DEVELOP THE PYTHON SCRIPT

Team ID	PNT2022TMID11102
Project Name	IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE
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Python code:

```
import random
import
ibmiotf.application
import
ibmiotf.device from
time import sleep
import sys

organization = "gjx22e"
deviceType =
"smartcrop" deviceId =
"53302945" authMethod
= "use-token-auth"
authToken =
"987654321"
def
  myCommandCallback(cmd)
  : print("%s" %
  cmd.data['command'])
  status=cmd.data['command']
  if status=="sprinkler_on":
    print ("sprinkler is
  turning ON")else :
    print ("sprinkler is turning OFF")

try:
  deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-
method": authMethod, "auth-token": authToken}
  deviceCli =
ibmiotf.device.Client(deviceOptions)
except Exception as e:
  print("Exception detected in connecting device:
  %s" % str(e))sys.exit()
```

```
deviceCli.conn

ect()while

True:
  temp = round(
  random.uniform(0,80),2)PH =
  round(random.uniform(1,14),3)
 moisture=
  round(random.uniform(0,100),2)
  water_level =
  round(random.uniform(0,30),2)
  temp_data = { 'Temp' : temp }
  PH_data = { 'PH value' : Ph }
  moist_data = { 'Moisture level' :
  moist_level}water_data = { 'Water
  level' : water_level}
  success = deviceCli.publishEvent("Temperature sensor", "json",
  temp_data, qos=0)sleep(1)
  if success:
    print ("... ...publish ok.        ")
    print ("Published Temp = %s C" % temp, "to IBM Watson")
    success = deviceCli.publishEvent("PH sensor", "json", PH_data, qos=0)


sleep(1)if
success:

    print ("Published PH value = %s" % Ph, "to IBM Watson")
    success = deviceCli.publishEvent("camera", "json",
    camera_data, qos=0)sleep(1)
  if success:
    print ("Published Moisture level = %s " % moist_level, "to
    IBM Watson") success = deviceCli.publishEvent("Water
    sensor", "json", water_data, qos=0)sleep(1)
  if success:
    print ("Published Water level = %s cm" % water_level,
    "to IBM Watson")print ("")
  if (temp > 35):
    print("sprinkler-1 is ON")
    success = deviceCli.publishEvent("Alert1", "json",{ 'alert1' : "Temperature(%s) is
 high, sprinkerlers are turnedON" %temp }, qos=0)
    sleep(
  1)if
  success:
```

```
    print( 'Published Alert1 : ', "Temperature(%s) is high, sprinkerlers are turned ON"
    %temp,"to IBM Watson")print("")
  else:

    print("sprinkler-1 is
    OFF")print("")
  if (Ph > 7.5 or Ph < 5.5):
    success = deviceCli.publishEvent("Alert2", "json",{ 'alert2' : "Fertilizer PH
level(%s) is not safe,use other fertilizer" %Ph } , qos=0)
    sleep(
  1)if
  success:
    print('Published Alert2 : ' , "Fertilizer PH level(%s) is not safe,use other fertilizer"
    %Ph,"to IBM Watson")print("")
    deviceCli.commandCallback = myCommandCallback deviceCli.disconnect(
```