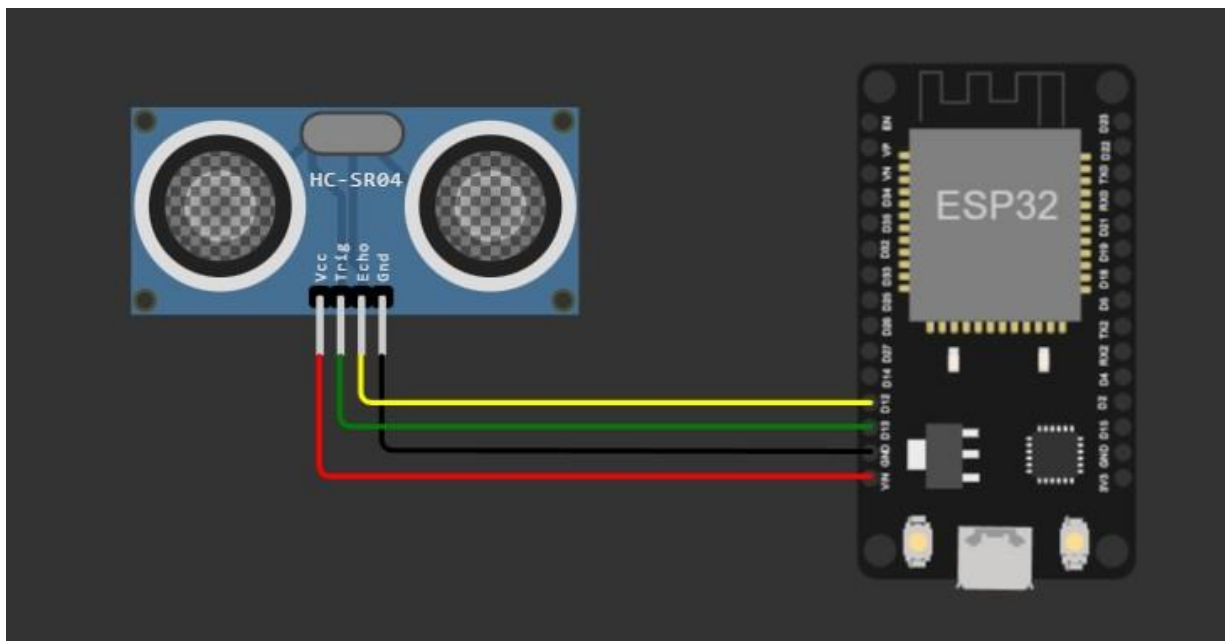


Assignment - 4

Objective:

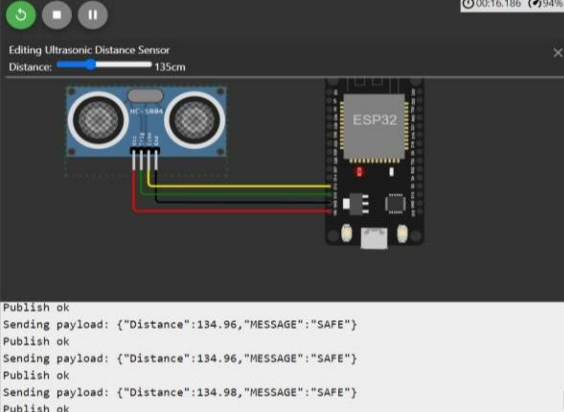
Write code and connections in wokwi for the ultrasonic sensor. Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events.

Circuit Diagram:



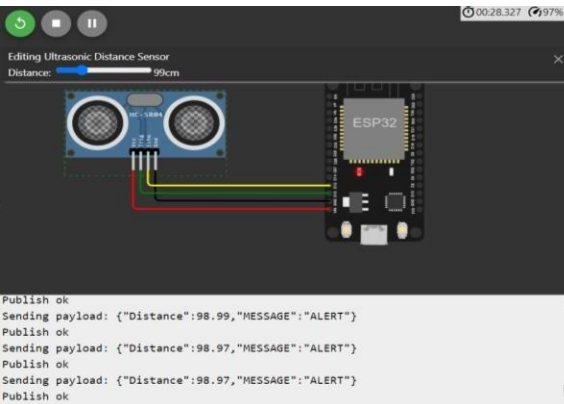
Output:

```
75 String payload = "{\"Distance\":\"";
76 payload+=d;
77 payload+="\"";
78 payload+="MESSAGE\":\"";
79 payload+="\"";
80 payload+=s;
81 payload+="\"";
82 payload+="\"";
83
84 Serial.print("Sending payload: ");
85 Serial.println(payload);
86
87
88 if (client.publish(publishTopic, (char*) payload.c_str())) {
89     Serial.println("Publish ok");// if it successfully upload data on the cloud then it will
90 } else {
91     Serial.println("Publish failed");
92 }
93
94
95
96
97
98 void mqttconnect() {
99     if (!client.connected()) {
100         Serial.print("Reconnecting client to ");
101         Serial.println(server);
102         while (!client.connect(clientId, authMethod, token)) {
103             Serial.print(".");
104             delay(500);
105         }
106     }
107 }
```



```
Publish ok
Sending payload: {"Distance":134.96,"MESSAGE":"SAFE"}
Publish ok
Sending payload: {"Distance":134.96,"MESSAGE":"SAFE"}
Publish ok
Sending payload: {"Distance":134.98,"MESSAGE":"SAFE"}
Publish ok
```

```
75 String payload = "{\"Distance\":\"";
76 payload+=d;
77 payload+="\"";
78 payload+="MESSAGE\":\"";
79 payload+="\"";
80 payload+=s;
81 payload+="\"";
82 payload+="\"";
83
84 Serial.print("Sending payload: ");
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100         Serial.print("Reconnecting client to ");
101         Serial.println(server);
102         while (!client.connect(clientId, authMethod, token)) {
103             Serial.print(".");
104             delay(500);
105         }
106     }
107 }
```



```
Publish ok
Sending payload: {"Distance":98.99,"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"Distance":98.97,"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"Distance":98.97,"MESSAGE":"ALERT"}
Publish ok
```

Browse Action Device Types Interfaces Add Device

abcd	Connected	123	Device	Oct 28, 2022 9:18 PM	→ ...
Identity	Device Information	Recent Events	State	Logs	×
The recent events listed show the live stream of data that is coming and going from this device.					
Event	Value	Format	Last Received		
Data	{"Distance":126.96,"MESSAGE":"SAFE"}	json	a few seconds ago		
Data	{"Distance":126.99,"MESSAGE":"SAFE"}	json	a few seconds ago		
Data	{"Distance":120.99,"MESSAGE":"SAFE"}	json	a few seconds ago		
Data	{"Distance":98.97,"MESSAGE":"ALERT"}	json	a few seconds ago		
Data	{"Distance":98.97,"MESSAGE":"ALERT"}	json	a few seconds ago		