Project Development - Delivery Of Sprint-2

Team ID	**PNT2022TMID00709**
Project Name	**IOT based safety gadget for child safetymonitoring and 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's application.

Coding:

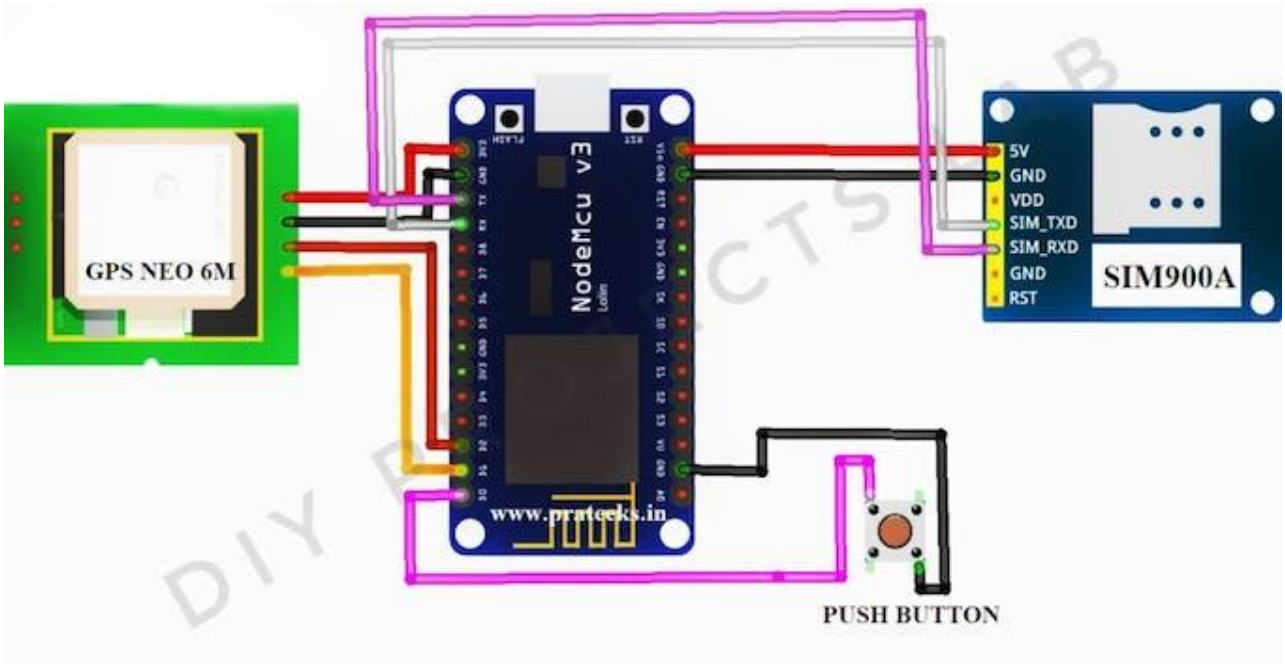
```
#include<WiFi.h>//library for wifi

#include<PubSubClient.h>//library for

MQTT
void callback(char* subscribe topic, byte* payload, unsigned int payload length);

//---------------credentials of IBM Account------

#define ORG "frpi8s"// IBM ORGANIZATION ID

#define DEVICE_TYPE "NodeMCU"//DEVICE TYPE MENTIONED IN IOT
WATSON

PLATFORM #define DEVICE_ID "12345"//DEVICE ID MENTIONED IN IOT
WATSONPLATEFORM

#define TOKEN "12345678"//Token String data3;float

dist;

//------------customize the above value-------
```

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

char publish topic[]="ultrasonic/evt/Data/fmt/json";/*topic name andtype
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();
}
}
/*.....retriving to cloud. .....
*/
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;
```

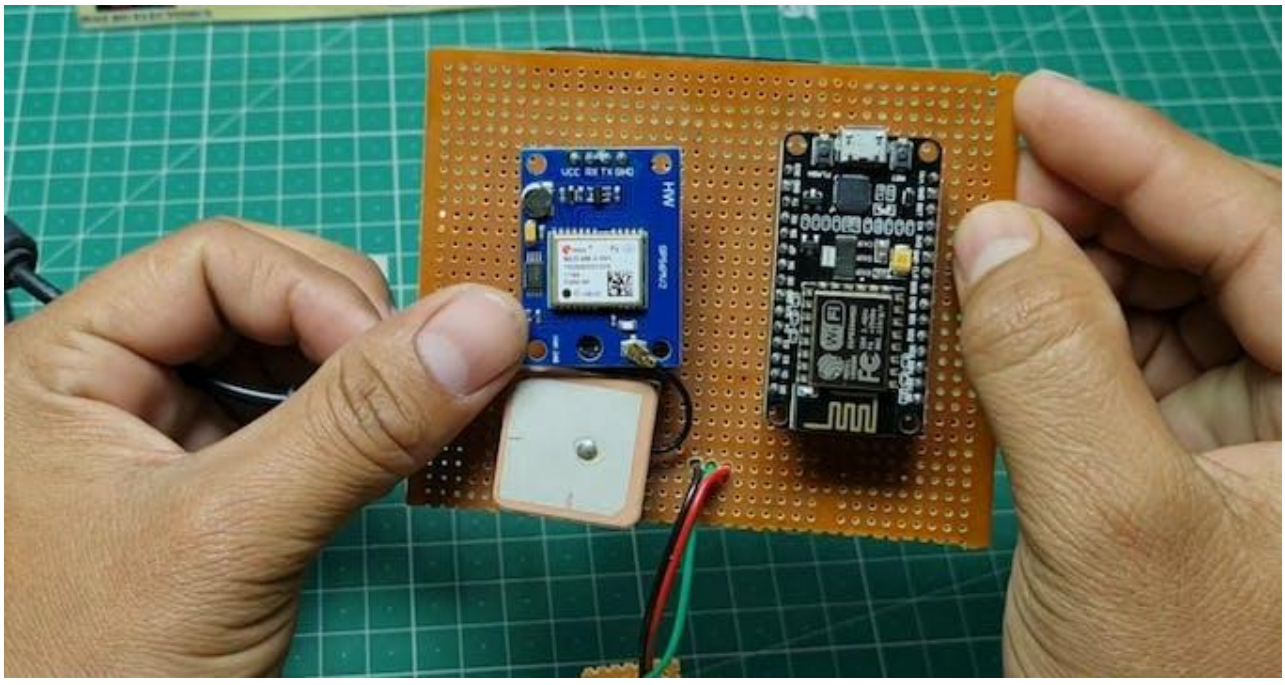
```
            if(dist<100)
              {
                  digitalWrite(LED,HIGH); Serial.println("no object is near");
object="Near";
      }
       else
           {
               digitalWrite(LED,LOW); Serial.println("no object found"); object="No";
           }
          String payload="{\"distance\":"; 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="";
}
```

SCHEMATIC DIAGRAM:



OUTPUT:



NOTIFY TO THIS DEVICE IBM WATSON CLOUD COMMUNICATION: