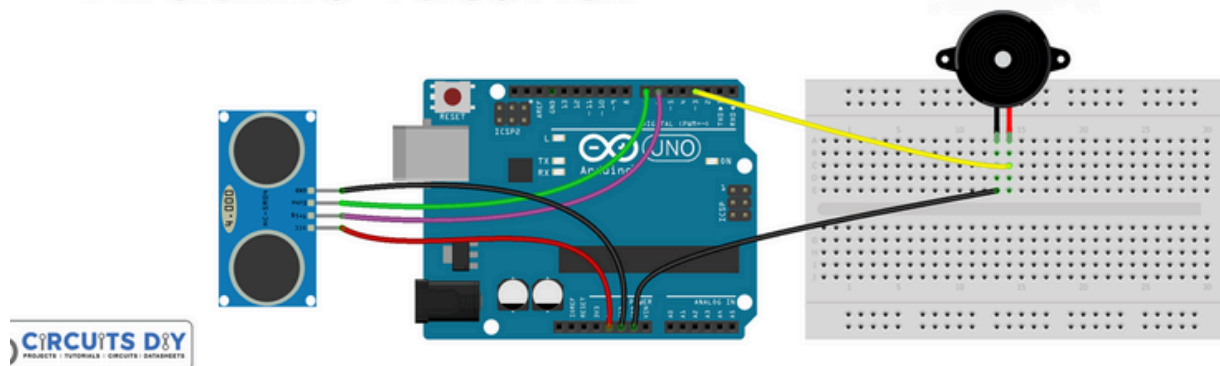
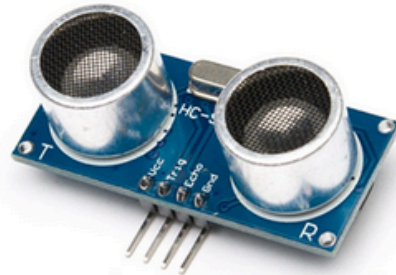


## 6) Digital Door Lock System Using Ultrasonic Sensor

### Components

- Arduino Uno
- Ultrasonic Sensor (HC-SR04)
- LED
- Buzzer
- Resistors (220Ω for LED)
- Breadboard and connecting wires

# Ultrasonic Piezo Buzzer Arduino Tutorial



### Code:

```
const int TRIG_PIN = 6; // Arduino pin connected to Ultrasonic Sensor's TRIG pin
const int ECHO_PIN = 7; // Arduino pin connected to Ultrasonic Sensor's ECHO pin
const int BUZZER_PIN = 3; // Arduino pin connected to Piezo Buzzer's pin
const int DISTANCE_THRESHOLD = 50; // centimeters
// variables will change:
float duration_us, distance_cm;

void setup() {
  Serial.begin(9600); // initialize serial port
  pinMode(TRIG_PIN, OUTPUT); // set arduino pin to output mode
  pinMode(ECHO_PIN, INPUT); // set arduino pin to input mode
  pinMode(BUZZER_PIN, OUTPUT); // set arduino pin to output mode
}

void loop() {
  // generate 10-microsecond pulse to TRIG pin
  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);
  // measure duration of pulse from ECHO pin
  duration_us = pulseIn(ECHO_PIN, HIGH);
  // calculate the distance
```

```
distance_cm = 0.017 * duration_us;
if(distance_cm < DISTANCE_THRESHOLD)
    digitalWrite(BUZZER_PIN, HIGH); // turn on Piezo Buzzer
else
    digitalWrite(BUZZER_PIN, LOW); // turn off Piezo Buzzer
// print the value to Serial Monitor
Serial.print("distance: ");
Serial.print(distance_cm);
Serial.println(" cm");
delay(500);
}
```