Weather API

Problem

A mobile app queries a 3rd party API for weather data, but after the app becomes popular the rate limit of the API is exceeded and we need to limit the number of requests made to the 3rd party API.

It is decided to introduce an integration layer between the app and the 3rd party API so that the app will no longer call the 3rd party API directly, but instead call the integration layer API that will ensure the rate limit towards the 3rd party is not exceeded while still serving data to the apps.

App API

The app facing API should be RESTful and return data in JSON format. You are free to define the response structure, but please bear in mind that it should be easy for the clients to consume.

The API should support the following:

A list of the user's favourite cities where the temperature will be above a certain temperature the next day. It is not required to store the user's favorites server side - the client will pass those as part of the request.	
GET	**/weather/summary?unit=celsius&temperature=24&cities=2618425,3621849,3133880** /weather/summary?unit=<celsius|fahrenheit>&temperature=<int>&cities=<city ids separated by comma>

A list of temperatures for the next 5 days in one specific city.	
GET	**/weather/cities/2618425** /weather/cities/<city_id>

3rd Party API

- You should use OpenWeatherMap as the 3rd party weather API. Imagine you are only allowed to call the API 10,000 times per day, but we want to support a much larger number of users.
  Sign up for a free API key here: https://openweathermap.org/api
- Use the 5 Day / 3 Hour Forecast API to query based on city ID:
  https://openweathermap.org/forecast5#cityid5

Things to consider

- Keep a sensible project structure that can be expanded when the project grows in the future. Apply design patterns to help with this.
- Find a good way to ensure we stay within the rate limit of the 3rd party API while still serving the users with meaningful data.
- If time permits, implement handling for different error scenarios and cases of invalid input.