

# THE ULTRASONIC RADAR

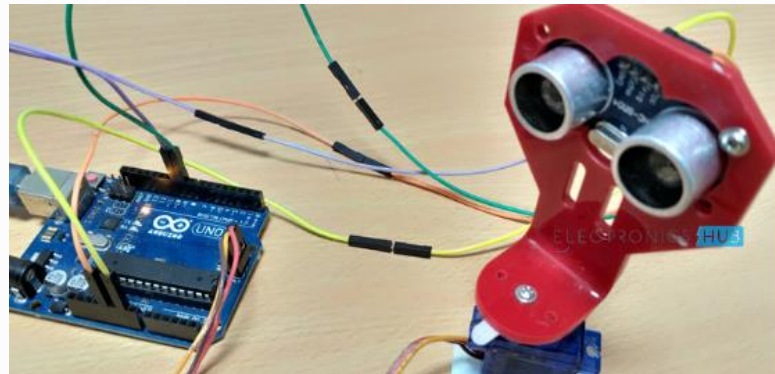
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# INTRODUCTION

This project is based on Sonar technology as we have used an Ultrasonic Sensor to determine the presence of any object in a particular range.





**ARDRINO UNO**



**HC SR 04 ULTRASONIC  
SENSOR**

**HARDWARE  
COMPONENTS**



**TOWER PRO SG90 SERVO  
MOTOR**



# Arduino UNO



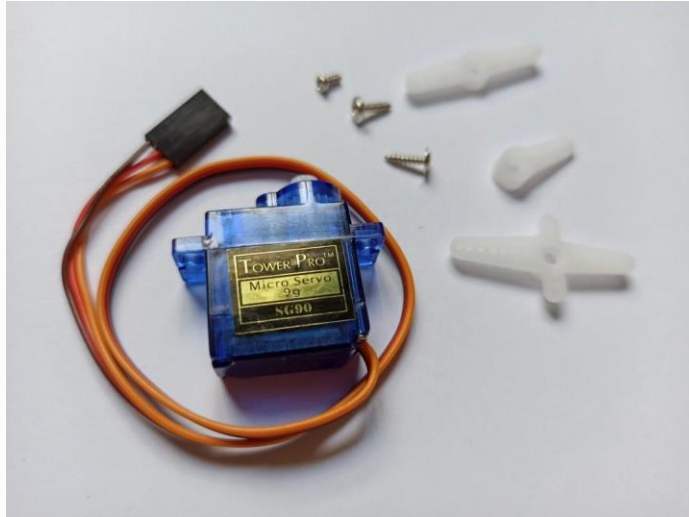
# HC SR04 Ultrasonic Sensor

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# Tower Pro SG 90 Servo Motor

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# WORKING PRINCIPLE

- ❑ The ultrasonic sensor emits ultrasonic waves.
- ❑ The wave propagates and reflects back on striking an object.
- ❑ These waves are again detected by the sensor.
- ❑ The qualities of the waves are then analysed.
- ❑ Arduino code is used to detect the position or angle of servo motor.





# ADVANTAGES



- ✓ Ultrasonic sensors are highly accurate.
- ✓ Can detect size and shape of an object.
- ✓ Not affected by color or transparency.
- ✓ Can be used in dark environments.
- ✓ Low cost option.

# DISADVANTAGES



- Can not distinguish and resolve multiple targets which are very close.
- Can not recognize color of objects.
- Can to see targets which are in water and are to deep.
- Can not see targets which are placed behind some conducting sheets.

# Project Future Development

Currently this is a wired concept. Our future goal is to make it wireless using a Wifi-module.

# CONCLUSION



This paper presents the design and implementation of a simple radar system using Arduino as microcontroller for short range applications. This Short-range radar system is a low cost, a simple device for distance measurement.

**THANK YOU**

