Project Development

Delivery Of Sprint-4

Date	13 Nov. 22
Team Id	PNT2022TMID51073
Project Name	SmartFarmer - IoT Enabled Smart Farming Application

PROGRAM

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



#Provide your IBM Watson Device Credentials
organization = "hzu4n4"
deviceType = "divya"
deviceId = "2411"
authMethod = "token"
authToken = " Z+d*VMnj0BTlJp*Tv"
global y
# Initialize GPIO


def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
```

```
    if status=="motoron":
        print ("motor is on")
    if status=="motoroff" :
        print ("motor is off")
    if status=="manual" :
        print ("Motor Control is in Manual Mode")
    if status=="automatic" :
        print ("Motor control is in Automatic Mode")
        if soilmoisture > 600:
            print ("motor is on")

    #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)
        Humid=random.randint(0,100)
        soilmoisture=random.randint(0,1023)
        Phlevel=random.randint(0,14)
        y=soilmoisture

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

        success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0, on_publish=myOnPublishCallback)
        if not success:
            print("Not connected to IoTF")
        time.sleep(10)

        deviceCli.commandCallback = myCommandCallback

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

Vabi.py - C:/Users/ELCOT/AppData/Local/Programs/Python/Python37/Vabi.py (3.7.4)

File Edit Format Run Options Window Help

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


#Provide your IBM Watson Device Credentials
organization = "hzu4n4"
deviceType = "abi"
deviceId = "2790"
authMethod = "token"
authToken = "ObNY5tR3)*hIq473Y0"
global y
# Initialize GPIO

def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("motor is on")
    if status=="motoroff" :
        print ("motor is off")
    if status=="manual" :
        print ("Motor Control is in Manual Mode")
    if status=="automatic" :
        print ("Motor control is in Automatic Mode")
        if soilmoisture > 600:
            print ("motor is on")

