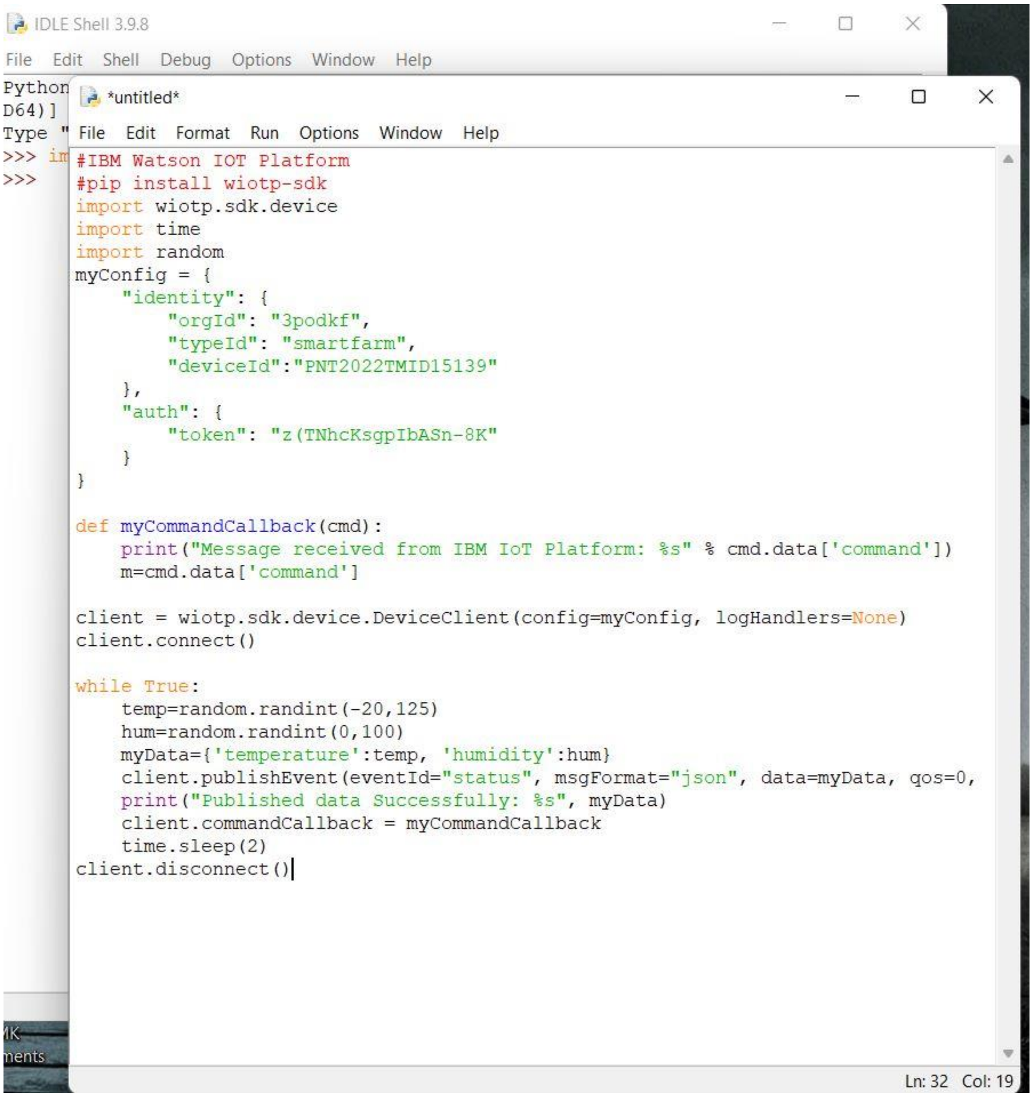
SPRINT-2

Date	13 November 2022
Project Name	Smart Farmer - IoT Enabled Smart Farming Application
TEAM ID	PNT2022TMID15139

PROCEDURE:

- Install IDLE Python 3.9.8
- Open python idle and import wiotp.sdk.device , time , random libraries. Open Command prompt and install the packages for wiotp.sdk
- In myConfig function we have given all the credential details about user device type.
- Device client from wiotp.sdk.device library is passes myConfig function as parameter into config attribute and taken in variable named as client.
- At while loop statement the values of soil, temperature, humidity are taken and these values will be sent through the message to the user.
- Then the user will command the device to make motor on or off through the message.

