Project Development-Delivery of Sprint-3

Project Title	SmartFarmer – IoT Enabled Smart Farming Application
Team ID	PNT2022TMID26132
Date	10 November 2022

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	**16**	**6 Days**	**28 Oct 2022**	**31 Oct 2022**	**15**	**31 Oct 2022**
Sprint-2	**16**	**8 Days**	**31 Oct 2022**	**07 Nov 2022**	**15**	**08 Nov 2022**
Sprint-3	**16**	**6 Days**	**10 Nov 2022**	**14 Nov 2022**	**15**	**15 Nov 2022**
Sprint-4	**8**	**5 Days**	**15 Nov 2022**	**17 Nov 2022**		**17 Nov 2022 – 18 Nov 2022**

Content:

S.NO	Tools & Technology Used
1	Python 3.7.0
2	IBM Cloud
3	Node-Red

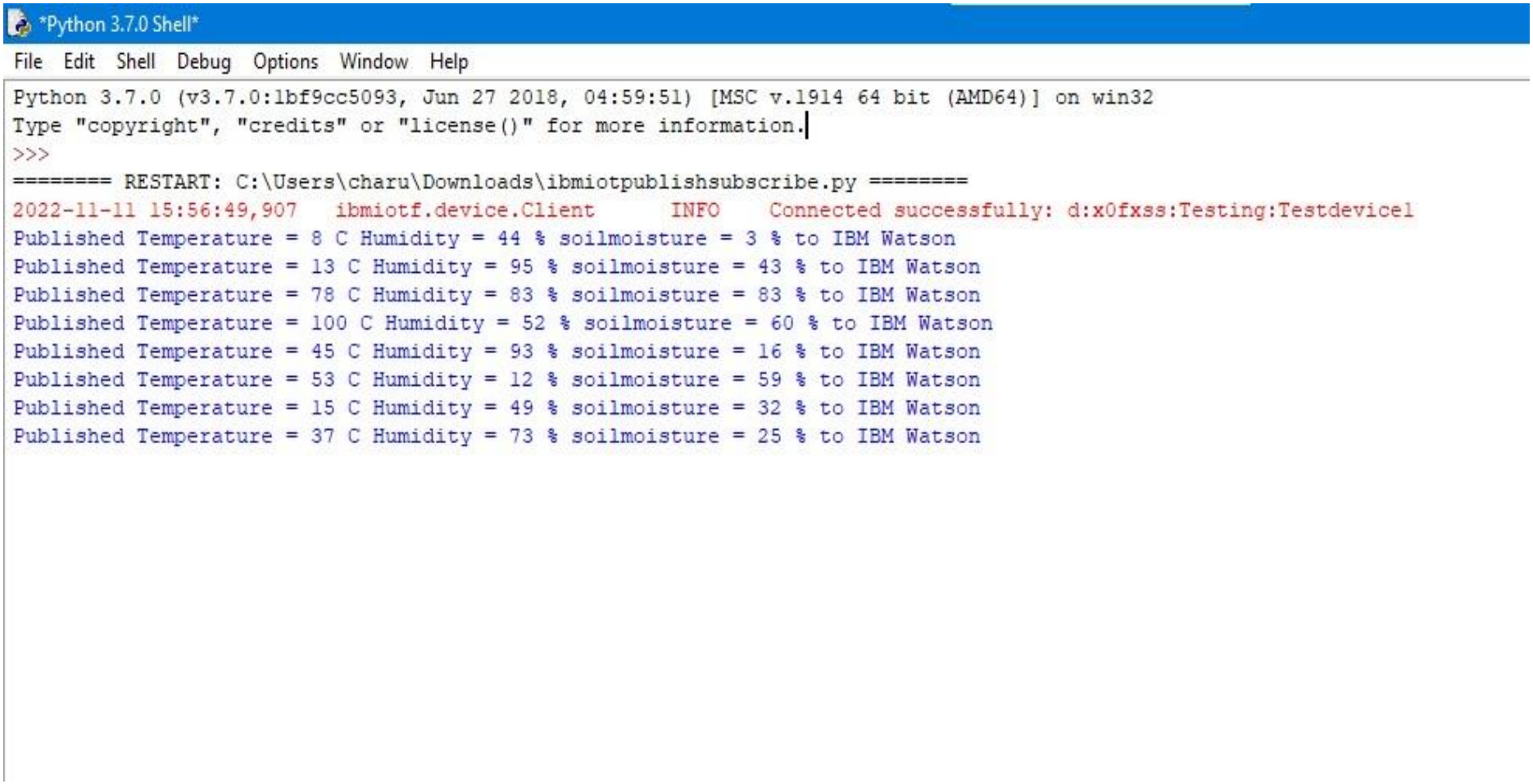
Python Code:

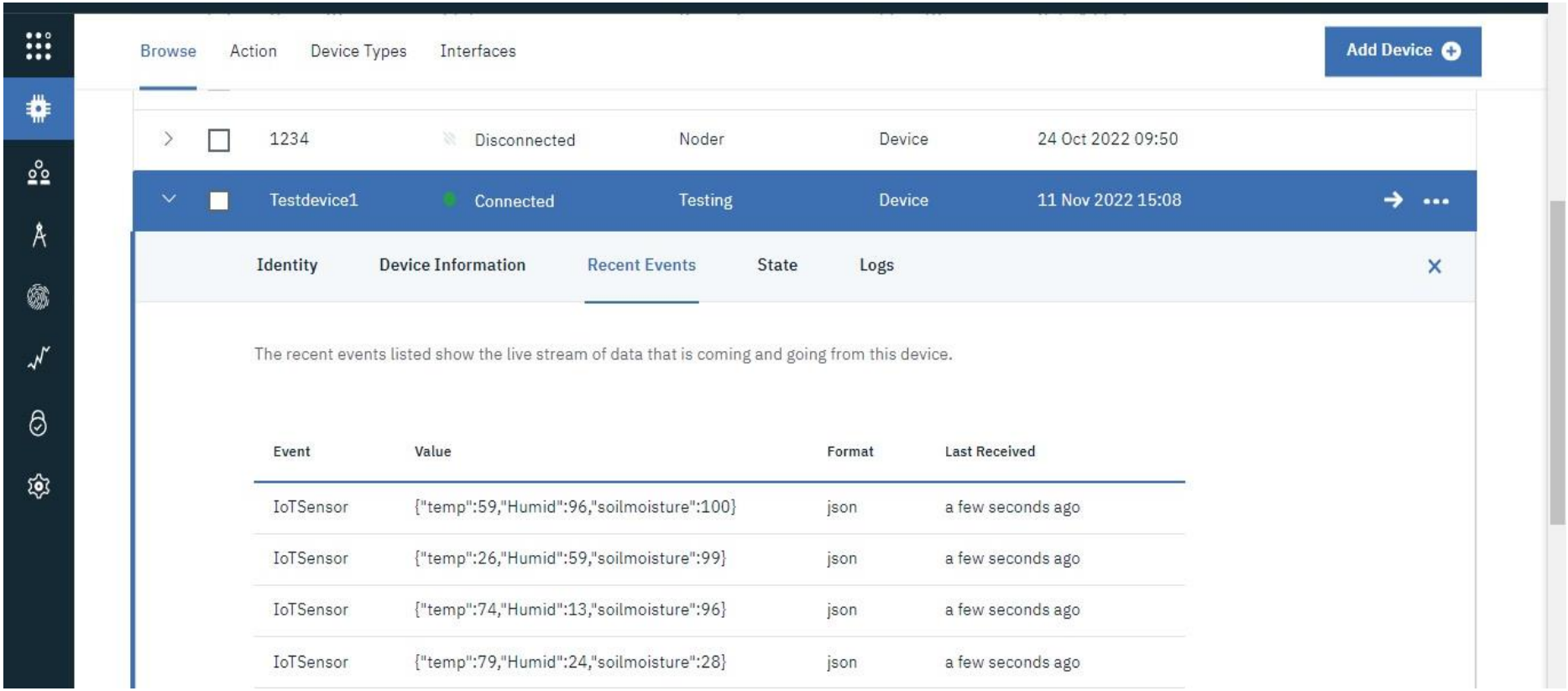
```
import time
import sys
importibmiotf.application
import ibmiotf.device
import random


#Provide your IBM Watson Device Credentials
organization = "mipzq4" #replace the ORG ID
deviceType = "Testing"#replace the Device type
wi deviceId = "Testdevice1"#replace Device ID
authMethod = "token" authToken = "1234567890"
#Replace the authtoken
# Initialize GPIO


#Receives Command from Node-red
def myCommandCallback(cmd):
    print ("Command received: %s" %cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("motor is on")
    elif status == "motoroff" :
    print ("motor is off")
    elif status == "motor30" :
        print ("motor is on for 30 minutes")
 try:
      deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod, "auth-
token": authToken}     deviceCli = ibmiotf.device.Client(deviceOptions)
```

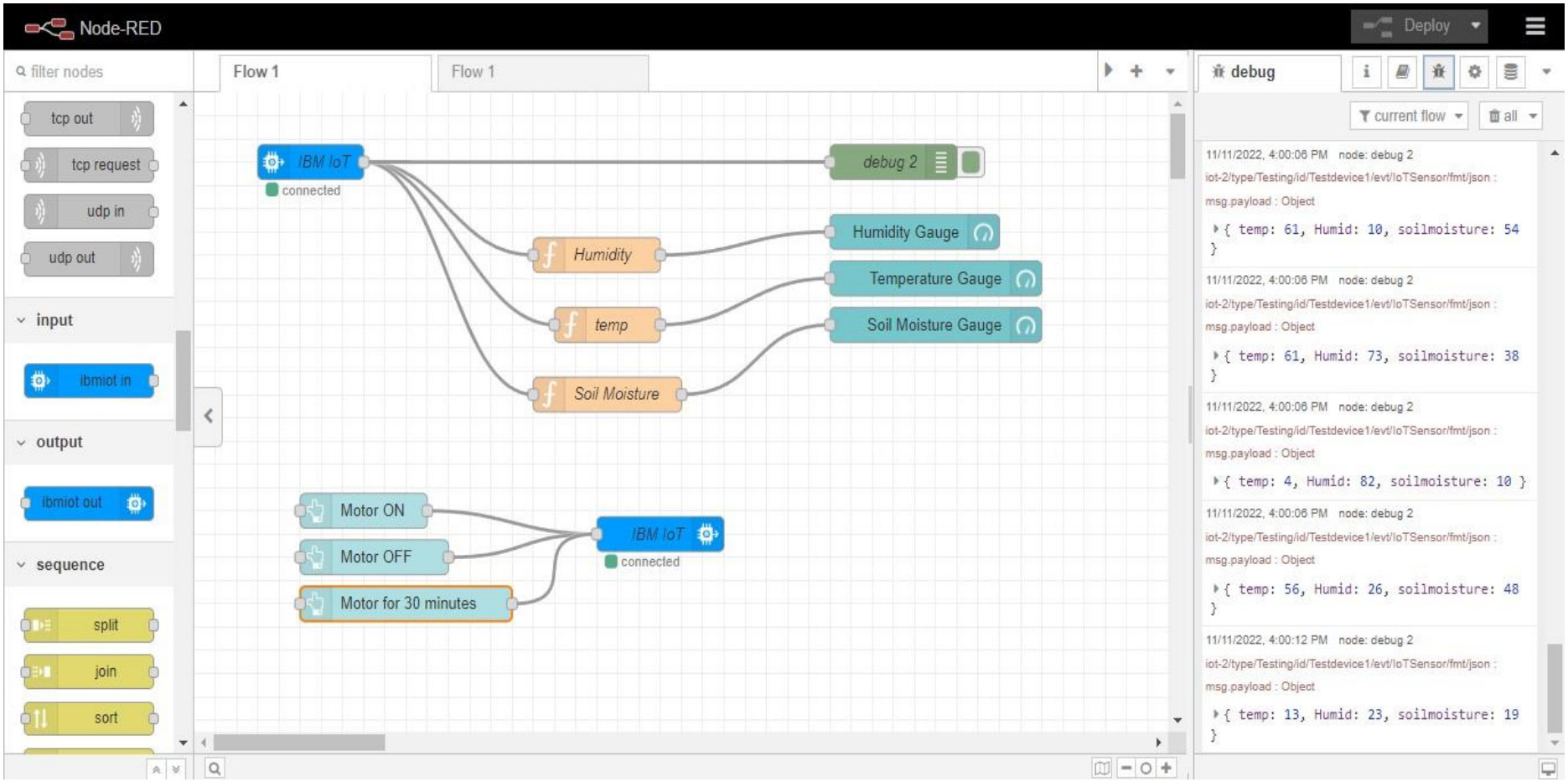
```
except Exception as e:
    print("Caught exception connecting device: %s" % str(e))
sys.exit()


# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type "greeting" 10 times
deviceCli.connect()

whileTrue:
        #Get Sensor Data from DHT11


        temp=random.randint(0,100)
        Humid=random.randint(0,100)
        soilmoisture=random.randint(0,100)

        data = { 'temp' : temp, 'Humid': Humid, 'soilmoisture': soilmoisture}
        #print data
      def  myOnPublishCallback():
           print ("Published Temperature = %s C" % temp, "Humidity = %s %%" % Humid, "soilmoisture = %s %%"
%soilmoisture, "to IBM Watson")

       success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0, on_publish=myOnPublishCallback)
       if not success:
           print("Not connected to IoTF")
       time.sleep(5)

       deviceCli.commandCallback = myCommandCallback
```

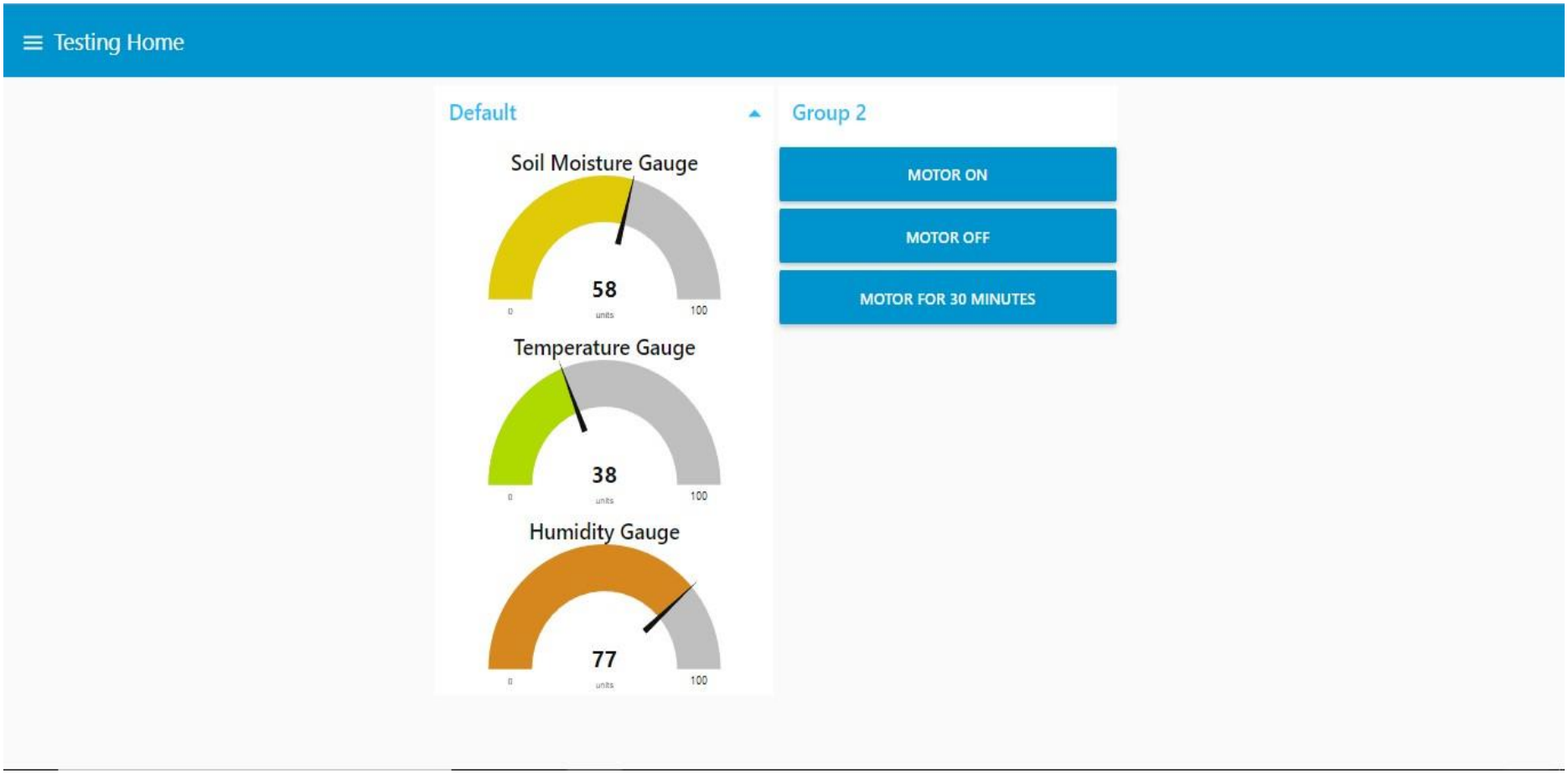
```
# Disconnect the device and application from the cloud
deviceCli.disconnect()
```

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\charu\Downloads\ibmiotpublishsubscribe.py ========
2022-11-11 15:56:49,907 ibmiotf.device.Client INFO Connected successfully: d:x0fxss:Testing:Testdevice1
Published Temperature = 8 C Humidity = 44 % soilmoisture = 3 % to IBM Watson
Published Temperature = 13 C Humidity = 95 % soilmoisture = 43 % to IBM Watson
Published Temperature = 78 C Humidity = 83 % soilmoisture = 83 % to IBM Watson
Published Temperature = 100 C Humidity = 52 % soilmoisture = 60 % to IBM Watson
Published Temperature = 45 C Humidity = 93 % soilmoisture = 16 % to IBM Watson
Published Temperature = 53 C Humidity = 12 % soilmoisture = 59 % to IBM Watson
Published Temperature = 15 C Humidity = 49 % soilmoisture = 32 % to IBM Watson
Published Temperature = 37 C Humidity = 73 % soilmoisture = 25 % to IBM Watson


Browse
Action
Device Types
Interfaces
Add Device
1234
Disconnected
Noder
Device
24 Oct 2022 09:50
Testdevice1
Connected
Testing
Device
11 Nov 2022 15:08
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
IoTSensor
{"temp":59,"Humid":96,"soilmoisture":100}
json
a few seconds ago
IoTSensor
{"temp":26,"Humid":59,"soilmoisture":99}
json
a few seconds ago
IoTSensor
{"temp":74,"Humid":13,"soilmoisture":96}
json
a few seconds ago
IoTSensor
{"temp":79,"Humid":24,"soilmoisture":28}
json
a few seconds ago


Node-RED
Deploy
filter nodes
Flow 1
Flow 1
debug
current flow
all
tcp out
tcp request
udp in
udp out
input
ibmiot in
output
ibmiot out
sequence
split
join
sort
IBM IoT
connected
debug 2
Humidity
Humidity Gauge
temp
Temperature Gauge
Soil Moisture
Soil Moisture Gauge
Motor ON
Motor OFF
Motor for 30 minutes
IBM IoT
connected
11/11/2022, 4:00:06 PM node: debug 2
iot-2/type/Testing/id/Testdevice1/evt/IoTSensor/fmt/json :
msg.payload : Object
{ temp: 61, Humid: 10, soilmoisture: 54 }
11/11/2022, 4:00:06 PM node: debug 2
iot-2/type/Testing/id/Testdevice1/evt/IoTSensor/fmt/json :
msg.payload : Object
{ temp: 61, Humid: 73, soilmoisture: 38 }
11/11/2022, 4:00:06 PM node: debug 2
iot-2/type/Testing/id/Testdevice1/evt/IoTSensor/fmt/json :
msg.payload : Object
{ temp: 4, Humid: 82, soilmoisture: 10 }
11/11/2022, 4:00:06 PM node: debug 2
iot-2/type/Testing/id/Testdevice1/evt/IoTSensor/fmt/json :
msg.payload : Object
{ temp: 56, Humid: 26, soilmoisture: 48 }
11/11/2022, 4:00:12 PM node: debug 2
iot-2/type/Testing/id/Testdevice1/evt/IoTSensor/fmt/json :
msg.payload : Object
{ temp: 13, Humid: 23, soilmoisture: 19 }

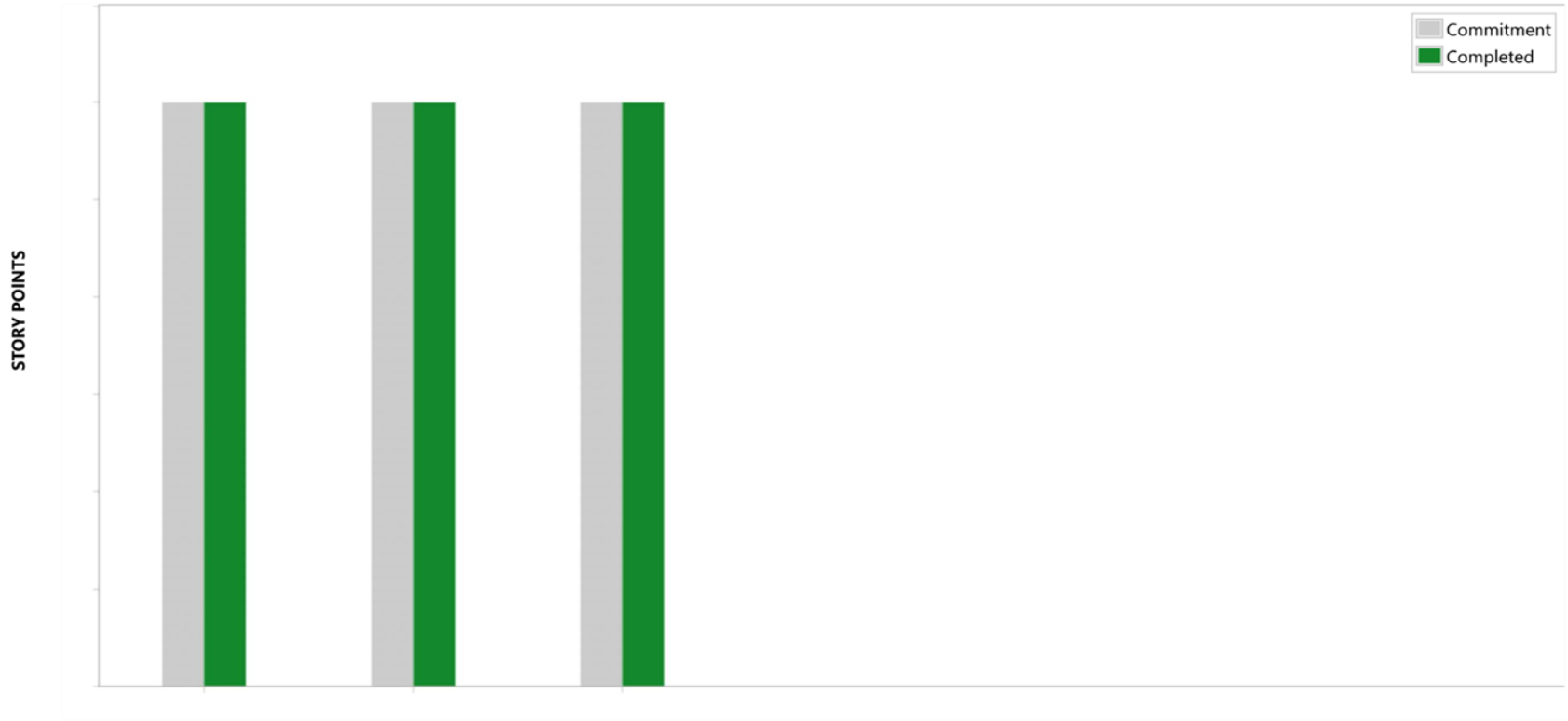

Testing Home
Default
Soil Moisture Gauge
58
0
units
100
Temperature Gauge
38
0
units
100
Humidity Gauge
77
0
units
100
Group 2
MOTOR ON
MOTOR OFF
MOTOR FOR 30 MINUTES

```
Published Temperature = 25 C Humidity = 32 % soilmoisture = 86 % to IBM Watson
Published Temperature = 27 C Humidity = 16 % soilmoisture = 26 % to IBM Watson
Command received: motoron
motor is on
Command received: motoron
motor is on
Published Temperature = 10 C Humidity = 69 % soilmoisture = 82 % to IBM Watson
Published Temperature = 75 C Humidity = 37 % soilmoisture = 2 % to IBM Watson
Published Temperature = 63 C Humidity = 59 % soilmoisture = 11 % to IBM Watson
Published Temperature = 31 C Humidity = 20 % soilmoisture = 43 % to IBM Watson
Published Temperature = 47 C Humidity = 38 % soilmoisture = 95 % to IBM Watson
Published Temperature = 62 C Humidity = 5 % soilmoisture = 93 % to IBM Watson
Command received: motoroff
motor is off
Command received: motor30
motor is on for 30 minutes
Published Temperature = 19 C Humidity = 99 % soilmoisture = 96 % to IBM Watson
Published Temperature = 6 C Humidity = 56 % soilmoisture = 85 % to IBM Watson
```

