

## Covid-19 Temperature Detector Mask and Maintaining Social Distance

Pradhnya Chaudhari <sup>1</sup>, Akshay Hasbe <sup>2</sup>, Ankit patil <sup>3</sup>, Trupti Agarkar <sup>4</sup>  
Ramrao Adik Institute of Tehnology, Nerul, Navi Mumbai<sup>1, 2, 3, 4</sup>

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### Abstract

Coronavirus could be a modern viral disease in people. This infection was to begin with found in Wuhan city of China in December 2019. This infection can effectively spread from human to human so worldwide crisis has been pronounced. The strategy proposed here is IOT based sensors to check whether a patient is enduring from irregular changes. Beside this, infrared temperature sensor will sense the temperature of individual and send caution to family people and government too. Besides, it'll certainly offer assistance to control this infection from spreading due to the programmed sensor location and determination framework. Modern strategy of location covid-19 fever side effects depending on IOT cloud administrations to fathom the higher time delay of checking the swarmed clients that enter open or private Offices which can lead to a perilous field to spread the malady. A naturally checking prepare is recommended utilizing the viable test is created utilizing ESP 8266, Node MCU, human body temperature sensor and IOT stage. Where Node MCU is open source equipment utilized to transmit the gotten information to the cloud stage. At that point caution the observing chief client when the collected information reach a basic esteem that indicated already an consequently take activity to illuminate this circumstance. At the same time, the cloud stage will give a graphical representation of the gotten information to show it utilizing diverse checking gadgets and sanitization framework.

**Keywords:** IoT, Covid-19, MCU

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### I. Introduction

Coronavirus spreads from human to human and also from animals. It was discovered in China. The initial symptoms are normal seasonal flu, cough or temperature. This virus has damaged almost the whole world.

The internet of things helps to automate things and give this world totally new view with the help of sensors and devices. We introduce and affordable IOT based solution as covid-19 temperature detector mask. Its aim is to increase covid-19 indoor safety. Since it is used to check the temperature of person's body. When the patient interacts with the proposed systems that will help the least interaction with the patient directly using Node MCU 8266 and send an alert. It will help to stop the spread of coronavirus as well as timely and real time detection of coronavirus detection of coronavirus. We have also added the sanitisation system for sanitizing purpose.

### Motivation

Proficient methodologies to contain the covid-19 widespread are authoritative soothe the contrarily affected open wellbeing and worldwide economy, with the total scope however to unfurl. Within the nonappearance of Profoundly Compelling drugs, immunizations and plenteous therapeutic assets, numerous measures are utilized to oversee the contamination rate and maintain a strategic distance from debilitating Restricted Clinic assets. We Design an affordable solution covid-19 temperature detector mask and hand sanitizer which is very helpful for this pandemic covid-19.

### Objective

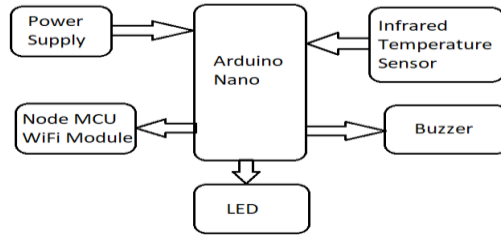
- To detect coronavirus person.
- To reduce coronavirus spreads to other people community.
- After coronavirus person detect send notification via internet of thing to responsible person.
- Corona detect using infrared temperature sensor.
- To sanitize the person.

**System Implementation**

**A. Block Diagram**

1. TEMPERATURE DETECTOR SYSTEM:

The block diagram for temperature detector system is shown as below:



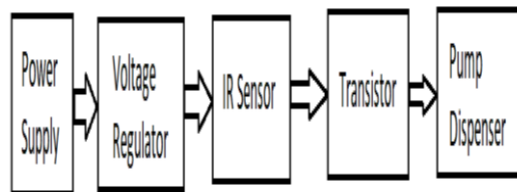
**Fig 1:** The block diagram for temperature detector system

In this block diagram we used Arduino Nano as main board of system. Infrared temperature sensor is the main input of system and Buzzer, LED, Wi-Fi module is the output part of the system and we used Battery as a power supply of the system.

Infrared temperature sensor senses the body temperature of person who comes near you and gives command to the Arduino, the Arduino gives command to output whether temperature is normal or not via LED, buzzer and the notification is send to a particular platform via Wi-Fi module.

**II. Sanitization System:**

The block diagram for sanitization system is shown as below:



**Fig 2:** The block diagram for sanitization system

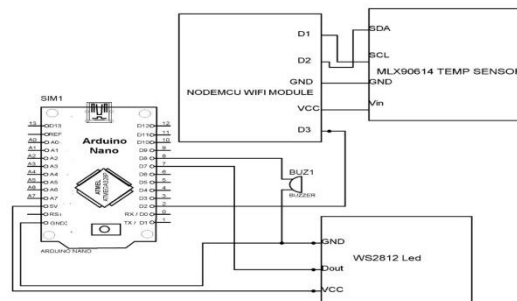
In this block diagram the main part of system is IR sensor which senses the hand is placed or not and give command to pump dispenser to spray sanitizer or not.

Battery is used as a power supply of the system and voltage regulator gives required voltage to the system, the transistor convert the signal and give to submersible dispenser pump.

