

## Develop a code to publish in IBM IoT Platform

Date	17 November 2022
Team ID	PNT2022TMID09732
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)"Temperature=" + t + (String)"Humidity=" + h + (String)
)"Moisture=" + m);
delay(1000);
}
}
```