REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM USING IoT

Submitted by

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WORK FLOW

Team ID	PNT2022TMID23523
Project Name	Real-time river water quality monitoringand control system

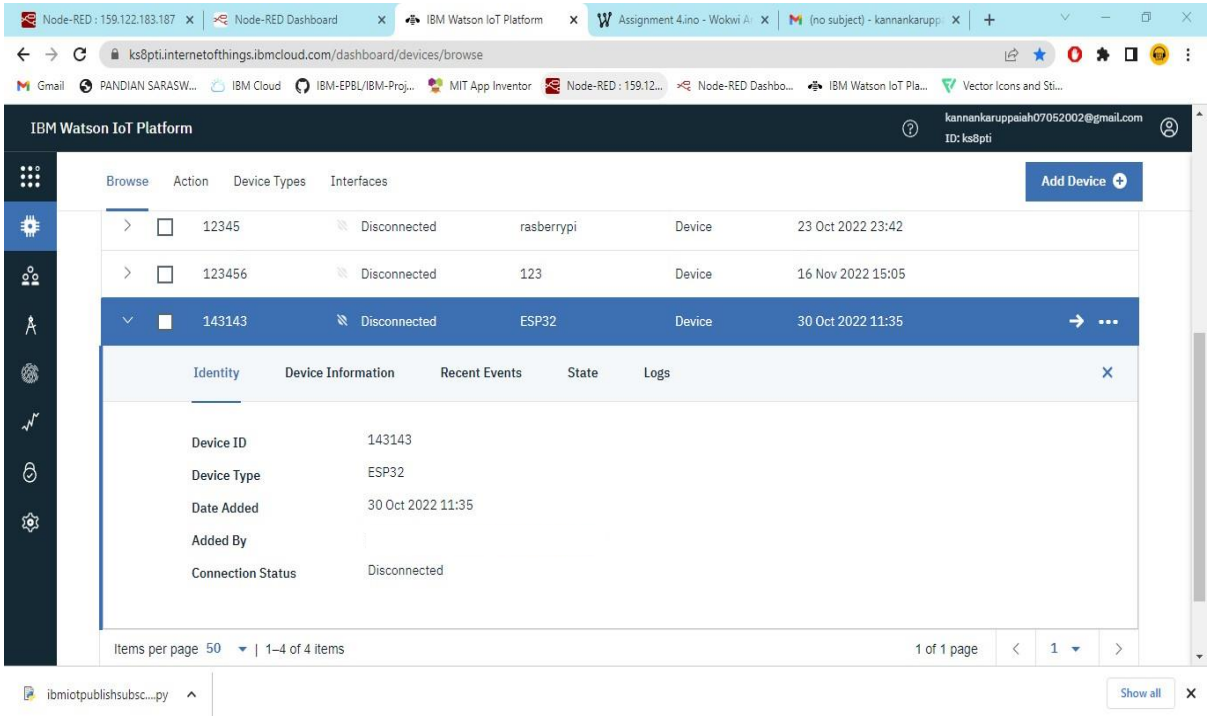
COMMUNICATION AMONG MIT APP, NODE-RED, IBM IOT WATSON AND PYTHON

Python code:

