

ID:PNT2022TMID49677

## 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
WATSONPLATFORM
#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];

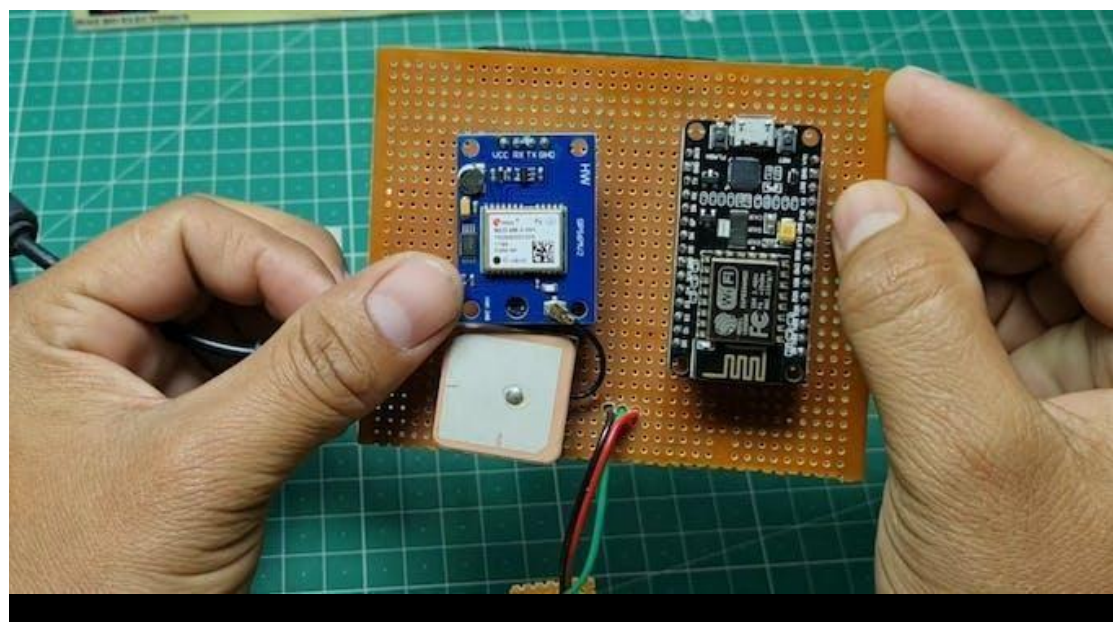
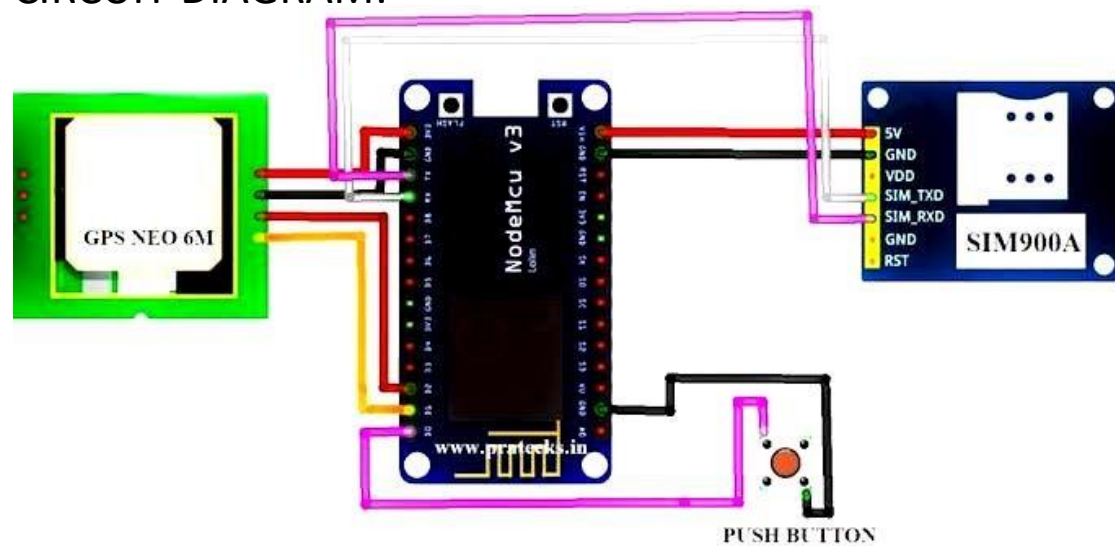
```

```

}
//Serial.println("dta: "+ data3);
//if(data3=="Near")
//{
//Serial.println(data3);
//digitalWrite(LED,HIGH);
//}
//else //{
//Serial.println(data3);
//digitalWrite(LED,LOW);//} data3="";
}

```

## CIRCUIT DIAGRAM:



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Device Drilldown - 12345

Device Credentials

Connection Information

Recent Events

State

Device Information

Metadata

Diagnostics

Connection Logs

Device Actions

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

Device Type

Device ID

Authentication Method

Authentication Token

frp8s

NodeMCU

12345

use-token-auth

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 ↗

←

Browse

Action

Device Types

Interfaces

Add Device +

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