Project Development - Delivery Of Sprint-2

Team ID	**PNT2022TMID47674**
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-------
```

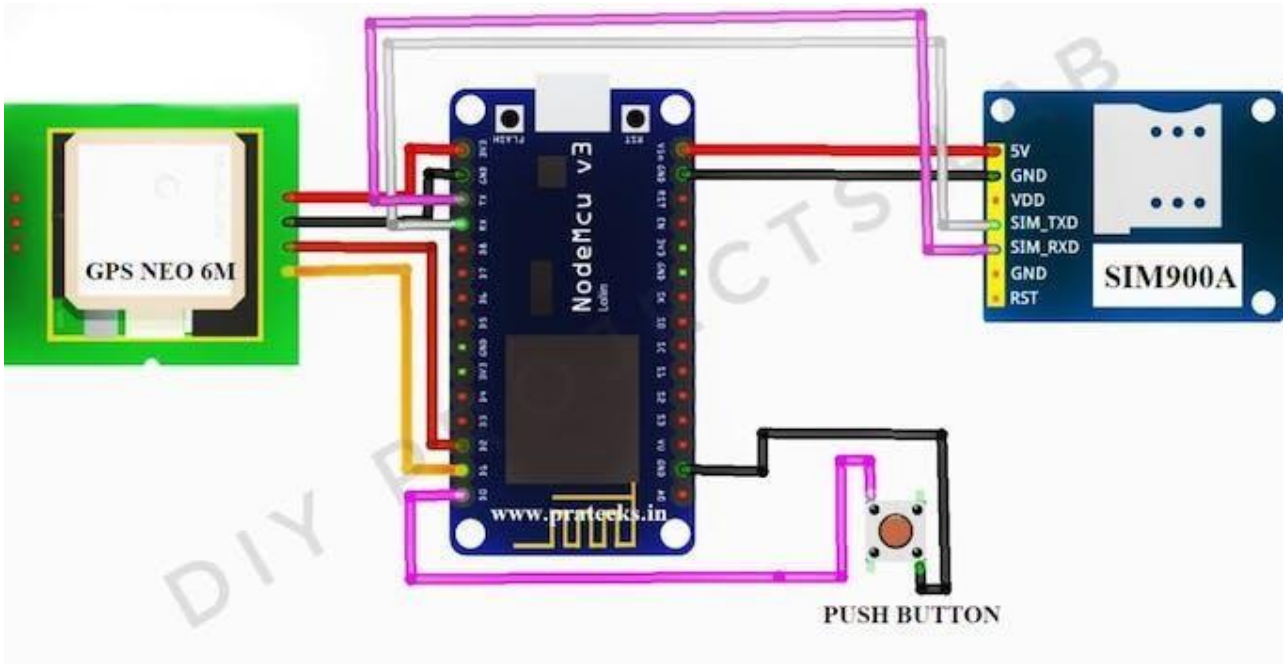
```
char server [] =ORG
".messaging.internetofthings.ibmcloud.com";//servername

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;

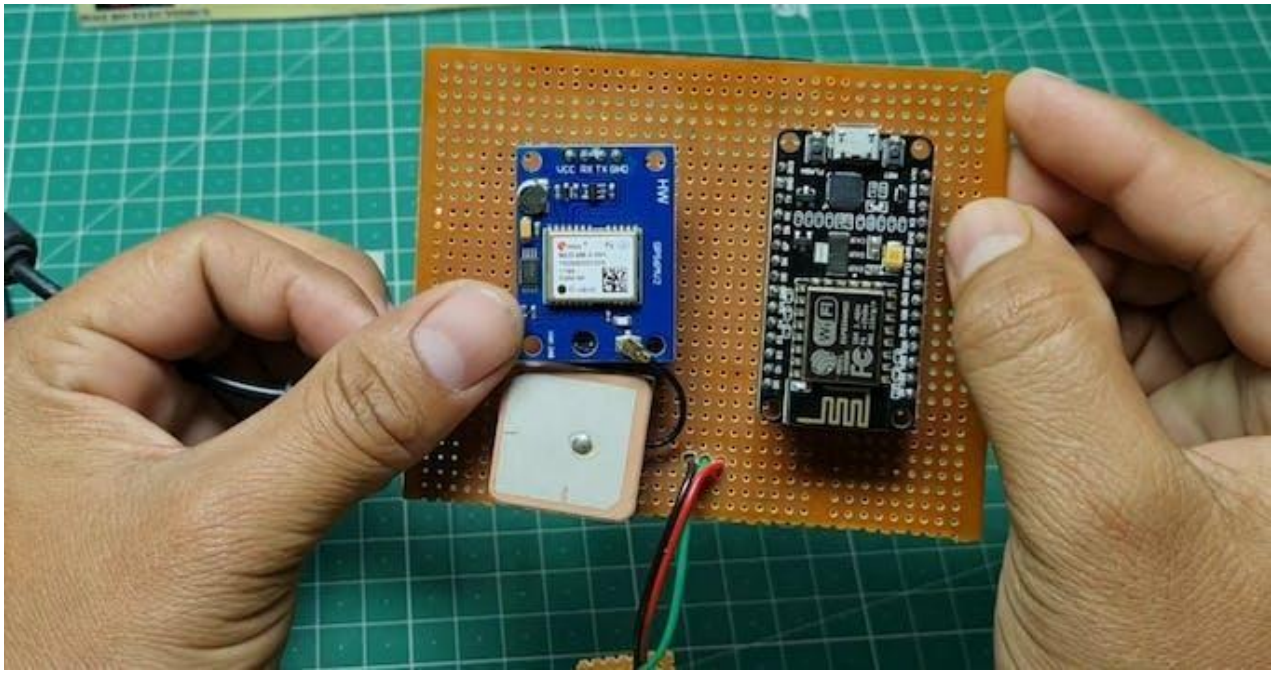
```
          if(dist<100)
           {
               digitalWrite(LED,HIGH); Serial.println("no object is
near"); object="Near";
     }
      else
         {
            digitalWrite(LED,LOW); Serial.println("no object found");
            object="No";
         }
         String payload="{\"distance\":";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