IOT Phase-4

**Environmental Monitoring**

Program(python):

import sys

from urllib.request import urlopen

import RPi.GPIO as GPIO

import bmpsensor

from time import sleep

import requests

GPIO.setwarnings(False)

GPIO.setmode(GPIO.BCM)

channel=26

GPIO.setup(channel,GPIO.IN)

GPIO.setup(21,GPIO.OUT)

GPIO.setup(21,GPIO.OUT, initial=GPIO.LOW)

pin1=23

pin2=24

GPIO.setup(pin1,GPIO.OUT, initial=GPIO.LOW)

GPIO.setup(pin2,GPIO.OUT, initial=GPIO.LOW)

myAPI='F6CJSTUTJ2S1WE9Q'

baseURL = 'https://api.thingspeak.com/update?api\_key=%s' %myAPI

def bmp\_data():

temp,press,alt= bmpsensor.readBmp180()

return temp,press,alt

def main():

for x in range(5):

temp,press,alt=bmp\_data()

print('ENVIRONMENTAL MONITORING SYSTEM ')

print('-------------------------------------------------------')

print('-------------------------------------------------------')

print("Temperature: %.2f C" % temp)

print('------------------------------')

print("Pressure: %.2f hPa" % (press / 100.0))

print('-------------------------------')

if GPIO.input(channel):

w=0;

conn = urlopen(baseURL + '&field1=%s&field2=%s&field4=%s' % (temp,press,w))

print('No Rain')

print('-------------------------------')

print(conn.read())

conn.close()

GPIO.output(21,0)

sleep(1)

else:

w=1;

conn = urlopen(baseURL + '&field1=%s&field2=%s&field4=%s' % (temp,press,w))

print('Raining!')

print('-------------------------------')

print(conn.read())

conn.close()

GPIO.output(21,1)

sleep(1)

GPIO.output(21,0)

sleep(1)

GPIO.output(21,1)

readapikey='VEGUER776SBMMPN8'

channel\_id=1369893

baseURL1= 'https://api.thingspeak.com/channels/1369893/fields/1.json?api\_key=VEGUER776SBMMPN8&results=1'

get\_data= requests.get(baseURL1).json()

print('ENVIRONMENTAL MONITORING SYSTEM - ACTUATION:')

print('-------------------------------------------------------')

print('Average Temperature: '+get\_data['feeds'][0]['field1'])

if float(get\_data['feeds'][0]['field1'])>28:

print("It's a VERY hot day")

GPIO.output(pin1, 1)

GPIO.output(pin2, 0)

else:

print("It's a Normal day")

GPIO.output(pin2, 1)

GPIO.output(pin1, 0)

baseURL2= 'https://api.thingspeak.com/channels/1369893/fields/2.json?api\_key=VEGUER776SBMMPN8&results=1'

get\_data2= requests.get(baseURL2).json()

print('-------------------------------')

print('Average Pressure:'+get\_data2['feeds'][0]['field2'])

if float(get\_data2['feeds'][0]['field2'])<970:

print("It's a windy day")

GPIO.output(21, 1)

sleep(30)

print('-------------------------------------------------------')

print('-------------------------------------------------------')

GPIO.output(pin1, 0)

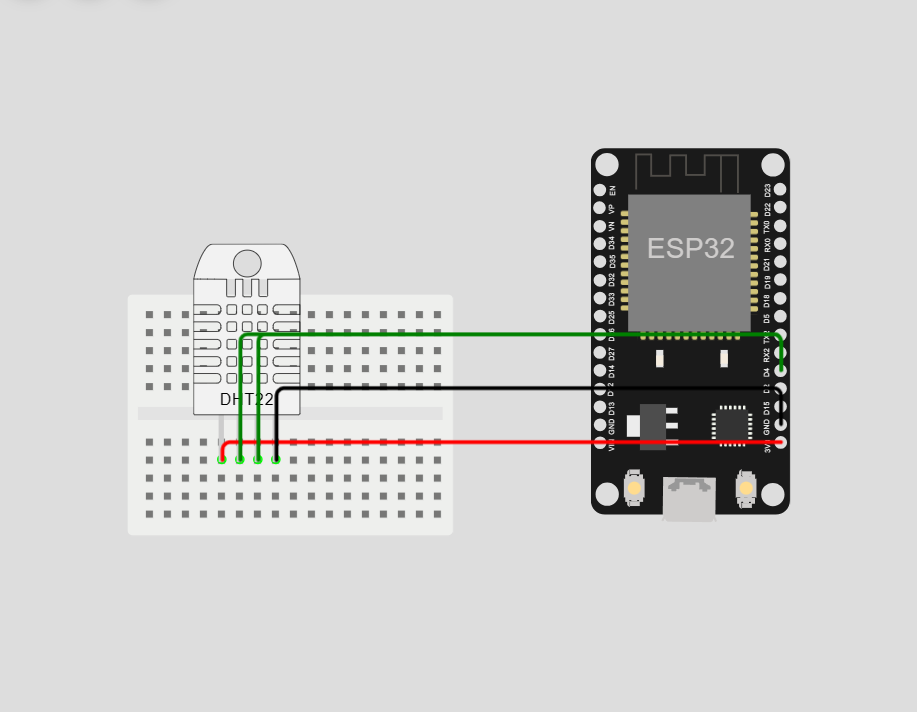
GPIO.output(pin2, 0)

GPIO.output(21,0)

if \_\_name\_\_=="\_\_main\_\_":

main()

SENSORS:



OUTPUT:

