FOG BASED HANDWASH

Priyanka Shouche[*1], Mahima Tekale[*2], Kaveri Patil[*3]

[*1,2,3]Department Of Electronics And Telecommunication, Maratha Vidya Prasarak Samaj's,

Karmaveer Baburao Ganpatrao Thakare College Of Engineering, Nashik, India.

ABSTRACT

To save the amount of water which get wasted in handwashing, an alternative technique of cleaning the hands with mist is proposed in this project. In this project, we employed an Atmega328 microcontroller as a processor and mist maker module to generate fog from water. To make the operation touch free, IR sensor is used to detect hands. So that when the user insert hands inside machine, IR sensor gives signal to microcontroller and it turn on the mist maker module. To prevent the mist maker modules from dry run, low liquid level alert is provided in the system.

Keywords: Microcontroller, Fog, Mist Maker, IR Sensor, Touch Free.

I.   INTRODUCTION

The COVID 19 Pandemic has led to behavioral changes in people with respect to heath and sanitation. Washing hands being the most basic and primary step towards hygiene, people became more aware about its benefits but are hesitant to wash hands in public places as they find it as a risk so, they using sanitizers instead. There is already gap between demand and availability of usable water, it is necessary to alternative to conventional method of handwashing. There are several optimized equipment's including automatic hand washing machine, foot operated sanitizer dispensing units, etc. However, in proposed system fog is created to disinfect hands which will be contact less and easy to use. Also, we all have been trying to protect our hands from dirt, germs and bacteria, so our fog based handwash system introduces new definition of Handwashing and also attracts the people for frequent handwash.


II.   METHODOLOGY
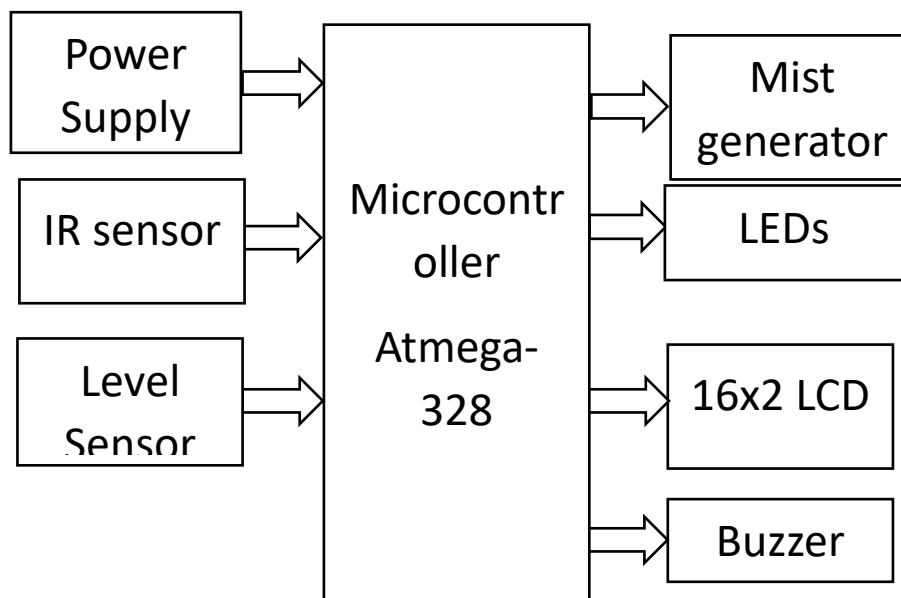
Before starting any operation, system checks liquid level in the tank. If the liquid level is low, then microcontroller shows the warning on LCD and beeps buzzer continuously till the liquid refills. In other case, user insert hands into the machine's chamber, it will be detected by IR sensor. Microcontroller gets signal from IR sensor and turn on LED lights and mist maker modules for set time of interval. Once the time interval get over, LED lights and mist maker module will be turned off. During the on time, if user removes the hands out of chamber, IR sensor will detect it and microcontroller will terminate the operation.

III.   MODELING AND ANALYSIS

COMPONENTS	SPECIFICATIONS
Mist Generator	Operating Voltage: 5V Operating Frequency: 113-3kHz
Microcontroller Atmega-328	Operating Voltage: 5V Speed : 20MHz
IR Sensor	Input voltage: 5-12VDC Sensing range: 3-10cm
Level Sensor	Includes 2 conductive electrodes

IV.   RESULTS AND DISCUSSION
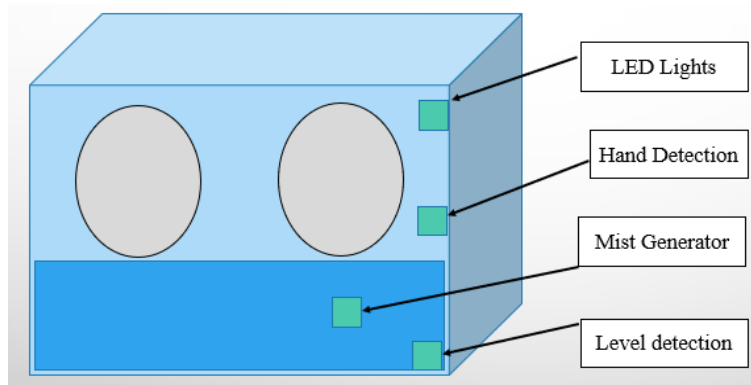
V.   CONCLUSION

The proposed project is ultimately expected to contribute to contactless hand disinfection in public places and virus infection prevention with the use of IR Sensor, Mist Generator and Level Sensor and also attracts user interface with audio and visual indications.

VI.   REFERENCES

[1]   A Ramelan, G S Ajie, M H Ibrahim, "Design Low Cost and Contactless Temperature Measurement Gate Based on the Internet of Things (IoT)", IOP Conf. Series: Materials Science and Engineering, ICIMECE, 2020.

[2]   Munmun Das, Lovely Gaur, Pranav Chavan, "IOT Based Temperature Scanning Entry System", International Journal of Advanced Research in Computer and Communication Engineering, May 2021.

[3]   DiseasePuput, Wanarti Rusimamto, Nurhayati, "Automatic Hand Sanitizer Container to Prevent the Spread of Corona Virus Disease", International Joint Conference on Science and Engineering (IJCSE), 2020.

[4]   Enerst Edozie, Wantimba Janat, Zaina Kalyankolo, "Design and Implementation of a Smart Hand Sanitizer Dispenser with Door Controller using ATMEGA328P", International Journal of Engineering and Information Systems (IJEAIS), June 2020.

[5]   "Cleaning and disinfection of environmental surfaces in the context of COVID-19", Interim guidance by World Health Organization, 15 May 2020

[6]   https://www.business-standard.com/article/pti-stories/by-2030-india-may-not-meet-half-of-its-water-demand-book-121121000855_1.html