

Project Development-Delivery of Sprint 3

Date	7 November 2022
Team ID	PNT2022TMID01197
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:

The screenshot displays a web browser window with a 'Login Form' centered on the page. The form is contained within a light blue box with a white border. It features three input fields: 'Device ID/Number' (with a masked value '*****'), 'E-Mail' (with the value 'hemadharshini2502@gmail.com'), and 'Password' (with a masked value '****'). Below the password field is a green 'Login' button. Further down are two more buttons: 'Login with Facebook.' and 'Login with Google.'. At the bottom of the form, there is a 'Remember me' checkbox (checked), a green 'Cancel' button, and a link for 'Forgot password?'. The browser's taskbar is visible at the bottom, showing the Windows logo, a search bar, and various application icons. The system tray on the right indicates the time as 22:16 on 05-11-2022, along with weather and network status.

NOTIFICATION:-

This coding will make connection between IoT Device & Parent's application. When the child crosses the geofence message will be notified 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 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 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)

```

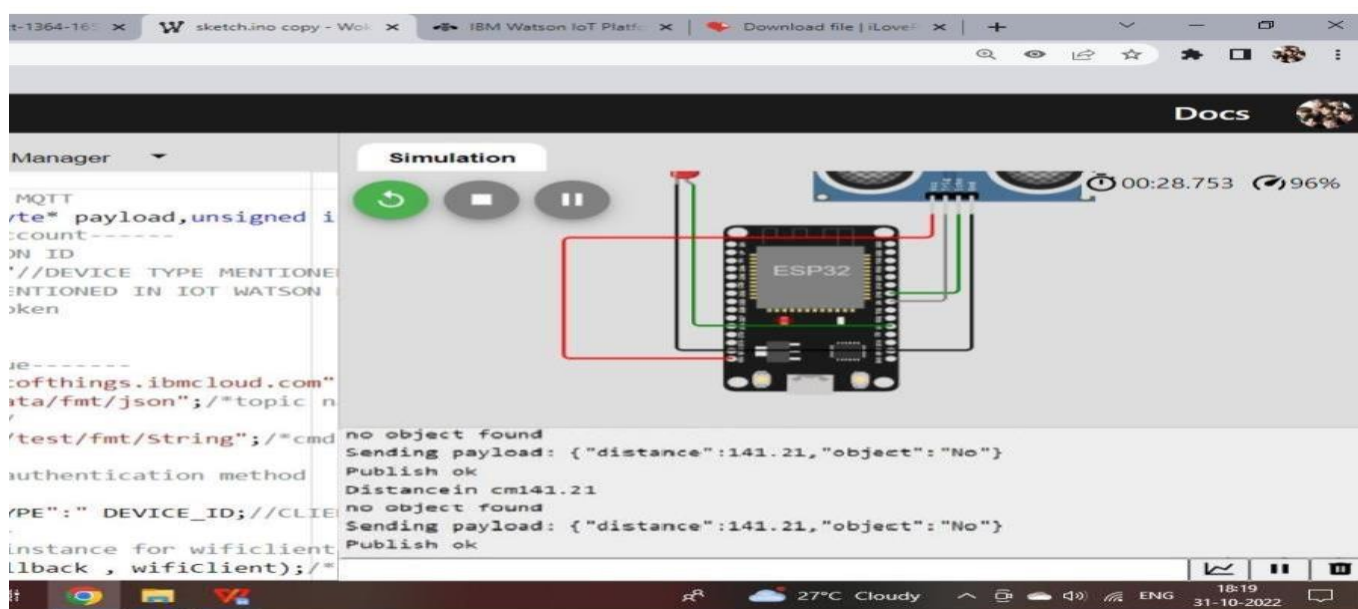
```

{
  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

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45z3o2.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform hemadharshini2502@gmail.com ID: 45z3o2

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

Event	Value	Context	Next Occurrence
State	["distance"/"29.452/obscure"/"Device"]	room	at least once every 5 days
State	["distance"/"29.452/obscure"/"Device"]	room	at least once every 5 days
State	["distance"/"29.452/obscure"/"Device"]	room	at least once every 5 days
State	["distance"/"29.452/obscure"/"Device"]	room	at least once every 5 days
State	["distance"/"29.452/obscure"/"Device"]	room	at least once every 5 days

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