

P

Project Development **Phase**

Sprint - II

Date	05 November 2022
Team ID	PNT2022TMID00383
Project Name	Industry-Specific Intelligent Fire Management System

LINK:

OUTPUT:

WOKWI OUTPUT



sketch.ino

diagram.json

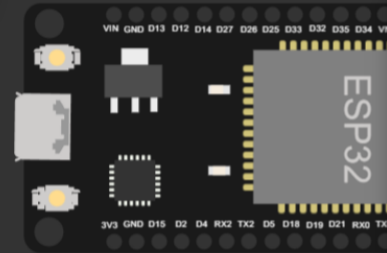
libraries.txt

Library Manager



Simulation

```
1 #include <time.h> #include <WiFi.h>
2 #include <PubSubClient.h>
3
4 #define ORG "88653s"
5 #define DEVICE_TYPE "iot_device" #define DEVICE_ID "wokwi_us" #define TOKEN "token"
6
7 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; char pubTopic[] = ORG "/iot/";
8 char authMethod[] = "use-token-auth"; char token[] = TOKEN;
9 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
10
11 WiFiClient wifiClient;
12 PubSubClient client(server, 1883, wifiClient);
13
14 float temperature = 0; int gas = 0;
15 int flame = 0;
16
17
18 String flame_status = ""; String Gas_status = "";
19 String exhaust_fan_status = ""; String sprinkler_status = "";
20
21 void setup()
22 {
23   Serial.begin(99900);
24   wifiConnect(); mqttConnect();
25 }
26
27
28 void loop() {
```



```
Flame Status : No Fire
Gas Status : Gas leakage Detected
Sprinkler Status : not working
Exhaust fan Status : Working
```

```
-----/-----/-----
Flame Status : Fire is Detected
Gas Status : Gas leakage Detected
Sprinkler Status : working
Exhaust fan Status : Working
```



Uppuliappan M
uppuliappan@gmail.com



Discord



< > My projects



The Club



Feature Roadmap



Language



Logout

IBM WATSON OUTPUT



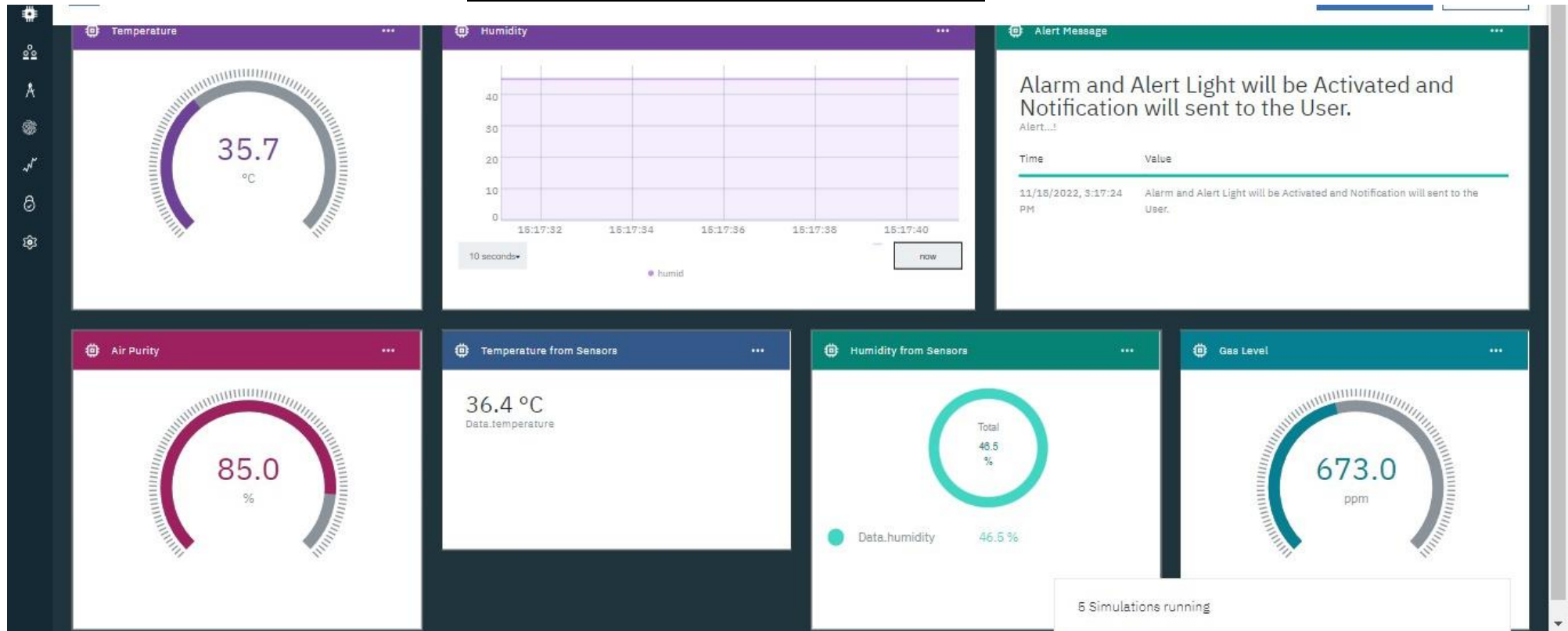
IdentityDevice InformationRecent EventsStateLogs

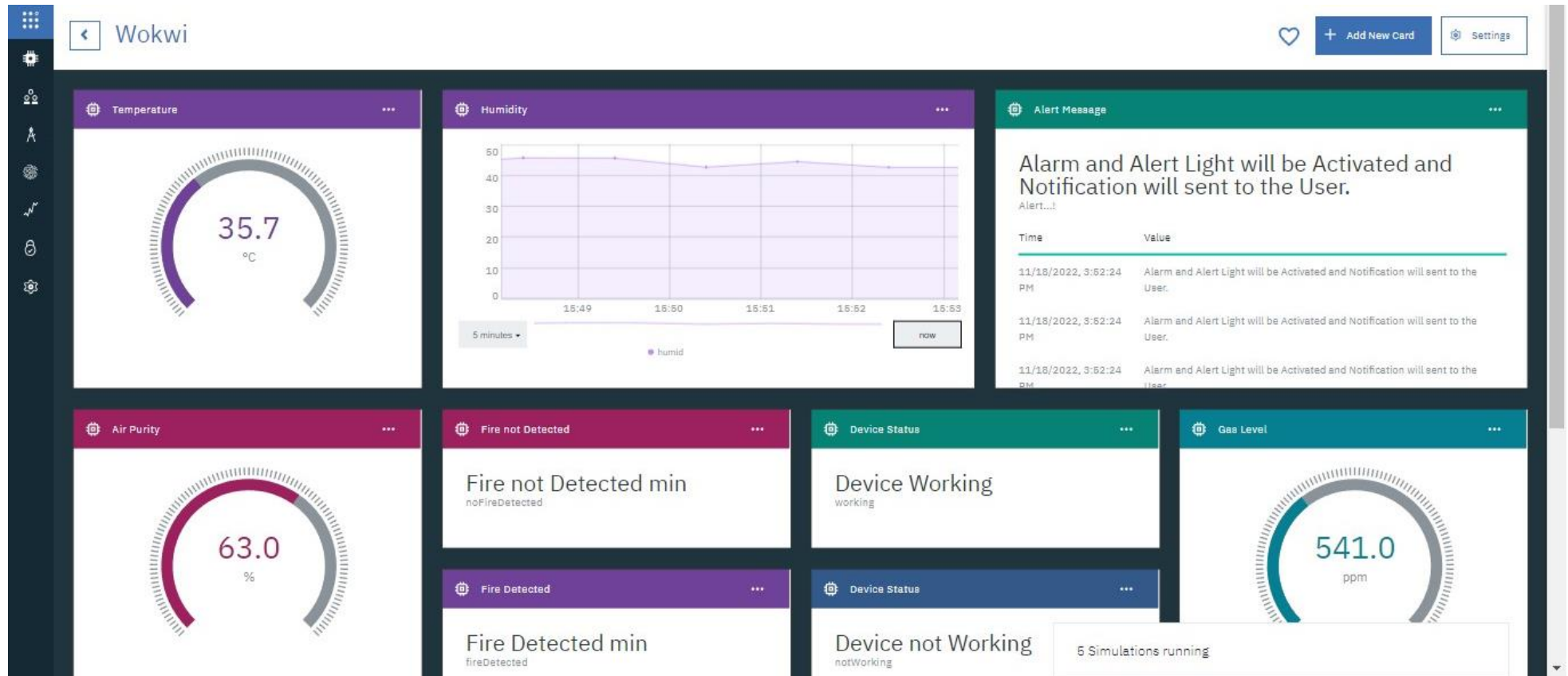
The recent events listed show the live stream of data that is coming and going from this device.

