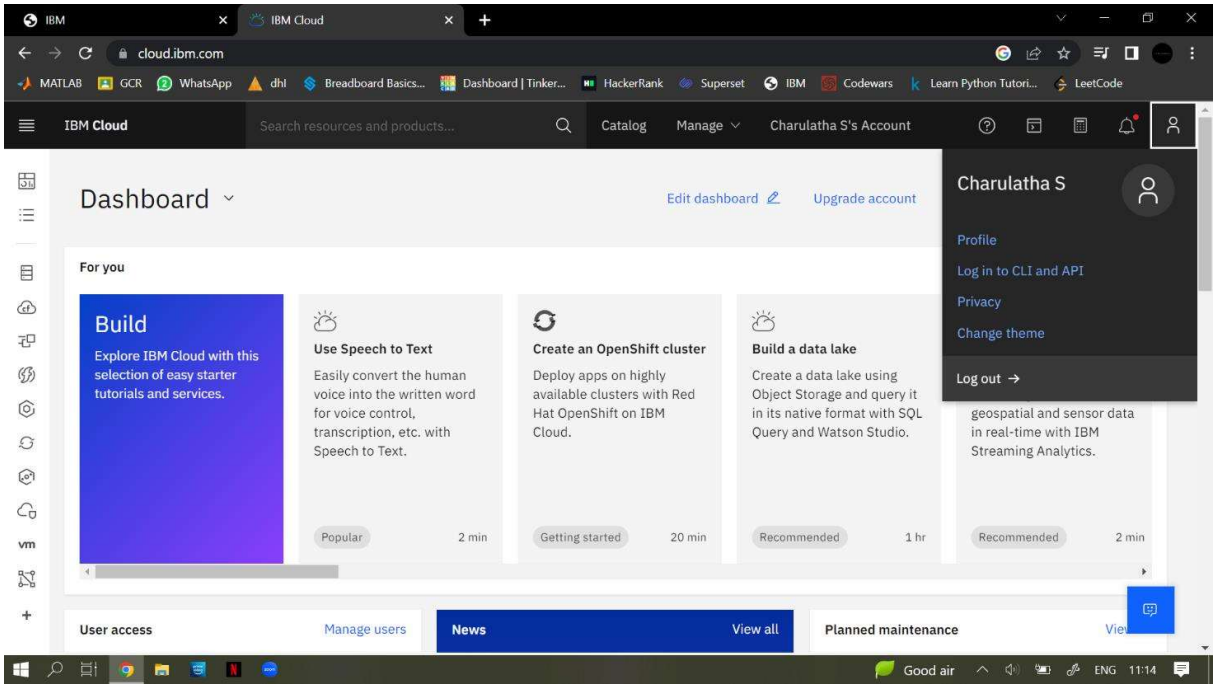
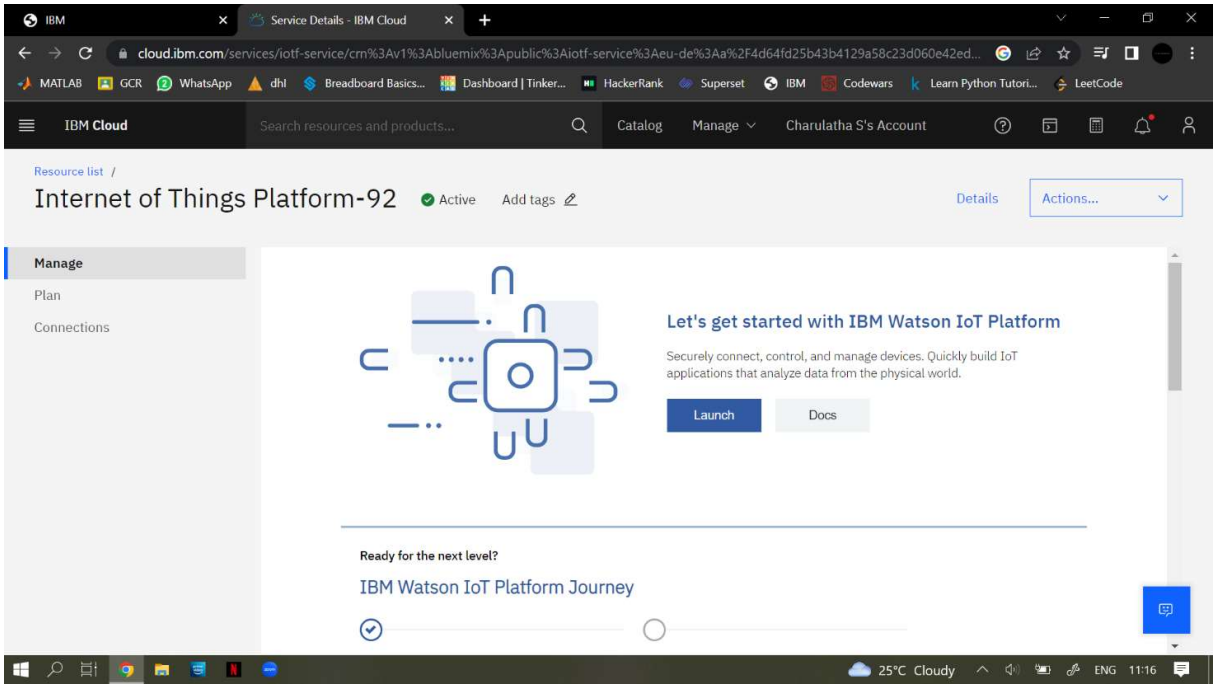
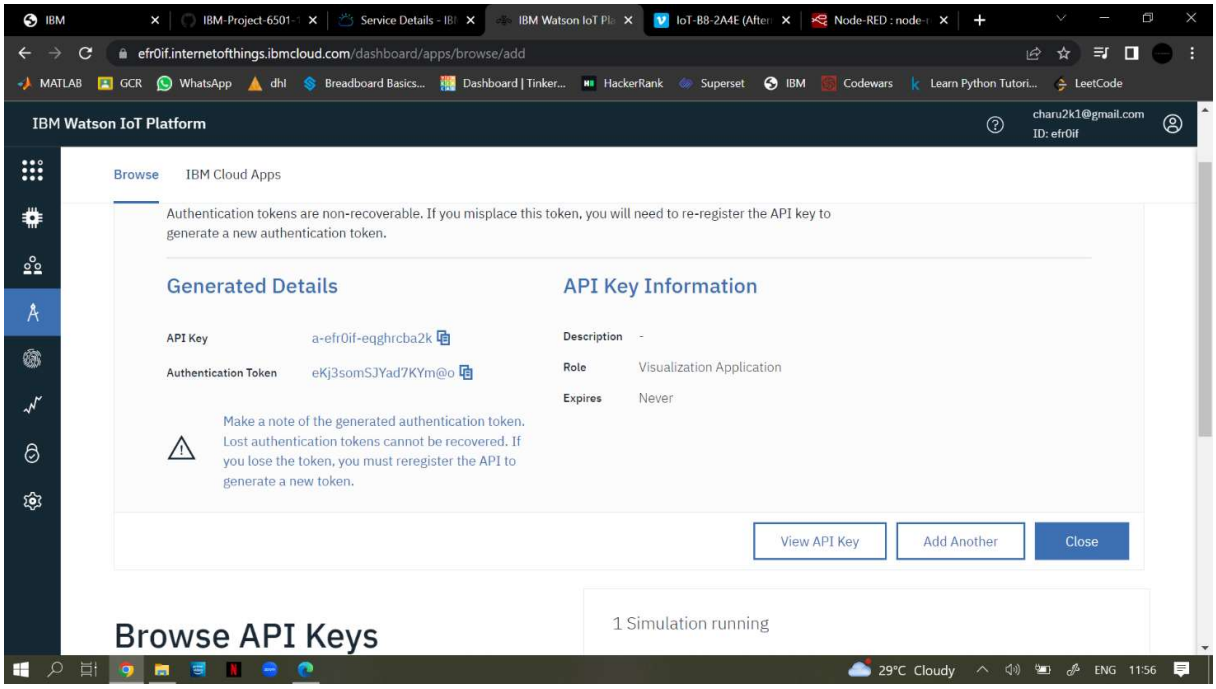
Project Development Phase
SPRINT - 4

