

Develop A Python Script

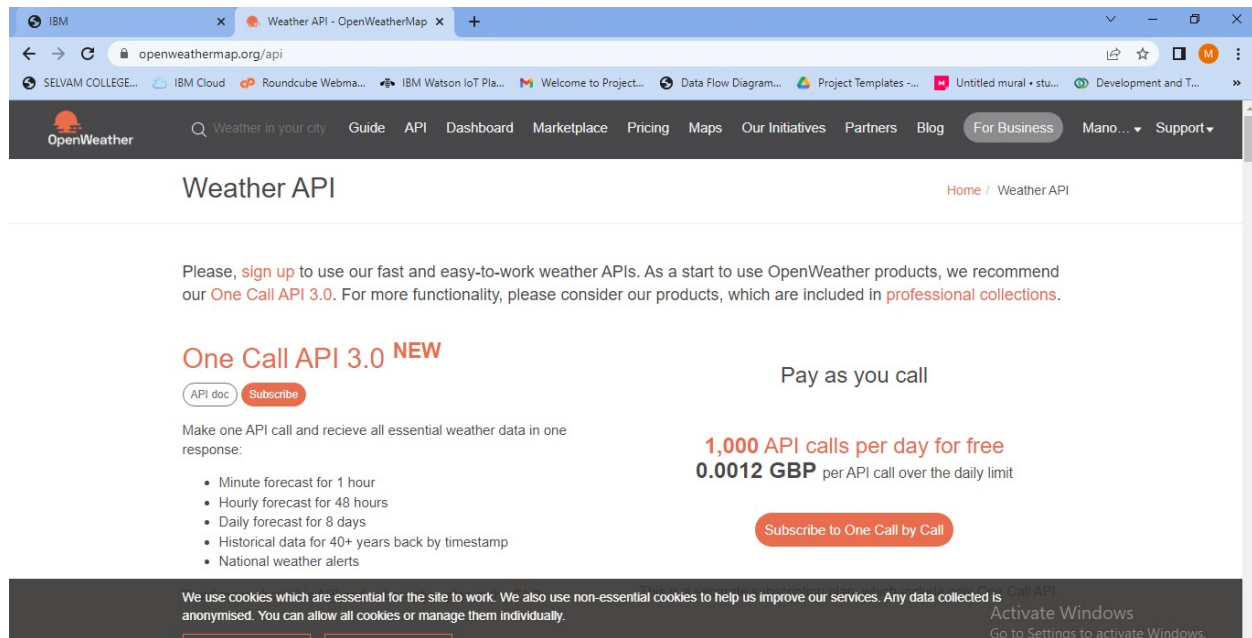
Date	12 September 2022
Team ID	PNT2022TMID41909
Project Name	Signs with Smart Connectivity for Better Road Safety
Maximum Marks	4 Marks

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



The screenshot shows the OpenWeatherMap API page in a web browser. The browser's address bar displays 'openweathermap.org/api'. The page header includes the OpenWeather logo and a navigation menu with links like 'Weather in your city', 'Guide', 'API', 'Dashboard', 'Marketplace', 'Pricing', 'Maps', 'Our Initiatives', 'Partners', 'Blog', 'For Business', 'Mano...', and 'Support'. The main heading is 'Weather API'. Below this, a paragraph explains that users should sign up to use the APIs and recommends the 'One Call API 3.0'. A 'Subscribe' button is visible. The 'One Call API 3.0' is highlighted as 'NEW'. A list of features 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'. The pricing section states '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 present. At the bottom, a cookie notice states: 'We use cookies which are essential for the site to work. We also use non-essential cookies to help us improve our services. Any data collected is anonymised. You can allow all cookies or manage them individually.' A Windows watermark is visible in the bottom right corner.

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

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](#)

We use cookies which are essential for the site to work. We also use non-essential cookies to help us improve our services. Any data collected is anonymised. You can allow all cookies or manage them individually.

Call API
Activate Windows
Go to Settings to activate Windows.

To make the API key Values

Access current weather data for any location on Earth including over 200,000 cities! We collect and process weather data from different sources such as global and local weather models, satellites, radars and a vast network of weather stations. Data is available in JSON, XML, or HTML format.

Call current weather data

How to make an API call

API call

```
https://api.openweathermap.org/data/2.5/weather?lat={lat}&lon={lon}&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](#).

- Call current weather data
- How to make an API call
- Bulk downloading
- Weather fields in API response
 - JSON
 - XML
 - List of condition codes
 - Min/max temperature in current weather
 - API and forecast API
- Other features
 - Geocoding API
 - Built-in geocoding
 - Built-in API request by city name
 - Built-in API request by city ID
 - Built-in API request by ZIP code
 - Format
 - Units of measurement
 - Multilingual support
 - Call back function for JavaScript code

Choose the Weather in your city---- Coimbatore

Weather in your city

coimbatore Search

Coimbatore, IN moderate rain

20.9°C temperature from 20.3 to 20.9 °C, wind 2.06 m/s, clouds 100 %, 1012 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.

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)
```

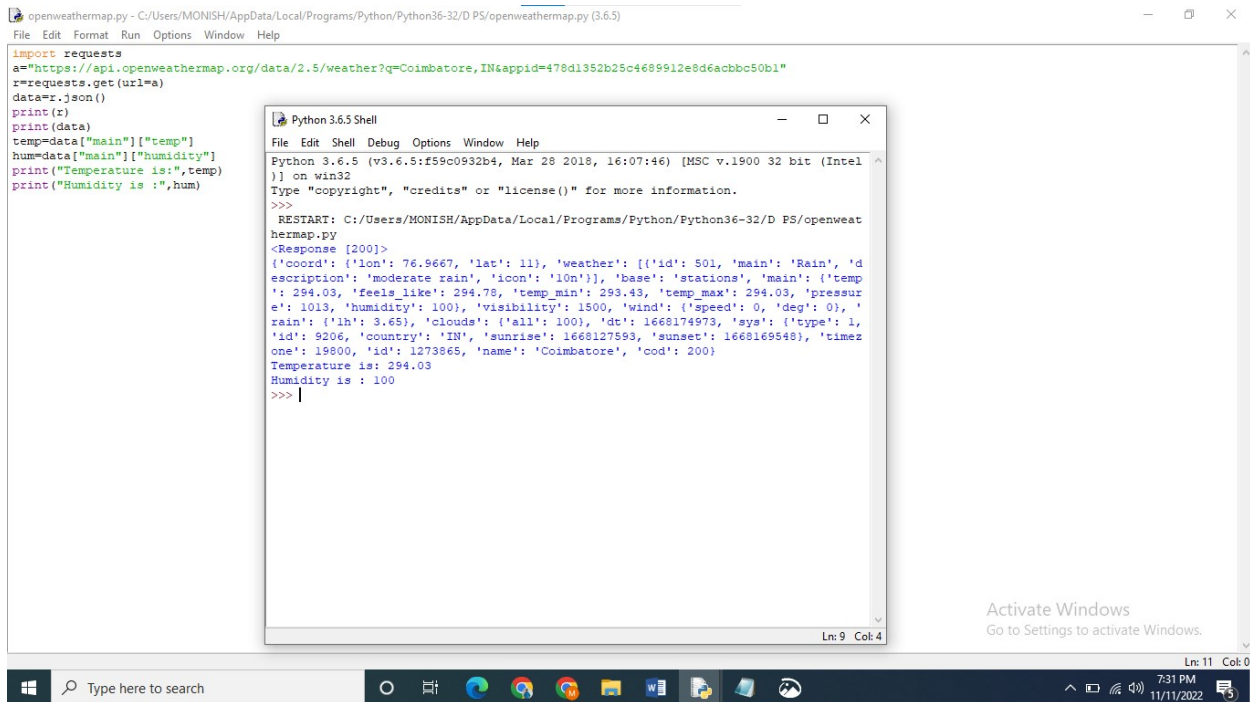
```
print(data)
```

```
temp=data["main"]["temp"]
```

```
hum=data["main"]["humidity"]
```

```
print("Temperature is:",temp)
```

```
print("Humidity is :",hum)
```

