Team ID PNT2022TMID45390

Date 17 November 2022

Project Title IoT Based Safety Gadget for Child Safety Monitoring and Notification

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

LOGIN:

This Coding is to build 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>
```

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 PLATEFORM
#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 performand
  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 idby 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);
```

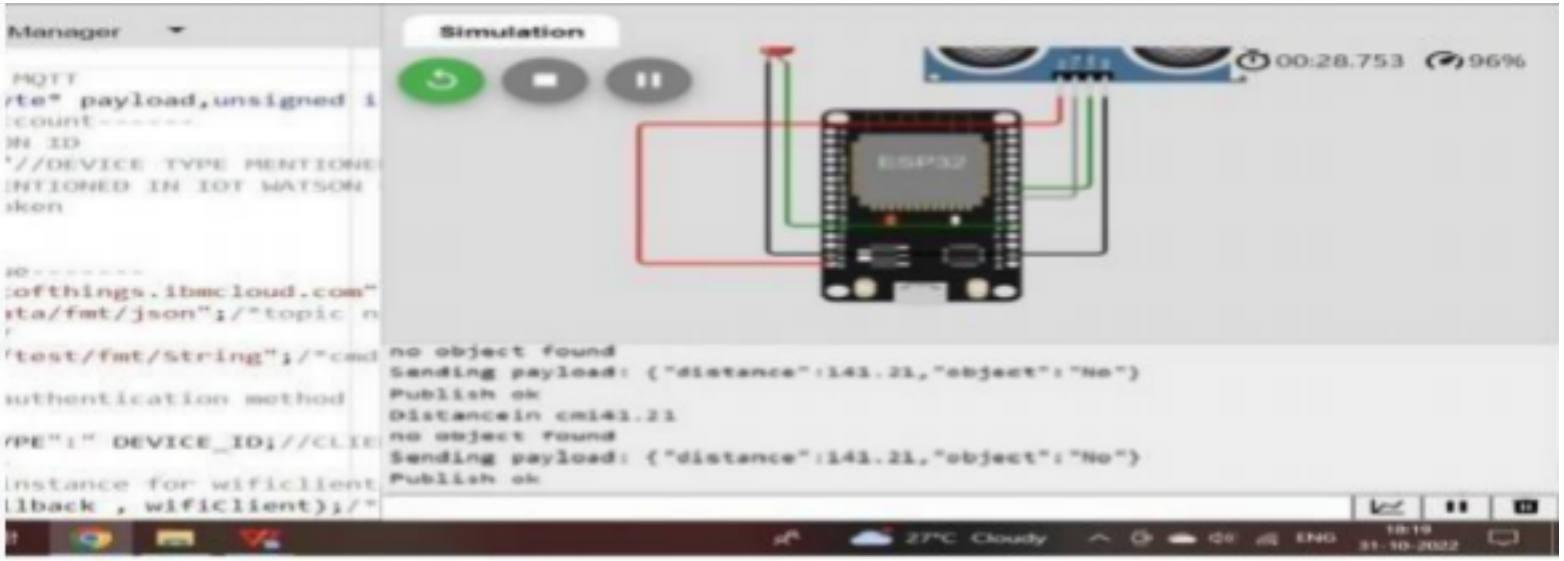
```
    float dist=(dur * 0.0343)/2;
    Serial.print("distance in cm");
    Serial.println(dist);
    PublishData(dist); delay(1000);
    if (!client.loop()){
       mqttconnect();
     }
  }
/*.....retriving to cloud..... */ void PublishData(float dist){
mqttconnect();//function
    call for connecting 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";
```

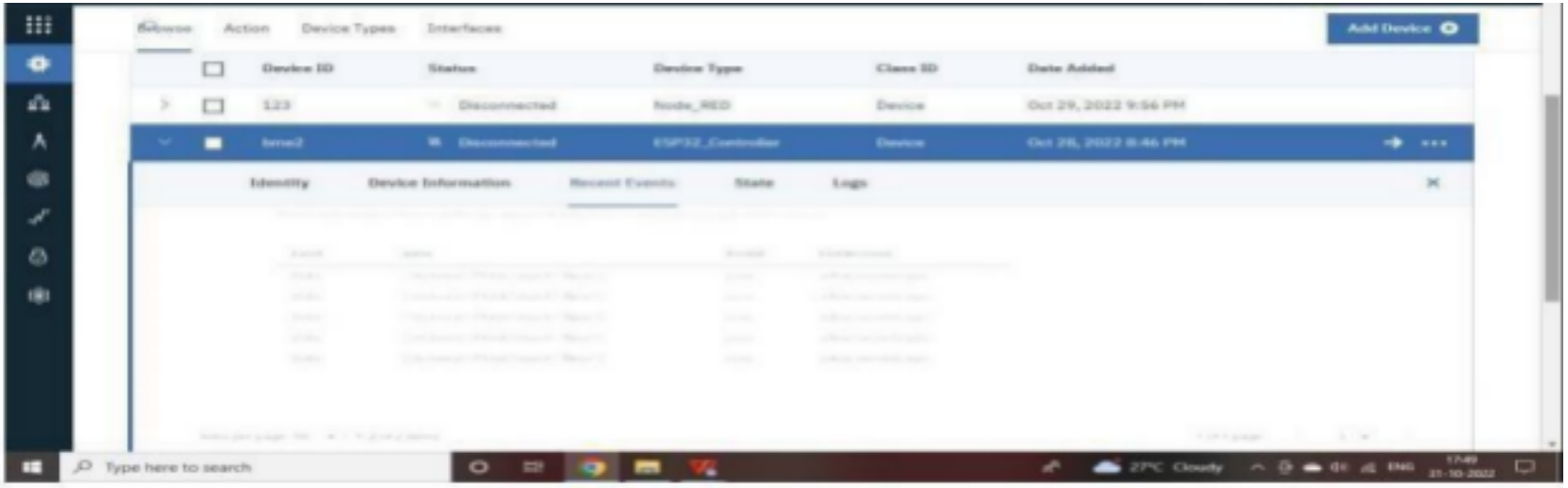
```
    }
   String payload="{\"distance\":";
   payload +=dist;
   payload +="," "\"object\":\"";
   payload += object;
   payload += "\"}";

   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 CREDIDENTIALS 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:


Manager
Simulation
00:28.753
96%
ESP32
no object found
Sending payload: {"distance":141.21,"object":"No"}
Publish ok
Distancein cm141.21
no object found
Sending payload: {"distance":141.21,"object":"No"}
Publish ok
27°C Cloudy
ENG


Browse
Action
Device Types
Interfaces
Add Device
Device ID
Status
Device Type
Class ID
Date Added
123
Disconnected
Node_RED
Device
Oct 29, 2022 9:06 PM
Identity
Device Information
Recent Events
State
Logs
Type here to search
27°C Cloudy
ENG