SMART FARMER – IoT ENABLED SMART FARMER APPLICATION

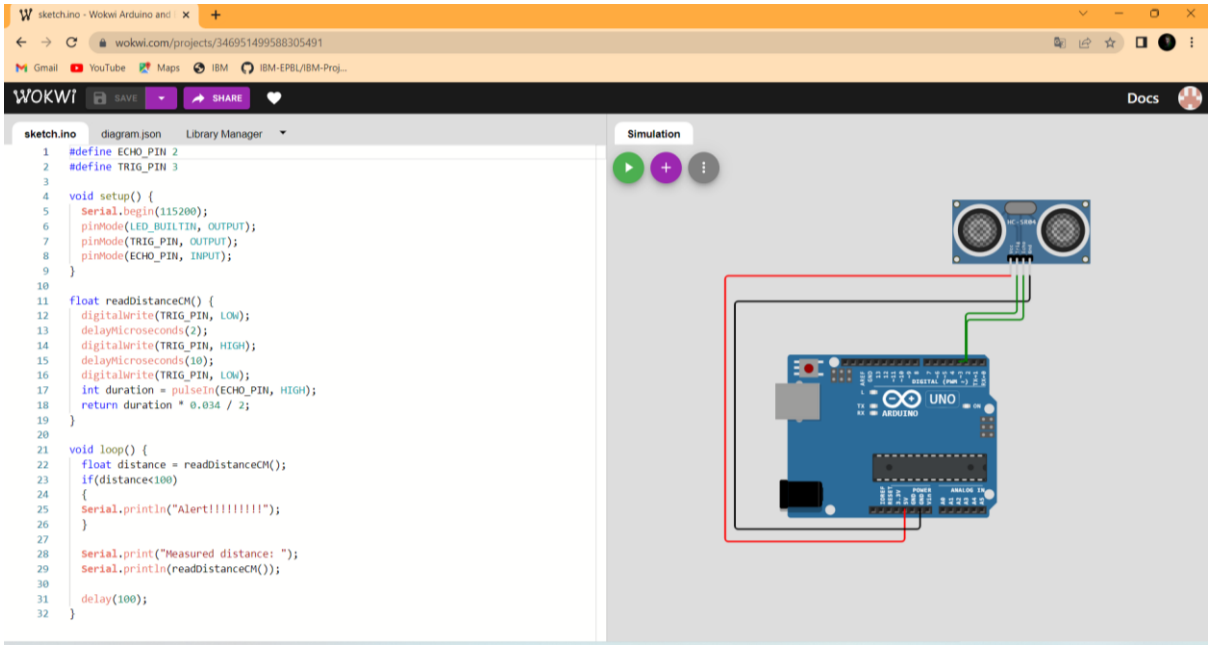
ASSIGNMENT – 4

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:

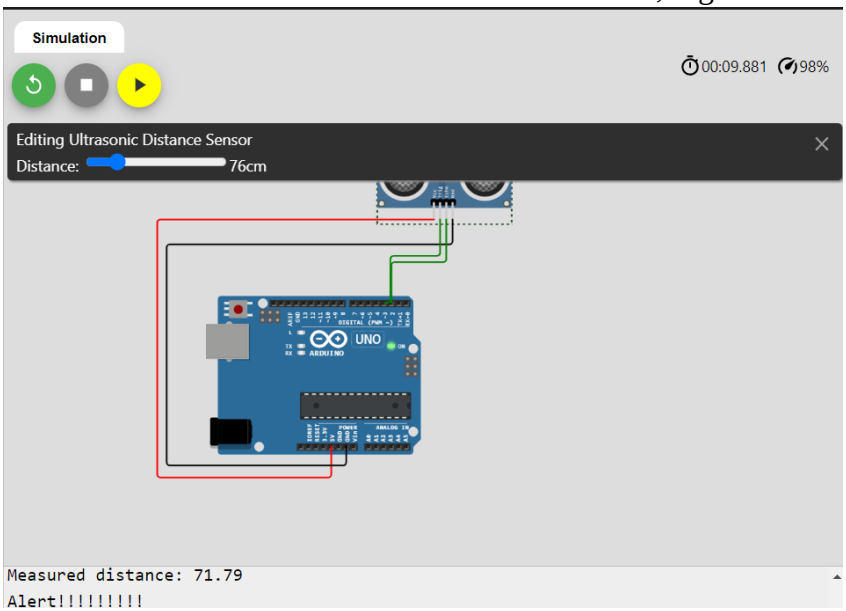
```
#define ECHO_PIN 2

#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:

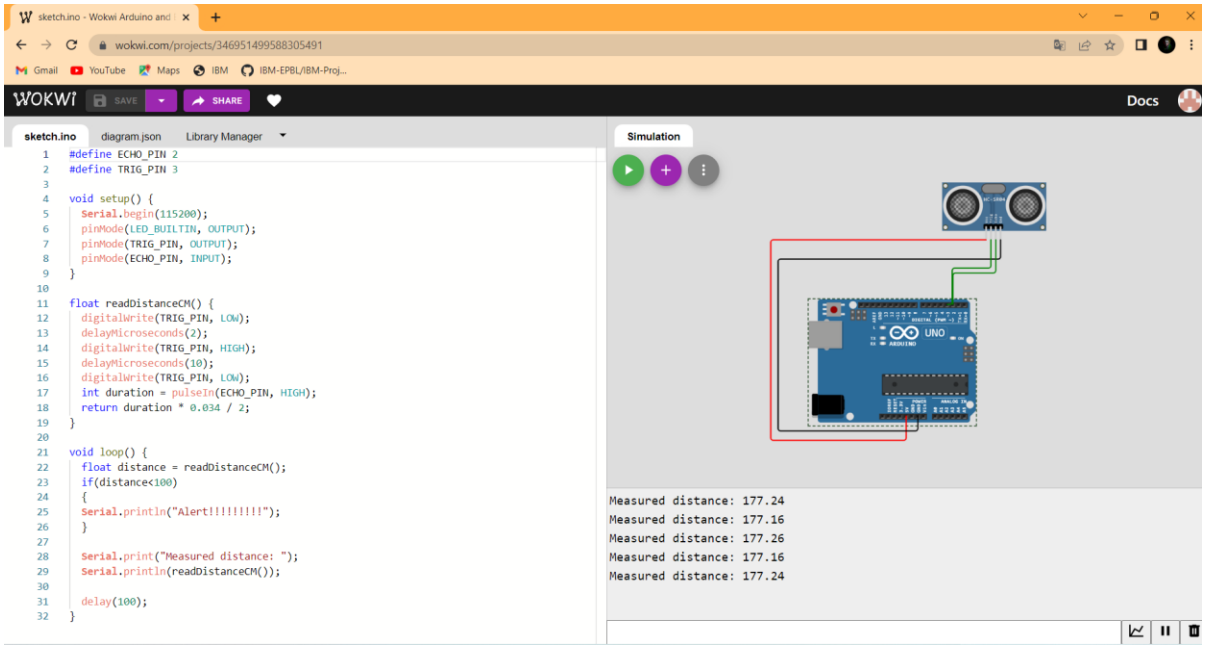


Results:

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


sketch.ino - Wokwi Arduino and
wokwi.com/projects/346951499588305491
Gmail
YouTube
Maps
IBM
IBM-EPBL/IBM-Proj...
WOKWI
SAVE
SHARE
Docs
sketch.ino
diagram.json
Library Manager
#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);
}
Simulation
UNO
Measured distance: 177.24
Measured distance: 177.16
Measured distance: 177.26
Measured distance: 177.16
Measured distance: 177.24