Weather app documentation

1. Software architecture

The application consists of multiple layers in order to separate responsibilities.

1.1. Data layer

Contains the database and api services. Database used for caching data from api. Api service makes calls to https://www.visualcrossing.com/ for weather data and https://maps.googleapis.com/ for autocompleting location addresses. Both apis requires keys to use.

1.2. Model layer

Holds the weather view model which communicates with the UI through observable properties and helper functions.

1.3. UI layer

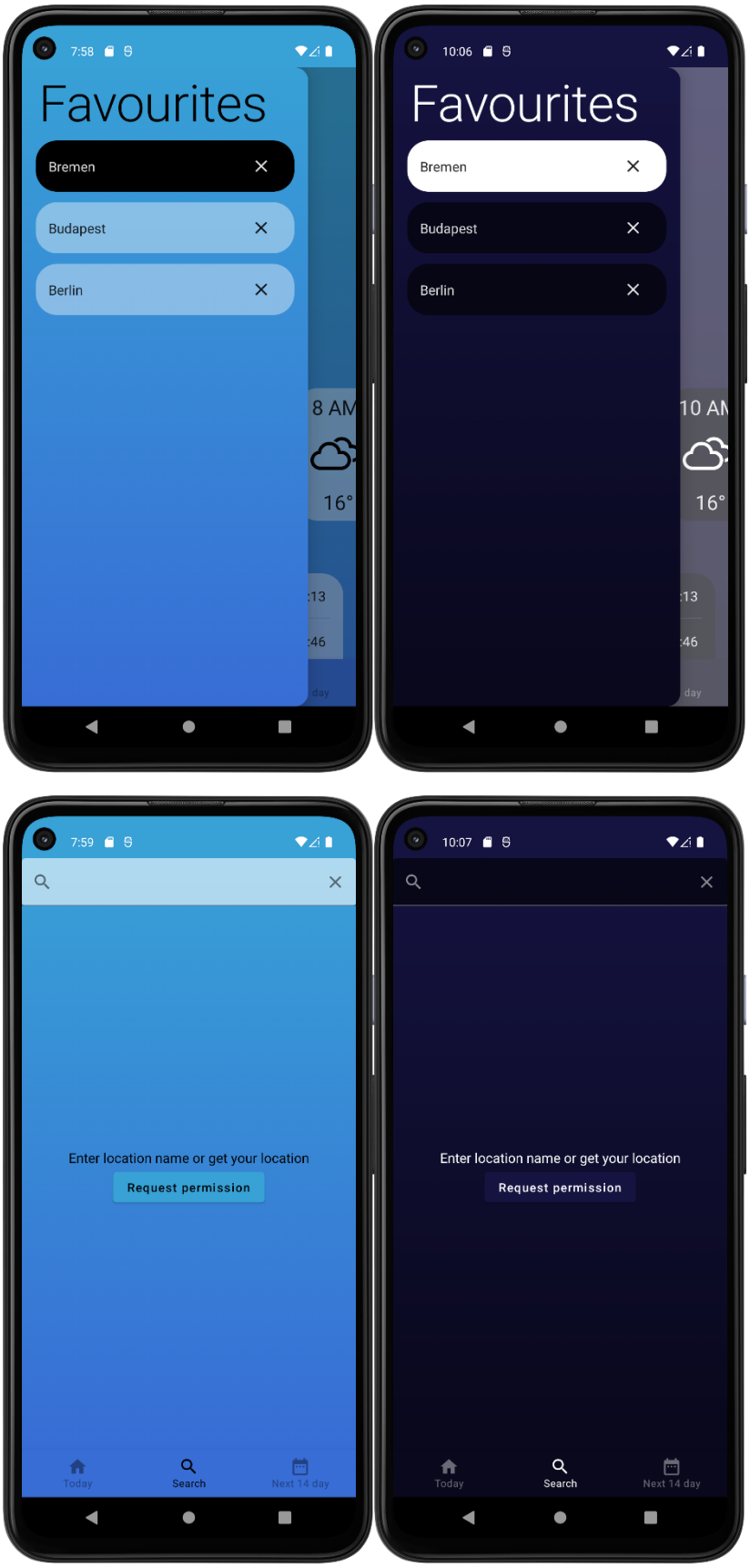
Contains all the compose code for the UI and provides the necessary dependencies for the components.

