

P

Project Development **Phase**

Sprint - II

Date	04 November 2022
Team ID	PNT2022TMID16771
Project Name	Industry-Specific Intelligent Fire Management System

OUTPUT:

WOKWI OUTPUT

IBM Project-11668-1659338499 Node-RED: node-red-1vix-2022 (12) MIT app to & fro ibm cloud esp32-firedetection.ino IBM Watson IoT Platform

wokwi.com/projects/348623285009777236

Gmail YouTube Maps My Camu Pragadesh N R - KCT Examyly Pragadesh N R - O... IBM Naalayiathiran WhatsApp KCT Placements

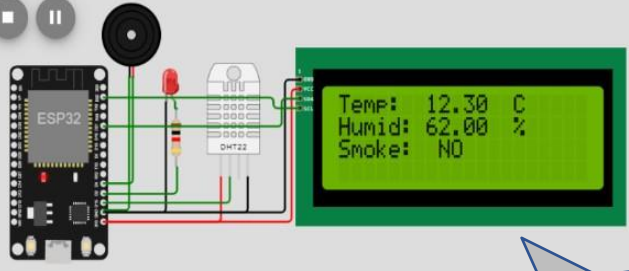
WOKWI SAVE SHARE esp32-firedetection.ino Docs

esp32-blink.ino diagram.json libraries.txt Library Manager

```
1 #include <WiFi.h> //library for wifi
2 #include <PubSubClient.h> //library for MQTT
3 #include "DHT.h" // Library for dht11
4 #define DHTPIN 15 // what pin we're connected to
5 #define DHTTYPE DHT22 // define type of sensor DHT 11
6 #define LED 2
7 #define BUZZER 4
8
9 #include <Wire.h>
10 #include <LiquidCrystal_I2C.h>
11
12 LiquidCrystal_I2C LCD = LiquidCrystal_I2C(0x27, 20, 4);
13
14 DHT dht (DHTPIN, DHTTYPE); // creating the instance by passing p
15
16 void callback(char* subscribetopic, byte* payload, unsigned int
17
18 //-----credentials of IBM Accounts-----
19
20 #define ORG "pol6f4" //IBM ORGANITION ID
21 #define DEVICE_TYPE "ESP-32IoT" //Device type mentioned in ibm w
22 #define DEVICE_ID "100100C40A24" //Device ID mentioned in ibm wa
23 #define TOKEN "EnuF+Tgx4Q@Y!wJWsq" //Token
24 String data3;
25 float h, t, f;
26
27 //----- Customise the above values -----
28
29 char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
30 char publishTopic[] = "iot-2/evt/Data/fmt/json"; // topic name a
31 char subscribetopic[] = "iot-2/cmd/command/fmt/String"; // cmd
32 char authMethod[] = "use-token-auth"; // authentication method
33 char token[] = TOKEN;
34 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; //clie
```

Simulation

00:48.827 16%



Temp: 12.30 C
Humid: 62.00 %
Smoke: NO

Fire Detection & Indication in LCD Screen

Sending payload: {"temp":12.30,"Humid":62.00,"Smoke":647.00}
Publish ok
Smoke: Detected
temp:12.30
Humid:62.00
Sending payload: {"temp":12.30,"Humid":62.00,"Smoke":823.00}
Publish ok
Smoke: Not Detected
temp:12.30
Humid:62.00
Sending payload: {"temp":12.30,"Humid":62.00,"Smoke":823.00}
Publish ok
Smoke: Not Detected

Sending Sensor Data to IBM Cloud

IBM WATSON OUTPUT

Browse

Action

Device Types

Interfaces

Add Device

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By	Device Class	Firmware Version
> <input type="checkbox"/>	iot_device_1	Connected	iot_device	Device	Nov 8, 2022 9:58 PM		tskarthicktkskarthick6778@gmail.com		
> <input type="checkbox"/>	iot_device_2	Connected	iot_device	Device	Nov 8, 2022 9:53 PM		tskarthicktkskarthick6778@gmail.com		
> <input type="checkbox"/>	iot_device_3	Connected	iot_device	Device	Nov 8, 2022 10:03 PM		tskarthicktkskarthick6778@gmail.com		
▼ <input type="checkbox"/>	wokwi_us	Connected	iot_device	Device	Nov 2, 2022 10:21 AM		tskarthicktkskarthick6778@gmail.com		

