Readme

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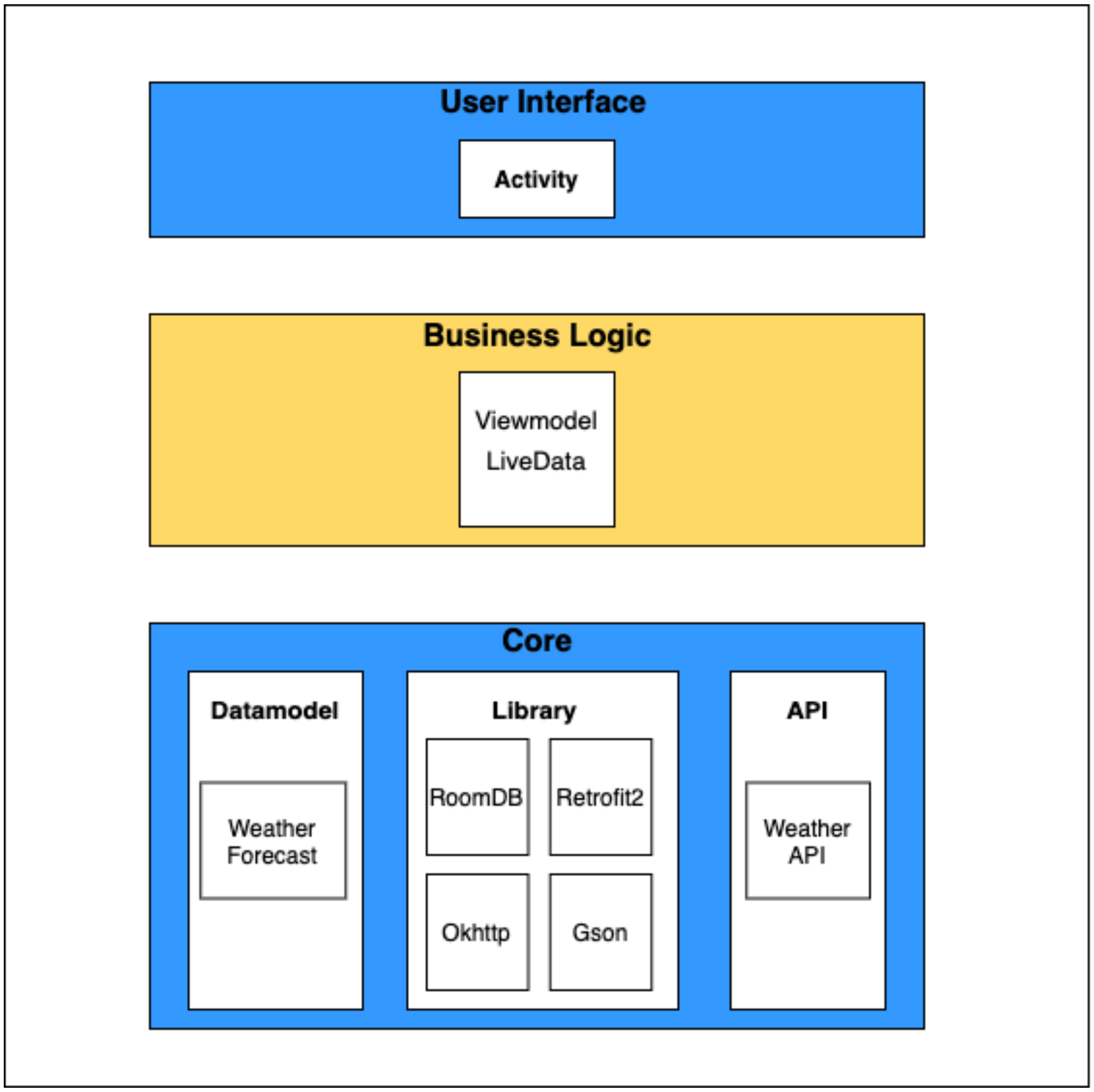
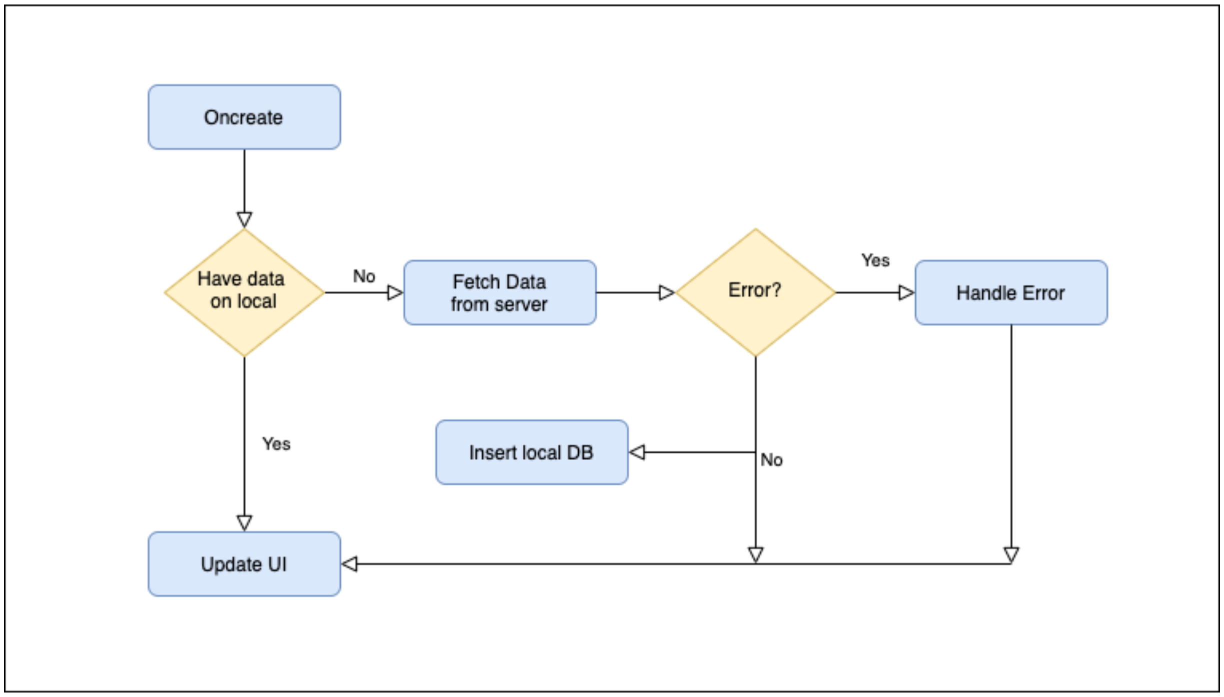
1. Diagrams and models

