Sprint 2

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Project Name	IOT based safety gadget for child safety monitoring and notification
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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:

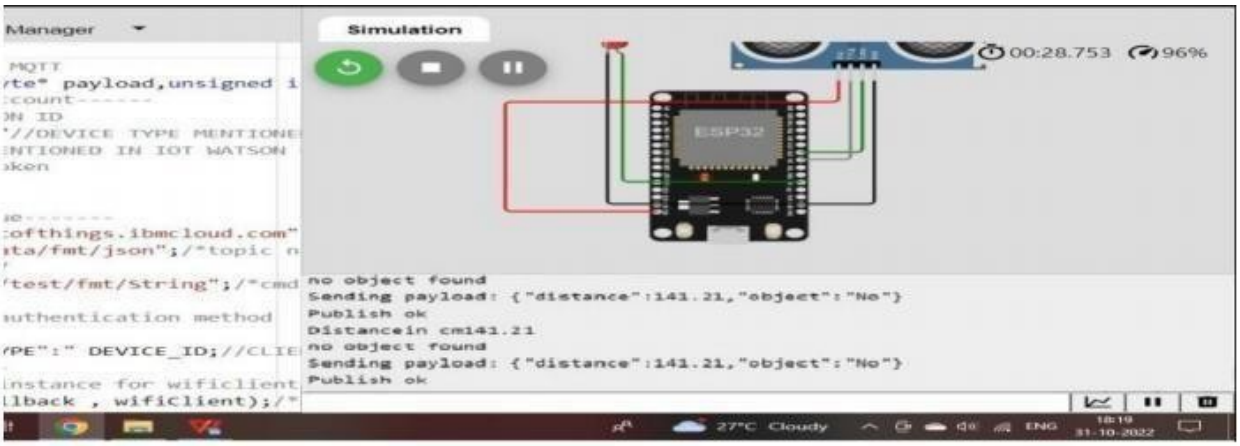
```
#include<WiFi.h>//library for wifi

#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-------
```

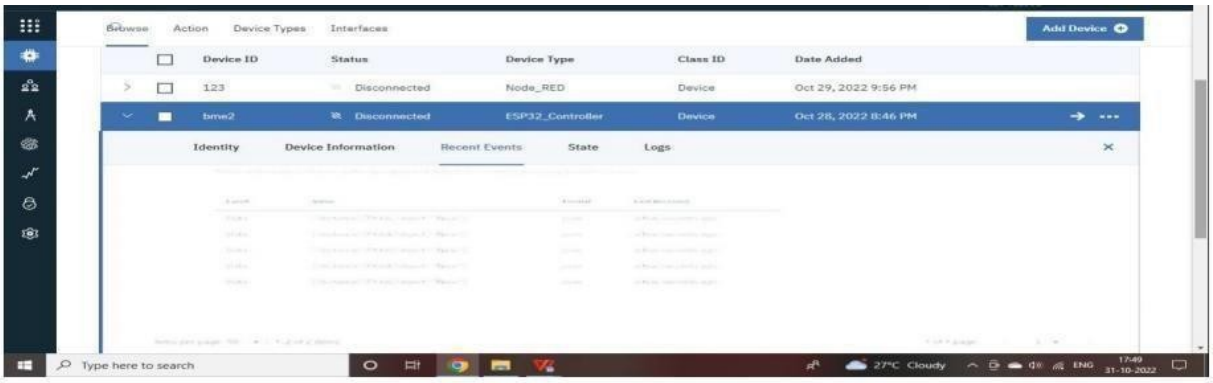
```
char server[]=ORG ".messaging.internetofthings.ibmcloud.com";//server name

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
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