

Develop A Python Script

Date	12 September 2022
Team ID	PNT2022TMID41963
Project Name	Signs with Smart Connectivity for Better Road Safety
Maximum Marks	4 Marks

Signs with Smart Connectivity for Better Road Safety

Create a code snippet using python to

- Extract weather data from OpenWeatherMap using APIs
- Send the extracted data to the cloud
- Receive data from the cloud and view it in the python compiler

Weather API

IBM Service Details - IBM Cloud IBM Watson IoT Platform (no subject) - 622519106048 One Call API 3.0 - OpenWeatherMap

openweathermap.org/api/one-call-3

OpenWeatherMap Weather in your city Guide API Dashboard Marketplace Pricing Maps Our Initiatives Partners Blog For Business Syed... Support

One Call API 3.0

Home / API / One Call API 3.0

Make just one API call and get all your essential weather data for a specific location with our new OpenWeather **One Call API 3.0**.
Easy migration from the Dark Sky API.

The One Call API provides the following weather data for any geographical coordinates:

- Current weather
- Minute forecast for 1 hour
- Hourly forecast for 48 hours
- Daily forecast for 8 days
- National weather alerts
- Historical weather data for 40+ years back (since January 1, 1979)

Please note, that One Call API 3.0 is included in the "One Call by Call" subscription only. This separate subscription includes 1,000 calls/day for free and allows you to pay only for the number of API calls made to this product. Please find more details on the [pricing page](#) and [FAQ](#).

Current and forecasts weather data

- How to make an API call
- Example of API response
- Fields in API response

Historical weather data

- How to make an API call
- Example of API response
- Fields in API response
- List of weather condition codes

Other features

- Units of measurement
- Multilingual support
- List of national weather alerts sources
- Call back function for JavaScript code

Manual

To make the API key Values

Current and forecast weather data

To get access to current weather, minute forecast for 1 hour, hourly forecast for 48 hours, daily forecast for 8 days and government weather alerts, please use this section of the documentation.

If you are interested in **historical weather data**, please read the "Historical weather data" section.

How to make an API call

API call

```
https://api.openweathermap.org/data/3.0/onecall?lat={lat}&lon={lon}&exclude={part}&appid={API key}
```

Parameters

lat, lon	required	Geographical coordinates (latitude, longitude). If you need the geocoder to automatic convert city names and zip-codes to geo coordinates and the other way around, please use our Geocoding API .
appid	required	Your unique API key (you can always find it on your account page)

Manual

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Choose the Weather in your city---- Coimbatore

Weather in your city

coimbatore

Coimbatore, IN **haze**

26.9°C temperature from 26.9 to 29.7 °C, wind 1.54 m/s, clouds 40 %, 1015 hpa

Geo coords [11, 76.9667]

Search engine is very flexible. How it works:

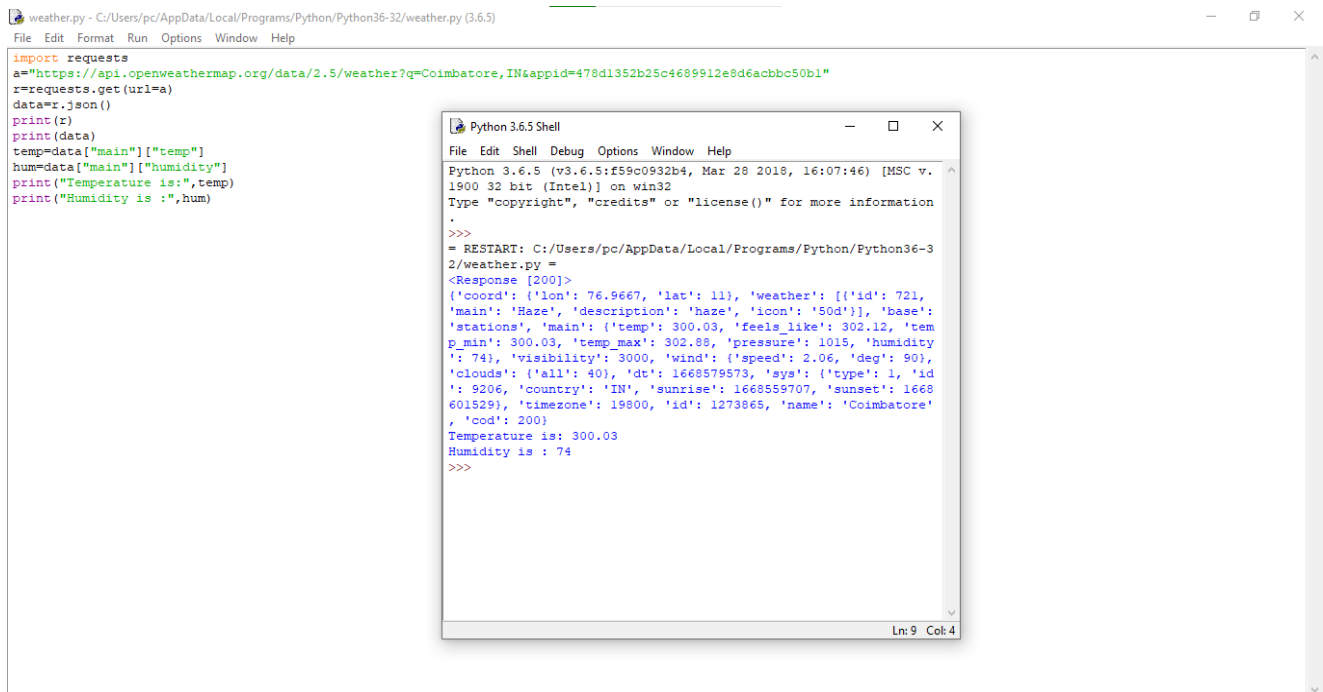
- To make it more precise put the city's name, comma, 2-letter country code (ISO3166). You will get all proper cities in chosen country. The order is important - the first is city name then comma then country. Example - London, GB or New York, US.

