. The commit history is displayed as follows:

Commit	Author	Message	Time
updates: move files & etc.	parkjbdev	...	6 hours ago (25)
public	bugfix: mv non-ts files to home dir to also a...		last month
src	updates: move files & etc.		6 hours ago
views	bugfix: mv non-ts files to home dir to also a...		last month
.gitignore	MIGRATION to TS		last month
.prettierrignore	add .prettierrc & reformat code via prett...		last month
.prettierrc	add .prettierrc & reformat code via prett...		last month
jsconfig.json	add .prettierrc & reformat code via prett...		last month
package.json	updates: move files & etc.		6 hours ago
tsconfig.json	MIGRATION to TS		last month
yarn.lock	MIGRATION to TS		last month

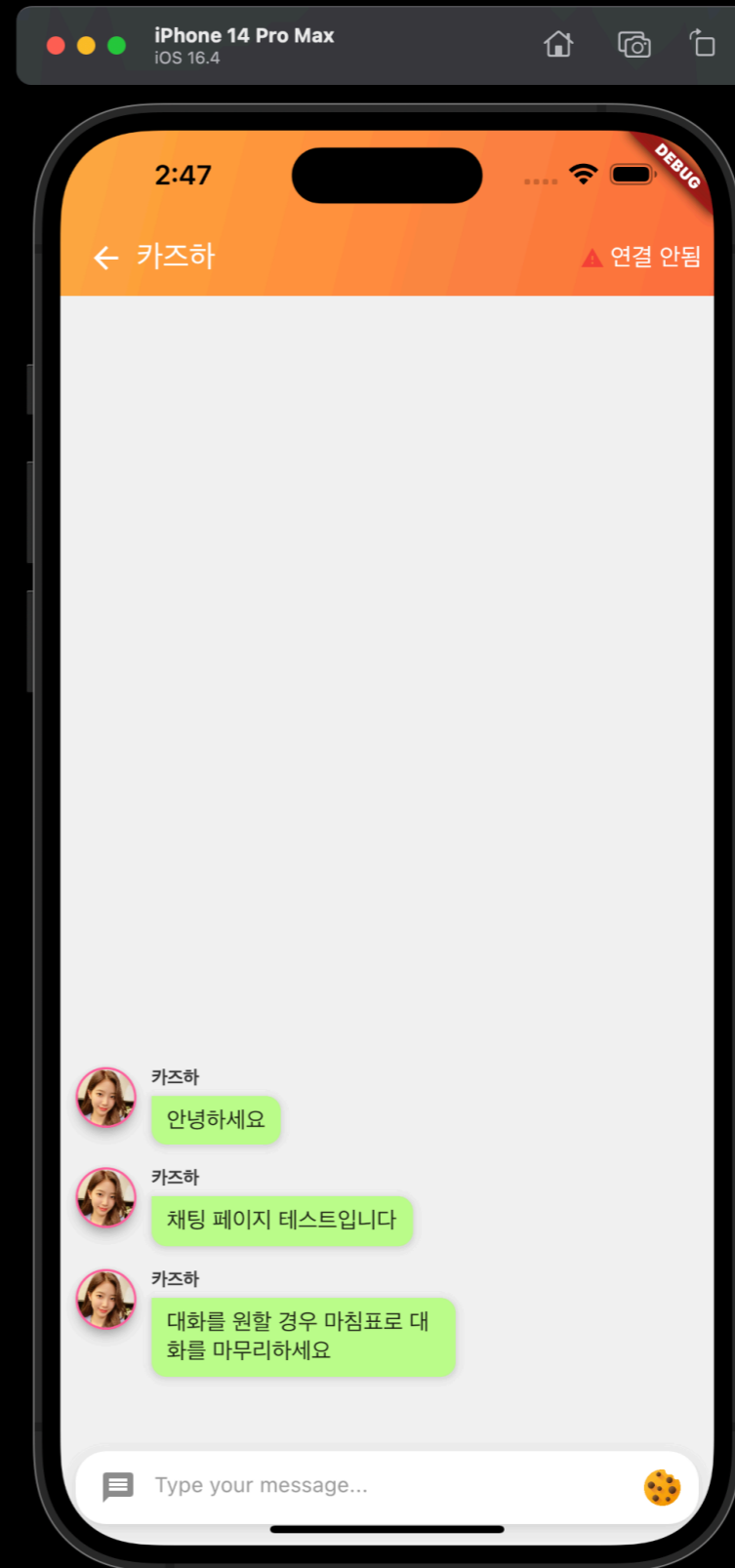
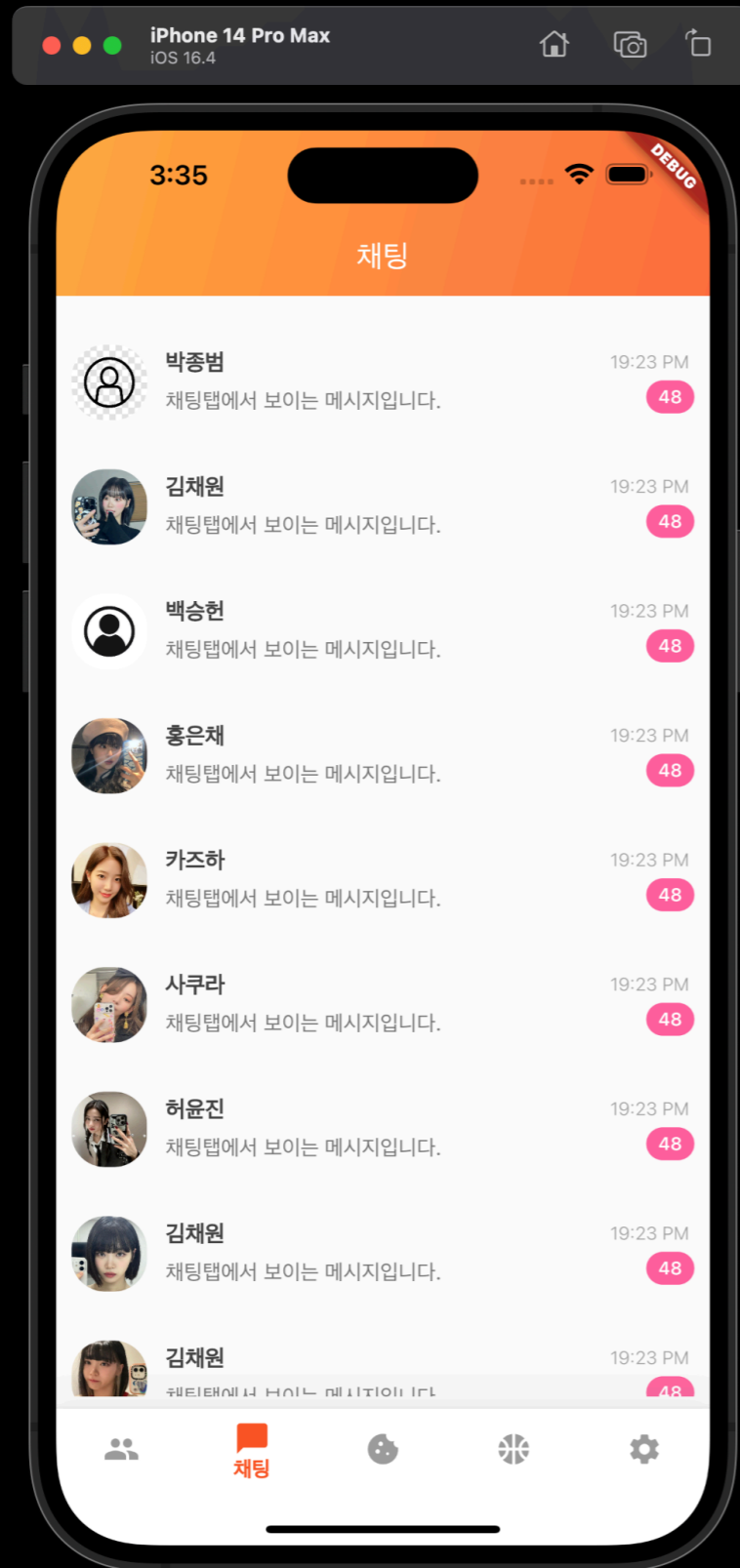
Sign In & Sign Up



