

# Dialogflow Weather API Using Flask and Ngrok server

The main theme of this project is to check basic details of the climate for any city in the world.

Requirements:

1. Flask
2. Google's dialogflow(agent)
3. Ngrok server

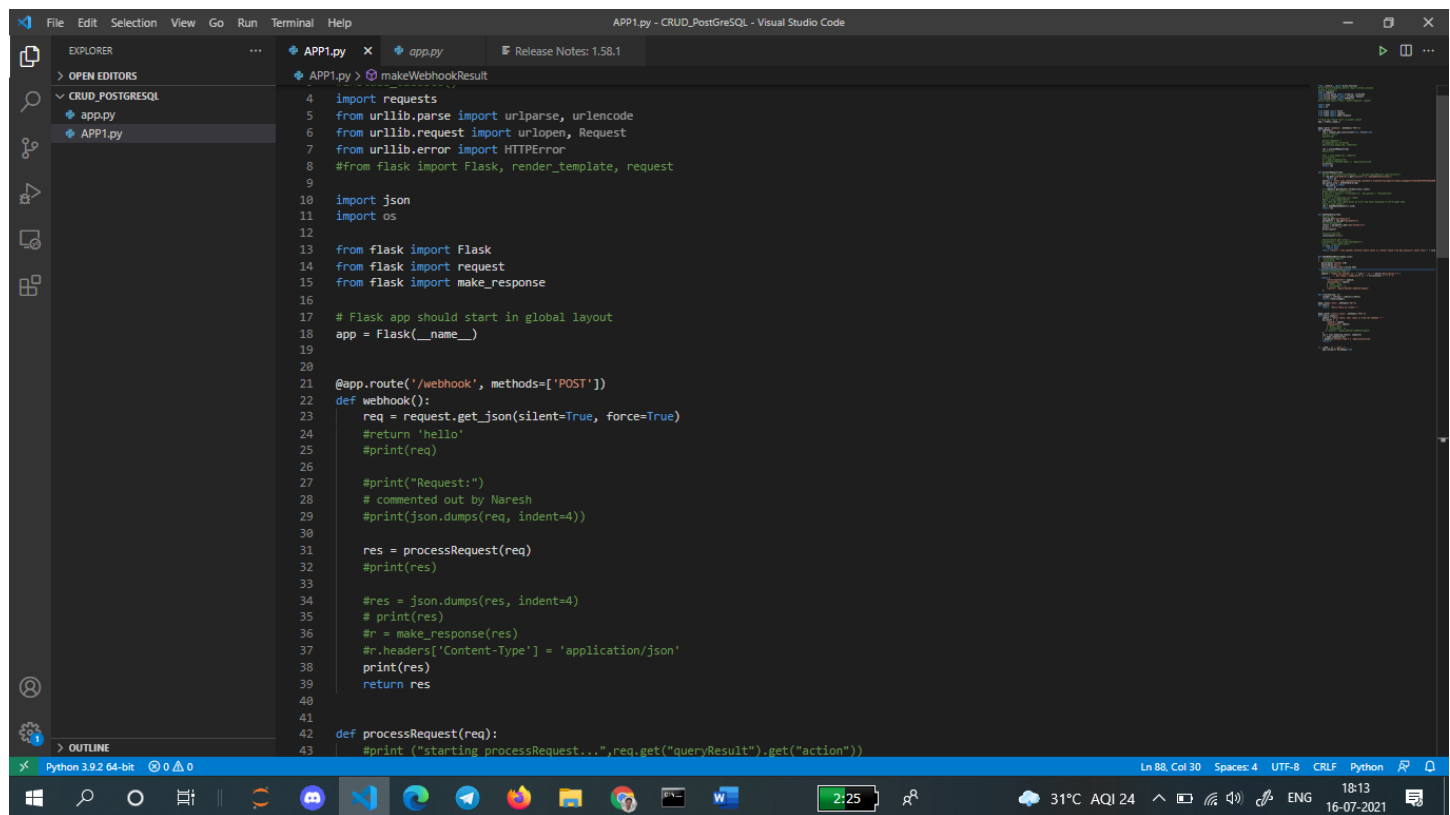
Code link : <https://github.com/krishnasai7500/-Dialogflow-Weather-API-Using-Flask-and-Ngrok-server/tree/main>

