SRI ESHWAR COLLEGE OF ENGINEERING
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ASSIGNMENT IV

TEAM MATES :

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Solution:

WOWKI LINK: https://wokwi.com/projects/346235465961046612

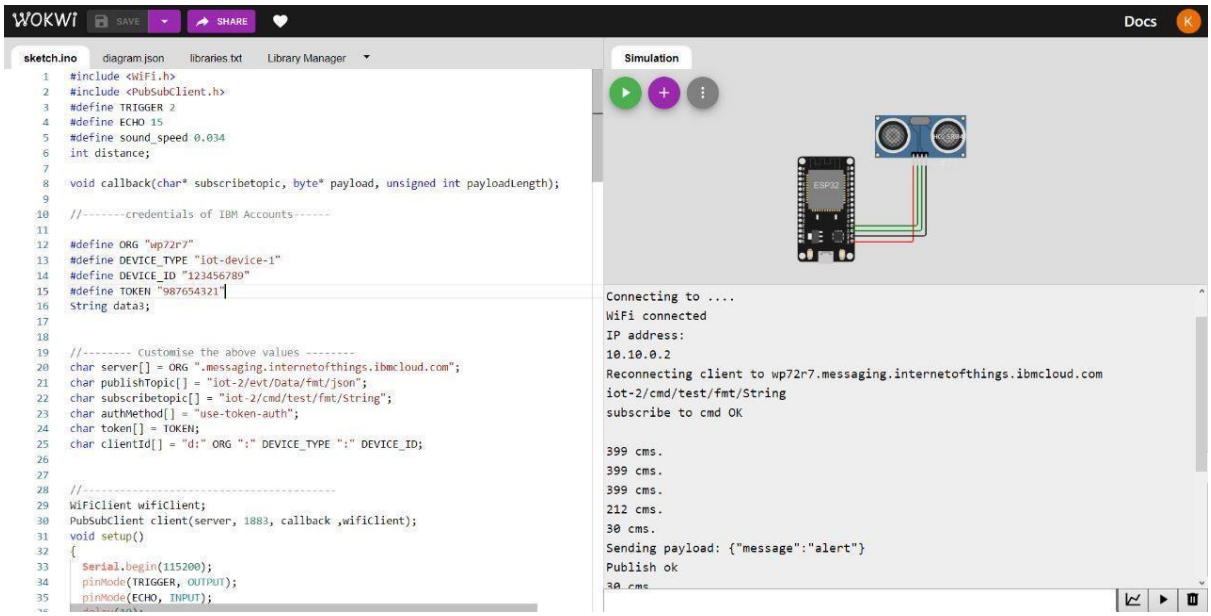
```
#include <WiFi.h>
#include <PubSubClient.h>
#define TRIGGER 2
#define ECHO 15
#define sound_speed 0.034
int distance;
void callback(char* subscribetopic, byte* payload, unsigned int
payloadLength);
//-------credentials of IBM Accounts------
#define ORG "wp72r7"
#define DEVICE_TYPE "iot-device-1"
#define DEVICE_ID "123456789"
#define TOKEN "987654321"
String data3;
//-------- Customise the above values --------char server[] = ORG
".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/Data/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;
//------------------------------------- WiFiClient
```

```
wifiClient;
PubSubClient client(server, 1883, callback ,wifiClient); void
setup()
{
Serial.begin(115200);
pinMode(TRIGGER, OUTPUT);
pinMode(ECHO, INPUT);
delay(10);
Serial.println();
wificonnect();
mqttconnect();
}
void loop()
{
digitalWrite(TRIGGER, HIGH);
delayMicroseconds(10); digitalWrite(TRIGGER,
LOW);
int duration=pulseIn(ECHO,HIGH);
distance=(duration*sound_speed)/2;
Serial.print("Distance:");
Serial.print(distance);
Serial.println("cms"); if(distance<100){
PublishData(distance);
} delay(1000); if
(!client.loop()) {
mqttconnect();
}
}
/.....retrieving to Cloud...../
void PublishData(int d) {
mqttconnect();
String payload = "{\"message\":alert}";
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 client 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);
data3="";
}
```

CIRCUIT DIAGRAM:



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