Assignment -4

Distance Detector using Ultrasonic Sensor
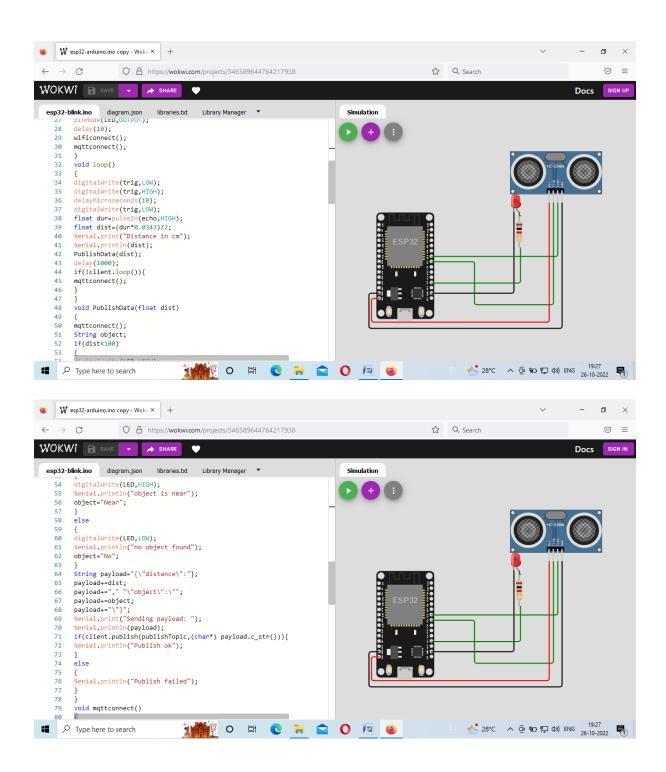
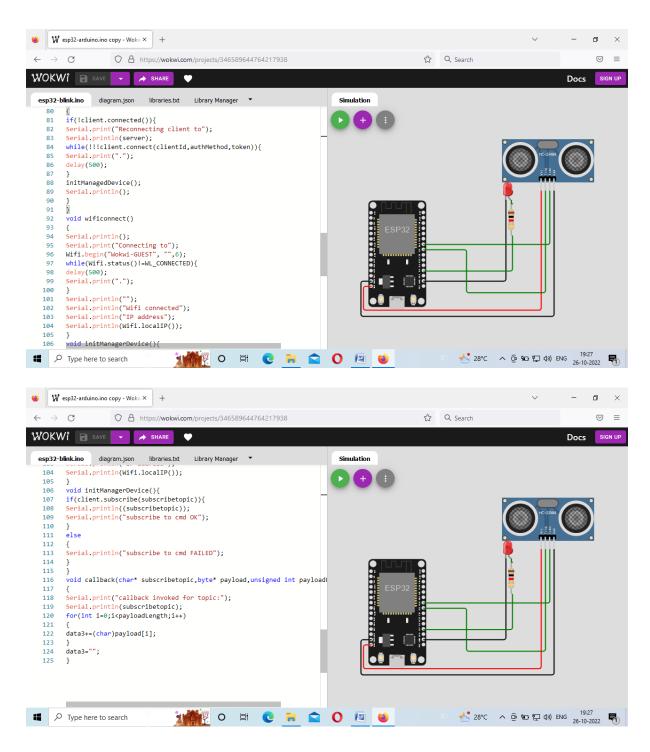|	
Assignment Date	26 September 2022
Student Name	T.N.SAGAR
Student Roll Number	811519106117
Maximum Marks	2 Marks

Question-1:

Write code and Connection in wokwi for ultrasonic sensor.Whenever distance is less than 100 Cms send "alert" to ibm cloud and display in device recent events.

Wokwi Link: https://wokwi.com/projects/346589644764217938

```
27  pinMode(LED,OUTPUT);
28  delay(10);
29  wificonnect();
30  mqttconnect();
31  }
32  void loop()
33  {
34  digitalWrite(trig,LOW);
35  digitalWrite(trig,HIGH);
36  delayMicroseconds(10);
37  digitalWrite(trig,LOW);
38  float dur=pulseIn(echo,HIGH);
39  float dist=(dur*0.0343)/2;
40  Serial.print("Distance in cm");
41  Serial.println(dist);
42  PublishData(dist);
43  delay(1000);
44  if(!client.loop()){
45  mqttconnect();
46  }
47  }
48  void PublishData(float dist)
49  {
50  mqttconnect();
51  String object;
52  if(dist<100)
53  {
```

```
54  digitalWrite(LED,HIGH);
55  Serial.println("object is near");
56  object="Near";
57  }
58  else
59  {
60  digitalWrite(LED,LOW);
61  Serial.println("no object found");
62  object="No";
63  }
64  String payload="{\"distance\":";
65  payload+=dist;
66  payload+="," "\"object\":\"";
67  payload+=object;
68  payload+="\"}";
69  Serial.print("Sending payload: ");
70  Serial.println(payload);
71  if(client.publish(publishTopic,(char*) payload.c_str())){
72  Serial.println("Publish ok");
73  }
74  else
75  {
76  Serial.println("Publish failed");
77  }
78  }
79  void mqttconnect()
80
```

esp32-blink.ino   diagram.json   libraries.txt   Library Manager ▾

Simulation

```
80  {
81  if(!client.connected()){
82  Serial.print("Reconnecting client to");
83  Serial.println(server);
84  while(!!!client.connect(clientId,authMethod,token)){
85  Serial.print(".");
86  delay(500);
87  }
88  initManagedDevice();
89  Serial.println();
90  }
91  }
92  void wificonnect()
93  {
94  Serial.println();
95  Serial.print("Connecting to");
96  Wifi.begin("Wokwi-GUEST", "",6);
97  while(Wifi.status()!=WL_CONNECTED){
98  delay(500);
99  Serial.print(".");
100 }
101 Serial.println("");
102 Serial.println("Wifi connected");
103 Serial.println("IP address");
104 Serial.println(Wifi.localIP());
105 }
106 void initManagerDevice(){
```

```
104 Serial.println(Wifi.localIP());
105 }
106 void initManagerDevice(){
107 if(client.subscribe(subscribetopic)){
108 Serial.println((subscribetopic));
109 Serial.println("subscribe to cmd OK");
110 }
111 else
112 {
113 Serial.println("subscribe to cmd FAILED");
114 }
115 }
116 void callback(char* subscribetopic,byte* payload,unsigned int payloadL
117 {
118 Serial.print("callback invoked for topic:");
119 Serial.println(subscribetopic);
120 for(int i=0;i<payloadLength;i++)
121 {
122 data3+=(char)payload[i];
123 }
124 data3="";
125 }
```

IBM WATSON APP ISSUES ONLY WOKWI SIMULATOR ATTACHED.