ProjectDevelopment-DeliveryOfSprint-2

TeamID	**PNT2022TMID26473**
ProjectName	**IOTbasedsafetygadget forchildsafetymonitoringand notification**
Date	**14-11-2022**

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'sapplication.

Coding:

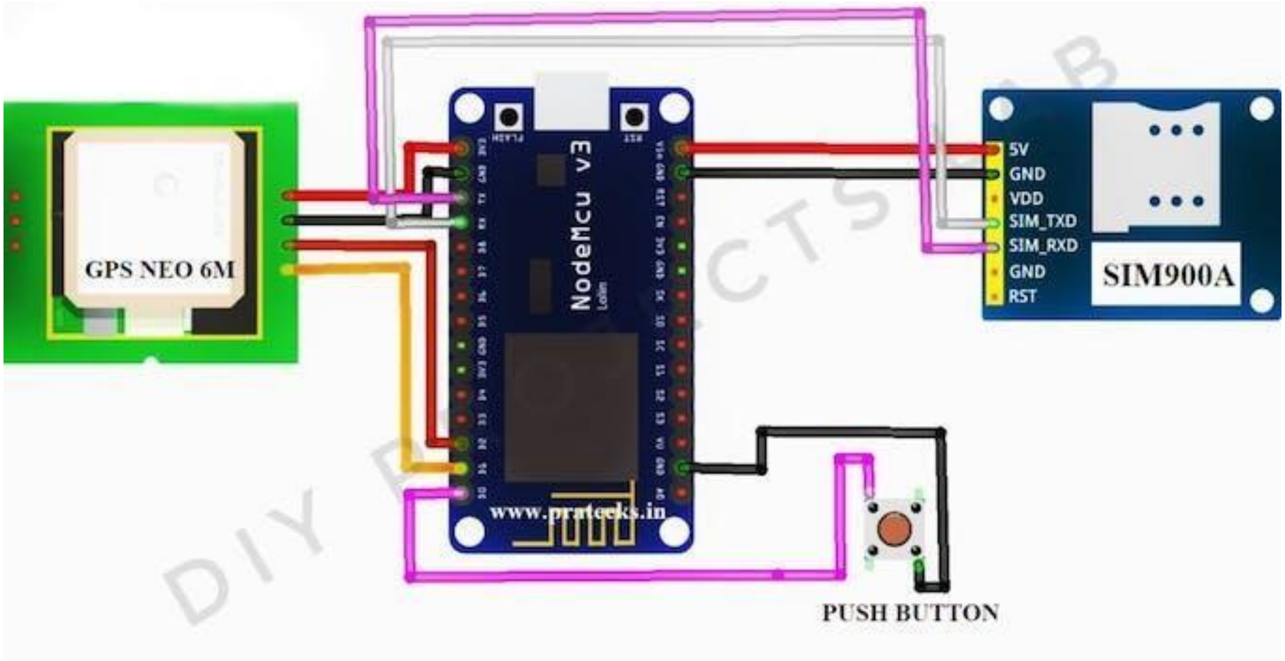
```
#include<WiFi.h>//library for

wifi#include<PubSubClient.h>//libraryforM

QTT
voidcallback(char*subscribetopic,byte*payload,unsignedintpayloadlength);

//---------------credentialsofIBMAccount------

#defineORG"frpi8s"// IBMORGANIZATIONID

#defineDEVICE_TYPE"NodeMCU"//DEVICETYPEMENTIONEDINIOTWATSON

PLATFORM#defineDEVICE_ID"12345"//DEVICEIDMENTIONEDINIOTWATSONPLATEF
ORM

#defineTOKEN"12345678"//TokenStringdata3;floatdist;

//------------customizetheabovevalue-------
```

```
charserver[]=ORG".messaging.internetofthings.ibmcloud.com";//servername

charpublishtopic[]="ultrasonic/evt/Data/fmt/json";/*topicnameandtypeofe
ventperformand format

inwhichdatatobesend*/

char subscribetopic[]="ultrasonic/cmd/test/fmt/String";/*cmd
REPRESENTCommandtupe and

COMMANDISTESTOFFORMATSTRING*/

charauthMethod[]="use-token-
auth";//authenticationmethodchartoken[]=TOKEN;
charclientid[]="d:"ORG":"DEVICE_TYPE":"DEVICE_ID;//CLIENTID
//
WiFiClientwifiClient;//creatinganinstanceforwificlient
PubSubClientclient(server,1883,callback,wifiClient);/*callingthepredefinedclientid
bypassingparameterlikeserverid,portandwificredential*/
intLED=4;
inttrig=5;intecho=18;voidsetup(){
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
incm");Serial.println(dist);PublishData(dist);
delay(1000);
if(!client.loop()){mqttconnect();
}
}
/*............................................retrivingtocloud..................................................
*/
voidPublishData(floatdist){mqttconnect();//functioncallforconnectingtoibm
/*creatingthestringinformofJSONtoupdatethedatatoibmcloud*/Stringobject;
```