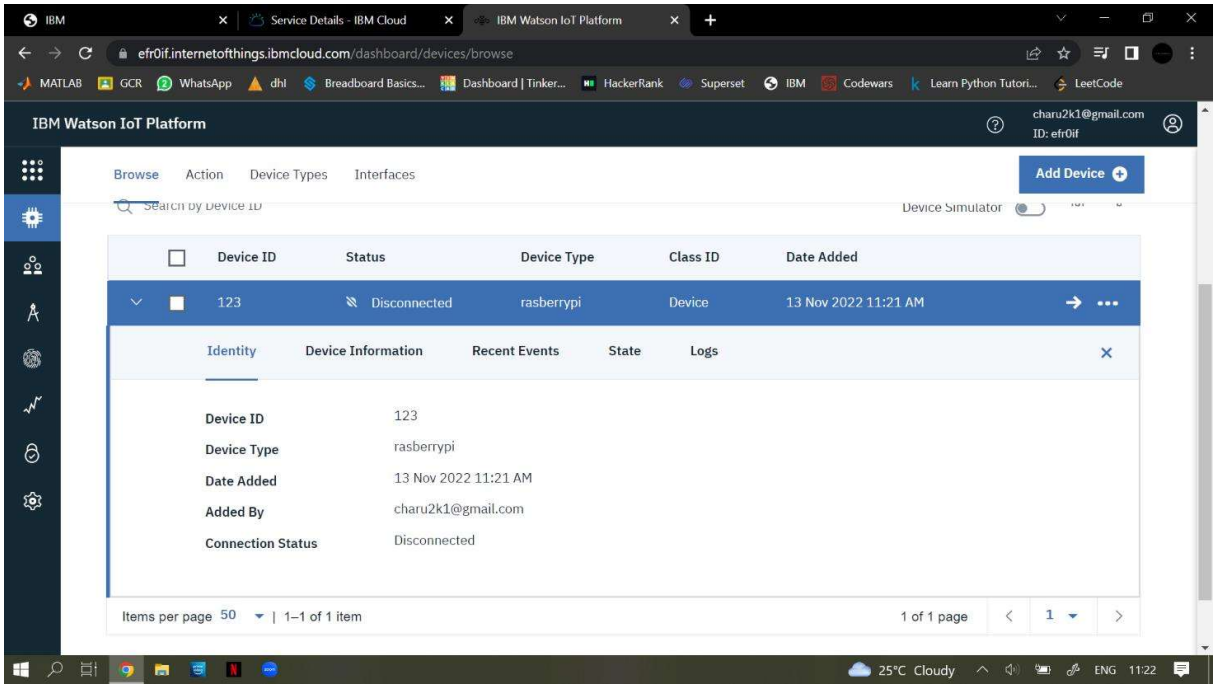
Date	19 November 2022
Team ID	PNT2022TMID54322
Project Name	Signs with Smart Connectivity for Better Road Safety
Maximum Marks	20 Marks

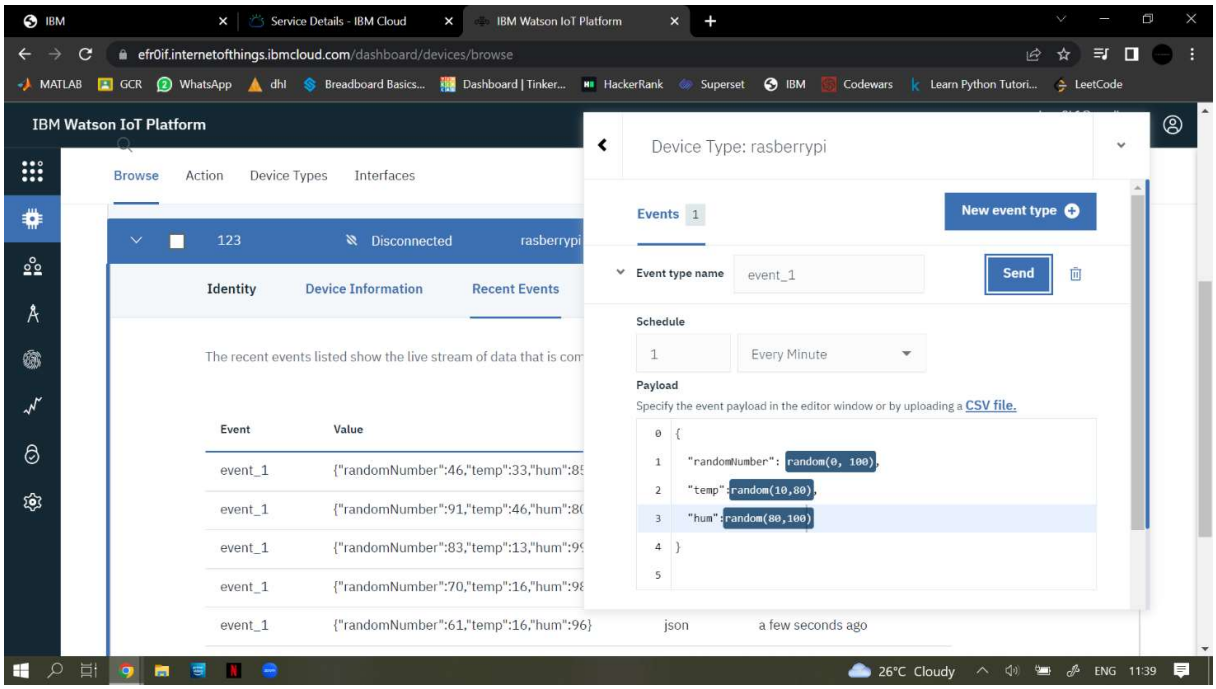
Sprint-4	USN-1	Create Web UI in Node - Red
Sprint-4	USN-2	Configure the Node-RED flow to receive data from the IBM IoT platform and also use cloudant DB nodes to store the received sensor data in the cloudant DB

