Interfacing HC-SR04 with Raspberry Pi

The HC-SR04 Ultrasonic Sensor requires 4 connections to be connected to the Raspberry Pi 3.

The first step is to connect the *GND* of the HC-SR04 to pin 6 (GND) of the Raspberry Pi. Next connect *VCC* of the HC-SR04 to pin 2 (*5V*) on the Raspberry Pi. When connecting multiple HC-SR04's to the Raspberry Pi, this is accomplished easiest by connecting both *VCC* and *GND* of the HC-SR04 to the breadboard and then connecting the positive and negative rails of the breadboard to the Raspberry Pi. The *Trig* of the HC-SR04 is then connected to any GPIO on the Raspberry Pi, in this diagram, pin 12 is used. The *Echo* pin is then connected to an empty row on the breadboard. In the same row, place a $1k\Omega$ resistor, denoted **R1**. On the other end of the $1k\Omega$ resistor, connect a wire from the breadboard to any GPIO on the Raspberry Pi, pin 16 is used in the diagram. Next, connect a $2k\Omega$ resistor, denoted **R2**, to the breadboard, making sure that the connection to pin 16 is between both **R1** and **R2**. Finally, connect the other end of the $2k\Omega$ resistor to ground.