File Edit Format Run Options Window Help

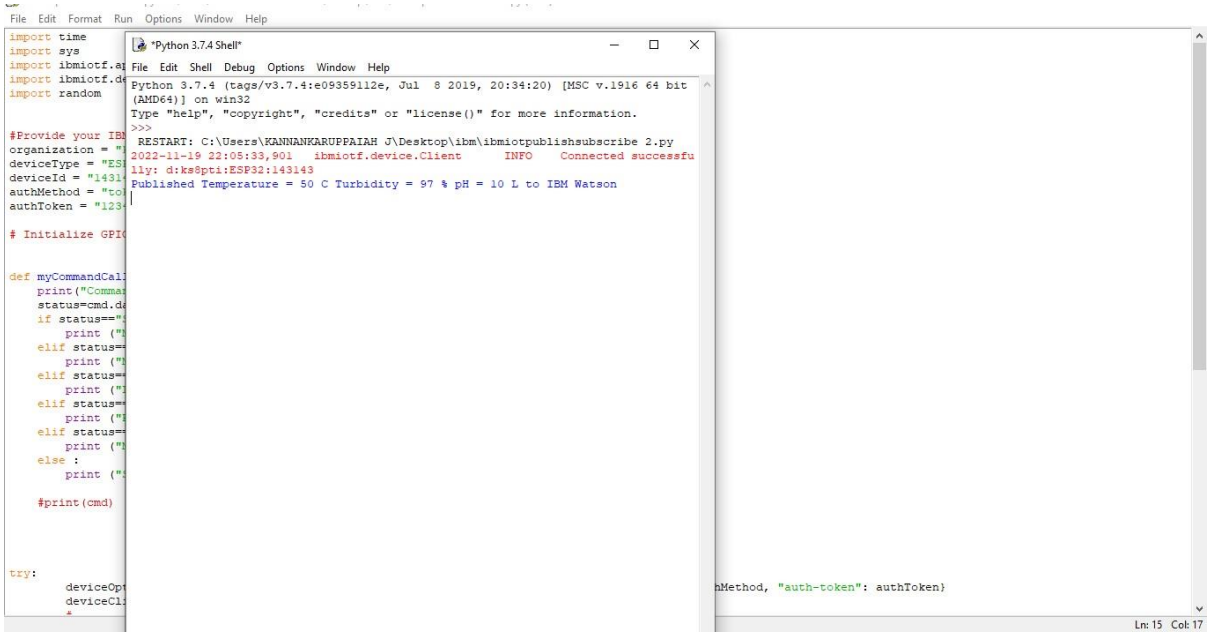
```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random


#Provide your IBM Watson Device Credentials
organization = "ks8pti"
deviceType = "ESP32"
deviceId = "143143"
authMethod = "token"
authToken = "123456789"

# Initialize GPIO


def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="START":
        print ("Motor is Started")
    elif status=="STOP":
        print ("Motor is oFF state")
    elif status=="LEFT":
        print ("Left Side is Closed")
    elif status=="RIGHT":
        print ("Right Side is Closed")
    elif status=="FORWARD":
        print ("Message is Forward to the chief")
    else :
        print ("Send a proper command")

    #print(cmd)



try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod, "auth-token": authToken}
        deviceCli = ibmiotf.device.Client(deviceOptions)
```

Before running the python code, The IOT platform is disconnected

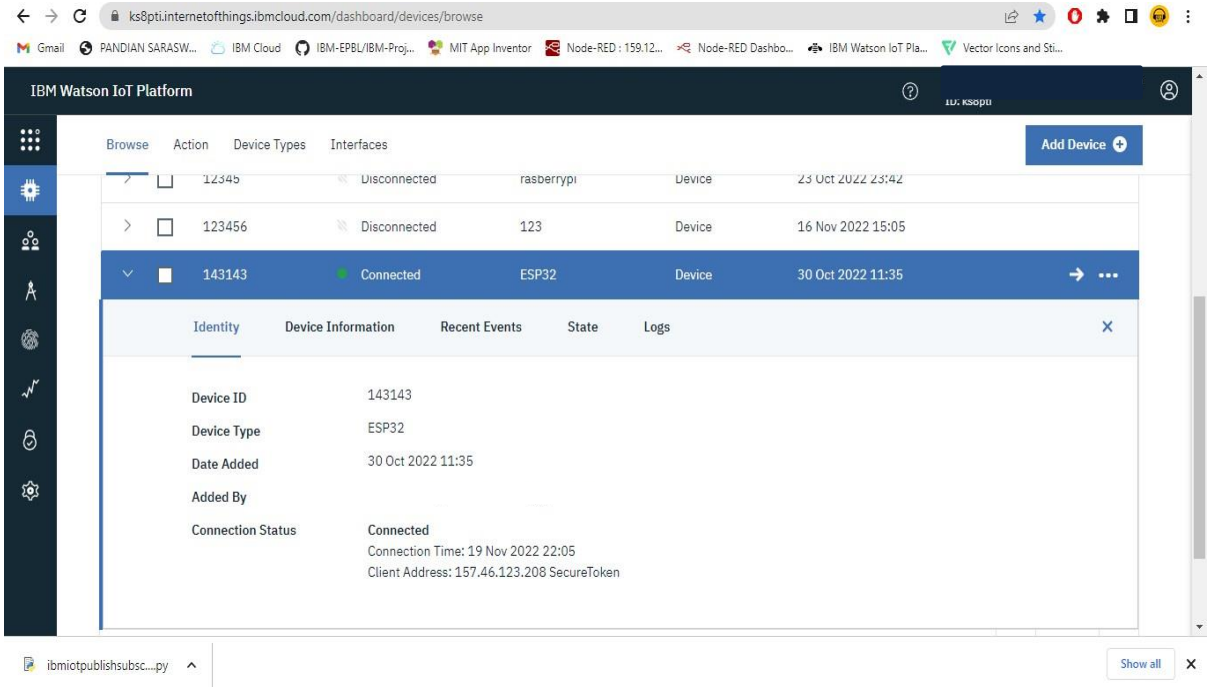


Run the Python code:

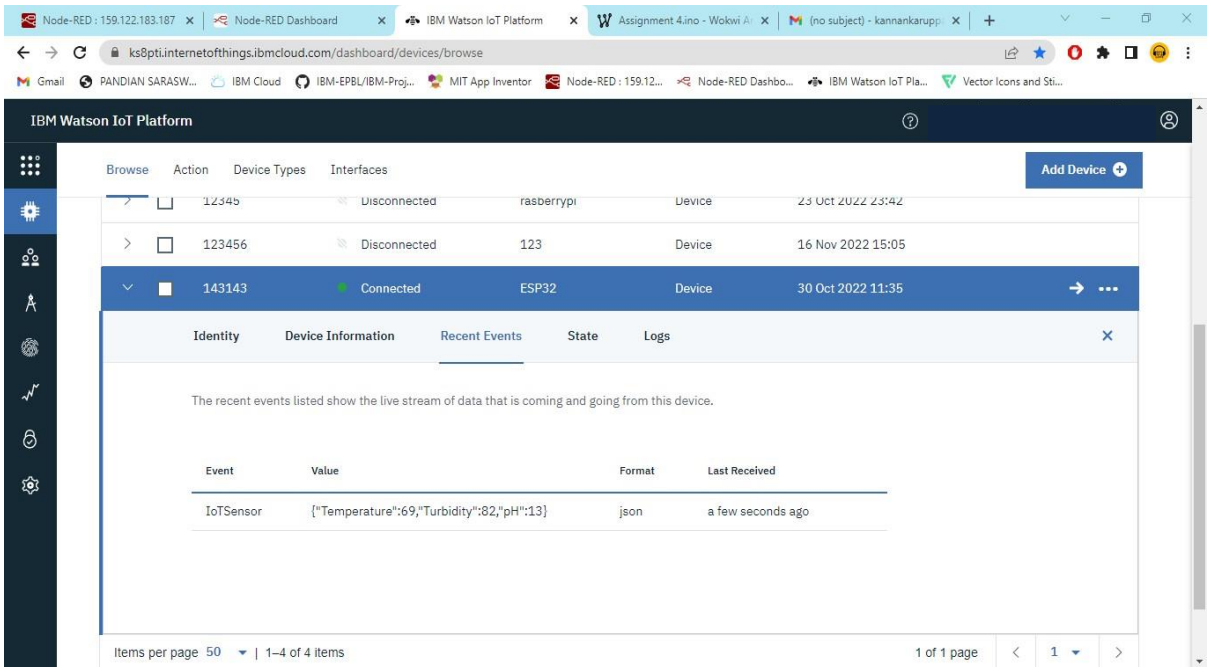
After running the python code the data's are shown in IDLE



