

Assignment -4 WOKWI

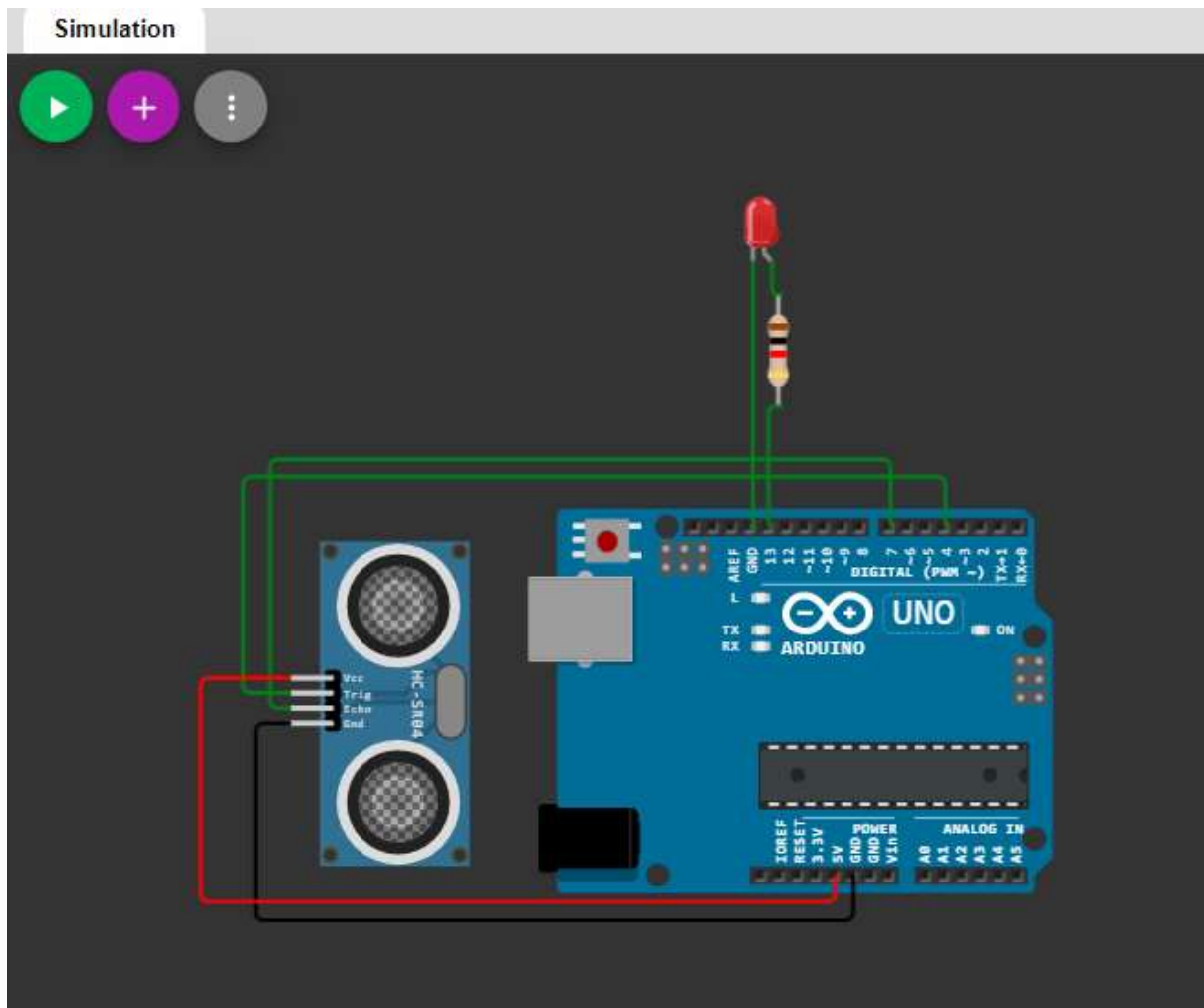
Assignment Date	28 October 2022
Student Name	MINUTHAA.S
Student Roll Number	510119106008
Maximum Marks	2 Marks

Question:

Write a code and connection in wokwi for ultrasonic sensor .whenever distance is less than 100 cms send alert