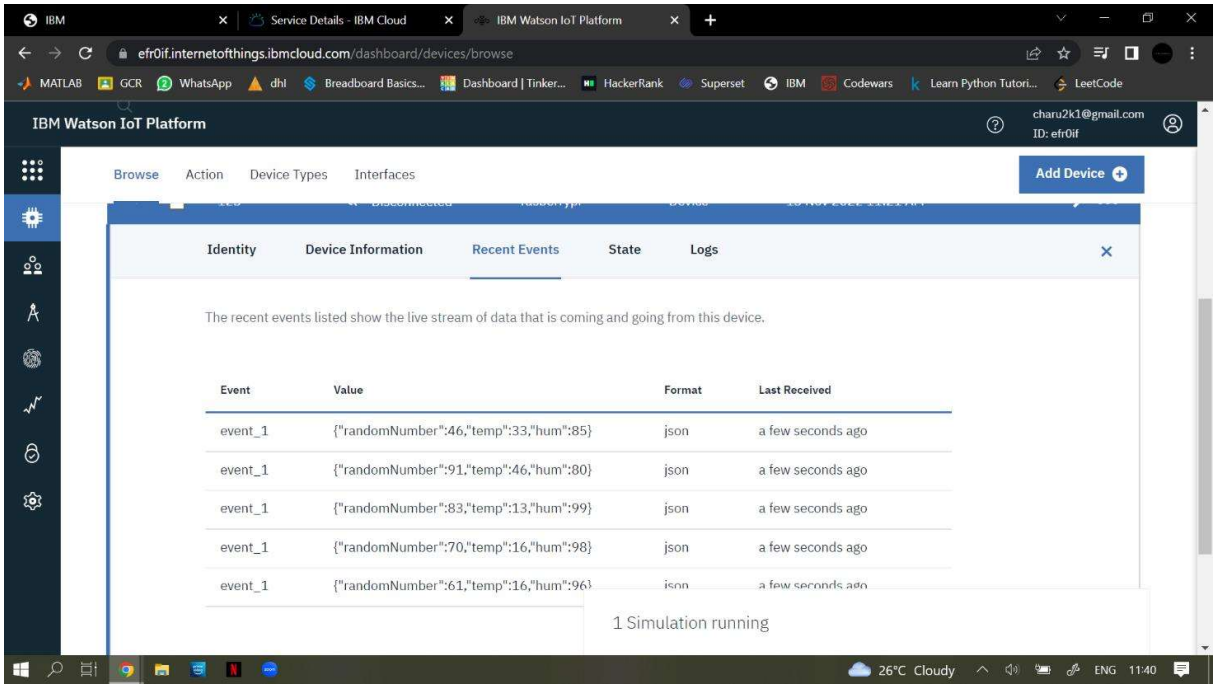


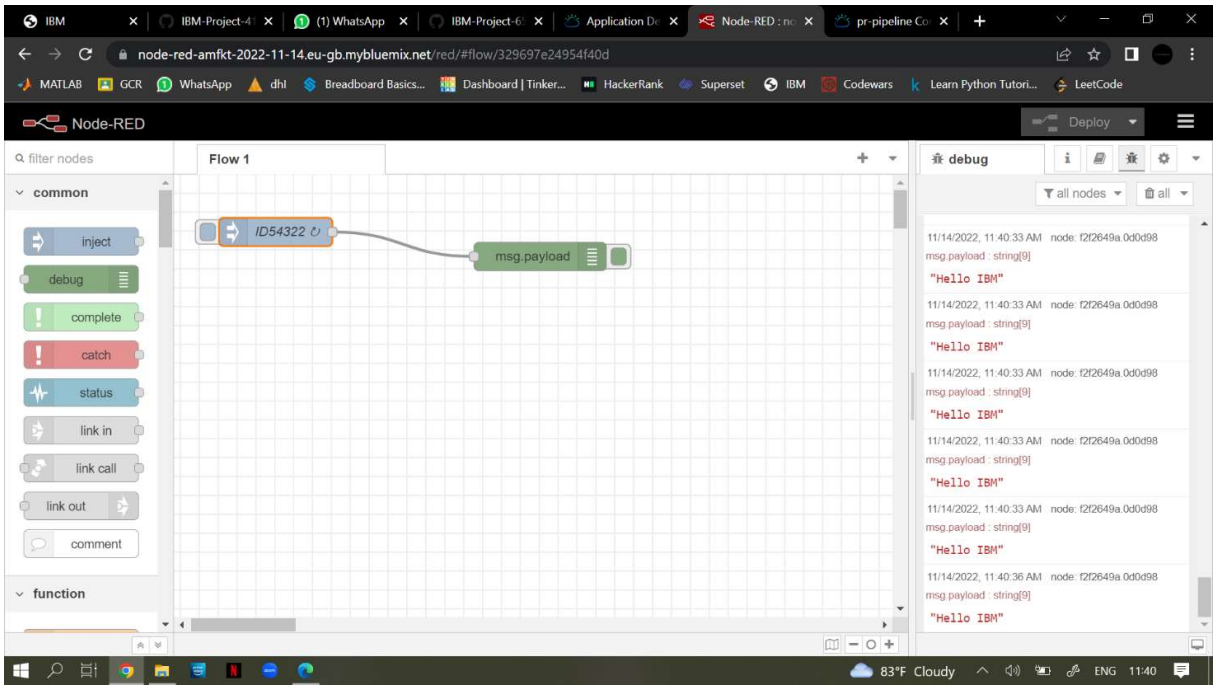

IBM
Service Details - IBM Cloud
cloud.ibm.com/services/iotf-service/crn%3Av1%3Abluemix%3Apublic%3Aiotf-service%3Aeu-de%3Aa%2F4d64fd25b43b4129a58c23d060e42ed...
MATLAB
GCR
WhatsApp
dhl
Breadboard Basics...
Dashboard | Tinker...
HackerRank
Superset
IBM
Codewars
Learn Python Tutori...
LeetCode
IBM Cloud
Search resources and products...
Catalog
Manage
Charulatha S's Account
Resource list /
Internet of Things Platform-92
Active
Add tags
Details
Actions...
Manage
Plan
Connections
Let's get started with IBM Watson IoT Platform
Securely connect, control, and manage devices. Quickly build IoT applications that analyze data from the physical world.
Launch
Docs
Ready for the next level?
IBM Watson IoT Platform Journey
25°C Cloudy
ENG
11:16

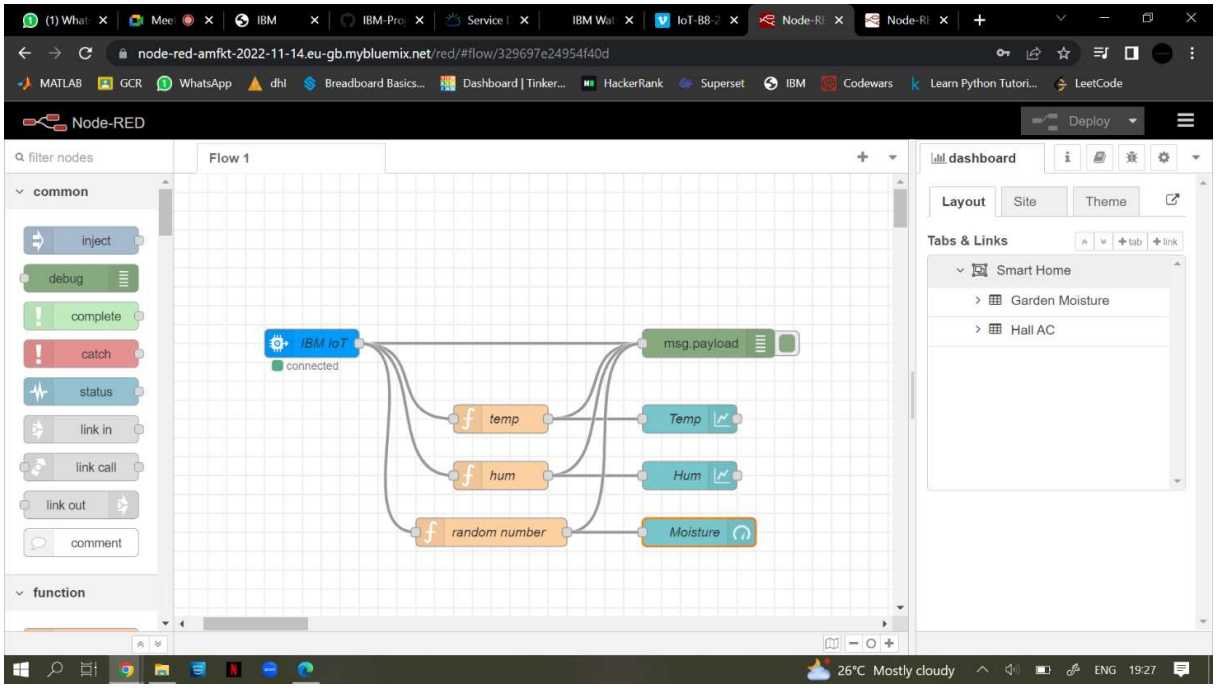

IBM
IBM-Project-6501-
Service Details - IBI
IBM Watson IoT Pla
IoT-B8-2A4E (After
Node-RED : node-
efr0if.internetofthings.ibmcloud.com/dashboard/apps/browse/add
MATLAB
GCR
WhatsApp
dhl
Breadboard Basics...
Dashboard | Tinker...
HackerRank
Superset
IBM
Codewars
Learn Python Tutori...
LeetCode
IBM Watson IoT Platform
charu2k1@gmail.com
ID: efr0if
Browse
IBM Cloud Apps
Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the API key to generate a new authentication token.
Generated Details
API Key
a-efr0if-eqghrcba2k
Authentication Token
eKj3somSJYad7KYm@o
Make a note of the generated authentication token. Lost authentication tokens cannot be recovered. If you lose the token, you must reregister the API to generate a new token.
API Key Information
Description
-
Role
Visualization Application
Expires
Never
View API Key
Add Another
Close
Browse API Keys
1 Simulation running
29°C Cloudy
ENG
11:56