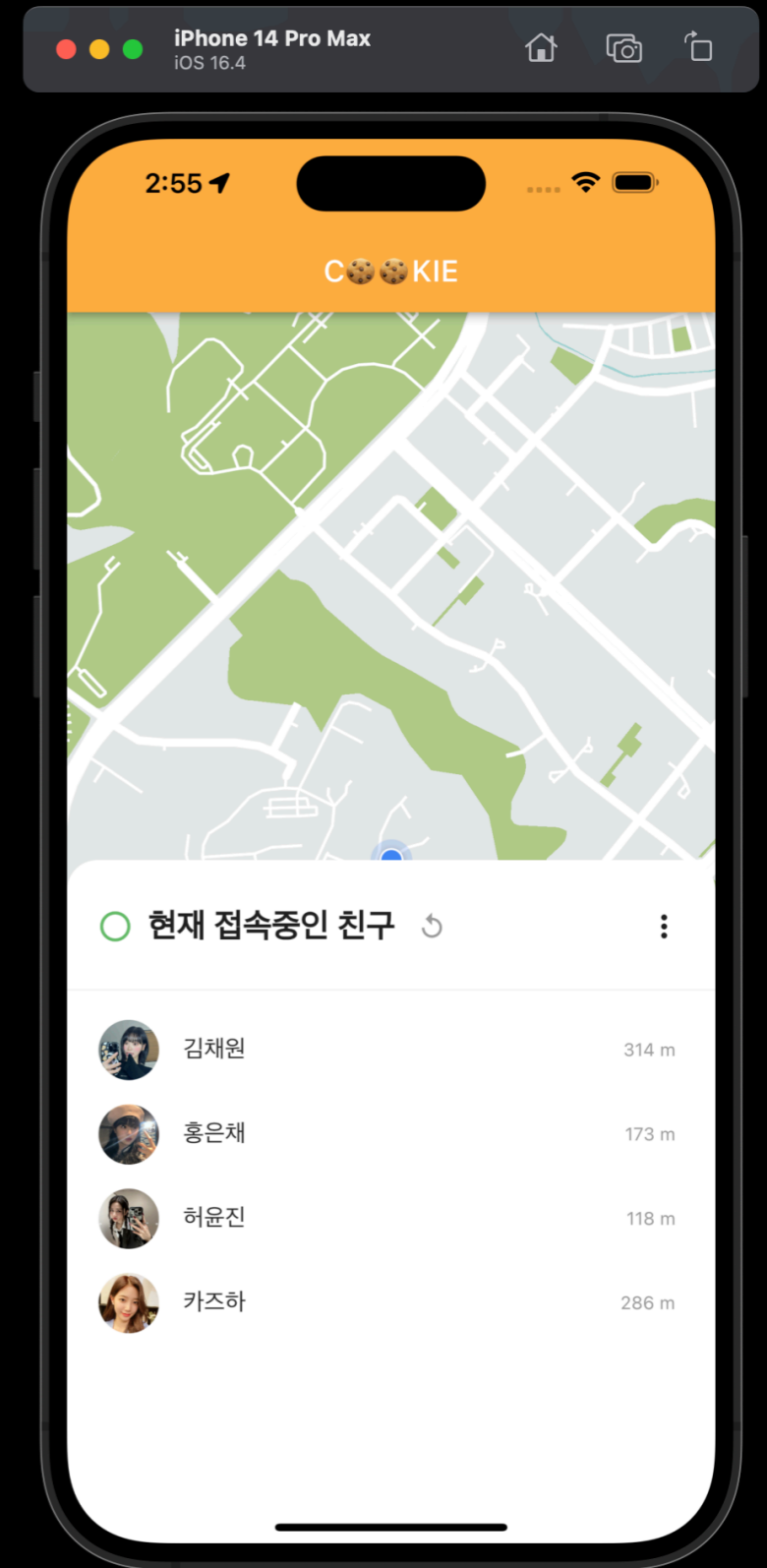
