Project Development-Delivery of Sprint 3

Date	7 November 2022
Team ID	PNT2022TMID28943
Project Name	Project -IoT Based Safety Gadget for Child Safety Monitoring and Notification

Sprint 3 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

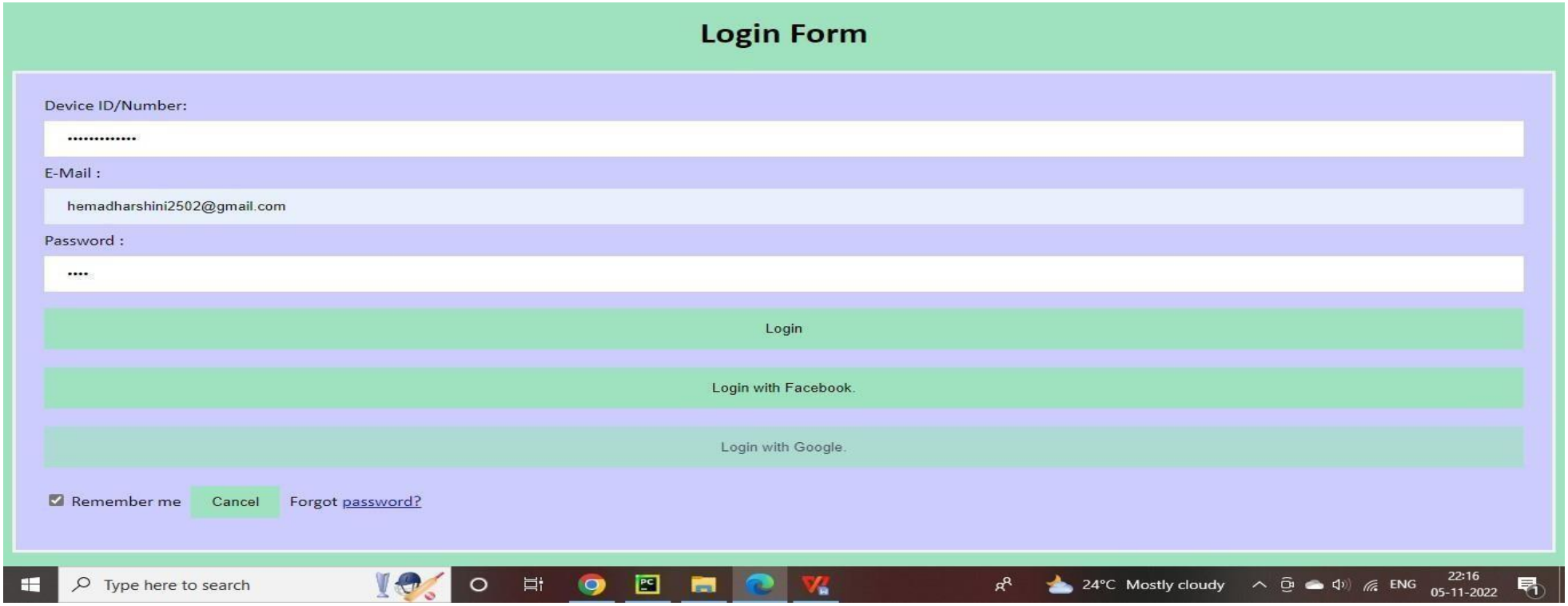
```
<!DOCTYPE html>
<html> <head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<title> Login Page </title>
<style> Body { font-family: Calibri,
Helvetica, sans-serif; background-color:
#9FE2BF;
}
button { background-color:
#9FE2BF; width: 100%;
color: black; padding: 15px;
```

```
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>
         <input type="checkbox" checked="checked"> Remember me
         <button type="button" class="cancelbtn"> Cancel</button>
         Forgot <a href="#"> password? </a>
```

```
        </div>
    </form>
</body>
</html>
```

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();
  }
}
/*.....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();
```

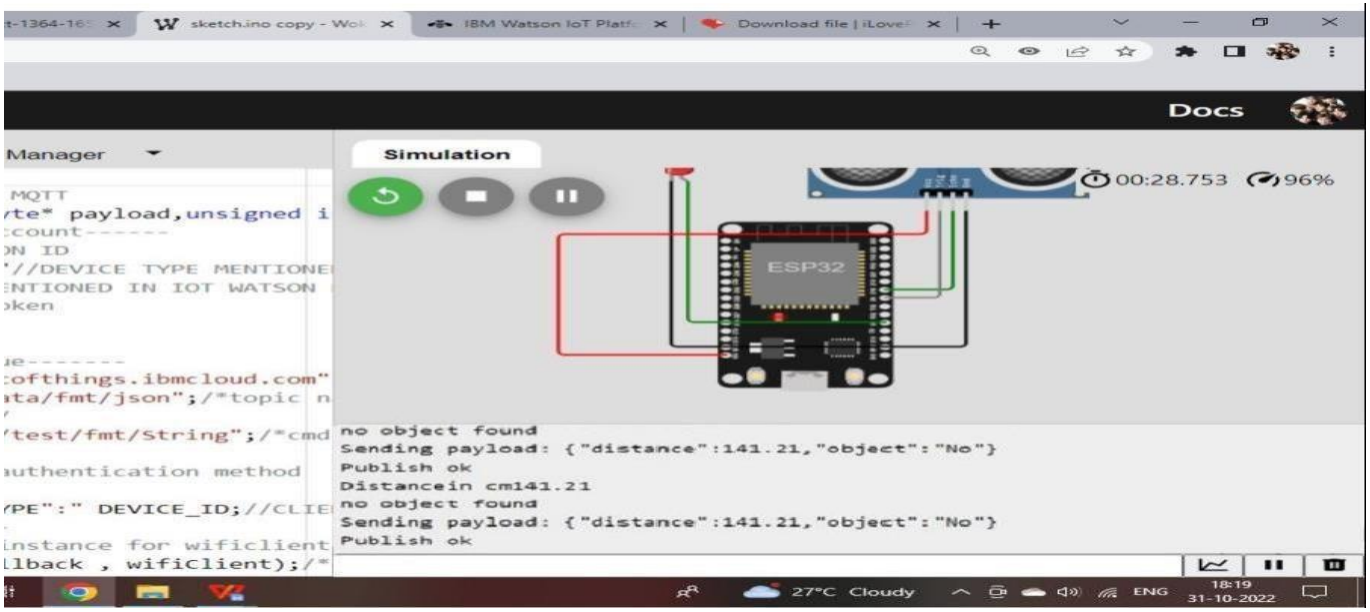
```
  } } void wificonnect()//function defenition for wificonnect {

 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)
```

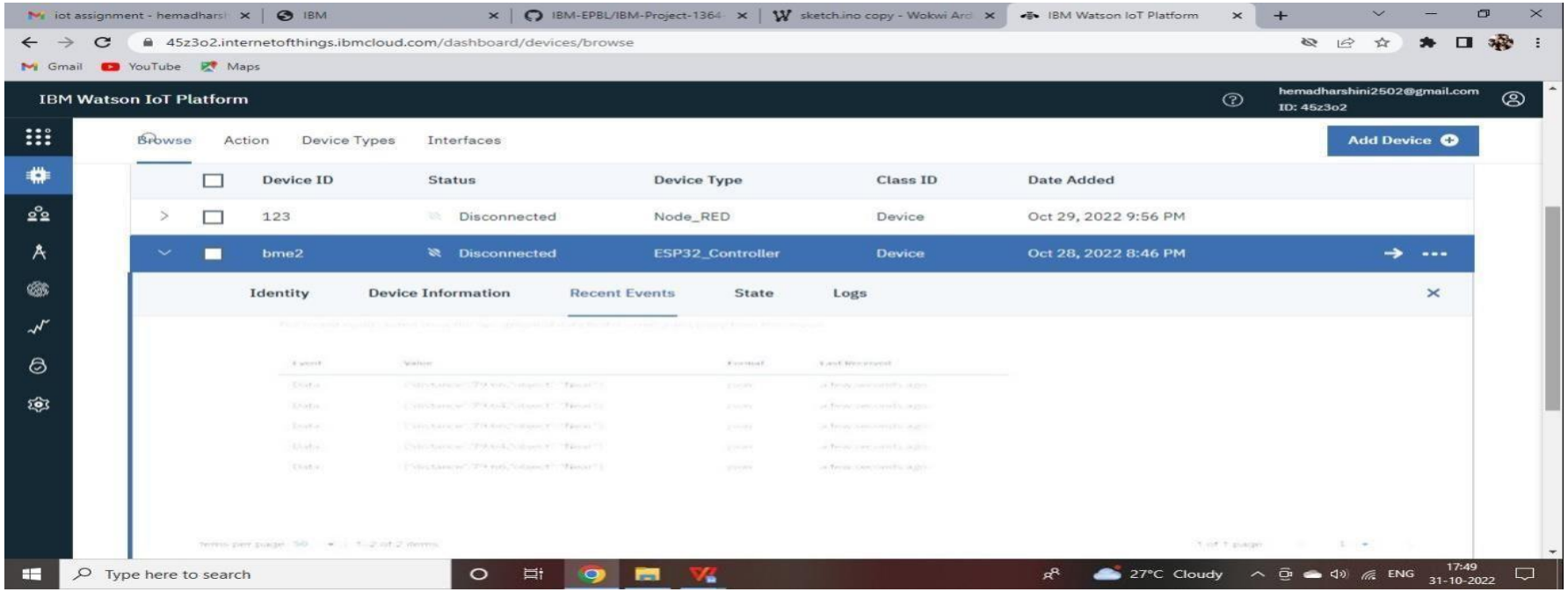
```
{
  Serial.print("callback invoked for topic: ");
Serial.println(subscribetopic); for(int i=0; i<
payloadLength; i++){     //Serial.print((char)payload[i]);
data3 +=(char)payload[i];
  }
  //Serial.println("dta: "+ data3);
  //if(data3=="Near")
  //{
  //Serial.println(data3);
  //digitalWrite(LED,HIGH);
  //}
  //else //{
  //Serial.println(data3);
//digitalWrite(LED,LOW);//}  data3="";
}
```

OUTPUT:

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


IBM Watson IoT Platform
45z3o2.internetofthings.ibmcloud.com/dashboard/devices/browse
hemadharshini2502@gmail.com
ID: 45z3o2
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