Dialogflow is the chatbot agent in that the user will ask the agent about climate in any city

The Ngrok is the server which connect the dialogflow and flask by giving the same port numbers for Ngrok and flask

Lets start

## Flask



```
File Edit Selection View Go Run Terminal Help
APP1.py - CRUD_PostgreSQL - Visual Studio Code
EXPLORER
> OPEN EDITORS
  CRUD_POSTGRESQL
  app.py
  APP1.py
APP1.py
4 import requests
5 from urllib.parse import urlparse, urlencode
6 from urllib.request import urlopen, Request
7 from urllib.error import HTTPError
8 #from flask import Flask, render_template, request
9
10 import json
11 import os
12
13 from flask import Flask
14 from flask import request
15 from flask import make_response
16
17 # Flask app should start in global layout
18 app = Flask(__name__)
19
20
21 @app.route('/webhook', methods=['POST'])
22 def webhook():
23     req = request.get_json(silent=True, force=True)
24     #return 'hello'
25     #print(req)
26
27     #print("Request:")
28     # commented out by Naresh
29     #print(json.dumps(req, indent=4))
30
31     res = processRequest(req)
32     #print(res)
33
34     #res = json.dumps(res, indent=4)
35     # print(res)
36     #r = make_response(res)
37     #r.headers['Content-Type'] = 'application/json'
38     print(res)
39     return res
40
41
42 def processRequest(req):
43     #print ("starting processRequest...",req.get("queryResult").get("action"))
```

```
41
42 def processRequest(req):
43     #print ("starting processRequest...",req.get("queryResult").get("action"))
44     if req.get("queryResult").get("action") != "yahooWeatherForecast":
45         return {}
46     baseUrl = "http://api.openweathermap.org/data/2.5/weather?q={}&units=imperial&appid=271d1234d3f497eed5b1d80a07b3fcd1"
47     yql_query,city = makeYqlQuery(req)
48     if yql_query is None:
49         return {}
50     r = requests.get(baseUrl.format(city)).json()
51     #print(baseUrl.format(city))
52     # yql_url = baseUrl + urlencode({'q': yql_query}) + "&format=json"
53     # print(yql_url)
54     # result = urlopen(yql_url).read()
55     #data = json.loads(result)
56     #for some the line above gives an error and hence decoding to utf-8 might help
57     #data = json.loads(r)
58     res = makeWebhookResult(r,city)
59     return res
60
61
62 def makeYqlQuery(req):
63     #print(req)
64     req=req.get("queryResult")
65     parameters = req.get("parameters")
66     #print(parameters)
67     result = parameters.get("geo-county-us")
68     print("-----")
69     print(result)
70
71     #result=result[0]
72     city=result['city']
73
74     #print(result.get('city'))
75     # parameters = result.get("parameters")
76     #city = result.get("city")
77     if city is None:
78         return None
79     return "select * from weather.forecast where woeid in (select woeid from geo.places(1) where text='"+ city + "')",city
80
```

```
82 def makeWebhookResult(data,city):
83     main1=data['weather'][0]
84     main2=data['main']
85     celsius=(main2['temp']-32)*0.5555
86     celsius=truncate(celsius,2)
87     #print(type(main2['temp']))
88     speech = "Today the weather in " + city + " is " + main1['description'] + \
89             ", And today's temperature is " + str(celsius) + "°C"
90
91     return {
92         "fulfillmentText": speech,
93         "displayText": speech,
94         # "data": data,
95         # "contextOut": [],
96         "source": "apiai-weather-webhook-sample"
97     }
98
99 def truncate(num, n):
100     integer = int(num * (10**n))/(10**n)
101     return float(integer)
102
103 @app.route('/test', methods=['GET'])
104 def test():
105     return "Hello there my friend !!"
106
107 @app.route('/static_reply', methods=['POST'])
108 def static_reply():
109     speech = "Hello there, this reply is from the webhook !!"
110     my_result = {
111         "speech": speech,
112         "displayText": speech,
113         # "data": data,
114         # "contextOut": [],
115         # "source": "apiai-weather-webhook-sample"
116     }
117     res = json.dumps(my_result, indent=4)
118     r = make_response(res)
119     r.headers['Content-Type'] = 'application/json'
120     return r
121
122 if __name__ == "__main__":
123     app.run(port= 80,debug=True)
```

This application running on port number “80”

