PROJECT DEVELOPMENT PHASE (Sprint 2)	
Team ID	PNT2022TMID14022
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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, sansserif; 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=passwor
d] { width: 100%;
margin:
```

```
        8px 0; padding:
        12px 20px; display:
        inlineblock; border:
        2px white; box-
        sizing:
        border-box;
    }  button:hover
{         opacity:
       0.7;
    }
  .cancelbtn          {
        width:      auto;
        padding:   10px
        18px;   margin:
        10px
        5px;
    }
```

```
.container  {  padding:  25px;
   backgroundcolor: #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,OUTP
```

```
UT);
pinMode(echo,INPU
T);
pinMode(LED,OUTP
UT);  delay(10);
Serial.println();
wificonnect();
mqttconnect();

}  void
loop() {
digitalWrit
e(trig,LO
W);
digitalWrit
e(trig,HIG
H);
delayMicro
seconds(10
);
digitalWrit
```

```
e(trig,LO
W); float
dur=pulseI
n(echo,HI
GH); float
dist=(dur
*
0.0343)/2;
  Serial.print("distance in cm");
  Serial.println(dist); PublishData(dist);
  delay(1000);

  if (!client.loop()){
    mqttconnect();
  }
}

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");
}
```

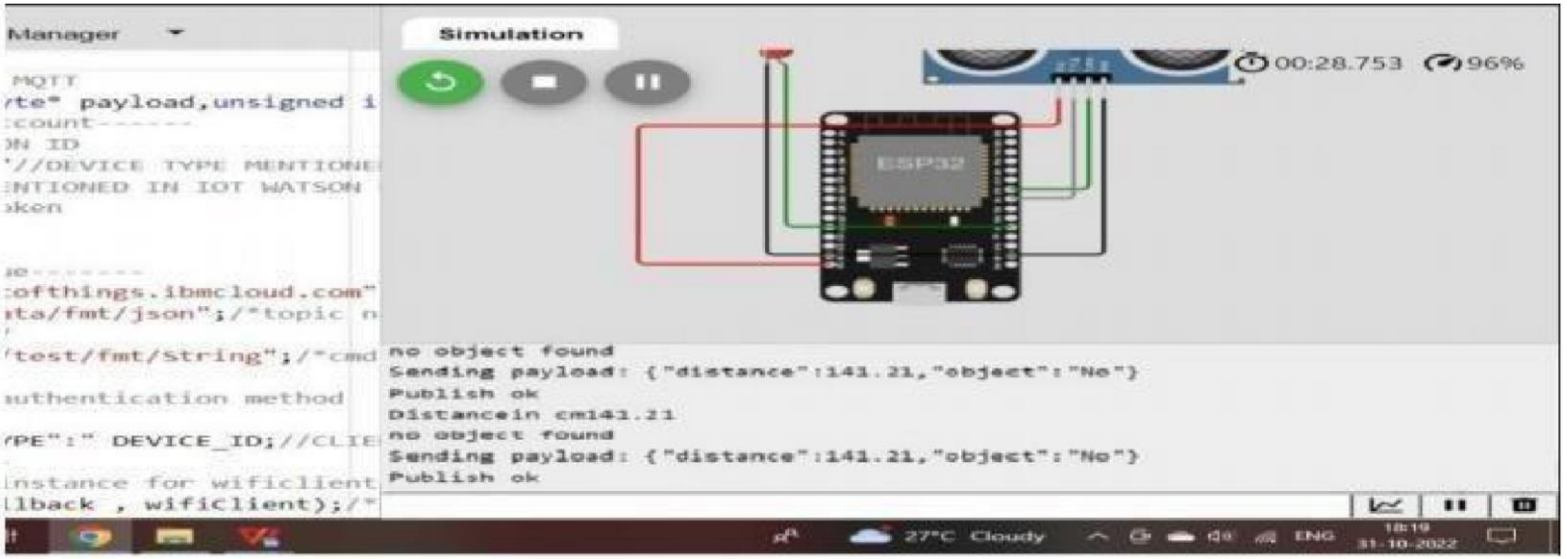
```
}

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 ");
```

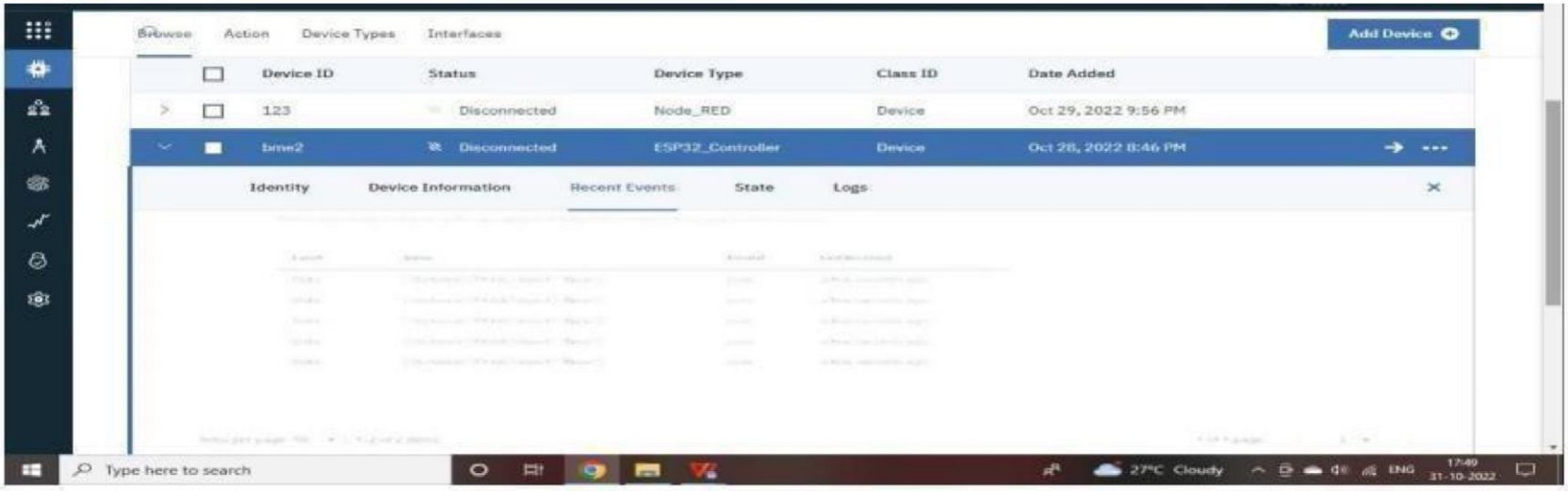
```
  WiFi.begin("vivo 1816", "taetae95",6);//PASSING THE WIFI CREDIDENTIALS TO ESTABLISH
  CONNECTION

  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
MQTT
:cofthings.ibmcloud.com"
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
bmw2
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