PROJECT DEVELOPMENT PHASE

PROJECT DEVELOPMENT - DELIVERY OF SPRINT-2

Date	16 November 2022
Team ID	PNT2022TMID34017
Project Name	Project - IoT Based Safety Gadget for Child Safety Monitoring and Notification

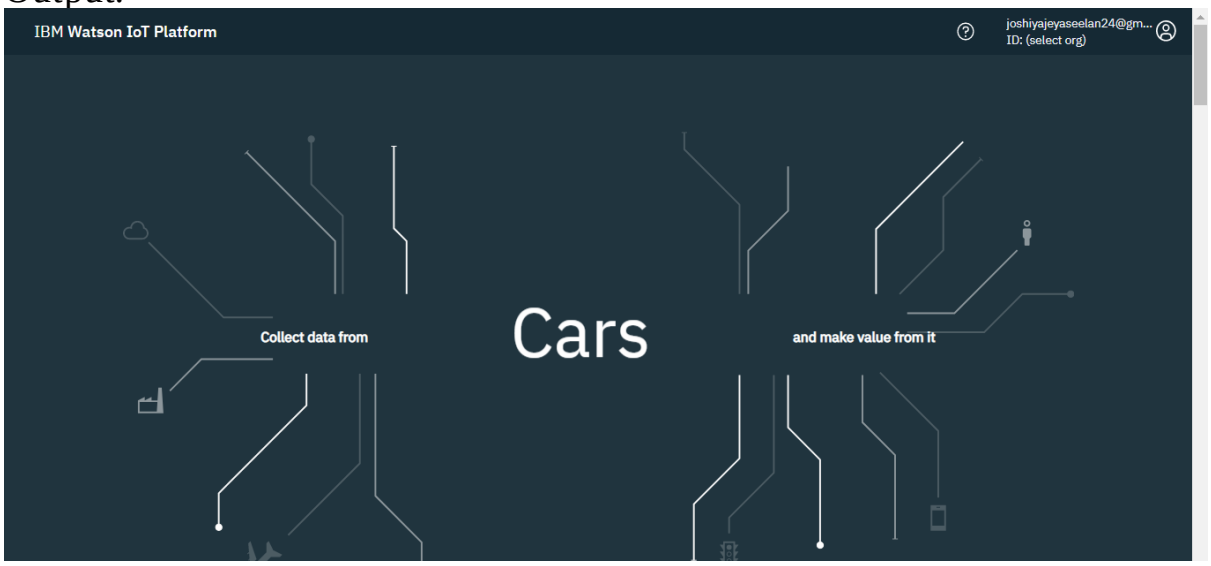
PROGRAM:

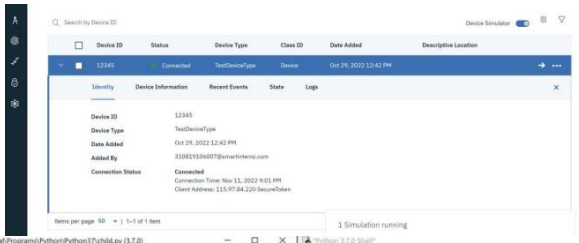
PYTHON CODE:

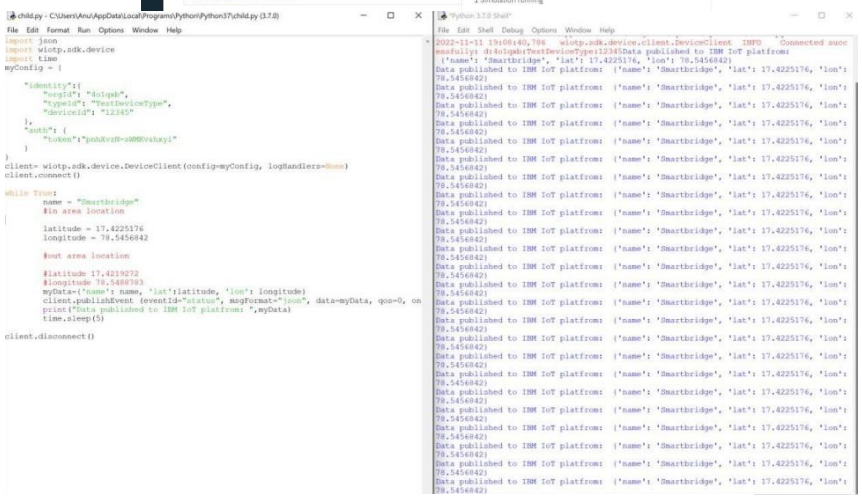
```
import json
import wiotp.sdk.device
import time
myconfig = {
    "identity": {
        "orgId": "a701la",
        "typeId": "IOT",
        "deviceId": "123"
    },
    "auth": {
         "token": "y-WFmI45YEkMF2ic2g"
    }
}
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()
```

```
while True:
    name= "Smartbridge"
    #in area location
    #latitude=17.4225176
    #longitude=78.5458842
    #out area location
    latitude=17.4219272
    longitude=78.5488783
    myData={'name': name, 'lat': latitude,'lon': longitude}
    client.publishEvent(eventId="status",msgFormat="json",data=myData,
qos=0, onPublish=None)
    print("Data published to IBM IOT platform :",myData)
    time.sleep(5)
client.disconnect()
```

