

Develop a python Script

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| Date | 13 November 2022 |
| Team ID | PNT2022TMID46743 |
| Project Name | Signs with smart connectivity for Better road safety |
| Maximum Marks | 4 Marks |

Create a code snippet using python compiler

1. Extract weather data from OpenWeatherMap using APIs
2. Send the extracted data to the cloud
3. Receive data from the cloud and view it in the python compiler

1. Extract weather data from OpenWeatherMap using APIs:

The screenshot shows the OpenWeatherMap website's 'Weather API' page. The navigation bar includes links for Guide, API, Dashboard, Marketplace, Pricing, Maps, Our Initiatives, Partners, Blog, For Business, and Support. The main heading is 'Weather API'. Below it, a paragraph encourages users to sign up for the fast and easy-to-work weather APIs, recommending the 'One Call API 3.0'. A list of features for the One Call API is provided: Minute forecast for 1 hour, Hourly forecast for 48 hours, Daily forecast for 8 days, Historical data for 40+ years back by timestamp, and National weather alerts. A 'Subscribe' button is visible. To the right, the pricing is listed as 'Pay as you call' with '1,000 API calls per day for free' and '0.0012 GBP per API call over the daily limit'. A 'Subscribe to One Call by Call' button is also present. At the bottom, there is a section for 'Professional collections'.

OpenWeatherMap

Weather in your city

Guide API Dashboard Marketplace Pricing Maps Our Initiatives Partners Blog For Business mahes Support

Weather API

Home / Weather API

Please, [sign up](#) to use our fast and easy-to-work weather APIs. As a start to use OpenWeather products, we recommend our [One Call API 3.0](#). For more functionality, please consider our products, which are included in [professional collections](#).

One Call API 3.0 **NEW**

[API doc](#) [Subscribe](#)

Make one API call and receive all essential weather data in one response:

- Minute forecast for 1 hour
- Hourly forecast for 48 hours
- Daily forecast for 8 days
- Historical data for 40+ years back by timestamp
- National weather alerts

Read more about this API and subscription plan in the [FAQ](#).

