Smart Farmer – IOT ENABLED

SMART FARMING APPLICATION

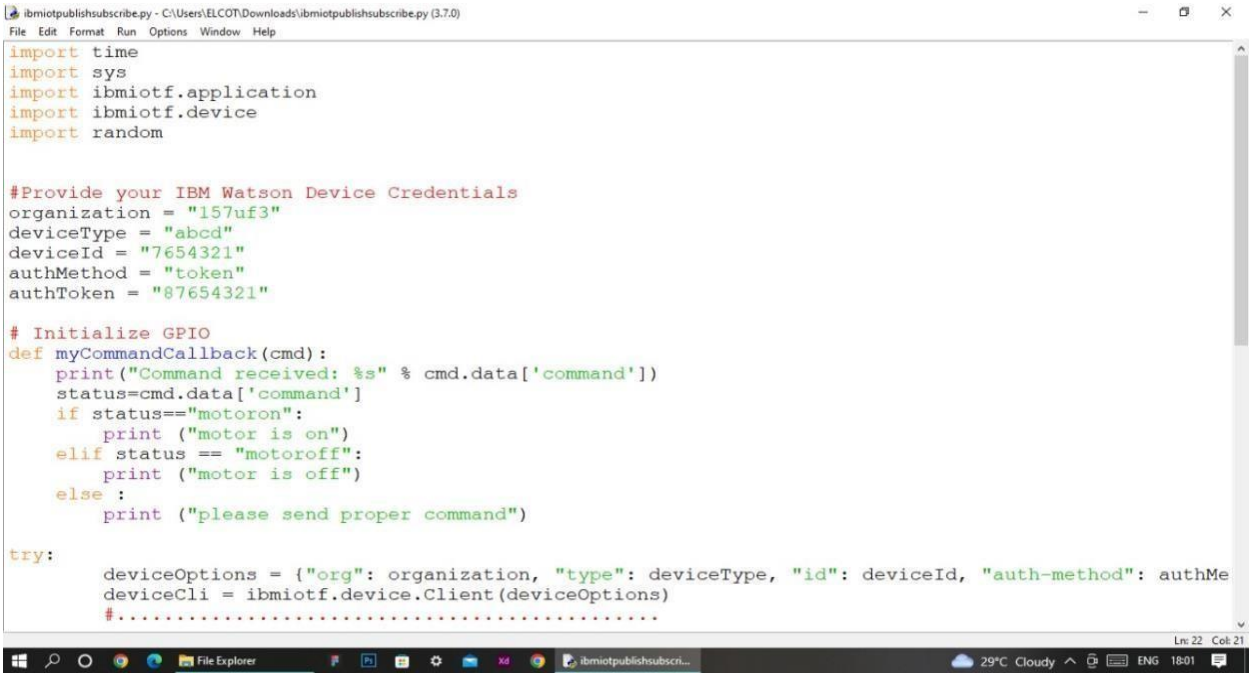
Sprint Delivery – 4

TEAM ID : PNT2022TMID52019

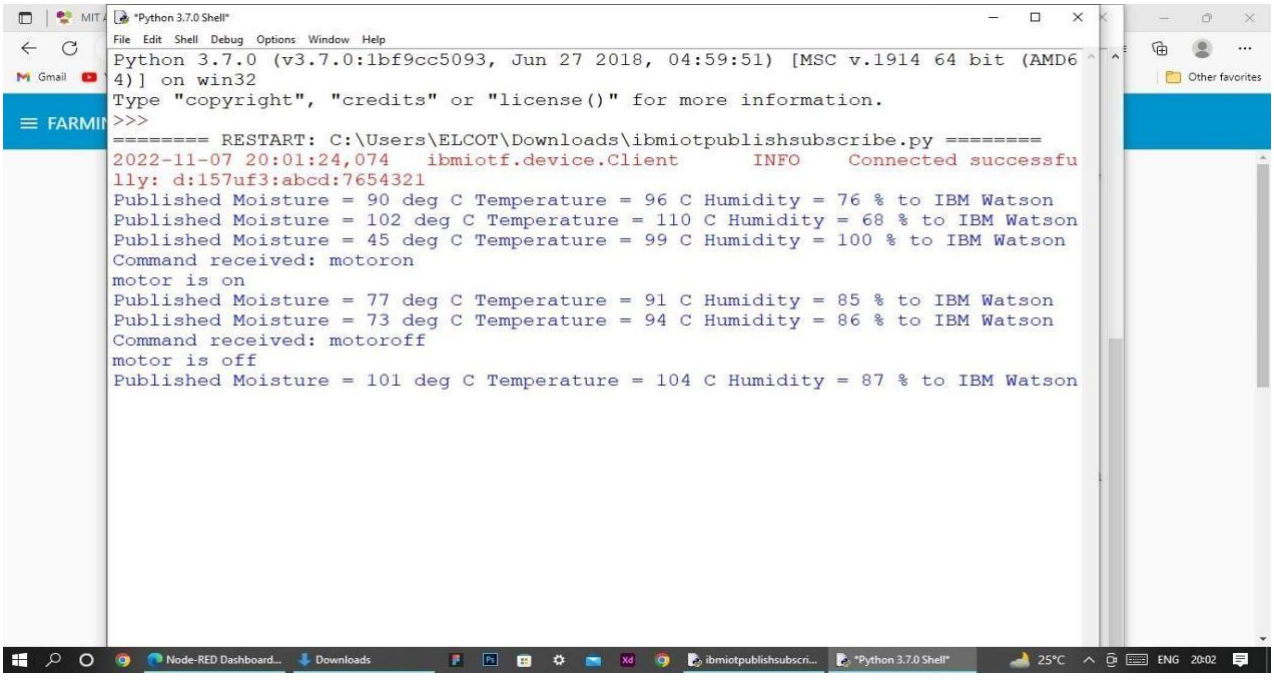
5.5 Receiving commands from IBM cloud using Python program

