IOT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING AND NOTIFICATION

TEAM ID: PNT2022TMID50350

Project Development-Delivery of Sprint 2

College	PSN Engineering College
Team ID	PNT2022TMID50350
Project Name	Project -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.

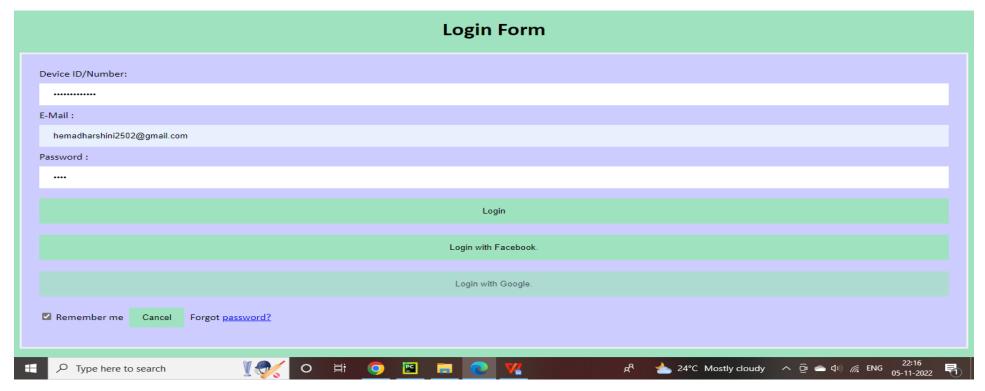
Coding, Output, Screenshot

```
<!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>
```

OUTPUT:



NOTIFICATION:-

This coding will make connection between IoT Device & Parent's application. When the child cross across the geofence message will be notifed on parent's application.

Coding, Output-Screenshot

```
#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();
}
/*.....*/
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)</pre>
{
  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);
```

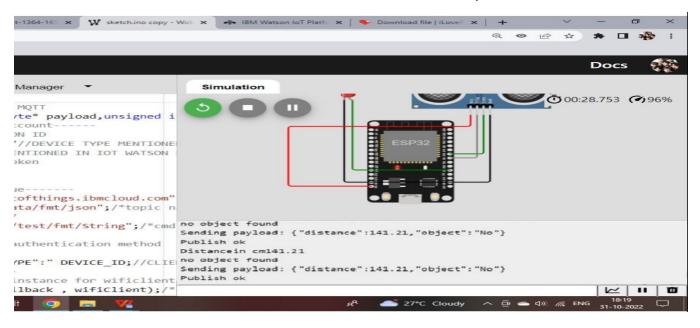
```
if(client.publish(publishtopic, (char*) payload.c str())){
    Serial.println("Publish ok");/* if its sucessfully upload data on the cloud then it will print
    publish ok in serial monitor or else it will print publish failed*/
 } else{
    Serial.println("Publish failed");
}
void mqttconnect(){
  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++){</pre>
   //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:

When child is not detected within the safe zone with the help of IoT device



Childs status are notified to parents device using cloud service

