ProjectDevelopment-DeliveryOfSprint-2

TeamID	PNT2022TMID19077
ProjectName	IOTbasedsafetygadget forchildsafetymonitoringa nd 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:

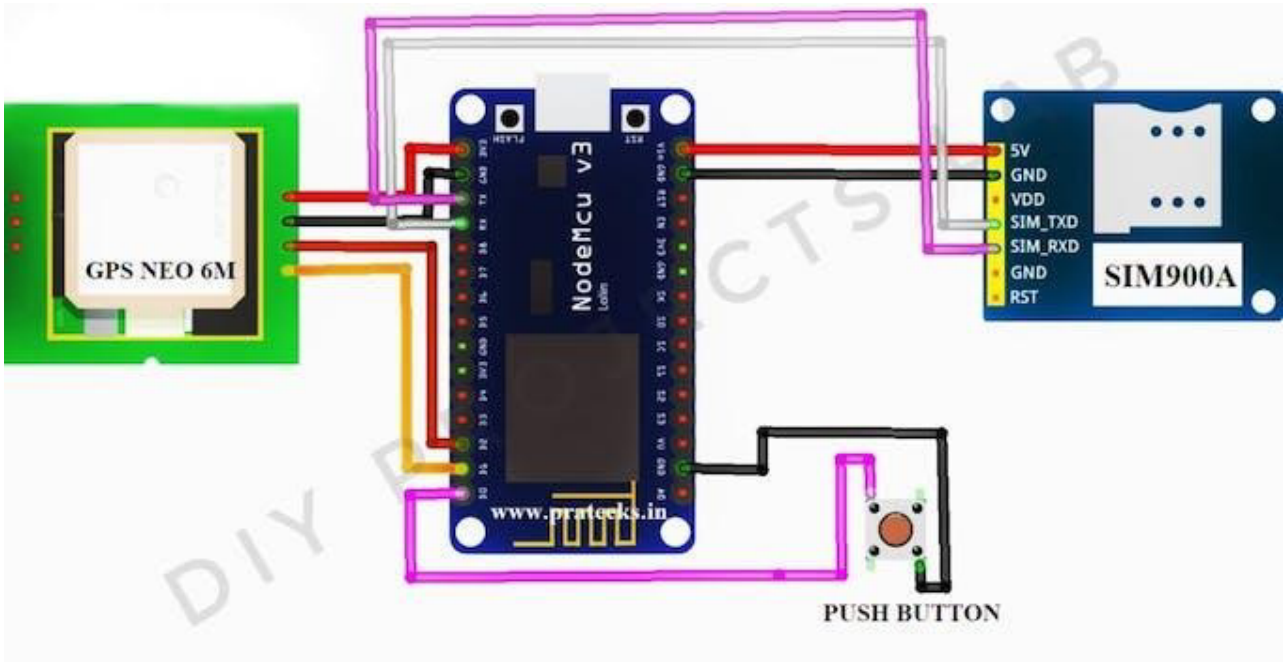
```
#include<WiFi.h>//library for

wifi#include<PubSubClient.h>//libraryfo

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

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

#defineORG"frpi8s"// IBMORGANIZATIONID

#defineDEVICE_TYPE"NodeMCU"//DEVICETYPEMENTIONEDINIOTW
ATSON

PLATFORM#defineDEVICE_ID"12345"//DEVICEIDMENTIONEDINIOTWATSON
PLATEFORM

#defineTOKEN"12345678"//TokenStringdata3;floatd

ist;

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

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

charpublishtopic[]="ultrasonic/evt/Data/fmt/json";/*topicnameandtyp
eofeventperformand 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);/*callingthepredefinedc
lientidbypassingparameterlikeserverid,portandwificredential*/
intLED=4;
inttrig=5;intecho=18;voidsetup(){
Serial.begin(115200); pinMode(trig,OUTPUT);
pinMode(echo,INPUT);pinMode(LED,OUTPUT);delay(10);Serial.println();wifico
nnect();mqttconnect();

void loop() { digitalWrite(trig,LOW);
digitalWrite(trig,HIGH);delayMicroseconds(10);digital
Write(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*/Stringobjec
t;
```

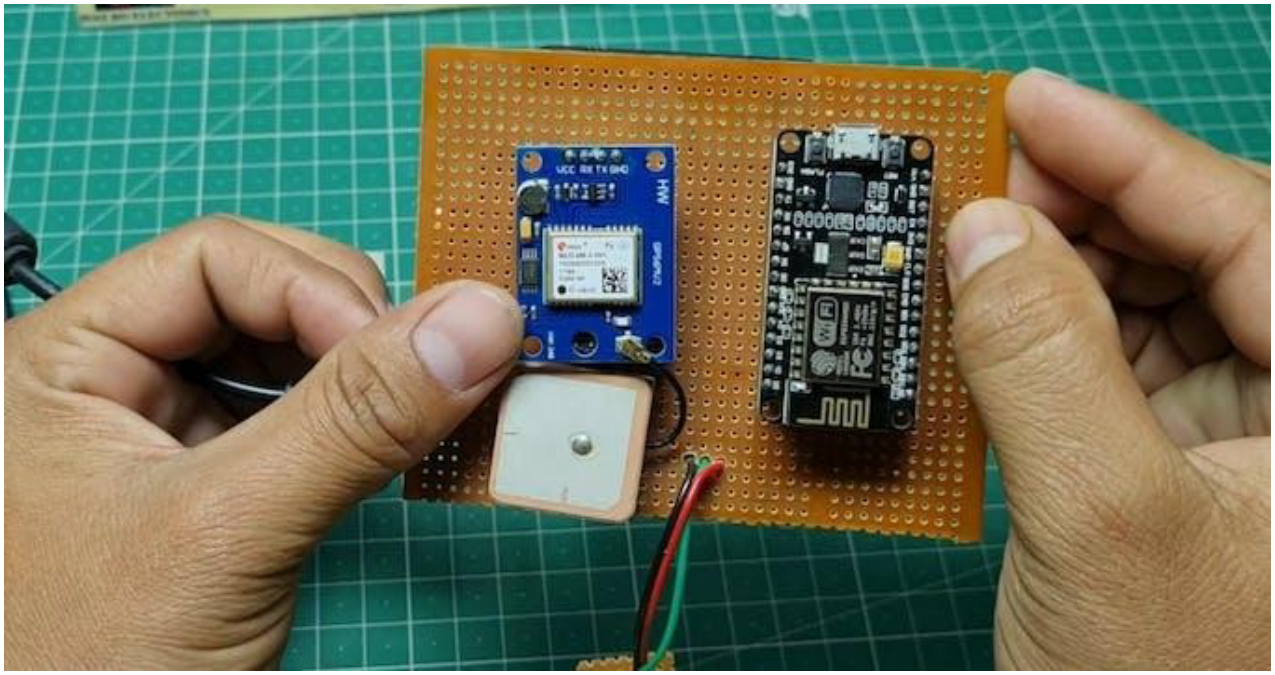
```
          if(dist<100)
           {
               digitalWrite(LED,HIGH);Serial.println("noobjectisnear");object="Ne
ar";
     }
      else
         {
            digitalWrite(LED,LOW);Serial.println("noobjectfound");object="No";
        }
        String payload="{\"distance\":"; payload
        +=dist;payload+=",""\"object\":\"";payload+=obj
        ect;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.conne
ct(clientid,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: