

Develop the python script

Date	09 November 2022
Team id	PNT2022TMID31677
Project name	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

The screenshot shows the OpenWeatherMap API keys management interface. At the top, there's a navigation bar with links like 'Weather in your city', 'Guide', 'API', 'Dashboard', 'Marketplace', 'Pricing', 'Maps', 'Our Initiatives', 'Partners', 'Blog', 'For Business', 'Swat...', and 'Support'. Below this, a sub-navigation bar includes '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 message is a table of existing API keys:

Key	Name	Status	Actions
76d24dec9915b133df9bdef90b7c215a	Default	Active	
809ee9f330cc007368d4883a9c0d20f0	weather	Active	

To the right of the table is a 'Create key' section with a text input field labeled 'API key name' and a 'Generate' button. At the bottom of the page, there are three columns of links: 'Product Collections' (Current and Forecast APIs, Historical Weather Data, Weather Maps, Weather Dashboard), 'Subscription' (How to start, Pricing, Subscribe for free, FAQ), and 'Company' (OpenWeather is a team of IT experts and data scientists that has been practising deep weather data science since 2014. For each point on the globe, OpenWeather provides historical, current and forecasted weather data via light-speed APIs. Headquarters in ...).



Weather in your city

Guide

API

Dashboard

Marketplace

Pricing

Maps

Our Initiatives

Partners

Blog

For Business


Swat...

Support

Weather in your city

bangalore

Search



Bengaluru, IN

overcast clouds


20.9°C

temperature from 20.9 to 20.9 °C, wind 4.88 m/s, clouds 100 %, 1015 hpa

Geo coords [12.9762, 77.6033]

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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```
{
  "coord": {
    "lon": 77.6033,
    "lat": 12.9762
  },
  "weather": [
    {
      "id": 802,
      "main": "Clouds",
      "description": "scattered clouds",
      "icon": "03n"
    }
  ],
  "base": "stations",
  "main": {
    "temp": 293.95,
    "feels_like": 294.25,
    "temp_min": 293.95,
    "temp_max": 294.05,
    "pressure": 1018,
    "humidity": 83,
    "visibility": 6000,
    "wind": {
      "speed": 4.12,
      "deg": 60
    },
    "clouds": {
      "all": 40
    },
    "dt": 1668094180,
    "sys": {
      "type": 1,
      "id": 9205,
      "country": "IN",
      "sunrise": 1668041170,
      "sunset": 1668082852,
      "timezone": 19800,
      "id": 1277333,
      "name": "Bengaluru",
      "cod": 200
    }
  }
}
```

The screenshot shows a web browser window with the URL `https://api.openweathermap.org/data/2.5/weather?q=Bengaluru,%20IN&appid=76d24dec9915b133df9bdef90b7c215a`. The browser displays the JSON response from the API. Below the browser, a Python IDE window shows a script that uses the `requests` library to fetch the data and print it.

```
{
  "coord": {
    "lon": 77.6033,
    "lat": 12.9762
  },
  "weather": [
    {
      "id": 804,
      "main": "Clouds",
      "description": "overcast clouds",
      "icon": "04n"
    }
  ],
  "base": "stations",
  "main": {
    "temp": 294.05,
    "feels_like": 294.39,
    "temp_min": 294.05,
    "temp_max": 294.05,
    "pressure": 1015,
    "humidity": 84,
    "sea_level": 1015,
    "grnd_level": 913,
    "visibility": 10000,
    "wind": {
      "speed": 14.88,
      "deg": 42,
      "gust": 9.55
    },
    "clouds": {
      "all": 100
    },
    "dt": 1668092656,
    "sys": {
      "type": 1,
      "id": 9208,
      "country": "IN",
      "sunrise": 1668041170,
      "sunset": 1668082852,
      "timezone": 19800,
      "id": 1277333,
      "name": "Bengaluru",
      "cod": 200
    }
  }
}
```

```
import requests
api_data="https://api.openweathermap.org/data/2.5/weather?q=Bengaluru,%20IN&appid=76d24dec9915b133df9bdef90b7c215a"
rec=requests.get(url=api_data)
data=rec.json()
print(data)
```

The screenshot shows a web browser window with the same URL as the first image. The browser displays a JSON response indicating an error. Below the browser, a Python IDE window shows the same script as before, but the output shows an error message from the API.

```
{
  "coord": {
    "lon": 77.6033,
    "lat": 12.9762
  },
  "weather": [
    {
      "id": 804,
      "main": "Clouds",
      "description": "overcast clouds",
      "icon": "04n"
    }
  ],
  "base": "stations",
  "main": {
    "temp": 294.05,
    "feels_like": 294.39,
    "temp_min": 294.05,
    "temp_max": 294.05,
    "pressure": 1015,
    "humidity": 84,
    "sea_level": 1015,
    "grnd_level": 913,
    "visibility": 10000,
    "wind": {
      "speed": 14.88,
      "deg": 42,
      "gust": 9.55
    },
    "clouds": {
      "all": 100
    },
    "dt": 1668092656,
    "sys": {
      "type": 1,
      "id": 9208,
      "country": "IN",
      "sunrise": 1668041170,
      "sunset": 1668082852,
      "timezone": 19800,
      "id": 1277333,
      "name": "Bengaluru",
      "cod": 200
    }
  }
}
```

```
Python 3.9 (64-bit)
Python 3.9.8 (tags/v3.9.8:bb3fdef, Nov 5 2021, 20:48:33) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> import requests
>>> api_data="https://api.openweathermap.org/data/2.5/weather?q=Bengaluru,%20IN&appid=76d24dec9915b133df9bdef90b7c215a"
>>> rec=requests.get(url=api_data)
>>> data=rec.json()
>>> print(data)
{'coord': {'lon': 77.6033, 'lat': 12.9762}, 'weather': [{'id': 802, 'main': 'Clouds', 'description': 'scattered clouds', 'icon': '03n'}], 'base': 'stations', 'main': {'temp': 294.95, 'feels_like': 295.22, 'temp_min': 294.05, 'temp_max': 294.95, 'pressure': 1017, 'humidity': 78, 'visibility': 6000, 'wind': {'speed': 3.6, 'deg': 40}, 'clouds': {'all': 40}, 'dt': 1668091958, 'sys': {'type': 1, 'id': 9205, 'country': 'IN', 'sunrise': 1668041170, 'sunset': 1668082852, 'timezone': 19800, 'id': 1277333, 'name': 'Bengaluru', 'cod': 200}}
```