    #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:
```

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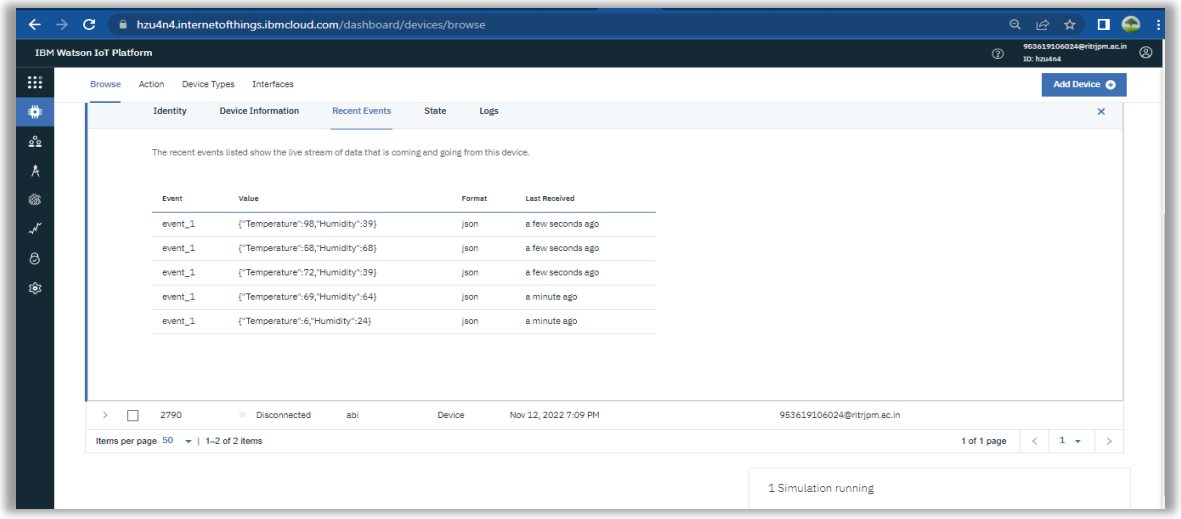
OUTPUT

Python 3.7.4 Shell

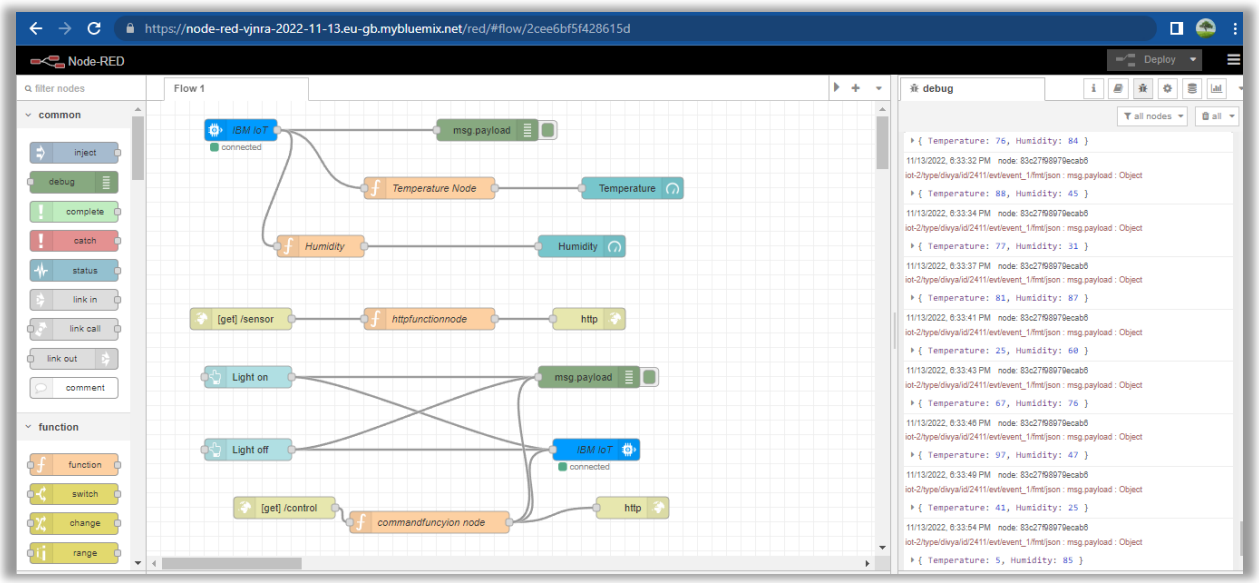
File Edit Shell Debug Options Window Help

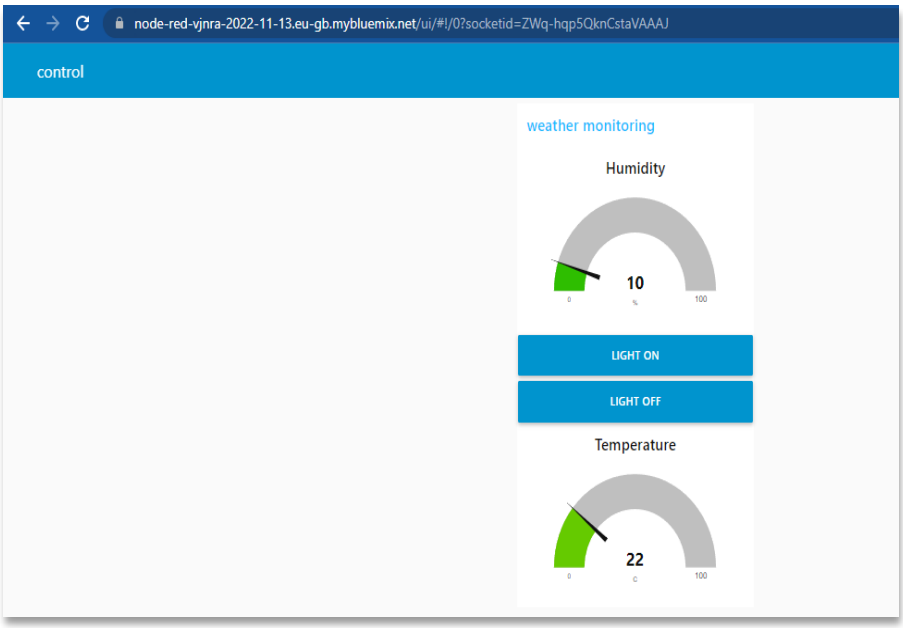
```
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul  8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
=== RESTART: C:/Users/ELCOT/AppData/Local/Programs/Python/Python37/Vabi.py ===
2022-11-12 19:13:16,346   ibmiotf.device.Client      INFO    Connected successfully: d:hzu4n4:abi:2790
Published Temperature = 66 C Humidity = 75 % Soil Moisture is 471 % PH level is 3 to IBM Watson
Published Temperature = 95 C Humidity = 80 % Soil Moisture is 26 % PH level is 5 to IBM Watson
Published Temperature = 37 C Humidity = 98 % Soil Moisture is 781 % PH level is 3 to IBM Watson