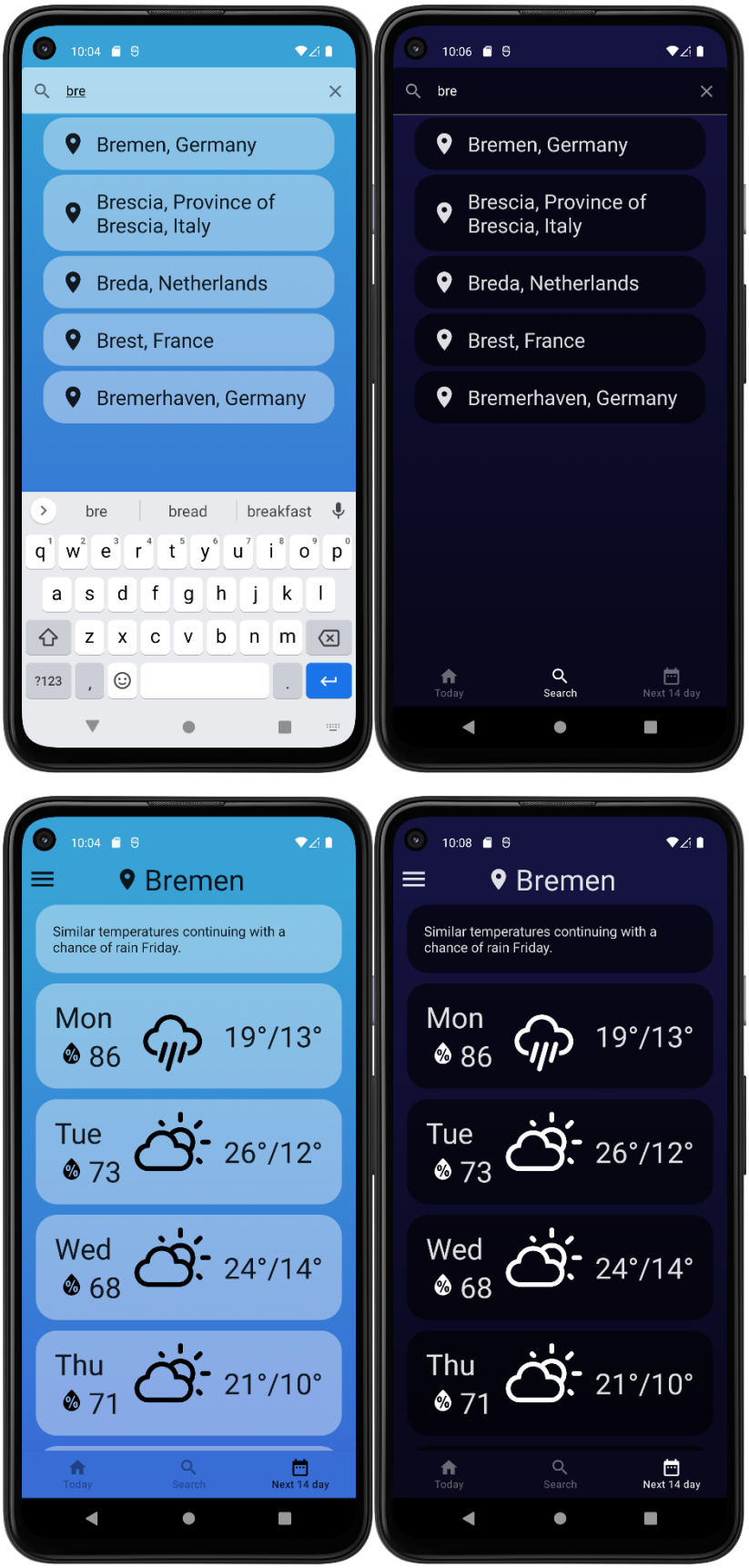
2. Used libraries

- Compose navigation
  Navigation service support.
- Moshi
  Json to kotlin class converter to handle http responses easily.
- Retrofit with moshi converter
  Handling http calls with moshi converter support.
- Compose
  Google new way of handling UI building.
- Activity integration for compose
- Compose material design
- Animations
  Compose animation library.
- Compose tooling support
  Handling compose previews.
- Compose viewmodel integration
- Accompanist swipe refresh
  Google swipe refresh UI component library.
- Room
  Database library.
- Gson
  Handles the converting process for custom datatypes when saving to database.
- Accompanist permission handler

Handling permissions for example requesting device location data from user.

Pictures:


7:58
Favourites
Bremen
Budapest
Berlin
8 AM
16°
10:06
Favourites
Bremen
Budapest
Berlin
10 AM
16°
7:59
Enter location name or get your location
Request permission
Today
Search
Next 14 day
10:07
Enter location name or get your location
Request permission
Today
Search
Next 14 day


10:04
bre
Bremen, Germany
Brescia, Province of Brescia, Italy
Breda, Netherlands
Brest, France
Bremerhaven, Germany
bre
bread
breakfast
10:06
bre
Bremen, Germany
Brescia, Province of Brescia, Italy
Breda, Netherlands
Brest, France
Bremerhaven, Germany
Today
Search
Next 14 day
10:04
Bremen
Similar temperatures continuing with a chance of rain Friday.
Mon 86 19°/13°
Tue 73 26°/12°
Wed 68 24°/14°
Thu 71 21°/10°
Today
Search
Next 14 day
10:08
Bremen
Similar temperatures continuing with a chance of rain Friday.
Mon 86 19°/13°
Tue 73 26°/12°
Wed 68 24°/14°
Thu 71 21°/10°
Today
Search
Next 14 day

Architecture graph located on the next page.