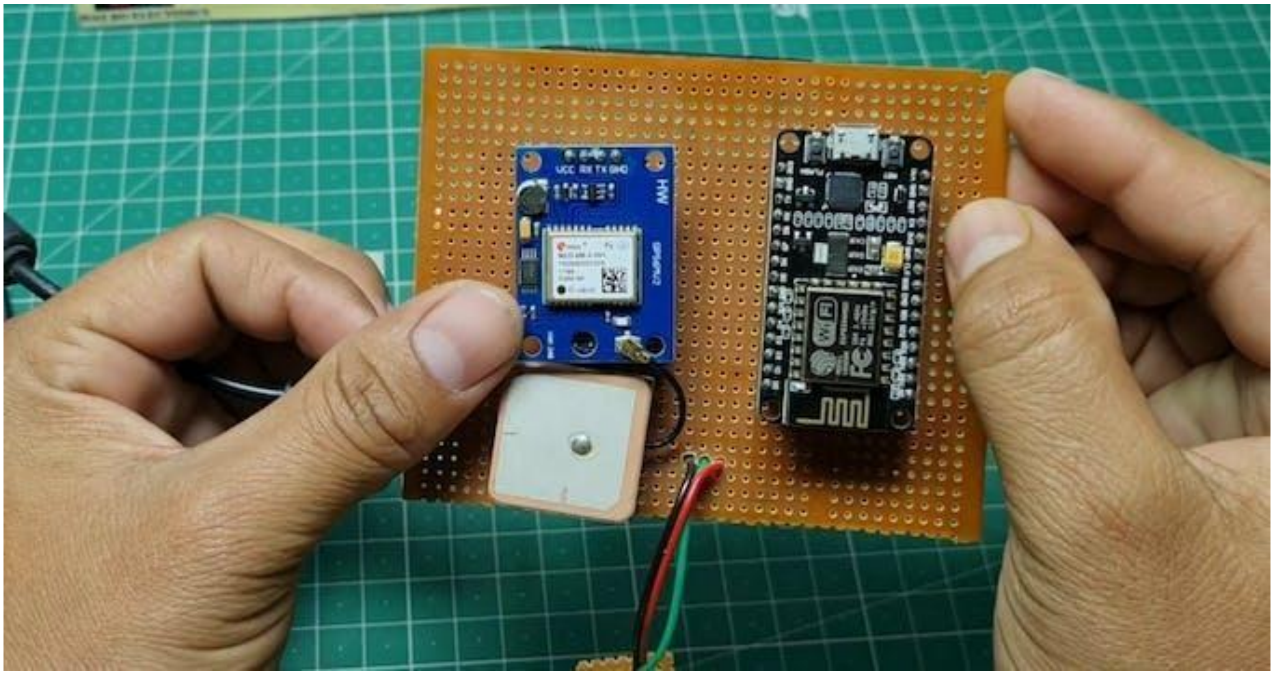
```
          if(dist<100)
           {
               digitalWrite(LED,HIGH);Serial.println("noobjectisnear");object="Near";
      }
       else
          {
              digitalWrite(LED,LOW);Serial.println("noobjectfound");object="No";
          }
         String payload="{\"distance\":"; payload
         +=dist;payload+=",""\"object\":\"";payload+=objec
         t;payload+="\"}";
         Serial.print("Sendingpayload:");
         Serial.println(payload);

        if(client.publish(publishtopic,(char*)payload.c_str())){
                    Serial.println("Publish ok");/* if its sucessfully upload data on
thecloud then it will print publish ok in serial monitor or else it will print
publishfailed*/
   }else{
          Serial.println("Publishfailed");
       }
}
voidmqttconnect(){if(!client.connected()){

Serial.print("Reconnectingclientto");Serial.println(server);while(!!!client.connect(cli
entid,authMethod,
token)){Serial.print(".");delay(500);
  }

initManagedDevice();
Serial.println();
     }
}
voidwificonnect()//functiondefenitionforwificonnect

 {
     Serial.println();Serial.print("Connectingto");
```

```
WiFi.begin("vivo 1816", "taetae95",6);//PASSING THE WIFI CREDIDENTIALS
TOESTABLISHCONNECTION
while(WiFi.status()!=WL_CONNECTED){delay(500);
    Serial.print(".");
  }
        Serial.println("");Serial.println("WiFiconnected");Serial.println("IP
address");
        Serial.println(WiFi.localIP());
   }
voidinitManagedDevice(){if(client.subscribe(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)payload[i];
}
//Serial.println("dta:"+data3);
//if(data3=="Near")
//{
//Serial.println(data3);
//digitalWrite(LED,HIGH);
//}
//else//{
//Serial.println(data3);
//digitalWrite(LED,LOW);//}data3="";
}
```