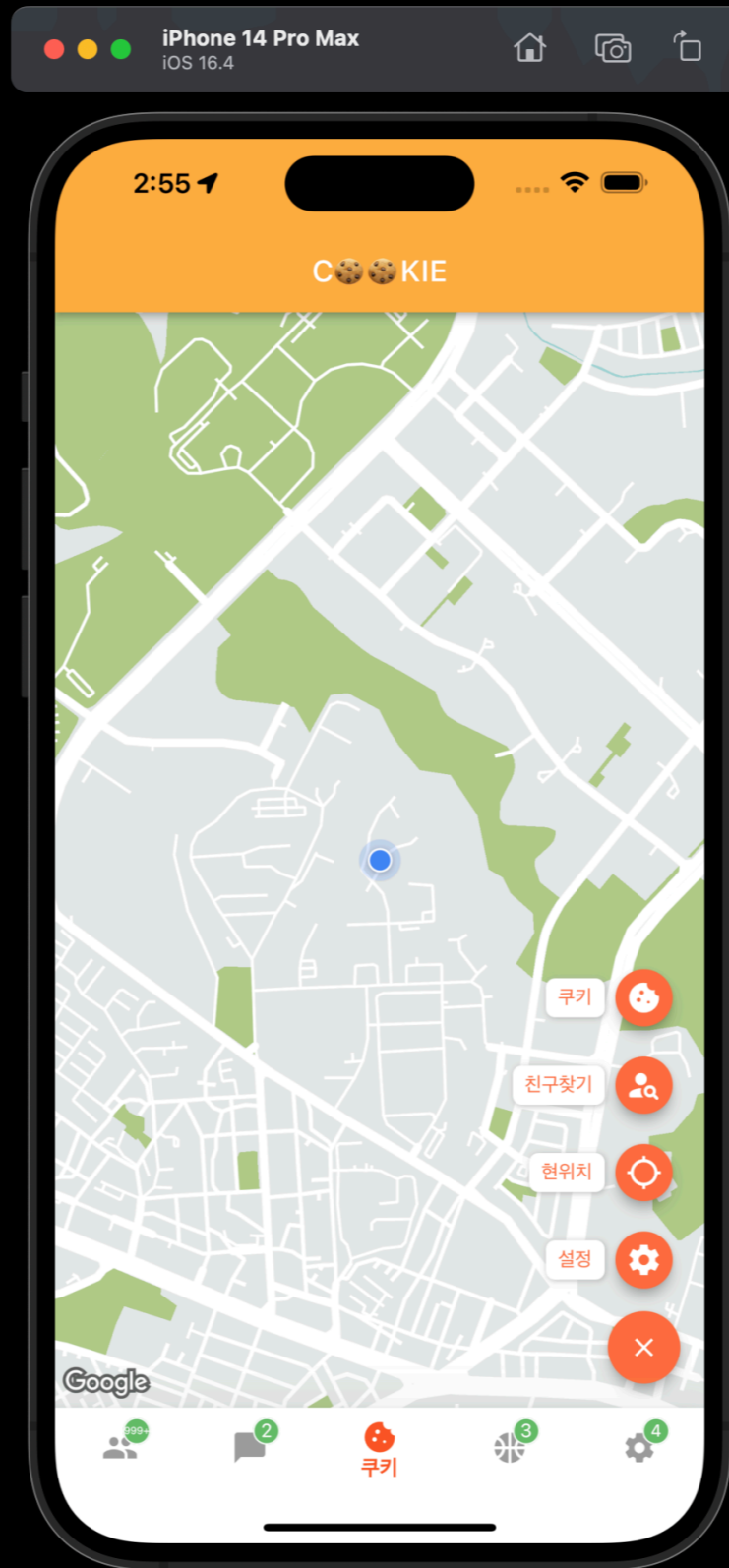
