TEAM ID : PNT2022TMID02092

Date	9 November 2022
Project Title	IOT Based Safety Gadget for Child Safety Monitoring and Notification

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>
```

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 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();
  }
}
```

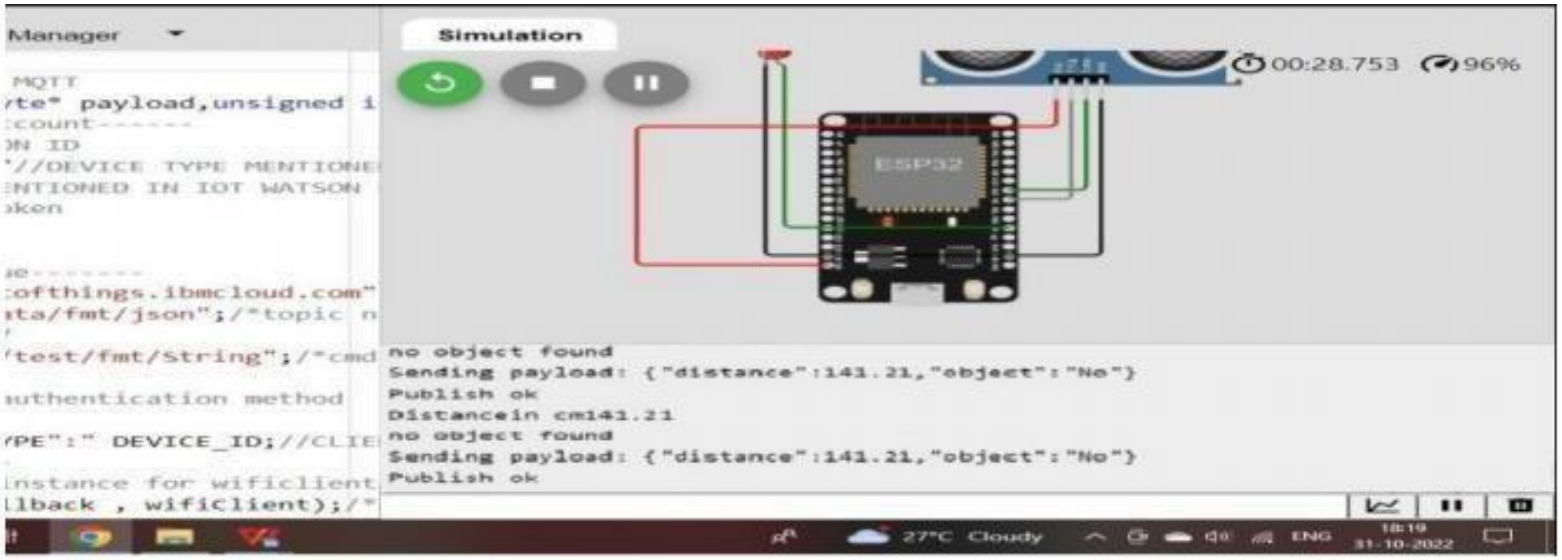
```
/*.....retriving to cloud ..... */ void PublishData(float dist){ mqttconnect();//function
call for connecting to ibm
  /*creating the string in form of JSON to update the data to ibm cloud*/
  String object;
  if(dist<100)
  {
    digitalWrite(LED,HIGH); Serial.println("no object is
    near"); object="Near";
  }
  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())){
```

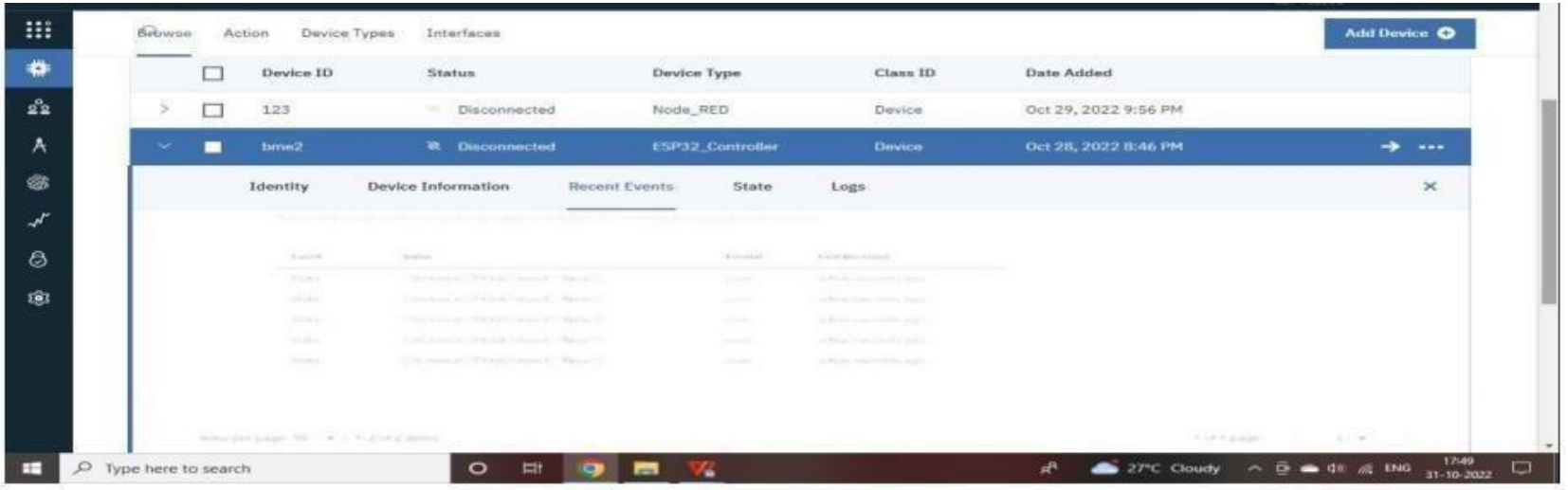
```
        Serial.println("Publish ok");/* if its sucessfully upload data on the cloud then it will print publish ok in serial
        monitor or else it will print publish failed*/
    } else{
        Serial.println("Publish failed");

    }
}

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 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
MQTT
rte* payload,unsigned i
:count------
)N ID
'//DEVICE TYPE MENTIONE
:NTIONED IN IOT WATSON
)ken
:ofthings.ibmcloud.com"
)ta/fmt/json";/*topic n
'test/fmt/String";/*cmd
uthentication method
/PE":" DEVICE_ID;//CLIE
nstance for wificlient
llback , wificlient);/*
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
18:19
31-10-2022


Browse
Action
Device Types
Interfaces
Add Device
Device ID
Status
Device Type
Class ID
Date Added
123
Disconnected
Node_RED
Device
Oct 29, 2022 9:56 PM
bme2
Disconnected
ESP32_Controller
Device
Oct 28, 2022 8:46 PM
Identity
Device Information
Recent Events
State
Logs
Type here to search
27°C Cloudy
ENG
17:49
31-10-2022