

Health Checking System For COVID Suspects

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Abstract

During COVID pandemic, it's always risky to go out. But since unlock has begun and our life is coming back to normal, it is more important to be careful and health cautious. While working with different people, there are always chances to come in contact with COVID suspicious person. To avoid this risk, we propose a health checking system for COVID suspect. In this, different sensors are used to measure critical parameters such as body temperature, pulse rate, SPO2 (Saturated Oxygen level). When all the parameters are within limit, system will tell to sanitize hands. Once the user takes sanitizer by pressing a button, system will open the door for 5 seconds and lock again. System will run on single phase AC supply. This system will be useful for senior citizen or at offices and schools. With the help of this system, every visitor will be monitor.

Keywords: LM35 Sensor, Pulse Rate & SPO2 Sensor, Buzzer, Hand Sanitizer Dispenser, COVID-19

1. Introduction

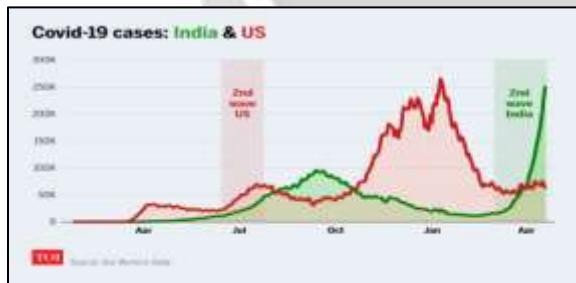


Fig. 1: India, US second Covid-19 wave compared by Times of India, Apr 20, 2021

Since December 2019 the world is under tremendous tension, the numbers are increasing day by day, and till date no vaccine has been full proved against the pandemic agent. Yes it is COVID-19, it was unknown to the race before it outbroke in Wuhan, China. Being from a large family, a continuous mutation is occurring, forbidding the researchers, microbiologist, and pharmaceuticals to draw the line of conclusion on the vaccine. Affecting the most prestigious countries in a chain; China, Italy, Spain, USA, India, Russia, [1] the virus has proved its strength and subservient a technologically enhanced race. The race of homo-sapiens. The policies taken worldwide has lesson its affect to some extent but could not eradicate it. Lockdown has economically weakened many nations, and testing of

different medicines has also not proven to be satisfactory. The question now prevail is Life vs. Livelihood. The weaker section of the society is facing the hardship due to vigorous lockdown across the nations. Seeing the picture of India, one of the most promising countries in technology, the labourers are rushing for a little piece of grain. The starving faces reveal the pain. Industries are in losses, workers are losing jobs, economic growth of the nation has taken a back seat, but it should be realised that a regular monitoring of body temperature and periodical hand sanitization can prevent the spread of the pandemic to the masses.

Keeping in mind, the situation worldwide, sanitization commodities should be installed in each and every corner of the sphere, be it an industry, a corporate office, an educational institute or an shopping mall. During COVID pandemic, it's always risky to go out. But since unlock has begun and our life is coming back to normal, it is more important to be careful and health cautious. While working with different people, there are always chances to come in contact with COVID suspicious person.

To avoid this risk, we propose a health checking system for COVID suspect. In this, different sensors are used to measure critical parameters such as body temperature, pulse rate, SPO₂ (Saturated Oxygen level). This system will be useful for senior citizen or at offices and schools. With the help of this system, every visitor will be monitor. Here automatic sanitizer dispenser is added to clean hands after test. System will run on single phase AC supply.

2.Methodology

BLOCK DIAGRAM

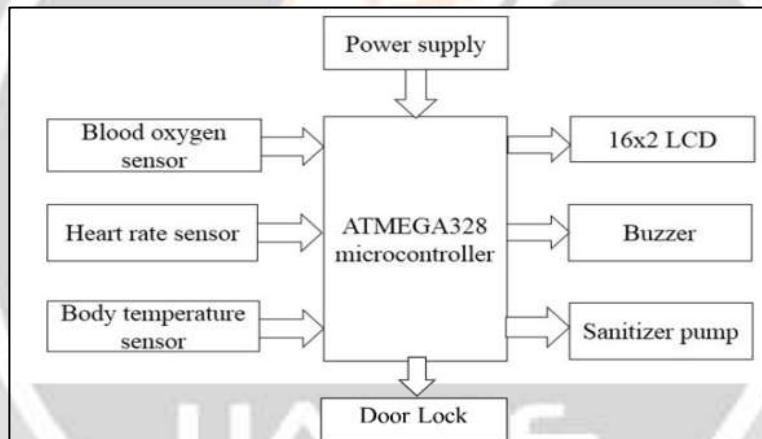


Fig.2: Block Diagram

Body parameters will be measure using different sensors like blood oxygen, heart rate, body temperature are considerable for COVID infection. To avoid this risk, we propose a health checking system for COVID suspect. In this, different sensors are used to measure critical parameters such as body temperature, pulse rate, SPO₂ (Saturated Oxygen level). With the help of this system, every visitor will be monitor. Here automatic sanitizer dispenser is added to clean hands after test. System will run on single phase AC supply.

Output of different sensors given to microcontroller. Microcontroller ATmega328 measures this parameters and displays on 16x2 LCD. Body temperature will be measured by LM35 sensor. This sensor provides analog output voltage. This will be measured by inbuilt ADC of microcontroller. Whereas, heart rate and blood oxygen is measured using MAX30100 SpO₂ sensor. This sensor communicate microcontroller using i2c communication protocol. If person has suspicious reading for COVID, system will turn on buzer. User can sanitize hands using hand sanitizer dispenser after testing.

3.Result:

It must be helpful to detect theCOVID suspect.

It should operate 24x7. It is low cost solution to make the surrounding safe.

4. CONCLUSION:

In this project by considering all the situations and possibility, we decided the specification for project and chosen components and sensors which are helping to achieve the desire target. Though, design of circuit is critical due to non-availability of some of module in Protius software. Whereas due to the use of Arduino development tools, reduce difficulties during programming & troubleshooting was reduced.

We believe that after installation of this project, it will help to reduce the spreading of COVID by detecting suspects on the basis of body temperature and blood oxygen level of every person.

5. References:

- ▶ 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
- ▶ Munmun Das, Lovely Gaur, Pranav Chavan, “IOT Based Temperature Scanning Entry System”, International Journal of Advanced Research in Computer and Communication Engineering, May 2021.
- ▶ Abdullah Al Mamun, Mohammad Alamgir Hossain, Muntasir Rahman, “Design and Development of Arduino Based Contactless Thermometer”, IITM Journal of Management and IT, June 2020.
- ▶ EnerstEdozie, WantimbaJanat, ZainaKalyankolo, “Design and Implementation of a Smart Hand Sanitizer Dispenser with Door Controller using ATMEGA328P”, International Journal of Engineering and Information Systems (IJE AIS), June 2020.
- ▶ “Cleaning and disinfection of environmental surfaces in the context of COVID-19”, Interim guidance by World Health Organization, 15 May 2020.