

SPRINT 2

Date	5 November 2022
Team ID	PNT2022TMID11129
Project Name	IOT BASED DEVICE FOR CHILD SAFETY MONITORING AND NOTIFICATION
Marks	20 marks
Members	V N YOGESH R VIJAY N T THARUN T SURYAPRAKSH

Sprint 2 is about **LOGIN and NOTIFIACATION** of the IoT device in Parent's Web Application for getting information about Child's Status.

LOGIN:

This Coding is to built login page of parent's application to get information about child's condition.

Coding:

```
<!DOCTYPE html>
```

```
<html> <head>
```

```
<meta name="viewport" content="width=device-width, initial-scale=1">
```

```
<title> Login Page </title>
<style>
Body { font-family: Calibri, Helvetica,
  sans-serif; background-color: #9FE2BF;
}
button { background-color:
  #9FE2BF; width: 100%;
  color: black; padding: 15px;
  margin: 10px 0px; border:
  none; cursor: pointer;
  } form { border: 3px solid
#f1f1f1;
  }
input[type=text], input[type=password] {
  width: 100%; margin:
  8px 0; padding: 12px
  20px; display: inline-
  block; border: 2px
  white; box-sizing:
  border-box;
  }
button:hover {
  opacity: 0.7;
  }
```

```
.cancelbtn {
    width:      auto;
    padding: 10px 18px;
    margin: 10px 5px;
}

.container { padding: 25px;
    background-color: #CCCCFF;
}

</style> </head>
<body>
    <center> <h1> Login Form </h1> </center>
    <form>
        <div class="container">
            <label>Device ID/Number: </label>
            <input type="password" placeholder="Enter Password" name="password" required>
            <label>E-Mail : </label>
            <input type="text" placeholder="Enter Username" name="username" required>
            <label>Password : </label>
            <input type="password" placeholder="Enter Password" name="password" required>
            <button type="submit">Login</button>
            <button class="loginBtn loginBtn--facebook">Login with Facebook.</button>
            <button class="loginBtn loginBtn--google">Login with Google.</button>
            <input type="checkbox" checked="checked"> Remember me
```

```
<button type="button" class="cancelbtn"> Cancel</button> Forgot
```

```
<a href="#"> password? </a>
```

```
</div>
```

```
</form>
```

```
</body>
```

```
</html>
```

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```
1 <!DOCTYPE html>
2 <html> <head>
3 <meta name="viewport" content="width=device-width, initial-scale=1">
4 <title> Login Page </title>
5 <style>
6 Body { font-family: Calibri, Helvetica, sans-serif; background-color:
   #9FE2BF;
7 }
8 button { background-color: #9FE2BF; width: 100%; color: black; padding:
   15px; margin: 10px 0px; border: none; cursor: pointer;
9 } form { border: 3px solid #f1f1f1;
10 }
11 input[type=text], input[type=password] {
12 width: 100%; margin: 8px 0; padding: 12px 20px; display: inline-block;
   border: 2px white; box-sizing: border-box;
13 }
14 button:hover {
15 opacity: 0.7;
16 }
17 .cancelbtn {
18 width: auto; padding: 10px 18px; margin: 10px 5px;
19 }
20 .container { padding: 25px; background-color: #CCCCFF;
21 }
22 </style> </head>
23 <body>
```

Result

Login Form

Device ID/Number:

Enter Password

E-Mail :

Enter Username

Password :

Enter Password

Login

Login with Facebook.

Login with Google.

☒ Remember me

Cancel

 Forgot [password?](#)

NOTIFICATION:

This coding will make connection between IoT Device & Parent's application. When the child cross across the geofence message will be notified on parent's application.

Coding:

```
#include<WiFi.h>//library for wifi

#include<PubSubClient.h>//library for MQTT

void callback(char* subscribetopic, byte* payload,unsigned int payloadlength);

//-----credentials of IBM Account-----

#define ORG "45z3o2"// IBM ORGANIZATION ID

#define DEVICE_TYPE "ESP32_Controller"//DEVICE TYPE MENTIONED IN IOT WATSON PLATFORM

#define DEVICE_ID "bme2"//DEVICE ID MENTIONED IN IOT WATSON PLATFORM

#define                                     TOKEN

"OKZ+q@JfPWDOd6wBTj"//Token String data3;

float dist;

//-----customize the above value-----

char server[]=ORG ".messaging.internetofthings.ibmcloud.com";//server name

char publishtopic[]="ultrasonic/evt/Data/fmt/json";/*topic name and type of event perform and format in which

data to be send*/

char subscribetopic[]="ultrasonic/cmd/test/fmt/String";/*cmd REPRESENT Command tupe and

COMMAND IS TEST OF FORMAT STRING*/
```

```

char    authMethod[]="use-token-auth";//authentication    method    char
token[]=TOKEN;

char clientid[]="d:" ORG ":" DEVICE_TYPE":" DEVICE_ID;//CLIENT ID

// .....

