**IOT (Internet Of Things)**

**Project: SMART POULTRY FARM BASED ON IOT**

**by**

**ECE\_D06**

**1. S.Shanin (18481A04J4)**

**2. S.Sravani (18481A04J5)**

**3.Shoaib (18481A04J6)**

**4.S.Prasanthi (18481A04J7)**

**5. S.Vineela (18481A04J8)**

**TABLE OF CONTENTS:**

**1.INTRODUCTION**

1.1 Overview

1.2 Purpose

**2.LITERATURE SURVEY**

2.1 Existing problem

2.2 Proposed solution

**3.THEORETICAL ANALYSIS**

3.1 Block diagram

3.2 Hardware/Software designing

**4.EXPERIMENTAL INVESTIGATIONS**

**5.FLOW CHART**

**6.RESULT**

**7.ADVANTAGES & DISADVANTAGES**

**8.APPLICATIONS**

**9.CONCLUSION**

**10.FUTURE SCOPE**

**11.BIBLIOGRAPHY**

**APPENDIX**

A. Source code

B. UI output Screenshot

**1.INTRODUCTION:**

**1.1 Overview**

This project consists of automation in poultry farms for monitoring and maintaining the inside temperature, feeding, monitoring water and poultry feed. The temperature sensor always monitors the inside temperature. If the temperature is not at the desired point then the microcontroller controls the heater or cooling fan to set the temperature at desired condition. The humidity sensor monitors the amount of water vapor in air. When outside temperatures are low, relative humidity in the house is low, which often results in dry dust circulating in the air within the house.

The recommended temperatures are:

First Day(32-34oC), 1st week decrease(30oC), 2nd week decrease(26oC),3rd week decrease(22oC), 4th week decrease(20oC).

**1.2 Purpose**

To develop an **IOT** based system with making **Smart Poultry farms**. System supports food feeder to the **chickens**, system is able to maintain the temperature to provide the mechanism of water sprinkler and also system will reduce the unwanted Gases from **poultry** by soil mixture

**2. LITERATURE SURVEY:**

**2.1 Existing Problem**

**Ammonia Gas:** There is no proper system for management of ammonia gas. Ammonia gas is hazardous to the health of chicks. Hence due to excess ammonia gas in the poultry environment, diseases are caused. It is important to control the ammonia gas in farms.

**Temperature and Humidity:** Temperature and humidity are controlled naturally. Special measures are not taken to control the temperature and humidity. Rise in environmental temperature and humidity is also dangerous for the chicks.

* The system requires more manpower.
* The system does not support the reduction of ammonia gases which is more hazardous.
* No proper measurements are taken for maintaining temperature and humidity.
* Cleanliness is difficult for maintenance.
* Due to manpower and no proper maintenance it is more cost effective.

**2.2 Proposed Solution**

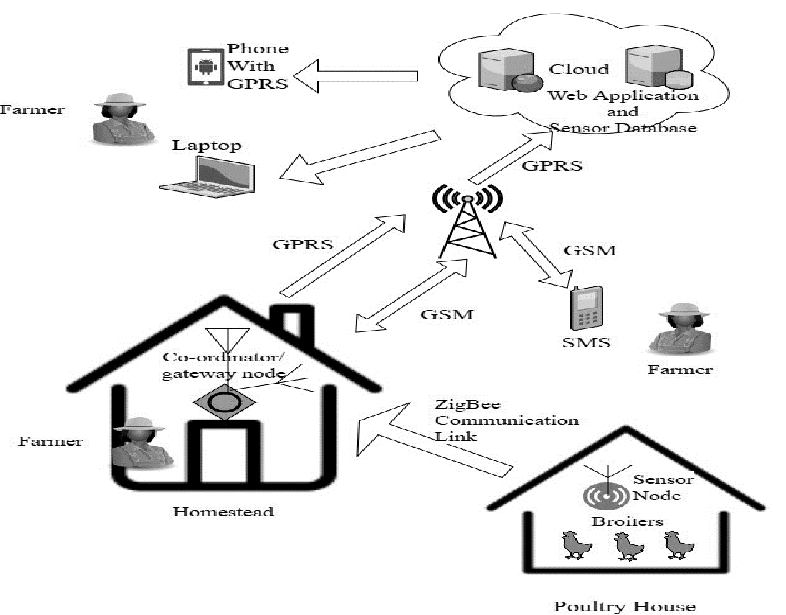
To develop an **IOT** based system with making **Smart Poultry farms**. System supports food feeder to the chickens, system is able to maintain

the temperature to provide the mechanism of water sprinkler and also system will reduce the unwanted Gases from **poultry** by soil mixture

The highest and lowest critical temperature depends very much on: Age, Body weight, housing system, Feeding level, Relative humidity, Air velocity and Health.

**3.THEORITICAL ANALYSIS :**

**3.1 Block Diagram**

****

**3.2 Hardware/Software designing :**

**Software Designing:**

The software used for smart parking system is:

a. Python

b. IOT Cloud Platform

c. IOT Communication Technologies

d. IOT Communication Protocols

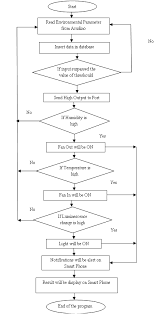
**4.EXPERIMENTAL INVESTIGATION :**

The Internet of things (IoT) is a system of interrelated computing devices, mechanical and digital machines provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. The definition of the Internet of things has evolved due to the convergence of multiple technologies, real-time analytics, machine learning, commodity sensors, and embedded systems.

The IoT can assist in the integration of communications, control, and information processing across various transportation systems. Application of the IoT extends to all aspects of transportation systems (i.e. the vehicle, the infrastructure, and the driver or user). Dynamic interaction between these components of a transport system enables inter- and intra-vehicular communication, smart traffic control, smart parking, electronic toll collection systems, vehicle control, safety, and road assistance. For example, an IoT platform can continuously monitor the location and vacancies of spaces in parking.

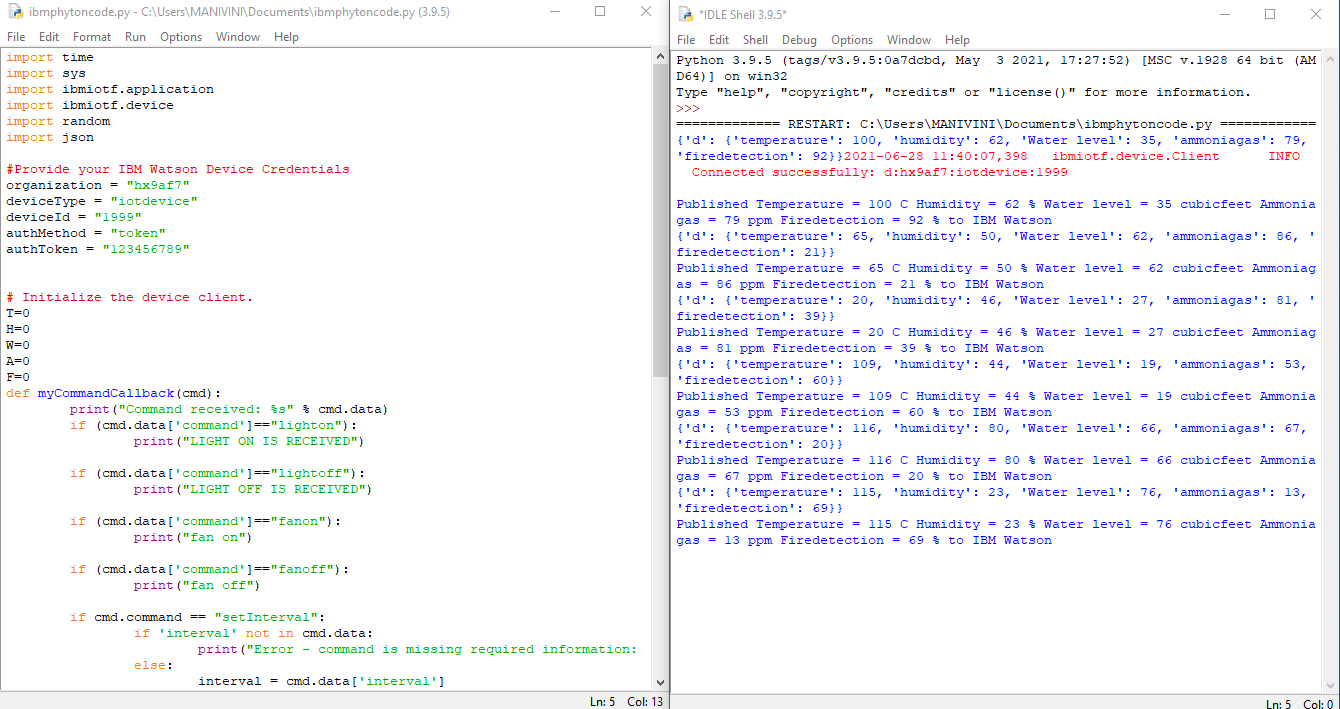
This can only be possible with the IoT and its seamless connectivity among devices. Sensors such as GPS, Humidity, and Temperature send data to the IoT platform and then the data is ANALYSED and then sent to the users. This way, users can track the real-time status of vehicles and can make appropriate decisions. The smart parking system is an IOT based device which is capable of automatic sensing of vehicles. ALSO, the data of sensors will be displayed in graphical form on.

**5. FLOWCHART:**

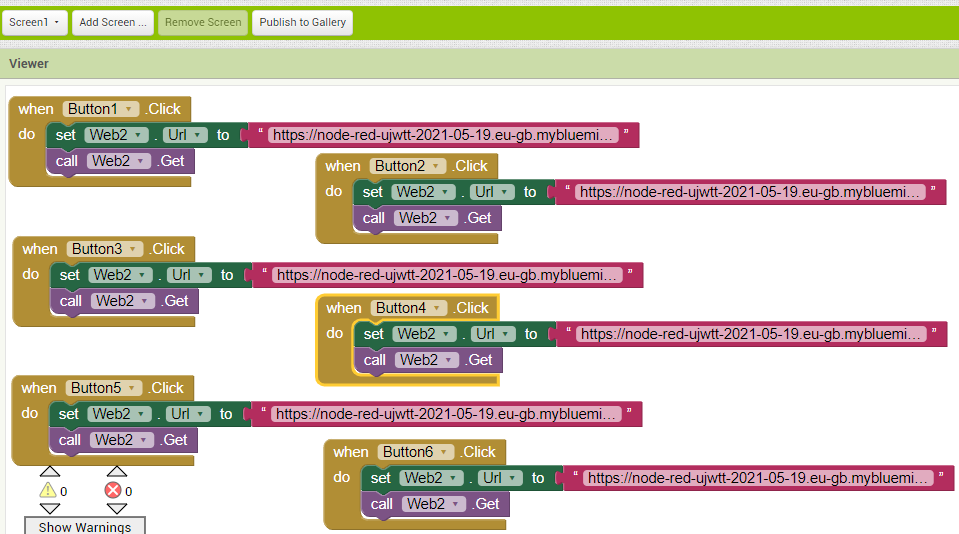
****

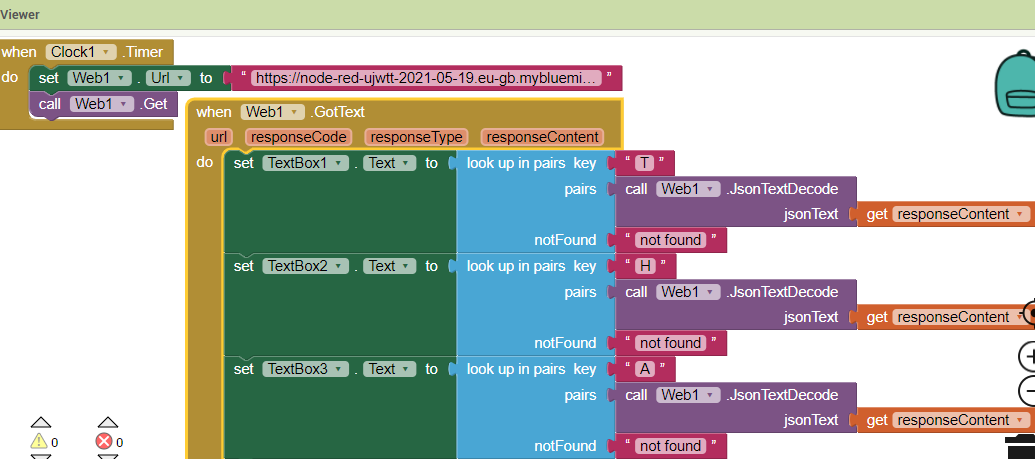
**6.RESULT:**

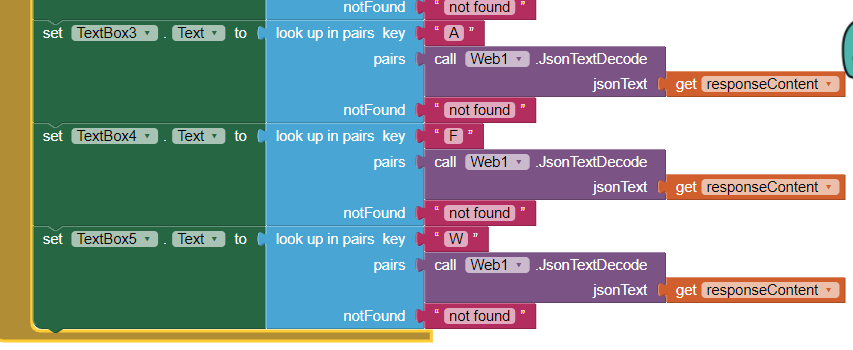
**Python Code:**

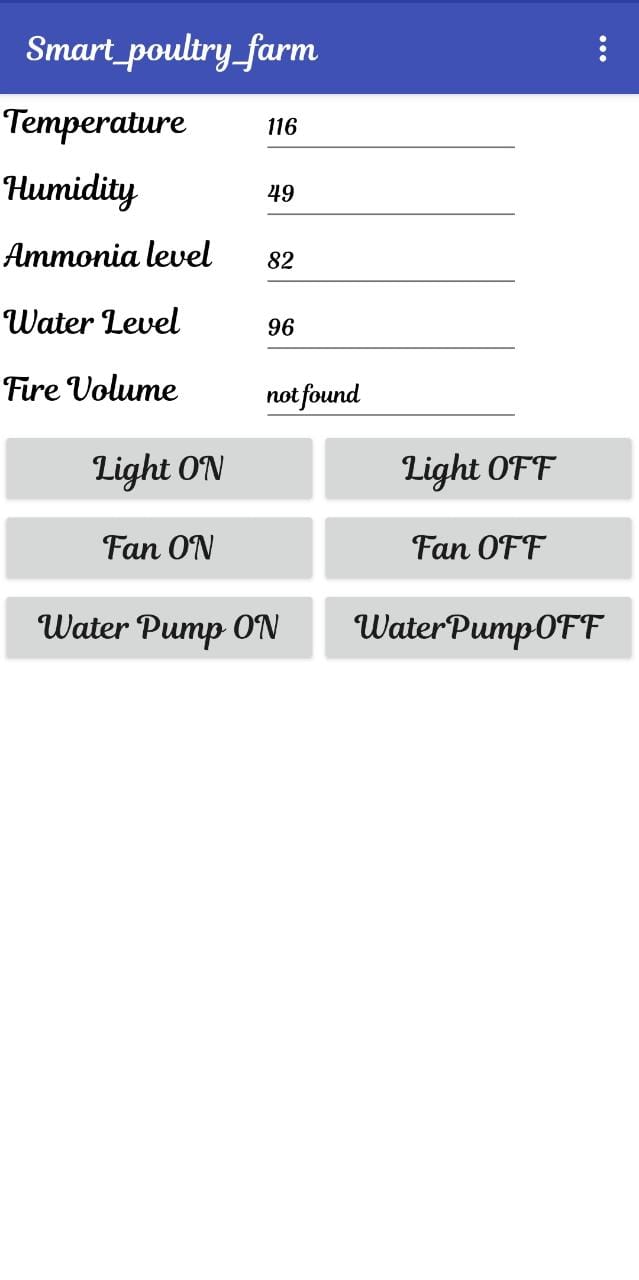


**Mit App:**

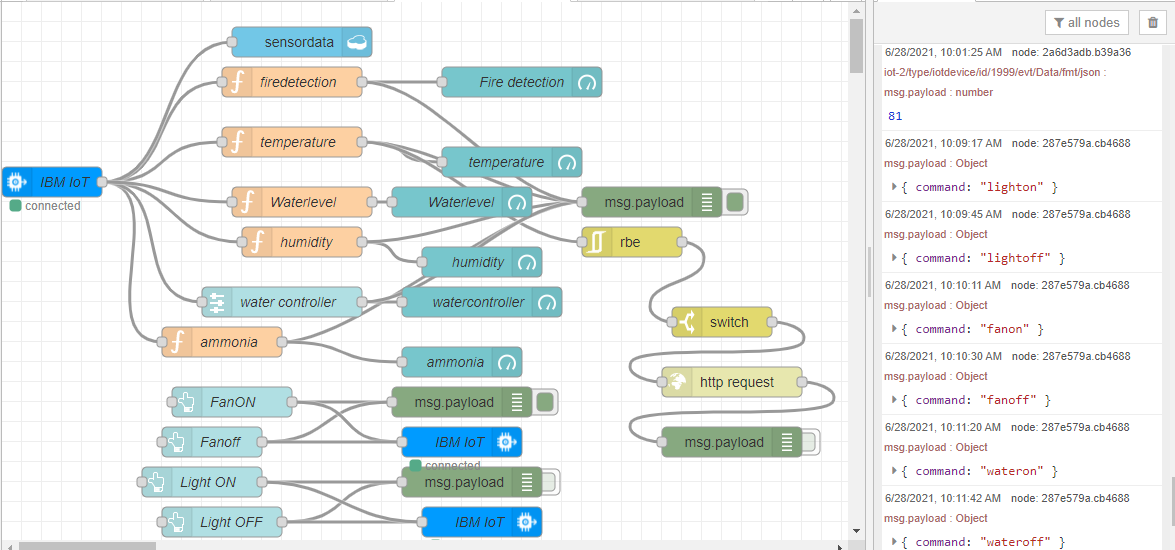
****

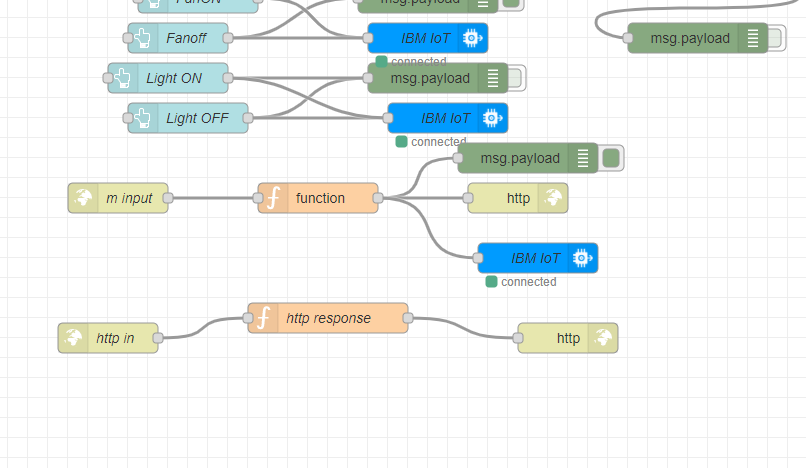
****

****

****

**Node-red:**

****

****

**Disadvantages of Fleet Management:**

* Difficulties in ensuring proper ventilation to birds especially in summer season and

Under very high dense condition

* Incident of leg problem,cage layer fatigue,fatty liver syndrome,flies and obnoxious

Gases in the house will be on increase.