Published Temperature = 27 C Humidity = 5 % Soil Moisture is 497 % PH level is 11 to IBM Watson
Published Temperature = 22 C Humidity = 49 % Soil Moisture is 979 % PH level is 9 to IBM Watson
Published Temperature = 5 C Humidity = 17 % Soil Moisture is 548 % PH level is 11 to IBM Watson
Published Temperature = 63 C Humidity = 24 % Soil Moisture is 376 % PH level is 4 to IBM Watson
Published Temperature = 76 C Humidity = 70 % Soil Moisture is 284 % PH level is 3 to IBM Watson
Published Temperature = 27 C Humidity = 64 % Soil Moisture is 359 % PH level is 5 to IBM Watson
Published Temperature = 18 C Humidity = 92 % Soil Moisture is 780 % PH level is 13 to IBM Watson
Published Temperature = 5 C Humidity = 71 % Soil Moisture is 883 % PH level is 11 to IBM Watson
Published Temperature = 19 C Humidity = 80 % Soil Moisture is 258 % PH level is 8 to IBM Watson
Published Temperature = 88 C Humidity = 37 % Soil Moisture is 331 % PH level is 6 to IBM Watson
Published Temperature = 6 C Humidity = 22 % Soil Moisture is 157 % PH level is 7 to IBM Watson
Published Temperature = 19 C Humidity = 65 % Soil Moisture is 171 % PH level is 10 to IBM Watson
Published Temperature = 94 C Humidity = 93 % Soil Moisture is 818 % PH level is 7 to IBM Watson
Published Temperature = 86 C Humidity = 22 % Soil Moisture is 520 % PH level is 6 to IBM Watson
Published Temperature = 19 C Humidity = 58 % Soil Moisture is 542 % PH level is 3 to IBM Watson
Published Temperature = 26 C Humidity = 8 % Soil Moisture is 224 % PH level is 2 to IBM Watson
Published Temperature = 24 C Humidity = 93 % Soil Moisture is 922 % PH level is 3 to IBM Watson
Published Temperature = 9 C Humidity = 5 % Soil Moisture is 977 % PH level is 6 to IBM Watson