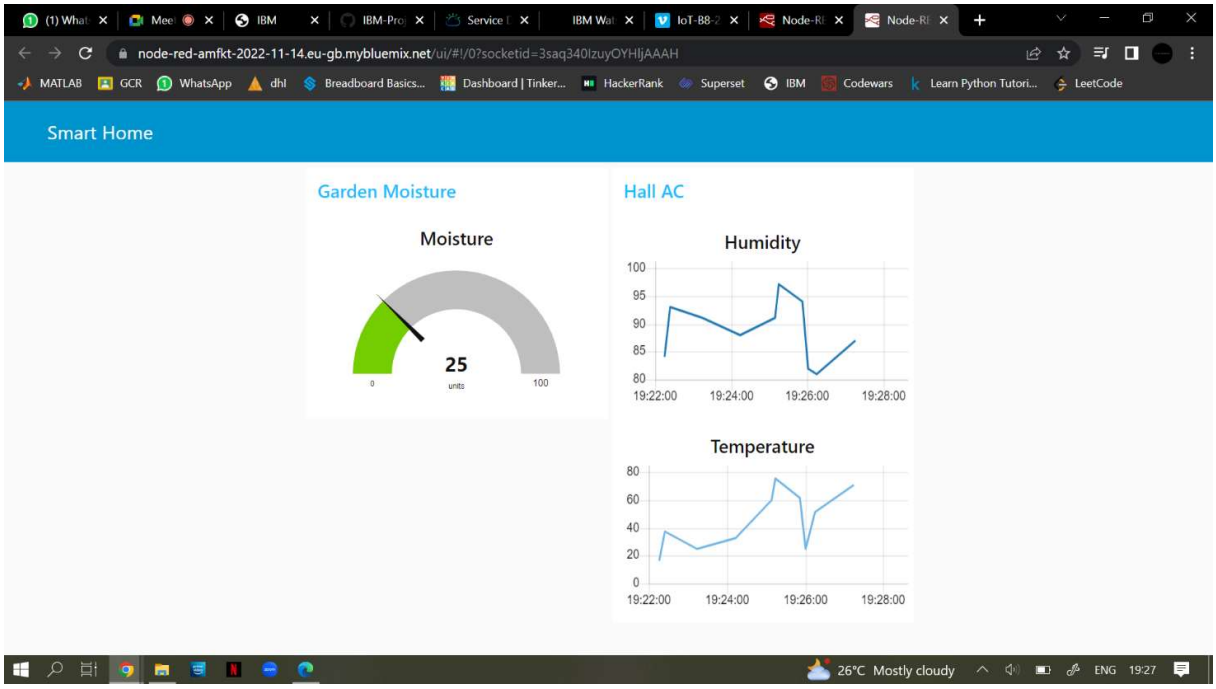

IBM
Service Details - IBM Cloud
IBM Watson IoT Platform
efr0if.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
charu2k1@gmail.com
ID: efr0if
Browse
Action
Device Types
Interfaces
Add Device
Device Simulator
Device ID
Status
Device Type
Class ID
Date Added
123
Disconnected
rasberrypi
Device
13 Nov 2022 11:21 AM
Identity
Device Information
Recent Events
State
Logs
Device ID
123
Device Type
rasberrypi
Date Added
13 Nov 2022 11:21 AM
Added By
charu2k1@gmail.com
Connection Status
Disconnected
Items per page 50
1–1 of 1 item
1 of 1 page
25°C Cloudy
ENG 11:22

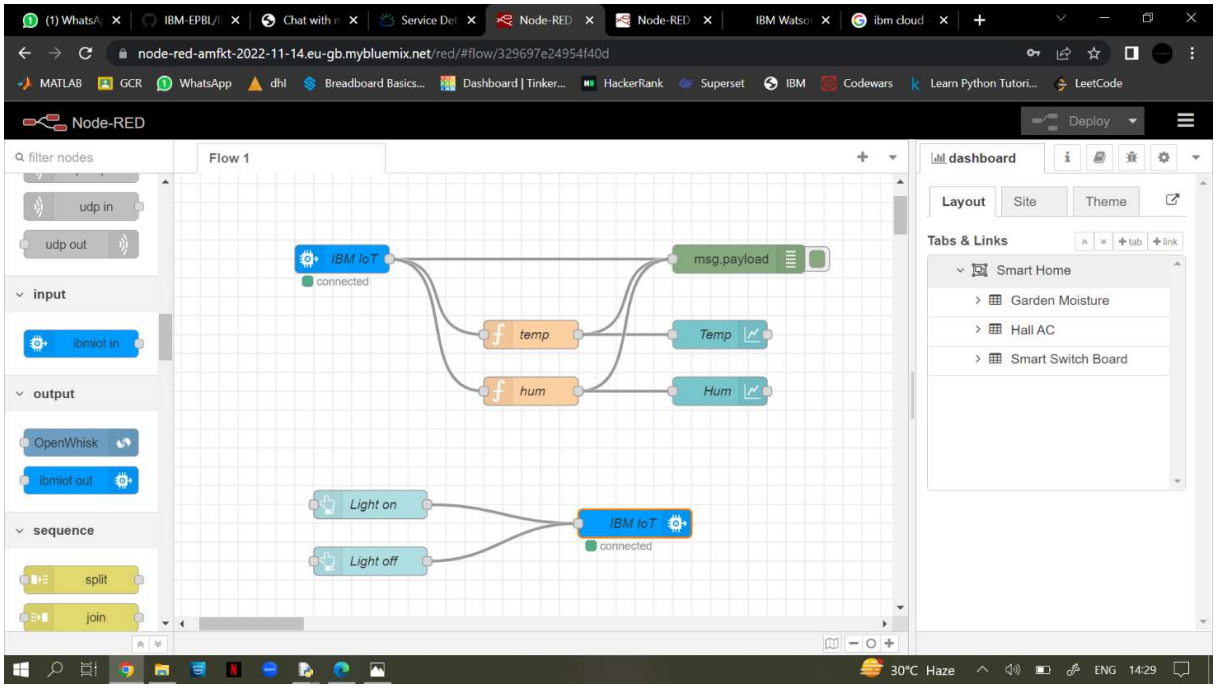

IBM
Service Details - IBM Cloud
IBM Watson IoT Platform
efr0if.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
Browse
Action
Device Types
Interfaces
123
Disconnected
rasberrypi
Identity
Device Information
Recent Events
The recent events listed show the live stream of data that is com
Event
Value
event_1
{"randomNumber":46,"temp":33,"hum":85
event_1
{"randomNumber":91,"temp":46,"hum":80
event_1
{"randomNumber":83,"temp":13,"hum":99
event_1
{"randomNumber":70,"temp":16,"hum":98
event_1
{"randomNumber":61,"temp":16,"hum":96}
json
a few seconds ago
Device Type: rasberrypi
Events 1
New event type
Event type name
event_1
Send
Schedule
1
Every Minute
Payload
Specify the event payload in the editor window or by uploading a CSV file.
{
"randomNumber": random(0, 100),
"temp":random(10,80),
"hum":random(80,100)
}
26°C Cloudy
ENG 11:39

