Assignment - 4

Wowki & IBM Cloud

Assignment Date	13 November 2022
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Maximum Marks	2 Marks

Question-1:

Write code and connections in wowki for the sensor. Whenever the distance less than 100cms sent "alert" to IBM cloud and display in device recent events.

Code:

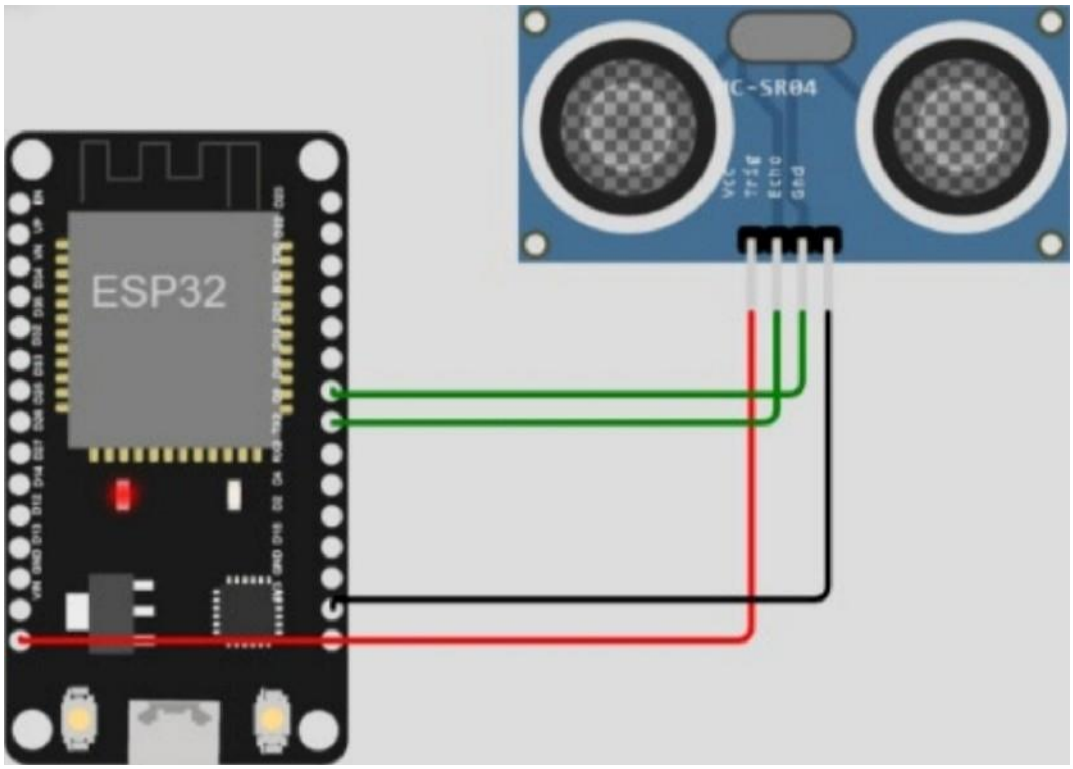
```
#include <WiFi.h>
#include <PubSubClient.h>
#include <ArduinoJson.h>

WiFiClient wifiClient;

#define ORG "oa8490"
#define DEVICE_TYPE "TestDeviceType"
#define DEVICE_ID "12345"
#define TOKEN "-Al0raS44flfdj¥BVS"
#define speed 0.034

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/abcd/fms/json";
char topic[] = "iot-2/cmd/home/fmt/String";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;

char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
PubSubClient client(server, 1883, wifiClient);
publishData();
```

```
const int trigpin=5;
const int echopin=l3:
String command;
String data=" ";
String lat="l4. 167589";
String lon="80.248510";
String name="point2":
String icon="";


long duration;
int dist;


void zerap()
( Serial.b-gi (115200) ;
  p-  " :e(trigpin,
  OUTPUT)
  p-    +(echopin,  lPUT) ;
  wifiConnect():
  mqttConnect();
}


void loop()   (


  publishData();
   -   (500) ;


  if (!client.loop()) (
    mqXtZonectC;
}
}


void wifi€onnect() (
  Serial.print("Connecting to ");
  Serial.;:  :.("Wifi")  ; WiFi.h=j   ("Wokwi—GUEST",   ,
'    ;_while   WiF .status() != WL_C0NNECTED)  (


   r Se  ia1 .1:•     (".") ;


  Serial.¿=--  ("WiFi connected, lP address: ") ;
Serial. :     ( WiFi.localIP())
}
```