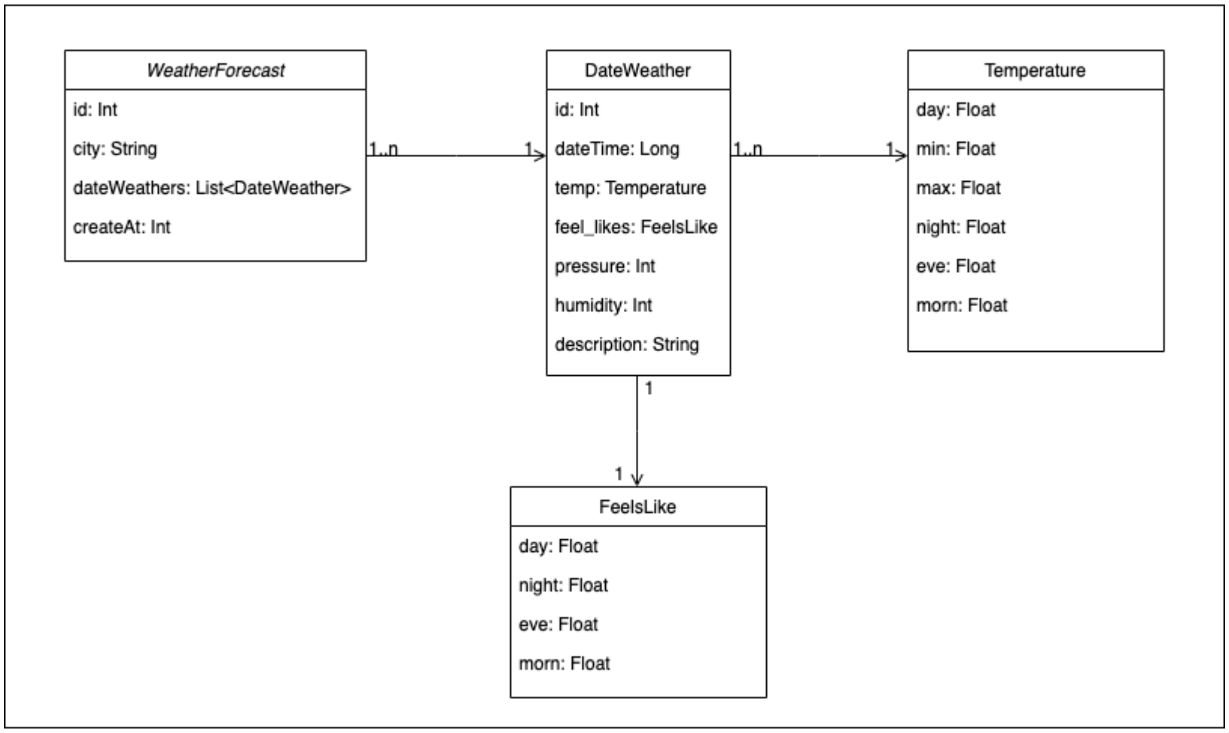
Architecture overview: Apply MVVM architect



