**FINAL PROJECT**

**ABSTRACT :**

The Weather App Project is a Python-based application designed to empower users with instant access to up-to-date weather information for any location in the world. The objective of this project is to create a user-friendly tool that simplifies the process of retrieving and presenting essential weather data. This abstract provides a concise overview of the project's key components.

**CODE :**

import requests  
import json  
  
api\_key = "22245bd297ccb7a693f1e0be899688cc"  
base\_url = "https://api.openweathermap.org/data/2.5/weather"  
  
city\_name = input("Enter city name: ")  
complete\_url = f"{base\_url}?q={city\_name}&appid={api\_key}"  
response = requests.get(complete\_url)

data = response.json()  
  
if data["cod"] != "404":  
 if "main" in data:  
 main\_data = data["main"]  
 coord = data["coord"]  
 speed = data["wind"]  
 temperature = main\_data["temp"]  
 humidity = main\_data["humidity"]  
 lattitude = coord["lat"]  
 longitude = coord["lon"]  
 pressure = main\_data["pressure"]  
 wind\_speed = speed["speed"]  
 weather\_data = data["weather"][0]  
 description = weather\_data["description"]  
  
 print(f"Temperature: {temperature-273}°C")  
 print(f"Humidity: {humidity}%")  
 print(f"lattitude : {lattitude}")  
 print(f"longitude: {longitude}")  
 print(f"pressure : { pressure}")  
 print(f"wind speed : {wind\_speed}")  
 print(f"Description: {description}")  
  
 else:  
 print("Main data not found in the API response.")  
else:  
 print("City not found")

**OUTPUT :**

**Case: 1**

Example form user correct input :

Enter city name: kadapa

Temperature: 24.45999999999998°C

Humidity: 86%

lattitude : 14.4667

longitude: 78.8167

pressure : 1014

wind speed : 2.15

Description: overcast clouds

**Case: 2**

Example form user incorrect input :

Enter city name: error

City not found

**EXPLANATION :**

* **Introduction:**

In today's fast-paced world, staying informed about current weather conditions is a fundamental need for planning daily activities, travel, and outdoor events. The Weather App Project addresses this need by offering a straightforward solution to obtain weather data at your fingertips.

* **Working:**

The core functionality of the Weather App involves a sequence of steps: first, users input a location, either by city name or coordinates. Then, the app initiates an API request to a weather data provider, extracting real-time weather information. The extracted data is meticulously processed, and crucial information like temperature, humidity, and weather descriptions are displayed to users in a comprehensible format.

* **Uses:**

The project has practical applications across diverse domains. It serves as a reliable tool for everyday weather checking, aiding in travel planning, facilitating the scheduling of outdoor events, and supporting academic research endeavors. The uses of this Weather App extend to any situation where access to accurate weather information is paramount.

* **Advantages & Disadvantages:**

The Weather App boasts advantages such as immediate access to real-time weather data, user-friendly interactions, cost-effectiveness, and adaptability to various locations. Nevertheless, it is essential to recognize its limitations, including reliance on external weather APIs, potential data limitations for unsupported locations, data inaccuracies attributed to API sources, and a lack of advanced features when compared to commercial weather applications.

* **Future Scope:**

To ensure the project remains relevant and continues to evolve, the future scope includes enriching the application with multi-day weather forecasts, integration with multiple weather APIs for redundancy, personalized user accounts, mobile app extensions, and advanced features like weather alerts and notifications.

In conclusion, the Weather App Project represents a valuable contribution to making weather information readily accessible to a wide user base. With its user-friendly design, versatility, and growth potential, it aims to enhance the way users engage with weather data, both in their daily lives and for future development possibilities.