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RESEARCH ARTICLE OPEN ACCESS

Wearable Band for COVID Health Monitoring

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ABSTRACT: -
Wearable band plays a very significant role in our daily life as well as in the healthcare industry. This wearable device suitable for monitoring the populations at risk and those who are in quarantine, for evaluating the health status of caregivers and management member of corporation. This wearable band has a option for tracking patient location. The reason for tracking patient is, if a person moves from one place to another, there is a chance of spreading of virus. This band contains sensors and also linked with adhar id and bank account, the amount is debited from the account if in case, the person moves to another location. And the patient information is maintained by the concerned health worker. In this way we can avoid spreading of COVID-19.

I. INTRODUCTION: -

Corona virus diseases 2019(COVID-19) has emerged as pandemic with serious clinical manifestations including death. A pandemic at the large-scale like COVID-19 places extraordinary demands on the world's health systems dramatically devastates vulnerable population, and critically threatens the global communities in an unprecedental way. While tremendous efforts at the frontline are placed on detecting the virus, providing treatment and developing vaccines, it is also critically important to check the technologies and systems for tracking disease emergence, arresting its spread and especially the strategy for diseases cure.

II. LITERATURE SURVEY: -

As many People are suffering from COVID-19 in order to come up with solution in
In [1] Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is of great cover. As of April 19, 2020, the number of confirmed COVID-19 cases had passed 2 160 000 worldwide (World Health Organization, 2020).More than 82 000 cases had been confirmed and more than 4600 patients had died in China. At present, the breakout in China has been essentially controlled. More than 100 countries worldwide are now facing and dealing with the COVID-19 epidemic, including the United States, Spain, Italy, Germany, Iran, France, the United Kingdom, and South Korea.

In [2] Only 3 cases of coronavirus disease 2019 (COVID-19) were identified in Italy in the first half of February 2020 and all engagedout people who had newly pre traveled to China.On February 20, 2020, a severe case of pneumonia due to SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) was diagnosed in northern Italy's Lombardy region in a man in his 30s who had no history of possible exposure in other counties. Within 14 days, many other cases of COVID-19 in the surrounding area were diagnosed, including a substantial number of critically ill patients.

In [3] Coronavirus disease 2019 (COVID-19) has emerged as a pandemic with serious clinical manifestations including death. A pandemic at the large-scale like COVID-19 places extraordinary demands on the world's health systems, dramatically devastates vulnerable populations, and critically threatens the global communities in an unprecedented way.While tremendous efforts at the frontline are placed on detecting the virus, providing treatments and developing vaccines, it is also critically important to converse about the technologies and systems for tracking disease emergence, arresting its spread and especially the strategy for diseases prohibition

In [4] In this article the prospects and possibilities for creating an individual wearable system for monitoring the condition of a patient suffering from COVID-19 and preventing attacks of the disease are discussed. As the basic method of determining the condition of the patient is considered the technique for determining the transmission coefficient of a certain frequency microwave signal through the chest.The proposed model is non-invasive and harmless and can be used for patients of all age groups.

III. PROBLEM STATEMENT:

To develop a system that can detect a person's body temperature and pulse rate through the sensors and deliver the information regarding the same for the concern health worker.

IV. OBJECTIVES:

- To design a system that can control spreading of COVID-19.
- To design a system that can track the information of the patient if the person moves from one place to another.
- To develop a device which can ideally be integrated with an alarm to remind the patients to take their medication.
- To provide a information of person's body temperature and pulse rate by using the sensors.

V. IMPLEMENTATION:

Input Module:

Sensor Module:

In this Module Data from sensors has been received and given as an input to controller. We Use Temperature and oxygen sensor for reading patient body temperature and oxygen levels.

