

## Project Planning Phase

### Delivery Sprint 2

Date	06 November 2022
Team ID	PNT2022TMID12772
Project Name	Project - IoT Based Safety Gadget for Child Safety Monitoring and notification

LOGIN and NOTIFICATION of the IoT device in Parent's Web Application for getting information about Child's Status.

LOGIN:-

### Coding, Output, Screenshot

```
<!DOCTYPE html>
<html><head>
<meta name="viewport" content="width=device-width,initial-scale=1">
<title>LoginPage</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:
```

```

8px0;padding:12px20px;
display:inline-block;
border:
2pxwhite;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>LoginForm</h1></center>
<form>
<divclass="container">
<label>DeviceID/Number:</label>
<inputtype="password"placeholder="EnterPassword"name="password"required>
<label>E-Mail:</label>
<inputtype="text"placeholder="EnterUsername"name="username"required>
<label>Password:</label><inputtype="password"placeholder="EnterPassword"name="password"required>
<buttontype="submit">Login</button>
<buttonclass="loginBtnloginBtn--facebook">LoginwithFacebook.</button>
<buttonclass="loginBtnloginBtn--google">LoginwithGoogle.</button>
<inputtype="checkbox"checked="checked">Rememberme
<buttontype="button"class="cancelbtn">Cancel</butt
on>Forgot<a href="#">password?</a></div>
</form>
</body>

```

</html>

### Coding, Output-Screenshot

```
#include<WiFi.h>//libraryforwifi#include<PubSubClient.h>//libraryforMQTTvoidcallback(char*subscribetopic,byte*payload,unsignedintpayloadlength);
//-----credentialsofIBMAccount-----
#defineORG"45z3o2"//IBMORGANIZATIONID
#defineDEVICE_TYPE"ESP32_Controller"//DEVICETYPEMENTIONEDINIOTWATSON
PLATFORM#defineDEVICE_ID"bme2"//DEVICEIDMENTIONEDINIOTWATSONPLATFORM
#define
TOKEN"OKZ+q@JfPWDOd6wBTj"//TokenStringdata3;floatdist;
//-----customizetheabovevalue
charserver[]=ORG
".messaging.internetofthings.ibmcloud.com";//servernamecharpublishtopic[]="ultrasonic/emit/Data/fmt/json";/*topicnameandtypeofeventperformandformatinwhichdatatobesend*/charsubscribetopic[]="ultrasonic/cmd/test/fmt/String";/*cmd
REPRESENTCommandtupeand
COMMANDISTESTOFFORMATSTRING*/charauthMethod[]="use-token-auth";//authentication
methodchartoken[]=TOKEN;char
clientid[]="d:"ORG":"DEVICE_TYPE":"DEVICE_ID";//CLIENTID
//
WiFiClientwifiClient;//creatinganinstanceforwificlient
PubSubClientclient(server,1883,callback,wifiClient);/*callingthepredefinedclientidby
passingparameterlikeserverid,portandwificredential*/intLED=4;inttrig=5;intecho=18;void
setup(){Serial.begin(115200);pinMode(trig,OUTPUT);pinMode(echo,INPUT);pinMode(LED,OUTPUT);
delay(10);Serial.println();wificonnect();mqttconnect();
}
voidloop()
{digitalWrite(trig,LOW);digital
Write(trig,HIGH);delayMicrose
conds(10);digitalWrite(trig,LOW);floatdur=pulseIn(echo,HIGH);floatdist=(dur*
0.0343)/2;Serial.print("distanc
eincm");Serial.println(dist);Publis
```

```

hData(dist);delay(1000);if
(!client.loop()){mqttconne
ct();
}
}
/*.....retrivingtocloud.....*/voidPublishData(floatdist){mqttconnect();//functi
oncallforconnectingtoibm
String
object;if(dis
t<100){
digitalWrite(LED,HIGH);
Serial.println("noobjectisnear");object="Nea
r";
}
else
{digitalWrite(LED,LOW);Serial.println("noobj
ectfound");object="No";
}String
payload="{\"distance\":";payload
+=dist;payload
+=",\"object\":\":";payload+=object;
payload+="\"}";
Serial.print("Sendingpayload:");
Serial.println(payload);
if(client.publish(publishtopic,(char*)payload.c_str())){
Serial.println("Publishok");
}else{
Serial.println("Publishfailed");
}}voidmqttconnect(){i
f(!client.connected()){
Serial.print("Reconnectingclientto");
Serial.println(server);while(!!!client.connect(clientid,authMet
hod,token)){Serial.print(".");
delay(500);
} initManagedDevice();

```

```

Serial.println();}}voidwificonnect();//functiondefenitionforwificonnect{
Serial.println();
Serial.print("Connectingto");
WiFi.begin("vivo1816","taetae95",6);//PASSINGTHEWIFICREDIDENTIALSTOESTABLISHCONNECTIONwhile(WiFi.status()!=WL_CONNECTE
D){
delay(500);
Serial.print(".");
}
Serial.println("");Serial.println("
WiFiconnected");Serial.println(
"IP
address");Serial.println(WiFi.lo
calIP());
}void
initManagedDevice(){if(client.subsc
ribe(subscribetopic)){Serial.println(
(subscribetopic));
Serial.println("subscribetocmdOK");
}else{
Serial.println("subscribetocmdfailed");
}
}voidcallback(char*subscribetopic,byte*payload,unsignedintpayloadLength){
Serial.print("callbackinvokedfortopic:");
Serial.println(subscribetopic);for(inti=0;
i<payloadLength;i++){
//Serial.print((char)payload[i]);data3+=(char)paylo
ad[i];
//Serial.println(data3);
//digitalWrite(LED,LOW);//}data3="";
}

```

### OUTPUT:

WhenchildisnotdetectedwithinthesafezonewiththehelpofIoTdevice

Manager

MQTT  
rte\* payload,unsigned i  
count-----  
IN ID  
//DEVICE TYPE MENTIONED  
ENTIONED IN IOT WATSON  
aken  
  
ID-----  
ofthings.ibmcloud.com"  
ta/fmt/json";/\*topic n  
/  
test/fmt/String";/\*cmd  
authentication method  
/PE": " DEVICE\_ID;//CLIE  
instance for wificlient  
lback , wificlient);/\*

Simulation

00:28.753

96%

no object found  
Sending payload: {"distance":141.21,"object":"No"}  
Publish ok  
Distancein cm141.21  
no object found  
Sending payload: {"distance":141.21,"object":"No"}  
Publish ok

18:19

31-10-2022

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
time2	Disconnected	ESP32_Controller	Device	Oct 28, 2022 8:46 PM

Identity

Device Information

Recent Events

State

Logs

Device ID	Device Name	Device Type	Device Status
123	123	Node_RED	Disconnected
time2	time2	ESP32_Controller	Disconnected

Type here to search

27°C Cloudy

17:49

31-10-2022