Mobile Applications for Sensing and Control (EEP 523)
Homework Assignment 3

Objective: The goal of this assignment is to Figma and display data from APIs in Kotlin (integrating with external APIs)

Instructions:

- Create a new Kotlin app that allows users to search for and display information about a location using the OpenWeatherMap API.
- The app should have the following features:
  - A text input where users can enter a location.
  - A button to initiate the search for the location's weather information.
  - The ability to display the following information about the location:
    - City, Current temperature.
    - Weather conditions (e.g., cloudy, sunny, rainy).
    - The minimum and maximum temperature for that time.
    - Sunset and Sunrise Time
    - Wind Speed, Pressure, Humidity
  - You can use the OpenWeatherMap API to retrieve the weather information for the location.
  - Sample OpenWeatherMap API: "https://api.openweathermap.org/data/2.5/weather?q=$city&units=metric&appid=$API"

NOTE: use the 2.5 version of OpenWeatherMap Api (The new version of OpenWeatherMapApi requires credit card) You will have to create your own APIKEY to consume the data from the API. (Refer to References Section of this document)

BONUS: By default, the app should show the weather conditions mentioned above for the current location of the device, for e.g., in our case it should be Seattle. You need to use GeoLocation to get the current location of the device.

How the UI should look like:

- When you open the app, the app should show the weather information of device current location.
- You need to design the Screen on Figma . You should display City Name, Current Temp, Weather Condition, Min Temp, and Max Temp, Sunrise Time, Sunset Time, Wind Speed, Pressure, Humidity
- You also need to have a Text Input Component, where you can type the city name and a button component which you need to press to get the weather information of that city.
- If the user enters a wrong name which is not a city, then you should show an error message.
- If no City is entered display Error message saying City Name cannot be blank
- If not connected to Internet : Error message saying ‘Please connect to internet’ (BONUS)

ERROR SCENARIO : There can be many ways to do this for e.g.: Build an Error Screen, or you can give a toast message etc.

Architecture Design Best Practices:
- Handle Network Calls Gracefully
- Use model files to store the structure of json
- Update UI on main thread

Submission:
Your submission should include:
- A .zip file containing the source code for your app.
- A readme file inside your zip file explaining how your app works, how many hours it took you to complete it, what were the most challenging parts, and please cite all the websites and any other resources you used.
- Figma Screen Design link share it with us @sosper30 - sosper30@uw.edu, @Varghesemela - snjy1697@uw.edu (If possible add @Tejashrichatbot - tejashri@uw.edu)
- A video showcasing the working of your App, you may include your voice, it is not compulsory. Your video should show all the requirements of the assignment.
- If you decide to use GitHub release link, make sure you share it with us @sosper30, @Tejashrichatbot and @Varghesemela

Grading:
This assignment will be graded based on the following criteria:
- Proper functioning of the app (70%)
- Quality and clarity of the code, and a descriptive readme file (30%)
- See Rubrics for detailed Evaluation

References:
https://home.openweathermap.org/
https://openweathermap.org/api/one-call-3#example
Open weather 2.5 getting deprecated
https://forum.arduino.cc/t/openweathermap-api-2-5-to-be-closed-this-june-2024/1250604/8

API Tutorial