LAB 5

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GitHub repo link for java code:

Create a free account on the OpenWeather API - https://openweathermap.org/api

Get the 5-days weather forecast data for “Halifax” using the API - https://openweathermap.org/api/one-call-api
Save the response as “weather.json” in your GCP instance – If it's not working, you can use direct ''weather.json" file from Teams channel.

Had created account on OpenweatherAPI and got the apikey, but the apikey was not working, so took the weather.json file from Teams channel.

For 5-days – weather forecast, I have assumed the days from 24th June, 2023 to 28th June 2023. Since the weather.json file contained the data from 21st June, 2023 to 28th June, 2023, I have manually looped the array from i = 3, to start it from 24th June, 2023.

■ Write a Java program to filter the response data where the daily “feels_like” temperature for the next 5-days is greater than 15°C during the “day” time. Exclude the current, minutely, and hourly fields.

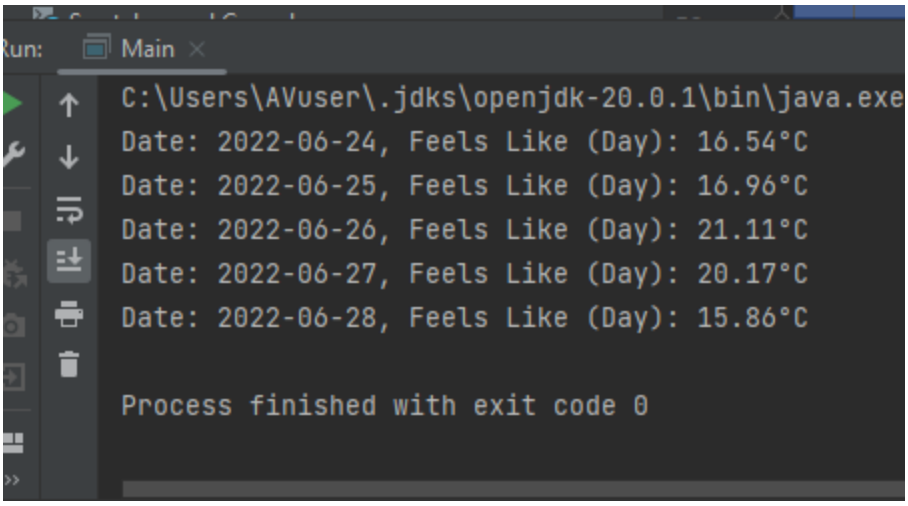
■ Save the filtered data into a new file – “summer_weather.json”.

```
package org.example;
import org.json.JSONArray;
import org.json.JSONObject;

import java.io.FileWriter;
import java.io.IOException;
import java.nio.charset.StandardCharsets;
import java.nio.file.Files;
import java.nio.file.Paths;
import java.time.Instant;
import java.time.LocalDateTime;
import java.time.ZoneOffset;
// Press Shift twice to open the Search Everywhere dialog and type `show
whitespaces`,
// then press Enter. You can now see whitespace characters in your code.
public class Main {
    public static void main(String[] args) throws IOException {
        // Press Alt+Enter with your caret at the highlighted text to see how
```

```
        // IntelliJ IDEA suggests fixing it.
        String text = new
String(Files.readAllBytes(Paths.get("C:\\Users\\AVuser\\IdeaProjects\\Lab5\\s
rc\\main\\resources\\weather.json")), StandardCharsets.UTF_8);

        JSONObject obj = new JSONObject(text);
        JSONArray arr = obj.getJSONArray("daily");
        JSONArray filteredData = new JSONArray();

        for (int i = 3; i < arr.length(); i++) {
            JSONObject daily = arr.getJSONObject(i);
            JSONObject feelsLikeObj = daily.getJSONObject("feels_like");
            double feelsLikeDay = feelsLikeObj.getDouble("day");
            if(feelsLikeDay > 15) {
                long timestamp = daily.getLong("dt");
                LocalDateTime dateTime =
LocalDateTime.ofInstant(Instant.ofEpochSecond(timestamp), ZoneOffset.UTC);
                System.out.println("Date: " + dateTime.toLocalDate() + ",
Feels Like (Day): " + feelsLikeDay + "°C");
                JSONObject filteredObject = new JSONObject();

                filteredObject.put("date",
dateTime.toLocalDate().toString());
                filteredObject.put("feels_like_day", feelsLikeDay);

                filteredData.put(filteredObject);
            }
        }
        try {
            FileWriter file = new
FileWriter("C:\\Users\\AVuser\\IdeaProjects\\Lab5\\src\\main\\resources\\summ
er-weather.json");
            file.write(filteredData.toString(4));
            file.close();
        } catch (IOException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        }
    }
}
```

