Team ID	**PNT2022TMID21772**
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())){
```

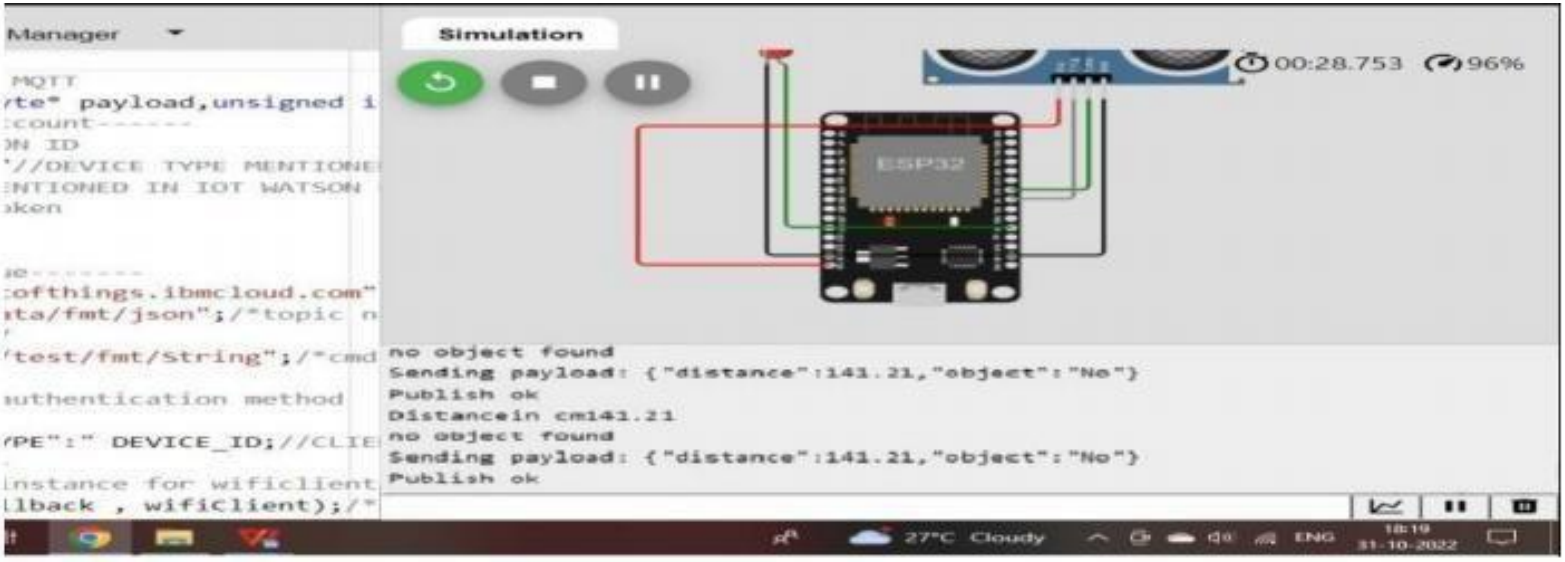
```
        Serial.println("Publish ok");/* if its sucessfully upload data on the cloud then it will print publish ok in serial monitor
        or else it will print publish failed*/
    } else{
        Serial.println("Publish failed");
    }
}
void mqttconnect(){
    if(!client.connected()){
      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

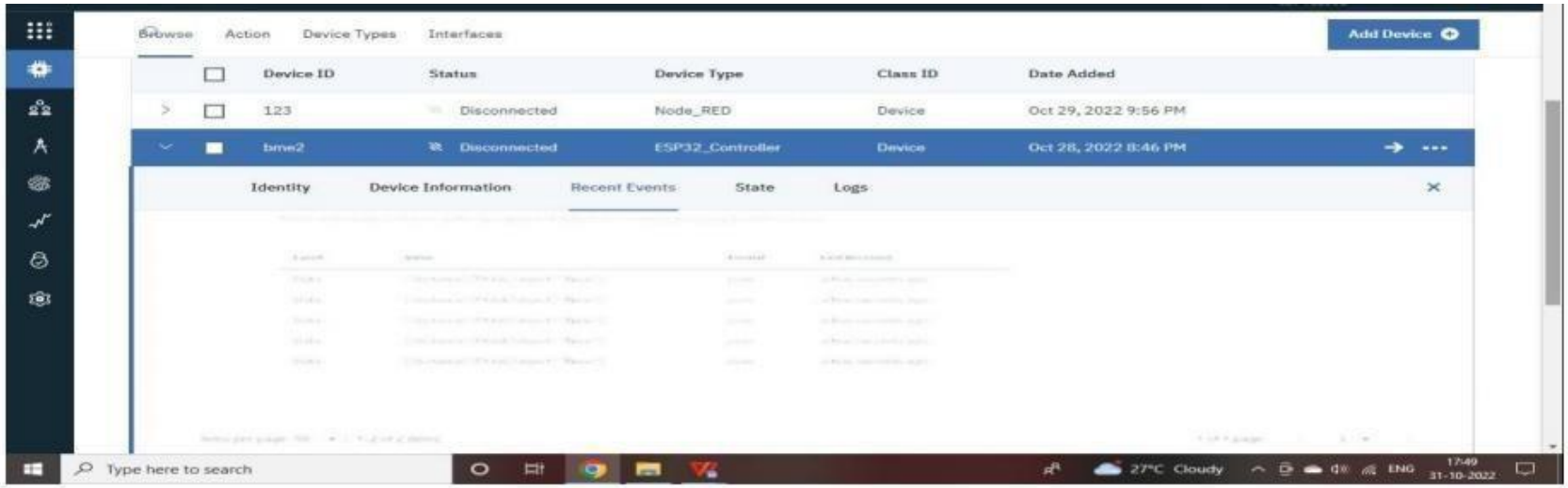
```
  Serial.println();
  Serial.print("Connecting to ");
  WiFi.begin("vivo 1816", "taetae95",6);//PASSING THE WIFI CREDIDENTIALS TO ESTABLISH CONNECTION
  while (WiFi.status() !=WL_CONNECTED){
    delay(500);
    Serial.print(".");
  }
  Serial.println("");
  Serial.println("WiFi connected");
  Serial.println("IP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