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Python code:

```
import requests
```

```
a="https://api.openweathermap.org/data/2.5/weather?q=Coimbatore,IN&appid=478d1352b25c4689912e8d6acbbc50b1"
r=requests.get(url=a)
data=r.json()
print(r)
print(data)
temp=data["main"]["temp"]
hum=data["main"]["humidity"]
print("Temperature is:",temp)
print("Humidity is :",hum)
```



The screenshot shows a Python script named 'weather.py' in a text editor. The script uses the 'requests' library to fetch weather data for Coimbatore, India, from the OpenWeatherMap API. The output of the script is displayed in a separate Python 3.6.5 Shell window. The shell output shows the raw JSON response from the API, followed by the printed values for temperature and humidity.

```
weather.py - C:/Users/pc/AppData/Local/Programs/Python/Python36-32/weather.py (3.6.5)
File Edit Format Run Options Window Help

import requests
a="https://api.openweathermap.org/data/2.5/weather?q=Coimbatore,IN&appid=478d1352b25c4689912e8d6acbbc50b1"
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```
Python 3.6.5 Shell
File Edit Shell Debug Options Window Help
Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 16:07:46) [MSC v. 1900 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information
>>>
= RESTART: C:/Users/pc/AppData/Local/Programs/Python/Python36-32/weather.py =
<Response [200]>
{'coord': {'lon': 76.9667, 'lat': 11}, 'weather': [{'id': 721, 'main': 'Haze', 'description': 'haze', 'icon': '50d'}], 'base': 'stations', 'main': {'temp': 300.03, 'feels_like': 302.12, 'temp_min': 300.03, 'temp_max': 302.88, 'pressure': 1015, 'humidity': 74}, 'visibility': 3000, 'wind': {'speed': 2.06, 'deg': 90}, 'clouds': {'all': 40}, 'dt': 1668579573, 'sys': {'type': 1, 'id': 9206, 'country': 'IN', 'sunrise': 1668559707, 'sunset': 1668601529}, 'timezone': 19800, 'id': 1273865, 'name': 'Coimbatore', 'cod': 200}
Temperature is: 300.03
Humidity is : 74
>>>
```

Output:

Python 3.6.5 Shell

File Edit Shell Debug Options Window Help

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<Response [200]>

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{'coord': {'lon': 76.9667, 'lat': 11}, 'weather': [{'id': 721, 'main': 'Haze', 'description': 'haze', 'icon': '50d'}], 'base': 'stations', 'main': {'temp': 300.03, 'feels_like': 302.12, 'temp_min': 300.03, 'temp_max': 302.88, 'pressure': 1015, 'humidity': 74}, 'visibility': 3000, 'wind': {'speed': 2.06, 'deg': 90}, 'clouds': {'all': 40}, 'dt': 1668579573, 'sys': {'type': 1, 'id': 9206, 'country': 'IN', 'sunrise': 1668559707, 'sunset': 1668601529}, 'timezone': 19800, 'id': 1273865, 'name': 'Coimbatore', 'cod': 200}
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>>> |