SPRINT 1

Team ID:PNT2022TMID36134

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)
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  finally:
      GPIO.cleanup()
```

Data base program:

```
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)
```