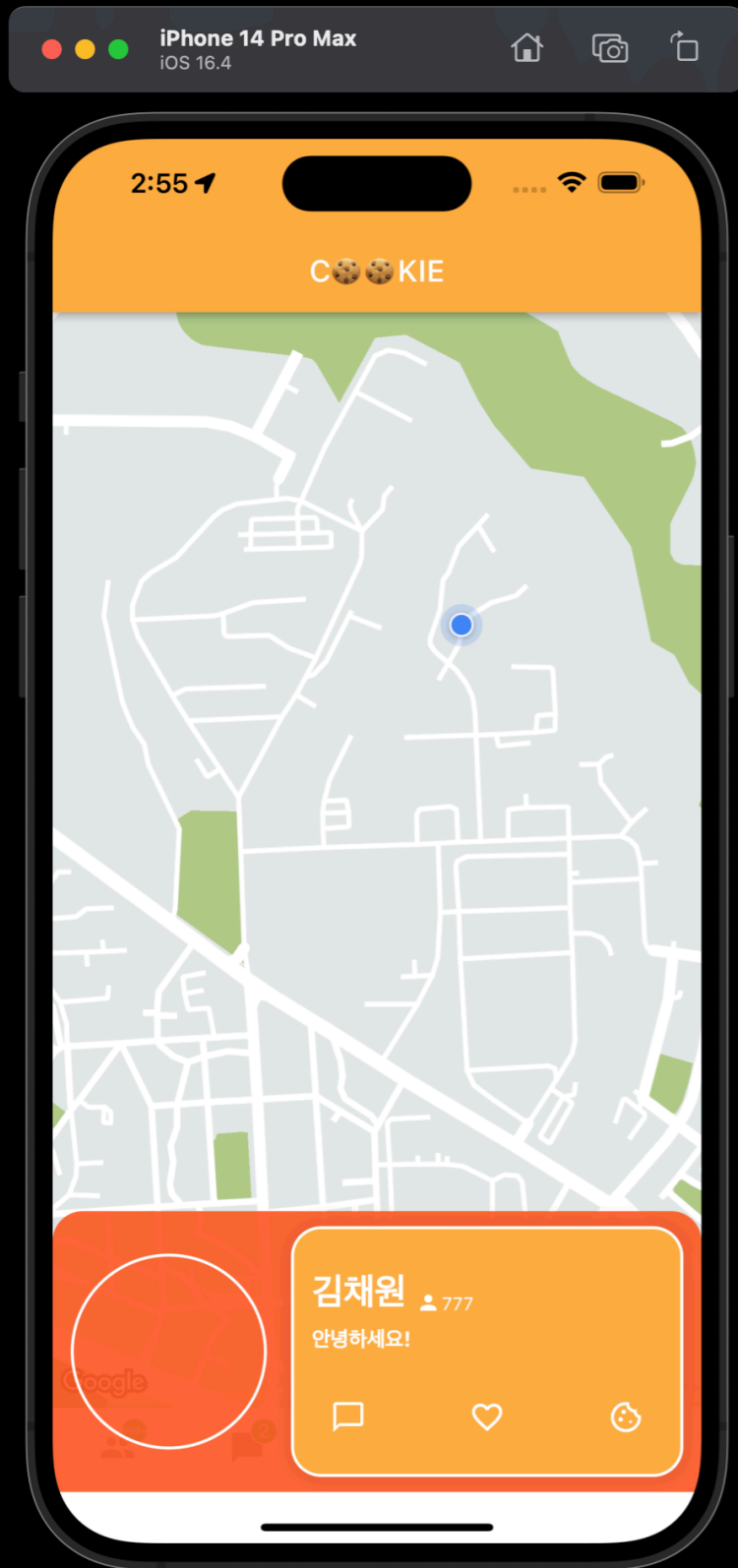
Friends Tab