Interfacing IBM Watson with IDLE Shell


IDLE Shell 3.9.8
File Edit Shell Debug Options Window Help
Python
D64)]
Type "
>>> im
>>>
untitled
File Edit Format Run Options Window Help
Ln: 32 Col: 19

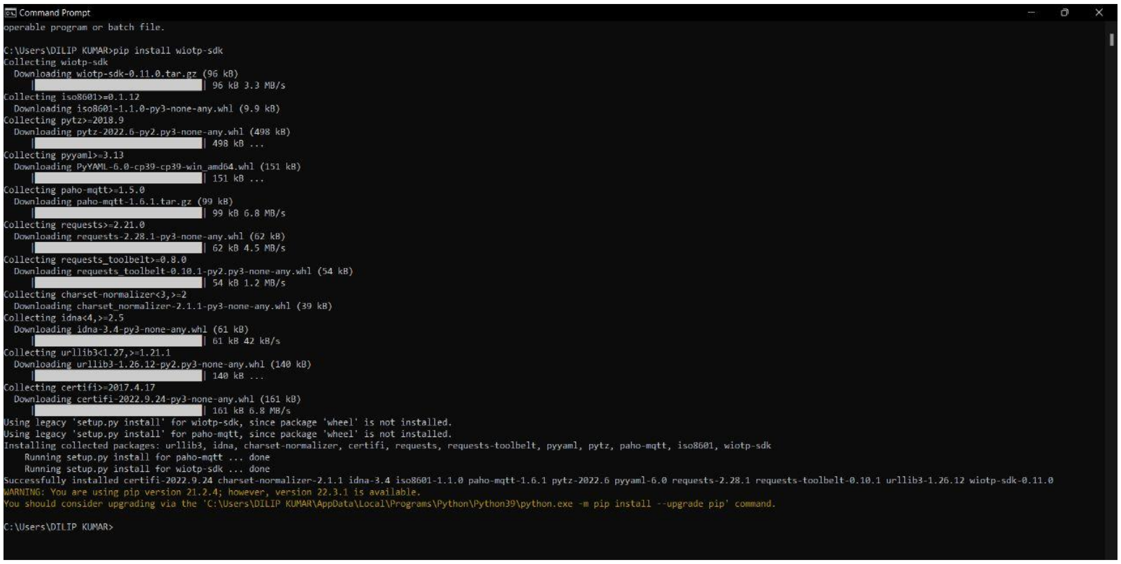
```
#IBM Watson IOT Platform
#pip install wiotp-sdk
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "3podkf",
        "typeId": "smartfarm",
        "deviceId":"PNT2022TMID15139"
    },
    "auth": {
        "token": "z(TNhcKsgpIbASn-8K"
    }
}

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

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

while True:
    temp=random.randint(-20,125)
    hum=random.randint(0,100)
    myData={'temperature':temp, 'humidity':hum}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
    print("Published data Successfully: %s", myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)
client.disconnect()
```

Installing the packages for Watson IoT

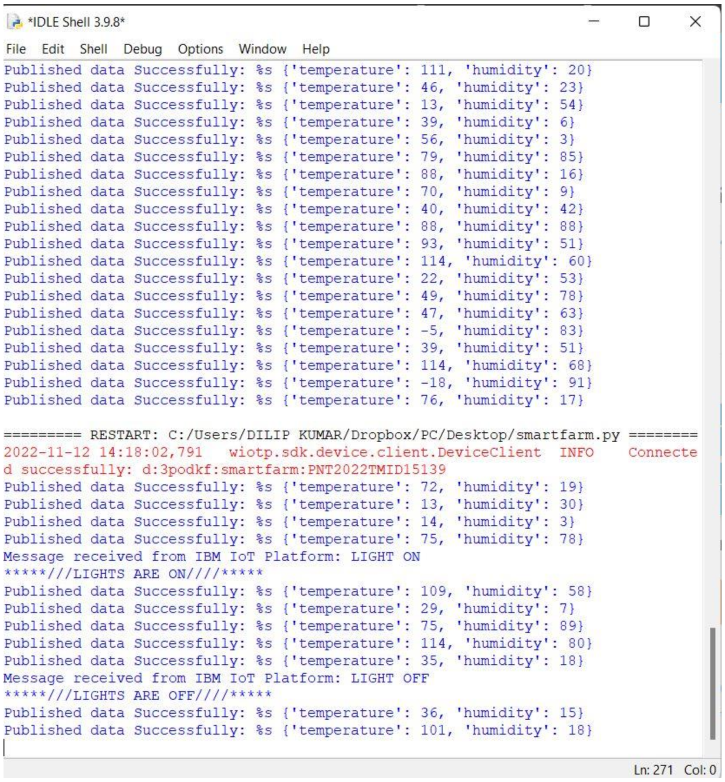


```
operable program or batch file.

C:\Users\DILIP KUMAR>pip install wiotp-sdk
Collecting wiotp-sdk
  Downloading wiotp-sdk-0.11.0.tar.gz (96 kB)
     |████████████████████████████████| 96 kB 3.3 MB/s
Collecting iso8601>=0.1.12
  Downloading iso8601-1.1.0-py3-none-any.whl (9.9 kB)
Collecting pytz>=2018.9
  Downloading pytz-2022.6-py2.py3-none-any.whl (498 kB)
     |████████████████████████████████| 498 kB ...
Collecting pyyaml>=3.13
  Downloading PyYAML-6.0-cp39-cp39-win_amd64.whl (151 kB)
     |████████████████████████████████| 151 kB ...
Collecting paho-mqtt>=1.5.0
  Downloading paho-mqtt-1.6.1.tar.gz (99 kB)
     |████████████████████████████████| 99 kB 6.8 MB/s
Collecting requests>=2.21.0
  Downloading requests-2.28.1-py3-none-any.whl (62 kB)
     |████████████████████████████████| 62 kB 4.5 MB/s
Collecting requests_toolbelt>=0.8.0
  Downloading requests_toolbelt-0.10.1-py2.py3-none-any.whl (54 kB)
     |████████████████████████████████| 54 kB 1.2 MB/s
Collecting charset-normalizer<3,>=2
  Downloading charset_normalizer-2.1.1-py3-none-any.whl (39 kB)
Collecting idna<4,>=2.5
  Downloading idna-3.4-py3-none-any.whl (61 kB)
     |████████████████████████████████| 61 kB 42 kB/s
Collecting urllib3<1.27,>=1.21.1
  Downloading urllib3-1.26.12-py2.py3-none-any.whl (140 kB)
     |████████████████████████████████| 140 kB ...
Collecting certifi>=2017.4.17
  Downloading certifi-2022.9.24-py3-none-any.whl (161 kB)
     |████████████████████████████████| 161 kB 6.8 MB/s
Using legacy 'setup.py install' for wiotp-sdk, since package 'wheel' is not installed.
Using legacy 'setup.py install' for paho-mqtt, since package 'wheel' is not installed.
Installing collected packages: urllib3, idna, charset-normalizer, certifi, requests, requests-toolbelt, pyyaml, pytz, paho-mqtt, iso8601, wiotp-sdk
    Running setup.py install for paho-mqtt ... done
    Running setup.py install for wiotp-sdk ... done
Successfully installed certifi-2022.9.24 charset-normalizer-2.1.1 idna-3.4 iso8601-1.1.0 paho-mqtt-1.6.1 pytz-2022.6 pyyaml-6.0 requests-2.28.1 requests-toolbelt-0.10.1 urllib3-1.26.12 wiotp-sdk-0.11.0
WARNING: You are using pip version 21.2.4; however, version 22.3.1 is available.
You should consider upgrading via the 'C:\Users\DILIP KUMAR\AppData\Local\Programs\Python\Python39\python.exe -m pip install --upgrade pip' command.

C:\Users\DILIP KUMAR>
```

Message received from IoT Platform



```
Published data Successfully: %s {'temperature': 111, 'humidity': 20}
Published data Successfully: %s {'temperature': 46, 'humidity': 23}
Published data Successfully: %s {'temperature': 13, 'humidity': 54}
Published data Successfully: %s {'temperature': 39, 'humidity': 6}
Published data Successfully: %s {'temperature': 56, 'humidity': 3}
Published data Successfully: %s {'temperature': 79, 'humidity': 85}
Published data Successfully: %s {'temperature': 88, 'humidity': 16}
Published data Successfully: %s {'temperature': 70, 'humidity': 9}
Published data Successfully: %s {'temperature': 40, 'humidity': 42}
Published data Successfully: %s {'temperature': 88, 'humidity': 88}
Published data Successfully: %s {'temperature': 93, 'humidity': 51}
Published data Successfully: %s {'temperature': 114, 'humidity': 60}
Published data Successfully: %s {'temperature': 22, 'humidity': 53}
Published data Successfully: %s {'temperature': 49, 'humidity': 78}
Published data Successfully: %s {'temperature': 47, 'humidity': 63}
Published data Successfully: %s {'temperature': -5, 'humidity': 83}
Published data Successfully: %s {'temperature': 39, 'humidity': 51}
Published data Successfully: %s {'temperature': 114, 'humidity': 68}
Published data Successfully: %s {'temperature': -18, 'humidity': 91}
Published data Successfully: %s {'temperature': 76, 'humidity': 17}

========= RESTART: C:/Users/DILIP KUMAR/Dropbox/PC/Desktop/smartfarm.py ========
2022-11-12 14:18:02,791   wiotp.sdk.device.client.DeviceClient  INFO    Connecte
d successfully: d:3podkf:smartfarm:PNT2022TMID15139
Published data Successfully: %s {'temperature': 72, 'humidity': 19}
Published data Successfully: %s {'temperature': 13, 'humidity': 30}
Published data Successfully: %s {'temperature': 14, 'humidity': 3}
Published data Successfully: %s {'temperature': 75, 'humidity': 78}
Message received from IBM IoT Platform: LIGHT ON
*****///LIGHTS ARE ON////*****
Published data Successfully: %s {'temperature': 109, 'humidity': 58}
Published data Successfully: %s {'temperature': 29, 'humidity': 7}
Published data Successfully: %s {'temperature': 75, 'humidity': 89}
Published data Successfully: %s {'temperature': 114, 'humidity': 80}
Published data Successfully: %s {'temperature': 35, 'humidity': 18}
Message received from IBM IoT Platform: LIGHT OFF
*****///LIGHTS ARE OFF////*****
Published data Successfully: %s {'temperature': 36, 'humidity': 15}
Published data Successfully: %s {'temperature': 101, 'humidity': 18}
```