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| **PROJECT DEVELOPMENT PHASE (Sprint 2)** | |
| Team ID | PNT2022TMID14022 |
| Date | 07 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, 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=password] { 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,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)

{

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:**