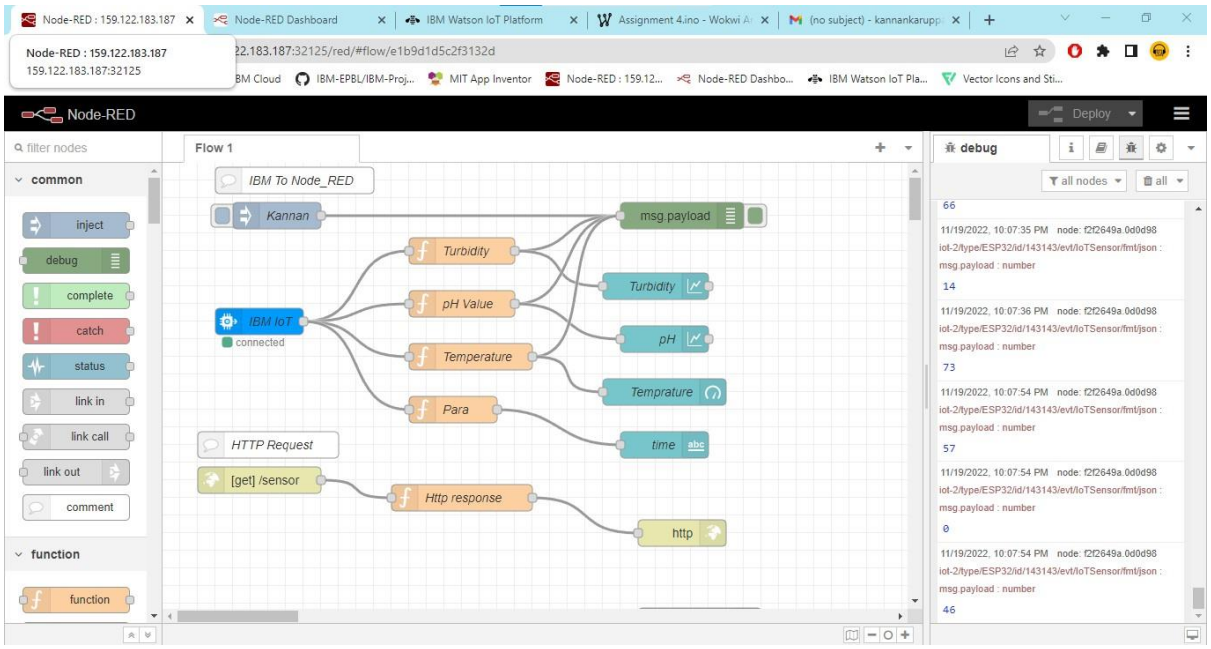
Now the IBM IoT Watson platform is connected



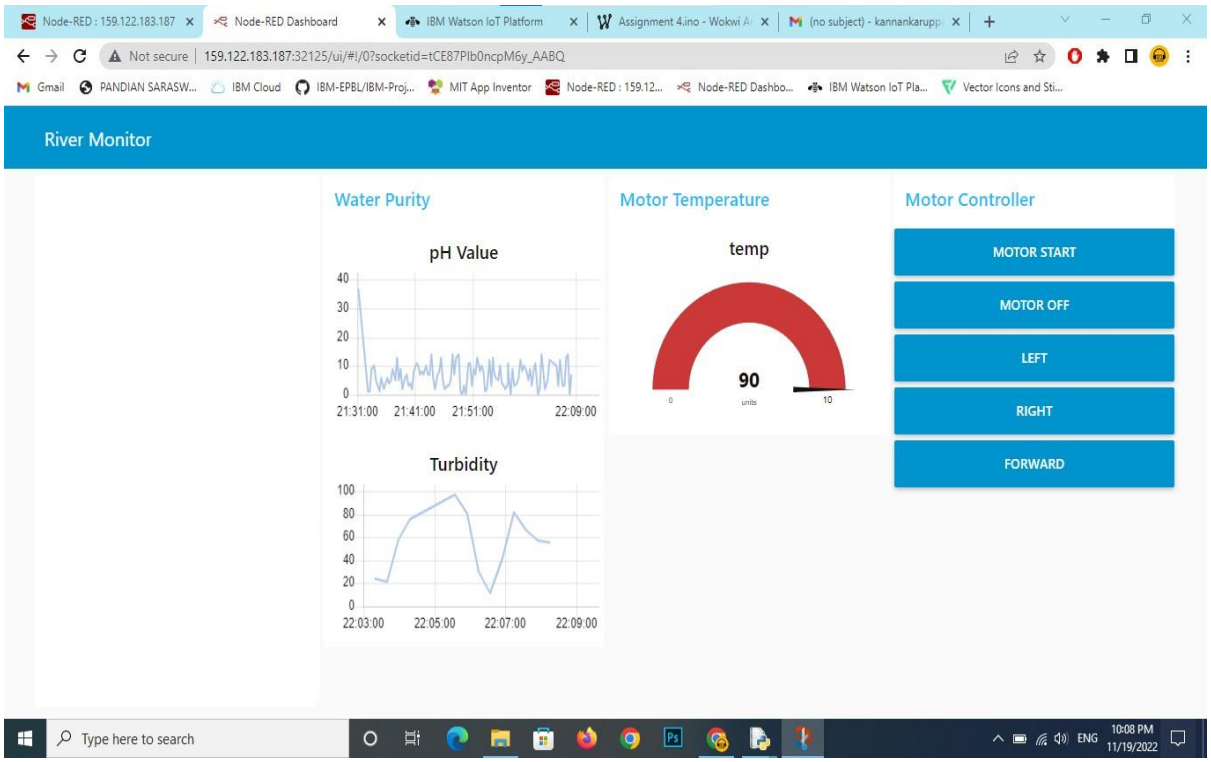
IoT Device ESP32 is connected with python code ,Then the data's are collected and shown in recent events.



