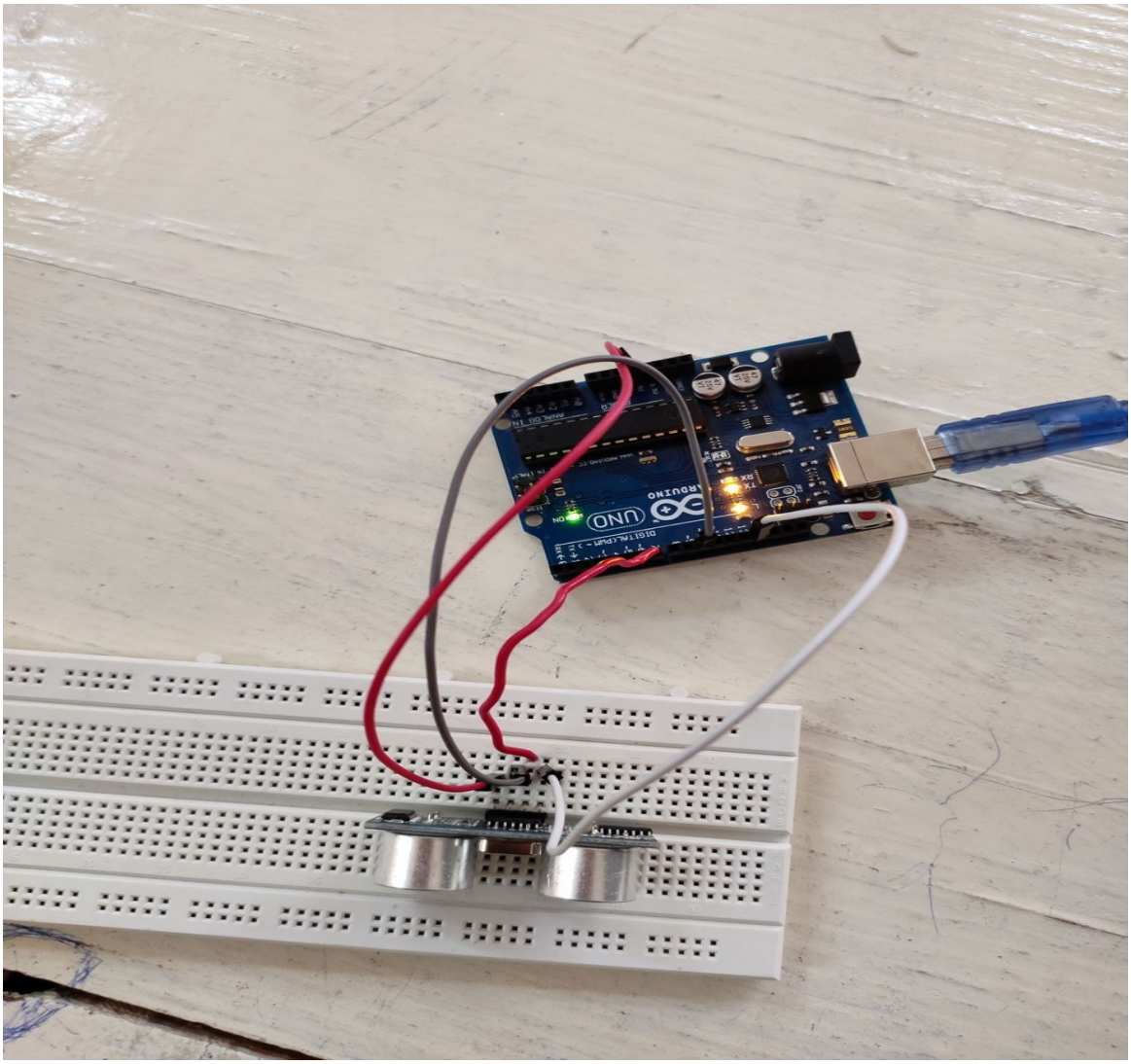
Exp 6:

Obstacle



Circuit Diagram

Theory

Concept Used:

The Ultrasonic sensor has four pins, VCC, GND, Echo, Trigger. The distance of the obstacle is calculated by using the time taken by the sound waves to return to the ultrasonic sensor

Learning and Observations:

Following observations were recorded during the experiment:

- The ultrasonic sensor uses high frequency sound waves in its operation.
- The Ultrasonic sensor has two parts, The trigger and The Echo. The trigger sends out the high frequency sound and the echo receives the same back when an obstacle comes in its way.
- Using the pulseIn () function to check for a pulse of signal at an input pin.

Problems and Troubleshooting:

No problem was faced while performing the following experiment and it commenced successfully.

Precautions:

The following precautions need to be considered while performing this experiment:

- The connections of the USB in both the PC and the ARDUINO UNO board should be snug.
- The USB ports of the PC and the ARDUINO UNO should be in a working condition.
- The sketch should be logically and syntactically correct and germane to the experiment that needs to be performed.
- The correct serial port should be selected that is the one through which the ARDUINO UNO has been connected.
- Look for errors during compilation and upload of the executable to the ARDUINO UNO.
- Disconnect the digital 1 and 0 pins while uploading the program to the board.
- Do not open more than one instance of the ARDUINO IDE at a time.

Learning outcomes:

The various learnings as the outcome of performing the above-mentioned experiment are:

- Use of the pulseIn () function.
- The working of an Ultrasonic sensor.
- Various applications of an ultrasonic sensor.