

Date	5 November 2022
Team ID	PNT2022TMID03728
Project Name	Smart farmer - IoT Enabled Smart Farming Application

```
import time
```

```
import sys
```

```
import ibmiotf.application
```

```
import ibmiotf.device
```

```
import random
```

```
#Provide your IBM Watson Device Credentials
```

```
organization = "kv09p4"
```

```
deviceType = "Groot"
```

```
deviceId = "13"
```

```
authMethod = "token"
```

```
authToken = "12345678"
```

```
global y
```

```
# Initialize GPIO
```

```
def myCommandCallback(cmd):
```

```
    print("Command received: %s" % cmd.data['command'])
```

```
    status=cmd.data['command']
```

```
    if status=="motoron":
```

```
        print ("motor is on")
```

```
    if status=="motoroff" :
```

```
    print ("motor is off")

if status=="manual" :

    print ("Motor Control is in Manual Mode")

if status=="automatic" :

    print ("Motor control is in Automatic Mode")

if soilmoisture > 600:

    print ("motor is on")
```

```
#print(cmd)
```

```
try:
```

```
    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method":
authMethod, "auth-token": authToken}
```

```
    deviceCli = ibmiotf.device.Client(deviceOptions)
```

```
    #.....
```

```
except Exception as e:
```

```
    print("Caught exception connecting device: %s" % str(e))
```

```
    sys.exit()
```

```
# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type "greeting"
10 times
```

```
deviceCli.connect()
```

```
while True:
```

```
    #Get Sensor Data from DHT11
```

```
    temp=random.randint(0,100)
```

```
    Humid=random.randint(0,100)
```

```
    soilmoisture=random.randint(0,1023)
```

```
    Phlevel=random.randint(0,14)
```

```
    y=soilmoisture
```

```
    data = { 'temp' : temp, 'Humid': Humid,'soilmoisture' : soilmoisture , 'Phlevel' : Phlevel }
```

```
    #print data
```

```
    def myOnPublishCallback():
```

```
        print ("Published Temperature = %s C" % temp, "Humidity = %s %" % Humid, "Soil Moisture  
is %s %" % soilmoisture, "PH level is %s" % Phlevel , "to IBM Watson")
```

```
    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0, on_publish=myOnPublishCallback)
```

```
    if not success:
```

```
        print("Not connected to IoT")
```

```
    time.sleep(10)
```

```
    deviceCli.commandCallback = myCommandCallback
```

```
# Disconnect the device and application from the cloud
```

```
deviceCli.disconnect()
```