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| Team ID | PNT2022TMID19925 |
| 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> <button type="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 PLATFORM
#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);

//}

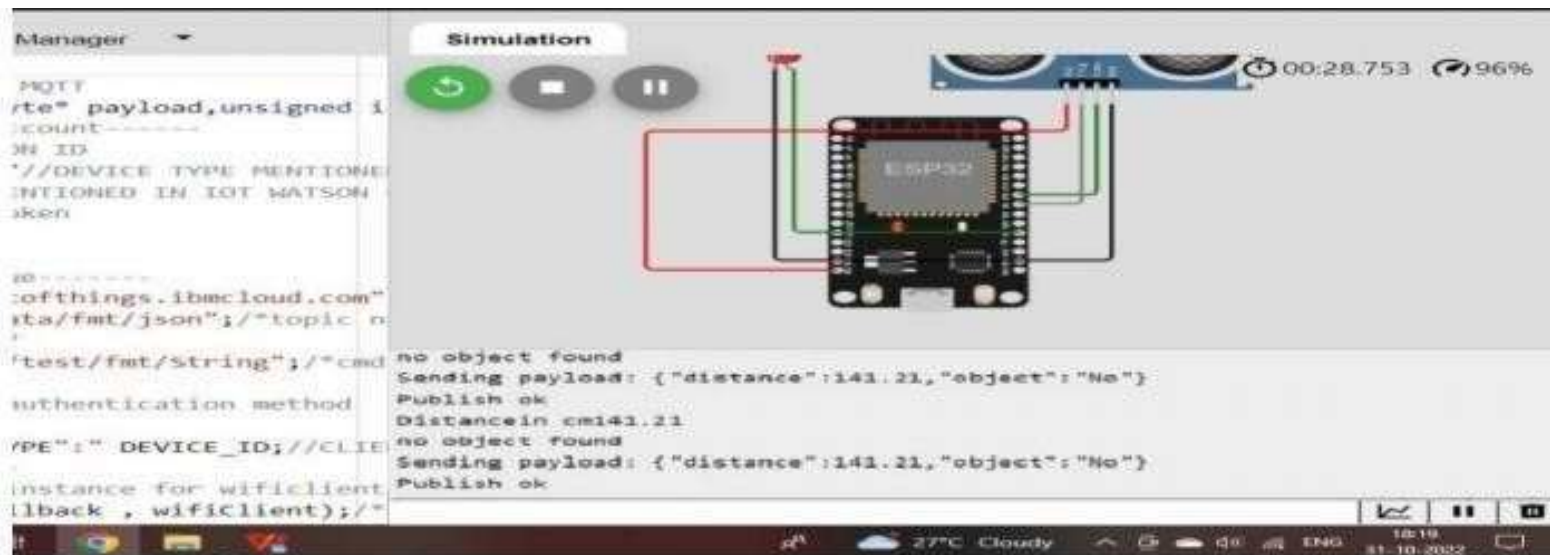
//else //{

//Serial.println(data3);

//digitalWrite(LED,LOW);//} data3="";
}

```

Output:



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 26, 2022 8:46 PM |

Identity

Device Information

Recent Events

State

Logs

| Device ID | Device Name | Device Type | Device Status |
|-----------|------------------|------------------|---------------|
| 123 | Node_RED | Node_RED | Disconnected |
| bme2 | ESP32_Controller | ESP32_Controller | Disconnected |

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31-10-2022