SMART FARMER – IoT ENABLED SMART FARMER APPLICATION

ASSIGNMENT – 4

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1. **Write Code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100 centimetres send an *'alert'* to the ibm cloud and display in device recent events.**

Program:

```
#define ECHO_PIN 2

#define TRIG  PIN 3

void setup() {
 Serial.begin(115200);
 pinMode(LED  BUILTIN, OUTPUT);
 pinMode(TRIG  PIN, OUTPUT);
 pinMode(ECHO  PIN, INPUT);
}

float readDistanceCM() {
 digitalWrite(TRIG  PIN, LOW);
 delayMicroseconds(2);
 digitalWrite(TRIG_PIN, HIGH);
 delayMicroseconds(10);
 digitalWrite(TRIG_PIN, LOW);
 int duration = pulseIn(ECHO_PIN, HIGH);
 return duration * 0.034 / 2;
}

void loop() {
 float distance = readDistanceCM();
 if(distance<100)
 {
 Serial.println("Alert!!!!!!!!!");
 }

 Serial.print("Measured distance: ");
 Serial.println(readDistanceCM());

 delay(100);
}
```
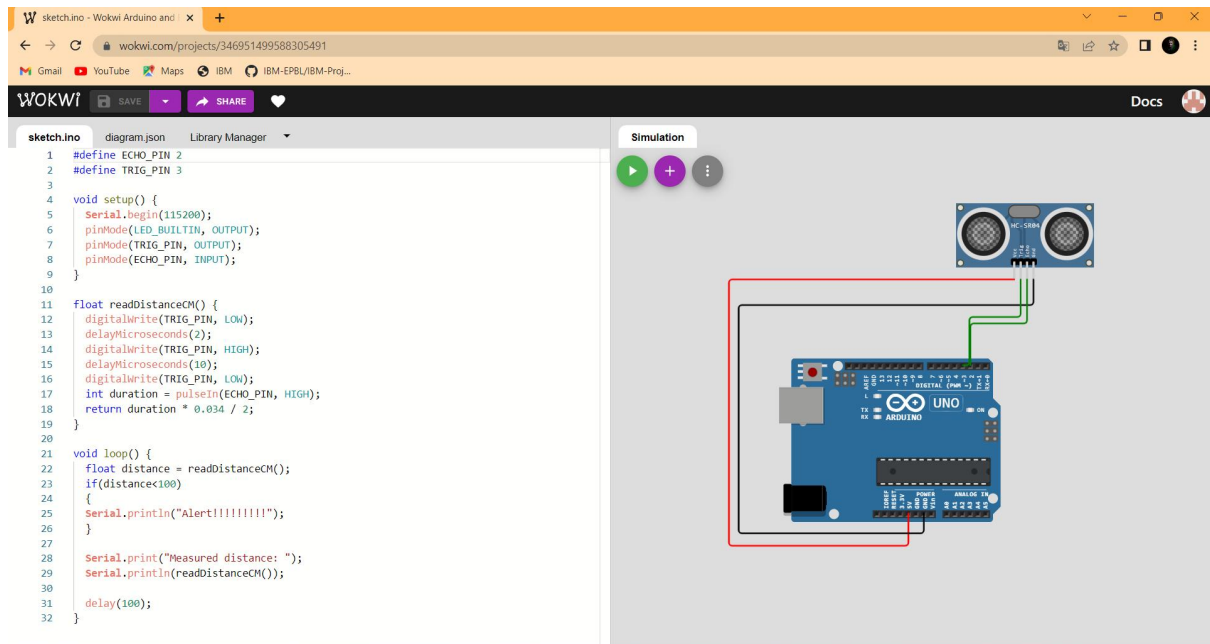
Wokwi Editor window:

Results:

1. The measured distance is less than 100 centimetres, it gives alert message

2. The measured distance is more than 100 centimetres, it will not give alert message


```ino
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  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
}

float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
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void loop() {
  float distance = readDistanceCM();
  if(distance<100)
  {
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  }

  Serial.print("Measured distance: ");
  Serial.println(readDistanceCM());

  delay(100);
}
```
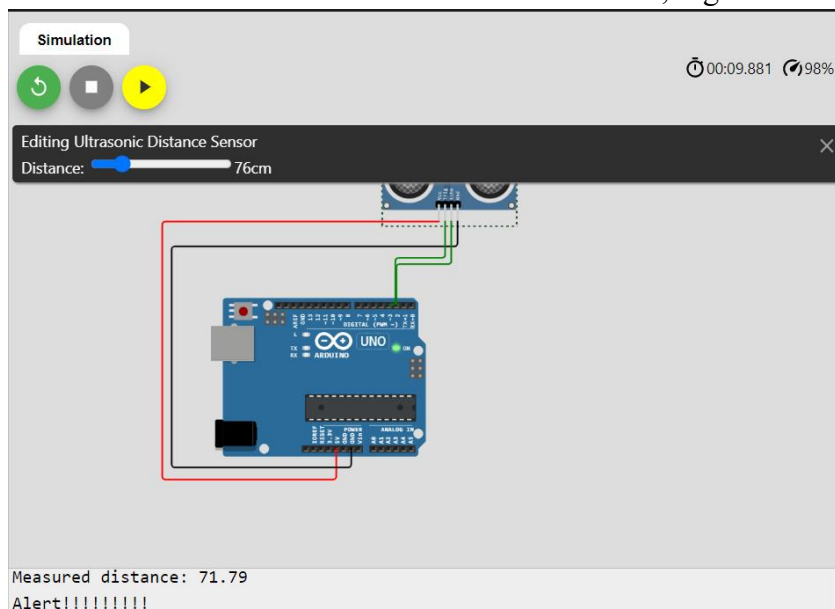
Measured distance: 177.24
Measured distance: 177.16
Measured distance: 177.26
Measured distance: 177.16
Measured distance: 177.24