java_code_image

Output



output

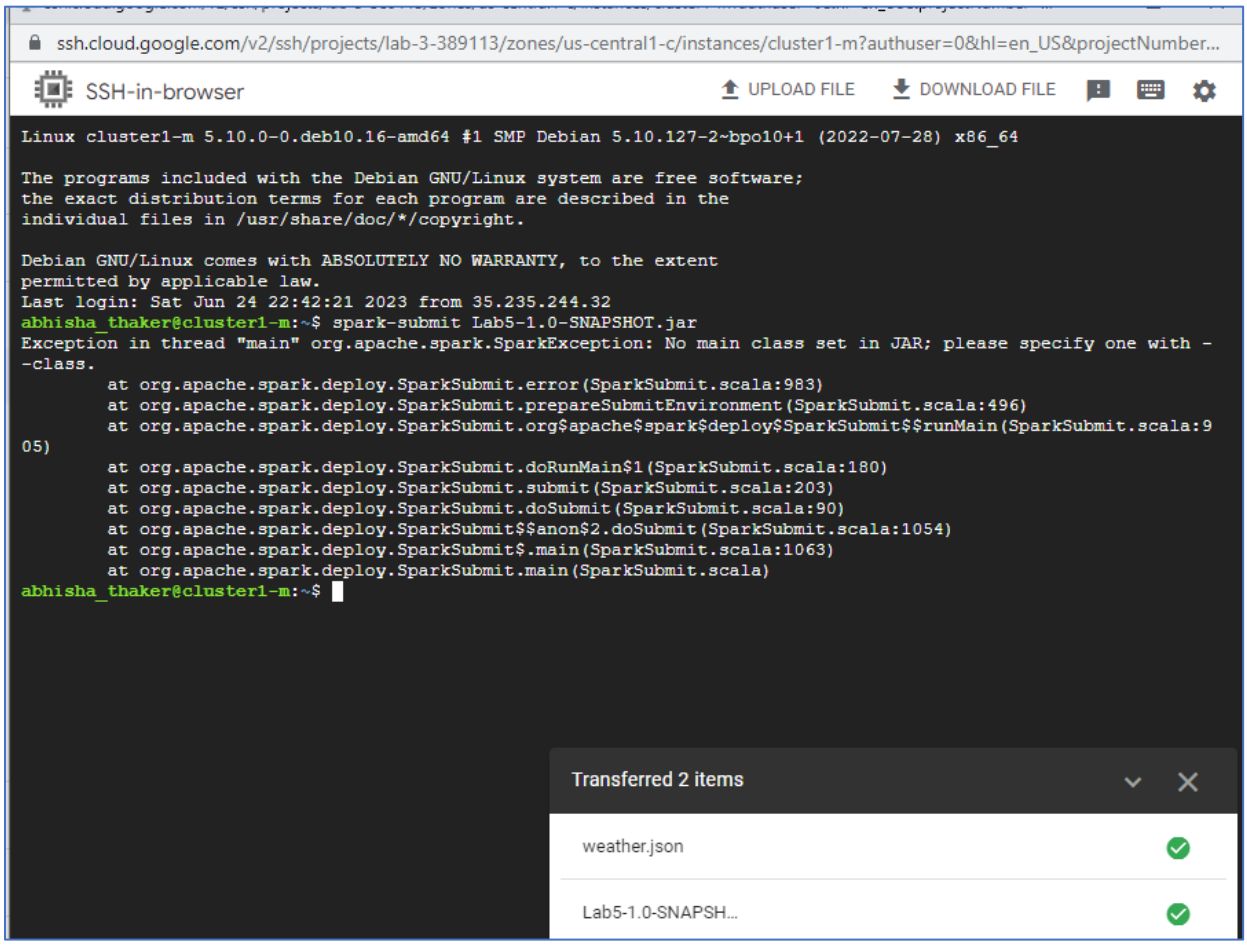
summer-weather.json file


```
[
    {
        "date": "2022-06-24",
        "feels_like_day": 16.54
    },
    {
        "date": "2022-06-25",
        "feels_like_day": 16.96
    },
    {
        "date": "2022-06-26",
        "feels_like_day": 21.11
    },
    {
        "date": "2022-06-27",
        "feels_like_day": 20.17
    },
    {
        "date": "2022-06-28",
        "feels_like_day": 15.86
    }
]
```


summer-weather.json

Created the Jar File by clicking on Maven > Lab5 > package > run build. Uploaded the jar file in ssh-in-browser in gcp. Also upload weather.json file

In ssh-in-browser, run spark-submit Lab5-1.0-SNAPSHOT.jar, you will see the following screen



Output-spark