* Hysteresis of chicks

**7.ADVANTAGES AND DISADVANTAGES :**

**Advantages of Smart Poultry Farm:**

Benefits of Poultry Farming Business

* Less Capital Required
* No Need for a Big Space
* High Returns in a Short Time Period
* High Maintenance not required
* License not Compulsory
* Huge Global Demand
* Easy Marketing
* Income & Employment Opportunities

**8. APPLICATIONS:**

The application of the IOT makes a great contribution to the development of modern poultry farming and intelligent farming.

**9.CONCLUSION:**

IOT is an innovative technology for poultry farming which can change a manual farm into a modern semi-automated poultry farm. In addition, the system could work on the android mobile application helping the owner to monitor the poultry farm such as food feeding function, object detection, water sprinkling, and unwanted gas reduction. The proposed system can reduce manpower and feed the food to chickens, reduce the unwanted gas, and maintain temperature in farms. This is fully automatic. Hence this system will reduce cost, time, manpower, and decrease environmental pollution.

**10.FUTURE SCOPE:**

Since poultry farming can be practiced as a supplementary or second income generating mechanism, the landless labourers and small farmers find support in this business. In fact, poultry farming has become an indispensable component of the agricultural industry in India. Thus the proposed project design provides an efficiently automated monitoring system. Traditional poultry farms can be converted into modern and automatic poultry farms using IoT. This automated poultry farm is used to improve the health and growth of the chicken. So poultry owners can make a huge profit and good earning from the poultry farming business. In the future, the fire alarm system can be added and an automated fire extinguisher system can be designed and we can add more information about poultry farms like reminders for vaccination of the chicken, information about workers, etc. on the web page. The same system can be referred for Poly house and food preserver. And mini robots can be used for cleanliness purposes.

**11.BIBLIOGRAPHY :**

[**https://cloud.ibm.com/**](https://cloud.ibm.com/)

[**https://cloud.ibm.com/catalog#services**](https://cloud.ibm.com/catalog#services)

[**https://node-red-ujwtt-2021-05-19.eu-gb.mybluemix.net/ui/#!/0?socketid=7F82sRafu1w\_XnYFAAAK**](https://node-red-ujwtt-2021-05-19.eu-gb.mybluemix.net/ui/#!/0?socketid=7F82sRafu1w_XnYFAAAK)

[**https://node-red-ujwtt-2021-05-19.eu-gb.mybluemix.net/sensordata**](https://node-red-ujwtt-2021-05-19.eu-gb.mybluemix.net/sensordata)

[**https://node-red-ujwtt-2021-05-19.eu-gb.mybluemix.net/data?command=wateroff**](https://node-red-ujwtt-2021-05-19.eu-gb.mybluemix.net/data?command=wateroff)

[**https://drive.google.com/file/d/17w9kM5rjWfzJyrMGNAuGSUnRs4zg70\_D/view?usp=sharing**](https://drive.google.com/file/d/17w9kM5rjWfzJyrMGNAuGSUnRs4zg70_D/view?usp=sharing)

[**http://ai2.appinventor.mit.edu/#5071135183339520**](http://ai2.appinventor.mit.edu/#5071135183339520)

**12.APPENDIX:**

**12.1.Source Code**

**import time**

**import sys**

**import ibmiotf.application**

**import ibmiotf.device**

**import random**

**import json**

**#Provide your IBM Watson Device Credentials**

**organization = "hx9af7"**

**deviceType = "iotdevice"**

**deviceId = "1999"**

**authMethod = "token"**

**authToken = "123456789"**

**# Initialize the device client.**

**T=0**

**H=0**

**W=0**

**A=0**

**F=0**

**def myCommandCallback(cmd):**

**print("Command received: %s" % cmd.data['command'])**

**if cmd.data['command']=='lighton':**

**print("LIGHT ON IS RECEIVED")**

**elif cmd.data['command']=='lightoff':**

**print("LIGHT OFF IS RECEIVED")**

**if cmd.command == "setInterval":**

**if 'interval' not in cmd.data:**

**print("Error - command is missing required information: 'interval'")**

**else:**

**interval = cmd.data['interval']**

**elif cmd.command == "print":**

**if 'message' not in cmd.data:**

**print("Error - command is missing required information: 'message'")**

**else:**

**print(cmd.data['message'])**

**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:**

**T=random.randint(-10,125)**

**H=random.randint(0,100)**

**W=random.randint(0,100)**

**A=random.randint(0,100)**

**F=random.randint(0,100)**

**#Send Temperature & Humidity to IBM Watson**

**data = {"d":{ 'temperature' : T, 'humidity': H, 'Water level': W, 'ammoniagas': A, 'firedetection': F}}**

**print (data)**

**def myOnPublishCallback():**

**print ("Published Temperature = %s C" % T, "Humidity = %s %%" % H, "Water level = %s cubic feet" %W,"Ammoniagas = %s ppm" %A ,"Firedetection = %s %%" %F,"to IBM Watson")**

**success = deviceCli.publishEvent("Data", "json", data, qos=0, on\_publish=myOnPublishCallback)**

**if not success:**

**print("Not connected to IoTF")**

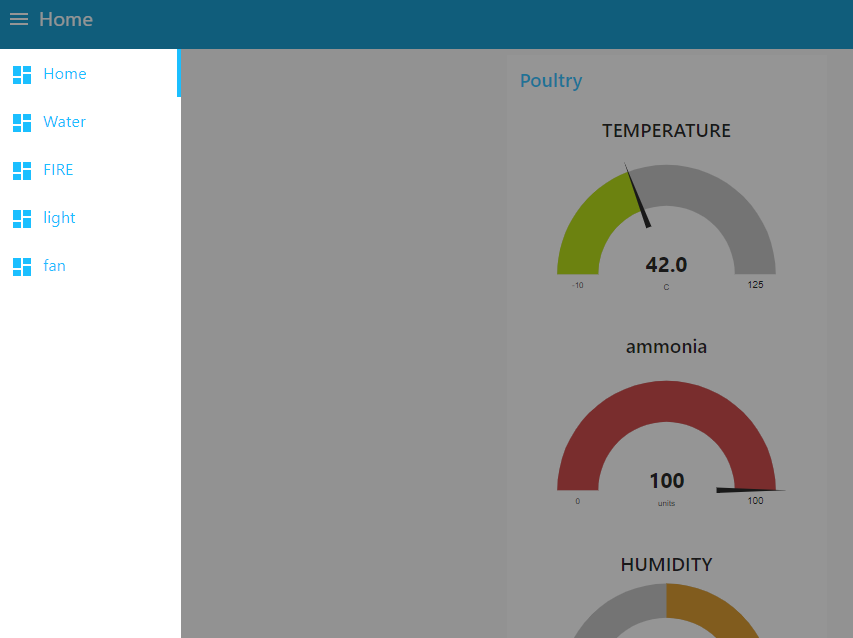
**time.sleep(1)**

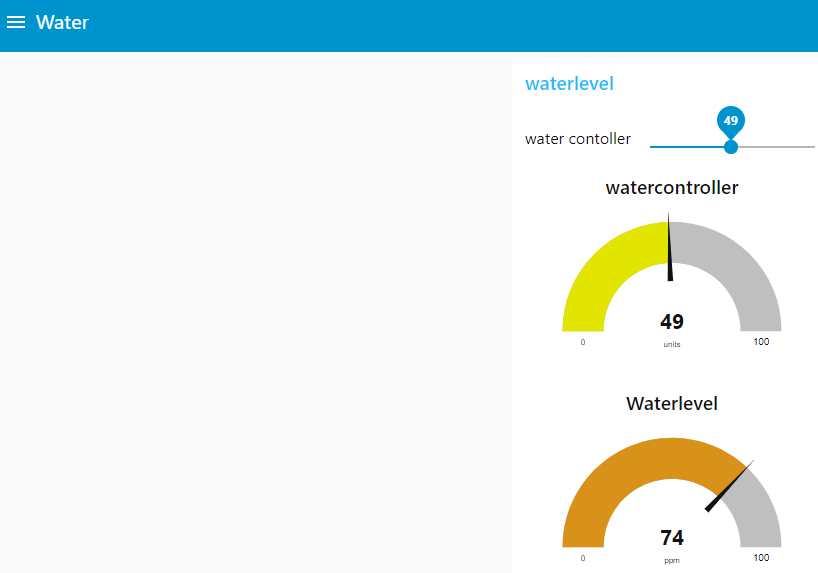
**deviceCli.commandCallback = myCommandCallback**

