SPRINT - 2

Team ID	PNT2022TMID15028
Project Name	Project : SmartFarmer - IoT Enabled Smart Farming Application

To create the device in an IBM Watson IOT platform and workflowfor IOT scenarios are done by using Node - Red

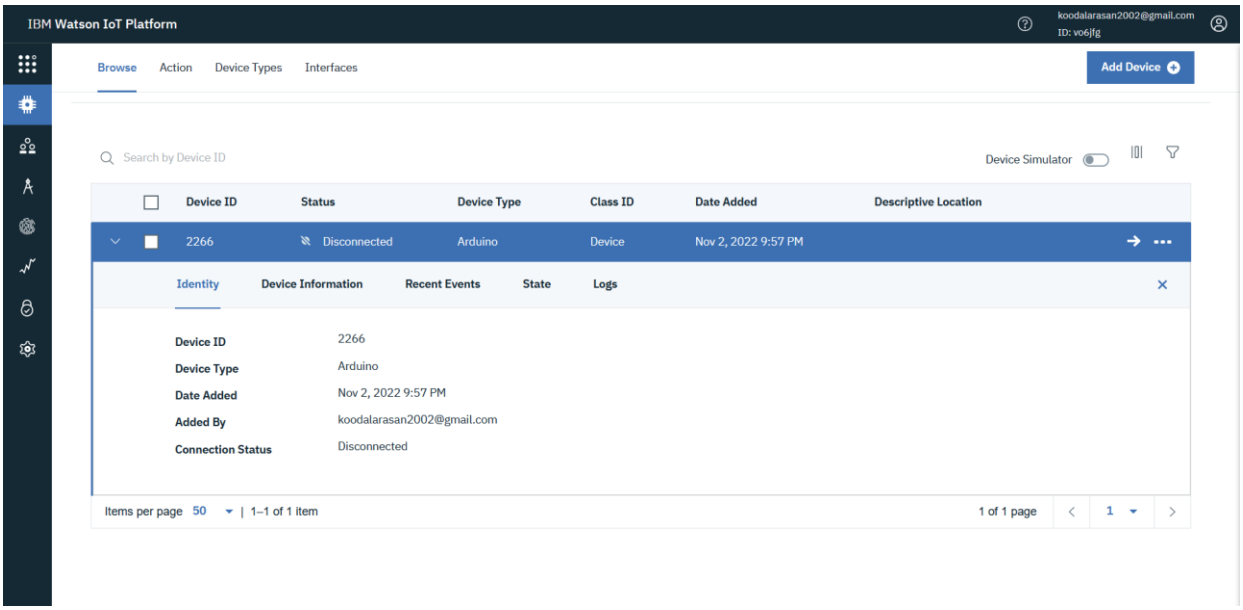
CODE:

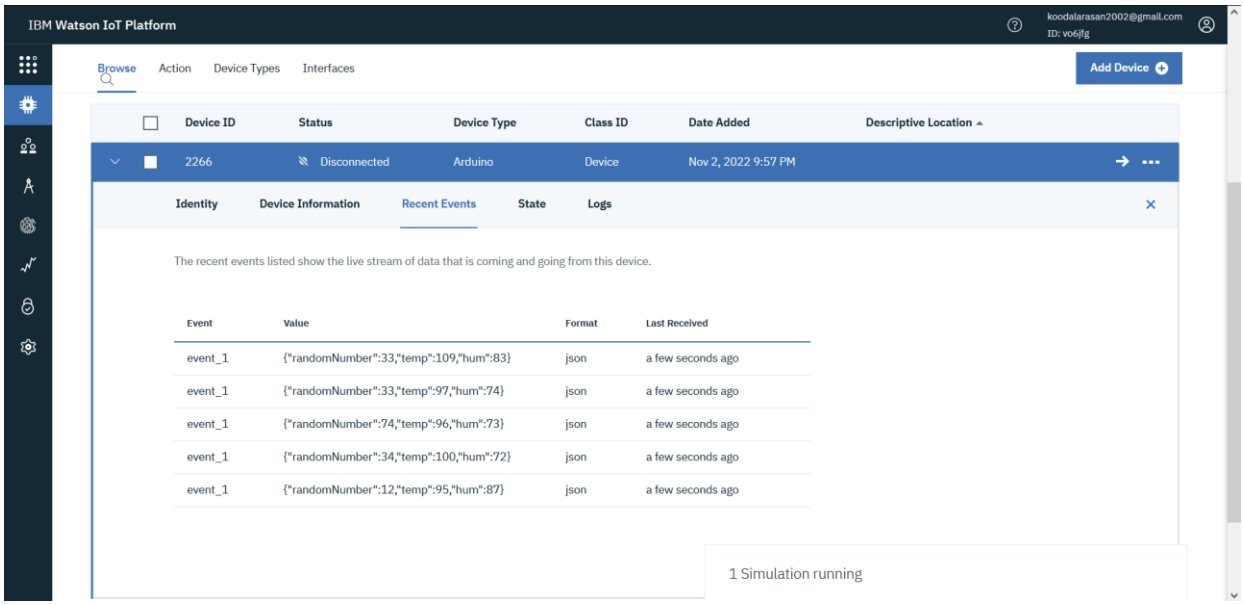
```
import wiotp.sdk.device
import time
import os
import datetime
import random

myConfig = {
   "identity": {
      "orgId" :"vo6jfg",
      "typeId":"Arduino",
      "deviceId":"2266"
      },
      "auth": {
         "token":"12345678"
         }
}
client=wiotp.sdk.device.DeviceClient(config=myConfig,logHandlers=
None)
client.connect()
def myCommandCallback(cmd):
   print("Message received from IBM IoT platform: %s" % cmd.data
['command'])
```

