

Weather Application Using APIs Documentation

Description

This documentation will explain the WeatherRestAPI class. What kind of APIs are used, what external libraries are imported, the flowchart to demonstrate the logic behind implementation, and how to compile the source code.

APIs Used

WeatherRestAPI implements two different restful APIs.

- The first API is used from [OpenWeatherMap](#). This API needs to be provided the city input to get the city's weather information.
- The second API is used from [GeoDB Cities](#). This API needs to be provided locations such as longitude and latitude input to get the cities nearby.

Libraries

Java library

The following libraries bellow are build in java library.

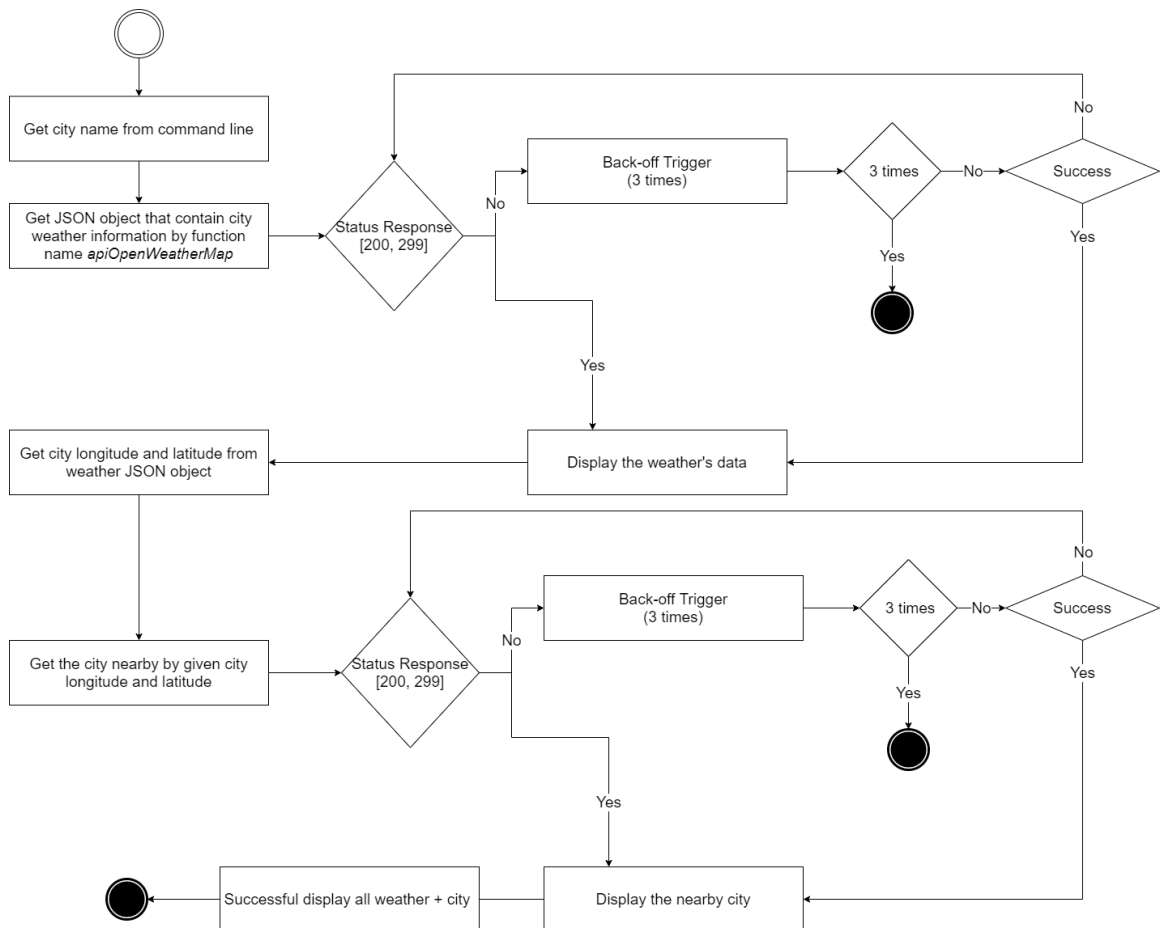
- `import java.util.concurrent.TimeUnit;`
- `import java.io.IOException;`
- `import java.time.Duration;`
- `import java.net.URI;`
- `import java.net.URISyntaxException;`
- `import java.net.http.HttpClient;`
- `import java.net.http.HttpRequest;`
- `import java.net.http.HttpResponse;`
- `import java.net.http.HttpResponse.BodyHandlers;`

External library

The following libraries below are external libraries. Downloaded from an [online resource](#). The external library must be in the same folder as the source code.

- `import org.json.JSONObject;`
- `import org.json.JSONArray;`

Flowchart



Compilation

- How to compile:

```
javac WeatherRestAPI.java
```

- How to run code:

```
java WeatherRestAPI cityname
```

- Example:

Assume that the source code is already compiled.

Case 1: Single word

We want to see Seattle's weather and the city nearby.

```
java WeatherRestAPI seattle
```

Case 2: Multiple words

We want to see Rio de Janeiro's weather and the city nearby, but there are multiple words. These are two ways to do it.

```
java WeatherRestAPI "rio de janeiro"
java WeatherRestAPI rio de janeiro
```

Sample output

Example 1

```
javac WeatherRestAPI.java
java WeatherRestAPI seattle
Weather information
- Country:      US
- City:         Seattle
- Weather:
  - Main:        Clouds
  - Description: scattered clouds
- Temperature:
  - Main:        54 (F)
  - Feel like:   53 (F)
  - Min:         52 (F)
  - Max:         57 (F)
  - Pressure:    1024
  - Humidity:    76
- Wind:
  - Speed:       2.68 meter/sec
  - Degree:      181
Near by locations in 10.0 (miles)
- Belltown
  - Distance:    0.81 (miles)
- South Lake Union
  - Distance:    1.25 (miles)
- Mount Baker
  - Distance:    2.45 (miles)
- West Seattle
  - Distance:    3.52 (miles)
```

Example 2

```
javac WeatherRestAPI.java
java WeatherRestAPI london
Weather information
- Country:      GB
- City:         London
- Weather:
  - Main:        Clouds
  - Description: broken clouds
- Temperature:
  - Main:        56 (F)
  - Feel like:   56 (F)
  - Min:         54 (F)
  - Max:         59 (F)
  - Pressure:    1016
  - Humidity:    87
- Wind:
  - Speed:       3.6 meter/sec
  - Degree:      190
Near by locations in 10.0 (miles)
- Charing Cross
  - Distance:    0.03 (miles)
- Covent Garden
  - Distance:    0.26 (miles)
- St James's
  - Distance:    0.31 (miles)
- Soho
  - Distance:    0.39 (miles)
```