Sprint 1

Team ID : PNT2022TMID34687
Project Name : Smart farmer-IoT based smart farming application

Python Code:

```
#IBM Watson IOT Platform
#pip install wiotp-sdk
import wiotp.sdk.device
import time
import random
import requests, json

ms=0
api_key = "a0db30a689a774b93ffcb58ef2eddfda"

base_url = "http://api.openweathermap.org/data/2.5/weather?"

city_name = 'Mumbai, IN'

complete_url = base_url + "appid=" + api_key + "&q=" + city_name

status='motor off'
myConfig = {
"identity": {
"orgId": "17lsro",
"typeId": "MyDeviceType",
"deviceId":"12345"
},
"auth": {
"token": "GkatKdiUS?UVHKvnAD"
}
}

def myCommandCallback(cmd):
print("Message received from IBM IoT Platform: %s" %
cmd.data['command'])
```

```
m=cmd.data['command']
if(m=="MOTOR ON"):
print("MOTOR IS ON")
global status
status='motor on'
myData={'temperature':temp,
'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':
api_temperature,'api_pressure':api_pressure,'api_humidity':api_humidity,'api
_weather_description':api_weather_description}
client.publishEvent(eventId="status", msgFormat="json", data=myData,
qos=0, onPublish=None)
print("Published data Successfully: %s", myData)

time.sleep(2)

elif(m=="MOTOR OFF"):
print("MOTOR IS OFF")

status='motor off'
myData={'temperature':temp,
'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':
api_temperature,'api_pressure':api_pressure,'api_humidity':api_humidity,'api
_weather_description':api_weather_description}
client.publishEvent(eventId="status", msgFormat="json", data=myData,
qos=0, onPublish=None)
print("Published data Successfully: %s", myData)

time.sleep(2)

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

while True:
response = requests.get(complete_url)
x = response.json()
if x["cod"] != "404":

y = x["main"]

api_temperature = y["temp"]
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api_pressure = y["pressure"]

api_humidity = y["humidity"]

z = x["weather"]

api_weather_description = z[0]["description"]

temp=random.randint(-20,125)
hum=random.randint(0,100)
soilmoisture=random.randint(0,1023)#analog sensor
sm_percentage=(soilmoisture/1023)*100
sm_percentage=int(sm_percentage)
myData={'temperature':temp,
'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':
api_temperature,'api_pressure':api_pressure,'api_humidity':api_humidity,'api
_weather_description':api_weather_description}
client.publishEvent(eventId="status", msgFormat="json", data=myData,
qos=0, onPublish=None)
print("Published data Successfully: %s", myData)
client.commandCallback = myCommandCallback
time.sleep(2)

time.sleep(2)
client.disconnect()
```


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#pip install wiotp-sdk
import wiotp.sdk.device
import time
import random
import requests, json
ms=0
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base_url = "http://api.openweathermap.org/data/2.5/weather?"
city_name = 'Mumbai, IN'
complete_url = base_url + "appid=" + api_key + "&q=" + city_name
status='motor off'
myConfig = {
"identity": {
"orgId": "17lsro",
"typeId": "MyDeviceType",
"deviceId":"12345"
},
"auth": {
"token": "GkatKdiUS?UVHKvnAD"
}
}
Ln: 13 Col: 19
25°C Cloudy
ENG IN
21:30 15-11-2022


