WEATHER APP

Project By:

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Scope of the Project:

As the name suggests, the 'Weather APP' is developed to provide the current weather data for any location including over 200,000 cities. The information is accurate and error-free.

Files used:

Sno.	File name	Use
1	wapp_final.py	Source code
2	kweather.ico	Icon image
3	bg1.png	Background image

API USED:

Openweathermap.org provides various free API for public use on sign up. In this programme, we have used the current weather API which provides all details of the weather of a city. The details come up in JSON format. The website also provides data in XML and HTML formats.

Modules Used:

1. Tkinter: Tkinter is a standard GUI library for python. Once Tkinter is imported we can access all its functionalities
2. Requests: the requests module allows users to send HTTP requests using python. This returns a response object with all response data.

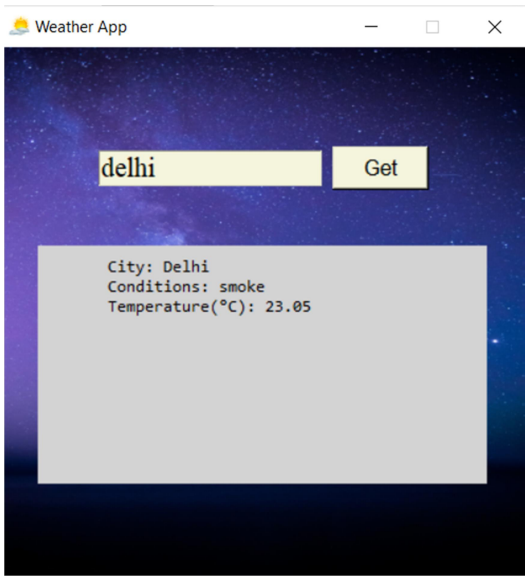
SOURCE CODE:

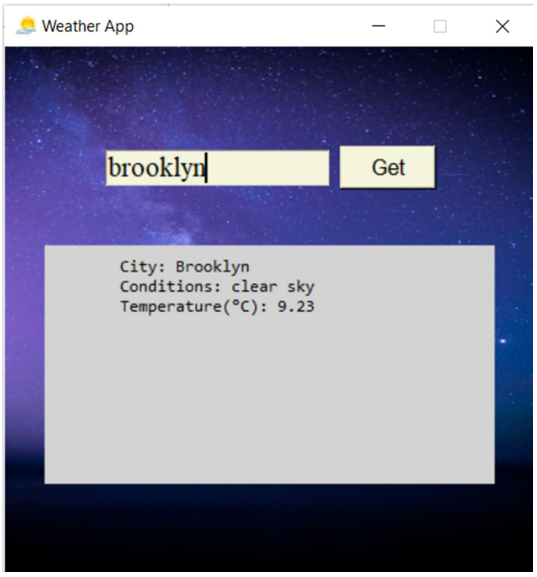
```
from tkinter import *
import requests

# APP
root = Tk()
root.geometry('400x400')
root.title('Weather App')
root.resizable(0,0)

# IMAGES
bg_image=PhotoImage(file='bg1.png')
bg_label=Label(root,image=bg_image)
bg_label.place(relwidth=1,relheight=1)
root.iconbitmap('kweather.ico')

# FUNCTIONS
def format_response(weather):
    try:
        name = weather['name']
        des = weather['weather'][0]['description']
        temp = weather['main']['temp']
        final_str = '''City: %s
Conditions: %s
Temperature(°C): %s''' % (name, des, temp)

    except:
        final_str = '''  There was a problem
  retrieving that information'''

    return final_str

def get_weather(city):
    global info_label
    weather_key = '74c153bcefd81616aab804f6434acc5b'
```

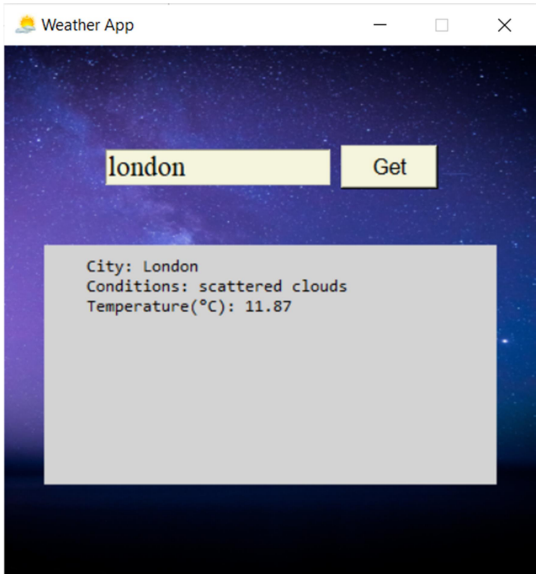
```
    url = 'https://api.openweathermap.org/data/2.5/weather'
    params = {'APPID': weather_key, 'q': city, 'units': 'metric'}
    response = requests.get(url, params=params)
    weather = response.json()
    info_label.destroy()
    info_label = Label(output_frame, font=('Consolas 10'), bg='light
gray', text=format_response(weather),
                       justify='left',)
    info_label.place(relx=0.4, rely=0.45, anchor='center')

# FRAMES, ENTRY BOX & LABEL
output_frame = Frame(bg_label, height=180, width=340,bg='light
gray').place(relx=0.5, rely=0.6, anchor='center')

city_entry = Entry(bg_label, width=15, bg='beige', font='Times 16')
city_entry.place(relx=0.4, rely=0.225, anchor='center')

get_button = Button(bg_label, text='Get', bg='beige', font=('Times
15', 13),
                    width=7,command=lambda:
get_weather(city_entry.get()))
get_button.place(relx=0.725, rely=0.225, anchor='center')

info_label = Label(output_frame, bg='light gray')
info_label.place(relx=0.325, rely=0.45, anchor='center')

# RUN THE APP
root.mainloop()
```

Output:


Weather App
chennai
Get
City: Chennai
Conditions: drizzle
Temperature(°C): 25.54


Weather App
delhi
Get
City: Delhi
Conditions: smoke
Temperature(°C): 23.05


Weather App
brooklyn
Get
City: Brooklyn
Conditions: clear sky
Temperature(°C): 9.23


Weather App
london
Get
City: London
Conditions: scattered clouds
Temperature(°C): 11.87

Limitations:

1. Since a free version of the weather API is used, only 60 requests/minute and 1,000,000 requests/month can be made.
2. Weather conditions are given only for cities and not for a village or tier 2 city.

Bibliography:

- Tkinter reference document
  https://www.tutorialspoint.com/python/python_gui_programming.htm
- Tkinter reference videos
  https://www.youtube.com/watch?v=yQSEXcf6s2I&list=PLCC34OHNcOtoC6GglhF3ncJ5rLwQrLGnV
- API
  https://openweathermap.org/