ASSIGNMENT4

WOKWI PROGRAM

ASSIGNMNET DATE	23 OCTOBER 2022
STUDENT NAME	SNEKHA.N
STUDENT ROLL NUMBER	110519106026
MAXIMUM NUMBER	2 MARKS
TEAM ID	PNT2022TMID36201

CODE :

```
#include <WiFi.h>
#include <PubSubClient.h>
void callback(char* subscribetopic,byte* payload, unsigned int payloadLength);
#define ORG "1bjb0q"
#define DEVICE_TYPE "snekha6801"
#define DEVICE_ID "6026"
#define TOKEN "aolcjvveog5?oyY6Ku "
String data3;


char server[]= ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[]="iot-2/evt/snekha6801/fmt/json";
char subscribeTopic[]="iot-2/cmd/test/fmt/String";
char authMethod[]="use-token-auth";
char token[]=TOKEN;
char clientID[]="d:"ORG":"DEVICE_TYPE":"DEVICE_ID;
```

```
WiFiClientwifiClient;
PubSubClient client(server,1883,callback,wifiClient);

#define ECHO_PIN 12
#define TRIG_PIN 13
#define led 14

void setup() {
  // put your setup code here, to run once:
Serial.begin(115200);
pinMode(led, OUTPUT);
pinMode(TRIG_PIN, OUTPUT);
pinMode(ECHO_PIN, INPUT);
wificonnect();
mqttconnect();
}
float readDistanceCM() {
digitalWrite(TRIG_PIN, LOW);
delayMicroseconds(2);
digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10);
digitalWrite(TRIG_PIN, LOW);
  int duration=random(1,200);
```

```
  //Serial.println(duration);
  //duration = pulseIn(ECHO_PIN, HIGH);
  return duration ;
  //Serial.println(duration);

}

void loop() {
  float distance = readDistanceCM();
  //Serial.println(distance);

  bool isNearby = distance < 100;
digitalWrite(led, isNearby);

Serial.print("Measured distance: ");
Serial.println(distance);
  if(distance<100){
    PublishData2(distance);

}else{
    PublishData1(distance);

  }
  //PublishData(distance);
```

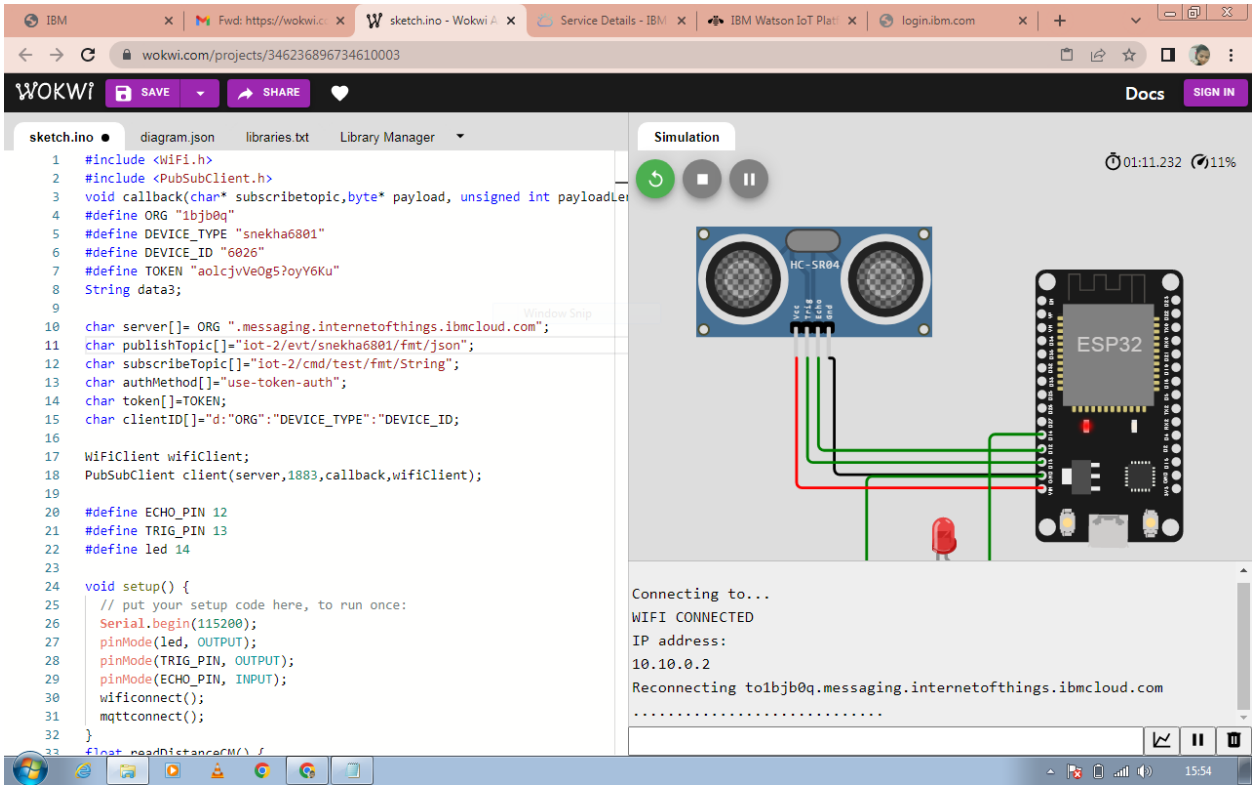
```
delay(1000);
  if(!client.loop()){
mqttconnect();
  }

  //delay(2000);
}
void PublishData1(float dist){
mqttconnect();
  String payload= "{\"distance\":";
  payload += dist;
  payload+="}";

Serial.print("Sending payload:");
Serial.println(payload);

  if(client.publish(publishTopic,(char*)payload.c_str())){
Serial.println("publish ok");
  } else{
Serial.println("publish failed");
  }
}
void PublishData2(float dist){
mqttconnect();
```

```
  String payload= "{\"ALERT\":";
  payload += dist;
  payload+="}";

Serial.print("Sending payload:");
Serial.println(payload);

  if(client.publish(publishTopic,(char*)payload.c_str())){
Serial.println("publish ok");
  } else{
Serial.println("publish failed");
  }
}
void mqttconnect(){
  if(!client.connected()){
Serial.print("Reconnecting to");
Serial.println(server);
while(!!!client.connect(clientID, authMethod, token)){
Serial.print(".");
delay(500);
    }
initManagedDevice();
Serial.println();
  }
```

```
}

void wificonnect(){
Serial.println();
Serial.print("Connecting to");

WiFi.begin("Wokwi-GUEST","",6);
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++){
    data3 += (char)payload[i];
  }
Serial.println("data:"+ data3);
  if(data3=="lighton"){
Serial.println(data3);
digitalWrite(led,HIGH);
}else{
Serial.println(data3);
digitalWrite(led,LOW);
  }
  data3="";
}
```