## Ngrok server which runs for a 2 Hours

```
Select C:\Windows\System32\cmd.exe - ngrok http 80
ngrok by @inconshreveable

Session Status      online
Session Expires    49 minutes
Version            2.3.40
Region             United States (us)
Web Interface       http://127.0.0.1:4040
Forwarding          http://e94b42ac5437.ngrok.io -> http://localhost:80
                   https://e94b42ac5437.ngrok.io -> http://localhost:80

Connections
  ttl   opn   rt1   rt5   p50   p90
   18    0    0.00  0.00  0.67  2.38

HTTP Requests
-----
POST /webhook      200 OK
POST /webhook      200 OK
POST /webhook      200 OK
POST /webhook      200 OK
POST /webhook      500 INTERNAL SERVER ERROR
POST /webhook      500 INTERNAL SERVER ERROR
POST /webhook      200 OK
POST /webhook      500 INTERNAL SERVER ERROR
POST /webhook      200 OK
POST /webhook      200 OK
```

This application running also runs on port number “80”

<https://e94b42ac5437.ngrok.io> this link will connect the dialogflow and flask

## Dialogflow

**Get\_weather**

Contexts

Events

Training phrases

Add user expression

how is the weather in sunnyvale

PARAMETER NAME	ENTITY	RESOLVED VALUE
geo-county-us	@sys.geo-county-us	sunnyvale

Action and parameters

Try it now

Agent

USER SAYS  
how is the weather in guntur

DEFAULT RESPONSE  
Today the weather in Guntur is broken clouds, And today's temperature is 87.69 F

INTENT  
Get\_weather

ACTION  
yahooWeatherForecast

PARAMETER	VALUE
geo-county-us	{ "city": "Guntur", "admin-area": "", "street-address": "", "shortout": "", "subadmin-area": "", "business-name": "", "zip": "" }

This is the intent of dialogflow , the intent is nothing but in chatbot from the user input dialogflow will identifies the which intent is suitable for the user's question. And above screenshot is how the intents is create and how to extract the city from the user question

**Fulfillment**

Webhook

ENABLED

Your web service will receive a POST request from Dialogflow in the form of the response to a user query matched by intents with webhook enabled. Be sure that your web service meets all the [webhook requirements](#) specific to the API version enabled in this agent.

URL\*  
https://e94b42ac5437.ngrok.io/webhook

BASIC AUTH  
Enter username Enter password

HEADERS  
Enter key Enter value  
Add header

SMALL TALK  
Disable webhook for Smalltalk

Inline Editor (Powered by Google Cloud Functions)  
DISABLED

Build and manage fulfillment directly in Dialogflow via Cloud Functions. [Docs](#)

Newly created cloud functions now use Node.js 10 as runtime engine. Check [migration guide](#) for more details.

Try it now

INTENT  
Get\_weather

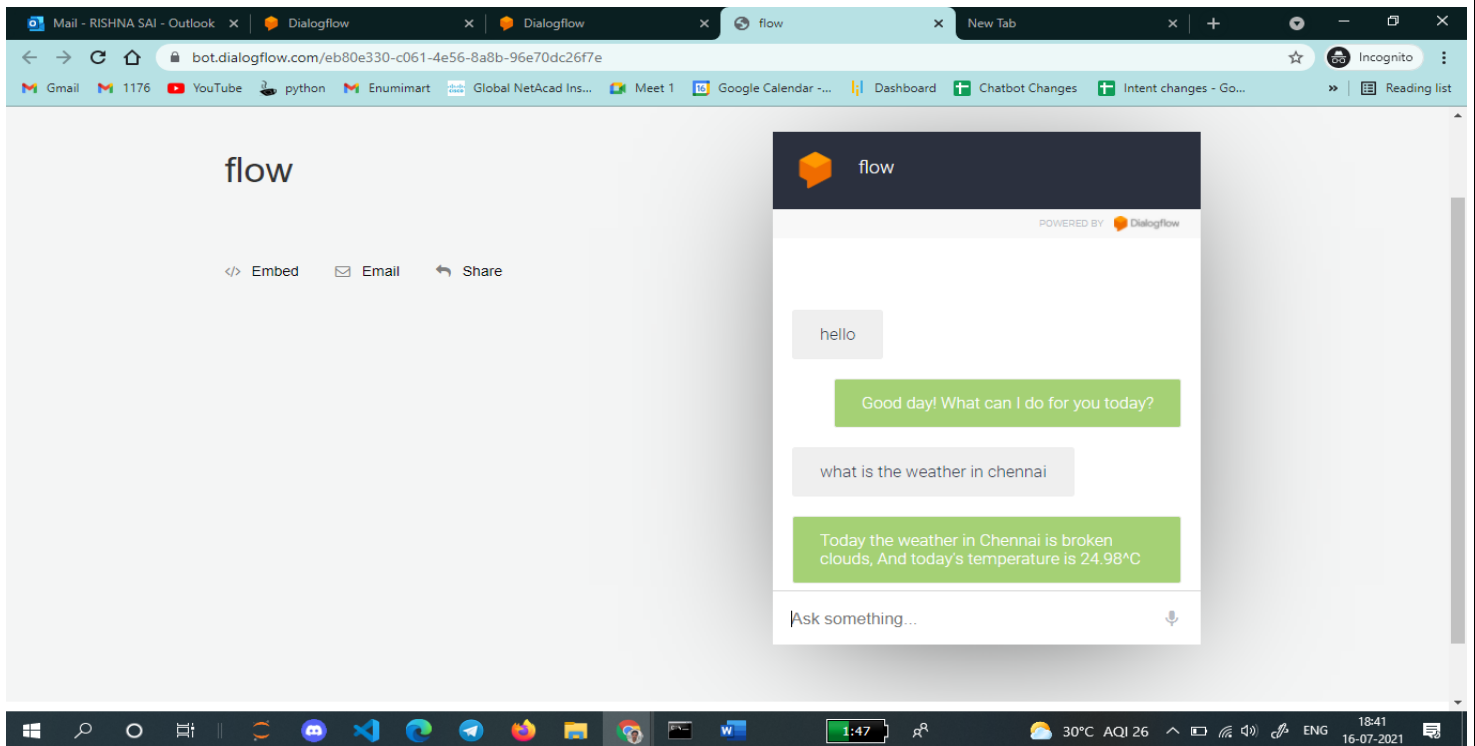
ACTION  
yahooWeatherForecast

PARAMETER	VALUE
geo-county-us	{ "subadmin-area": "", "admin-area": "", "short cut": "", "zip-code": "", "country": "", "island": "", "business-name": "", "city": "Guntur", "street-address": "" }

SENTIMENT  
Query Score: 0.0

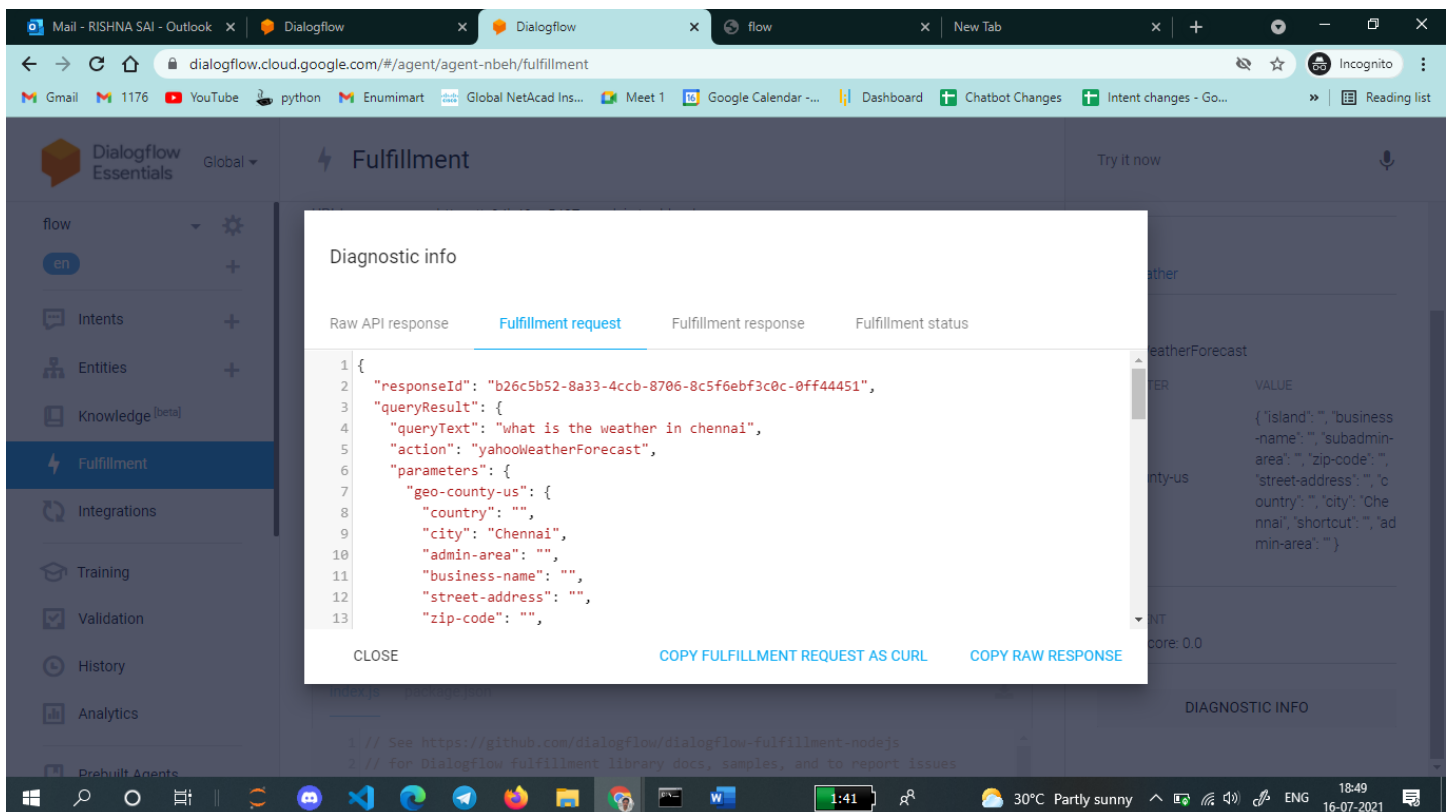
DIAGNOSTIC INFO

This is the fulfillment part which is used to connect the dialogflow which external API's . Here the ngrok link used connection of both dialogflow and ngrok and "/webhook" is used to root the application which on running in the same port . Here in this the flask and ngrok running on same port so we can directly access the flask code with this.



Here the user asking the question that what is the weather in Chennai

The reply here is "Today the weather in Chennai is broken clouds, And today's temperature is 24.98°C"



This is the responds was given by dialogflow which was in json format

In that we are extracting the city name

```
Select C:\Windows\System32\cmd.exe - ngrok http 80
ngrok by @inconshreveable

Session Status      online
Session Expires    22 minutes
Version            2.3.40
Region             United States (us)
Web Interface       http://127.0.0.1:4040
Forwarding          http://e94b42ac5437.ngrok.io -> http://localhost:80
                   https://e94b42ac5437.ngrok.io -> http://localhost:80

Connections        ttl    opn    rt1    rt5    p50    p90
                   19     0     0.00   0.00   0.68   2.37

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POST /webhook       200 OK
POST /webhook       200 OK
POST /webhook       200 OK
POST /webhook       200 OK
POST /webhook       500 INTERNAL SERVER ERROR
POST /webhook       500 INTERNAL SERVER ERROR
POST /webhook       200 OK
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POST /webhook       200 OK
```

Here the dialogflow was connected to ngrok server

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70

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
-----
{'country': '', 'city': 'Chennai', 'admin-area': '', 'business-name': '', 'street-address': '', 'zip-code': '', 'shortcut': '', 'island': '', 'subadmin-area': ''}
{'fulfillmentText': "Today the weather in Chennai is broken clouds, And today's temperature is 24.98°C", 'displayText': "Today the weather in Chennai is broken clouds, And today's temperature is 24.98°C", 'source': 'api-weather-webhook-sample'}
127.0.0.1 - - [16/Jul/2021 18:48:50] "POST /webhook HTTP/1.1" 200 -
```

```
baseurl = "http://api.openweathermap.org/data/2.5/weather?q={}&units=imperial&appid=271d1234d3f497eed5b1d80a07b3fcd1"
```

This is the link which I'm using to extract the weather data which is in format of json ,

Here I'm connecting the link with city with the help of format() function in python.

**This is the Dialogflow Weather API Using Flask and Ngrok server**

**Thank you 😊**

**By T Krishna sai**