Identity

Device Information

Recent Events

State

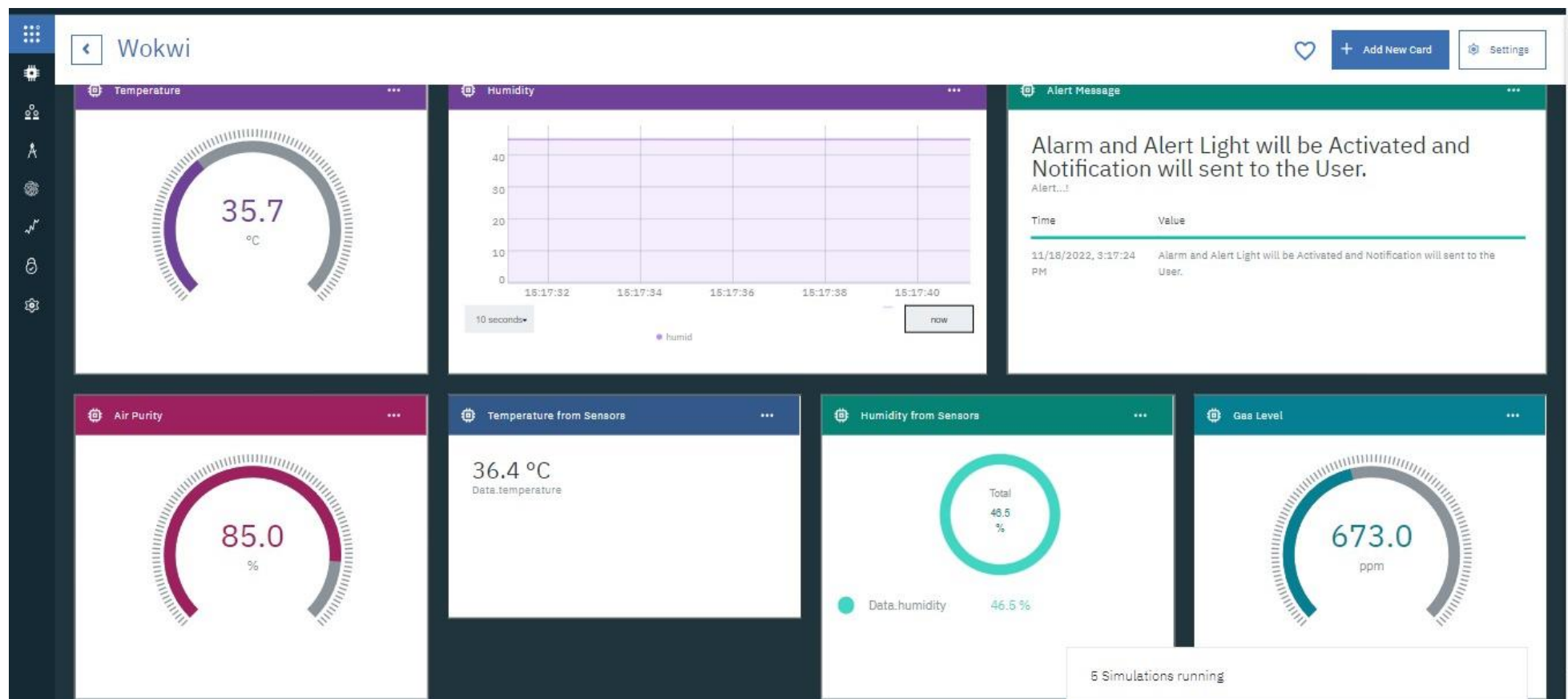
Logs

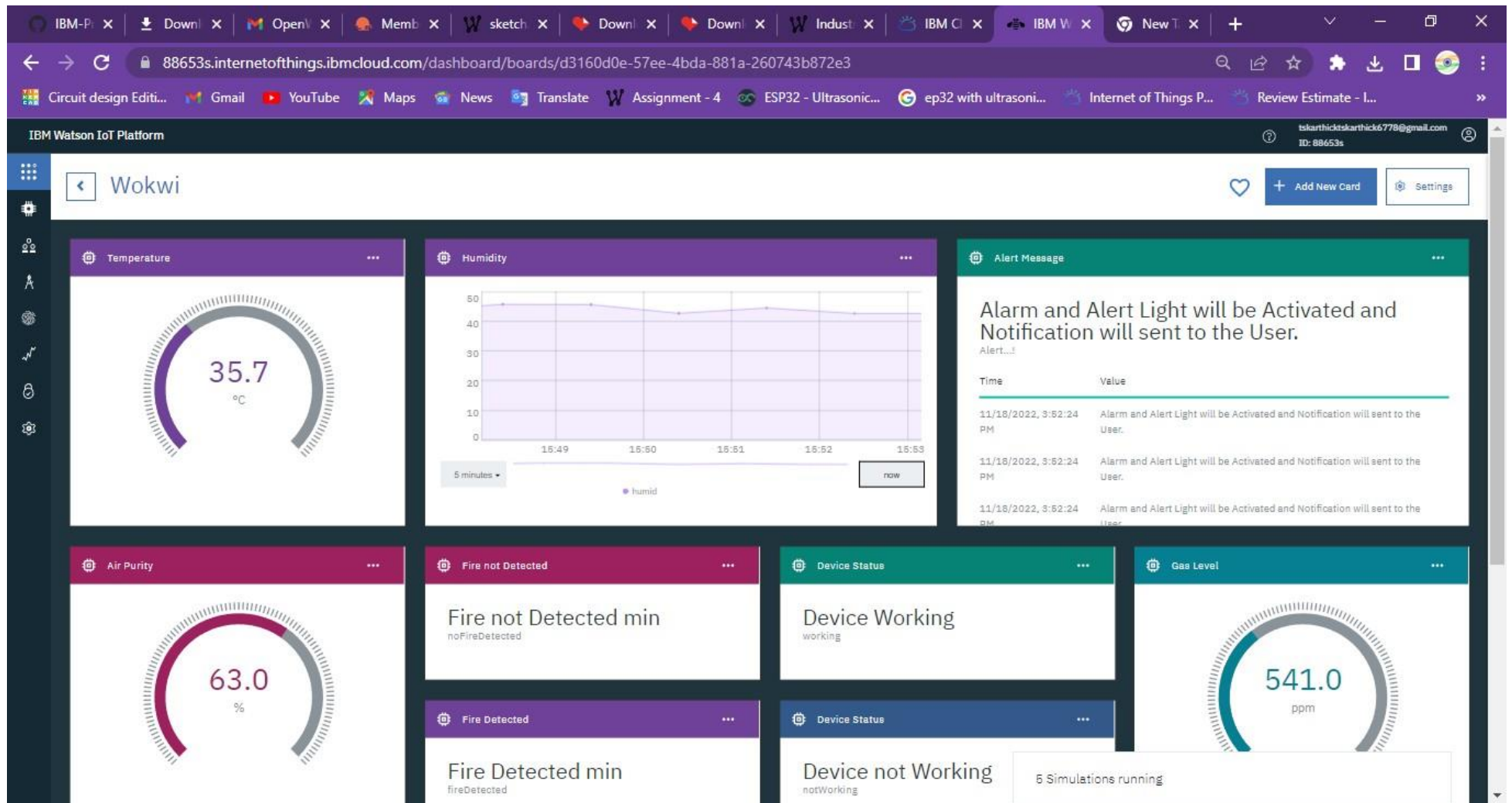
The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
Data	{"Data":{"temperature":36.4,"humidity":46.5}}	json	a few seconds ago
Data	{"Data":{"temperature":36.4,"humidity":46.5}}	json	19 minutes ago
Data	{"Data":{"temperature":36.4,"humidity":46.5}}	json	19 minutes ago
Data	{"Data":{"temperature":36.4,"humidity":46.5}}	json	19 minutes ago
Data	{"Data":{"temperature":36.4,"humidity":46.5}}	json	19 minutes ago

5 Simulations running

IBM WATSON DASHBOARD OUTPUT





CODE:

```
#include <time.h>
#include <WiFi.h>
#include <PubSubClient.h>

#define ORG "88653s"
#define DEVICE_TYPE "iot_device"
#define DEVICE_ID "wokwi_us"
#define TOKEN ")l(u!YYO)NmKr9sk(k"

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";char
publishTopic[] = "iot-2/evt/data/fmt/json";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;

WiFiClient wifiClient;
PubSubClient client(server, 1883, wifiClient);

float temperature = 0;
int gas = 0;
int flame = 0;
```

```
String flame_status = "";  
String Gas_status = "";  
String exhaust_fan_status = "";  
String sprinkler_status = "";
```

```
void setup()
```

```
{
```

```
Serial.begin(99900);
```

```
wifiConnect();
```

```
mqttConnect();
```

```
}
```

```
void loop() {
```

```
    srand(time(0));
```

```
    //initial variables and random generated data
```

```
    temperature = random(-20,125);
```

```
    gas = random(0,1000);
```

```
    int flamereading = random(200,1024);
```

```
    flame = map(flamereading,200,1024,0,2);
```

```
    //seta flame status
```

```

switch (flame) {
case 0:
    flame_status = "No Fire";
    break;
case 1:
    flame_status = "Fire is Detected";
    break;
}

//send the sprinkler status

if(flame==1){

    sprinkler_status = "Working";
}
else{
    sprinkler_status = "Not Working";

}

//toggle the fan according to gas reading...
If (gas > 100){
    Gas_status = "Gas Leakage is Detected";
    exhaust_fan_status = "Working";

}
else{
    Gas_status = "No Gas Leakage is Detected";exhaust_fan_status = "NotWor

```


//json format for IBM Watson

```
String payload = "{";
payload+="\"gas\":";    payload+=gas;
payload+=",";
payload+="\"temperature\":";
payload+=(int)temperature;
payload+=",";
payload+="\"flame\":";
payload+=flamereading;
payload+=",";
    payload+="\"fire_status\":\","+flame_status+"\",","; payload+="\"sprinkler_status\":\","+sprinkler_status+"\",",";
    payload+="\"Gas_status\":\","+Gas_status+"\",","; payload+="\"exhaust_fan_status\":\","+exhaust_fan_status+"\"}";
                                                                    if(client.publish(publishTopic, (char*)
payload.c_str()))
{
    Serial.println("Publish OK");
} else{
    Serial.println("Publish failed");
}
delay(1000);

if
(!client.loop())
```

