

## Лабораторная работа № 2



### 1. Генерируем API openweathermap.org.

Notice

API key was deleted successfully

[New Products](#) [Services](#) [API keys](#) [Billing plans](#) [Payments](#) [Block logs](#) [My orders](#) [My profile](#) [Ask a question](#)

You can generate as many API keys as needed for your subscription. We accumulate the total load from all of them.

Key	Name	Status	Actions	Create key
	LW55	Active	 	<input type="text" value="API key name"/> <input type="button" value="Generate"/>

### 2. Модуль getweatherdata.py с функцией для URL запроса к API openweathermap.org и формирования json ответа.

```
def get_weather_data(place, api_key=None):
    if api_key is None:
        raise ValueError("API key is required")

    url =
f'https://api.openweathermap.org/data/2.5/weather?q={place}&appid={api_key}&units=m
etric'

    response = requests.get(url)

    if response.status_code != 200:
        response.raise_for_status()

    data = response.json()

    city_name = data['name']
    country_code = data['sys']['country']
    lat = data['coord']['lat']
    lon = data['coord']['lon']
    feels_like = data['main']['feels_like']
    timezone = data['timezone']
```

```

timezone_hours = timezone // 3600
timezone_str = f"UTC{'+' if timezone_hours >= 0 else '-'}{abs(timezone_hours)}"

result = {
    "name": city_name,
    "coord": {"lon": lon, "lat": lat},
    "country": country_code,
    "feels_like": feels_like,
    "timezone": timezone_str
}

return json.dumps(result, ensure_ascii=False, indent=4)

```

### 3. main.py файл для запуска модуля getweatherdata.py

```

from owm_key import owm_api_key
from getweatherdata import get_weather_data

def main():
    cities = ['Chicago', 'Saint Petersburg', 'Dakka']

    for city in cities:
        try:
            weather_data = get_weather_data(city, api_key=owm_api_key)
            print(f"Weather data for {city}: {weather_data}")
        except Exception as e:
            print(f"Error fetching weather data for {city}: {e}")

if __name__ == '__main__':
    main()

```

### 4. Ответ на примере Чикаго, Санкт-Петербург, Дакка:

```
PS C:\Users\gnevni\OneDrive\Рабочий стол\учеба\РГПУ\программирование 5\ЛР№ 2> & C:/Users/gnevni/AppData/Local/Programs/Python/Python312/pyth
● on.exe "c:/Users/gnevni/OneDrive/Рабочий стол/учеба/РГПУ/программирование 5/ЛР№ 2/main.py"
Weather data for Chicago: {
  "name": "Chicago",
  "coord": {
    "lon": -87.65,
    "lat": 41.85
  },
  "country": "US",
  "feels_like": 14.43,
  "timezone": "UTC-5"
}
Weather data for Saint Petersburg: {
  "name": "Saint Petersburg",
  "coord": {
    "lon": 30.2642,
    "lat": 59.8944
  },
  "country": "RU",
  "feels_like": 24.3,
  "timezone": "UTC+3"
}
Weather data for Dacca: {
  "name": "Dhaka",
  "coord": {
    "lon": 90.4074,
    "lat": 23.7104
  },
  "country": "BD",
  "feels_like": 37.57,
  "timezone": "UTC+6"
}
```