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);
  //set a 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 = "Not  
Working";  
}
```


//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)
```

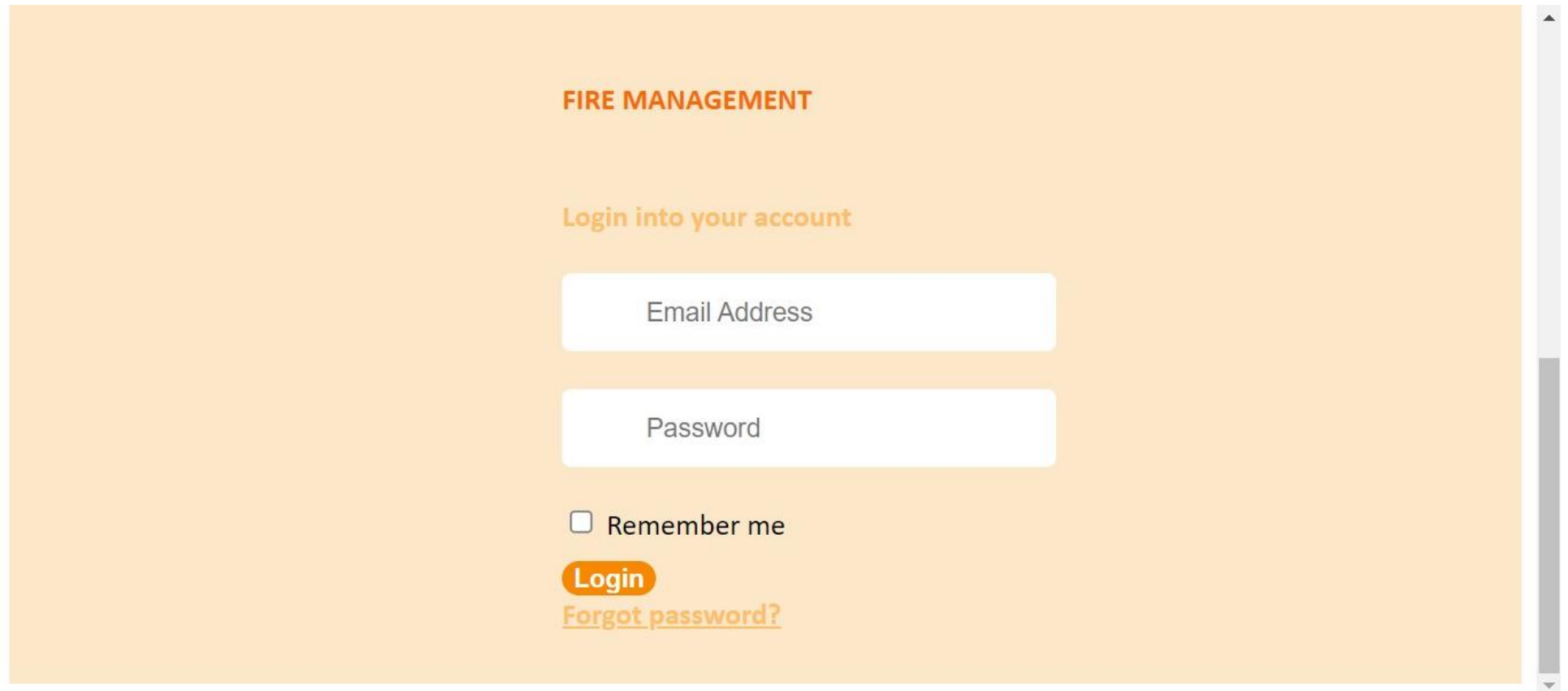
```
{
  delay(500);
  Serial.print(".");
}
Serial.print("WiFi connected, IP address: ");
Serial.println(WiFi.localIP());

}

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 image shows a login page with an orange background. At the top, the text "FIRE MANAGEMENT" is displayed in orange. Below it, the text "Login into your account" is also in orange. There are two white input fields: the first is labeled "Email Address" and the second is labeled "Password". Below the password field is a checkbox labeled "Remember me". At the bottom, there is an orange "Login" button and a link labeled "Forgot password?" in orange text. A vertical scrollbar is visible on the right side of the page.

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.

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>
          <!-- 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>
          </form>
        </div>
      </div>
    </div>
  </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>
            <!-- 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>
<!-- 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{
backgroundcolor: black; }
.infinity-image-container{  background:
url('fire.jpg') center no-repeat; backgroundsize:
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:
bol;
}
```

```
.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: bol;
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: bol; 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;  
}
```