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The Great India Hackathon -Jabalpur

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Problem Statement

Weather Forecasting Tool – Microsoft Azure

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Solution Statement

- Based on my understanding, the problem statement requires the creation of a command-line tool that can accept a city's name as input and return the current weather forecast for that city. The weather forecast data should be fetched using the OpenWeatherMap API and parsed using Python.
- The solution is expected to leverage GitHub Copilot to help with API usage, data parsing, and error handling. This means that the tool should be able to handle errors gracefully, such as when there is an issue with the API response or if the user enters an invalid input.
- Overall, the solution should demonstrate proficiency in using APIs, data parsing, error handling, and utilizing the capabilities of GitHub Copilot.

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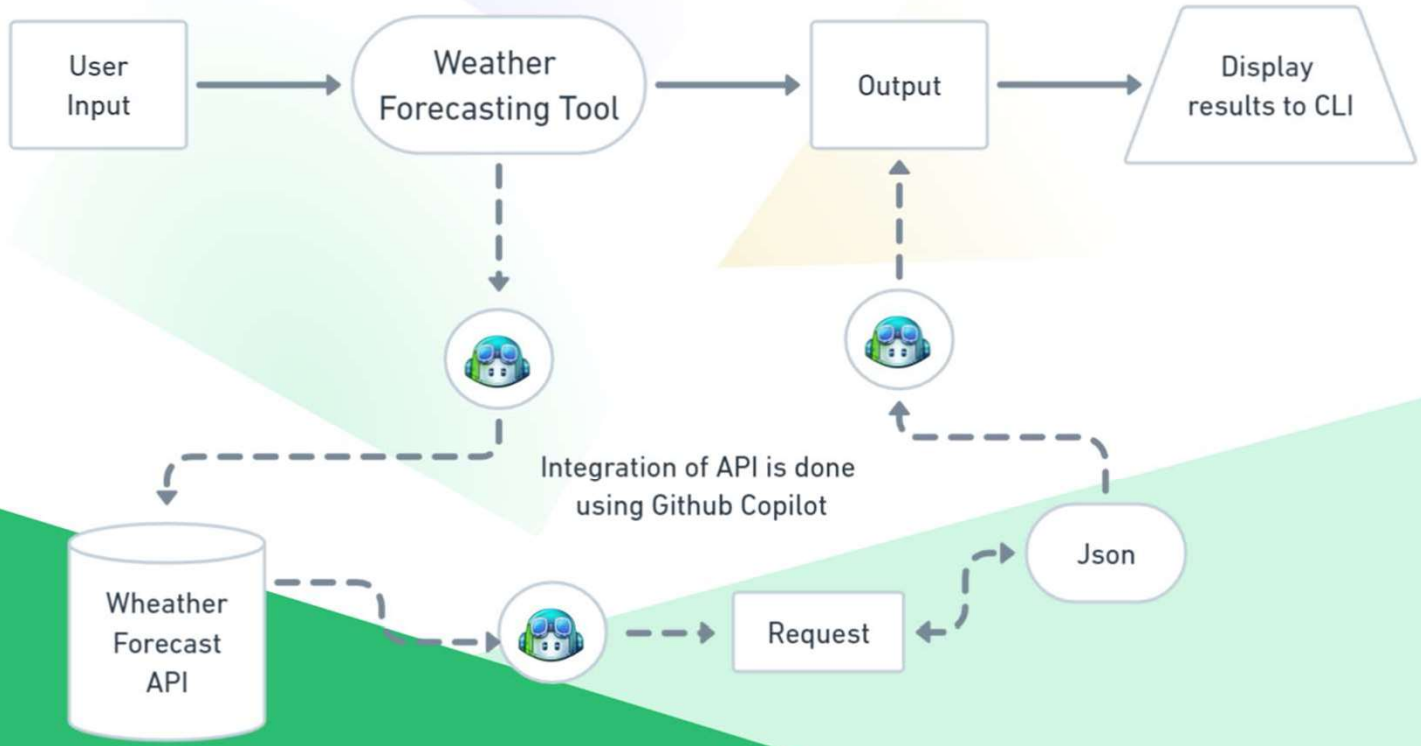
Workflow of Project



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Check point 1

Here are two key takeaways from building a weather forecast CLI using GitHub Copilot and the OpenWeatherMap API:

Automating code writing:
GitHub Copilot can help you automate the process of writing code by generating suggestions and completing code snippets for you. In this case, we used Copilot to help us write the code for making requests to the OpenWeatherMap API and parsing the response data to get the temperature and weather description. This can save you time and reduce the likelihood of errors in your code.