Pay as you call

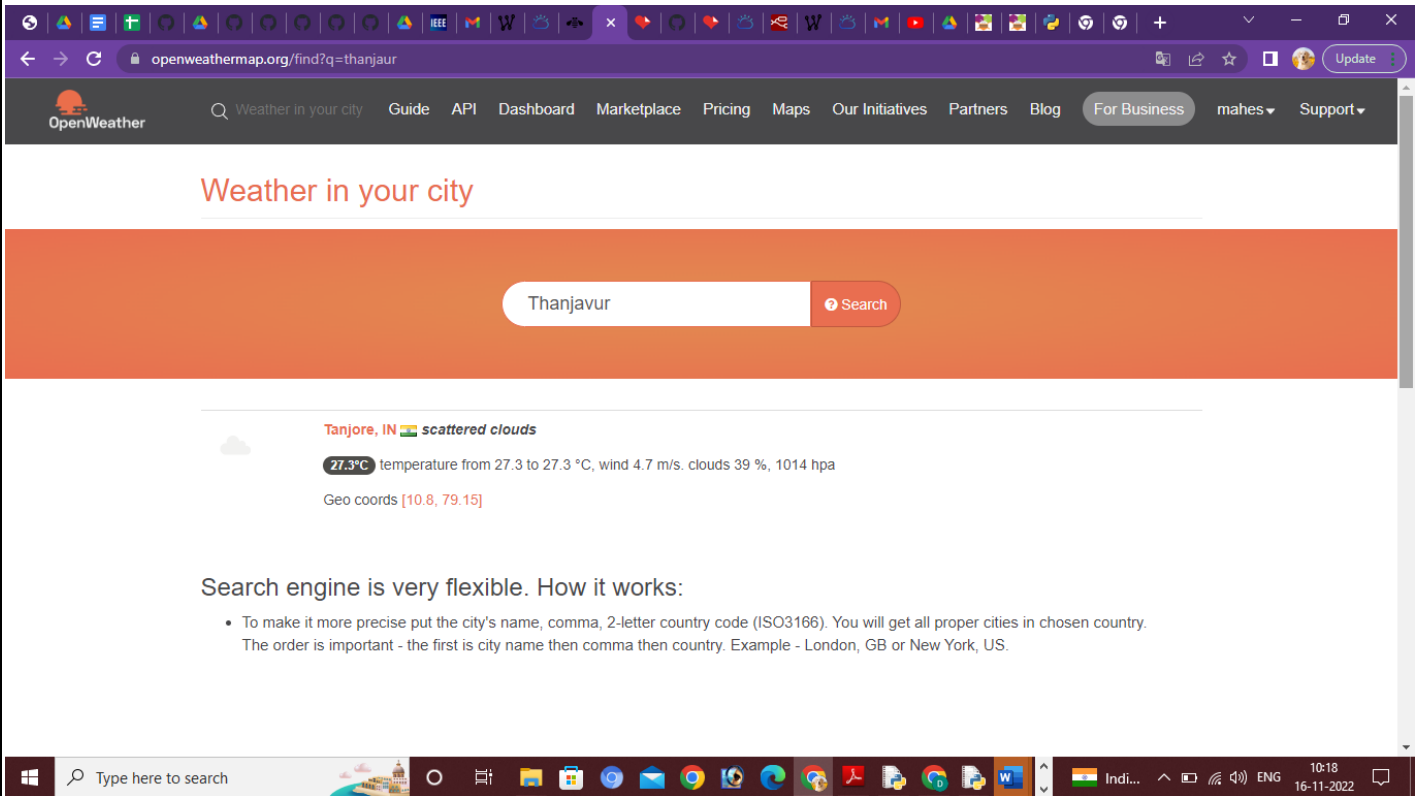
1,000 API calls per day for free
0.0012 GBP per API call over the daily limit

[Subscribe to One Call by Call](#)

This is a separate subscription plan, which includes only One Call API.