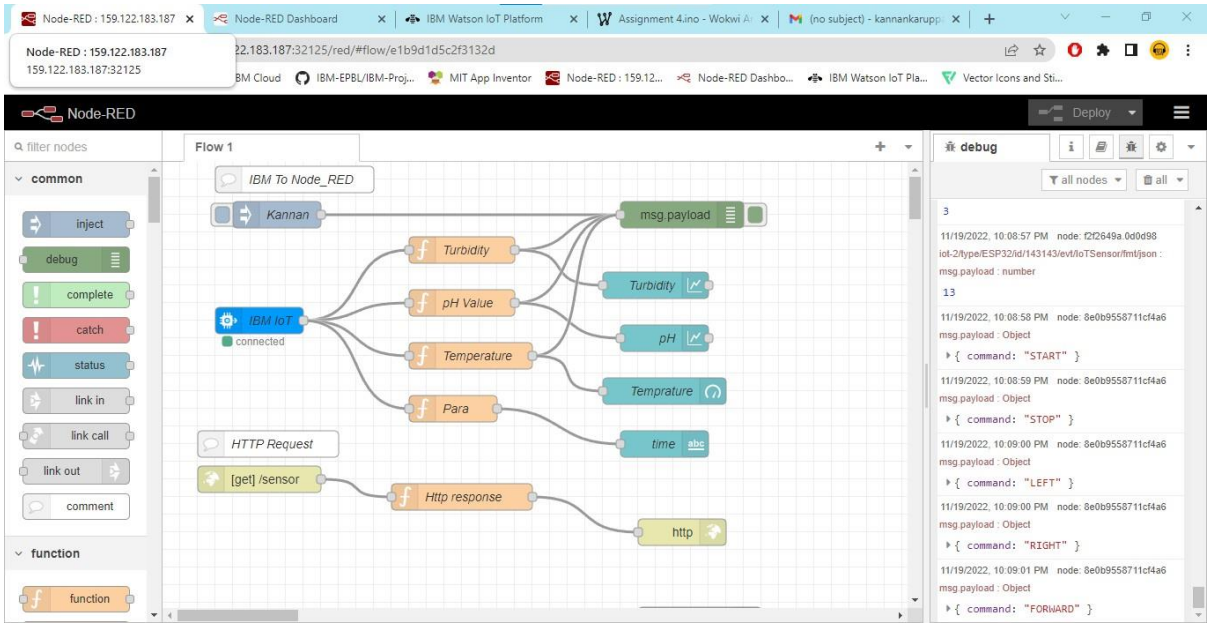
- The Node-RED is connected with the IBM IoTplatform .
- IBM IoT passes the data to the Node-Red.
- Node-RED collects all the data and display in debug window.