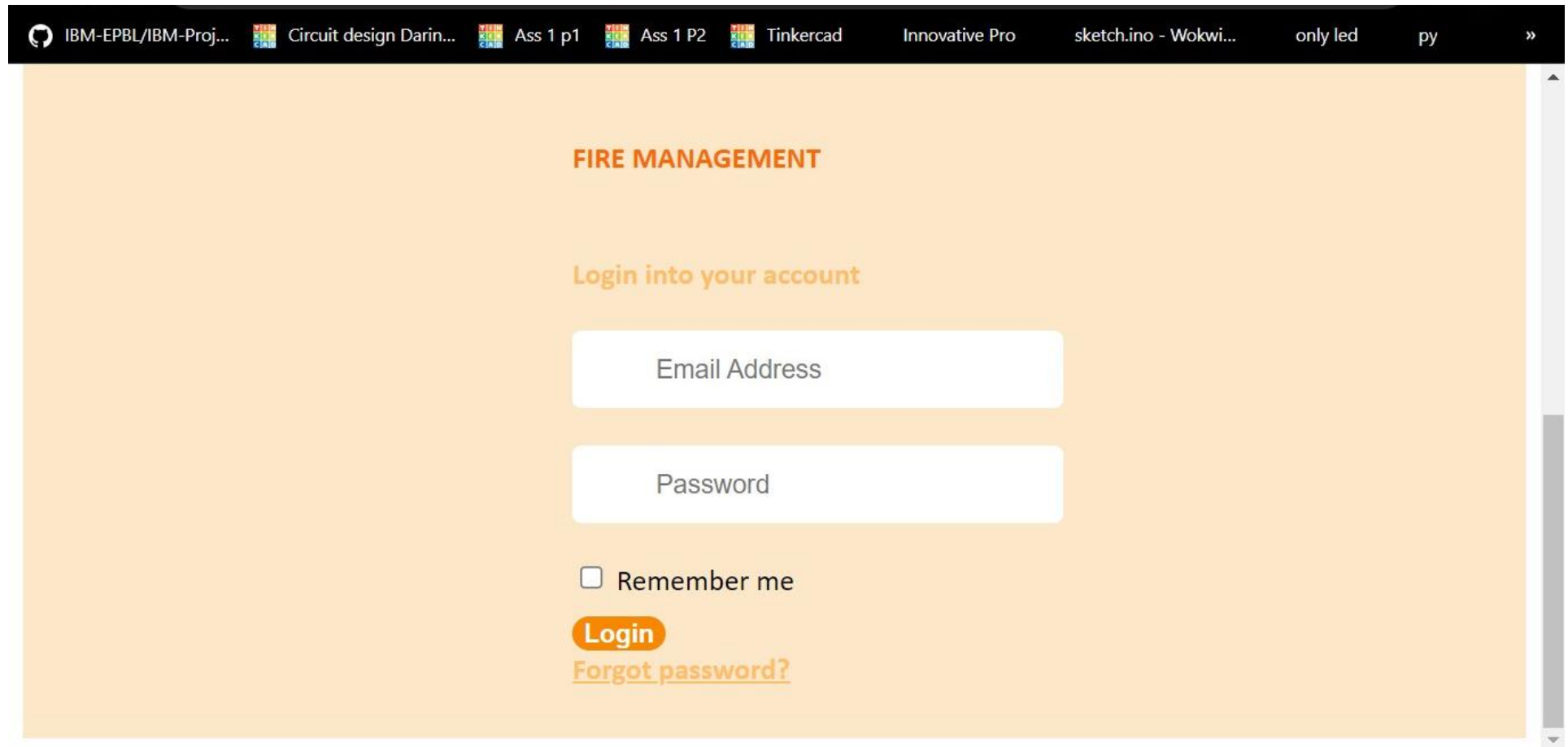
```
{  
  mqttConnect();  
}
```

```
void wifiConnect()  
{  
  Serial.print("Connecting to ");  
  Serial.print("Wifi");  
  WiFi.begin("Wokwi-GUEST", "", 6);  
  while (WiFi.status() != WL_CONNECTED)  
  {  
    delay(500);  
    Serial.print(".");  
  }  
  Serial.print("WiFi connected, IP address: ");  
  Serial.println(WiFi.localIP());  
}
```

```
void mqttConnect()  
{  
  if (!client.connected())
```

```
{  
  Serial.print("Reconnecting MQTT client to ");  
  Serial.println(server);    while  
(!client.connect(clientId, authMethod, token))  
  {  
    Serial.print(".");  
    delay(500);  
  }  
  
  Serial.println();  
}  
}
```

LOGIN PAGE OUTPUT:



The screenshot shows a web browser window with a dark title bar containing several tabs. The active tab is titled 'FIRE MANAGEMENT'. The page has a light orange background. At the top, the text 'FIRE MANAGEMENT' is displayed in a bold, orange font. Below this, the text 'Login into your account' is shown in a smaller, orange font. There are two white input fields: the first is labeled 'Email Address' and the second is labeled 'Password'. Below the password field, there is a checkbox labeled 'Remember me'. At the bottom, there is an orange 'Login' button and a link labeled 'Forgot password?' in orange text.

IBM-EPBL/IBM-Proj... Circuit design Darin... Ass 1 p1 Ass 1 P2 Tinkercad Innovative Pro sketch.ino - Wokwi... only led py »

FIRE MANAGEMENT

Login into your account

Email Address

Password

☐ Remember me

Login

[Forgot password?](#)

RESET PAGE OUTPUT:



Reset Your password

Please enter your email address and we will send you a password reset link.

 Email Address

Send Reset Link

LOGIN CODE:

```
<!DOCTYPE html>
<html>
<head>
  <title>Login</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
  <link href="style.css" rel="stylesheet" type="text/css">
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.0/css/bootstrap.min.css">
  <link href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" rel="stylesheet"> <script
src="https://code.jquery.com/jquery-3.5.1.slim.min.js"></script>
</head>
<body>
  <div class="container-fluid">
    <div class="row ">
      <!-- IMAGE CONTAINER BEGIN -->
      <div class="col-lg-6 col-md-6 d-none d-md-block infinity-image-container"></div>
      <!-- IMAGE CONTAINER END -->

      <!-- FORM CONTAINER BEGIN -->
      <div class="col-lg-6 col-md-6 infinity-form-container">
        <!-- <h4 class = "test" style="color:#fa6903;">FIRE MANAGEMENT</h4> -->
        <div class="col-lg-9 col-md-12 col-sm-9 col-xs-12 infinity-form">
          <!-- Company Logo -->
          <div class="text-center mb-3 mt-5">
            <h4 class = "test" style="color:#fa6903;">FIRE MANAGEMENT</h4>
          </div>
          <div class="text-center mb-4">
            <h4>Login into your account</h4>
          </div>
        </div>
      </div>
    </div>
  </div>
</body>
</html>
```

```

</div>
<!-- Form -->
    <form class="px-3">
        <!-- Input Box -->
        <div class="form-input">
            <span><i class="fa fa-envelope-o"></i></span>
            <input type="email" name="" placeholder="Email Address" tabindex="10"required>
        </div>
        <div class="form-input">
            <span><i class="fa fa-lock"></i></span>
            <input type="password" name="" placeholder="Password" required>
        </div>
        <div class="row mb-3">
            <!-- Remember Checkbox -->
            <div class="col-auto d-flex align-items-center">
                <div class="custom-control custom-checkbox">
                    <input type="checkbox" class="custom-control-input" id="cb1">
                    <label class="custom-control-label text-black" for="cb1" style = >Remember me</label>
                </div>
            </div>
        </div>
        </div>
        <!-- Login Button -->
        <div class="mb-3">
            <button type="submit" class="btn btn-block">Login</button>
        </div>
        <div class="text-right ">
            <a href="reset.html" class="forget-link">Forgot password?</a>
        </div>
    </form>
</div>

```



```

        </div>
        <!-- FORM CONTAINER END -->
    </div>
</div>
</body>
</html>

```

RESET CODE:

```

<!DOCTYPE html>
<html>
<head>
    <title>Reset</title>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <link href="style.css" rel="stylesheet" type="text/css">
    <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.0/css/bootstrap.min.css">
    <link href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" rel="stylesheet"> <script
src="https://code.jquery.com/jquery-3.5.1.slim.min.js"></script>
</head>
<body>
    <div class="container-fluid">
        <div class="row">
            <!-- IMAGE CONTAINER BEGIN -->
            <div class="col-lg-6 col-md-6 d-none d-md-block infinity-image-container"></div>
            <!-- IMAGE CONTAINER END -->

            <!-- FORM CONTAINER BEGIN -->
            <div class="col-lg-6 col-md-6 infinity-form-container">

