

Develop a code to publish in IBM IoT Platform

Date	17 November 2022
Team ID	PNT2022TMID05114
Project Name	Project – Smart Farmer-IoT Enabled smart Farming Application

Connecting Sensors with Arduino using C++ code

```
#include "Arduino.h"  
  
#include "dht.h"  
  
#include "SoilMoisture.h"  
  
#define dht_apin A0  
  
  
#define organization = "mmbh4c"  
#define deviceType = "smartfarmer"  
#define deviceId = "smartfarmer_1"  
#define authMethod = "use-token-auth"  
#define authToken = "123456789"  
  
  
char server[] = ORG  
".messaging.internetofthings.ibmcloud.com";  
char publishTopic[] = "iot-2/evt/abcd_1/fmt/json";  
char topic[] = "iot-2/cmd/home/fmt/String";  
char authMethod[] = "use-token-auth";  
char token[] = TOKEN;
```

```
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":"  
DEVICE_ID;  
const int sensor_pin = A1; //soil moisture  
int pin_out = 9;  
dht DHT;  
int c=0;  
void setup()  
{  
pinMode(2, INPUT); //Pin 2 as INPUT  
pinMode(3, OUTPUT); //PIN 3 as OUTPUT  
pinMode(9, OUTPUT); //output for pump }  
void loop()  
{  
if (digitalRead(2) == HIGH)  
{  
digitalWrite(3, HIGH); // turn the LED/Buzz ON  
delay(10000); // wait for 100 msecond  
digitalWrite(3, LOW); // turn the LED/Buzz OFF  
delay(100);  
}  
Serial.begin(9600);  
delay(1000);
```

```
DHT.read11(dht_apin); //temprature
float h=DHT.humidity;
float t=DHT.temperature;
delay(5000);
Serial.begin(9600);
float moisture_percentage;
int sensor_analog;
sensor_analog = analogRead(sensor_pin);
moisture_percentage = ( 100 - ( (sensor_analog/1023.00) *
100 ) );
float m=moisture_percentage;
delay(1000);
if(m<40)//pump
{
while(m<40)
{
digitalWrite(pin_out,HIGH); //open pump
sensor_analog = analogRead(sensor_pin);
moisture_percentage = ( 100 - ( (sensor_analog/1023.00) *
100 ) );
m=moisture_percentage;
delay(1000);
}
```

```
digitalWrite(pin_out,LOW); //closepump
}
if(c>=0)
{
mySerial.begin(9600);
delay(15000);
Serial.begin(9600);
delay(1000);
Serial.print("\r");
delay(1000);

Serial.print((String)"update-
>" +(String)"Temprature=" +t+(String)"Humidity=" +h+(String
)"Moisture=" +m);
delay(1000);
}

}
```