



## The Superior University

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### Lab Task 07

#### Weather App With Flask

The `app.py` file is a Flask-based Python script that powers the weather application. It starts by importing necessary libraries like `Flask`, `requests`, and `datetime`. The Flask app is initialized using `app = Flask(\_\_name\_\_)`, and an API key for OpenWeatherMap is required to fetch weather data. The main route (`/`) handles both `GET` and `POST` requests. When a user enters a city name and submits the form, the script makes an API request to OpenWeatherMap, retrieves weather details, and extracts information such as temperature, humidity, wind speed, and weather description. This data is then sent to the frontend (`index.html`) for display. If the city is invalid, an error message is shown. Additionally, `datetime` is used to fetch and display the current day and time.

#### Code:

```
from flask import Flask, render_template, request  
  
import requests
```

```

from datetime import datetime

app = Flask(__name__)

API_KEY =
"https://api.openweathermap.org/data/2.5/weather?lat=44.34&lon=10.99&appid=df8cb2fcea3
e3dead8bc9faf6855c9ee&units=metric"

@app.route("/", methods=["GET", "POST"])
def index():

    Weather_Data = None

    if request.method == "POST":

        city = request.form.get("city")

        if city:

            url =
f"http://api.openweathermap.org/data/2.5/weather?q={city}&appid=df8cb2fcea3e3dead8bc9f
af6855c9ee&units=metric"

            response = requests.get(url)

            Data = response.json()

            if Data["cod"] == 200:

                Weather_Data = {

                    "city": Data["name"],

                    "temperature": Data["main"]["temp"],

                    "humidity": Data["main"]["humidity"],

                    "wind_speed": Data["wind"]["speed"],

                    "weather": Data["weather"][0]["description"],

                    "icon": Data["weather"][0]["icon"],

                    "time": datetime.now().strftime("%Y-%m-%d %H:%M:%S"),

```

```
        "day": datetime.now().strftime("%A")
    }

    else:

        Weather_Data = {"error": "City not found!"}

    return render_template("index.html", weather=Weather_Data)

if __name__ == "__main__":
    app.run(debug=True)
```