DISTANCE CALCULATION USING ULTRASONIC SENSOR

INTRODUCTION:

Ultrasonic sensors are used in this work, as the name implies.Ultrasonic sensors operate by emitting a sound wave that is higher in frequency than human hearing. To send a pulse and receive an echo, our ultrasonic sensors, like many others, use a single transducer.By monitoring the duration between delivering and receiving an ultrasonic pulse, the sensor can calculate the distance to a target.

RESEARCH:

The criteria for the programme to execute or the code to be in effect are simple, and it's an excellent solution for detecting clean things.

FEATURES:

1. Used to measure the distance of object.
2. The sensors have a 3mm precision and can measure distances ranging from 2 to 400cm.The sensors have a 3mm precision and can measure distances ranging from 2 to 400cm.

WORKING:

Ultrasonic sensors operate by emitting a sound wave that is higher in frequency than human hearing. To receive and transmit ultrasonic sound, The sensor's transducer functions as a microphone. To send a pulse and receive an echo, our ultrasonic sensors, like many others, use a single transducer.

SWOT ANALYSIS:

STRENGTH:

A low-cost ultrasonic sensor can be used to determine the distance to an obstacle. The sensors have a 3mm precision and can measure distances ranging from 2 to 400cm. The ultrasonic transmitter, ultrasonic receiver, and control circuit are all included in this sensor module.

WEAKNESS:

Although we are confident in our sensors' capabilities, we recognise that ultrasonic are not appropriate for all applications. Low-thickness focuses, such as foam and fabric, have a proclivity to absorb sound vitality; these materials can be difficult to detect at a distance.

WHAT:

Created a system based on a microcontroller that uses an ultrasonic sensor to detect distance in real time and shows the results on an LCD display.

WHERE:

There is no physical touch between the sensor and the item in this technology. It uses non-contact technology to accurately measure distance.

HOW:

The Atmega328 is used to show an ultrasonic sensor, which is primarily used to detect the target object's distance.