Team ID	**PNT2022TMID04073**
Date	**5 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 the login page of the parent's application to get information about the 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 connections between IoT Device & Parent's application. When the child cross across the geofence message will be notified on the 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
```

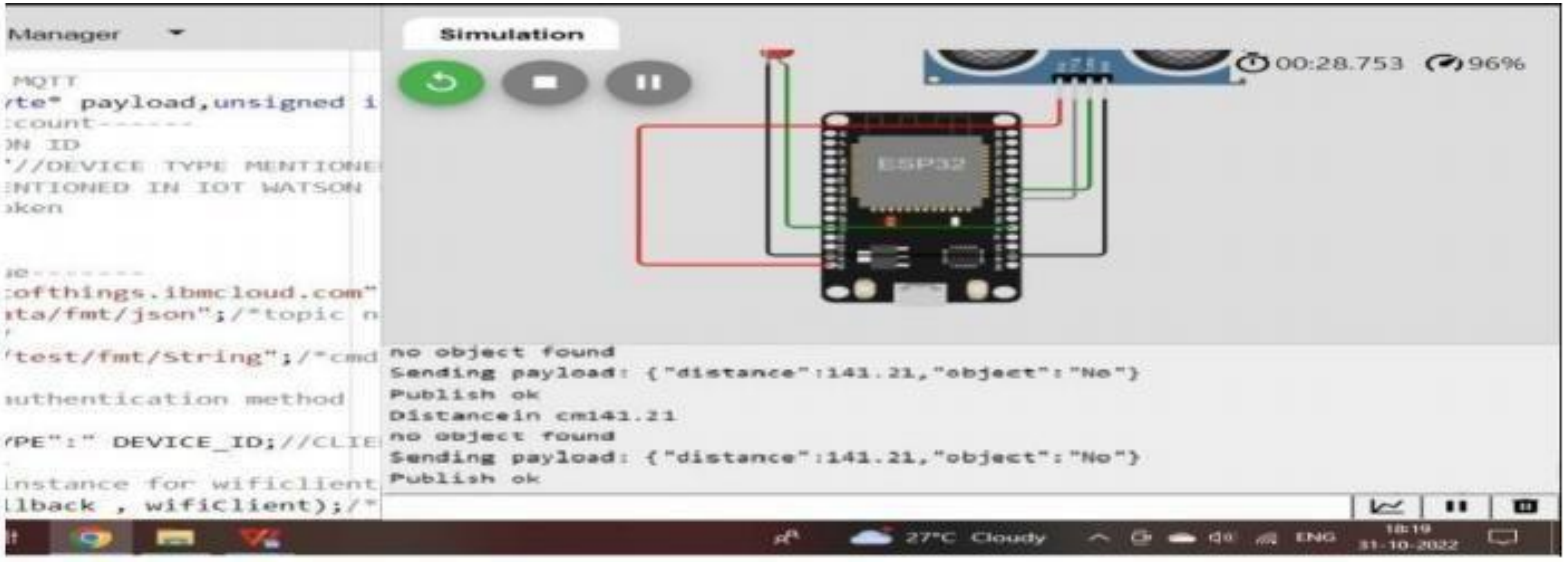
```
    dur=pulseIn(echo,HIGH); float
    dist=(dur  *  0.0343)/2;
    Serial.print("distance in cm");
    Serial.println(dist); PublishData(dist);
    delay(1000);
    if (!client.loop()){
        mqttconnect();
    }
}
/*.....retriving  to  cloud. ..... */
void PublishData(float dist){
    mqttconnect();//function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

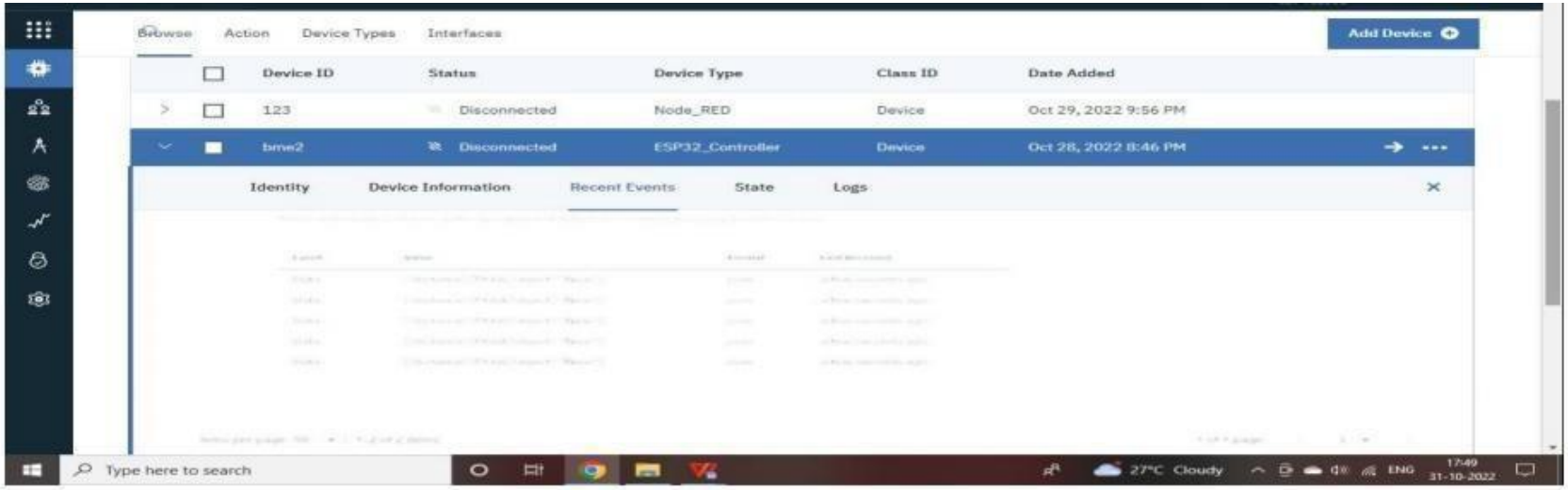
```
        digitalWrite(LED,LOW); Serial.println("no object
        found"); object="No";
    }
    String payload="{\"distance\":"; payload
    +=dist; payload +="," "\"object\":\"";
    payload += object;
    payload += "\"}";

    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
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