Team ID :	**PNT2022TMID40792**
Project topic :	**IoT Based Safety Gadget for Child Safety Monitoring and Notification**
Date :	**14th Nov 2022**

SPRINT-2

NOTIFICATION and STORE DATA

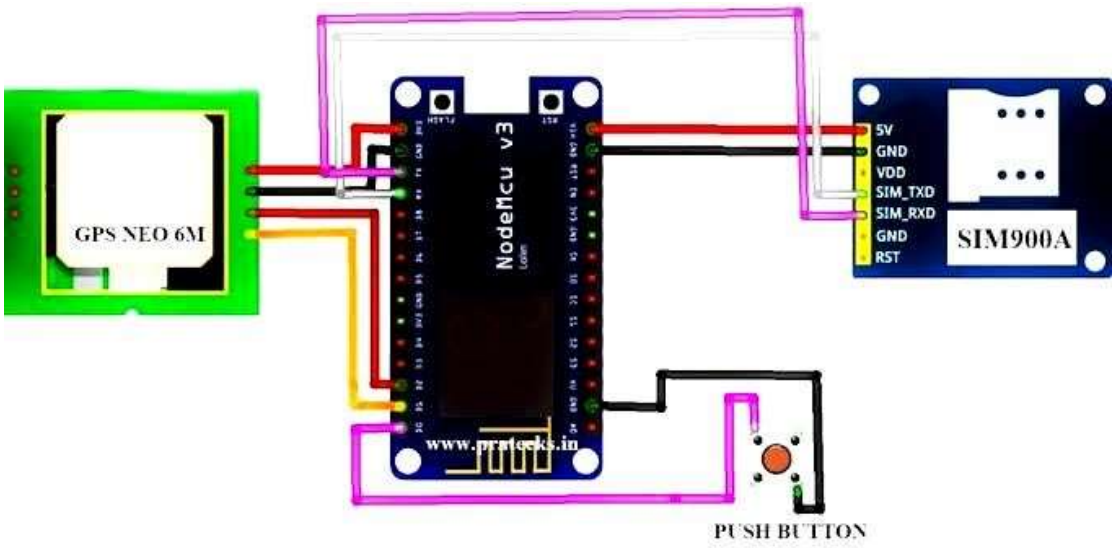
```
#include<WiFi.h>//library for wifi
#include<PubSubClient.h>//library for
MQTT
void callback(char* subscribe topic, byte* payload, unsigned int payload
length);
//---------------credentials of IBM Account-----
#define ORG "frpi8s"// IBM ORGANIZATION ID
#define DEVICE_TYPE "NodeMCU"//DEVICE TYPE MENTIONED
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*/
charsubscribetopic[]="ultrasonic/cmd/test/fmt/String";/*cmd
REPRESENT
Command tupe and
COMMAND IS TEST OF FORMAT STRING*/
```

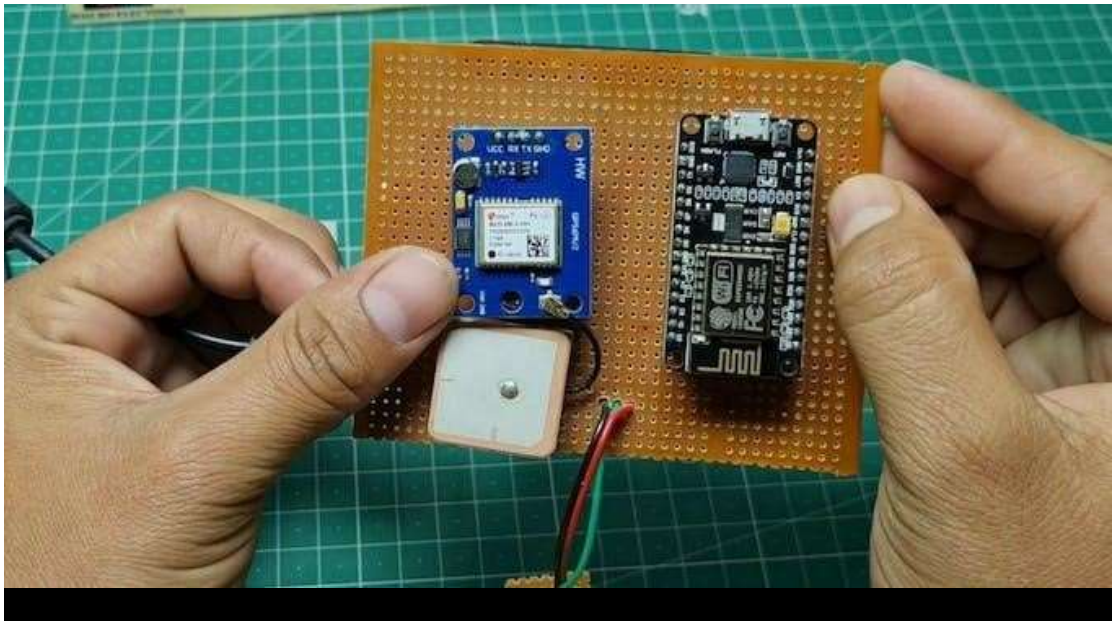
```
char authMethod[]="use-token-auth";//authentication method char
token[]=TOKEN;
char clientid[]="d:" ORG ":" DEVICE_TYPE":"
DEVICE_ID;//CLIENT ID //
WiFiClient wifiClient;// creating an instance for wificlient
PubSubClient client(server, 1883 , callback , wifiClient);/*calling the
predefined
client 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";
}
```