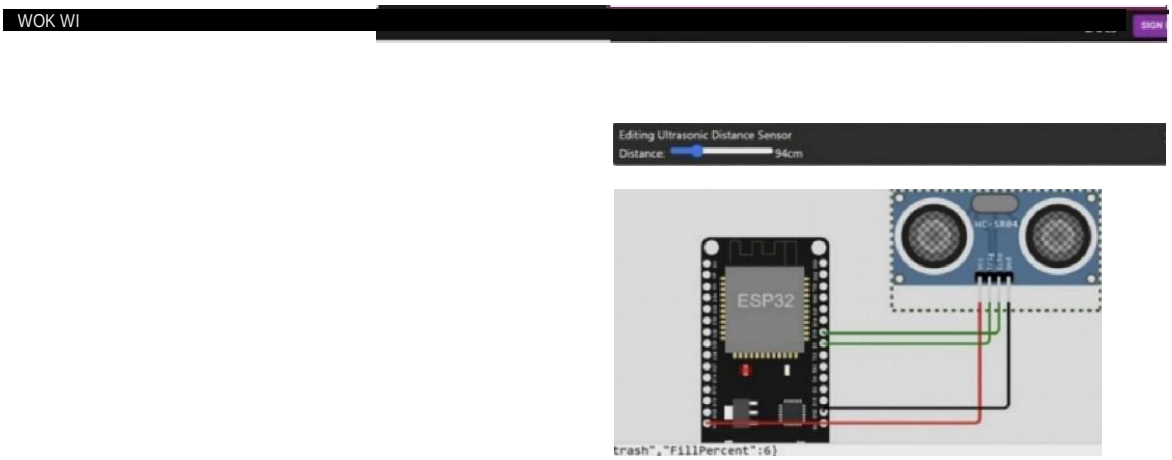
```
avoid mqttConnect{) (
 ' if (! client.connected()}  (
    Serial.pr  n’("Reconnecting MQTT client to ") ; I
Serial.p  ›r  l server); while {!client.connect(cli'entId,
    authMethod, taken)  ( Serial.p  =' (".") ;
    delay(1000) ;
    )
   ’initManagedDevice();
    Serial.pt_ ›_ u() ;


 void initManagedDevice() (
   if  ( client.subscribe(topic))  ( '
      Serial.pi :  :  .( client.subscri'be(topic));
     Ser lal  . ›i  i*  i("s ubs cr ibe  t o  cmd  OK") ;
   ): else {
     Serial.p  '›'  › ("subscribe  to  cmd  FAILED") ;
   } ) void
publishData {)
( I’m’’ !W °’••(trigpin,LOW)
. a?’ !'i' ••(trigpin,HIGH) ;
     ..,. ..  .... =‘..1...      ,
    q3’ !:< i_=(trigpin,LQW) ;
  dur0tion=pu.’c ’: (echopin,MIGM)
  ; dist=duration*speed/2; I

  if(dist<100){
    dist=l00- dist; icon="fa-
    trash";
  )else( distr:
    icon="fa-trasN-
    o";

  DynamicJ sonDocument  doc (1024) i
  String payload; doc{"Name")=  I
' name; docl"Latitude")= lat;
 doc{"Longitude"]=  lon;
 doc["Icon"]=icon;
 docl"FillPercent")= diet;
 serializeJson(doc, payload);
 delay(3000) ;
 Serial.print("\n") ,
```

```
  Serial.p  .’("lending payload: ") ; I
 Serial.p _.' .( payload):     _        I
  if (client.publish(publishTopic, (ohar’) payload.c_str()))
    ( Serial.p  .' .(”Publish OK") ;
  ) else l
    Serial.)  .’ .("Publish FAILED") ; I
```

Connecdons:



Output:



Output :(IBM Clo ud)