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client.publishEvent(eventId="status", msgFormat="json", data=myData,
qos=0, onPublish=None)
print("Published data Successfully: %s", myData)
time.sleep(2)
elif(m=="MOTOR OFF"):
print("MOTOR IS OFF")
status='motor off'
myData={'temperature':temp,
'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':
api_temperature,'api_pressure':api_pressure,'api_humidity':api_humidity,'api
_weather_description':api_weather_description}
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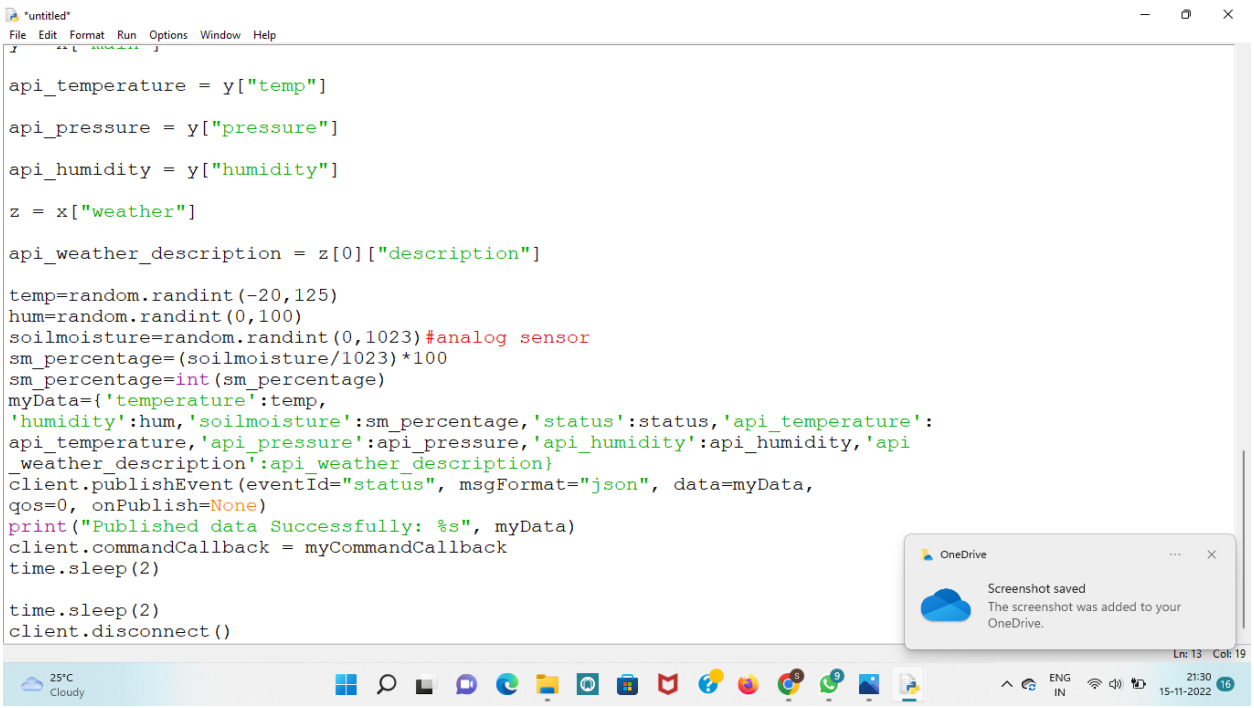
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()
while True:
response = requests.get(complete_url)
x = response.json()
if x["cod"] != "404":
OneDrive
Screenshot saved
The screenshot was added to your OneDrive.
Ln: 13 Col: 19
25°C Cloudy
ENG IN
21:30 15-11-2022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api_temperature = y["temp"]
api_pressure = y["pressure"]
api_humidity = y["humidity"]
z = x["weather"]
api_weather_description = z[0]["description"]
temp=random.randint(-20,125)
hum=random.randint(0,100)
soilmoisture=random.randint(0,1023)#analog sensor
sm_percentage=(soilmoisture/1023)*100
sm_percentage=int(sm_percentage)
myData={'temperature':temp,
'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':
api_temperature,'api_pressure':api_pressure,'api_humidity':api_humidity,'api
_weather_description':api_weather_description}
client.publishEvent(eventId="status", msgFormat="json", data=myData,
qos=0, onPublish=None)
print("Published data Successfully: %s", myData)
client.commandCallback = myCommandCallback
time.sleep(2)
time.sleep(2)
client.disconnect()
OneDrive
Screenshot saved
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ENG IN
21:30 15-11-2022

output:


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Python 3.8.10 (tags/v3.8.10:3d8993a, May 3 2021, 11:48:03) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\B.SOMESHWARAN\Desktop\IBM\Project Development Phase\sprint -1\api python mit app.py
2022-11-13 10:02:58,056 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:l7lsro:MyDeviceType:12345
Published data Successfully: %s {'temperature': 122, 'humidity': 88, 'soilmoisture': 11, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': -17, 'humidity': 4, 'soilmoisture': 97, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 29, 'humidity': 36, 'soilmoisture': 96, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 81, 'humidity': 68, 'soilmoisture': 90, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 10, 'humidity': 4, 'soilmoisture': 3, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 32, 'humidity': 53, 'soilmoisture': 35, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': -17, 'humidity': 99, 'soilmoisture': 81, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 116, 'humidity': 58, 'soilmoisture': 52, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 21, 'humidity': 4, 'soilmoisture': 77, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
= RESTART: C:\Users\B.SOMESHWARAN\Desktop\IBM\Project Development Phase\sprint -1\api python mit app.py
2022-11-13 10:03:19,663 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:l7lsro:MyDeviceType:12345
Published data Successfully: %s {'temperature': 59, 'humidity': 13, 'soilmoisture': 36, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': -20, 'humidity': 40, 'soilmoisture': 54, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': -9, 'humidity': 74, 'soilmoisture': 24, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 27, 'humidity': 96, 'soilmoisture': 17, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 18, 'humidity': 76, 'soilmoisture': 96, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 28, 'humidity': 69, 'soilmoisture': 94, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 6, 'humidity': 72, 'soilmoisture': 98, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}