

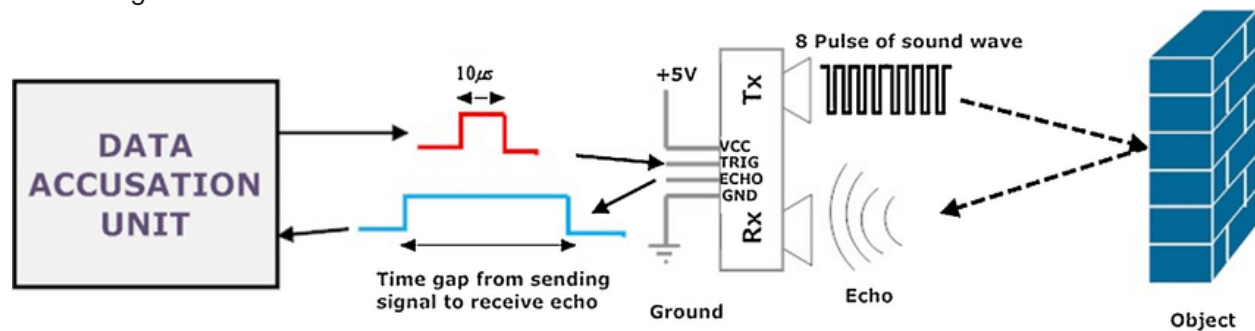
Aim :- Ultrasonic Sensor Interface – Obstacle detector and distance measurement.

Theory :-

Ultrasonic transducers or ultrasonic sensors are a type of acoustic sensor divided into three broad categories: transmitters, receivers and transceivers. Transmitters convert electrical signals into ultrasound, receivers convert ultrasound into electrical signals, and transceivers can both transmit and receive.

Ultrasound can also be used to make point-to-point distance measurements by transmitting and receiving discrete bursts of ultrasound between transducers. This technique is known as Sonar where the transit-time of the ultrasound signal is measured electronically (ie digitally) and converted mathematically to the distance between transducers assuming the speed of sound of the medium between the transducers is known. This method can be very precise in terms of temporal and spatial resolution because the time-of-flight measurement can be derived from tracking the same incident (received) waveform either by reference level or zero crossing. This enables the measurement resolution to far exceed the wavelength of the sound frequency generated by the transducers.

Block Diagram :



Code :-

Learning and Outcomes:-

1. Use of ground and resistance in circuit.
2. How to connect Ultrasonic sensor in circuit.
3. Resistance must be of 10 kilo ohm not less than that.
4. To work on both analog and digital pins.

Observations:-

1. Use of Ultrasonic sensor and its functioning.
2. To connect Ultrasonic sensor with arduino.
3. Always in circuit ground should always have least resistance.
4. Coding of Ultrasonic sensor and its library function.

PROBLEM & TROUBLESHOOTING:

1. Mistake in coding in statement.
2. Logical mistake happened in connection.