

## 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,
initialscale=1">
    <title> Login Page </title>
    <style>
      Body {      font-family: Calibri, Helvetica, sans-serif;
        backgroundcolor:#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 CREDENTIALS 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:

