

# **Weather Pro Mobile Application**

- Weather Pro is a mobile application that provides users with current weather information and forecasts for various locations. It utilizes external APIs to fetch weather data and local storage to store user preferences and location data.

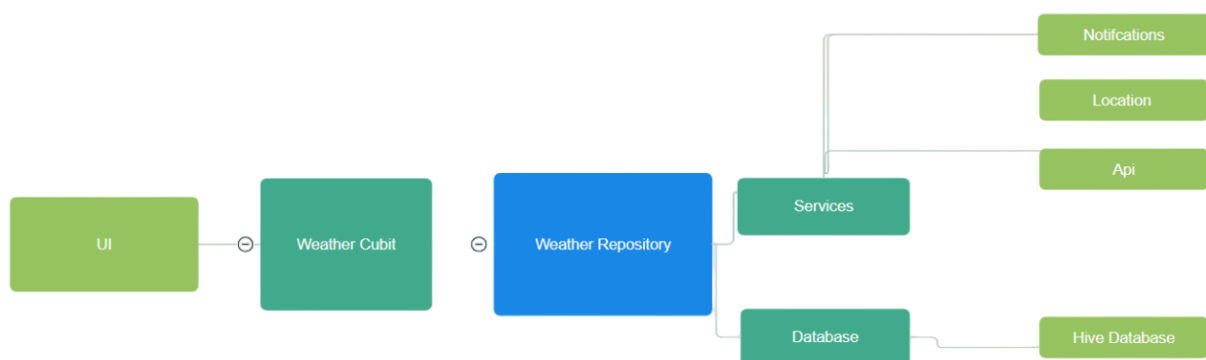
## **Features :-**

- Current weather: Displays the current temperature, weather conditions, humidity, wind speed, and other relevant information for a given location.
- Forecasts: Provides weather forecasts for the next 5 days, including daily high and low temperatures.
- Location search: Allows users to search for locations by city name or using GPS to get their current location.

- Unit settings: Users can choose between Celsius and Fahrenheit for temperature units.
- Notifications: Sends alerts for extreme weather conditions, such as temperatures below 30 degrees Celsius.
- Theme settings: Users can switch between light and dark themes.

## Architecture

The application follows MVVM architecture with the following components:



- Presentation: This layer contains the UI components, such as screens, widgets, and state management using BLoC (Cubit) and Provider .
- Data: This layer handles data access and storage, including fetching data from external APIs, storing data locally using Hive, managing user preferences, services that interact with external systems, such as the weather API and location services and repositories which acts as an intermediary between the data and presentation layers, providing an abstraction for data access.

## Dependencies

Flutter: The core framework for building the UI.

BLoC: A state management pattern for managing the application's state.

Hive: A lightweight and fast NoSQL database for local storage.

Dio: An HTTP client for making network requests to the weather API.

Geolocator: A plugin for accessing location services.

Provider: A state management solution for managing shared data.

Shared Preferences: A plugin for storing and retrieving simple key-value data on the device.

## 1.API Integration

Weather Pro integrates with the OpenWeatherMap API to fetch weather data. The API key is stored in the const.dart file.

## 2. Local Storage

User preferences, location data, and other application data are stored locally using Hive. The following Hive boxes are used:

isCelsius: Stores the user's preferred temperature unit (Celsius or Fahrenheit).

location: Stores location screen state .

onBoarding: stores onboarding screen state.

isDarkMode: Stores the user's preferred theme (light or dark).

sendAlert: Stores the user's preference for receiving weather alerts.

location\_model: Stores the location data, including latitude, longitude, and city name.

## 3. Notifications:

The application uses the flutter\_local\_notifications plugin to send weather alerts. The NotificationService class handles the initialization and display of notifications.

#### 4. Theme:

The application supports light and dark themes. The ThemeProvider class manages the current theme and provides methods for switching between themes.

## Usage

- Launch the application.
- The splash screen will be displayed while the application initializes.
- The home screen will be displayed, showing the current weather for the default location.
- Use the search bar to search for a different location by city name.

- Click the GPS icon to get the current weather for your location.
- Use the settings menu to change the temperature unit, theme, and notification preferences.

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