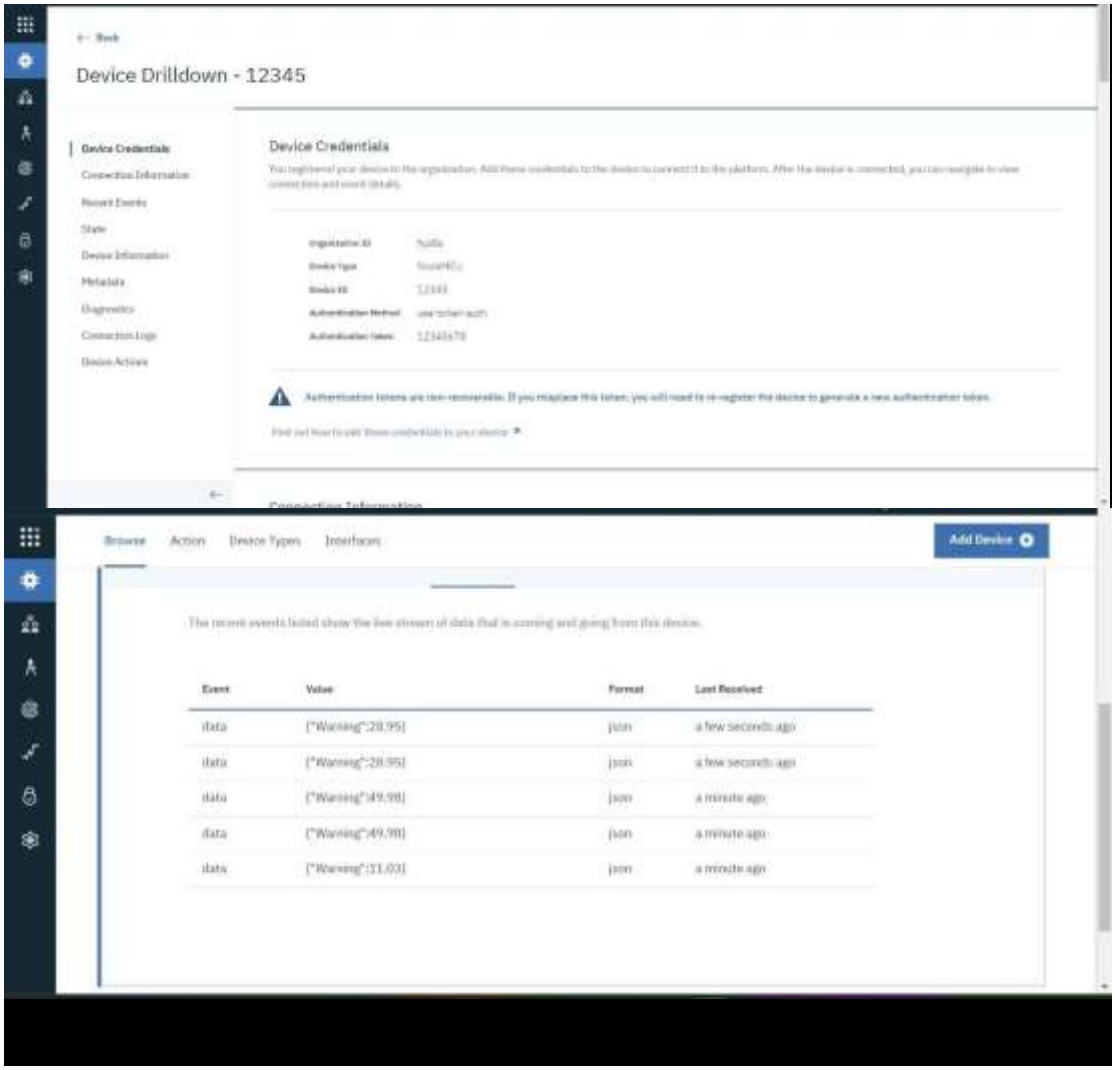
```
String payload="{\"distance\":"; payload +=dist;
payload +="," "\"object\":\""; payload += object;
payload += "\"}";
Serial.print("Sending payload: ");
Serial.println(payload);
if(client.publish(publishtopic, (char*) payload.c_str())){
Serial.println("Publish ok");/* if its sucessfully upload data 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="";
}
```

CIRCUIT DIAGRAM:






Device Drilldown - 12345
Device Credentials
Connection Information
Recent Events
State
Device Information
Metadata
Diagnostics
Connection Logs
Device Actions
Device Credentials
Browse
Action
Device Types
Interfaces
Add 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":31.03)
json
a minute ago