Utilizing external APIs:
The OpenWeatherMap API provides a way to access weather data for any location in the world. By using this API, we were able to get real-time weather data for the user-specified city and display it in the CLI. This demonstrates the value of leveraging external APIs to enrich your applications with data and functionality that would be difficult or time-consuming to implement yourself.


C:\Users\Adi\Desktop\HACKATHON\weather_forecast_tool>python main.py
Enter city name: jabalpur
Weather Forecast CLI
jabalpur
Minimum Temperature: 35.11
Maximum Temperature: 35.11
Humidity: 14
Description: scattered clouds
C:\Users\Adi\Desktop\HACKATHON\weather_forecast_tool>

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Checkpoint 2

In checkpoint 2 we have converted our idea into a web app which directly access the location of the user and predicts the weather for that location

WEATHER FORCAST APP

Enter city name | Search

Pune, IN

31 °C

Clear Sky

Upcoming Forecast

2:30 PM	34 °C / 32 °C	Clear Sky
5:30 PM	33 °C / 33 °C	Clear Sky
8:30 PM	27 °C / 27 °C	Clear Sky
11:30 PM	26 °C / 26 °C	Clear Sky
2:30 AM	24 °C / 24 °C	Broken Clouds

Next 4 Days Forecast

Mon Apr 24 2023	Tue Apr 25 2023	Wed Apr 26 2023	Thu Apr 27 2023
36 °C / 36 °C	36 °C / 36 °C	36 °C / 36 °C	35 °C / 35 °C

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Checkpoint 3

Here we have added the feature of crop recommendation which works on machine learning model and recommends the crops to the farmer.

```
[53]  1 from sklearn.metrics import classification_report
      2 print(classification_report(y_test,y_pred))
```

	precision	recall	f1-score	support
apple	1.00	1.00	1.00	35
banana	1.00	1.00	1.00	30
blackgram	0.90	0.97	0.93	29
chickpea	1.00	1.00	1.00	37
coconut	1.00	1.00	1.00	22
coffee	1.00	1.00	1.00	27
cotton	0.89	1.00	0.94	24
grapes	1.00	1.00	1.00	37
jute	0.87	0.93	0.90	28
kidneybeans	1.00	1.00	1.00	30
lentil	1.00	0.96	0.98	27
maize	1.00	0.88	0.94	26
mango	0.97	1.00	0.98	28
mothbeans	0.97	0.91	0.94	32
mungbean	1.00	1.00	1.00	32
orange	1.00	1.00	1.00	33
papaya	1.00	0.96	0.98	27
pigeonpeas	0.96	1.00	0.98	24
pomegranate	1.00	1.00	1.00	26
rice	0.83	0.71	0.77	14
watermelon	1.00	1.00	1.00	29
accuracy			0.97	597
macro avg	0.97	0.97	0.97	597
weighted avg	0.98	0.97	0.97	597

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Future Scope of the project

- We are planning to convert these project to a android app
- It we also contains the feature of plants diseases prediction
- Adding support for other weather APIs: While OpenWeatherMap API is a popular and reliable weather API, adding support for other weather APIs could provide users with more options and increase the tool's flexibility.

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Future Scope of the project

- Integration with other applications: The tool could be integrated with other applications, such as a weather dashboard, to provide users with more comprehensive weather data and enable them to make more informed decisions.

- User preferences: The tool could allow users to set their weather preferences, such as their preferred units of measurement, and customize the output accordingly.

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Thank You!