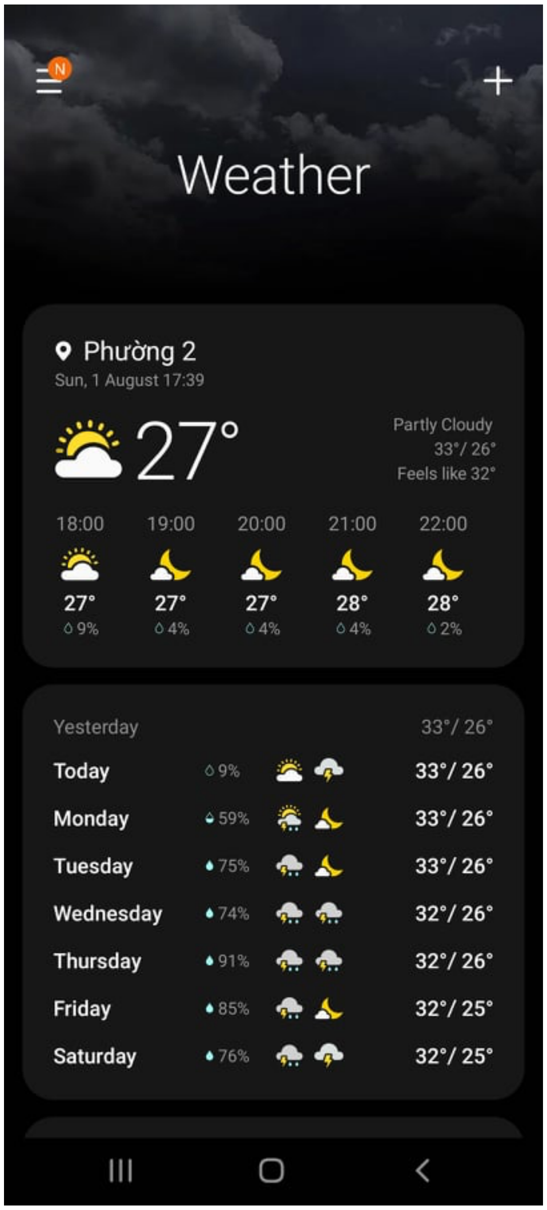
Appflow overview



Models



At the first time, I want to make an weather application like Applition on Android Smartphone, but currently I do not have enough time for it, so only make UI like requirement.