Processor Module:

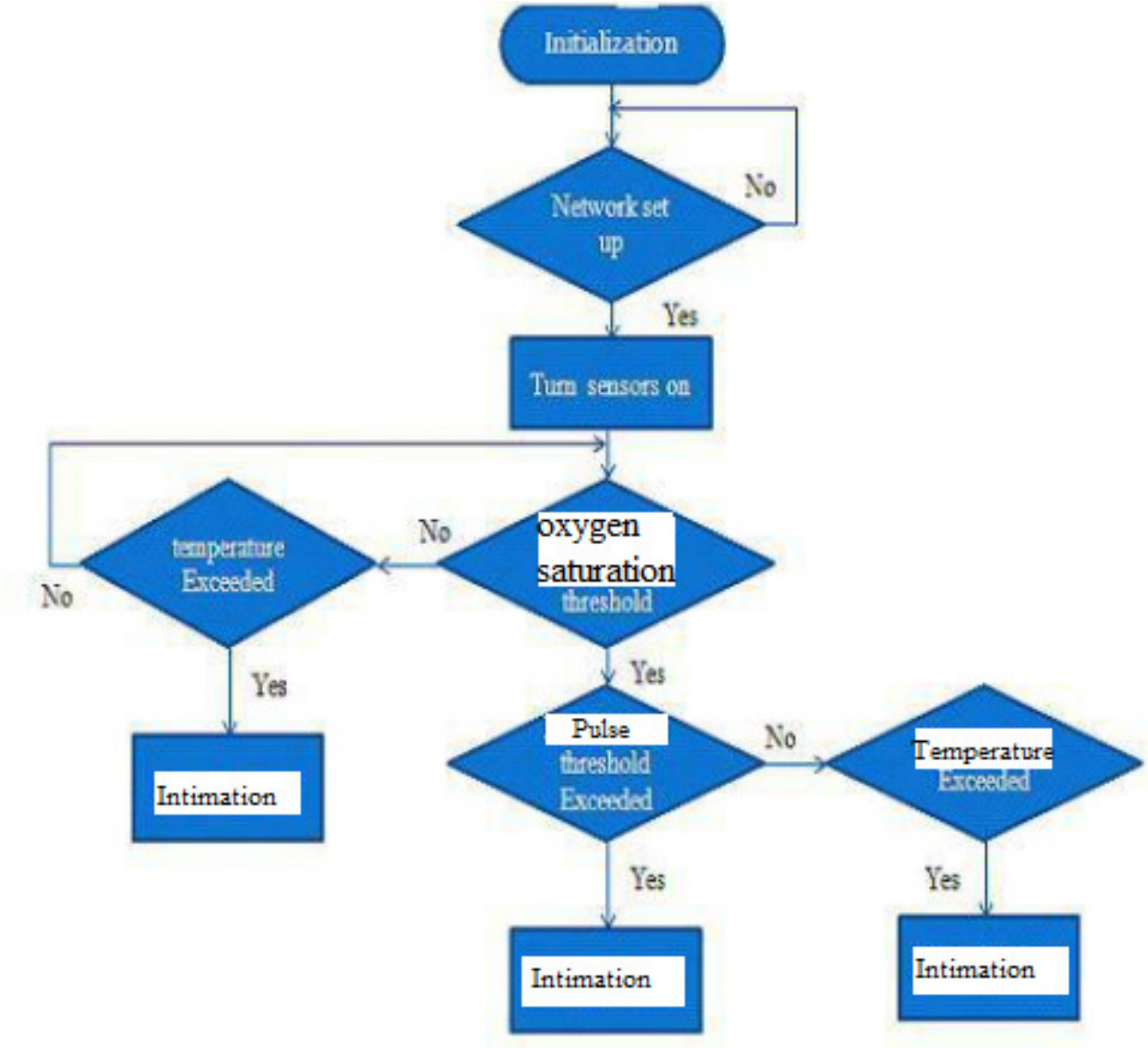
Arduino Module:

This is the main module of the whole project. We use Arduino nano as the processor because of its compactness. Processors receive data from sensors and process it and connect to Wi-Fi module for updating to hospitals and caretaker for emergency responses.

