Automatic sanitizer dispenser with temperature screening  
Nawaz Abas  
nawazabbas313@gmail.com  
Bharati Vidyapeeth College of Engineering,  
Bharati Vidyapeeth College of Engineering,  
Navi Mumbai, Maharashtra  
Ashwini Parab  
Parab.ashwini28@gmail.com  
Bharati Vidyapeeth College of Engineering,  
Bharati Vidyapeeth College of Engineering,  
Navi Mumbai, Maharashtra  
Ruchita Vaidya  
Vaidyaruchita86@gmail.com  
Bharati Vidyapeeth College of Engineering,  
Bharati Vidyapeeth College of Engineering,  
Navi Mumbai, Maharashtra  
Rutuja Satav  
Satavrutuja1505@gmail.com  
Bharati Vidyapeeth College of Engineering,  
Bharati Vidyapeeth College of Engineering,  
Navi Mumbai, Maharashtra  
Dr. J. Jeayavel  
j.jeyavel@bvcoenm.edu.in  
Bharati Vidyapeeth College of Engineering,  
Bharati Vidyapeeth College of Engineering,  
Navi Mumbai, Maharashtra

ABSTRACT
As the whole world is dealing with Covid-19 pandemic the most significant solution to this is sanitize hand and monitor temperature. We have designed a system where we can sanitize our hand and monitor temperature without any contact with the machine. Also sanitizing spray is inserted for the object’s sanitization.

Keywords: Arduino nano, MLX90614 sensor, IR sensor, Covid-19, sanitizer

1. INTRODUCTION
The whole world is battling against COVID-19. Though now we are having a vaccine we have to keep using masks and sanitize. Sources of the spread of the Corona virus are mainly through human interaction. Person to person spread of virus is controlled by sanitizing hands regularly in the specific time interval. The Easy Non-Contact Automatic Hand Sanitizer Dispenser or Automatic Soap Dispenser with Arduino, it has the Arduino microcontroller to control the sanitizer liquid with the help of a Servo motor. [1] This is used to power up the system by the external power supply of 6v battery or through computer USB cable. This method is good to use and the drawback is the battery replacement for the usage of the system. [1]

The above system does not contain temperature monitoring system as well as it uses Arduino UNO which require more space. The Automatic Hand Sanitizer Dispenser and temperature detection have Arduino Nano. It has two sanitizer pumps, first for hand sanitization and second for object sanitization. We can also monitor our body temperature. Drawback of system is it requires continuous power supply.

2. METHODOLOGY
In house, we all are safe but some people are still working outside and they need to sanitize their Hand regularly for prevention from Covid-19. This virus is spread through the touch so we make a Covid-19 protection device which is used for sanitize the hand as well as check the body temperature without touching any object. If the person comes in front of our system, then using IR sensors as well as touch-less temperature sensor, the sanitization as well as temperature checking will be done.

3. PROPOSED SYSTEM

![Block diagram](https://www.ijariit.com)

4. WORKING
In this proposed system, we use two IR Sensors one for object sanitization through spray and second one to detect the person to sanitize hand. In this project we used Arduino Nano 3.x as Main Controller, LCD, temperature, sensor, IR sensor all are connected to Arduino Nano. For this project, we use the two-power supply of LM2596 which gives 5V. One 5V supply is for relay and second power supply is for other circuitry like Arduino Nano, IR Sensors, touch-less temperature sensor, buzzer and LCD.
In the above circuit, rectifier converts 230V AC into 12V DC. IC 7805T is a regulator which converts 12V DC into 5V DC. Now we see the working of first IR sensor is that when first IR sensor is triggered which means someone is in front of the sanitizer dispenser, then Arduino commands to turn ON the pump which dispenses the Sanitizer for some time and after few second, turn OFF the pump. To check the body temperature of a person without any contact, we are using MLX90614 sensor. If Temperature is normal then it displays on LCD but if body temperature exceeds the normal temperature (37°C) then buzzer will beep and also it displays on LCD so that necessary action can be taken.

5. HARDWARE SPECIFICATION
There are basically three main hardware components used:

5.1 Arduino Nano 3.x

Features:
Microcontroller ATmega328

Specifications:
Operating voltage: 5 V
Analog Input Pin: 8
Digital I/O Pin: 14
Clock Speed: 16 MHz

5.2 MLX90614

Features:
Built-in Ambient Light Sensor
Adjustable Sensing range

Specifications:
Temp range-70°C to 382°C
Distance range -2 to 5 cm
Accuracy- (+-) 0.5°C
Supply voltage: -3v to 5 V

5.3 IR Sensor

Features:

Specifications:
Operating voltage: 5 V
Range: up to 20 cm
Detection angle: 35 degree

6. RESULT AND ANALYSIS

Fig 6: Assembly setup

Fig 7.1: Hand Sanitization output
Fig 7.2: Sanitizing spray output
Fig 7.3: Measured Temperature
7. FUTURE SCOPE
Even if virus is cured, there are high chances of viruses to be spread. We need to take precaution in the coming future. Hand sanitizer dispensing machine is need to install at every crowded place such as malls, railway stations, education premises, and industries.

8. CONCLUSION
Automatic hand sanitizer dispenser with temperature screening is efficient and price is minimized. The main advantage of this system is that it is completely contactless so person can sanitize hand and any object without worrying about getting infected. Only solution for this pandemic situation is sanitizing hand and objects, regular checking of body temperature.

9. REFERENCES
[2] WORKING PRINCIPLE OF ARDUINO AND USING IT AS A TOOL FOR STUDY AND RESEARCH Leo Louis