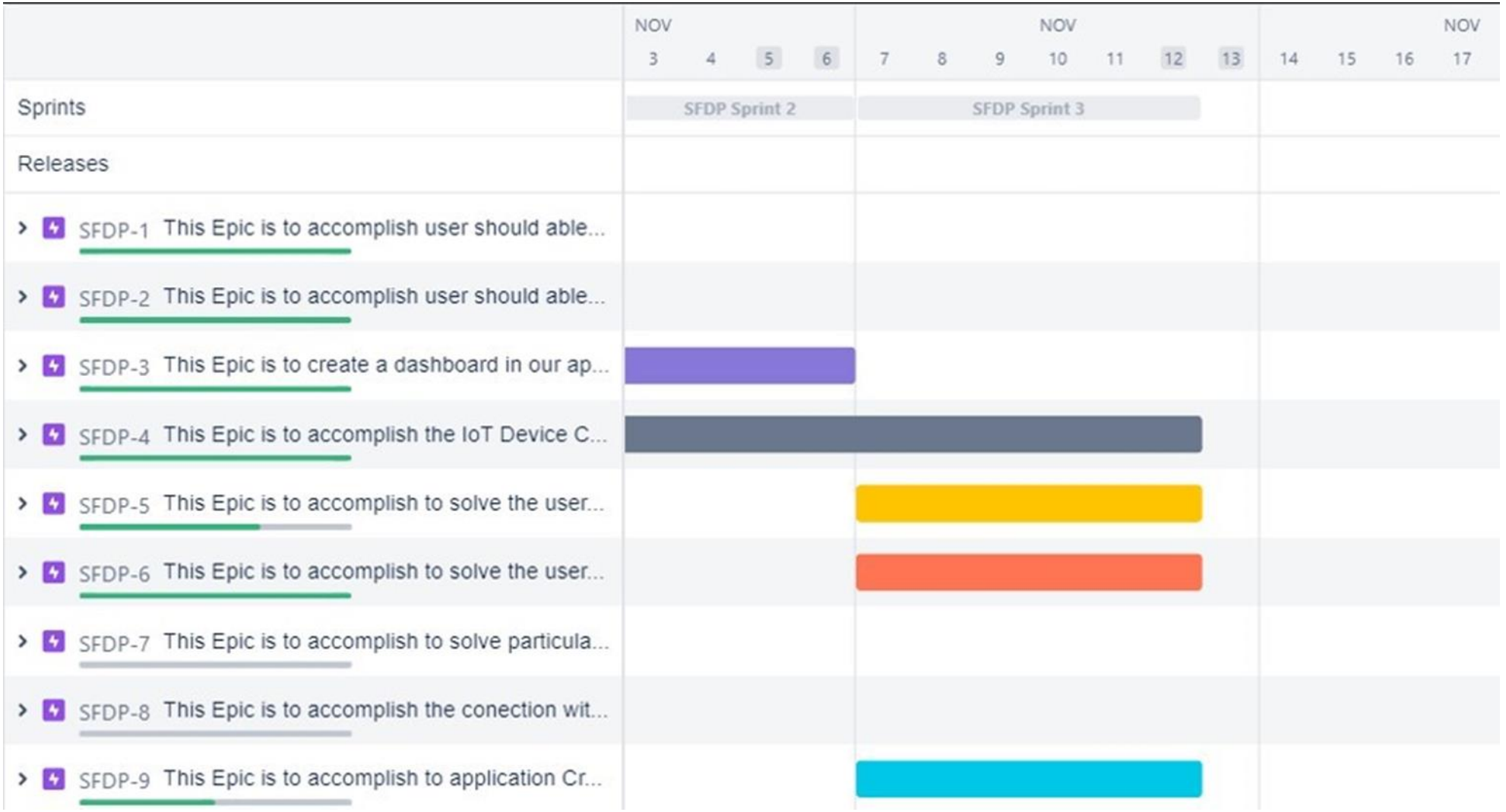
Your work Projects Filters Dashboards People Apps