Authors:

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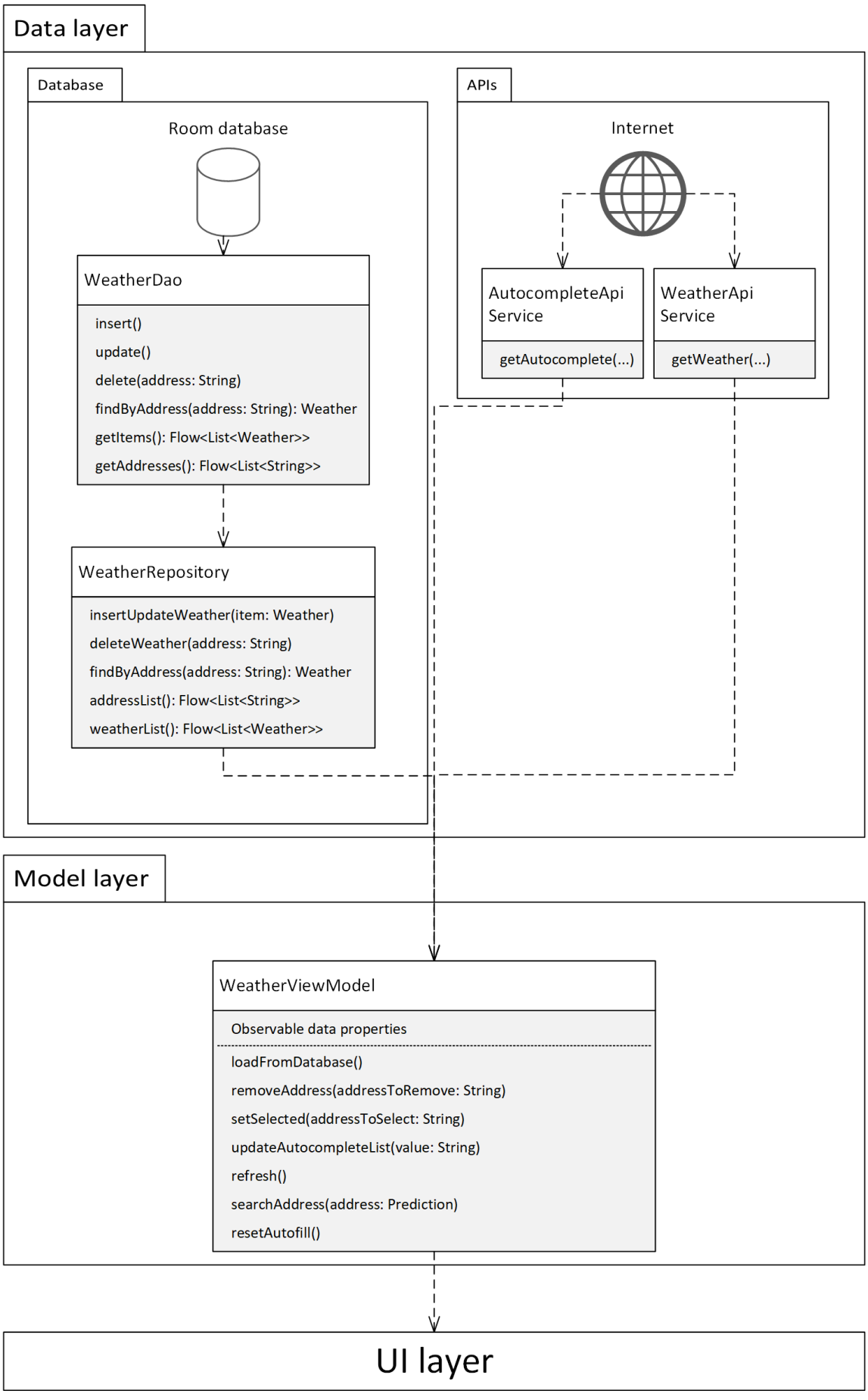
Data layer
Database
Room database
WeatherDao
insert()
update()
delete(address: String)
findByAddress(address: String): Weather
getItems(): Flow<List<Weather>>
getAddresses(): Flow<List<String>>
WeatherRepository
insertUpdateWeather(item: Weather)
deleteWeather(address: String)
findByAddress(address: String): Weather
addressList(): Flow<List<String>>
weatherList(): Flow<List<Weather>>
APIs
Internet
AutocompleteApi Service
getAutocomplete(...)
WeatherApi Service
getWeather(...)
Model layer
WeatherViewModel
Observable data properties
loadFromDatabase()
removeAddress(addressToRemove: String)
setSelected(addressToSelect: String)
updateAutocompleteList(value: String)
refresh()
searchAddress(address: Prediction)
resetAutofill()
UI layer