Solution:

SIMULATION



CODE

```
#define ECHO_PIN 2
#define TRIG_PIN 9
void setup() {
  Serial.begin(115200);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
}
float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delay(2);
  digitalWrite(TRIG_PIN, HIGH);
  delay(10);
  digitalWrite(TRIG_PIN, LOW);
  int duration = pulseIn(ECHO_PIN, HIGH);
  return duration * 0.034 / 2;
}
void loop() {
  float distance = readDistanceCM();
  if (distance < 100){
    bool isNearby = distance < 100;
    digitalWrite(LED_BUILTIN, isNearby);
    Serial.println("ALERT DETECTED ");
    Serial.print("Measured distance: ");
    Serial.println(readDistanceCM());
    delay(100);
  }
  else {
    bool isNearby = distance > 100;
    digitalWrite(LED_BUILTIN, LOW);
    Serial.println("ALERT NOT DETECTED");
    Serial.print("Measured distance: ");
    Serial.println(readDistanceCM());
    delay(100);
  }
}
```

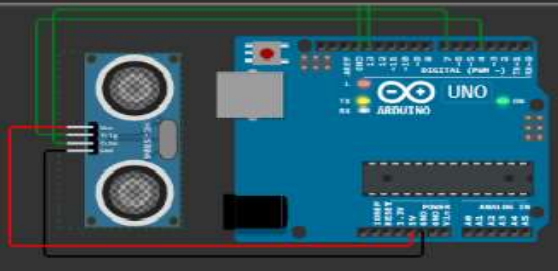
OUTPUT

When it reaches less than 100 cm , alert is detected

Simulation

00:06.820 19%

Editing Ultrasonic Distance Sensor
Distance: 45cm



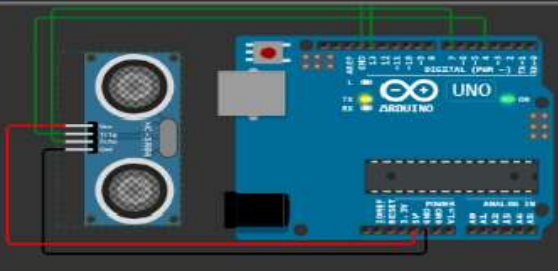
Measured distance: 44.71
ALERT DETECTED
Measured distance: 44.81
ALERT DETECTED
Measured distance: 44.80

When the distance is greater than 100 cm , alert is not detected

Simulation

00:24.722 18%

Editing Ultrasonic Distance Sensor
Distance: 333cm



Measured distance: 331.06
ALERT NOT DETECTED
Measured distance: 331.04
ALERT NOT DETECTED
Measured distance: 330.94
ALERT NOT DETECTED

PROGRAM AND OUTPUT

```
1 #define ECHO_PIN 7
2 #define TRIG_PIN 4
3 void setup() {
4   Serial.begin(115200);
5   pinMode(LED_BUILTIN, OUTPUT);
6   pinMode(TRIG_PIN, OUTPUT);
7   pinMode(ECHO_PIN, INPUT);
8 }
9 float readDistanceCM() {
10  digitalWrite(TRIG_PIN, LOW);
11  delay(2);
12  digitalWrite(TRIG_PIN, HIGH);
13  delay(10);
14  digitalWrite(TRIG_PIN, LOW);
15  int duration = pulseIn(ECHO_PIN, HIGH);
16  return duration * 0.034 / 2;
17 }
18 void loop() {
19  float distance = readDistanceCM();
20  if (distance < 100){
21    bool isNearby = distance < 100;
22    digitalWrite(LED_BUILTIN, isNearby);
23    Serial.println("ALERT DETECTED ");
24    Serial.print("Measured distance: ");
25    Serial.println(readDistanceCM());
26    delay(100);
27  }
28  else {
29    Serial.println("Measured distance: 100");
30  }
31 }
```



Measured distance: 86.50
ALERT DETECTED
Measured distance: 86.50
ALERT DETECTED
Measured distance: 86.50
ALERT DETECTED
Measured distance: 86.50

REFERENCE LINK

<https://wokwi.com/projects/346757092672012882>