Application:

- APIS
  - OpenWeatherAPI
    - This api gets the weather and temperature of the city.
  - CityAPI
    - This api gets the population of the city.
  - GeoLocationAPI
    - This api gets the current date, time, timezone, and country of the city.
- Functions
  - getJSONFromURL
    - Uses HttpURLConnection for connection with the request method being “Get”. It’ll also set the header incase the API requires the key to be in the header. Then it’ll check if the code is a 200, if it’s 200 then just return the JsonElement. Otherwise, it’ll go through and keep track of the number of times retries have happened. It starts off by sleeping for 0 seconds, then adds 1. Sleeps for 1, then doubles to 2, then doubles to 4, up to 8. If it gets to 8 and still no 200 code, then it’ll just return null and the function that calls it will deal with that.
  - Api functions
    - They all call the getJSONFromURL, they’ll then turn that JSON element into a JSON object where then we can call .get() with the key as a parameter to get the value. Once we have the value we can just output it to the console and that’s it. At first, the output was made using text blocks, but the lab is on java 11 and text blocks were introduced in java 15, so that didn’t work.
- Usage:
  - You can run the program very easily by getting to the src file. Then just doing ./build.sh “Your City” and that’s it. **It may say permission denied, so you might have to run chmod +x build.sh first. Make sure the city name is in quotes as well, this is to ensure that cities with more than one word work correctly.** build.sh is essentially compiled using and ran using
    - javac -cp "../gson-2.10.1.jar" MyCity.java
    - java -cp .:"../gson-2.10.1.jar" MyCity "$1"