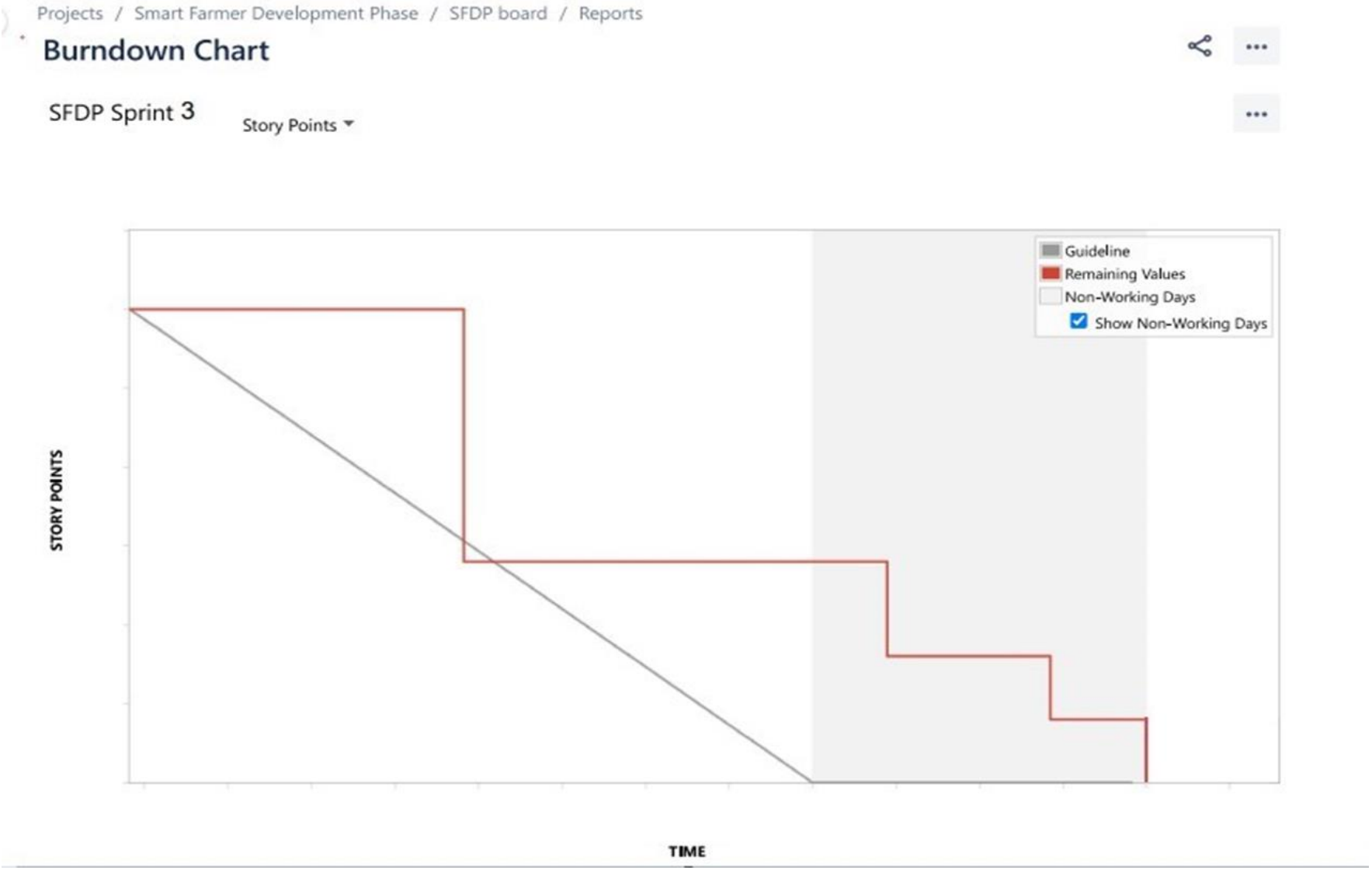
Projects / Smart Farmer Development Phase / SFDP board / Reports

Velocity Chart



Sprint	Commitment	Completed
SFDP Sprint 1	15	15
SFDP Sprint 2	15	15
SFDP Sprint 3	15	15


NOV
3
4
5
6
7
8
9
10
11
12
13
NOV
14
15
16
17
NOV
Sprints
SFDP Sprint 2
SFDP Sprint 3
Releases
SFDP-1 This Epic is to accomplish user should able...
SFDP-2 This Epic is to accomplish user should able...
SFDP-3 This Epic is to create a dashboard in our ap...
SFDP-4 This Epic is to accomplish the IoT Device C...
SFDP-5 This Epic is to accomplish to solve the user...
SFDP-6 This Epic is to accomplish to solve the user...
SFDP-7 This Epic is to accomplish to solve particula...
SFDP-8 This Epic is to accomplish the conection wit...
SFDP-9 This Epic is to accomplish to application Cr...


Projects / Smart Farmer Development Phase / SFDP board / Reports
Burndown Chart
SFDP Sprint 3
Story Points
Guideline
Remaining Values
Non-Working Days
Show Non-Working Days
STORY POINTS
TIME