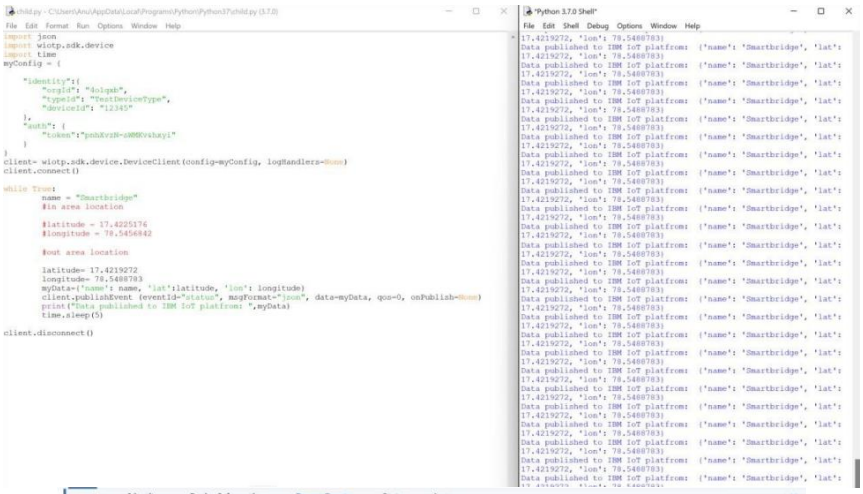
Output:

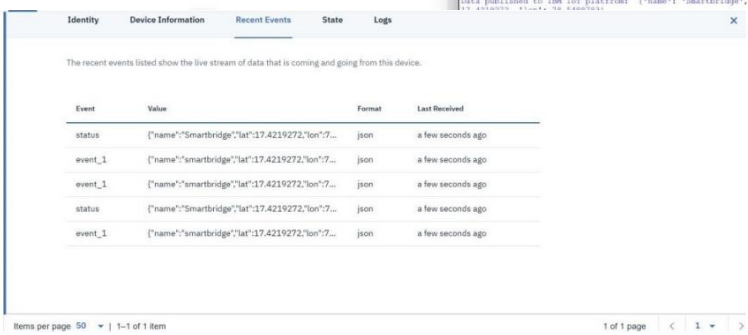






Event	Value	Format	Last Received
event_1	{"name":"smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
status	{"name":"Smartbridge","lat":17.4225176,"lon":7...	json	a few seconds ago
event_1	{"name":"smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
event_1	{"name":"smartbridge","lat":17.4219272,"lon":7...	json	a few seconds ago
status	{"name":"Smartbridge","lat":17.4225176,"lon":7...	json	a few seconds ago



