ASSIGNMENT-4

Code and connections using wokwi

Assignment Date	25th October 2022
Student Name	Karthick S
Student Roll Number	111619106059
Maximum Marks	4 Marks

Question:

Write code and connections in Wokwi for ultrasonic sensor whenever distance is less than 100m send alert message.

Solution:

Code:

```
#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();

  bool isNearby = distance < 100;
digitalWrite(LED_BUILTIN, isNearby);
  Serial.print("Measured distance: ");




  Serial.println(readDistanceCM());

delay(100);
}
```
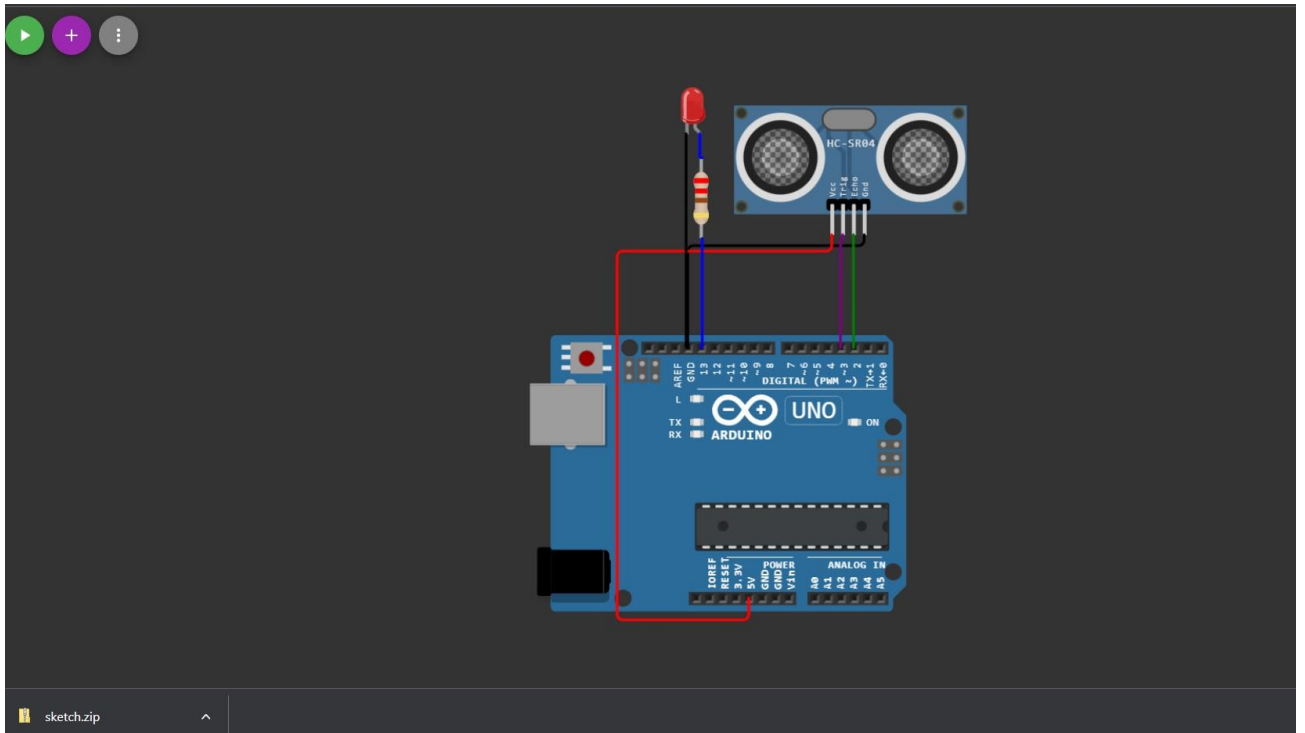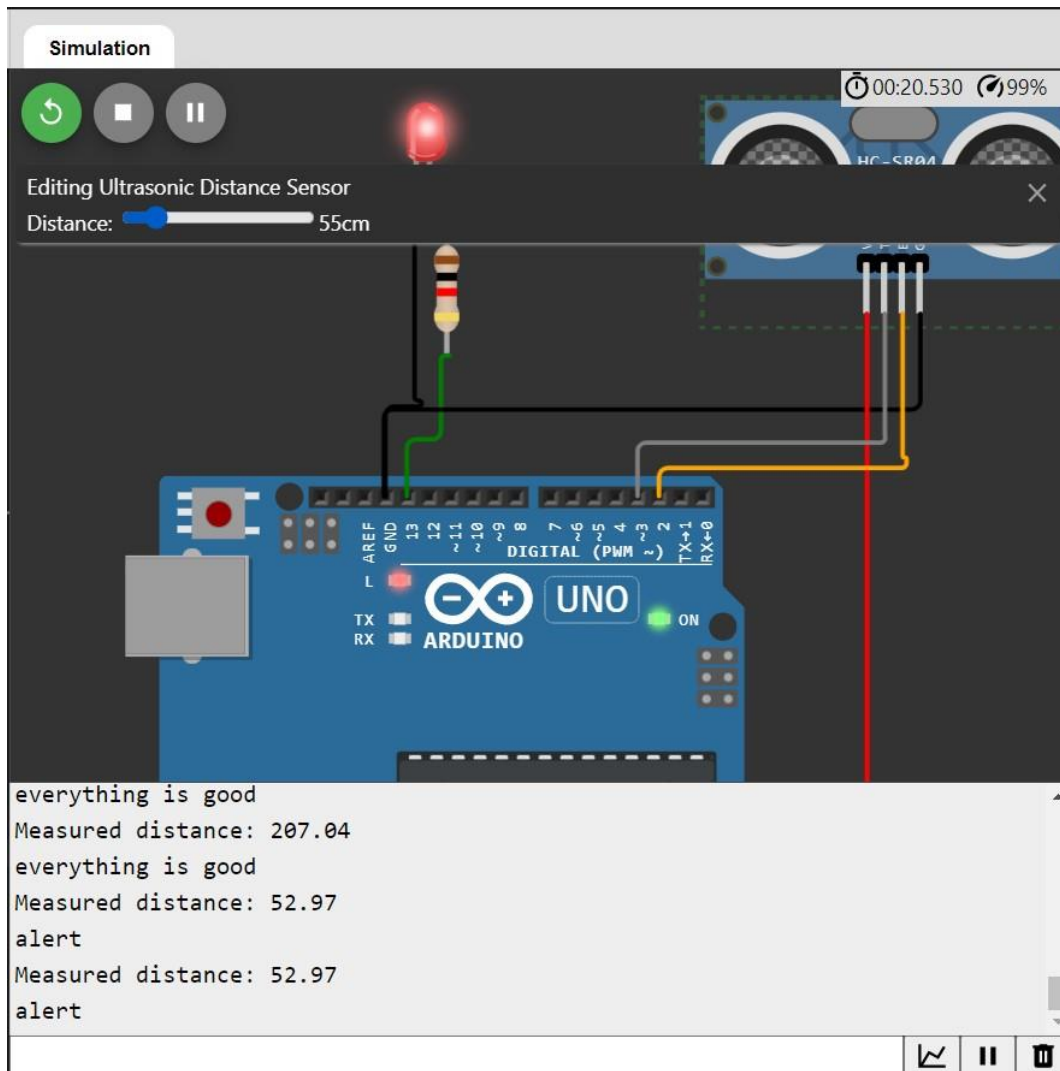
Circuit connections:

Case (i):

When distance is less than 100m sends "alert" message.

everything is good
Measured distance: 207.04
everything is good
Measured distance: 52.97
alert
Measured distance: 52.97
alert

Case (ii):
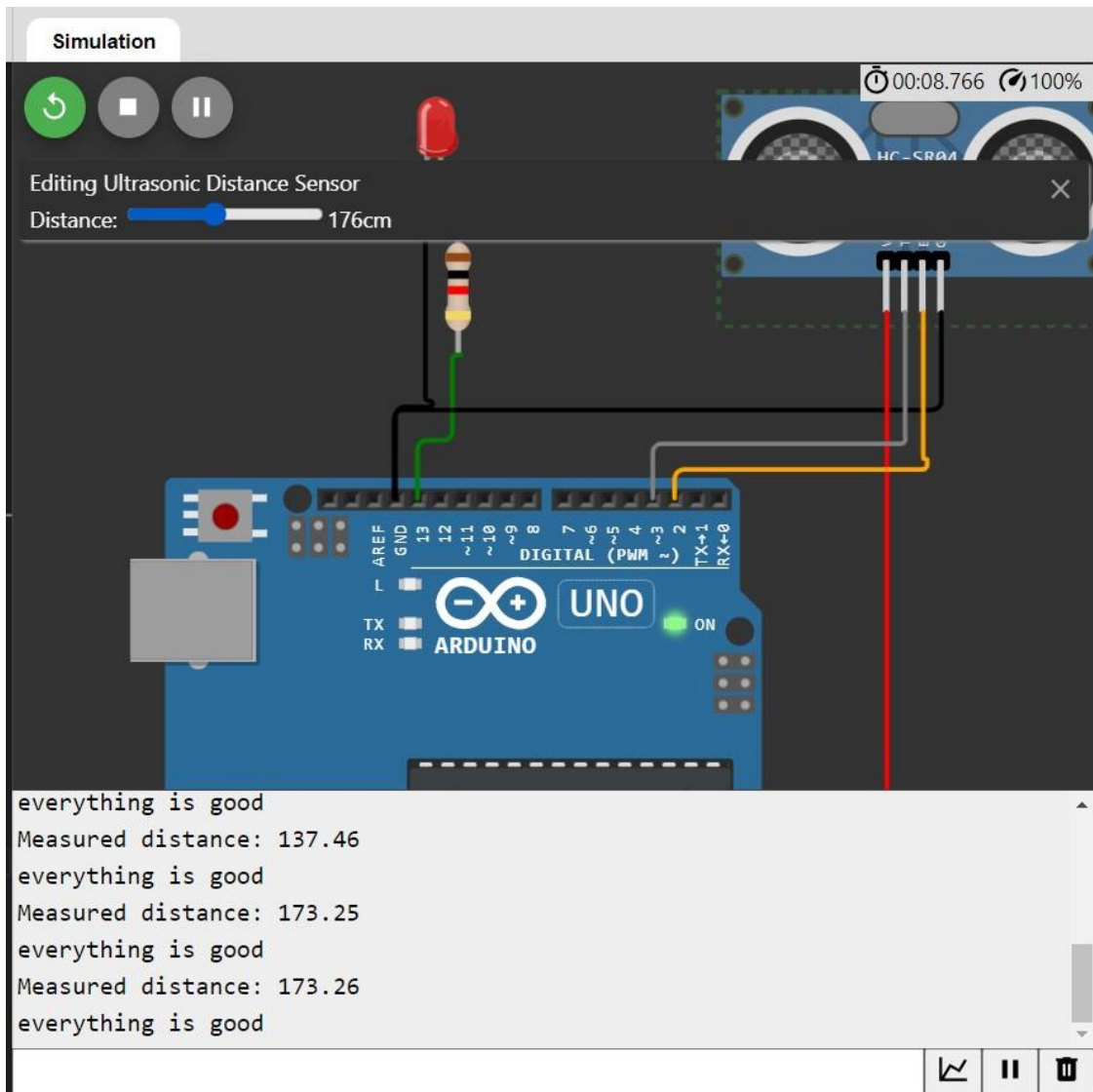
When distance is greater than 100m sends "everything is good" message.

Simulation

00:08.766 100%

Editing Ultrasonic Distance Sensor   ×
Distance: ▬▬▬●▬▬▬▬▬ 176cm

HC-SR04

AREF GND 13 12 ~11 ~10 ~9 8   7 ~6 ~5 4 ~3 2 TX►1 RX◄0
                    DIGITAL (PWM ~)

L
TX
RX   ARDUINO   UNO   ON

```
everything is good
Measured distance: 137.46
everything is good
Measured distance: 173.25
everything is good
Measured distance: 173.26
everything is good
```