

Mobile App Development
Homework 03

Basic Instructions:

1. In every file submitted you **MUST** place the following comments:
 - a. Assignment #.
 - b. File Name.
 - c. Full name of the student.
2. Each group is required to submit the assignment on Canvas.
3. Please download the support files which include a Java project to be used for this assignment.
4. **Submit Codes:**
 - a. Zip all the project folder to be submitted on canvas.
5. Submission details:
 - a. The file name is very important and should follow the following format:
Group#_HW03.zip
 - b. You should submit the assignment through Canvas: Submit the zip file.
6. **Failure to follow the above instructions will result in point deductions.**






Homework 03 (100 Points)

In this assignment you build a weather application using the OpenWeatherMap api.

API Details:

The current weather api should be used by this app:

1. Create an account at <https://openweathermap.org/> and get an api key, which will be used to make the api calls.
2. You should use the Weather API, check the documentation for that is provided by the OpenWeatherMap APIs
 - a. For the city and country information you should use the data provided in the support file.
 - b. All the retrieved information should be in the imperial units. Check the api documentation to retrieve the data in this unit. All data should be retrieved in JSON format.
 - c. The Current Weather API, check the documentation provided at <https://openweathermap.org/current>
 - d. The 5 Day Weather Forecast API, check the documentation provided at <https://openweathermap.org/forecast5>
 - e. To load the Weather Icon check the documentation provided at <https://openweathermap.org/weather-conditions>

Cities	Current Weather	Weather Forecast
Charlotte,US	Charlotte,US 	Charlotte,US
Chicago,US	Temperature 46.5 F	2019-03-20 03:00:00  36.7F Max: 38.58F Min: 36.7F Humidity: 48% Clear Sky
New York,US	Temperature Max 50.2 F	2019-03-20 06:00:00  36.7F Max: 38.58F Min: 36.7F Humidity: 51% Few Clouds
London,UK	Temperature Min 43.1 F	2019-03-20 09:00:00  36.7F Max: 38.58F Min: 36.7F Humidity: 53% Few Clouds
Bristol,UK	Description Clear Sky	2019-03-20 12:00:00  36.7F Max: 38.58F Min: 36.7F Humidity: 51% Few Clouds
	Humidity 31%	
	Wind Speed 5.95 miles/hr	
	Wind Degree 46.1 degrees	
	Cloudiness 1%	
	<input type="button" value="Check Forecast"/>	

(a) Cities List

(b) Current Weather

(c) Weather Forecast

Figure 1, Application Wireframe

Part 1 : Cities List Screen (10 Points)

The interface should be created to match the UI presented in Figure 1(a). The requirements are as follows:

1. This screen should use the cities list in the provided Data class.
 - a. You should list the city and country code as shown in Figure 1(a).
2. Clicking on a row item should start the Current Weather screen and should pass the required information to the Current Weather screen.

Part 2 : Current Weather Screen (30 Points)

The interface should be created to match the UI presented in Figure 1(b). The requirements are as follows:

1. This screen should retrieve the current weather information for the selected city. You should use the Current Weather API.
 - a. You should integrate OkHTTP library into your project and use it to make the API requests.
 - b. This screen should make the HTTP request, retrieve the weather information for the provided city, parse the JSON.
 - c. Create a Weather class that should hold the data returned in the JSON API response.
2. Display the weather information and shown in Figure 1(b). This screen should display the Weather Icon based on the retrieved weather information. You should load the weather icon based on the documentation provided at <https://openweathermap.org/weather-conditions>
 - a. To load the image from a url use the Picasso library <https://square.github.io/picasso/>
3. Clicking the “Forecast” button should show “Weather Forecast screen”, and should pass the required information to it.

Part 3 : Weather Forecast Screen (60 Points)

The interface should be created to match the UI presented in Figure 1(c). The requirements are as follows:

1. This screen should retrieve the weather forecast for the selected city. You should use the 5 Day Weather Forecast API.
 - a. You should use OKHttp to make the API request/
 - b. Create a Forecast class that should hold the data returned in the JSON API response. You should create an array of the retrieved Forecast items.
2. This screen should display the retrieved forecast in a ListView or RecyclerView as shown in Figure 1(c). Note that each cell should display, the date/time, weather icon, temperature, max temp, min temp, humidity, and the description.
 - a. Use the Picasso library to load the weather icon for each of the row items. <https://square.github.io/picasso/>