

ABSTRACT

We explained our idea in this ABSTRACT. Kindly refer this.

INTRODUCTION:

Objective

- In this project, we will build an automatic hand sanitizer dispenser which will help you to dispose of hand sanitizer without contact.

Outcome

- Hand sanitizer is one of the best ways to get rid of all the harmful germs and viruses in our hand. But what if a healthy person uses a hand sanitizer, which was previously used by a person who was infected by COVID-19? In this case, there is a chance of spreading the virus.

Resources Required

- water tube
- Arduino Nano
- water pump
- ultrasonic sensor
- Arduino IDE

Safety Precautions

- If any problem in the computer related with electrical power, booting, etc please inform to the lab in-charge / lab instructor.
- In case any injuries, medicine kept in first-aid box should be used immediately.
- The computer hardware should be used with proper care.

Prerequisites

Basic knowledge of Arduino

Hand sanitizer is one of the best ways to get rid of all the harmful germs and viruses in our hand. But what if a healthy person uses a hand sanitizer, which was previously used by a person who was infected by COVID-19? In this case, there is a chance of spreading the virus.

How Automatic Hand Sanitizer Dispenser using Arduino works

So let's get started. Here, we use to an ultrasonic sensor calculate the distance of our hand from the sensor. If the hand is close to the dispenser, Arduino will activate the pump and the sanitizer will be expelled out of the bottle through the tube.

Ultrasonic Sensor

An ultrasonic sensor is a device that is capable of transmitting and receiving ultrasonic sound waves out into the air and calculates the distance from the sensor to the obstacle by making use of the time required for the sound wave to reach back the sensor. If you are not sure about the ultrasonic sensor and distance calculation, we have an entire article just for that. I will leave the link here.

Using this, we can calculate the distance of our hands from the dispenser bottle. If the hand is right below the valve, that is 5 cm from the sensor, we turn on the pump using a transistor which is connect connected to pin 5 of the Arduino.

How to make Automatic Hand Sanitizer Dispenser using Arduino

Contactless Hand Sanitizer Dispenser Circuit

So here is the circuit. Here we have a 12V DC adapter that is connected to the Vin of Arduino and to the Positive terminal of the pump. D2 and D3 are connected to Echo and Trigger pin respectively. And D5 is connected to the Transistor. When the transistor switches On, the pump will get turned on. Here, one end of the pump is connected to the tube that goes inside the sanitizer bottle and the other end is held free.

CONCLUSION:

REFERENCE:

<https://create.arduino.cc/projecthub/aakash11/automatic-hand-sanitizer-using-arduino-2924ad>