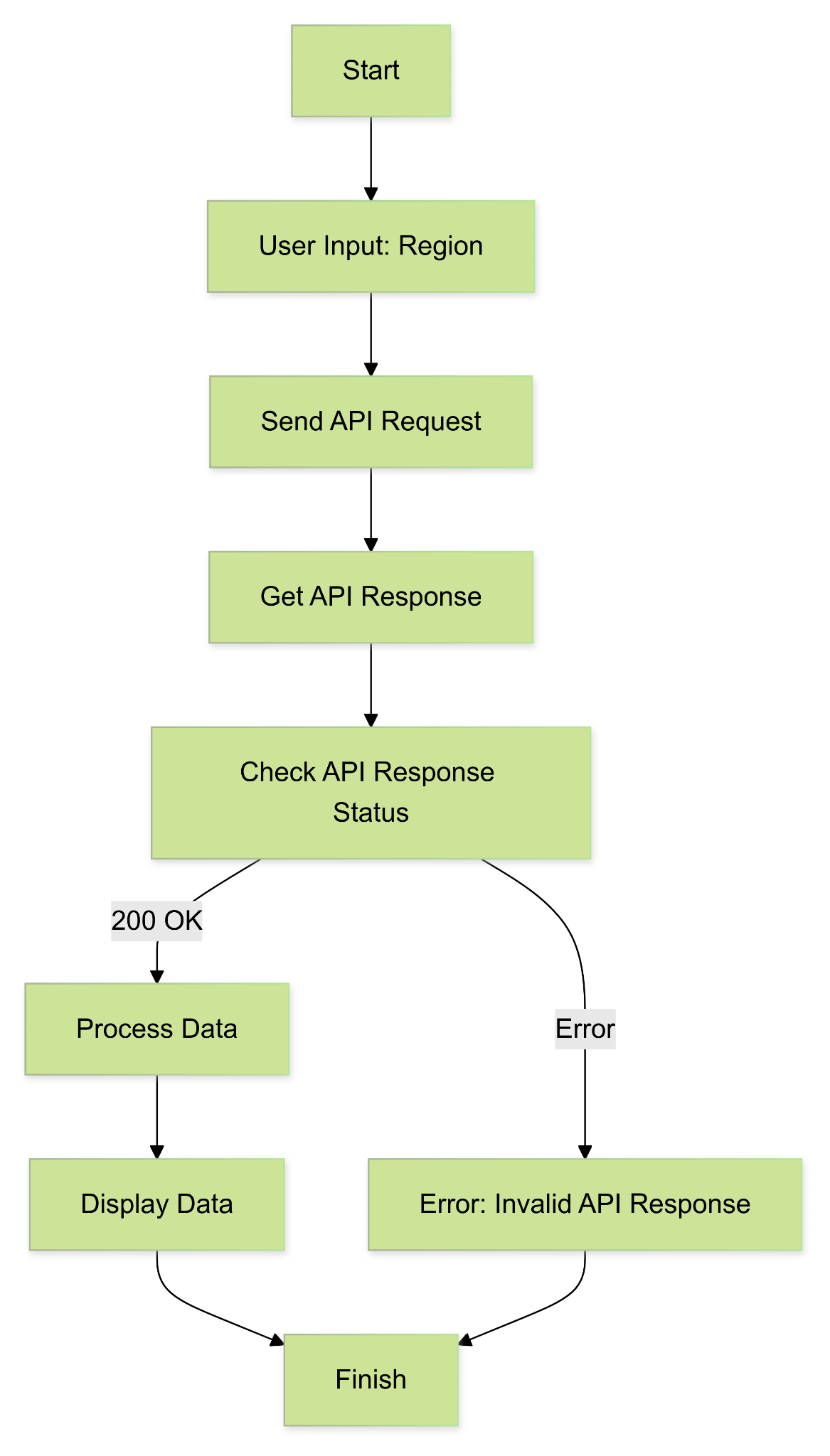
**Assignment: Python Programming for GUI Development  
  
  
Name:** CH.GOWTHAM REDDY **Register Number:** 192365064  **Department:** COMPUTER SCIENCE **Date of Submission:** 27-08-2024 **Title:** Real-Time COVID-19 Statistics Tracker   
  
  
  
  
  
  
  
  
  
  
  
  
  
  
**Problem 4: Real-Time COVID-19 Statistics Tracker   
  
Scenario:**   
  
You are developing a real-time COVID-19 statistics tracking application for a healthcare organization. The application should provide up-to-date information on COVID-19 cases, recoveries, and deaths for a specified region.   
  