WiFiClient wifiClient;// creating an instance for wificlient
PubSubClient client(server, 1883 , callback , wifiClient);/*calling the predefined client id by passing parameter like
server id,portand wificredential*/ int LED =4; int  trig  =5; int  echo=18; void setup(){ Serial.begin(115200);
pinMode(trig,OUTPUT);    pinMode(echo,INPUT);    pinMode(LED,OUTPUT);    delay(10);    Serial.println();
wificonnect(); mqttconnect();
}

void loop() {
    digitalWrite(trig,LOW);
    digitalWrite(trig,HIGH);
    delayMicroseconds(10);
    digitalWrite(trig,LOW); float
    dur=pulseIn(echo,HIGH); float
    dist=(dur * 0.0343)/2;
    Serial.print("distance in cm");
    Serial.println(dist);
    PublishData(dist);
    delay(1000); if
    (!client.loop()){

```

```
    mqttconnect();
}
}

/*.....retriving to cloud ..... */ void PublishData(float dist){ mqttconnect();//function
call for connecting to ibm

/*creating the string in form of JSON to update the data to ibm cloud*/
String object;
if(dist<100)
{

    digitalWrite(LED,HIGH); Serial.println("no object is
    near"); object="Near";
}

else
{

    digitalWrite(LED,LOW); Serial.println("no object
    found"); object="No";
}
```



```
String payload="{\"distance\": "; payload
+=dist; payload += ","  "\"object\":\":";
payload += object;
payload += "\}";
```

```
Serial.print("Sending payload: ");
```

```
Serial.println(payload); if(client.publish(publishtopic, (char*) payload.c_str())){
```

```
    Serial.println("Publish ok");/* if its sucessfully upload data on the cloud then it will print publish ok in serial
    monitor or else it will print publish failed*/
```

```
} else{
```

```
    Serial.println("Publish failed");
```

```
}
```

```
}
```

```
void mqttconnect(){
```

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

```
        Serial.print("Reconnecting client to "); Serial.println(server);
```

```
        while(!client.connect(clientid,authMethod, token)){
```

```
            Serial.print("."); delay(500);
```

```
        }
```

```
        initManagedDevice();
```

```
        Serial.println();
```

```
}  
}
```

```
void wificonnect()//function defenition for wificonnect
```

```
{  
    Serial.println();  
    Serial.print("Connecting to ");  
    WiFi.begin("vivo 1816", "taetae95",6);//PASSING THE WIFI CREDENTIALS TO ESTABLISH CONNECTION  
    while (WiFi.status() !=WL_CONNECTED){  
        delay(500);  
        Serial.print(".");  
  
    }  
  
    Serial.println("");  
    Serial.println("WiFi connected");  
    Serial.println("IP address");  
    Serial.println(WiFi.localIP());  
}
```

```
void initManagedDevice(){  
    if(client.subscribe(subscribetopic)){  
        Serial.println((subscribetopic));  
        Serial.println("subscribe to cmd OK");  
    }
```

```

}else{
    Serial.println("subscribe to cmd failed");

}

}

void callback(char* subscribetopic,byte*payload,unsigned int payloadLength)
{

    Serial.print("callback    invoked    for    topic:    ");
    Serial.println(subscribetopic);    for(int    i=0;    i<
payloadLength;    i++){ //Serial.print((char)payload[i]);
data3 +=(char)payload[i];
}
//Serial.println("dta: "+ data3);
//if(data3=="Near")
//{
//Serial.println(data3);
//digitalWrite(LED,HIGH);
//}
//else //{
//Serial.println(data3);
//digitalWrite(LED,LOW);//} data3="";
}

```

Output:

The screenshot displays an IoT simulation environment. On the left, a code editor shows MQTT-related code. The central simulation window shows an ESP32 microcontroller connected to an ultrasonic sensor. The right console displays the following output:

```
no object found
Sending payload: {"distance":141.21,"object":"No"}
Publish ok
Distance in cm:141.21
no object found
Sending payload: {"distance":141.21,"object":"No"}
Publish ok
```

The bottom status bar indicates a temperature of 27°C, cloudy weather, and the date 31-10-2022.

[illegible]