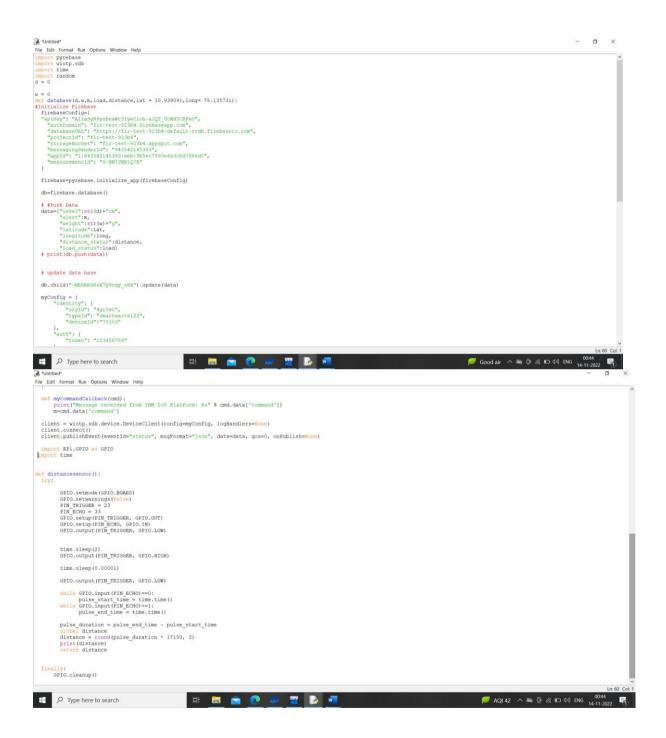
## **SPRINT 1**

## Team ID: PNT2022TMID36134

Topic: smart waste management system for metropolitan cities



## Distance program:

```
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:

```
import
pyrebase
           import wiotp.sdk
           import time
           import random
           d = 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-BN7JNX107B"
             }
             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)
```