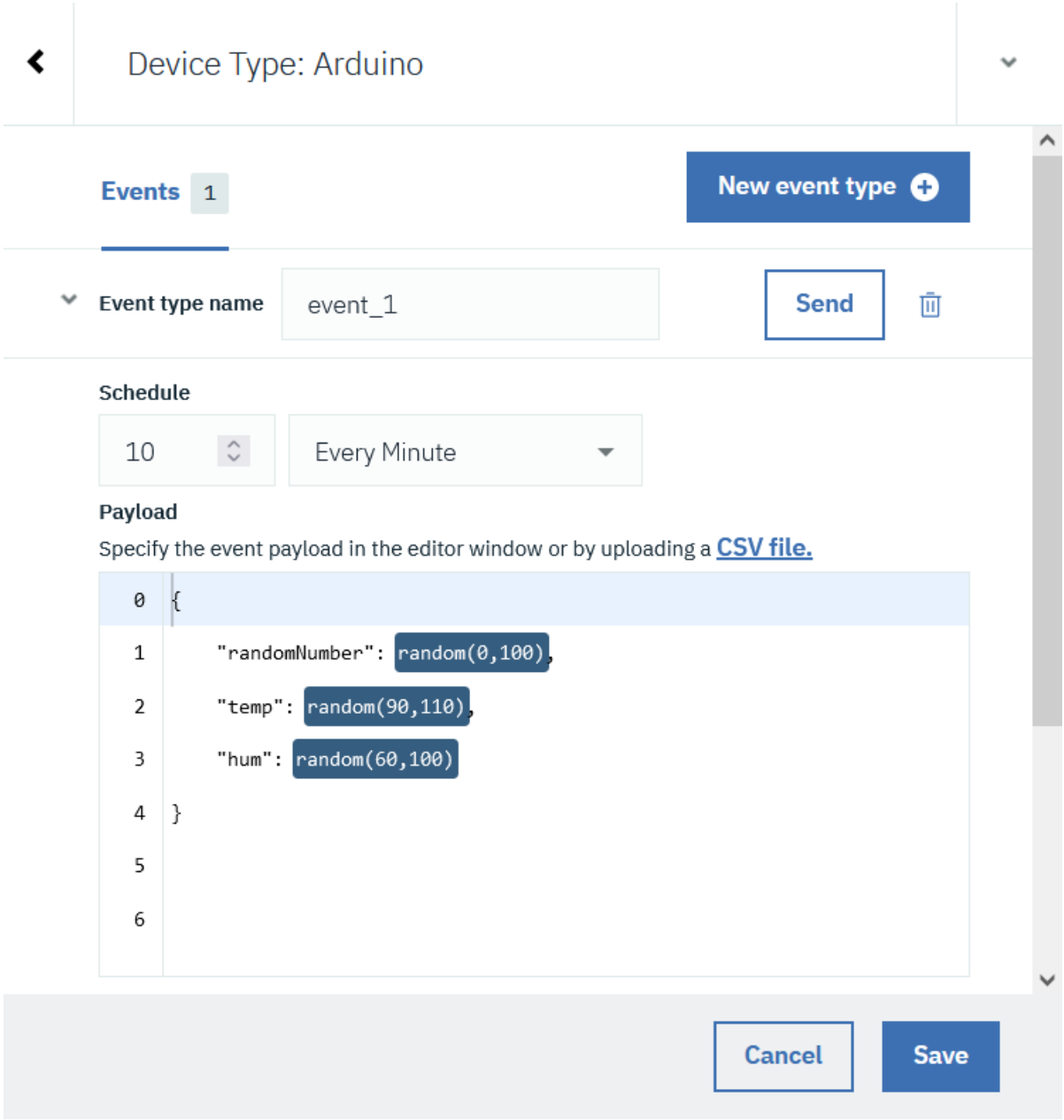
```
    m=cmd.data['command']
    if(m=="motoron"):
        print("motor is switched on")
    elif(m=="motoroff"):
        print("motor is switched off")
    print(" ")
while True:
    soil=random.randint(0,100)
    temp=random.randint(90,125)
    hum=random.randint(0,100)
    myData={'soil_moisture':soil,'temperature':temp,'humidity':hum}
    client.publishEvent(eventId="status",msgFormat="json"
,data=myData ,qos=0,onPublish=None)
    print("published data successfully: %s",myData)
    time.sleep(5)
    client.commandCallback=myCommandCallback
client.disconnect()
```

SCREENSHOTS:

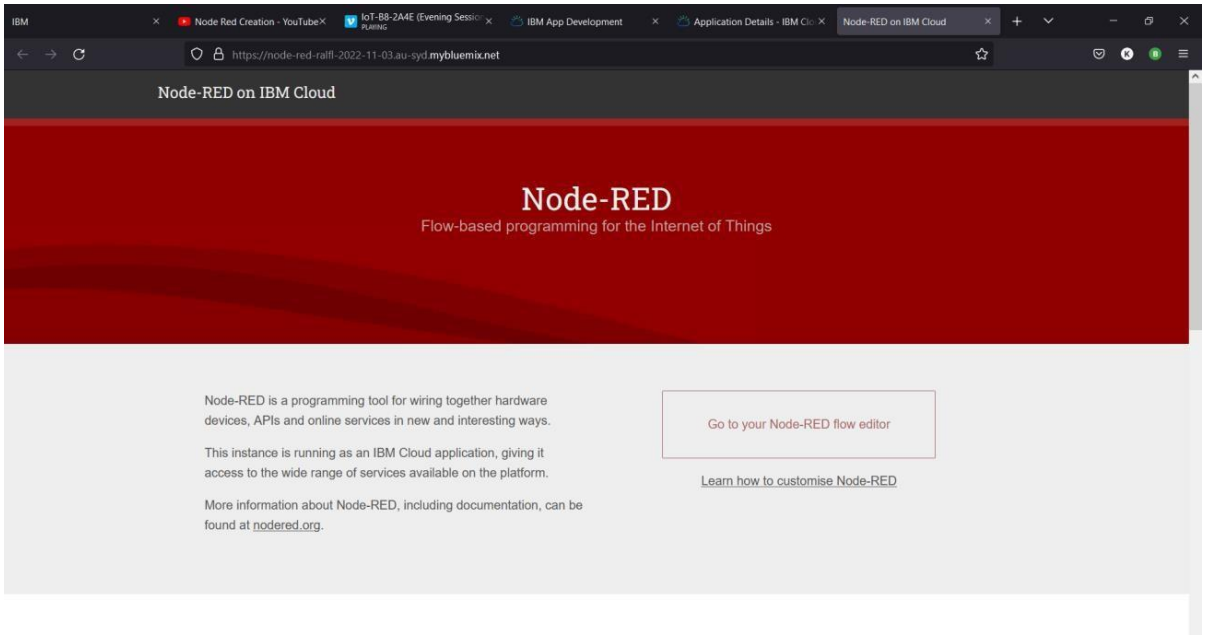
Create the device in an IBM Watson IOT platform

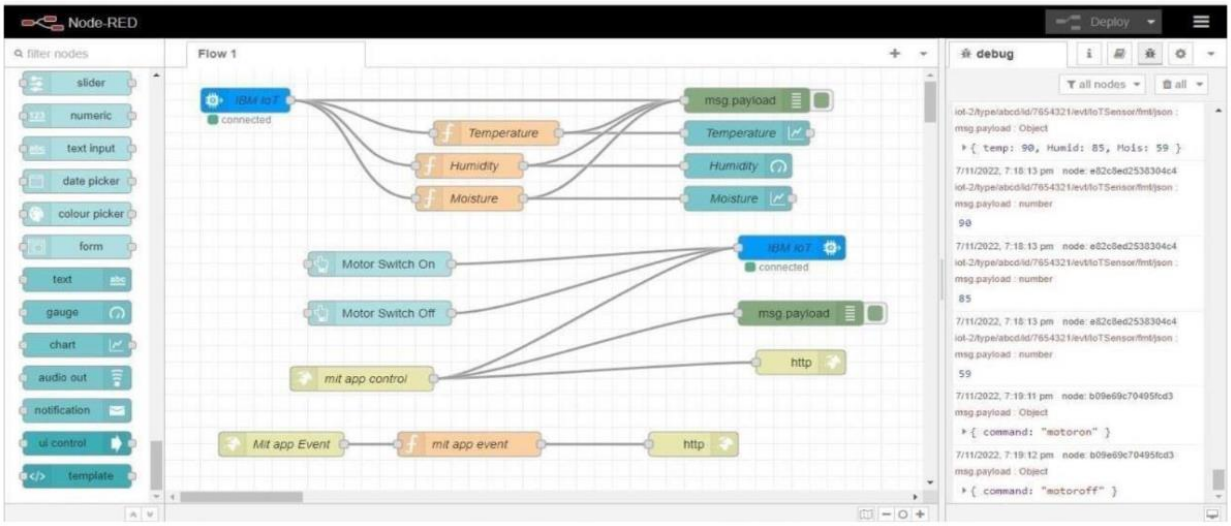


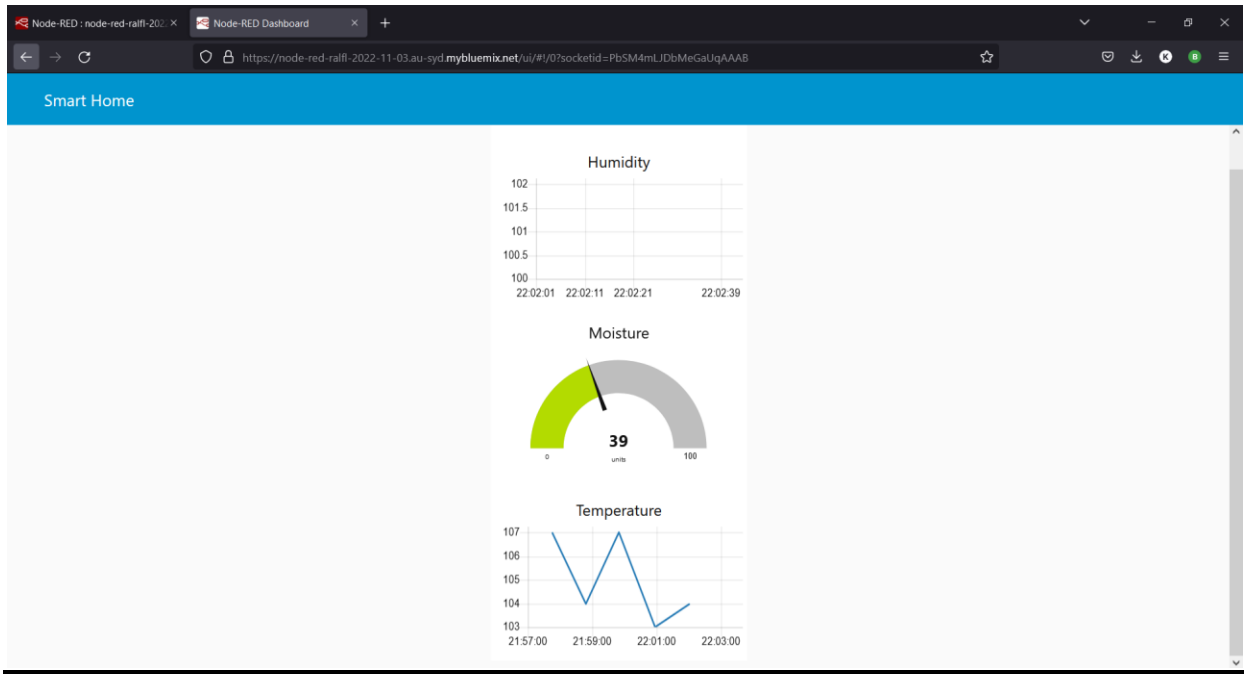

IBM Watson IoT Platform
koodalarasan2002@gmail.com
ID: vo6jfg
Browse
Action
Device Types
Interfaces
Add Device
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
2266
Disconnected
Arduino
Device
Nov 2, 2022 9:57 PM
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
event_1
{"randomNumber":33,"temp":109,"hum":83}
json
a few seconds ago
event_1
{"randomNumber":33,"temp":97,"hum":74}
json
a few seconds ago
event_1
{"randomNumber":74,"temp":96,"hum":73}
json
a few seconds ago
event_1
{"randomNumber":34,"temp":100,"hum":72}
json
a few seconds ago
event_1
{"randomNumber":12,"temp":95,"hum":87}
json
a few seconds ago
1 Simulation running


Device Type: Arduino
Events 1
New event type
Event type name
event_1
Send
Schedule
10
Every Minute
Payload
Specify the event payload in the editor window or by uploading a CSV file.
{
"randomNumber": random(0,100),
"temp": random(90,110),
"hum": random(60,100)
}
Cancel
Save

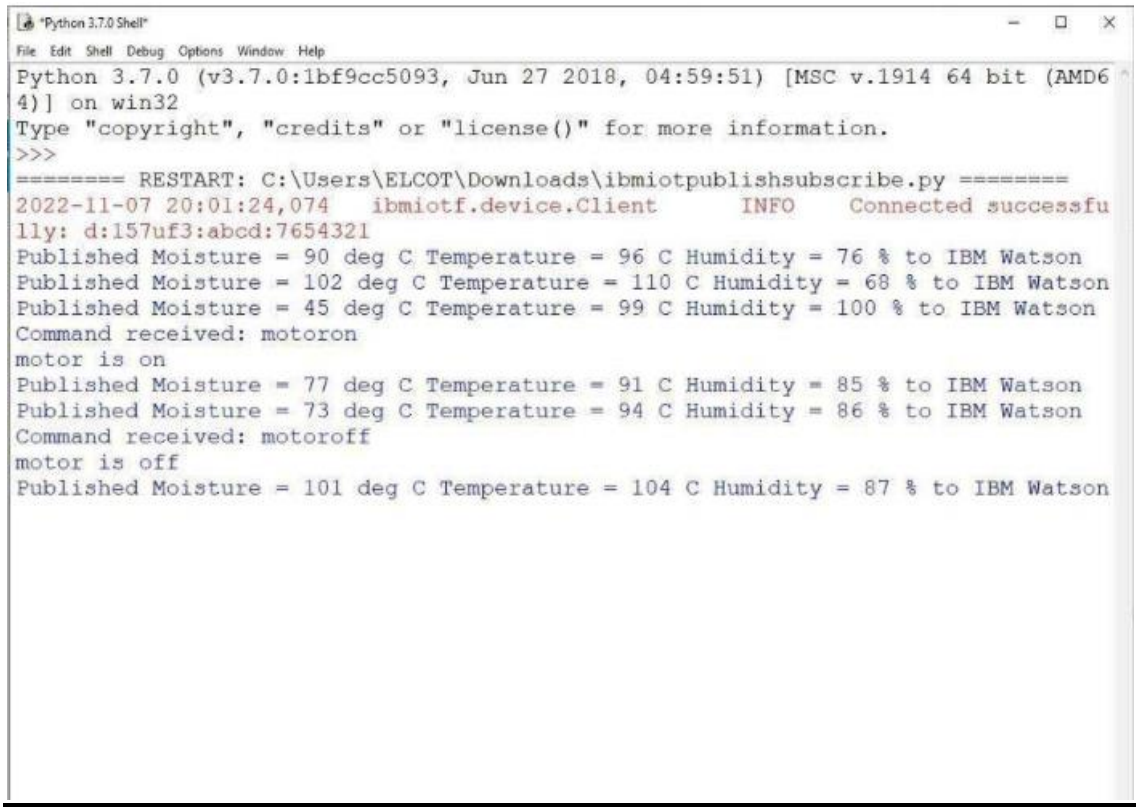
Workflow for IOT scenarios are done by using Node - Red






Node-RED : node-red-ralfl-202
Node-RED Dashboard
https://node-red-ralfl-2022-11-03.au-syd.mybluemix.net/ui/#!/0?socketid=PbSM4mLJDbMeGaUqAAAB
Smart Home
Humidity
102
101.5
101
100.5
100
22:02:01
22:02:11
22:02:21
22:02:39
Moisture
39
units
0
100
Temperature
107
106
105
104
103
21:57:00
21:59:00
22:01:00
22:03:00

OUTPUT:


Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py ========
2022-11-07 20:01:24,074 ibmiotf.device.Client INFO Connected successfully: d:157uf3:abcd:7654321
Published Moisture = 90 deg C Temperature = 96 C Humidity = 76 % to IBM Watson
Published Moisture = 102 deg C Temperature = 110 C Humidity = 68 % to IBM Watson
Published Moisture = 45 deg C Temperature = 99 C Humidity = 100 % to IBM Watson
Command received: motoron
motor is on
Published Moisture = 77 deg C Temperature = 91 C Humidity = 85 % to IBM Watson
Published Moisture = 73 deg C Temperature = 94 C Humidity = 86 % to IBM Watson
Command received: motoroff
motor is off
Published Moisture = 101 deg C Temperature = 104 C Humidity = 87 % to IBM Watson