

# PROJECT DEVELOPMENT PHASE

## SPRINT-4

Date	12 November 2022
Team ID	PNT2022TMID00340
Project Name	Hazardous Area Monitoring for Industrial Plant powered by IoT

### WOKIWI SIMULATION:

The screenshot displays the Wokwi simulation interface. On the left, the 'sketch.ino' file contains the following code:

```
58 }
59 delay(1000);
60 }
61
62 /*.....retrieving to Cloud */
63
64 void PublishData(float temp, float humid)
65 {
66   mqttconnect(); //function call for connecting to ibm
67   /*creating the String in in form JSON to update the data to ibm cloud*/
68   String payload = "{\"Temperature\":";
69   payload += temp;
70   payload += ",";
71   payload += "\"Humidity\":";
72   payload += humid;
73   //payload += ",";
74   //payload += "\"Gas Sensor\":";
75   //payload += val;
76   payload += "\"}";
77   Serial.print("Sending payload: ");
78   Serial.println(payload);
79   if (client.publish(publishTopic, (char*) payload.c_str()))
80   {
81     Serial.println("Publish ok");
82   }
83   else
84   {
85     Serial.println("Publish failed");
86   }
87 }
88
89 void mqttconnect()
90 {
91   if (!client.connected())
92   {
93     Serial.print("Reconnecting client to ");
```

On the right, the 'Simulation' window shows an ESP32 microcontroller connected to a DHT22 sensor. The sensor's current readings are displayed as:

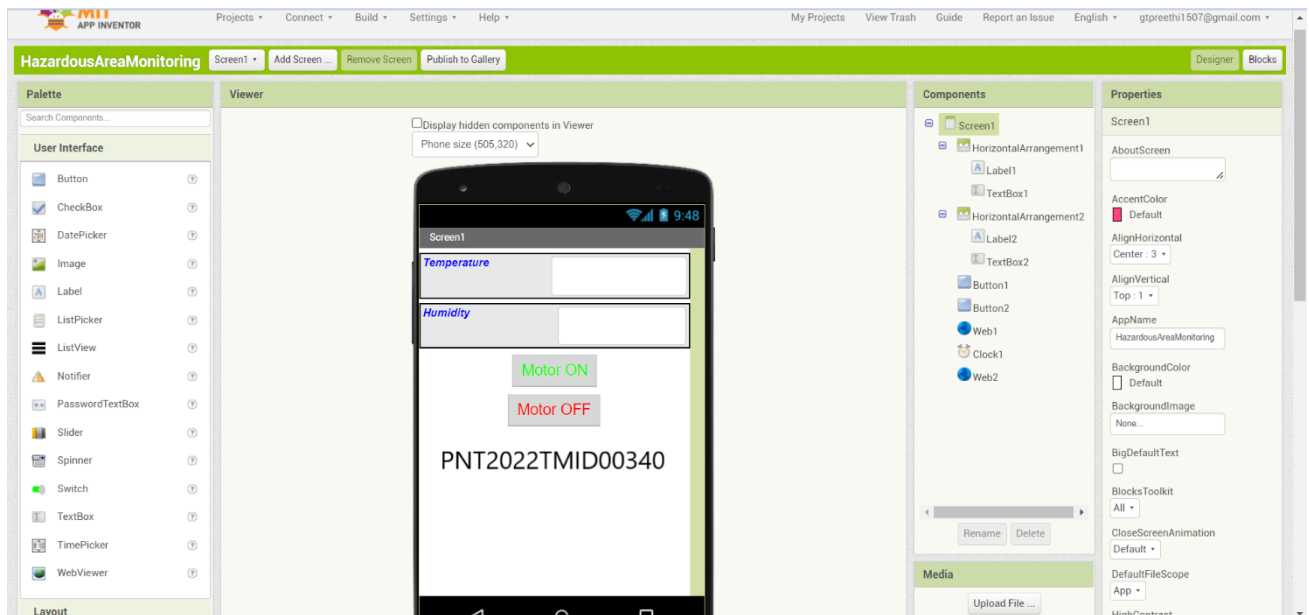
- Temperature: 60.7°C
- Humidity: 60.5%

The console output shows the following sequence of events:

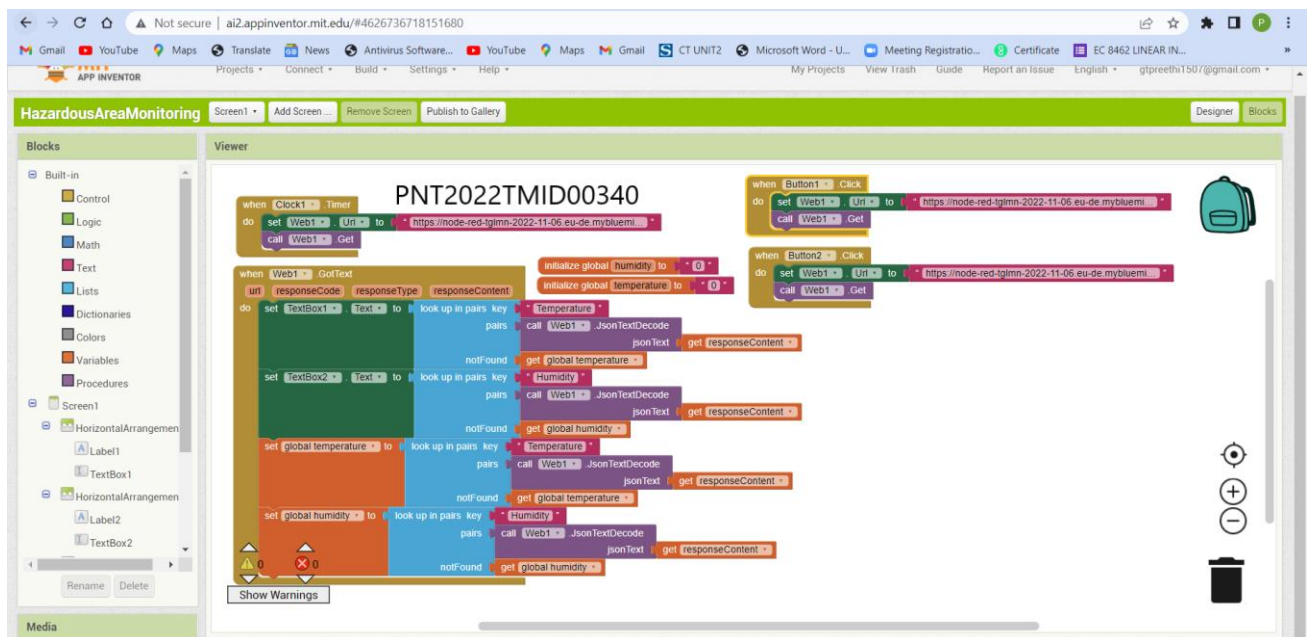
```
Humidity:60.50
Sending payload: {"Temperature":60.70,"Humidity":60.50}
Publish ok
Temperature:60.70
Humidity:60.50
Sending payload: {"Temperature":60.70,"Humidity":60.50}
Publish ok
```

## MIT-APP INVENTOR ➔

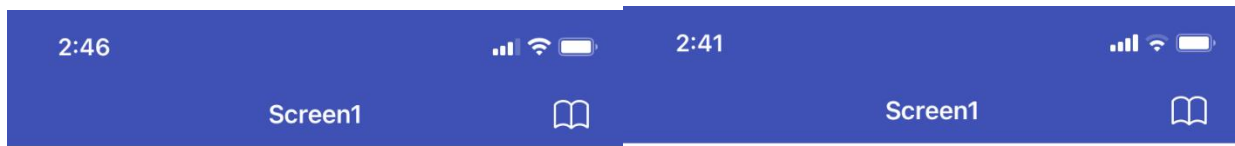
### DESIGNER:



### BLOCKS:



## MOBILE APPLICATION:



*Temperature* 70.100000

*Humidity* 86

Motor ON

Motor OFF

*Temperature* -25.100000

*Humidity* 75

Motor ON

Motor OFF



Temperature 33

Humidity 79

Motor ON

Motor OFF

Temperature 33.300000

Humidity 79

Motor ON

Motor OFF



## IBM WATSON PLATFORM



## DEVICE EVENT LOG:

IBM Watson IoT Platform

Device: ibmA-4, Status: Connected, ESP32\_Controller, Nov 7, 2022 10:15 PM

Recent Events

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
Data	{"Temperature": -25.1, "Humidity": 75}	json	a few seconds ago
Data	{"Temperature": 33.6, "Humidity": 75}	json	a few seconds ago
Data	{"Temperature": 10.6, "Humidity": 61.5}	json	a few seconds ago
Data	{"Temperature": -5.5, "Humidity": 50.5}	json	a few seconds ago
Data	{"Temperature": 15.7, "Humidity": 75.5}	json	a few seconds ago

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## DEVICE EVENT PAYLOAD:

IBM Watson IoT Platform

Device: ibmA-4, Status: Disconnected

Event Payload

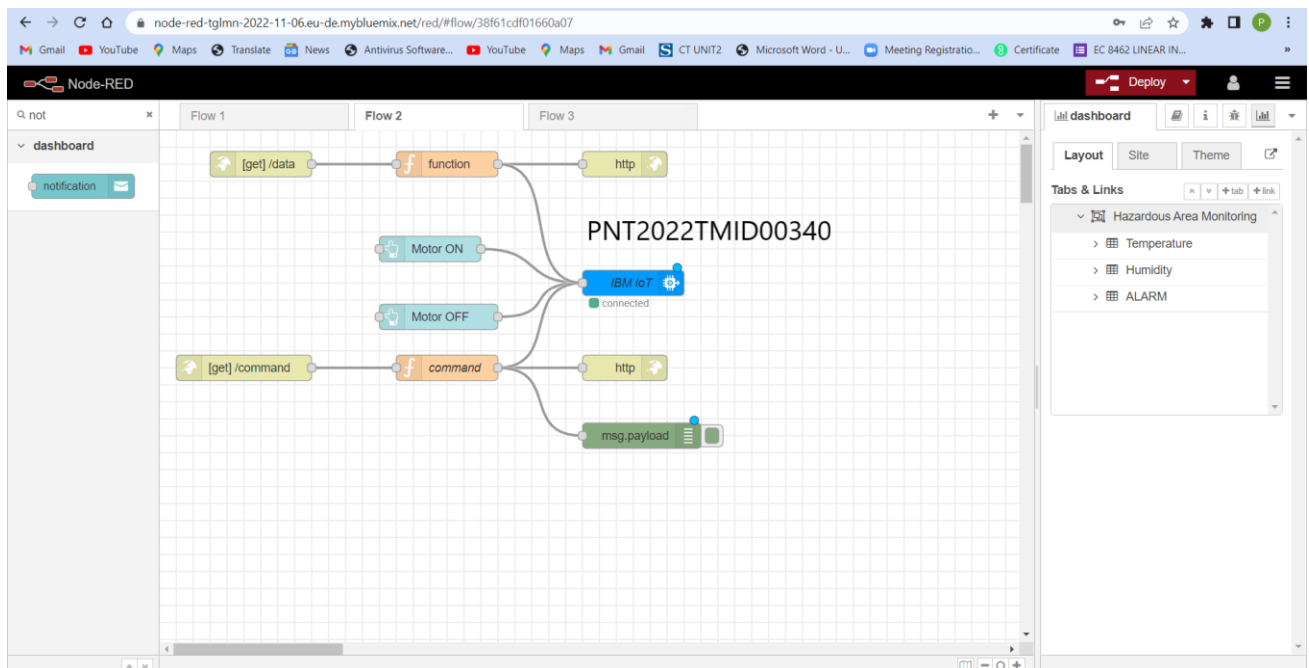
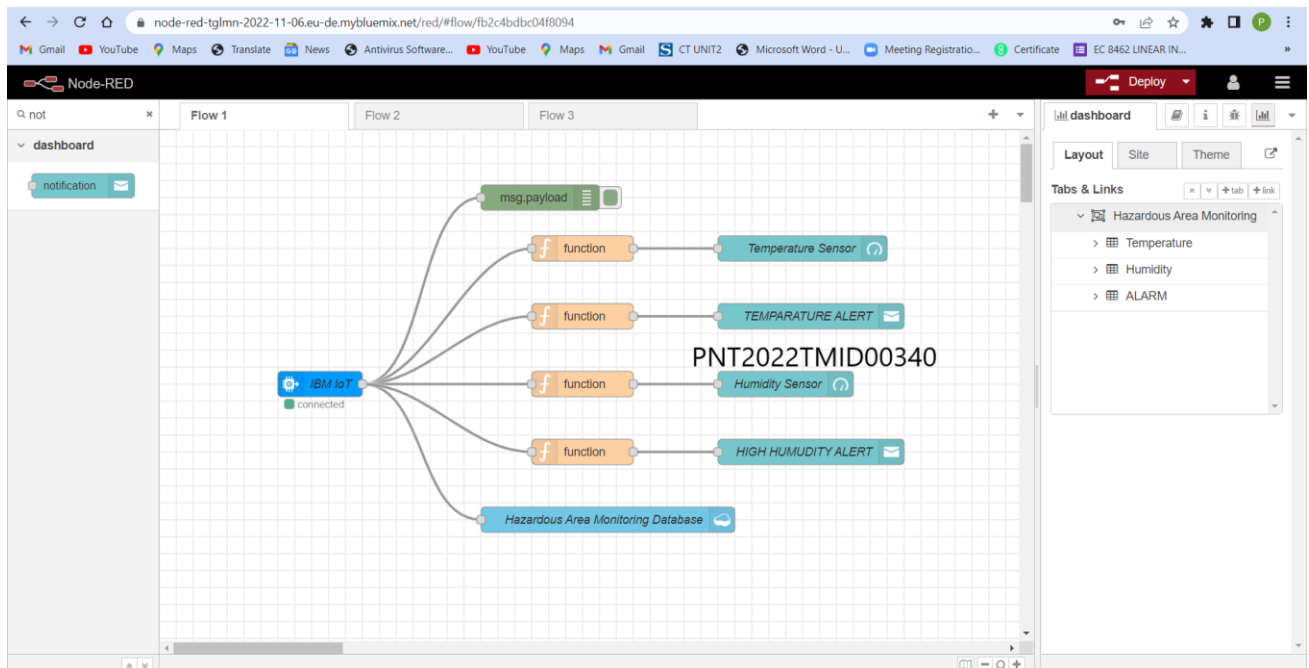
Event Name: Data

Time Received: Nov 12, 2022 2:33 AM

```
1 {
2   "Temperature": 33.6,
3   "Humidity": 75
4 }
```

## NODE-RED APP ➔

### DESIGN FLOW:



WEB UI:

