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DOOR BUZZER USING ULTRASONIC SENSOR

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Abstract – Covid-19 has created havoc in people also we can see it is increasing day by day all over the world. We also know a well known proverb that "prevention is better than cure" so, we need to search for prevention methods so that it can be avoided. Therefore, some of the preventive measures are as follows: social distancing, avoiding surface contact, washing hands frequently and wearing mask. Then also there are many unavoidable circumstances like people visiting to the homes, in that case the guests have to ring the doorbell which might also spread the infection.

Thus, as the doorbell has also become hotspot for spread of the virus this can be avoided if we use touch less doorbell. By which, we can avoid surface contact. Touch less door Bell can be created using an ultrasonic sensor and Arduino Uno. In which, we just have to put our hand in front of the sensor then the buzzer rings to intimate the owner of the house.

***Key Words*:** Sensors, Automation, Covid-19,Controllers, Smart Products

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Introduction:

Corona virus has infected many mankinds on the planet and the situation we are facing in our life has to upgrade life in a new normal. We can have the same old habit of eating, travelling, buying or even doing our routine works. Today home have become offices and the Internet is only savior. During lock down in restrictions people found it difficult to stay in long queue 1 meter distance to buy groceries, dairies product. So, online ordering and home delivery has become a trend. Though e-commerce claim that their employees take all safety measures from sanitizing to social distancing but when they come to house they have to touch the door bell and their temperature needs to be scan, after that they keep a distance in delivery. Touching surface is one we should as per studies Corona virus stays on surface for nearly 24-48 hours. This is gap in delivery chain.

Even when our family member or may be a guest comes from outside we need to check their temperature to see if it is less than 99.5 F. If temperature is more we should tell them to seek a doctor or may be live in their space isolation and shall not allowed to visit the house and after that proper sanitization can be done.

Problem definition:

To avoid infection and other virus attack in the difficult time of covid 19,people are suffering from the huge problem in the daily life, every where it was spreading by touching the surface and the life of virus is 24 hours, and the suspect victim can get the disease within a week or after 10-12 days later, so for the safety of the mankind and family members and collogues touching at the entry point was bit a most tedious task, even at the society, offices and malls, hospital gates the distance check is compulsory so we have create the smart entry system were the distance between the door and the person who is standing outside done automatically.

Working :

A 5v supply is connected to vcc nodes the signal is generated and that is converted in the distance by the coding and controller system. Gnd is connected with Gnd. Trigger pin is connected with pin number 2 and echo is connected with pin number 3. Buzzer is connected to ground and digital pin number 10 were it will follow the signal reading from the ultrasonic sensor and it will start buzzing if the distance is less than 10 and

the gate is opening at that moment and if the distance is greater than 10 then the gate is not opening at that moment the guard or the house member will get to know that the person standing outside is some problem within the body. Ultrasonic sensor operates within the range of 1 foot be installed in the society entrance gate, as automatic sanitizer is available but this is the product which the human will not come in contact and with the help of maintain the social distance once can easily monitor from the distance.