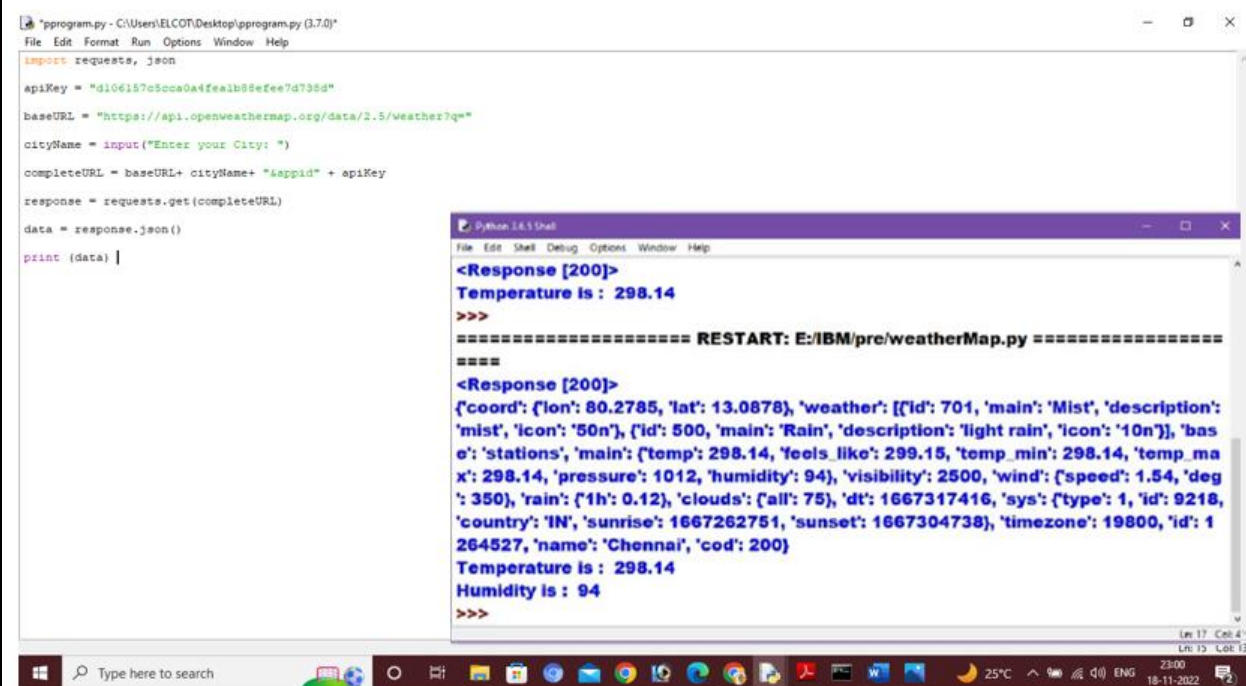
Professional collections

2. Send the extracted data to the cloud:



The screenshot shows the OpenWeatherMap website in a web browser. The URL is `openweathermap.org/find?q=thanjavur`. The page title is "Weather in your city". A search bar contains "Thanjavur" and a "Search" button. Below the search bar, the weather for "Tanjore, IN" is displayed as "scattered clouds" with a temperature of "27.3°C". The temperature range is "from 27.3 to 27.3 °C", wind is "4.7 m/s", clouds are "39 %", and pressure is "1014 hpa". Geo coordinates are "[10.8, 79.15]". Below the weather information, a text block explains the search engine's flexibility: "Search engine is very flexible. How it works:" followed by a bullet point: "• To make it more precise put the city's name, comma, 2-letter country code (ISO3166). You will get all proper cities in chosen country. The order is important - the first is city name then comma then country. Example - London, GB or New York, US."

3. Receive data from the cloud and view it in the python compiler:



The screenshot shows a Python script in a text editor and its output in a Python 3.8.1 Shell. The script is named "pprogram.py" and is located at "C:\Users\ELCOT\Desktop\pprogram.py (3.7.0)". The script imports "requests" and "json", sets an API key, and uses the OpenWeatherMap API to fetch weather data for a city. The output in the shell shows the response from the API, including the temperature and humidity for Chennai.

```
pprogram.py - C:\Users\ELCOT\Desktop\pprogram.py (3.7.0)
File Edit Format Run Options Window Help

import requests, json

apiKey = "d106157c5cca0a4fee1b88efee7d738d"
baseUrl = "https://api.openweathermap.org/data/2.5/weather?q="
cityName = input("Enter your City: ")
completeURL = baseUrl+ cityName+ "&appid=" + apiKey
response = requests.get(completeURL)
data = response.json()
print (data) |

Python 3.8.1 Shell
File Edit Shell Debug Options Window Help

<Response [200]>
Temperature is : 298.14
>>>
===== RESTART: E:\IBM\pre\weatherMap.py =====
=====
<Response [200]>
{'coord': {'lon': 80.2785, 'lat': 13.0878}, 'weather': [{'id': 701, 'main': 'Mist', 'description': 'mist', 'icon': '50n'}, {'id': 500, 'main': 'Rain', 'description': 'light rain', 'icon': '10n'}], 'base': 'stations', 'main': {'temp': 298.14, 'feels_like': 299.15, 'temp_min': 298.14, 'temp_max': 298.14, 'pressure': 1012, 'humidity': 94}, 'visibility': 2500, 'wind': {'speed': 1.54, 'deg': 350}, 'rain': {'1h': 0.12}, 'clouds': {'all': 75}, 'dt': 1667317416, 'sys': {'type': 1, 'id': 9218, 'country': 'IN', 'sunrise': 1667262751, 'sunset': 1667304738}, 'timezone': 19800, 'id': 1264527, 'name': 'Chennai', 'cod': 200}
Temperature is : 298.14
Humidity is : 94
>>>
```