**Tasks:  
  
 1. Model the data flow for fetching COVID-19 statistics from an external API  
 and Display it to the user.  
 2. Implement a Python application that integrates with a COVID-19 statistics  
 API (e.g., disease.sh) to fetch real-time data.   
 3. Display the current number of cases, recoveries, and deaths for a specified  
 region.**

**4. Allow users to input a region (country, state, or city) and display the  
 corresponding COVID-19 statistics**    
 **Deliverables:**  • Data flow diagram illustrating the interaction between the application and the API.   
 • Pseudocode and implementation of the COVID-19 statistics tracking application.   
 • Documentation of the API integration and the methods used to fetch and display   
 COVID-19 data.  
 • Explanation of any assumptions made and potential improvements

**Solution:  
  
 Real-Time COVID-19 Statistics Tracker  
  
 1. Data Flow Diagram  
  
  
   
  
Implementation:  
  
 1. With using API key:**   
 import requests

# Set API URL and API key

url = "https://covid-193.p.rapidapi.com/statistics"

headers = {

"x-rapidapi-key": "211029da1dmsha84adc22e2438d4p14e56djsn60172c7c64a0",

"x-rapidapi-host": "covid-193.p.rapidapi.com"

}

# Get user input for country name

country\_name = input("Enter a country name (e.g. United States, Italy, India, etc.): ")

# Send GET request to API URL

response = requests.get(url, headers=headers, params={"country":country\_name})

# Check if API call was successful

if response.status\_code == 200:

# Parse JSON response

data = response.json()

# Extract and print COVID-19 statistics

if len(data["response"]) > 0:

cases = data["response"][0]["cases"]["total"]

deaths = data["response"][0]["deaths"]["total"]

recovered = data["response"][0]["cases"]["recovered"]

today\_cases = data["response"][0]["cases"]["new"]

today\_deaths = data["response"][0]["deaths"]["new"]

print(f"Live COVID-19 Statistics for {country\_name}:")

print(f"Cases: {cases}")

print(f"Deaths: {deaths}")

print(f"Recovered: {recovered}")

print(f"Today's Cases: {today\_cases}")

print(f"Today's Deaths: {today\_deaths}")

else:

print(f"No data found for {country\_name}.")

else:

print("Error:", response.status\_code)  
  
  
**Displaying Data:**

**Input:**   
 Enter a country name (e.g. United States, Italy, India, etc.): USA  
  
  
**Output:**  Live COVID-19 Statistics for USA:

Cases: 111820082

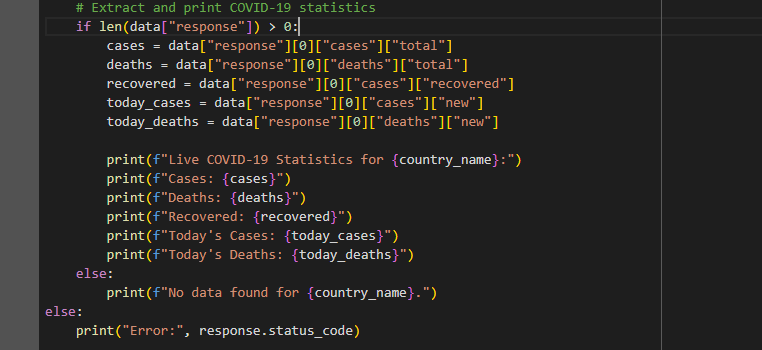
Deaths: 1219487

Recovered: 109814428

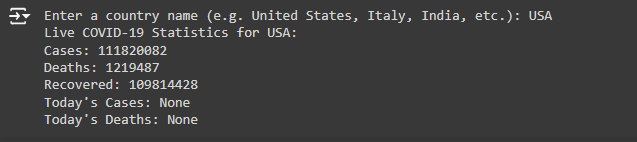
Today's Cases: None

Today's Deaths: None

**User-Input:  
   
 **

****

**Out-put:**

****

**2. Without using API key:**

import requests

# Set API URL and API key

api\_url = "https://disease.sh/v3/covid-19/countries"

api\_key = "" # You don't need an API key for this API

# Get user input for country

country = input("Enter a country: ")

# Set headers with API key (not needed for this API)

headers = {

"Authorization": f"Bearer {api\_key}"

}

# Set query parameter

params = {

"query": country

}

# Send GET request to API URL

response = requests.get(api\_url, params=params, headers=headers)

# Check if API call was successful

if response.status\_code == 200:

# Parse JSON response

data = response.json()

# Extract and print COVID-19 statistics

if len(data) > 0:

cases = data[0]["cases"]

deaths = data[0]["deaths"]

recovered = data[0]["recovered"]

today\_cases = data[0]["todayCases"]

today\_deaths = data[0]["todayDeaths"]

print(f"Live COVID-19 Statistics for {country}:")

print(f"Cases: {cases}")

print(f"Deaths: {deaths}")

print(f"Recovered: {recovered}")

print(f"Today's Cases: {today\_cases}")

print(f"Today's Deaths: {today\_deaths}")

else:

print(f"No data found for {country}.")

else:

print("Error:", response.status\_code)

**Displaying Data:**

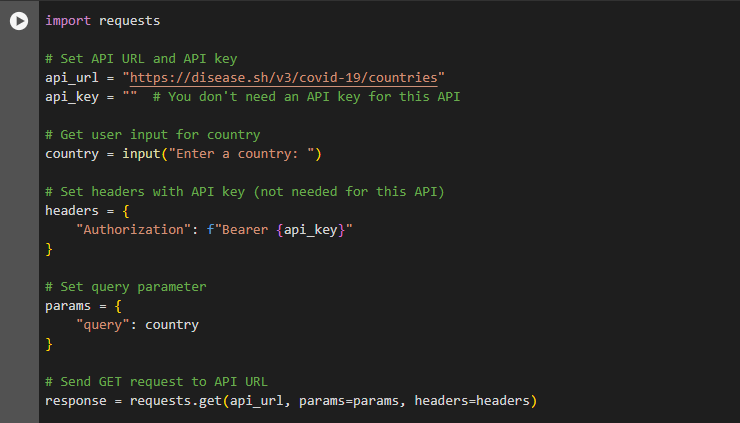
**Input:**  Enter a country: INDIA  
  
**Output:**  Live COVID-19 Statistics for INDIA:

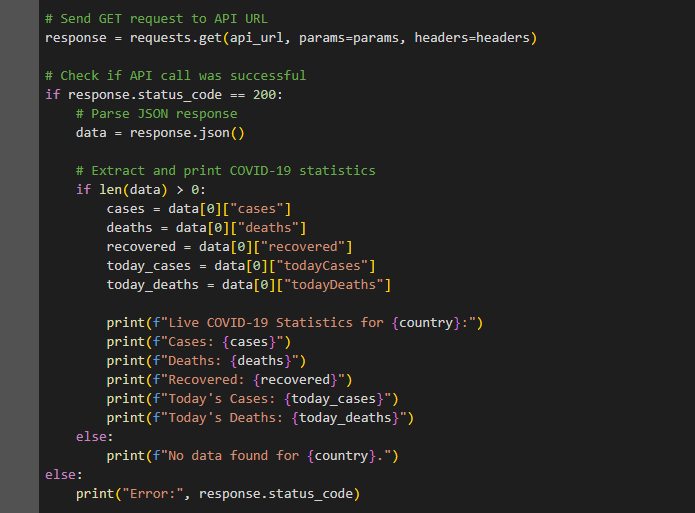
Cases: 234174

Deaths: 7996

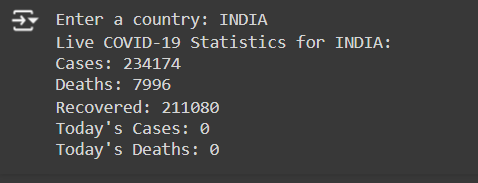
Recovered: 211080

Today's Cases: 0

Today's Deaths: 0  
  
**User-Input:**  
 

****

**Out-put:**

****

**Documentation:**

**COVID-19 Statistics Tracker**

This Python script retrieves and displays live COVID-19 statistics for a specific country using the COVID-19 API from RapidAPI.

**Importing Required Libraries**

The script starts by importing the requests library, which is used to send HTTP requests to the API.

**Setting API URL and API Key**

The API URL and API key are set as follows:

* ‘**url’**: The API URL is set to **https://covid-193.p.rapidapi.com/statistics’**.
* ‘**headers’** : The API key is set in the headers dictionary with the key **‘x-rapidapi-key’** and the value **‘211029da1dmsha84adc22e2438d4p14e56djsn60172c7c64a0’.** The **‘x-rapidapi-host key’** is also set to **‘covid-193.p.rapidapi.com’**.

**Getting User Input**

The script prompts the user to enter a country name using the **‘input’** function. The country name is stored in the **‘country\_name’** variable.

**Sending GET Request to API**

The script sends a GET request to the API URL using the ‘**requests.get’** method. The **‘headers’** dictionary is passed as an argument to include the API key in the request. The **‘params’** dictionary is also passed as an argument to specify the country name as a parameter.

**Checking API Response**

The script checks if the API call was successful by checking the status code of the response. If the status code is 200, the script proceeds to parse the JSON response.

