SmartFarmer - IoT Enabled Smart Farming Application

Project Development Phase – Sprint 4

PYTHON CODE

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
organization = "ojzlch"
deviceType = "abcd"
deviceId = "12345"
authMethod = "token"
authToken = "12345678"

# Initialize GPIO
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")
   else :
      print ("please send proper command")

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(90,110)
      Humid=random.randint(60,100)

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


Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Published Temperature = 101 C Humidity = 93 % to IBM Watson
Published Temperature = 96 C Humidity = 82 % to IBM Watson
Published Temperature = 102 C Humidity = 78 % to IBM Watson
Published Temperature = 104 C Humidity = 84 % to IBM Watson
Published Temperature = 100 C Humidity = 94 % to IBM Watson
Published Temperature = 97 C Humidity = 99 % to IBM Watson
Published Temperature = 91 C Humidity = 97 % to IBM Watson
Published Temperature = 110 C Humidity = 69 % to IBM Watson
Published Temperature = 92 C Humidity = 83 % to IBM Watson
Published Temperature = 102 C Humidity = 99 % to IBM Watson
Published Temperature = 104 C Humidity = 68 % to IBM Watson
Published Temperature = 110 C Humidity = 67 % to IBM Watson
Published Temperature = 94 C Humidity = 63 % to IBM Watson
Published Temperature = 94 C Humidity = 89 % to IBM Watson
Published Temperature = 93 C Humidity = 67 % to IBM Watson
Published Temperature = 92 C Humidity = 79 % to IBM Watson
Published Temperature = 105 C Humidity = 91 % to IBM Watson
Published Temperature = 94 C Humidity = 60 % to IBM Watson
Published Temperature = 105 C Humidity = 62 % to IBM Watson
Published Temperature = 97 C Humidity = 95 % to IBM Watson
Published Temperature = 93 C Humidity = 73 % to IBM Watson
RESTART: C:\Users\Arun kumar\AppData\Local\Programs\Python\Python37\smart.py
2022-11-18 04:52:45,820 ibmiotf.device.Client INFO Connected successfully: d:ojzlch:abcd:12345
Published Temperature = 101 C Humidity = 100 % to IBM Watson
Published Temperature = 107 C Humidity = 77 % to IBM Watson
Published Temperature = 98 C Humidity = 90 % to IBM Watson
Published Temperature = 108 C Humidity = 84 % to IBM Watson
Published Temperature = 95 C Humidity = 61 % to IBM Watson
Published Temperature = 100 C Humidity = 64 % to IBM Watson
Published Temperature = 98 C Humidity = 66 % to IBM Watson
Published Temperature = 107 C Humidity = 84 % to IBM Watson
Published Temperature = 97 C Humidity = 99 % to IBM Watson
Published Temperature = 95 C Humidity = 99 % to IBM Watson
Published Temperature = 106 C Humidity = 89 % to IBM Watson
Published Temperature = 108 C Humidity = 94 % to IBM Watson
Published Temperature = 94 C Humidity = 69 % to IBM Watson
2022-11-18 04:54:54,663 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 7
Published Temperature = 104 C Humidity = 64 % to IBM Watson
2022-11-18 04:54:56,735 ibmiotf.device.Client INFO Connected successfully: d:ojzlch:abcd:12345
Published Temperature = 90 C Humidity = 75 % to IBM Watson
Published Temperature = 91 C Humidity = 100 % to IBM Watson
Published Temperature = 110 C Humidity = 93 % to IBM Watson
Published Temperature = 100 C Humidity = 79 % to IBM Watson
Published Temperature = 100 C Humidity = 93 % to IBM Watson
Published Temperature = 105 C Humidity = 68 % to IBM Watson
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28°C
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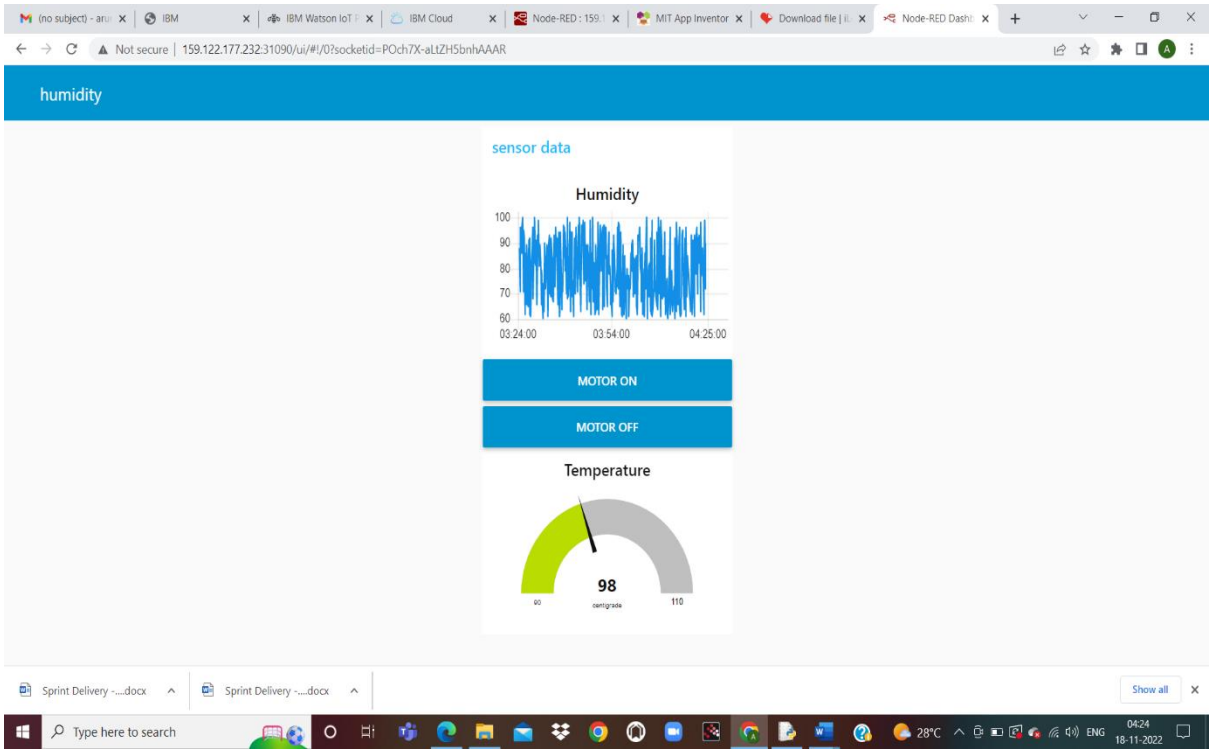
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IBM
IBM Watson IoT P
IBM Cloud
Node-RED : 159.1
MIT App Inventor
Download file | il
Node-RED Dashb
Not secure | 159.122.177.232:31090/ui/#!/0?socketid=POch7X-aLtZH5bnhAAAR
humidity
sensor data
Humidity
100
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Temperature
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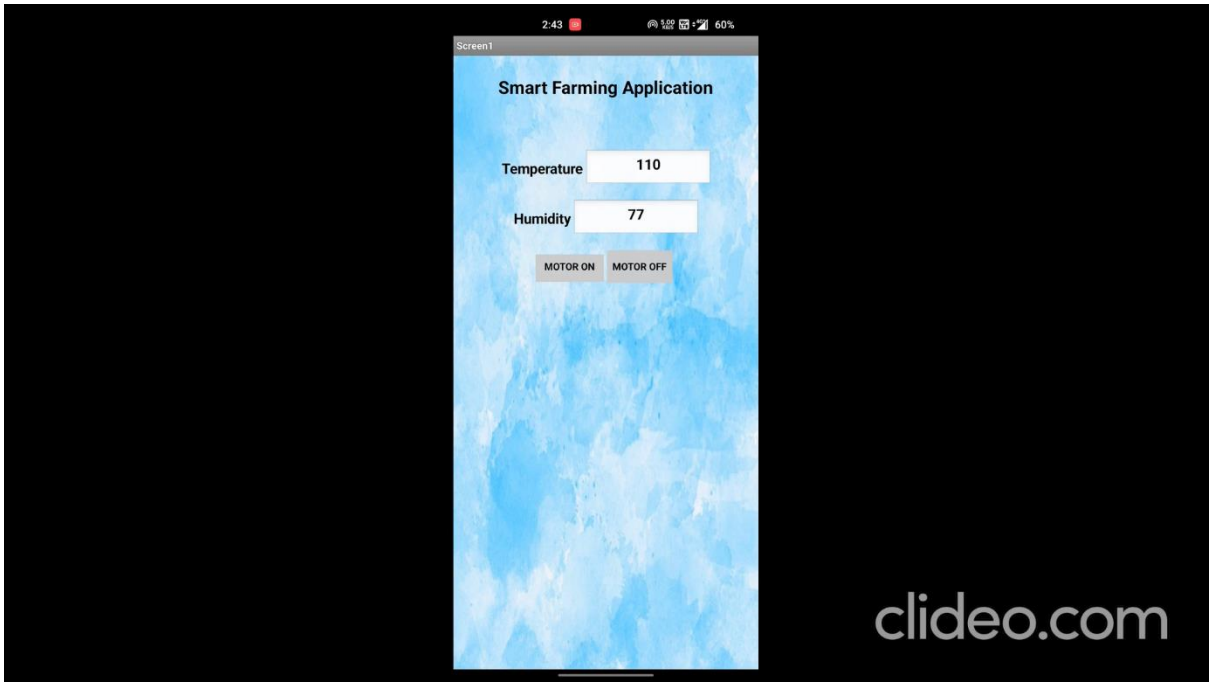
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60%
Screen1
Smart Farming Application
Temperature
110
Humidity
77
MOTOR ON
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