```

```

<div class="col-lg-8 col-md-12 col-sm-8 col-xs-12 infinity-form">
  <div class="text-center mb-3 mt-5">
    
  </div>
<div class="reset-form d-block">
  <form class="reset-password-form px-3">
    <h4 class="mb-3" style="color:#fa6903">Reset Your password</h4>
    <p class="mb-3 text-black">
      Please enter your email address and we will send you a password reset link.
    </p>
    <div class="form-input">
      <span><i class="fa fa-envelope"></i></span>
      <input type="email" name="" placeholder="Email Address" tabindex="10"required>
    </div>
    <div class="mb-3">
      <button type="submit" class="btn" >Send Reset Link</button>
    </div>
  </form>
</div>

<div class="reset-confirmation d-none px-3">
  <div class="mb-4">
    <h4 class="mb-3">Link was sent</h4>
    <h6 class="text-white">Please, check your inbox for a password reset link.</h6>
  </div>

  <a href="login.html">
    <button type="submit" class="btn">Login Now</button>
  </a>

  <div>
</div>
</div>
<!-- FORM CONTAINER END -->

```

```
        </div>
    </div>

<script type="text/javascript">
    function PasswordReset() {
        $('form.reset-password-form').on('submit', function(e) {
e.preventDefault();      $('.reset-form')
        .removeClass('d-block')
        .addClass('d-none');
            $('.reset-confirmation').addClass('d-block');
        });
    }

    window.addEventListener('load', function() {
        PasswordReset();
    });
</script>

</body>
</html>
```

STYLE CODE:

```
.container-fluid{ background-
    color: black;
}
```

```
.infinity-image-container{    background:
url('fire.jpg') center no-repeat; background-
size: cover;
    height: 100vh;
```

```
}
```

```
.infinity-form-container{  
background: #fce7c9; display:  
flex;      flex-direction:  
column;    align-items: center;  
      justify-content: center;  
}
```

```
.infinity-form{  display:  
flex;  flex-direction:  
column;  justify-  
content: center;  min-  
height: 100vh;  
}
```

```
.infinity-form h4 {  font-  
weight: bold;  color:  
#ffbe6a;  font-weight:  
bold;  
}
```

```
.infinity-form .form-input {  
position: relative;  
}
```

```
.infinity-form .form-input input {  
width: 100%;  margin-  
bottom: 20px;  height: 40px;  
border: none;  border-radius:  
5px;  outline: none;  
background: white;  
padding-left: 45px;  
}
```

```
.infinity-form .form-input span {  
position: absolute; top: 8px;  
padding-left: 20px; color:  
#777;  
}
```

```
.infinity-form .form-input input:focus, .infinity-form  
.form-input input:valid {  
border: 2px solid #fbae4e;  
}
```

```
.infinity-form input[type="checkbox"]:not(:checked) + label:before{  
background: transparent; border:2px solid #ffbe6a; font-  
weight: bold; width: 15px;  
height: 15px;  
}
```

```
.infinity-form .custom-checkbox .custom-control-input:checked ~ .custom-control-label::before {  
background-color: #feb449 !important; border:0px;  
}
```

```
.infinity-form button[type="submit"] {  
margin-top: 10px; border: none;  
cursor: pointer; border-radius:  
20px;  
background: linear-gradient(45deg, #f88702,#f88702); /*Button Color*/color:  
#fff; font-weight: bold; font-weight: bold;  
transition: 0.5s;  
}
```

```
.infinity-form button[type="submit"]:hover {  
background: linear-gradient(45deg, #FEB449, #feb449); /*Button color when hover*/  
}
```

```
.forget-link , .login-link , .register-link {  
color: #ffbe6a; font-weight: bold;
```

```
}
```

```
.forget-link:hover , .login-link:hover , .register-link:hover {  
color: #feb449;    text-decoration: none;  
}
```