Sprint-4

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Project Name	Smart Farmer - IoT Enabled Smart Farming Application

Step-1

USN-10

Writing Python Script to connect with hardware and to access cloud and to display comments like light on/off and motor on/off in Python IDE.

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


#Provide your IBM Watson Device Credentials
organization = "o7kvsp"
deviceType = "Aurdino"
deviceId = "123"
authMethod = "token"
authToken = "87654321"

# Initialize GPIO


def myCommandCallback(cmd):
```

```
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="Lighton":
        print ("Light is on")
    elif status=="Motoron":
        print ("Motor is on")
    elif status=="Lightoff":
        print ("Light is off")
    else:
        print("Motor is off")

    #print(cmd)




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()

while True:
        #Get Sensor Data from DHT11

        temp=random.randint(0,100)
```

```
        hum=random.randint(0,100)
        moisture=random.randint(0,100)
        distance=random.randint(0,500)

        data = { 'temp' : temp, 'hum': hum, 'moisture' : moisture, 'distance': distance}
        #print data
        def myOnPublishCallback():
            print ("Published Temperature = %s C" % temp, "Humidity = %s %%" % hum,
"Moisture = %s %%" % moisture,"Distance = %s %%" % distance, "to IBM Watson")

        success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)
        if not success:
            print("Not connected to IoTF")
        time.sleep(50)

        deviceCli.commandCallback = myCommandCallback

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

Step-2

USN-11

As sir told we didn’t used simulator like wokwi instead that we used python script.

Step-3

USN-12

In python script I can see whatever change I have made in my application if I on/off motor or light I can see commands like motor on, motor off, Light on, light off commands in my Python output console.


Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
led is off
Command received: Lightoff
led is off
Command received: Lightoff
led is off
Command received: Lightoff
led is off
Command received: Lightoff
led is off
Published Temperature = 98 C Humidity = 39 % Moisture = 73 % Distance = 379 % to IBM Watson
Command received: Motoron
Motor is on
Command received: Motoron
Motor is on
Command received: Motoroff
Motor is off
Command received: Lighton
led is on
Command received: Lightoff
led is off
Published Temperature = 87 C Humidity = 33 % Moisture = 91 % Distance = 476 % to IBM Watson
Published Temperature = 13 C Humidity = 75 % Moisture = 1 % Distance = 220 % to IBM Watson
Published Temperature = 92 C Humidity = 90 % Moisture = 57 % Distance = 472 % to IBM Watson
Command received: Motoron
Motor is on
Command received: Motoroff
Motor is off
Published Temperature = 75 C Humidity = 93 % Moisture = 59 % Distance = 440 % to IBM Watson
Published Temperature = 50 C Humidity = 58 % Moisture = 68 % Distance = 146 % to IBM Watson
Published Temperature = 87 C Humidity = 66 % Moisture = 54 % Distance = 267 % to IBM Watson
Published Temperature = 31 C Humidity = 78 % Moisture = 66 % Distance = 466 % to IBM Watson
Published Temperature = 82 C Humidity = 14 % Moisture = 96 % Distance = 153 % to IBM Watson
Published Temperature = 99 C Humidity = 14 % Moisture = 35 % Distance = 284 % to IBM Watson
Published Temperature = 25 C Humidity = 28 % Moisture = 29 % Distance = 38 % to IBM Watson
Published Temperature = 91 C Humidity = 53 % Moisture = 43 % Distance = 224 % to IBM Watson
Published Temperature = 25 C Humidity = 16 % Moisture = 42 % Distance = 398 % to IBM Watson
Published Temperature = 70 C Humidity = 12 % Moisture = 99 % Distance = 108 % to IBM Watson
Published Temperature = 0 C Humidity = 1 % Moisture = 8 % Distance = 297 % to IBM Watson
Published Temperature = 78 C Humidity = 4 % Moisture = 56 % Distance = 313 % to IBM Watson
Published Temperature = 17 C Humidity = 66 % Moisture = 22 % Distance = 280 % to IBM Watson
Published Temperature = 42 C Humidity = 84 % Moisture = 52 % Distance = 25 % to IBM Watson
Ln: 5 Col: 0
Type here to search
Rain to stop
ENG
13:47
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