

How to Run this...?

Step 1: Install Python

Ensure you have Python 3.12 installed on your system. You can download and install Python from the official website: [Python Downloads](<https://www.python.org/downloads/>).

Step 2: Install Required Libraries

Open your command line interface (CLI) and run the following commands individually:

Install Matplotlib:

```
pip install matplotlib
```

Install Pillow:

```
pip install pillow
```

Install Requests:

```
pip install requests
```

Install Numpy:

```
pip install numpy
```

Install Tkinter:

```
pip install Tkinter
```

Step 3: Obtain OpenWeatherMap API Key

Sign up for an API key on the OpenWeatherMap website:

[OpenWeatherMap API](<https://openweathermap.org/api>).

Replace the placeholder `API_KEY` variable in the provided code with your actual API key.

Step 4: Run the Code

1. Copy the provided code into a Python script file, for example, `urban_heat_island_monitor.py`.
2. Run the script using your Python interpreter. Navigate to the directory containing the script in your CLI and run:

```
python sdg.py
```

Step 5: Usage

Once the GUI window appears:

Enter City Name:

- Enter the name of a city in the provided entry field.

Update Data:

- Click the "Update" button to fetch and display UHI data and weather forecast for the specified city.

Explore Visualizations:

- Explore various tabs and visualizations to gain insights into the urban heat island phenomenon and its implications.