

Develop The Python Script

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Team ID	PNT2022TMID22104
Project Name	Signs with Smart Connectivity for Better Road Safety
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Create a code snippet using python to

- Extract weather data from Open Weather Map using APIs.
- Send the extracted data to the cloud.
- Receive data from the cloud and view it in the python compile.

Getting the API keys

The screenshot shows the OpenWeather API keys management page. The browser's address bar displays 'home.openweathermap.org/api_keys'. The page has a dark header with the OpenWeather logo and navigation links like Guide, API, Dashboard, Marketplace, Pricing, Maps, Our Initiatives, Partners, Blog, For Business, and Support. Below the header, there's a sub-header with links for New Products, Services, API keys (which is highlighted), Billing plans, Payments, Block logs, My orders, My profile, and Ask a question. A message states: 'You can generate as many API keys as needed for your subscription. We accumulate the total load from all of them.' Below this, there's a table with columns: Key, Name, Status, Actions, and Create key. The table contains one entry with the key '78f52c5ac8695462eb94ac88ef64703b', name 'Default', and status 'Active'. To the right of the table is a 'Create key' section with an input field for 'API key name' and a 'Generate' button. At the bottom of the page, there are three sections: 'Product Collections' (listing Current and Forecast APIs, Historical Weather Data, Weather Maps, Weather Dashboard, and Widgets), 'Subscription' (listing How to start, Pricing, Subscribe for free, and FAQ), and 'Company' (describing OpenWeather as a team of IT experts and data scientists since 2014). The browser's taskbar at the bottom shows the Windows logo, search icon, and various application icons, along with the system clock indicating 10:43 on 16-11-2022.

Setting the Location

The screenshot shows the OpenWeather website with the search bar containing 'chennai'. The results display 'Chennai, IN' with a 'mist' icon, a temperature of 28°C, and a description 'temperature from 28 to 28 °C, wind 2.57 m/s, clouds 40 %, 1014 hpa'. The geo coordinates are listed as [13.0878, 80.2785]. Below the search results, there is a section titled 'Search engine is very flexible. How it works:' with a bullet point explaining the search format: '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.' A sidebar on the left shows a search for 'TranZact' with a result for 'Free Simple Inventory Software' and a 'SIGN UP' button. The bottom of the browser shows a taskbar with various application icons and a system tray with the date and time.

Getting The Data In Open Weather API

The screenshot shows the OpenWeather API endpoint in a browser. The URL is `https://api.openweathermap.org/data/2.5/weather?q=Chennai,%20IN&appid=70f52c5ac8695462eb64ac08efd4703b`. The JSON response is displayed in the browser's developer tools, showing the weather data for Chennai, India. The response includes coordinates, weather conditions, temperature, and other meteorological data.

```
{
  "coord": {
    "lon": 80.2785,
    "lat": 13.0878
  },
  "weather": [
    {
      "id": 701,
      "main": "Mist",
      "description": "mist",
      "icon": "50d"
    }
  ],
  "base": "stations",
  "main": {
    "temp": 301.14,
    "feels_like": 305.69,
    "temp_min": 301.14,
    "temp_max": 301.14,
    "pressure": 1013,
    "humidity": 83,
    "visibility": 3000,
    "wind": {
      "speed": 4.12,
      "deg": 20
    },
    "clouds": {
      "all": 40
    },
    "dt": 1668574239,
    "sys": {
      "type": 1,
      "id": 9218,
      "country": "IN",
      "sunrise": 1668559087,
      "sunset": 1668600558,
      "timezone": 19800,
      "id": 1264527,
      "name": "Chennai",
      "cod": 200
    }
  }
}
```

Program

```
import requests
```

```
api_data="https://api.openweathermap.org/data/2.5/weather?q=Chennai,%20IN&appid=70f52c5ac8695462eb64ac08efd4703b"
```

```
rec=requests.get(url=api_data)
```

```
data= rec.json()
```

```
print(data)
```

The screenshot displays the Programiz Python Online Compiler interface. The left sidebar contains icons for Python, JavaScript, and other languages. The main editor area shows a Python script named 'main.py' with the following code:

```
1 import requests
2 api_data="https://api.openweathermap.org/data/2.5/weather?q=Chennai,%20IN&appid=70f52c5ac8695462eb64ac08efd4703b"
3 rec=requests.get(url=api_data)
4 data= rec.json()
5 print(data)
6
```

The 'Run' button is highlighted. The output shell on the right shows the JSON response from the API:

```
{'coord': {'lon': 80.2785, 'lat': 13.0878}, 'weather': [{'id': 701, 'main': 'Mist', 'description': 'mist', 'icon': '50d'}], 'base': 'stations', 'main': {'temp': 302.14, 'feels_like': 307.65, 'temp_min': 302.14, 'temp_max': 302.14, 'pressure': 1013, 'humidity': 79}, 'visibility': 3000, 'wind': {'speed': 3.6, 'deg': 20}, 'clouds': {'all': 40}, 'dt': 1668575519, 'sys': {'type': 1, 'id': 9218, 'country': 'IN', 'sunrise': 1668559087, 'sunset': 1668600558}, 'timezone': 19800, 'id': 1264527, 'name': 'Chennai', 'cod': 200}
```

The bottom of the image shows a Windows taskbar with the date and time as 16-11-2022, 10:41.