

Review on Automatic sanitizer dispensing machine

Deeksha S N¹, Aishwarya R², Mrs Vishalini Diwakar³

Scholars, Department of ECE, K S Institute of Technology, Bangalore, India^{1,2}

Assistant professor, Department of ECE, K S Institute of Technology, Bangalore, India³

Abstract:- An automatic hand sanitizer must be used to prevent COVID-19. An automatic machine is contactless, alcohol-based hand sanitizer dispenser. Automatic hand sanitizer that will guarantee cleanliness and being well in day light better for offices, clinics, school, shopping malls, home and other places. Contactless sanitizer machine has been proposed with ultrasonic sensor. Arduino uno is used to sense the distance and result is pump running to pump out hand sanitizer. Sanitizer containers and pump devices are compatible.

Keyword:- sanitizer, pump, Arduino uno, ultrasonic sensor.

INTRODUCTION

Demand for hand sanitizer has surged as the coronavirus broke out and spread around the world. The contamination is spread skin to skin contact. Alcohol gel hand sanitizer is usually applied by squirting the sanitizer liquid when one presses a pump with one's hand. This causes many people to come into contact with pump handle, which increases the risk of viral transmission. Hand sanitizer gives a better solution for hygienic, cleanliness, and alcohol-based sanitizer makes hand dry and absorbs moisture and alcohol-based sanitizer is a disinfectant. Repeatedly touching the sanitizer containers which leads to contact with other person. It leads to risk. Hence, there is a need for contactless hand sanitizer.

LITERATURE SURVEY

In [1], the paper mainly says about the hospital grasped infections, which is about 2 Million Patients per year and also says that it is 8th leading cause for deaths annually in USA. It also says that handwashing is important and also effective with proper hand washing steps, but washing with soap and water is time consuming for peak hours in hospitals. This paper also showed the effectiveness of the alcohol-based hand sanitizers, which reduced infection rates by whopping 30%. They used hand sanitizers with 60 to 70 percent ethanol or isopropanol for reducing significant number of pathogens. The patients were also given about 4.25 ounce containers of hand sanitizer alongside their beds. For 10 month period of using hand sanitizers showed a result of 36.1% infection reduction.

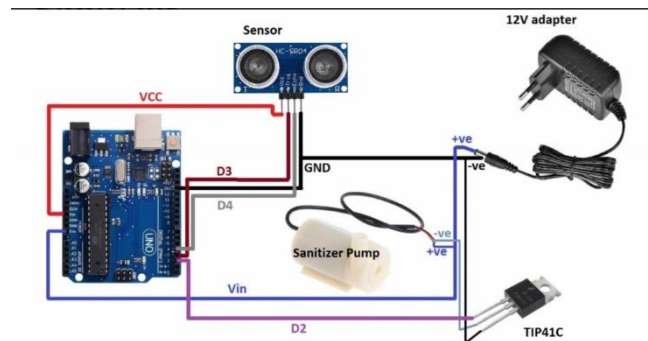
In [2], the paper says about the infection caused by drug-resistant micro-organisms which causes increase in death rate and also complications, the multidrug-resistant bacteria includes Methicillin Resistant *Staphylococcus aureus* (MRSA), Extended Spectrum Beta-lactamase (ESBL) producing bacteria, Multidrug Resistant *Pseudomonas aeruginosa* (MDRP), which are very common worldwide. Several antibiotics have increasing multidrug bacteria isolation rate, even personal protection equipment (PPE) can't be effective in isolation rate of MRSA. Hence they emphasize about the use of alcohol-based hand sanitizers since the alcohol-based hand sanitizers had negative association with MRSA isolation rate, which means that hand hygiene is very important in hospitals.

In [3], the paper says about emergence of the novel Coronavirus (SARS-CoV-2), which has caused unexpected challenges to health of the people of this world, the paper also aims at reducing the transmission rate of the disease. The paper explains about the virus structure and how it is different from that of the bacterial structure, which means that virus has single stranded or double stranded RNA or DNA encapsulated in 'capsid' and virus can replicate only in presence of a host and described as 'living entities'. Bacteria also has almost the same structure including DNA or RNA along with 'Cell Membrane' and can replicate without a host. The paper also gives a complete comparison between hand sanitizers and soap, foam vs gel, and it says that high concentration of ethanol can reduce the amount of virus particle present in the hand and hence proves the effectiveness of alcohol-based hand sanitizer.

METHODOLOGY:

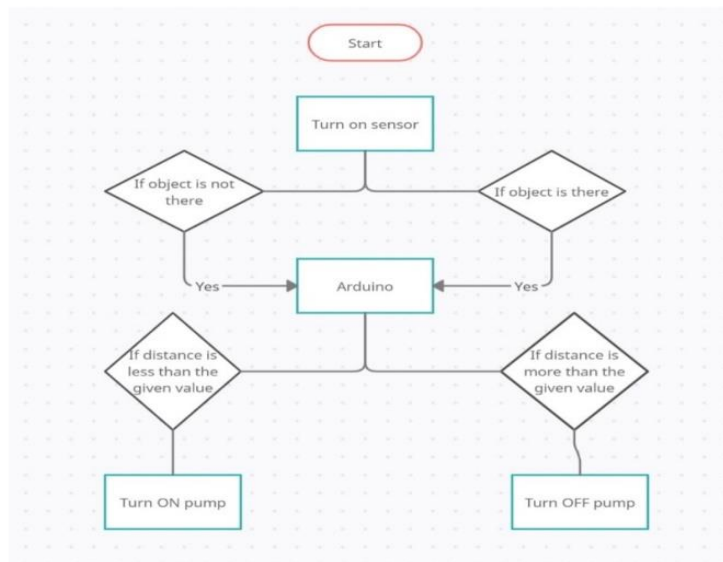
Several steps were carried out to test the Automatic hand sanitizer container. An automatic hand sanitizer system was designed, which will be presented in two stages describing the instrument structure and control parts. This work focused on using the elasticity of pumps and improving people's access to devices.

Proposed circuit diagram



Using an ultrasonic sensor for detection of hand. So, place our hand in front of the distance sensor, it will help to the Arduino to measure the distance from the sensor to Object. The Arduino will be repeatedly sending a signal to trigger the ultrasonic sensor and when hand is present in front of the sensor then sensor will output the total time by sound to travel and from the Object then signal read by Arduino and when hand is not present in front of sensor then machine will be turned off.

Proposed Algorithm



CONCLUSION

Automatic hand sanitizer are priced less when compared to other hand sanitizing dispensers and also it is environment friendly because, disposal of wastage is less.alcohol based hand sanitizer are more effective than soaps and easy to use and the goal of this project was to use current advanced technologies to develop an automatic hand sanitizing machine to improve hygiene and prevent viruses entering body.

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