Team ID	**PNT2022TMID02431**
Date	5 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
```

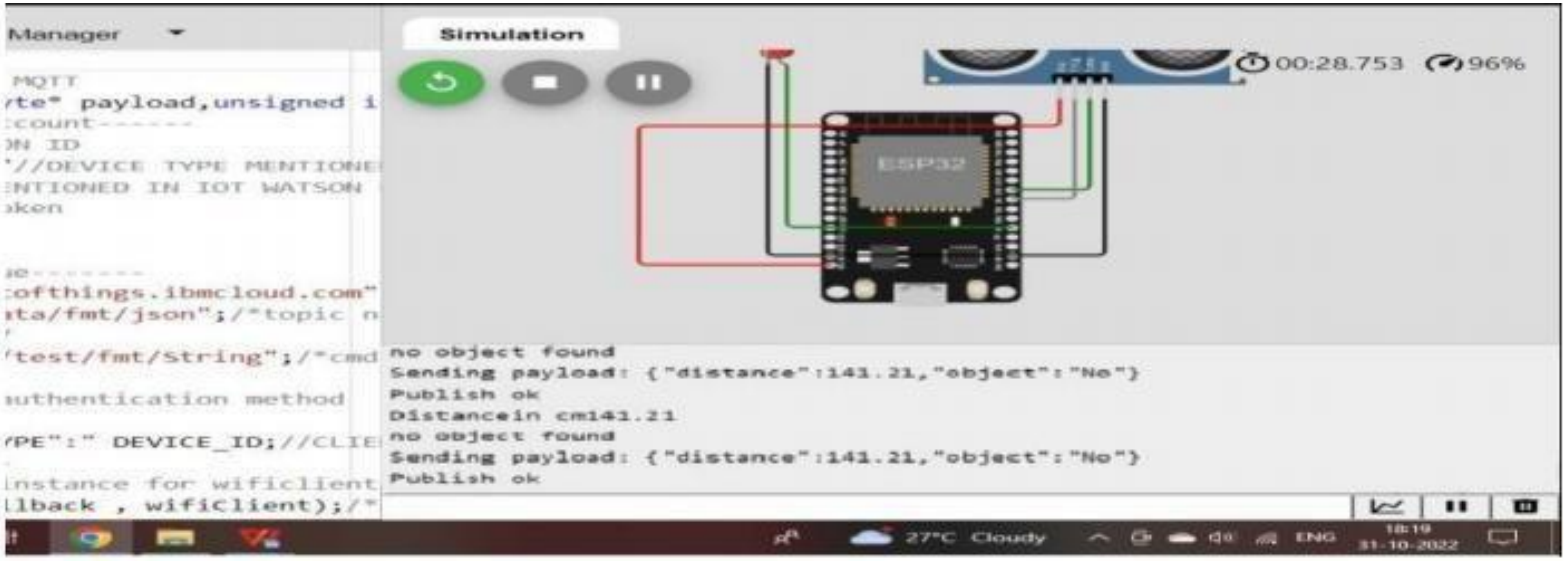
```
    {
        digitalWrite(LED,LOW); Serial.println("no object
        found"); object="No";
    }
    String payload="{\"distance\":"; payload
    +=dist; payload +="," "\"object\":\"";
    payload += object;
    payload += "\"}";


    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);
```

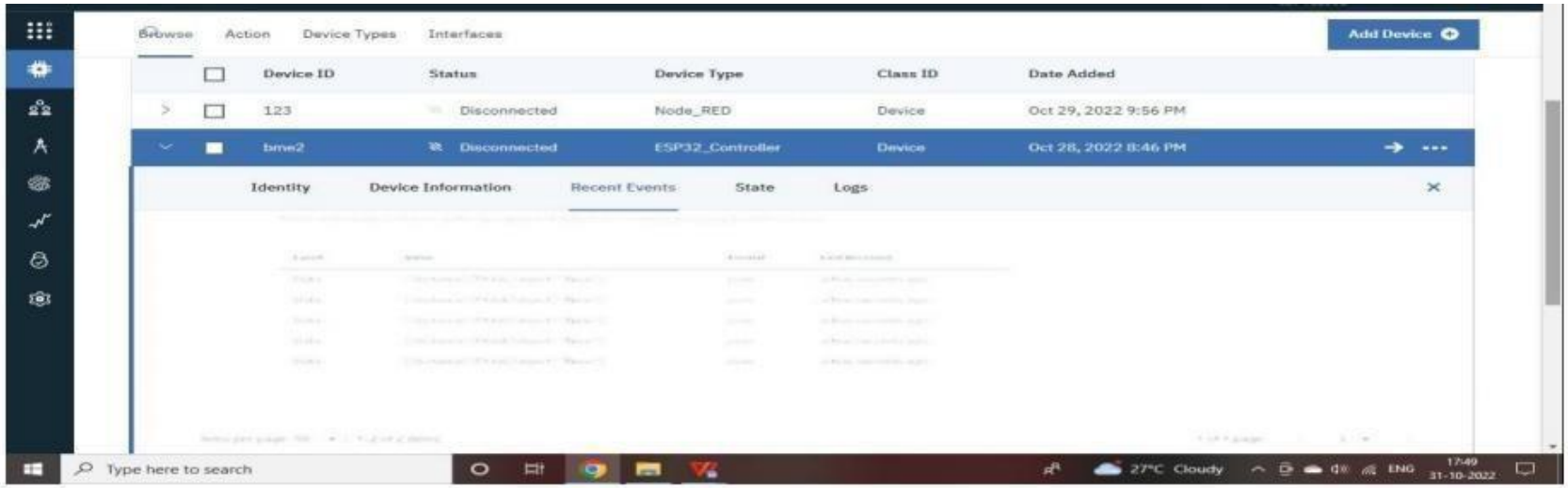
```
        while(!!!client.connect(clientid,authMethod, token)){
            Serial.print("."); delay(500);
        }

        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:




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