

Date	18.11.2022
Team ID	PNT2022TMID46236
Project Name	Project - IoT Based Safety Gadget for Child Safety Monitoring and Notification
Maximum Marks	4 Marks

Sprint 2 is about **LOGIN and NOTIFIACATION** of the IoT device in Parent's Web Application for getting information about Child's Status.

```

#include <WiFi.h>//library for wifi
#include <PubSubClient.h>//library for MQTT

void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);
//-----credentials of IBM Accounts-----
#define ORG "o6i6hl"//IBM ORGANITION ID
#define DEVICE_TYPE "ESP32"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "Nodemcu"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN
"Dps+?2lX5qe6?lbRDz" String
data3; float dist;
//----- Customise the above values ----- char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server
Name char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type of event perform and format in which data to
be send char subscribetopic[] = "iot-2/cmd/test/fmt/String";// cmd REPRESENT command type 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 the 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);
  wificonnect();
  mqttconnect();
} void loop()// Recursive
Function
{  digitalWrite(trig,LOW);
digitalWrite(trig,HIGH);
delayMicroseconds(10);
digitalWrite(trig,LOW);  float
dur = pulseIn(echo,HIGH);
float dist = (dur * 0.0343)/2;
  Serial.print ("Distancein cm");
  Serial.println(dist);
```

```
PublishData(dist);  
delay(1000);  if  
(!client.loop()) {  
  mqttconnect();  
}  
}
```

```

/*.....retrieving to Cloud.....*/
void PublishData(float dist) {
  mqttconnect();//function call for connecting to ibm
  /*      creating the String in in form JSon to update the data to ibm
cloud
  */
  String object;
  if (dist <100)
  {
    digitalWrite(LED,HIGH);
    Serial.println("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 it 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 defination for
wificonnect {
    Serial.println();
    Serial.print("Connecting to ");

    WiFi.begin("Wokwi-GUEST", "", 6); //passing the wifi credentials to establish the
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("data: "+ data3);
//    if(data3=="Near")
//    {
//    Serial.println(data3);
//    digitalWrite(LED,HIGH);

//    }

//    else
//    {
//    Serial.println(data3);
//    digitalWrite(LED,LOW);

```



```
// }  
data3="";
```

IBM Watson IoT Platform

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ID: o6i6ht

Browse

Action

Device Types

Interfaces

Add Device +

>

12345

Disconnected

python

Device

12 Nov 2022 2:41 PM

▼

Nodemcu

Disconnected

ESP32

Device

15 Nov 2022 1:56 PM

→ ...

Identity

Device Information

Recent Events

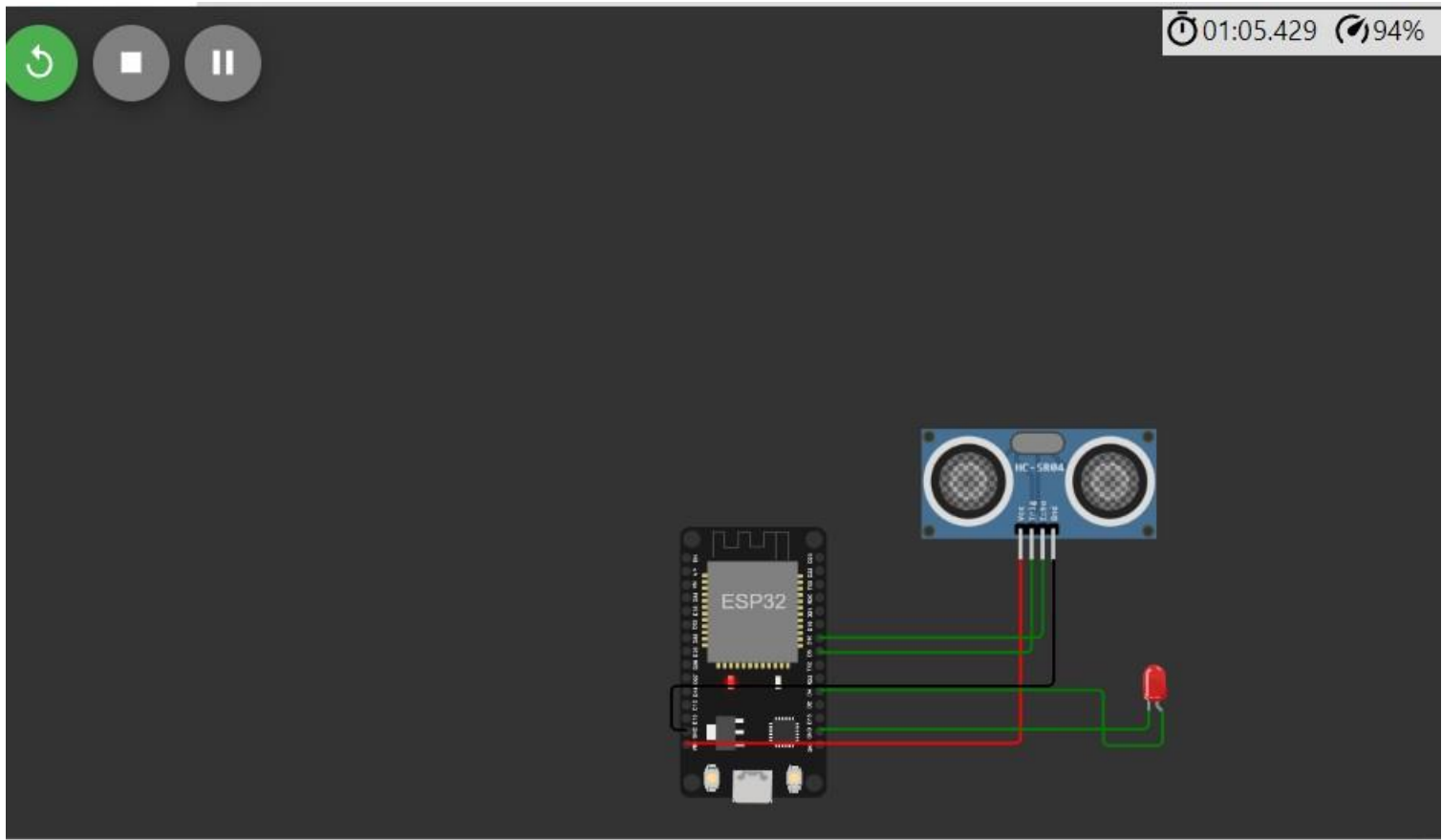
State

Logs

×

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
Data	{"distance":403.49,"object":"No"}	json	a minute ago
Data	{"distance":403.45,"object":"No"}	json	a minute ago
Data	{"distance":403.49,"object":"No"}	json	a minute ago
Data	{"distance":403.44,"object":"No"}	json	a minute ago
Data	{"distance":403.61,"object":"No"}	json	a minute ago



Link : <https://wokwi.com/projects/348382996059914834>