

### Develop a code to publish in IBM IoT Platform

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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);
```

```
}
```

```
}
```