ASSIGNMENT – IV

DOMAIN – IOT

PROJECT TITLE : SMART FARMER – IOT ENABLED SMART FARMING APPLICATION

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ASSIGNMENT TITLE :

Write code and connections in wokwi for ultrasonic sensor.whenever distance is less than 100 cms send "alert" to IBM CLOUD and display in device recent events.
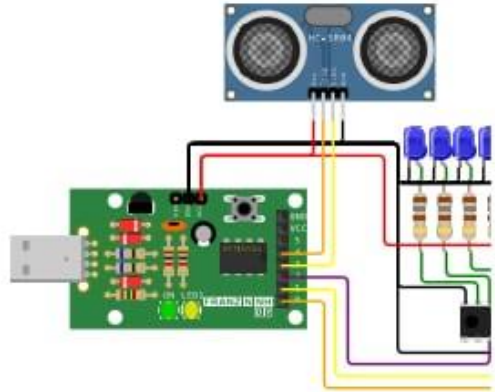
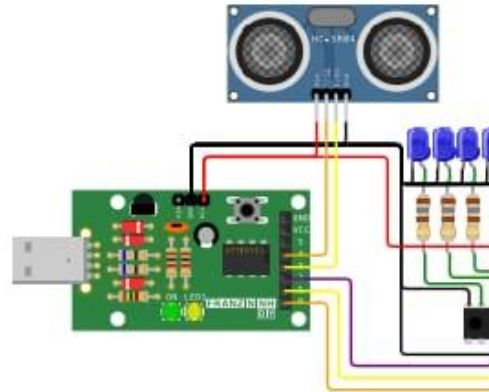SAVE   ▾   SHARE   ♥

distance detection using ultrasonic sensor.ino   diagram.json   *Simulation*

Library Manager   ▾

```
29      writeRegisters();
30    }
31
32    void loop() {
33      // Verifica a cada 100 milissegundos
34      if ((millis() - interval) >= 100) {
35        interval = millis();
36
37        digitalWrite(TRIG_PIN, LOW);
38        delayMicroseconds(5);
39        digitalWrite(TRIG_PIN, HIGH);
40        delayMicroseconds(10);
41        digitalWrite(TRIG_PIN, LOW);
42
43        // Tempo de leitura do trigger ao echo
44        duration = pulseIn(ECHO_PIN, HIGH);
45
46        // Calcula a distância
47        distance = (duration / 2) / 29;
48
49        // Retorna o valor da distância e converte para c
50        uint8_t value = map(distance, 2, 400, 0, numOfRe;
51
52        for (uint8_t i = 0; i < numOfRegisterPins; i++) {
53          if (i >= value) {
54            setRegisterPin(i, HIGH);
55          } else {
56            setRegisterPin(i, LOW);
```

```
74
75    void writeRegisters() {
76      // Define e exibe os registros
77      digitalWrite(LATCH_PIN, LOW);
78
79      for (int i = numOfRegisterPins - 1; i >= 0; i--) {
80        digitalWrite(CLOCK_PIN, LOW);
81        digitalWrite(DATA_PIN, registers[i]);
82        digitalWrite(CLOCK_PIN, HIGH);
83      }
84
85      digitalWrite(LATCH_PIN, HIGH);
86    }
87
```

Data send to the IBM cloud device when the object is far :

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":141.21,"object":"No"}	json	a few seconds ago
Data	{"distance":141.21,"object":"No"}	json	a few seconds ago
Data	{"distance":141.21,"object":"No"}	json	a few seconds ago
Data	{"distance":141.18,"object":"No"}	json	a few seconds ago
Data	{"distance":141.2,"object":"No"}	json	a few seconds ago

Data sent to the IBM cloud device when the object is near

Event	Value	Format	Last Received
Data	{"distance":79.66,"object":"Near"}	json	a few seconds ago
Data	{"distance":79.64,"object":"Near"}	json	a few seconds ago
Data	{"distance":79.66,"object":"Near"}	json	a few seconds ago
Data	{"distance":79.64,"object":"Near"}	json	a few seconds ago
Data	{"distance":79.66,"object":"Near"}	json	a few seconds ago