In the name of god

2th Assignment Report

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Introdution

We want a program that get a city name and then find its weather status from servers finally show them to user.

In this project we want to use JSON objs and api request to read file from servers.

Design and Implementation

1. Get the city’s name from user
2. Send API request for the server and get the reponse
3. Handle JSON string that was given by the servers to get our desirable data from it.
4. Use swing to have a simple GUI.

First aip is an interface for programs to communicate with each other

2-in the get weather function we follow these steps

1. We create URL obj with specific AIP key that site generate for each person and site address
2. Use http obj to open connetion with server and set a way of transport to “get”
3. Send data to buffer input and use buffer reader obj to read it and change multi-line string to one.
4. Whenever a problem occurs in Wherever of these functions it goes in the catch block and then returns null.

What is JSON?

JSON (JavaScript Object Notation, pronounced /ˈdʒeɪsən/; also /ˈdʒeɪˌsɒn/) is an open standard file format and data interchange format that uses human-readable text to store and transmit data objects consisting of attribute–value pairs and arrays (or other serializable values). It is a common data format with diverse uses in electronic data interchange, including that of web applications with servers.

is said by wiki. But how can we use it?

It is similar to dict in phyton and hash set in java but it was sent with string format and we must convert this string to JSON obj to use it. The JSON obj has methods that return value by getting keys like get(), getInt(), and getDouble(), …..

The JSON string value can have some types in it like int, float, string, list, or even another JSON string but the key must be a string.

3- first add json to dependencys and import json to program.

import org.json.JSONObject;

to extract desirable data from JSON obj as mentioned

Have functions it each of them export one of the data

For example for extract temperature use:

public static double getTemperature(JSONObject jsonObject){  
 return jsonObject.getJSONObject("current").getDouble("temp\_c");  
}

and then return with simple data type and then we easily can access them see , change and analyze them.

4-same as json add swing to dependency and import it.

String city = JOptionPane.*showInputDialog*("Enter the city name");

Use this function to get input or output with GUI

This function create a window for program and get input and show results of program.

The main challenge of this project is creating GUI and JSON string.

For handle this problem , search and watch clips to learn basics informations.

Testing and Evaluation

For test, get random inputs to program to see what does it do,

There is some error when extract data from JSON , it’s problem is the typo mistake in the keys of JSON objs.

The result is when the city is unvalid or connection get lost it wants you to reenter a city name and then do the prosses again .

When it recived data completely it show the data of the current state of that city.

Conclusion:

JSON is a file format used to communicate with computers

API request is used to get or sent data for a server

We can use swing function to have simple GUI