Published Temperature = 45 C Humidity = 100 % Soil Moisture is 900 % PH level is 8 to IBM Watson
Published Temperature = 64 C Humidity = 54 % Soil Moisture is 598 % PH level is 7 to IBM Watson
Published Temperature = 30 C Humidity = 87 % Soil Moisture is 469 % PH level is 10 to IBM Watson
Published Temperature = 58 C Humidity = 82 % Soil Moisture is 20 % PH level is 9 to IBM Watson
Published Temperature = 81 C Humidity = 100 % Soil Moisture is 576 % PH level is 0 to IBM Watson
Published Temperature = 76 C Humidity = 86 % Soil Moisture is 818 % PH level is 10 to IBM Watson
Published Temperature = 24 C Humidity = 75 % Soil Moisture is 716 % PH level is 1 to IBM Watson
Published Temperature = 95 C Humidity = 50 % Soil Moisture is 52 % PH level is 6 to IBM Watson
Published Temperature = 70 C Humidity = 63 % Soil Moisture is 445 % PH level is 13 to IBM Watson
Published Temperature = 38 C Humidity = 7 % Soil Moisture is 184 % PH level is 4 to IBM Watson
Published Temperature = 91 C Humidity = 0 % Soil Moisture is 877 % PH level is 11 to IBM Watson
Published Temperature = 19 C Humidity = 51 % Soil Moisture is 331 % PH level is 2 to IBM Watson
```

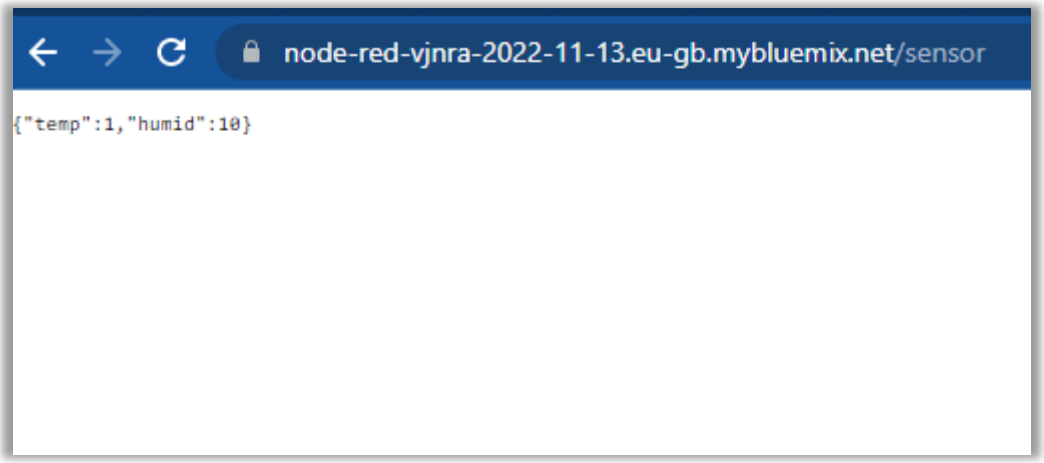
IBM WATSON CLOUD OUTPUT

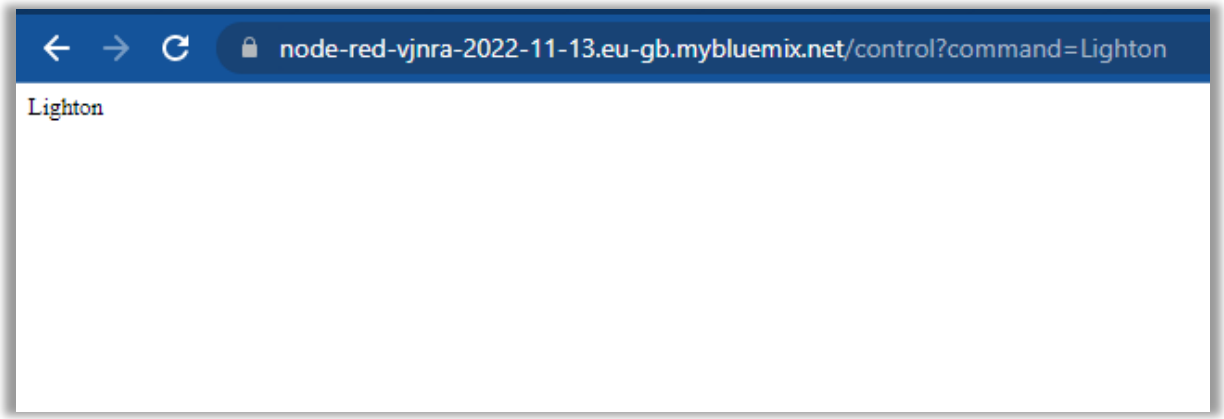


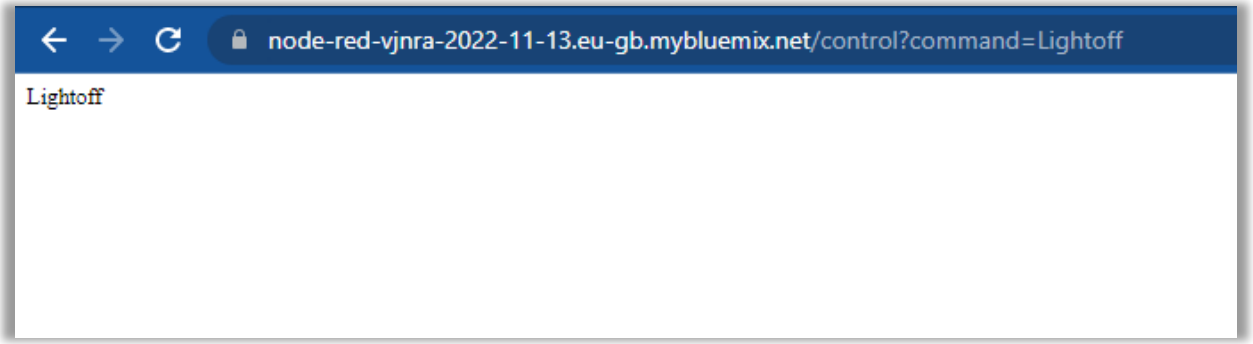
NODE-RED OUTPUT



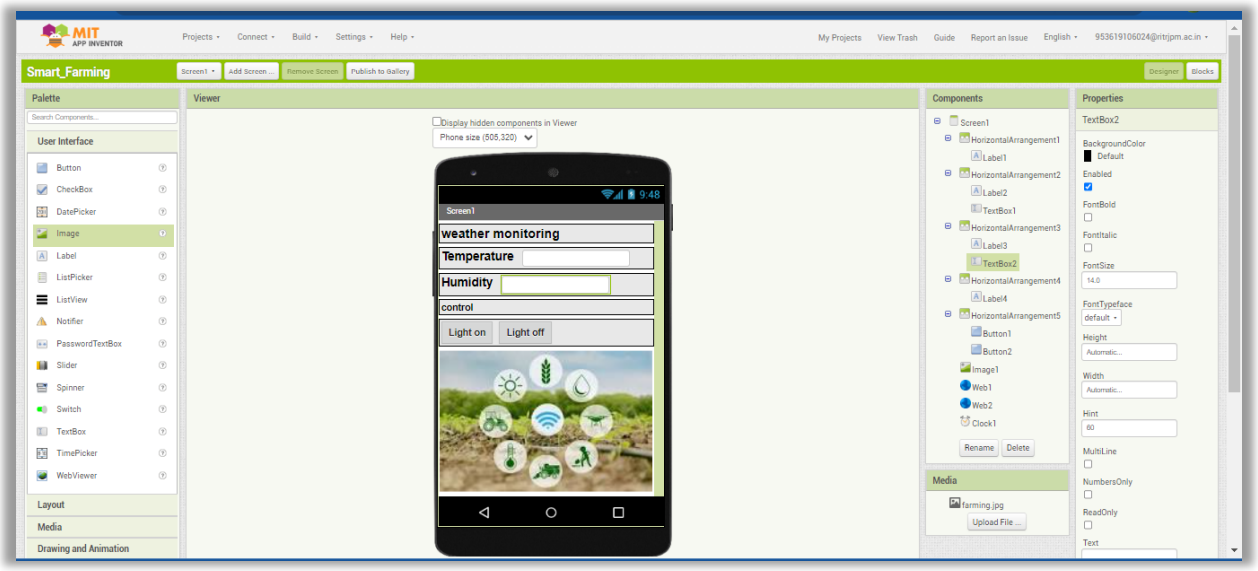




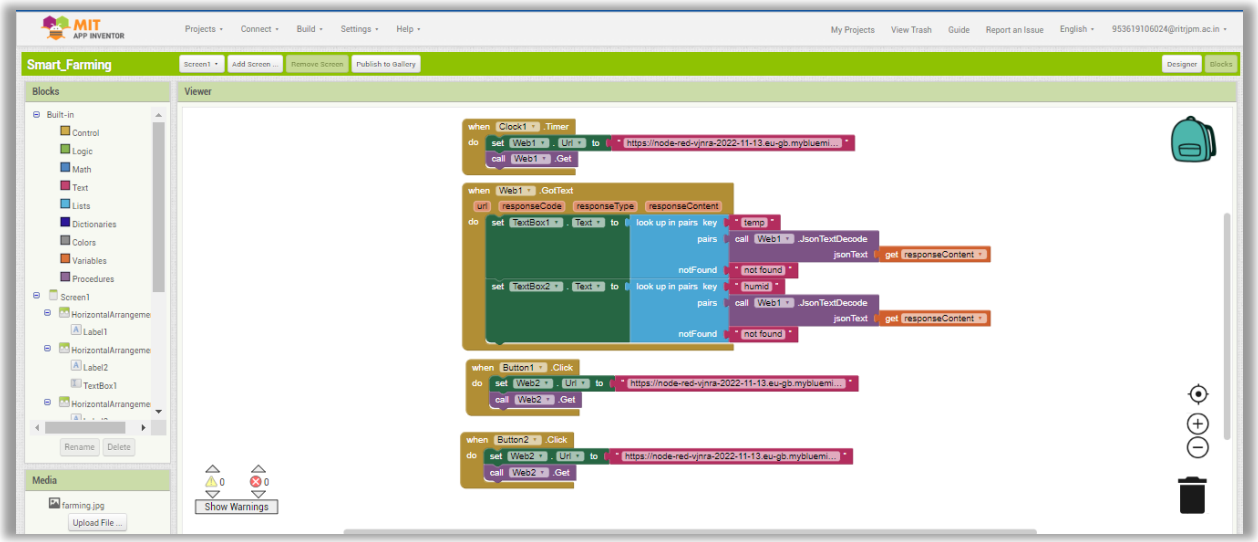




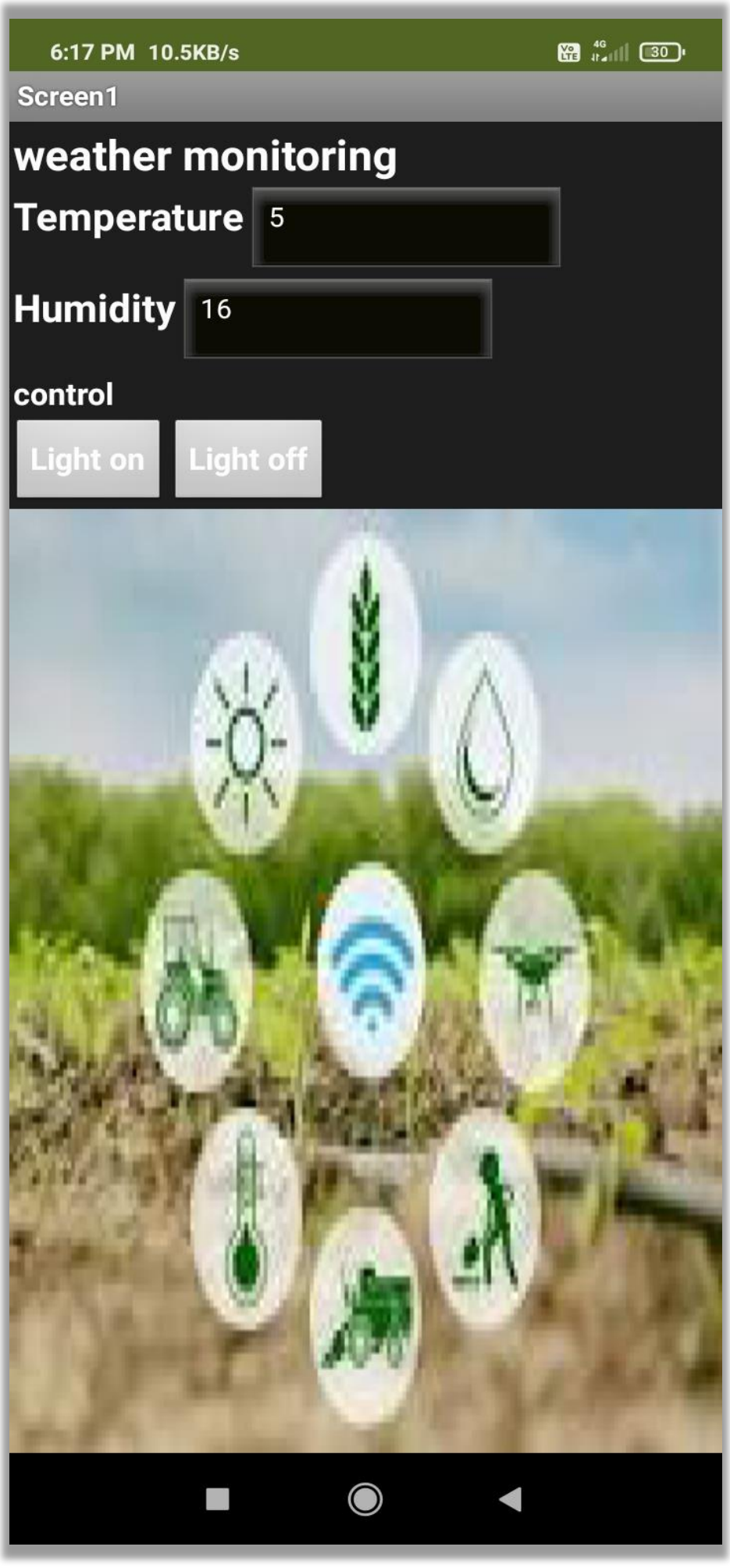
MIT APP INVENTOR – DESINGER



MIT APP INVENTOR – BLOCK



MIT APP INVENTOR – OUTPUT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Screen1
weather monitoring
Temperature
5
Humidity
16
control
Light on
Light off