Weather

Phường 2
Sun, 1 August 17:39

27°

Partly Cloudy
33°/ 26°
Feels like 32°

18:00	19:00	20:00	21:00	22:00
27°	27°	27°	28°	28°
9%	4%	4%	4%	2%

Yesterday		33°/ 26°
Today	9%	33°/ 26°
Monday	59%	33°/ 26°
Tuesday	75%	33°/ 26°
Wednesday	74%	32°/ 26°
Thursday	91%	32°/ 26°
Friday	85%	32°/ 25°
Saturday	76%	32°/ 25°

2. Principle applied

Seperation of Concern principles: apply when using MVVM architecture, include 3 layers: View, Viewmodel, Model. Each layer is responsible for one task.

SOLID principles:

S - Single responsibility: Each class or method func only have one job to to.

Example:

Class ApiManager: only init and provides Api

Class DataPaser: only parse response data from server

O – Open-closed: open for extension, but close for modifycation

Example: Apply when design repository layer to get remote data.

Currently, we only using WeatherApi to get data, the next time, we need extend some feature and need get data from another api. We only do some steps:

1. Define method for new API
2. Declare new API instance in ApiManager class
3. Using ApiManager to get new Api instance and call its method.

➔ We don't modify any class except ApiManager – this class manage all Api so that we need modify to add new Instance in this class

3. Design Patterns & Practices applied

Singleton design pattern: WeatherRepository class

Builder desgin Pattern: Service Builder class

Strategy Pattern: DataResponse class -> WeatherRepository class

4. Folder structure

Folder	Responsibility
Api	Manage (API Manager), create (ServiceBuilder), define Api method (WeatherApi)

Database	Init, migrate database (WeatherDB) Defind method access DB (WeatherDao)
Model	Define Model data
Repository	Manage, handle logic get data (local, remote)
Utils	Include class can reuse anywhere in project: Errorcode, StringUtils, etc
View	Include activty, adapter, v.v
Viewmodel	Include viewmodel class handle logic app

5. Libraries & android componet:

a. Gson, Retrofit2, OkhttpClient, Mockito
b. Viewmodel, live data, room database

6. Run app on local computer:

Run debug mode:

1. Check out source code by android studio
2. Select build variant on debug mode
3. Run build

Run release mode:

1. Build -> Generate Signed Bundle/APK
2. Choose opt APK -> Next
3. On Key store path: choose existing -> select file release.keystore (../WeatherApp/app) -> Next
4. Choose destination foler generate apk -> release -> V2 -> Finish
5. Get apk and run adb: adb install app-release.apk

Configure the build process to automatically sign your app: sorry for not config success ^^

7. Check list item done:

Done: 9/12

STT	Description	Status	Note
1	Programming language: Kotlin is required, Java is optional	✓	
2	Design app's architecture (suggest MVVM)	✓	
3	Apply LiveData mechanism	✓	
4	UI should be looks like in attachment.	✓	
5	Write UnitTests	✓	Unit test for database, livedata (folder android test)
6	Acceptance Tests	✗	
7	Exception handling	✓	Handle error when get data from api (only simple a toast on UI)
8	Caching handling	✗	
9	Secure Android app from	✓	Using: proguard, minifyEnabled, shrinkResource for release build
10	Accessibility for Disability Supports	✗	
11	Entity relationship diagram for the database and solution diagrams for the components, infrastructure design if any	✓	
12	Readme file includes	✓	