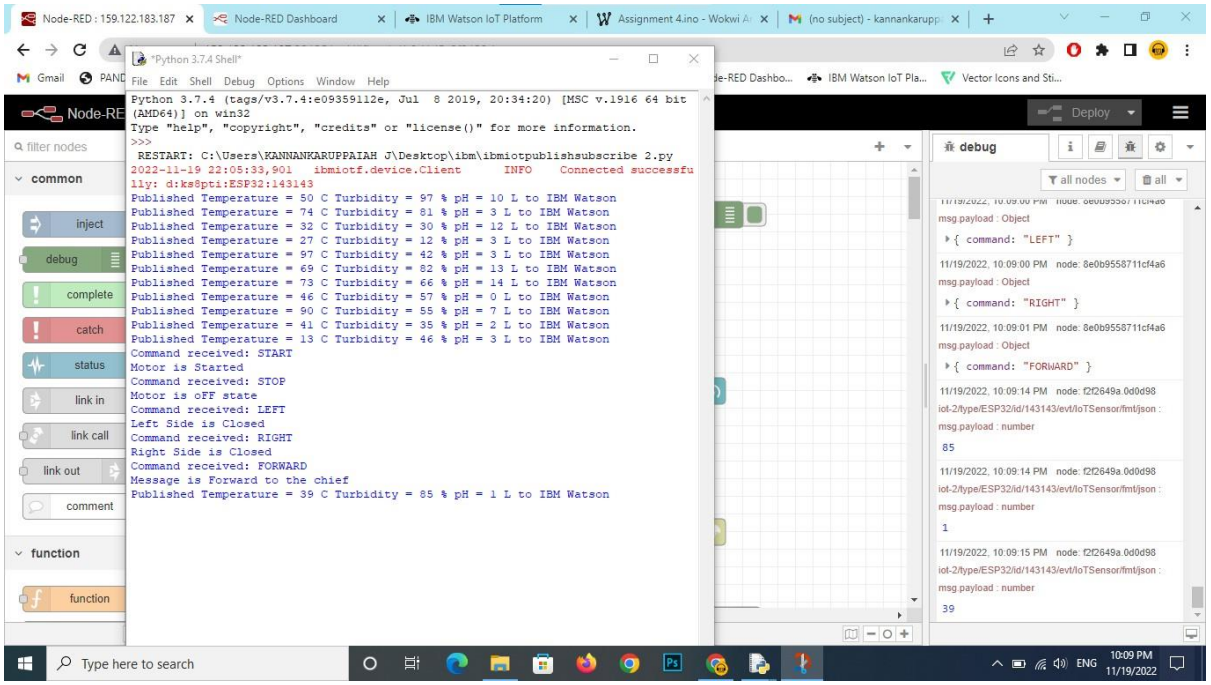
- Node-RED Dashboard is Showing all the data.
- When we click the buttons in dashboard the result will publish both Node-RED and Python



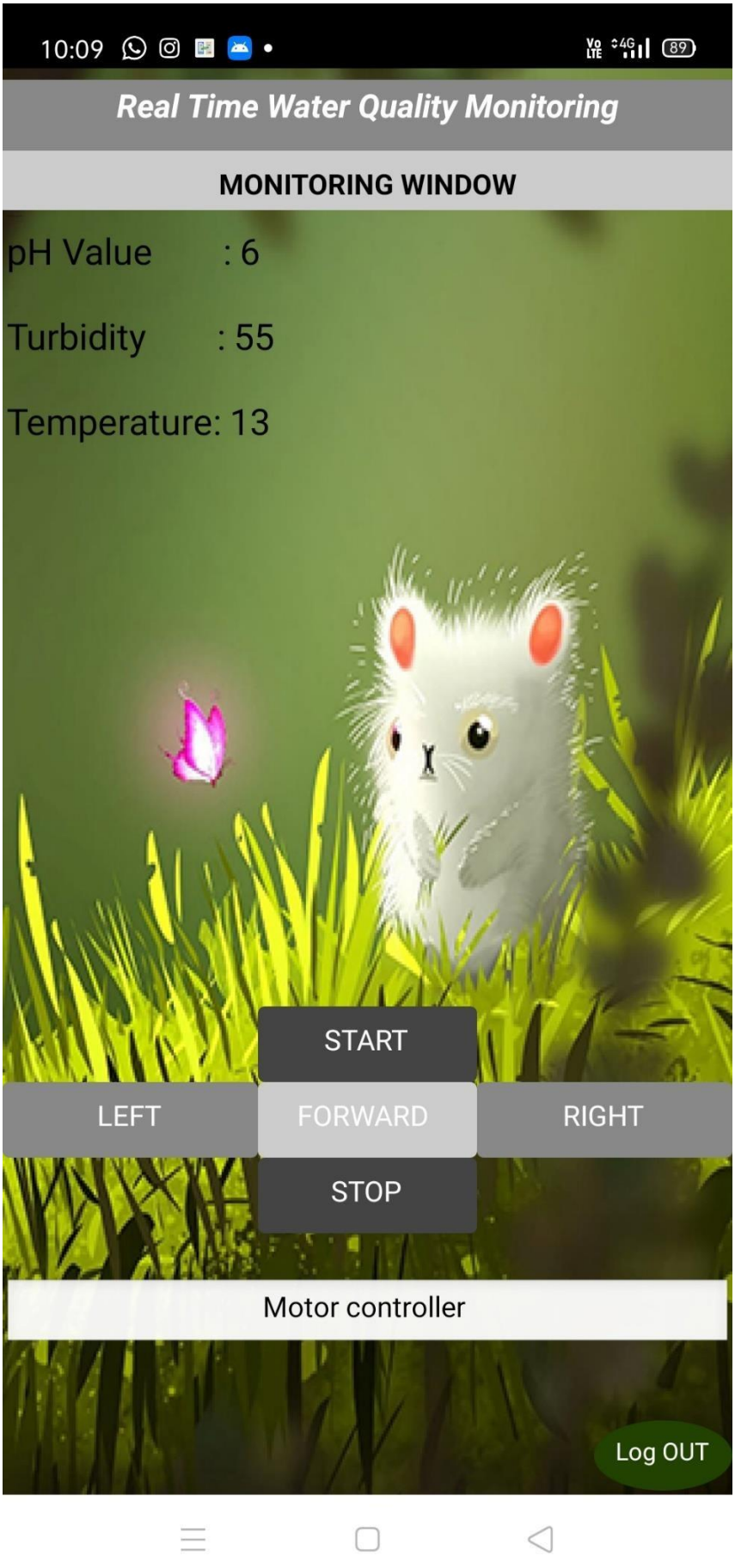
Node-RED OUTPUT



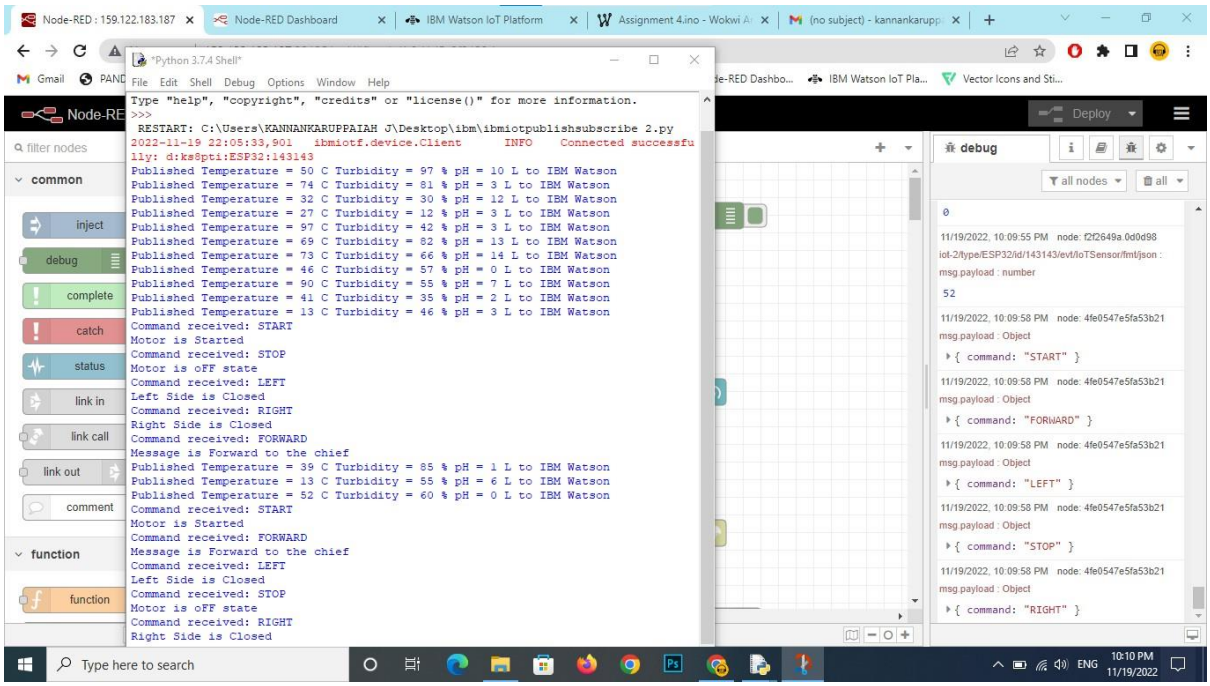
Python OUTPUT



- This is my mobile app screen.
- Its show the pH and Turbidity values of water andtemperature of motor.
- When I’m clicking the control buttons in this screen the result are publish in Node-RED & Python.


10:09
Real Time Water Quality Monitoring
MONITORING WINDOW
pH Value : 6
Turbidity : 55
Temperature: 13
START
LEFT
FORWARD
RIGHT
STOP
Motor controller
Log OUT

Python Output



Node-RED