



# AUTOMATIC DOORBELL USING ULTRASONIC SENSOR

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## **ABSTRACT**

The automatic doorbell using ultrasonic sensor is designed to see the operation of ultrasonic transmitter emits waveform to the object. The bouncing wave from the object is received by the receiver hence complete the circuit and output will on. Ultrasonic sensors act as a switch. Furthermore, this project aims in producing or creating circuit simulation for automatic doorbell using ultrasonic sensor. Apart from that, this project also develop innovation of automatic doorbell using ultrasonic sensor.

Overall, what can be summarize for this automatic doorbell using ultrasonic sensor project are it is practical and useful in term of cost, reliability and function. The concept of this project is simple, ultrasonic transmitter will emits ultrasonic wave for about a meter and if there is an object, the wave will bounce back and being absorb or receive by the receiver. When the receiver received the wave it means the circuit is complete and super led will light up.

Another circuit which is normally open contact relay, consist a light density resistor (ldr) which act as a sensor. Sensor will measure the physical and convert into electrical. As soon as, it measure the light produced by led, the normally open contact relay will change its state and become close. Circuit has completed, the output which is buzzer will produce sound.

This project is very practical and can be implements in front of our house and gate.

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Background Of Study**

Doorbell is very popular in neighborhood nowadays. The old days, doorbell uses electromagnetic principle. When a visitor come to the house, searching for the doorbell switch and then rings it is needed to let know their presence [2]. If the one who come to the house cannot find the doorbell or else if the person is so short that cannot reach the doorbell switch, what can be done? [2] How will it be if a new invented technology which is an automatic doorbell which rings as soon as a person arrives? There will no more hassles.

Install this automatic doorbell using object detection circuit, the circuit will automatically sense the presence of the person and it rings the doorbell.

This project operates using a pair of ultrasonic transmitter and receiver modules 40 kHz which are used to detect the person [3]. It has delay on and delay off circuit including internal circuit. If person is detected, the doorbell will automatically turn on. By using this system, the old method can be removed.