

Mini Radar 30cm/60cm

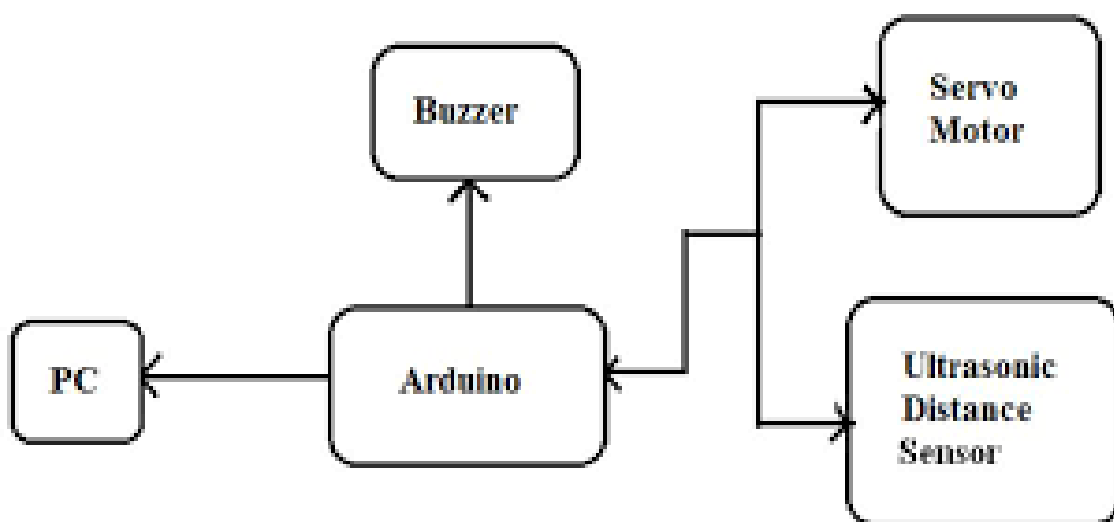
Introduction

In this project, I will show you how to design a simple Radar Application using Microcontroller and Processing. This Microcontroller Mini Radar Project is implemented with the help of Processing Application.

Radar is a long-range object detection system that uses radio waves to establish certain parameters of an object like its range, speed and position. Radar technology is used in aircrafts, missiles, marine, weather predictions and automobiles.

Even though the title says Mini Radar Project, technically the project is based on Sonar technology as I will be using an Ultrasonic Sensor to determine the presence of any object in a particular range.

Block Diagram



Component

Hardware

- Microcontroller
- HC-SR04 Ultrasonic Sensor
- Servo Motor
- Mounting Bracket for Ultrasonic Sensor
- Connecting Wires
- Jumper Cables
- 5V Power Supply
- USB Cable

Software

- IDE
- Processing Application

Advantages

1. It is not affected by colour or transparency. Basically, the Ultrasonic Sensors transmit the sound off of the object, hence the colour and transparency have no effect on the radar reading.
2. Any dark environments have no effect on this Mini radar sensor's detection procedure. So, it can also use at night.
3. Easy to design and low price. The ultrasonic sensors are available at the market with very cheap price.

4. It has high frequency, high sensitivity therefore it can easily detect the external or deep objects.

5. This radar sensor is not affected by dust, rain, snow, and many more.

6. It has a self-cleaning system to continue running and less downtime.

7. The Mini Radar Sensor is easy to use. Also, it is completely safe during the operation to nearby objects, human or equipment.

8. The Ultrasonic sensor can easily interface with any types of the microcontroller.