**B. Schematic Design**

1. TEMPERATURE DETECTOR SYSTEM:

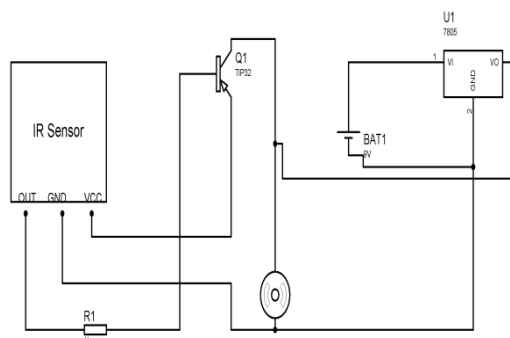
The Schematic Design for temperature detector system is shown as below:



**Fig 3:** The Schematic Design for temperature detector system.

## 2. SANITIZATION SYSTEM:

The sanitation system schematic diagram is shown as below:



**Fig 4:** The sanitation system schematic diagram

### III. Methodology

In this proposed method, we presented a safety concept in which we can save our family members and many other people from Covid-19. We found it difficult to identify a person who is a victim of Covid-19 because of having similar symptoms like many other diseases. Therefore, the purpose of the project is to build a detection system that will be able to detect the temperature and we also build the sanitation system for safety purpose.

#### 1. TEMPERATURE DETECTOR SYSTEM:

- In this system we are going to build the temperature detection system.
- We are going to build this system on a mask.
- There is detector on the mask. For detection we use infrared temperature sensor.
- An infrared temperature sensor can measure heat of an object as well as detect the motion.
- An infrared temperature sensor above the mask can detect the temperature in real time.
- The infrared temperature sensor is input of the circuit.
- On the output side we connect LED (ws2812), Buzzer and Wi-Fi module.
- If any person comes near you or your surrounding environment the mask alerts you whether the temperature of the person is high or low by emitting red or green light respectively.
- When the temperature is favorable or ideal (i.e. 37°C) body temperature the mask emits green led.
- When the temperature exceeds 38°C the mask emits red led and buzzer will ring and be accompanied by an alert, indicating that he/she is a potential risk with coronavirus, then I will advise him to go to the hospital for test and treatment.
- The information of temperature is stored via cloud computing.
- We send notification through Wi-Fi module on the site.
- Data shown over Server website like Ubidots.com. We also check reading on server & check previous history Monitoring.

#### 2. SANITIZATION SYSTEM :

- In this system we are going to build the contactless hand sanitization system using IR sensor for safety purpose.
- When hand is placed in the required distance, the IR sensor senses the signal and sends it to the transistor, the transistor amplifies the signal and switches electronic signal into electrical power, this power activates the motor to pump sanitizer.

### IV. Software Required

#### 1. Ubidots Website

We use Ubidots website for display the Sensor value. Wi-Fi module Node mcu ESP12E sends the ultrasonic sensor value to Ubidots server site, so we can access this value anywhere from the world, only both side we need internet connectivity.

## 2. **Arduino IDE**

The corona detector is simple to make and basically economical. We wanted to make it cost effective and we develop the basic sensor and easy constructed. Code is very understandable and even people having very basic programming knowledge could fix it.

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board.

### **Advantages**

1. This mask can potentially reduce the covid 19 virus transmission rate.
2. People will be relatively safer from getting infected by covid19.
3. People can be pre consult of nearby danger.
4. We can travel anywhere freely without the threat of getting infected by wearing this mask.
5. Cost effective.

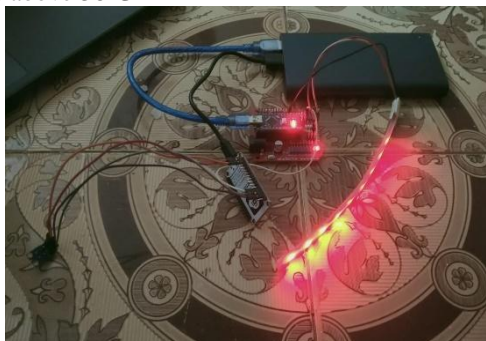
## **V. Results**

### 1. **TEMPERATURE DETECTOR SYSTEM:**

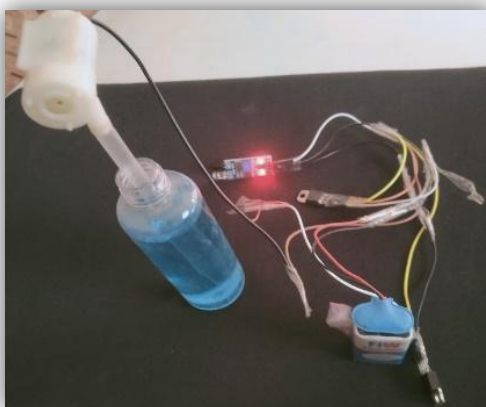
- When temperature is normal



- When Temperature rises above 38°C



### 2. **SANITIZATION SYSTEM :**



## VI. Conclusion

We introduce an affordable IOT-based solution as covid 19 temperature detector mask which is aiming to increase COVID-19 indoor safety, covering several relevant aspects: 1) contactless temperature sensing 2) mask detection 3) social distancing check. Sensor is used to check the temperature of a person's body. When the patient interacts with the proposed system that will help the least interaction with the patient directly using nodemcu8266 and send an alert. It will help in controlling the spread of this coronavirus as well as timely and real-time detection of the Corona virus. Also we developed automatic hand sanitization machine for safety purpose.

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