OUTPUT


wokwi.com/projects/346236896734610003
WOKWi
SAVE
SHARE
Docs
SIGN IN
sketch.ino
diagram.json
libraries.txt
Library Manager
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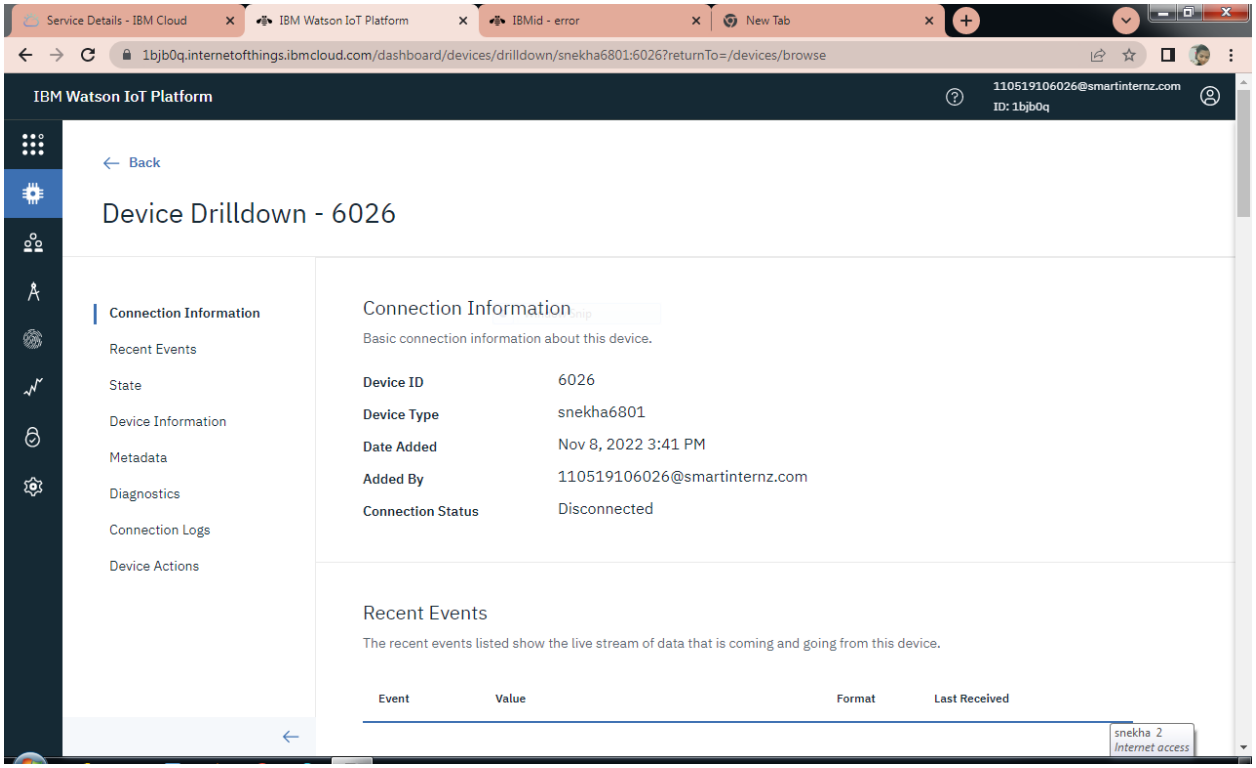
pinMode(ECHO_PIN, INPUT);
wificonnect();
mqttconnect();
}
Simulation
01:11.232
11%
HC-SR04
ESP32
Connecting to...
WIFI CONNECTED
IP address:
10.10.0.2
Reconnecting to1bjb0q.messaging.internetofthings.ibmcloud.com
.....


Service Details - IBM Cloud
IBM Watson IoT Platform
IBMid - error
New Tab
1bjb0q.internetofthings.ibmcloud.com/dashboard/devices/drilldown/snekha6801:6026?returnTo=/devices/browse
IBM Watson IoT Platform
110519106026@smartinternz.com
ID: 1bjb0q
Back
Device Drilldown - 6026
Connection Information
Recent Events
State
Device Information
Metadata
Diagnostics
Connection Logs
Device Actions
Connection Information
Basic connection information about this device.
Device ID
6026
Device Type
snekha6801
Date Added
Nov 8, 2022 3:41 PM
Added By
110519106026@smartinternz.com
Connection Status
Disconnected
Recent Events
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
snekha 2
Internet access