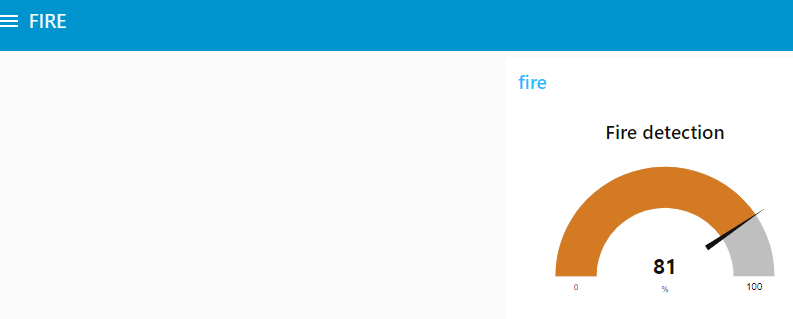
**# Disconnect the device and application from the cloud**

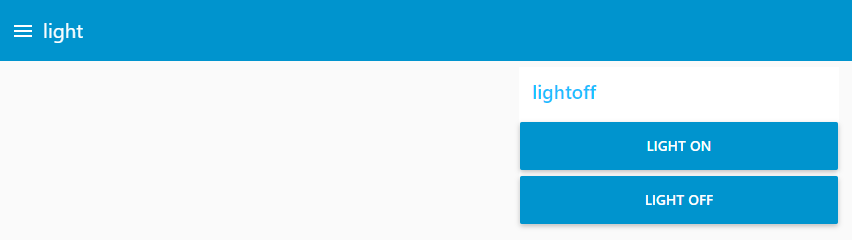
**deviceCli.disconnect()**

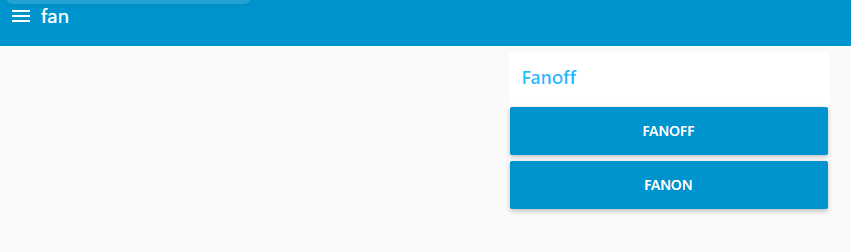
**12.2 UI Output**

****

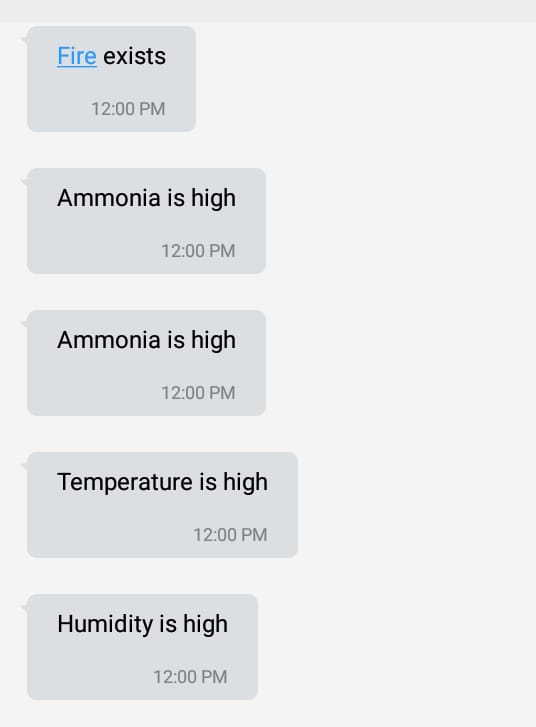
****

****

****

****

**FAST 2 SMS OUTPUT:**

****