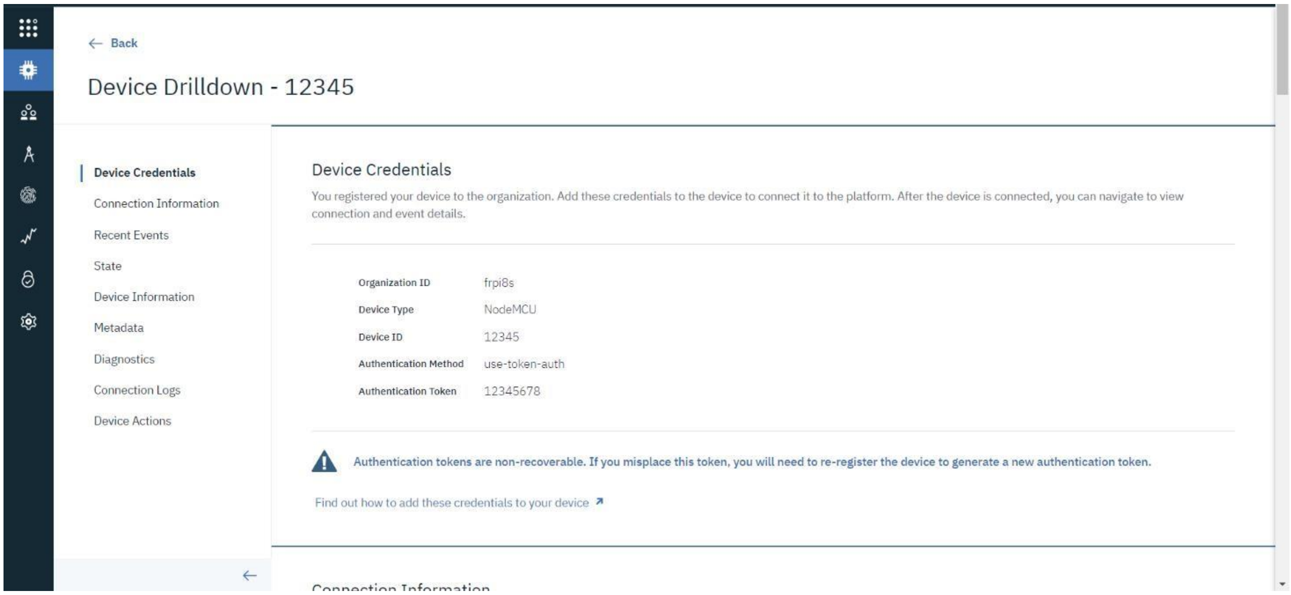
SCHEMATICDIAGRAM:



OUTPUT:



NOTIFYTOTHISDEVICEIBMWATSONCLOUD COMMUNICATION:



Device Drilldown - 12345

Device Credentials

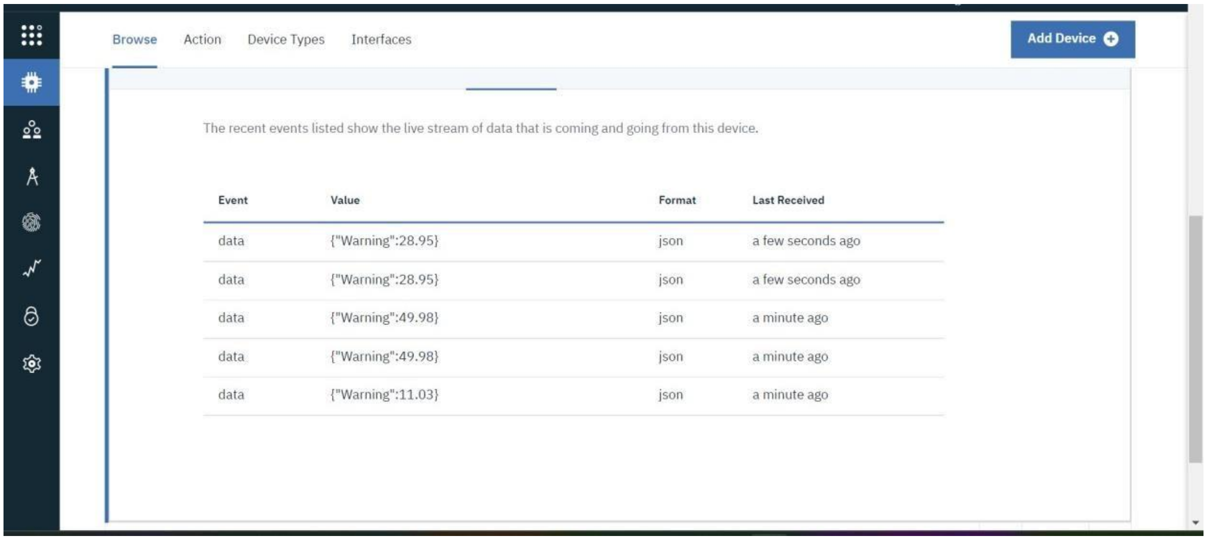
You registered your device to the organization. Add these credentials to the device to connect it to the platform. After the device is connected, you can navigate to view connection and event details.

Organization ID	frpi8s
Device Type	NodeMCU
Device ID	12345
Authentication Method	use-token-auth
Authentication Token	12345678

Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.

Find out how to add these credentials to your device ↗

Connection Information



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

Event	Value	Format	Last Received
data	{"Warning":28.95}	json	a few seconds ago
data	{"Warning":28.95}	json	a few seconds ago
data	{"Warning":49.98}	json	a minute ago
data	{"Warning":49.98}	json	a minute ago
data	{"Warning":11.03}	json	a minute ago