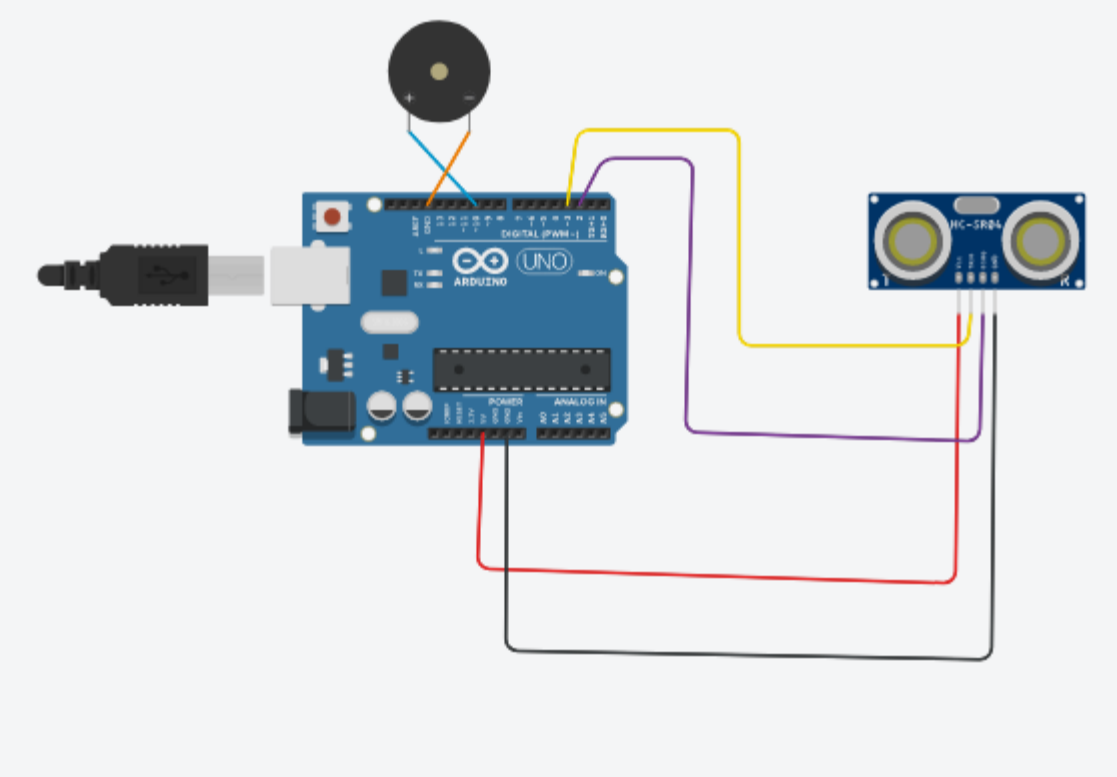


Figure 1 . Circuit Diagram

Application :

The System is used at every possible entry points to over check the body parameters, it is majorly use in the offices and crowded places were maximum number of people are visiting in a single day. Even at the hospital there are different covid ward were sudden temperature check are needed and social distance needs to be maintained thus this application can be installed in the entrance gate, also automatic sanitizer is available with the application. Using the application the human will not come in contact and thus we can maintain the social distance also.

Components In Use :

System consist of following hardware :

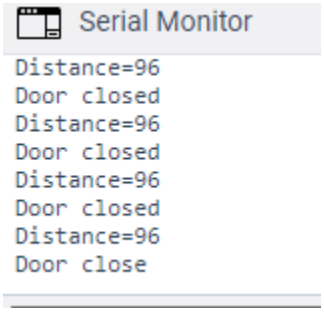
a. Arduino Uno
b. Buzzer
c. Ultrasonic sensor

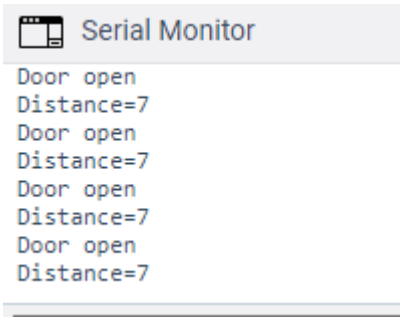
PROGRAM :

```
int trigger_pin=3;
int echo_pin=2;
int buzzer_pin=10;
int time;
int distance;
void setup()
{
  Serial.begin(9600);
  pinMode(trigger_pin,OUTPUT);
  pinMode(echo_pin,INPUT);
  pinMode(buzzer_pin,OUTPUT);
}
void loop()
{
  digitalWrite(trigger_pin,HIGH);
  delayMicroseconds(10);
  digitalWrite(trigger_pin,LOW);
  time= pulseIn(echo_pin,HIGH);
  distance =(time*0.034)/2;

if(distance <= 10)
{
    Serial.println("Door open");
    Serial.print("Distance=");
    Serial.println(distance);
    digitalWrite(buzzer_pin,HIGH);
    delay(500);
 }
else{
    Serial.println("Door closed");
    Serial.print("Distance=");
    Serial.println(distance);
    digitalWrite(buzzer_pin,LOW);
    delay(500);
  }
}
```

RESULT ON SERIAL MONITOR :





CONCLUSIONS:

This research can be further extended to various institutes as school, co-operate offices, government offices etc. This will help in reducing the manpower to check the temperature and also in the future aspect it can connect to the medical services via emergency services. In general, the humans will get less affected by covid-19 infection by installing the application which stops person to enter the premises. Though vaccine is now available, still we need to follow the covid protocol to avoid any mishap.

REFERENCES :

1.https://sajet.in/index.php/journal/article/view/209

2. Burgoji Santosh Kumar, “Implementation of Automatic College Bell Ring System Using Arduino”, ISSN: 2393-8374, VOLUME-5, ISSUE-4, 2018

3.A.C Jose, R. Malekian, "Savvy Home Automation Security: A Literature Review", Smart Computing Review, Vol. 5, No. 4, pp. 269-285, August 31, 2015.

4.http://wireless.ictp.it/wp-content/uploads/2012/02/BasicDoorbell-Project.pdf

5.http://www.talkingelectronics.com/projects/WirelessDoorbell/WirelessDoorbell.html

6.www.wikipedia.com

7.www.google.com