SPRINT 1

Team ID:PNT2022TMID06962

Topic: smart waste management system for metropolitan cities


```python
import pyrebase
import wiotp.sdk
import time
import random
d = 0

w = 0
def database(d,w,m,load,distance,lat = 10.939091,long= 78.135731):
#Initialize Firebase
    firebaseConfig={
    "apiKey": "AIzaSyB9ysbnaWc3IyeCioh-aJQT_UCMd5CBFeU",
        "authDomain": "fir-test-923b4.firebaseapp.com",
        "databaseURL": "https://fir-test-923b4-default-rtdb.firebaseio.com",
        "projectId": "fir-test-923b4",
        "storageBucket": "fir-test-923b4.appspot.com",
        "messagingSenderId": "943542145393",
        "appId": "1:943542145393:web:9b5ec7593e6a3cbd7966d0",
        "measurementId": "G-BN7JNX1Q7B"
    }

    firebase=pyrebase.initialize_app(firebaseConfig)

    db=firebase.database()

    # #Push Data
    data={"level":str(d)+"cm",
        "alert":m,
        "weight":str(w)+"g",
        "latitude":lat,
        "longitude":long,
        "distance_status":distance,
        "load_status":load}
    # print(db.push(data))


    # update data base

    db.child("-NEkRRkKsX7yVcqy_rK4").update(data)

myConfig = {
    "identity": {
        "orgId": "4yi0vc",
        "typeId": "smartwaste123",
        "deviceId":"70103"
    },
    "auth": {
        "token": "123456789"
```



```python
def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()
client.publishEvent(eventId="status", msgFormat="json", data=data, qos=0, onPublish=None)

import RPi.GPIO as GPIO
import time

def distancesensor():
    try:

        GPIO.setmode(GPIO.BOARD)
        GPIO.setwarnings(False)
        PIN_TRIGGER = 23
        PIN_ECHO = 33
        GPIO.setup(PIN_TRIGGER, GPIO.OUT)
        GPIO.setup(PIN_ECHO, GPIO.IN)
        GPIO.output(PIN_TRIGGER, GPIO.LOW)

        time.sleep(2)
        GPIO.output(PIN_TRIGGER, GPIO.HIGH)

        time.sleep(0.00001)

        GPIO.output(PIN_TRIGGER, GPIO.LOW)

        while GPIO.input(PIN_ECHO)==0:
            pulse_start_time = time.time()
        while GPIO.input(PIN_ECHO)==1:
            pulse_end_time = time.time()

        pulse_duration = pulse_end_time - pulse_start_time
        global distance
        distance = round(pulse_duration * 17150, 2)
        print(distance)
        return distance


    finally:
        GPIO.cleanup()
```

Distance program:

```python
import
RPi.GPIO
as GPIO
            import time


            def distancesensor():
              try:

                    GPIO.setmode(GPIO.BOARD)
                    GPIO.setwarnings(False)
                    PIN_TRIGGER = 23
                    PIN_ECHO = 33
                    GPIO.setup(PIN_TRIGGER, GPIO.OUT)
                    GPIO.setup(PIN_ECHO, GPIO.IN)
                    GPIO.output(PIN_TRIGGER, GPIO.LOW)


                    time.sleep(2)
                    GPIO.output(PIN_TRIGGER, GPIO.HIGH)

                    time.sleep(0.00001)

                    GPIO.output(PIN_TRIGGER, GPIO.LOW)

                    while GPIO.input(PIN_ECHO)==0:
                          pulse_start_time = time.time()
                    while GPIO.input(PIN_ECHO)==1:
                          pulse_end_time = time.time()

                    pulse_duration = pulse_end_time - pulse_start_time
                    global distance
                    distance = round(pulse_duration * 17150, 2)
                    print(distance)
                    return distance


              finally:
                  GPIO.cleanup()
```

Data base program:

```python
import
pyrebase
            import wiotp.sdk
            import time
            import random
            d = 0

            w = 0
            def database(d,w,m,load,distance,lat = 10.939091,long= 78.135731):
            #Initialize Firebase
              firebaseConfig={
              "apiKey": "AIzaSyB9ysbnaWc3IyeCioh-aJQT_UCMd5CBFeU",
                "authDomain": "fir-test-923b4.firebaseapp.com",
                "databaseURL": "https://fir-test-923b4-default-rtdb.firebaseio.com",
                "projectId": "fir-test-923b4",
                "storageBucket": "fir-test-923b4.appspot.com",
                "messagingSenderId": "943542145393",
                "appId": "1:943542145393:web:9b5ec7593e6a3cbd7966d0",
                "measurementId": "G-BN7JNX1Q7B"
              }

              firebase=pyrebase.initialize_app(firebaseConfig)

              db=firebase.database()

              # #Push Data
              data={"level":str(d)+"cm",
                    "alert":m,
                    "weight":str(w)+"g",
                    "latitude":lat,
                    "longitude":long,
                    "distance_status":distance,
                    "load_status":load}
            # print(db.push(data))


              # update data base

              db.child("-NEkRRkKsX7yVcqy_rK4").update(data)

              myConfig = {
                  "identity": {
                      "orgId": "4yi0vc",
                      "typeId": "smartwaste123",
```

```
            "deviceId":"70103"
        },
        "auth": {
            "token": "123456789"
        }
    }


    def myCommandCallback(cmd):
        print("Message received from IBM IoT Platform: %s" %
cmd.data['command'])
        m=cmd.data['command']


    client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
    client.connect()
    client.publishEvent(eventId="status", msgFormat="json", data=data, qos=0,
onPublish=None)
```