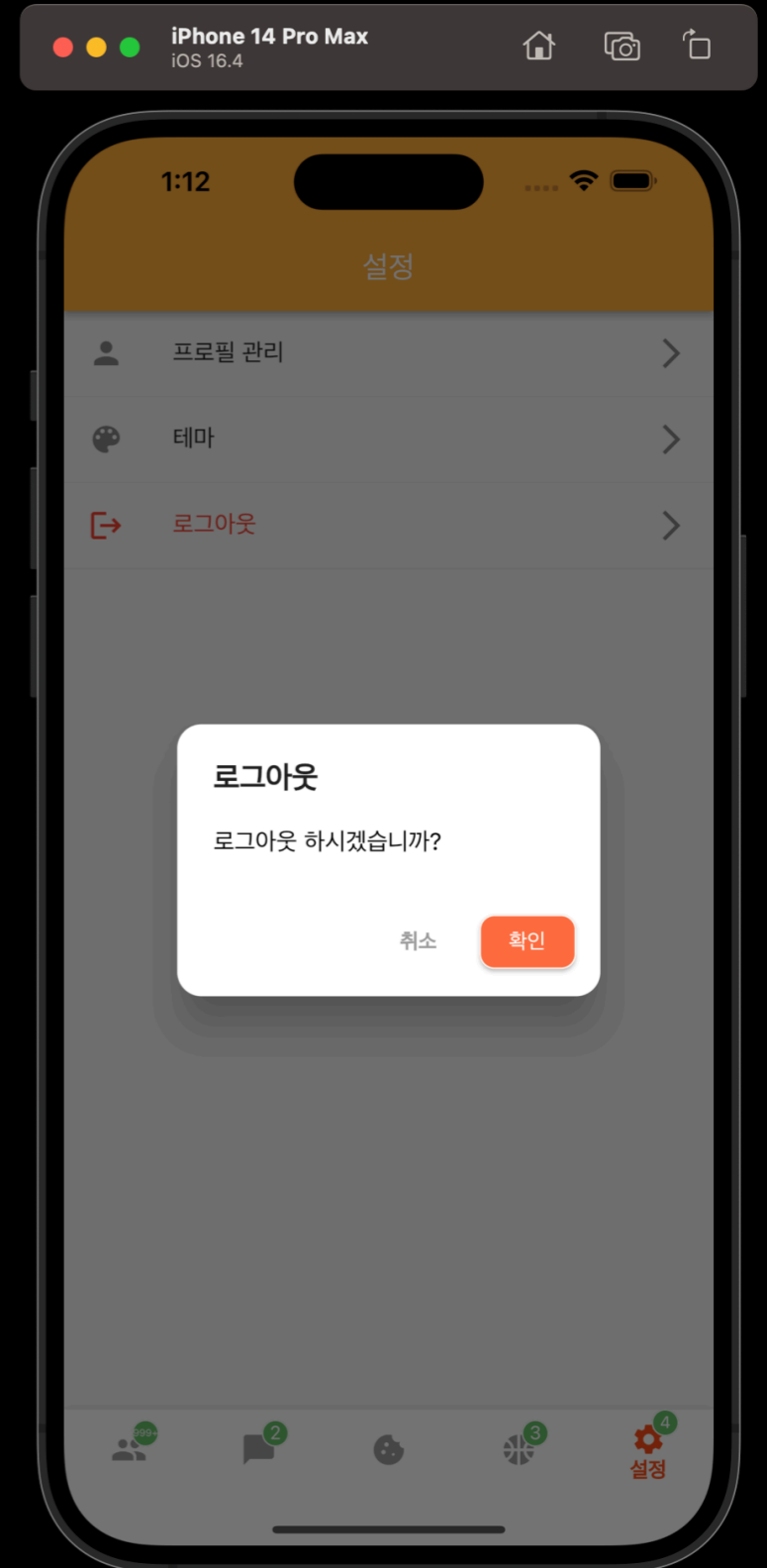
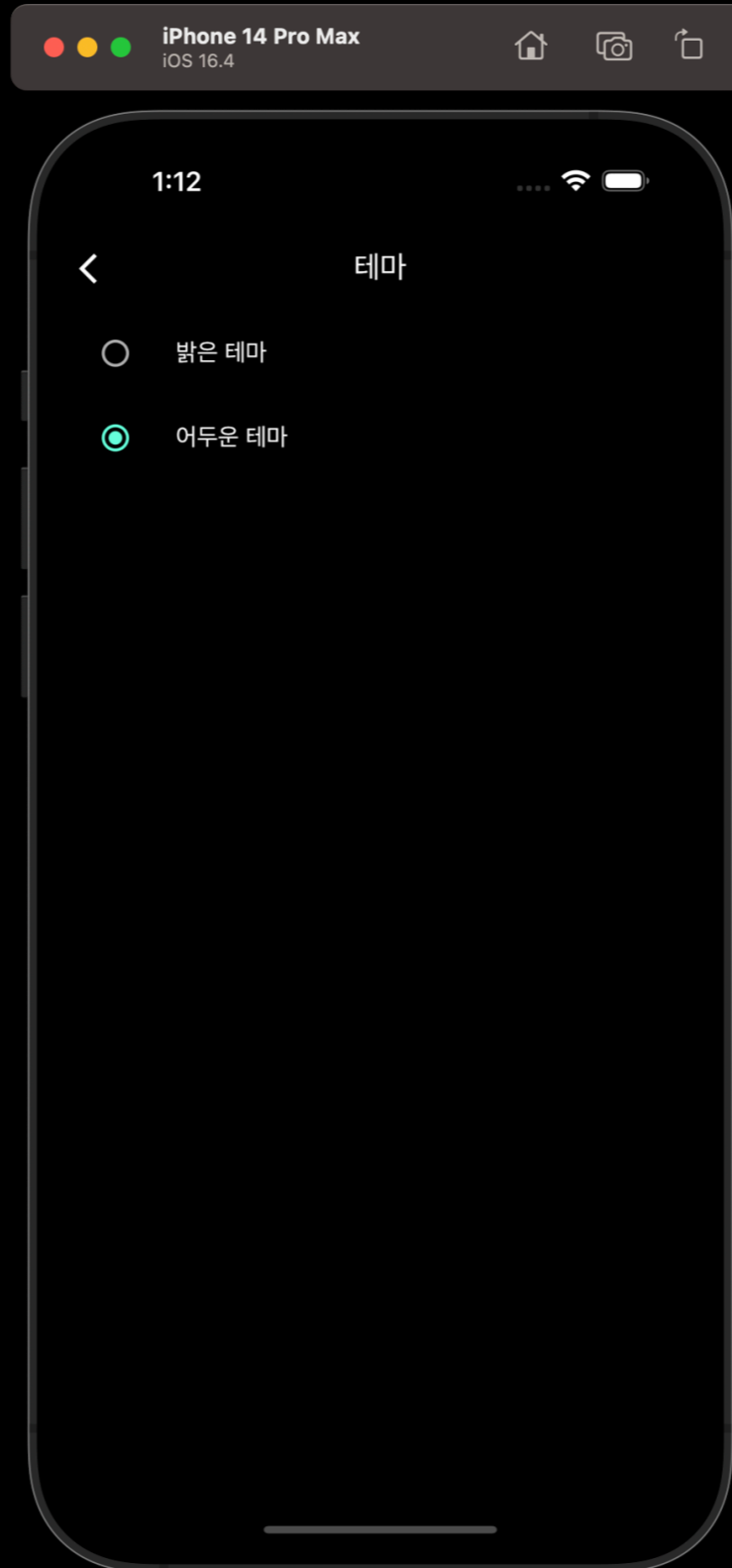
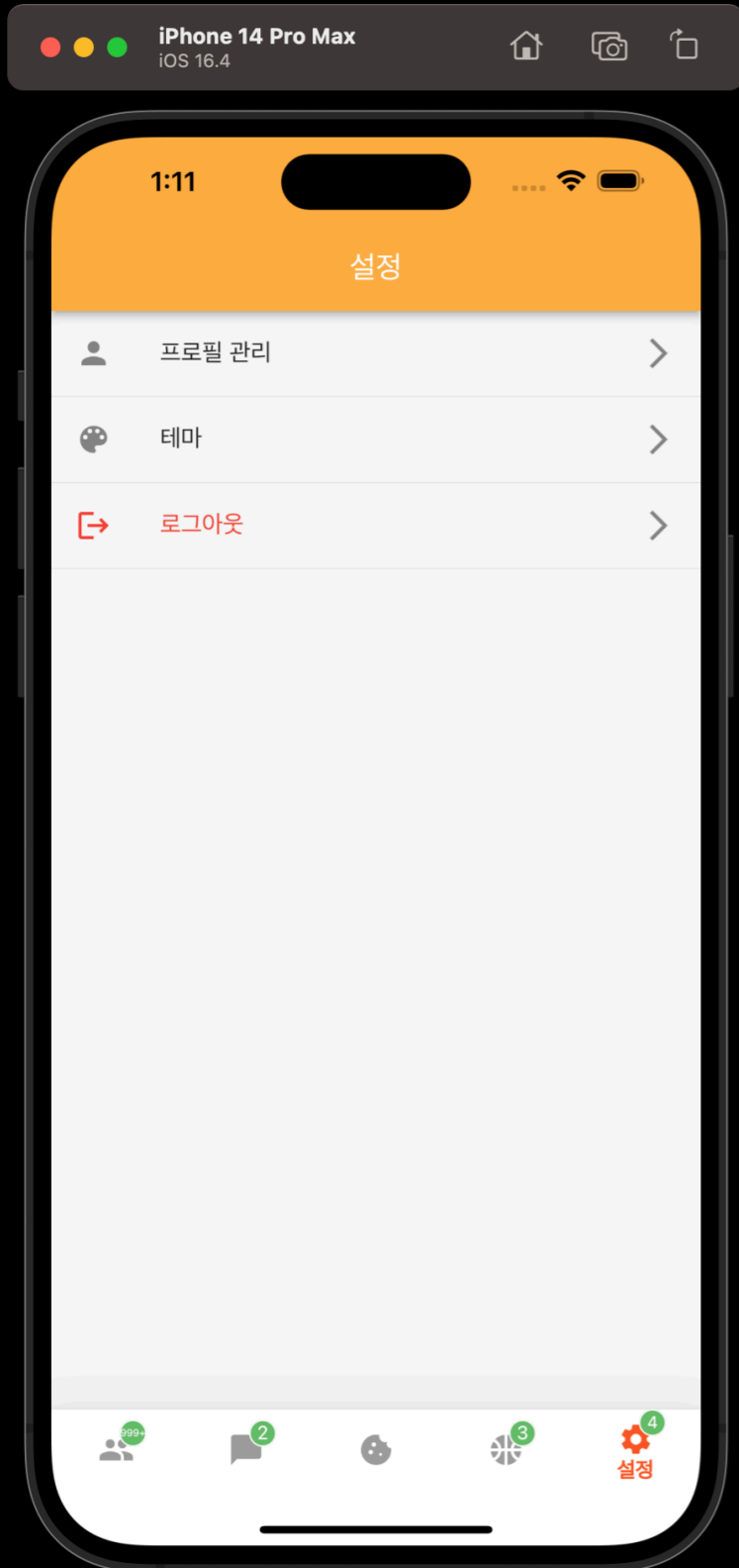
Chat Tab & Chat Room



Maps Tab



Settings Tab



Conclusion

What we've learned

1st Semester

- Flutter framework & Dart language
- Design Architecture Pattern (MVC, MVP, MVVM...)
- Git & Github Collaboration
- Backend API Implementations
- JWT token Authorization
- Importance of TYPE

What we've done

1st Semester

- Basic Structure
 - Took longer than our expectations
 - Since, we didn't know the importance of the Basic Structure
- UIs
 - Friends Tab, Chat Tab, Maps Tab, Setting Tab
 - More organized, better-looking changes needed
- Account Creation / Login

Benefit

What we expect

- Increased communication with real friends
- Visualize Friends' status via Maps tab, not just Chat
- Provide users with an easy-of-use, intuitive UI
- Share informations safely by encrypting user information

Future Plans

Future Plans

Summer Vacation & 2nd Semester

- Stabilized MVVM Structure
- Stabilized Chatting Service
- Alerts (FCM)
- Location Sharing
- (Schedule Sharing)
- Authority Management
- Stabilization before actual service
- PlayStore / AppStore Distribution

Thank You

Questions are welcome