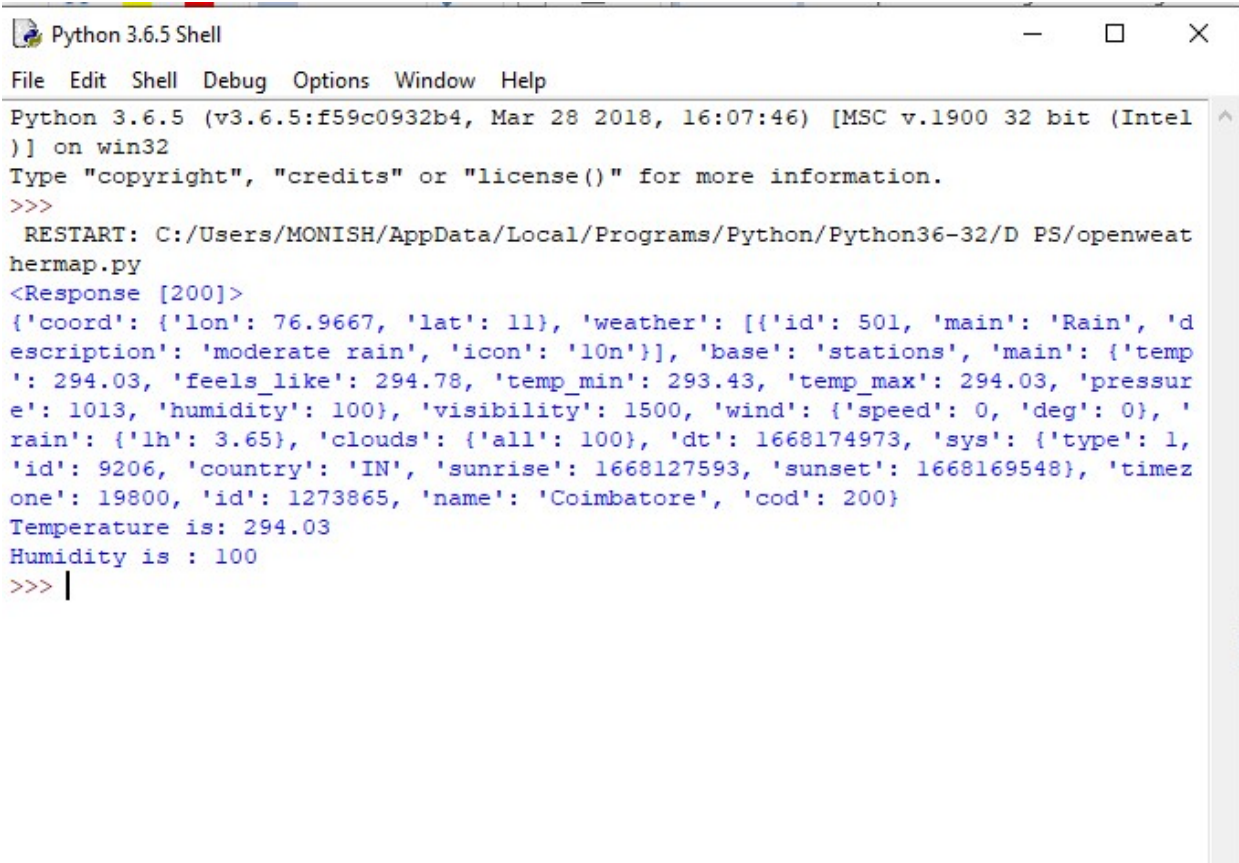


The screenshot displays a Windows desktop environment. In the background, a file explorer window titled 'openweathermap.py - C:/Users/MONISH/AppData/Local/Programs/Python/Python36-32/D PS/openweathermap.py (3.6.5)' is open. In the foreground, a 'Python 3.6.5 Shell' window is active, showing the execution of the Python script. The script's output is as follows:

```
>>>
RESTART: C:/Users/MONISH/AppData/Local/Programs/Python/Python36-32/D PS/openweathermap.py
<Response [200]>
{'coord': {'lon': 76.9667, 'lat': 11}, 'weather': [{'id': 501, 'main': 'Rain', 'description': 'moderate rain', 'icon': '10n'}], 'base': 'stations', 'main': {'temp': 294.03, 'feels_like': 294.78, 'temp_min': 293.43, 'temp_max': 294.03, 'pressure': 1013, 'humidity': 100}, 'visibility': 1500, 'wind': {'speed': 0, 'deg': 0}, 'rain': {'1h': 3.65}, 'clouds': {'all': 100}, 'dt': 1668174973, 'sys': {'type': 1, 'id': 9206, 'country': 'IN', 'sunrise': 1668127593, 'sunset': 1668169548}, 'timezone': 19800, 'id': 1273865, 'name': 'Coimbatore', 'cod': 200}
Temperature is: 294.03
Humidity is : 100
>>> |
```

The taskbar at the bottom shows the Windows Start button, a search bar, and several application icons. The system clock indicates the time is 7:31 PM on 11/11/2022.

Output:



```
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/MONISH/AppData/Local/Programs/Python/Python36-32/D PS/openweat
hermap.py
<Response [200]>
{'coord': {'lon': 76.9667, 'lat': 11}, 'weather': [{'id': 501, 'main': 'Rain', 'd
escription': 'moderate rain', 'icon': '10n'}], 'base': 'stations', 'main': {'temp
': 294.03, 'feels_like': 294.78, 'temp_min': 293.43, 'temp_max': 294.03, 'pressur
e': 1013, 'humidity': 100}, 'visibility': 1500, 'wind': {'speed': 0, 'deg': 0}, '
rain': {'1h': 3.65}, 'clouds': {'all': 100}, 'dt': 1668174973, 'sys': {'type': 1,
'id': 9206, 'country': 'IN', 'sunrise': 1668127593, 'sunset': 1668169548}, 'timez
one': 19800, 'id': 1273865, 'name': 'Coimbatore', 'cod': 200}
Temperature is: 294.03
Humidity is : 100
>>> |
```