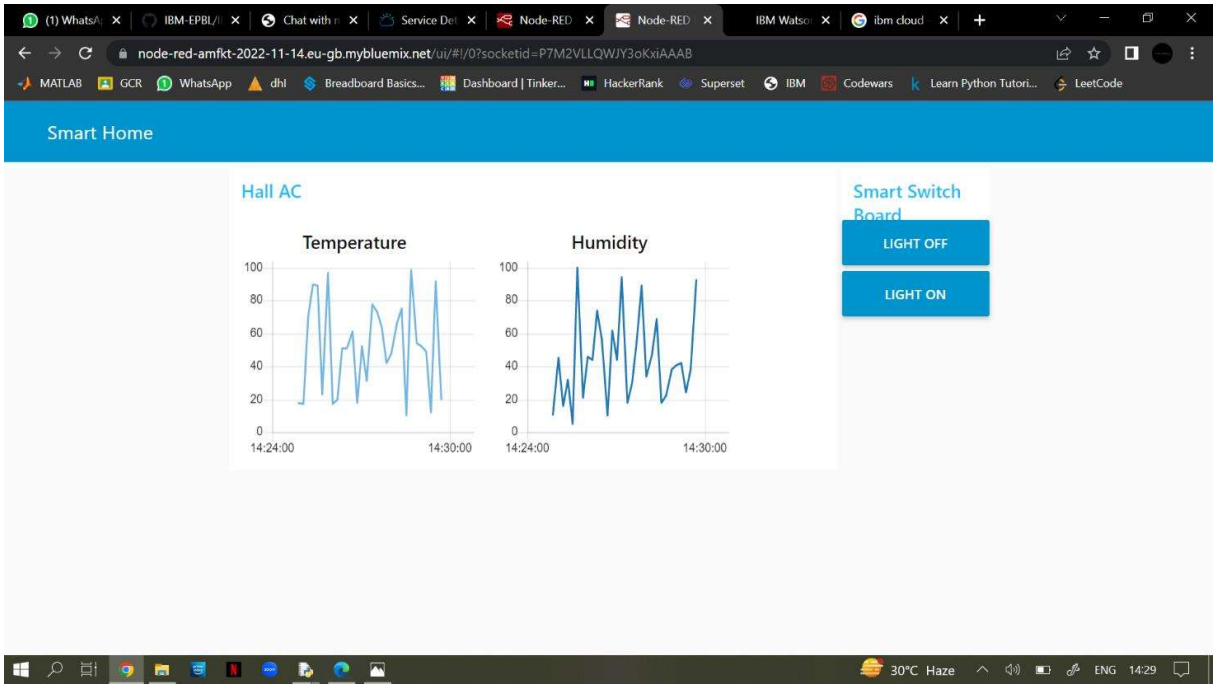

IBM Watson IoT Platform
Browse
Action
Device Types
Interfaces
Add Device
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
event_1
{"randomNumber":46,"temp":33,"hum":85}
json
a few seconds ago
event_1
{"randomNumber":91,"temp":46,"hum":80}
json
a few seconds ago
event_1
{"randomNumber":83,"temp":13,"hum":99}
json
a few seconds ago
event_1
{"randomNumber":70,"temp":16,"hum":98}
json
a few seconds ago
1 Simulation running

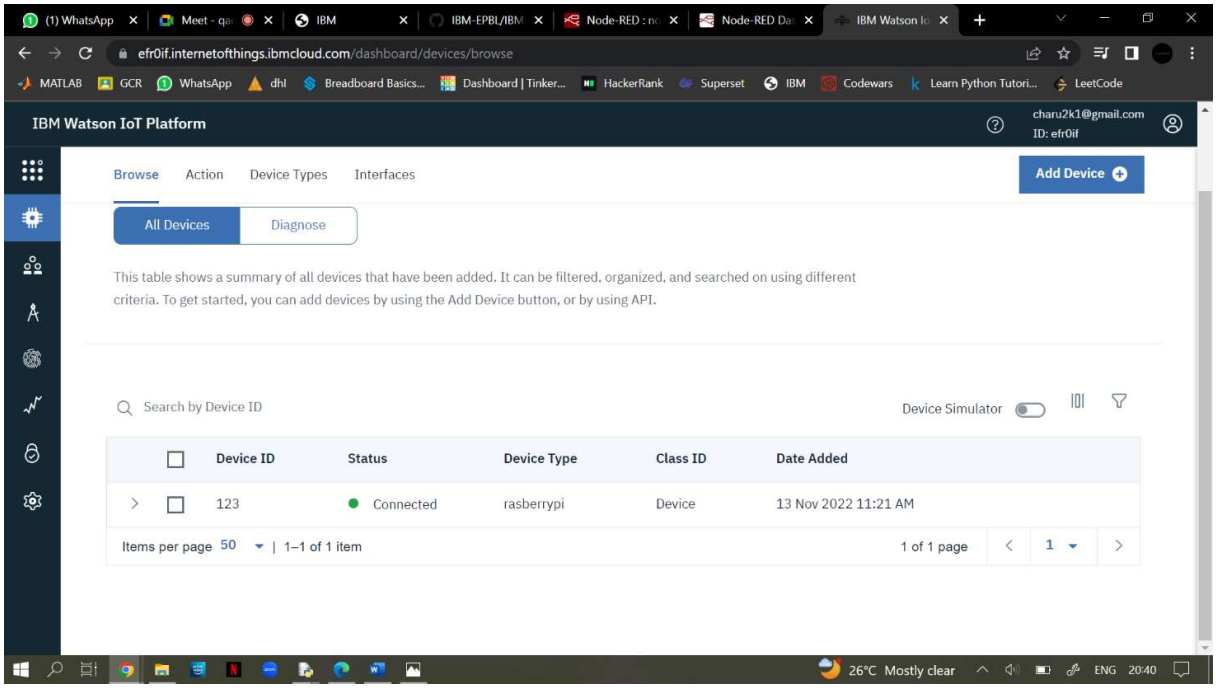

Node-RED
Deploy
Flow 1
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
ID54322
msg.payload
debug
all nodes
"Hello IBM"

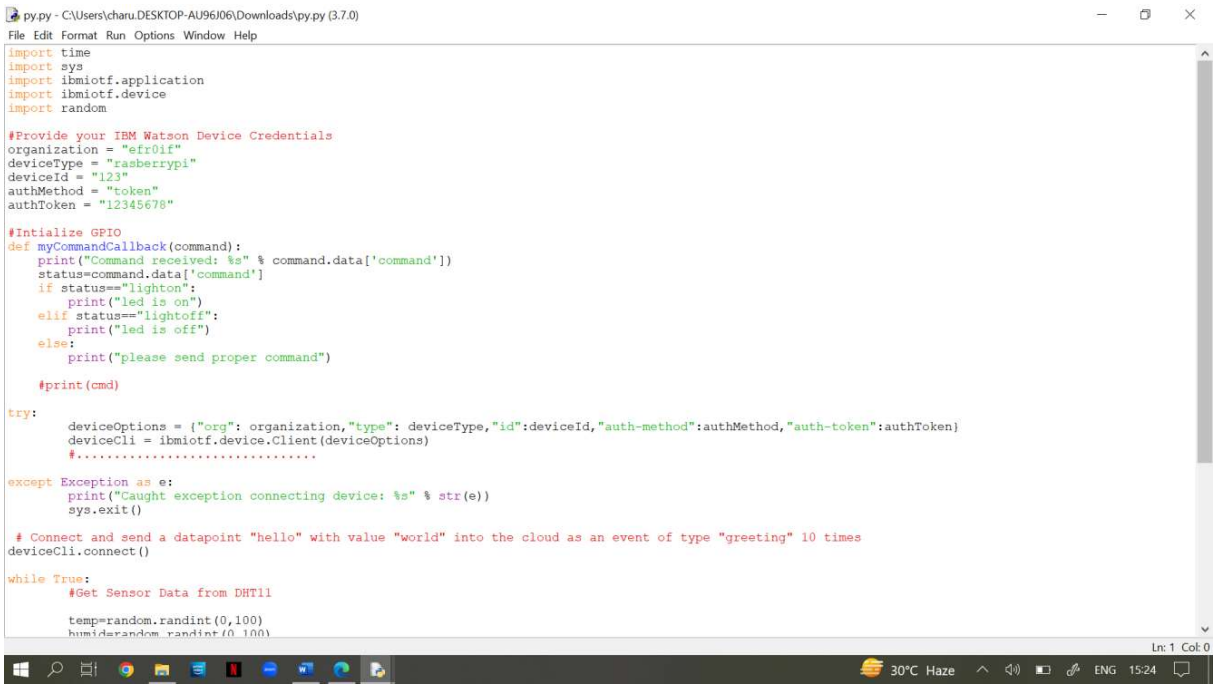

node-red-amfkt-2022-11-14.eu-gb.mybluemix.net/red/#flow/329697e24954f40d
Node-RED
Deploy
filter nodes
Flow 1
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
IBM IoT
connected
msg.payload
temp
Temp
hum
Hum
random number
Moisture
dashboard
Layout
Site
Theme
Tabs & Links
Smart Home
Garden Moisture
Hall AC
26°C Mostly cloudy
ENG
19:27

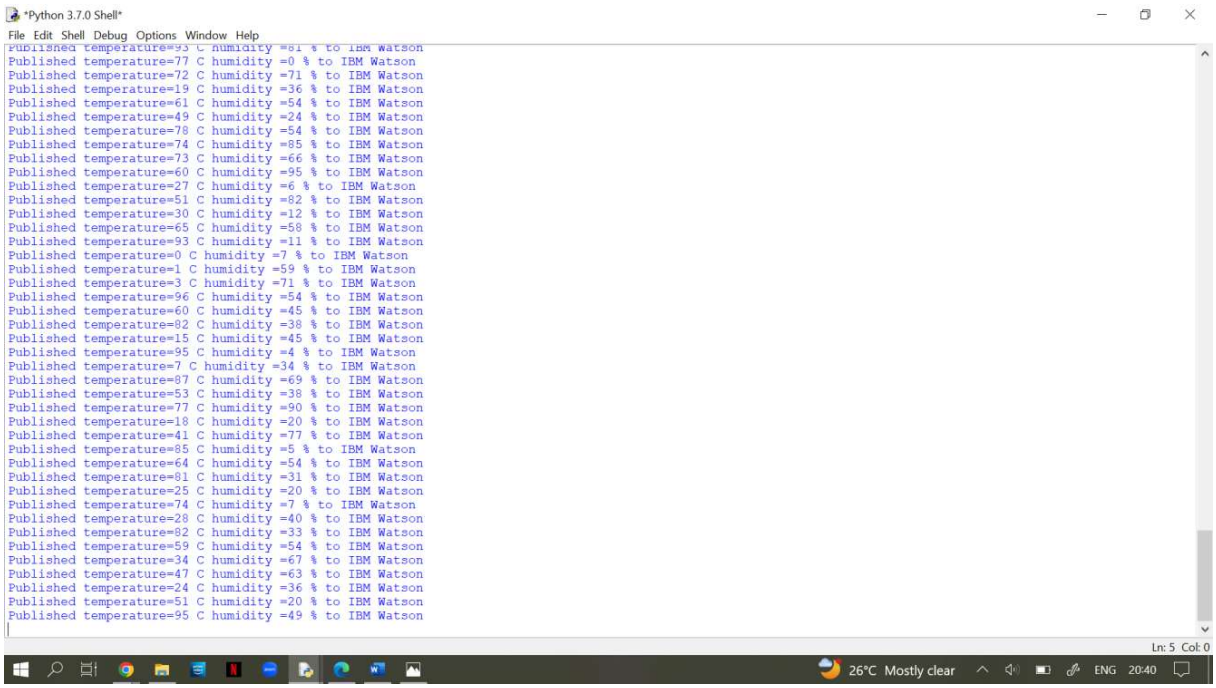

node-red-amfkt-2022-11-14.eu-gb.mybluemix.net/ui/#!/0?socketid=3saq340lzuyOYHljAAAH
Smart Home
Garden Moisture
Moisture
25
units
0
100
Hall AC
Humidity
100
95
90
85
80
19:22:00
19:24:00
19:26:00
19:28:00
Temperature
80
60
40
20
0
19:22:00
19:24:00
19:26:00
19:28:00
26°C Mostly cloudy
ENG
19:27

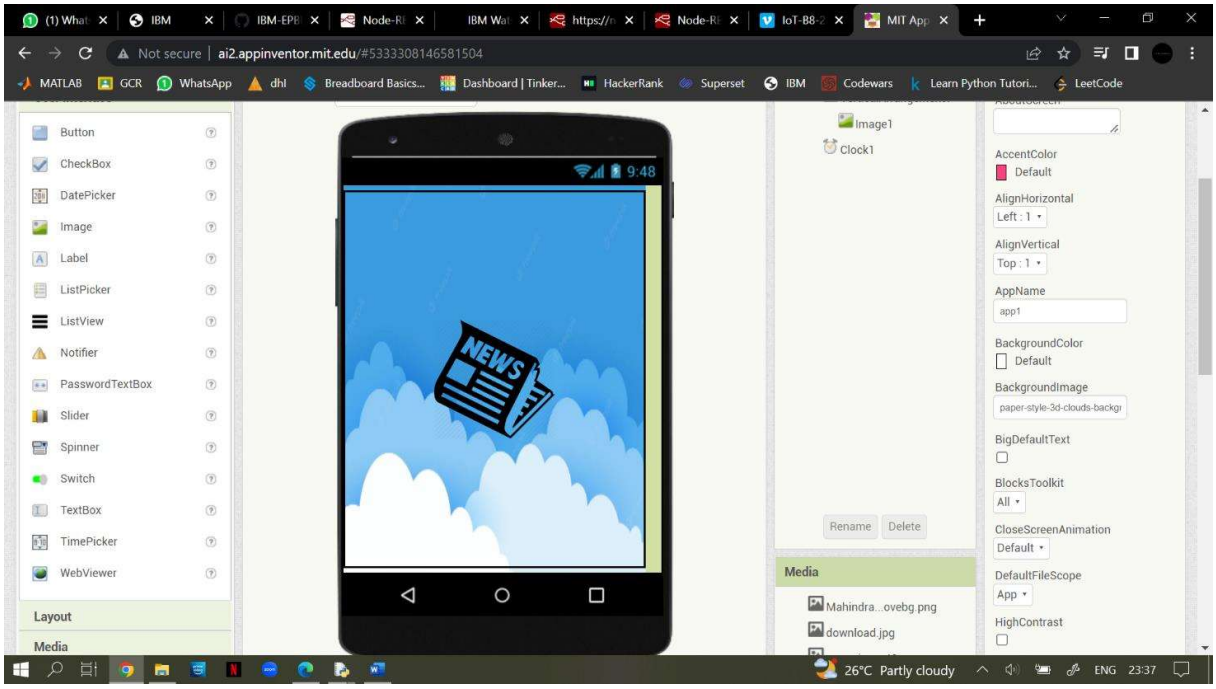

node-red-amfkt-2022-11-14.eu-gb.mybluemix.net/red/#flow/329697e24954f40d
Node-RED
Deploy
filter nodes
Flow 1
udp in
udp out
input
ibmiot in
output
OpenWhisk
ibmiot out
sequence
split
join
IBM IoT
connected
msg.payload
temp
Temp
hum
Hum
Light on
Light off
IBM IoT
connected
dashboard
Layout
Site
Theme
Tabs & Links
Smart Home
Garden Moisture
Hall AC
Smart Switch Board
30°C Haze
ENG
14:29

