Date	19 Nov 2022
Team id	PNT2022TMID11540
Project name	IOT Based smart crop protection system for agriculture

Python script for Humidity Temperature and Soil moisture sensor:

```python
import wiotp.sdk.device

import time

import random

myConfig = {

"identity": {

"orgId":"ozexmo",

"typeId":"rasberrypi",

"deviceId":"12345"

},

"auth": {

"token":"12345678"

}

}

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()

while True:

soil = random.randint(0, 100)

temp=random.randint(-25,125)

hum=random.randint(0,100)

if soil<50:

myData = {'d': {'temperature': temp, 'humidity': hum,'soil':soil,'flag': 1}}

else:

myData = {'d': {'temperature': temp, 'humidity': hum,'soil':soil,'flag': 0}}
```

client.publishEvent(eventId="Data", msgFormat="json", data=myData, qos=0,onPublish=None)

print("Published data Successfully: %s", myData)

client.commandCallback = myCommandCallback

time.sleep(2)

client.disconnect()

Python code for PIR sensor:

```
#include <WiFi.h>
#include <PubSubClient.h>
WiFiClient wifiClient;
String data3;
#define ORG "ozexmo"
#define DEVICE_TYPE
"rasberrypi"
#define DEVICE_ID "12345"
#define TOKEN "y6Lb7lznmBD&Iv9euq"
int ledPin = 12; // choose the pin for the LED
int inputPin = 2; // choose the input pin (for PIR sensor)
int pirState = LOW; // we start, assuming no motion detected
int val = 0; // variable for reading the pin status
void setup() {
pinMode(ledPin, OUTPUT); // declare LED as output
pinMode(inputPin, INPUT); // declare sensor as input
Serial.begin(9600);
}
void loop() {
val = digitalRead(inputPin); // read input value
if (val == HIGH) { // check if the input is HIGH
digitalWrite(ledPin, HIGH); // turn LED ON
//void publishData();
if (pirState == LOW) {
// we have just turned on
Serial.println("Motion detected!");
Serial.println("Camera activated!");
```

```
delay(1000);
Serial.println("Pictures taken!");
// We only want to print on the output change, not
statepirState = HIGH;
}
}
else {
digitalWrite(ledPin, LOW); // turn LED OFF
//void
publishData(); if
(pirState == HIGH)
{
// we have just turned of
Serial.println("Motion ended!");
// We only want to print on the output change, not
statepirState = LOW;
}}}
```