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

#Provide your IBM Watson Device
Credentialsorganization = "157uf3"
deviceType = "abcd" deviceId = "7654321"
authMethod = "token" authToken =
"87654321"

# 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 anevent
of type "greeting" 10 times deviceCli.connect()

while True:
      #Get Sensor Data from
DHT11
temp=random.randint(90,110)
Humid=random.randint(60,100)
Mois=random. Randint(20,120)
   data = { 'temp' : temp, 'Humid': Humid ,
‘Mois’: Mois}
      #print data        def
myOnPublishCallback(
):
         print ("Published Temperature = %s C" % temp, "Humidity = %s %%" %
Humid, “Moisture =%s deg c” % Mois “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()
```

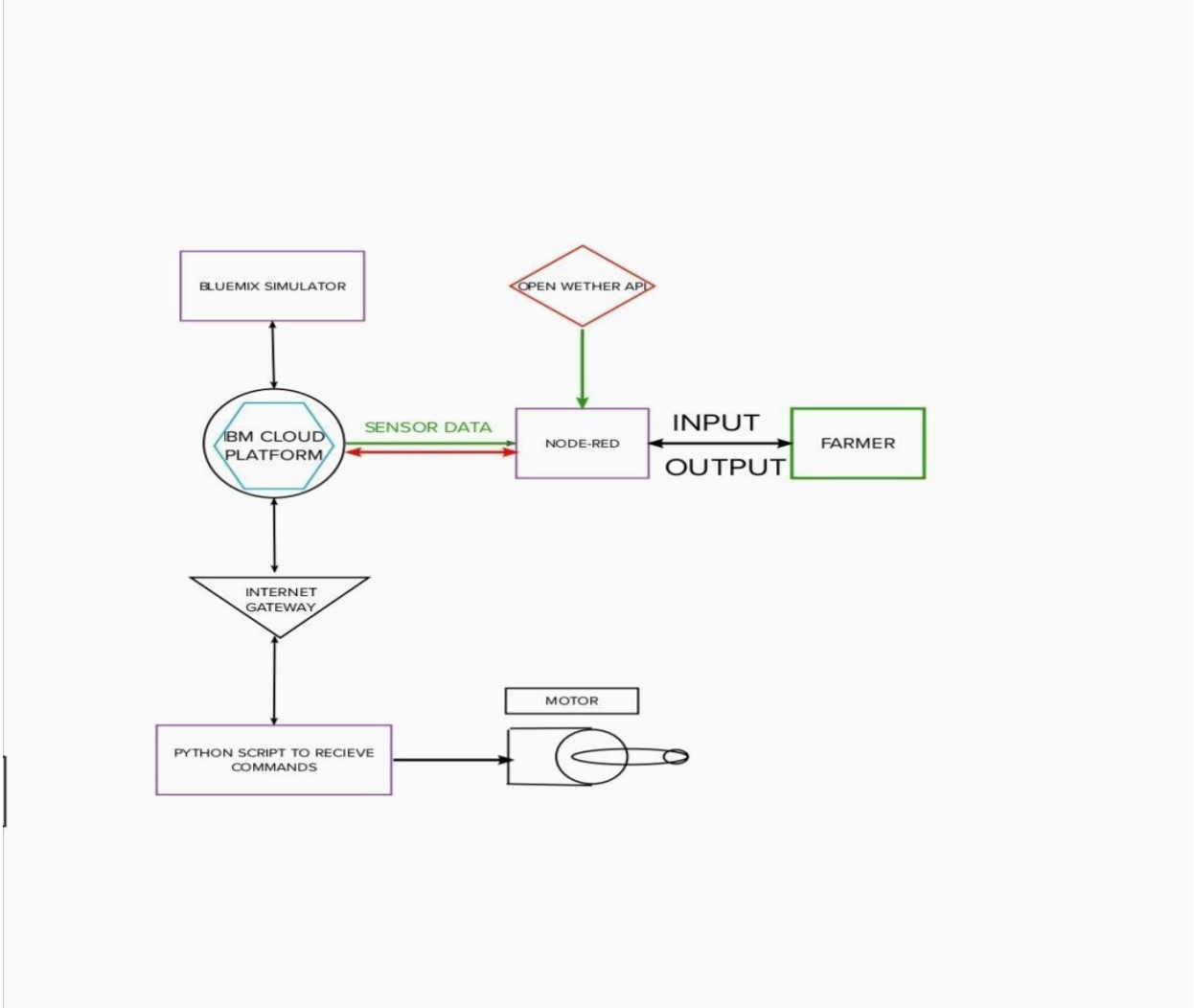


Observations and Results:



Block Diagram:

In order to implement the solution , the following approach as shown in the blockdiagram is used



6. Advantages & Disadvantages

Advantages:

- Farms can be monitored and controlled remotely.
- Increase in convenience to farmers.
- Less labor cost.
- Better standards of living.

Disadvantages:

- Lack of internet/connectivity issues.
- Added cost of internet and internet gateway infrastructure.
- Farmers wanted to adapt the use of Mobile App.

9. Conclusion

Thus the objective of the project to implement an IoT system in order to help farmers to control and monitor their farms has been implemented successfully.

10. Bibliography

IBM cloud reference: https://cloud.ibm.com/

IoT simulator : https://watson-iot-sensor-simulator.mybluemix.net/

OpenWeather : https://openweathermap.org/