**Parsing JSON Response**

The script parses the JSON response using the **‘response.json’** method. The parsed data is stored in the **‘data’** variable.

**Extracting and Printing COVID-19 Statistics**

The script extracts the COVID-19 statistics from the parsed data and prints them to the console. The statistics include:

* Total cases
* Total deaths
* Total recovered
* Today's cases
* Today's deaths

If no data is found for the specified country, the script prints a message indicating that no data was found.

**Error Handling**

If the API call fails, the script prints an error message with the status code.

**Code Structure**

The code is structured as follows:

1. Importing required libraries
2. Setting API URL and API key
3. Getting user input
4. Sending GET request to API
5. Checking API response
6. Parsing JSON response
7. Extracting and printing COVID-19 statistics
8. Error handling

**Variables**

The script uses the following variables:

* **‘url’**: The API URL
* **‘headers’**: The API key and host
* **‘country\_name’**: The user-input country name
* **‘response’**: The API response
* **‘data’**: The parsed JSON data
* **‘cases’**: The total cases
* **‘deaths’**: The total deaths
* **‘recovered’**: The total recovered
* **‘today\_cases’**: Today's cases
* **‘today\_deaths’**: Today's deaths

**API key and URL**

**import requests**

**url = "https://covid-19-statistics.p.rapidapi.com/regions"**

**headers = {**

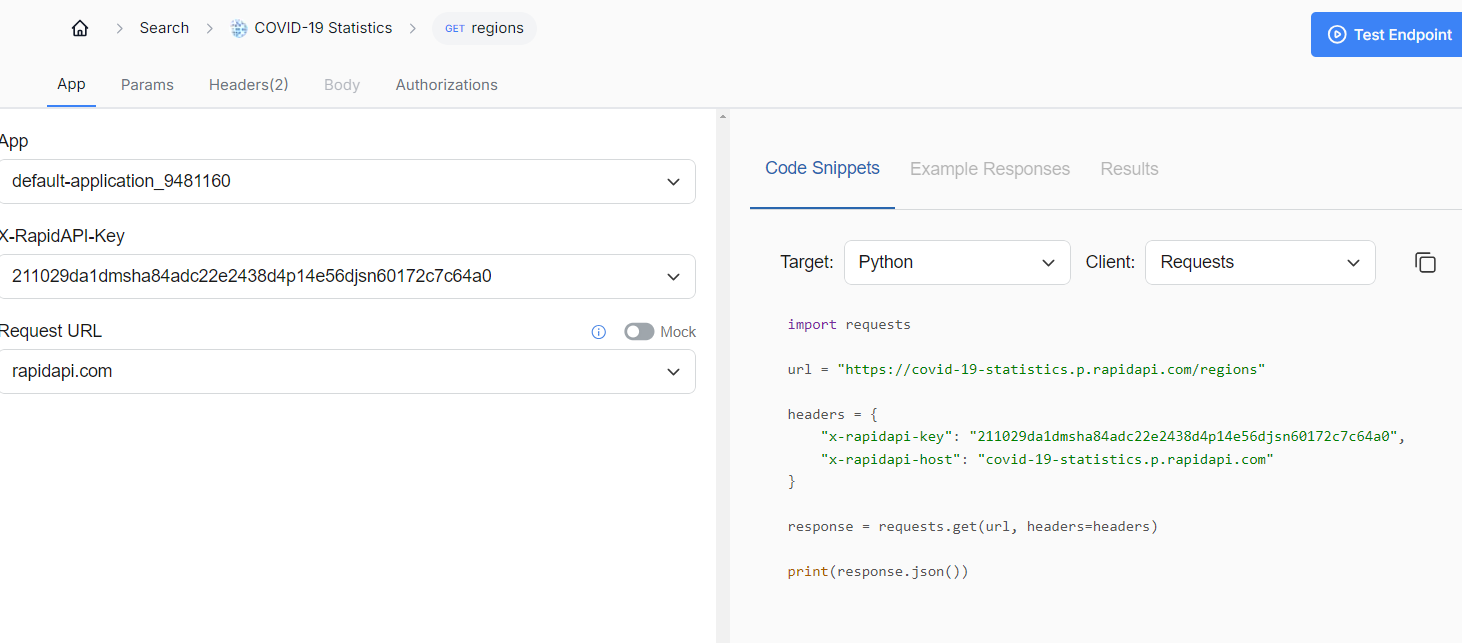
**"x-rapidapi-key": "211029da1dmsha84adc22e2438d4p14e56djsn60172c7c64a0",**

**"x-rapidapi-host": "covid-19-statistics.p.rapidapi.com"**

**}**

**response = requests.get(url, headers=headers)**

**print(response.json())**

****