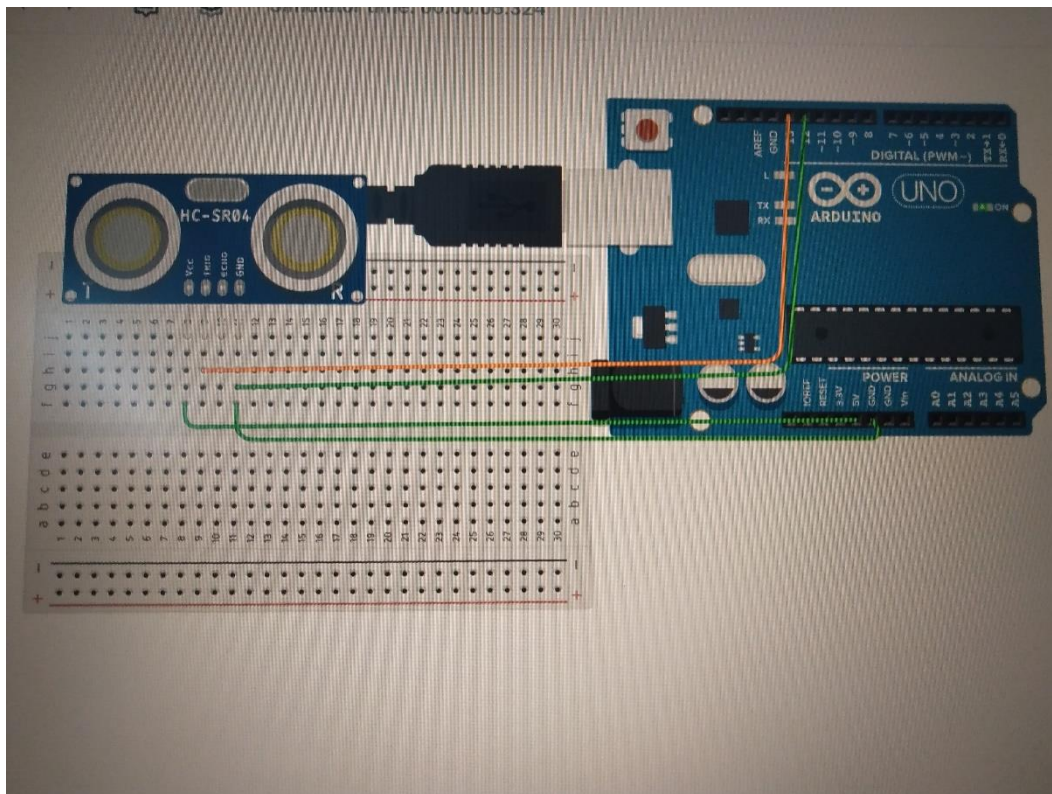


Experiment :-ultrasonic sensor interface-obstacle detector and distance

Circuit Diagram:-



Theory:-

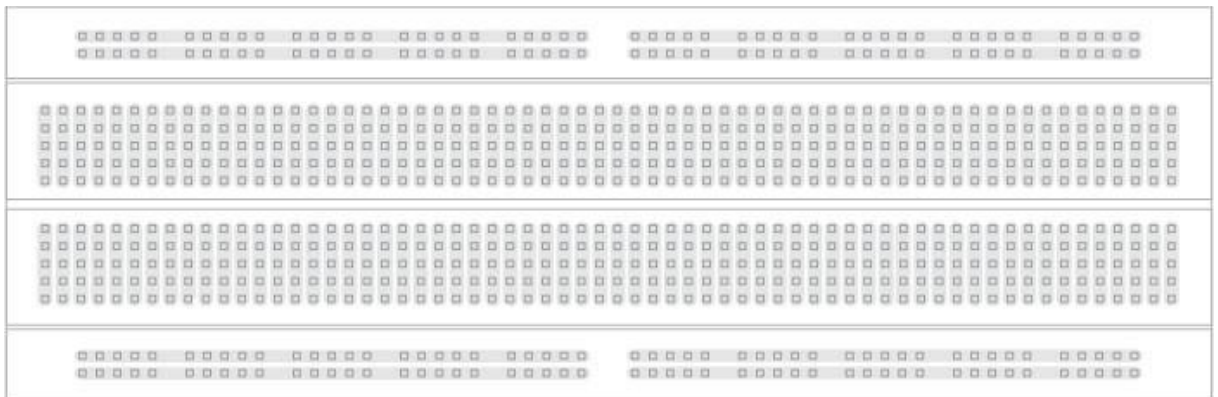
Concept used:-

The concepts used by me for doing this task can be listed as:-

- *The arduino board can supply a power of 5v as*

digital output signals through the 14 pins (namely 0-13) present in it as digital input or output pins.

- *The GND pin of the arduino board acts as ground.*
- *In the bread board present in the above circuit diagram the two rows present at the top and bottom each, are connected with each other in series and the columns present in between are connected in a set of 5 each. The connection pattern is shown below:*



- *Speed of sound =340m/s*
- *Distance =speed x time*

Learning and Observation:-

Leanings:

- *I have learned about how to make a series circuit using an arduino board and a*

breadboard.

- *I have learned about how an arduino works and I also learned how current flows and how it works.*
- *I have now gained a practical experience of how an LED and a resistor work.*
- *I have also learned the working of a ultra sonic sensor.*

Observations:-

- *When we activate the system an ultra sonic wave is projected from it which rebound when an obstacle comes and comes back which is picked up by the sensor thus calculating time .*

Problems and Troubleshooting:-

The problems faced by me while doing this task are :-

- *The code was not working properly at first so I have to change it many time.*
- *The functioning of switch was not clear to me so I faced problems.*

- *Sometimes the the wires came before the sensor thus creating problems in measurement.*

Precautions:-

The precautions that we need to keep in mind while doing this experiment are:-

- *The connections at different points should not be loose and the pins should be inserted properly.*
- *We should take care that the circuit is closed .*
- *The path between the object and the sensor should be clear.*
- *While writing the code extra care should be taken while writing the syntax keeping in mind about different small and a capital words in them.*

Learning Outcomes:-

- *I have learned how to make circuits using an*

arduino board and a bread board and some other hardwares.

- *Through this experiment I have gained the skill of making a circuit using different hard wares and controlling the functions done by that circuit with the help of codes.*