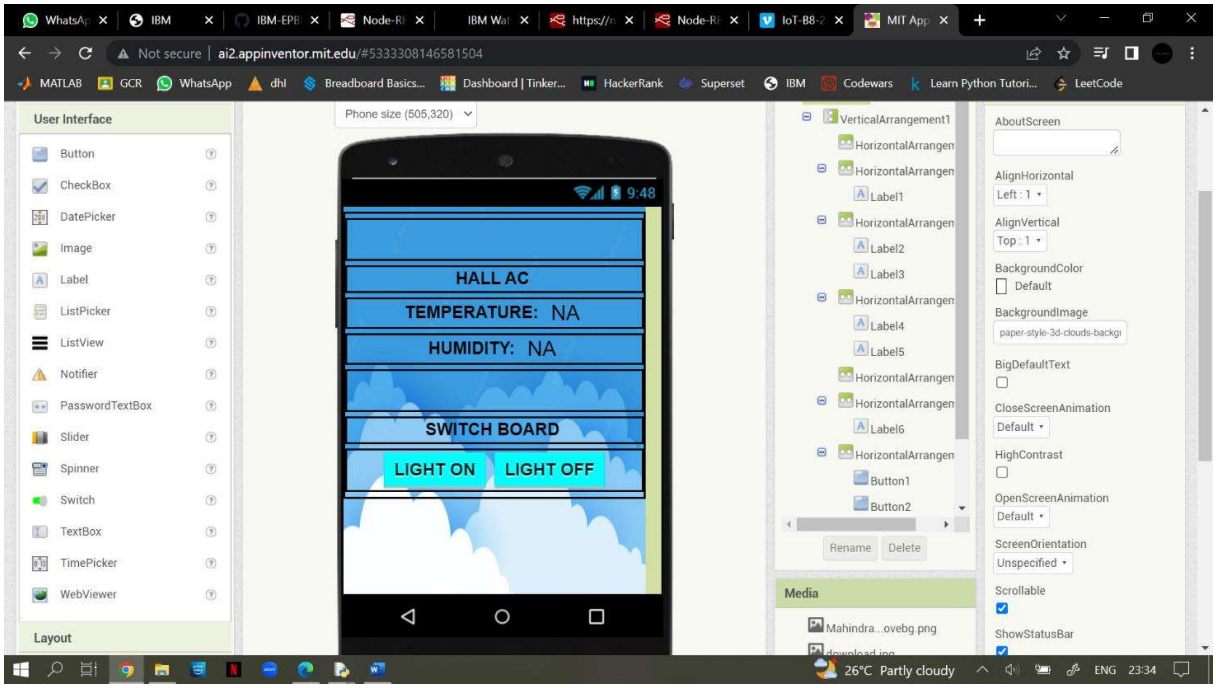

node-red-amfkt-2022-11-14.eu-gb.mybluemix.net/ui/#!/0?socketid=P7M2VLLQWJY3oKxiAAAB
Smart Home
Hall AC
Temperature
Humidity
100
80
60
40
20
0
14:24:00
14:30:00
Smart Switch Board
LIGHT OFF
LIGHT ON
30°C Haze
ENG
14:29

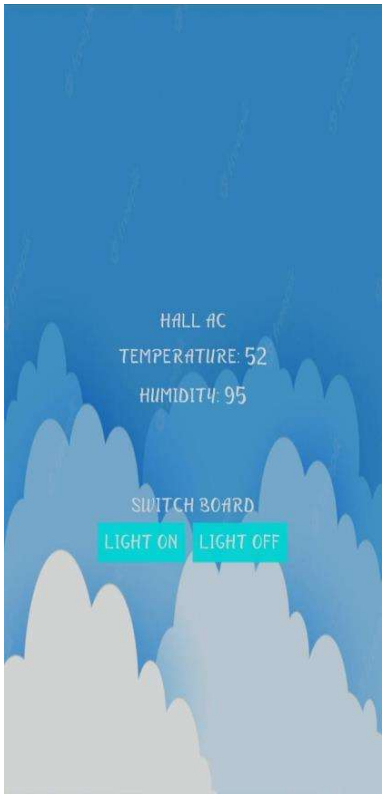

efr0if.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
charu2k1@gmail.com
ID: efr0if
Browse
Action
Device Types
Interfaces
Add Device
All Devices
Diagnose
This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.
Search by Device ID
Device Simulator
Device ID
Status
Device Type
Class ID
Date Added
123
Connected
rasberrypi
Device
13 Nov 2022 11:21 AM
Items per page 50
1–1 of 1 item
1 of 1 page
26°C Mostly clear
ENG 20:40

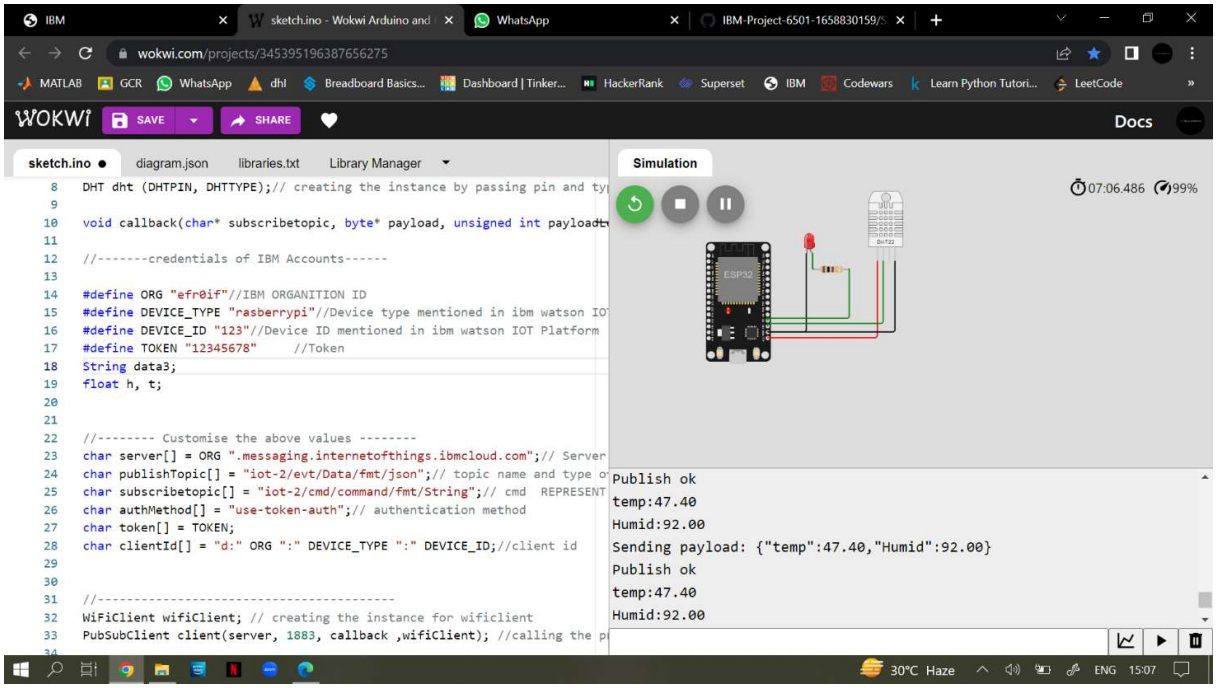

py.py - C:\Users\charu.DESKTOP-AU96J06\Downloads\py.py (3.7.0)
File Edit Format Run Options Window Help
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "efr0if"
deviceType = "rasberrypi"
deviceId = "123"
authMethod = "token"
authToken = "12345678"
#Initialize GPIO
def myCommandCallback(command):
print("Command received: %s" % command.data['command'])
status=command.data['command']
if status=="lighton":
print("led is on")
elif status=="lightoff":
print("led is off")
else:
print("please send proper command")
#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)
Ln: 1 Col: 0
30°C Haze
ENG 15:24

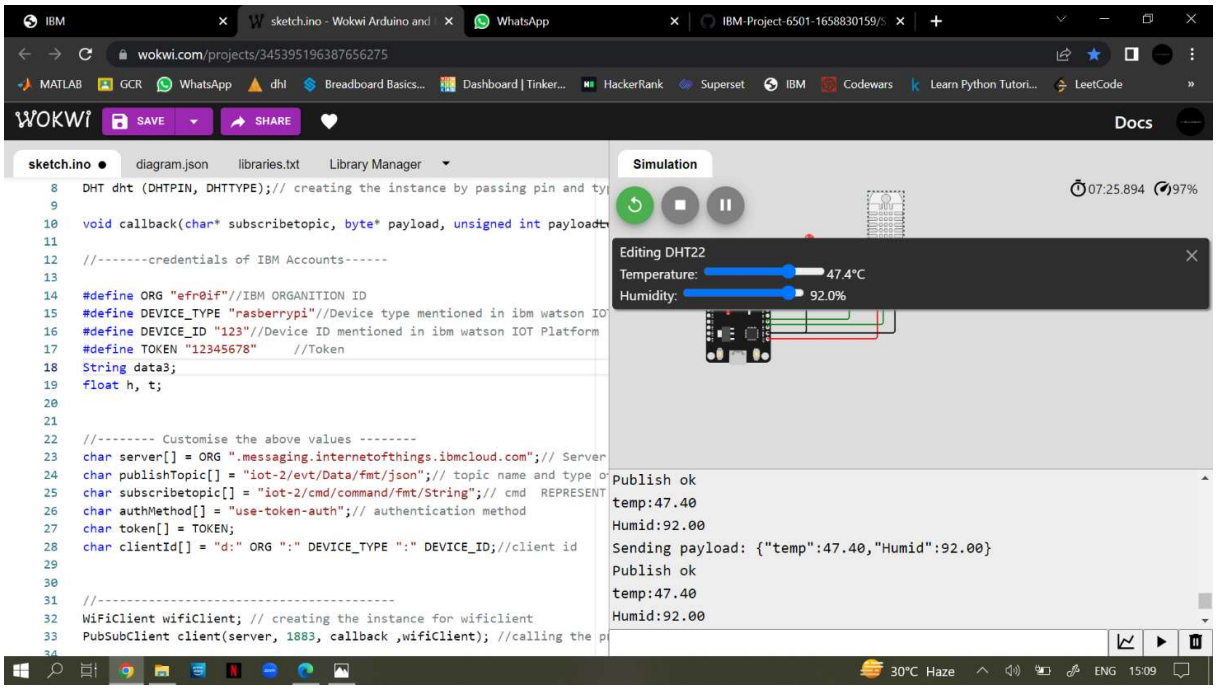

Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Published temperature=77 C humidity =0 % to IBM Watson
Published temperature=72 C humidity =71 % to IBM Watson
Published temperature=19 C humidity =36 % to IBM Watson
Published temperature=61 C humidity =54 % to IBM Watson
Published temperature=49 C humidity =24 % to IBM Watson
Published temperature=78 C humidity =54 % to IBM Watson
Published temperature=74 C humidity =85 % to IBM Watson
Published temperature=73 C humidity =66 % to IBM Watson
Published temperature=60 C humidity =95 % to IBM Watson
Published temperature=27 C humidity =6 % to IBM Watson
Published temperature=51 C humidity =82 % to IBM Watson
Published temperature=30 C humidity =12 % to IBM Watson
Published temperature=65 C humidity =58 % to IBM Watson
Published temperature=93 C humidity =11 % to IBM Watson
Published temperature=0 C humidity =7 % to IBM Watson
Published temperature=1 C humidity =59 % to IBM Watson
Published temperature=3 C humidity =71 % to IBM Watson
Published temperature=96 C humidity =54 % to IBM Watson
Published temperature=60 C humidity =45 % to IBM Watson
Published temperature=82 C humidity =38 % to IBM Watson
Published temperature=15 C humidity =45 % to IBM Watson
Published temperature=95 C humidity =4 % to IBM Watson
Published temperature=7 C humidity =34 % to IBM Watson
Published temperature=87 C humidity =69 % to IBM Watson
Published temperature=53 C humidity =38 % to IBM Watson
Published temperature=77 C humidity =90 % to IBM Watson
Published temperature=18 C humidity =20 % to IBM Watson
Published temperature=41 C humidity =77 % to IBM Watson
Published temperature=85 C humidity =5 % to IBM Watson
Published temperature=64 C humidity =54 % to IBM Watson
Published temperature=81 C humidity =31 % to IBM Watson
Published temperature=25 C humidity =20 % to IBM Watson
Published temperature=74 C humidity =7 % to IBM Watson
Published temperature=28 C humidity =40 % to IBM Watson
Published temperature=82 C humidity =33 % to IBM Watson
Published temperature=59 C humidity =54 % to IBM Watson
Published temperature=34 C humidity =67 % to IBM Watson
Published temperature=47 C humidity =63 % to IBM Watson
Published temperature=24 C humidity =36 % to IBM Watson
Published temperature=51 C humidity =20 % to IBM Watson
Published temperature=95 C humidity =49 % to IBM Watson
Ln: 5 Col: 0
26°C Mostly clear
ENG 20:40


Not secure | ai2.appinventor.mit.edu/#5333308146581504
MATLAB GCR WhatsApp dhl Breadboard Basics... Dashboard | Tinker... HackerRank Superset IBM Codewars Learn Python Tutori... LeetCode
Button
CheckBox
DatePicker
Image
Label
ListPicker
ListView
Notifier
PasswordTextBox
Slider
Spinner
Switch
TextBox
TimePicker
WebViewer
Layout
Media
9:48
NEWS
Image1
Clock1
Rename
Delete
Media
Mahindra...ovebg.png
download.jpg
AccentColor
Default
AlignHorizontal
Left : 1
AlignVertical
Top : 1
AppName
app1
BackgroundColor
Default
BackgroundImage
paper-style-3d-clouds-backgr
BigDefaultText
BlocksToolkit
All
CloseScreenAnimation
Default
DefaultFileScope
App
HighContrast
26°C Partly cloudy
ENG 23:37


Not secure | ai2.appinventor.mit.edu/#5333308146581504
User Interface
Button
CheckBox
DatePicker
Image
Label
ListPicker
ListView
Notifier
PasswordTextBox
Slider
Spinner
Switch
TextBox
TimePicker
WebViewer
Layout
Phone size (505,320)
9:48
HALL AC
TEMPERATURE: NA
HUMIDITY: NA
SWITCH BOARD
LIGHT ON
LIGHT OFF
VerticalArrangement1
HorizontalArrangen
Label1
Label2
Label3
Label4
Label5
Label6
Button1
Button2
Rename
Delete
Media
Mahindra...ovebg.png
AboutScreen
AlignHorizontal
Left : 1
AlignVertical
Top : 1
BackgroundColor
Default
BackgroundImage
paper-style-3d-clouds-backgr
BigDefaultText
CloseScreenAnimation
Default
HighContrast
OpenScreenAnimation
Default
ScreenOrientation
Unspecified
Scrollable
ShowStatusBar
26°C Partly cloudy
ENG
23:34


HALL AC
TEMPERATURE: 52
HUMIDITY: 95
SWITCH BOARD
LIGHT ON
LIGHT OFF


IBM
sketch.ino - Wokwi Arduino and
WhatsApp
IBM-Project-6501-1658830159/
wokwi.com/projects/345395196387656275
MATLAB
GCR
WhatsApp
dhl
Breadboard Basics...
Dashboard | Tinker...
HackerRank
Superset
IBM
Codewars
Learn Python Tutori...
LeetCode
WOKWI
SAVE
SHARE
Docs
sketch.ino
diagram.json
libraries.txt
Library Manager
DHT dht (DHTPIN, DHTTYPE);// creating the instance by passing pin and ty
void callback(char* subscribetopic, byte* payload, unsigned int payloadLe
//-------credentials of IBM Accounts------
#define ORG "efr0if"//IBM ORGANITION ID
#define DEVICE_TYPE "rasberrypi"//Device type mentioned in ibm watson IO
#define DEVICE_ID "123"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "12345678" //Token
String data3;
float h, t;
//-------- Customise the above values --------
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server
char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type o
char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd REPRESENT
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
//---
WiFiClient wifiClient; // creating the instance for wificlient
PubSubClient client(server, 1883, callback ,wifiClient); //calling the p
Simulation
07:06.486
99%
Publish ok
temp:47.40
Humid:92.00
Sending payload: {"temp":47.40,"Humid":92.00}
Publish ok
temp:47.40
Humid:92.00
30°C Haze
ENG
15:07


IBM
sketch.ino - Wokwi Arduino and
WhatsApp
IBM-Project-6501-1658830159/
wokwi.com/projects/345395196387656275
MATLAB
GCR
WhatsApp
dhl
Breadboard Basics...
Dashboard | Tinker...
HackerRank
Superset
IBM
Codewars
Learn Python Tutori...
LeetCode
WOKWI
SAVE
SHARE
Docs
sketch.ino
diagram.json
libraries.txt
Library Manager
DHT dht (DHTPIN, DHTTYPE);// creating the instance by passing pin and ty
void callback(char* subscribetopic, byte* payload, unsigned int payloadLe
//-------credentials of IBM Accounts------
#define ORG "efr0if"//IBM ORGANITION ID
#define DEVICE_TYPE "rasberrypi"//Device type mentioned in ibm watson IO
#define DEVICE_ID "123"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "12345678" //Token
String data3;
float h, t;
//-------- Customise the above values --------
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server
char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type o
char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd REPRESENT
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
//---
WiFiClient wifiClient; // creating the instance for wificlient
PubSubClient client(server, 1883, callback ,wifiClient); //calling the p
Simulation
07:25.894
97%
Editing DHT22
Temperature:
47.4°C
Humidity:
92.0%
Publish ok
temp:47.40
Humid:92.00
Sending payload: {"temp":47.40,"Humid":92.00}
Publish ok
temp:47.40
Humid:92.00
30°C Haze
ENG
15:09