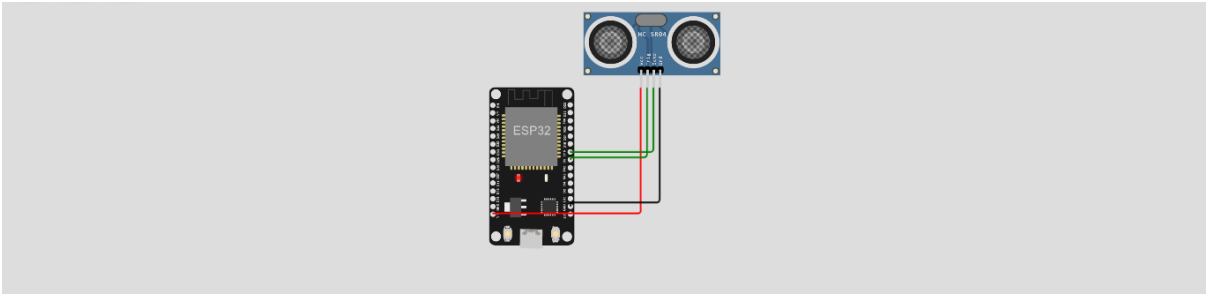


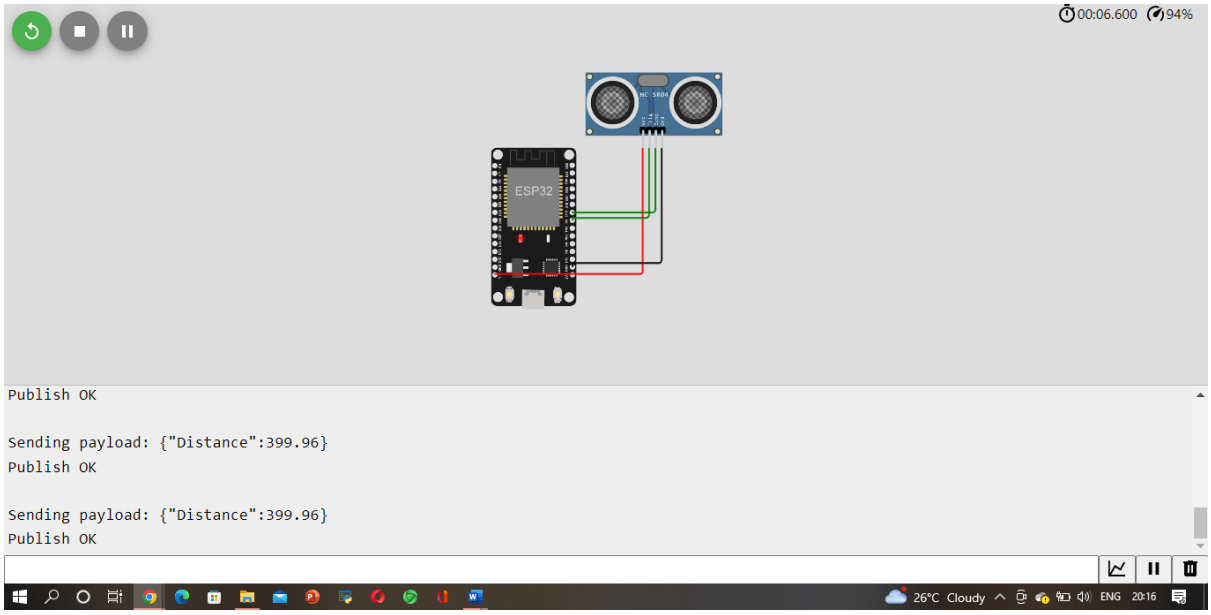
NOTIFICATION:

```
#include <WiFi.h>
#include <PubSubClient.h>
WiFiClient wifiClient;
String data3;
#define ORG "a701la"
#define DEVICE_TYPE "IOT"
#define DEVICE_ID "123"
#define TOKEN "y-WFmI45YEkMF2ic2g"
#define speed 0.034
#define led 14
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/fmt/json";
char topic[] = "iot-2/cmd/led/fmt/String";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
PubSubClient client(server, 1883, wifiClient);



const int trigpin=5;
const int echopin=18;
String command;
String data="";

long duration;
float dist;



void setup()
{
  Serial.begin(115200);
  pinMode(led, OUTPUT);
  pinMode(trigpin, OUTPUT);
  pinMode(echopin, INPUT);
  wifiConnect();
  mqttConnect();
}

void loop() {
  bool isNearby = dist < 100;
  digitalWrite(led, isNearby);

  publishData();
  delay(500);

  if (!client.loop()) {
    mqttConnect();
```

```
  }
}

void wifiConnect() {
  Serial.print("Connecting to "); Serial.print("Wifi");
  WiFi.begin("Wokwi-GUEST", "", 6);
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.print("WiFi connected, IP address: ");
Serial.println(WiFi.localIP());
}

void mqttConnect() {
  if (!client.connected()) {
    Serial.print("Reconnecting MQTT client to "); Serial.println(server);
    while (!client.connect(clientId, authMethod, token)) {
      Serial.print(".");
      delay(500);
    }
    initManagedDevice();
    Serial.println();
  }
}

void initManagedDevice() {
  if (client.subscribe(topic)) {
    // Serial.println(client.subscribe(topic));
    Serial.println("IBM subscribe to cmd OK");
  } else {
    Serial.println("subscribe to cmd FAILED");
  }
}
void publishData()
{
  digitalWrite(trigpin,LOW);
  digitalWrite(trigpin,HIGH);
  delayMicroseconds(10);
  digitalWrite(trigpin,LOW);
  duration=pulseIn(echopin,HIGH);
  dist=duration*speed/2;
  if(dist<100){
    String payload = "{\"Alert Distance\":";
    payload += dist;
    payload += "}";

    Serial.print("\n");
```

```
  Serial.print("Sending payload: ");
  Serial.println(payload);
  if (client.publish(publishTopic, (char*) payload.c_str())) {
    Serial.println("Publish OK");
  }

}
  if(dist>100){
  String payload = "{\"Distance\":";
  payload += dist;
  payload += "}";

  Serial.print("\n");
  Serial.print("Sending payload: ");
  Serial.println(payload);
   if(client.publish(publishTopic, (char*) payload.c_str())) {
    Serial.println("Publish OK");
  }else {
    Serial.println("Publish FAILED");
  }

}


}
```




00:06.600
94%
HC-SR04
ESP32
Publish OK
Sending payload: {"Distance":399.96}
Publish OK
Sending payload: {"Distance":399.96}
Publish OK
26°C Cloudy
ENG
20:16