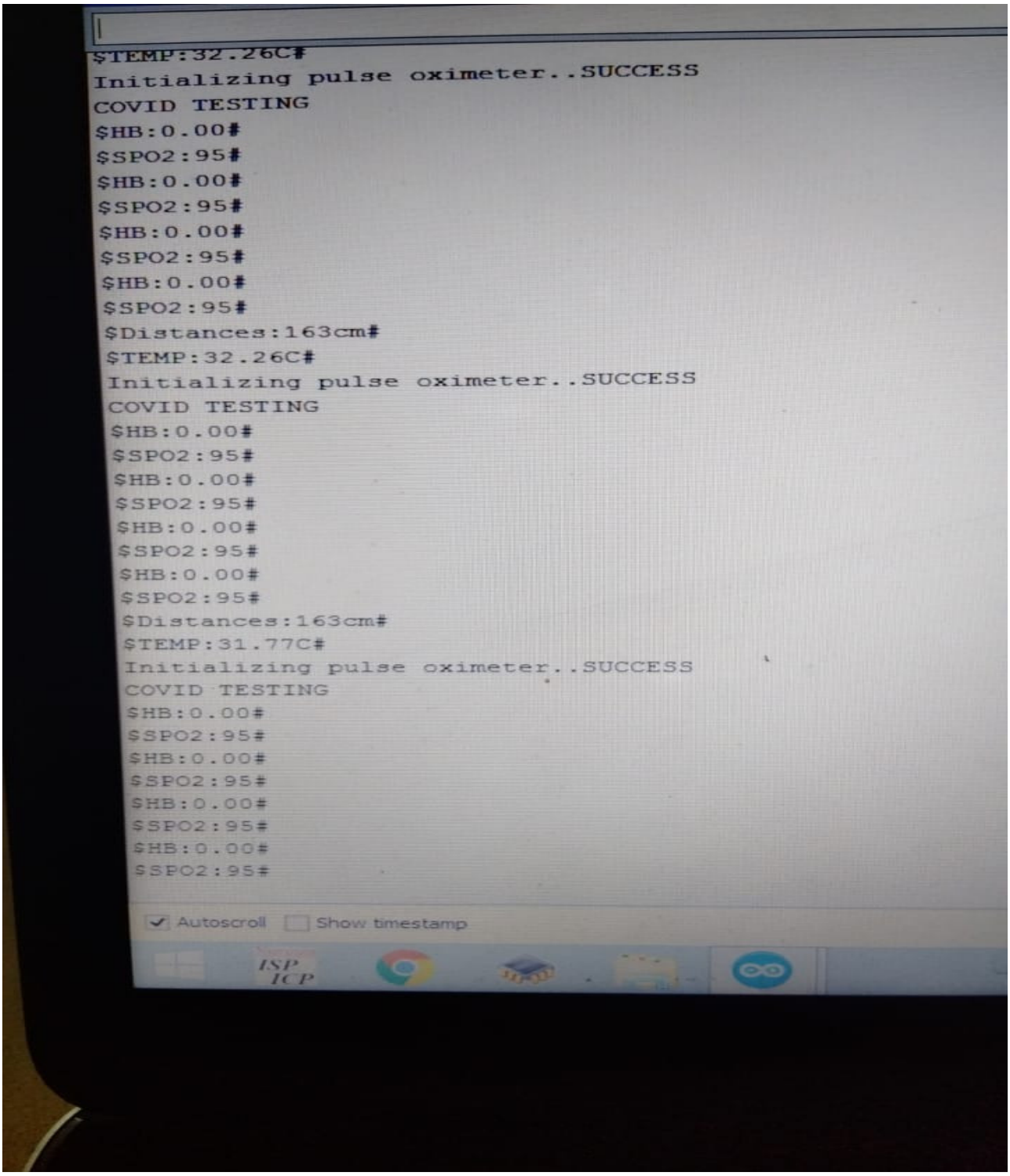
Output Module:

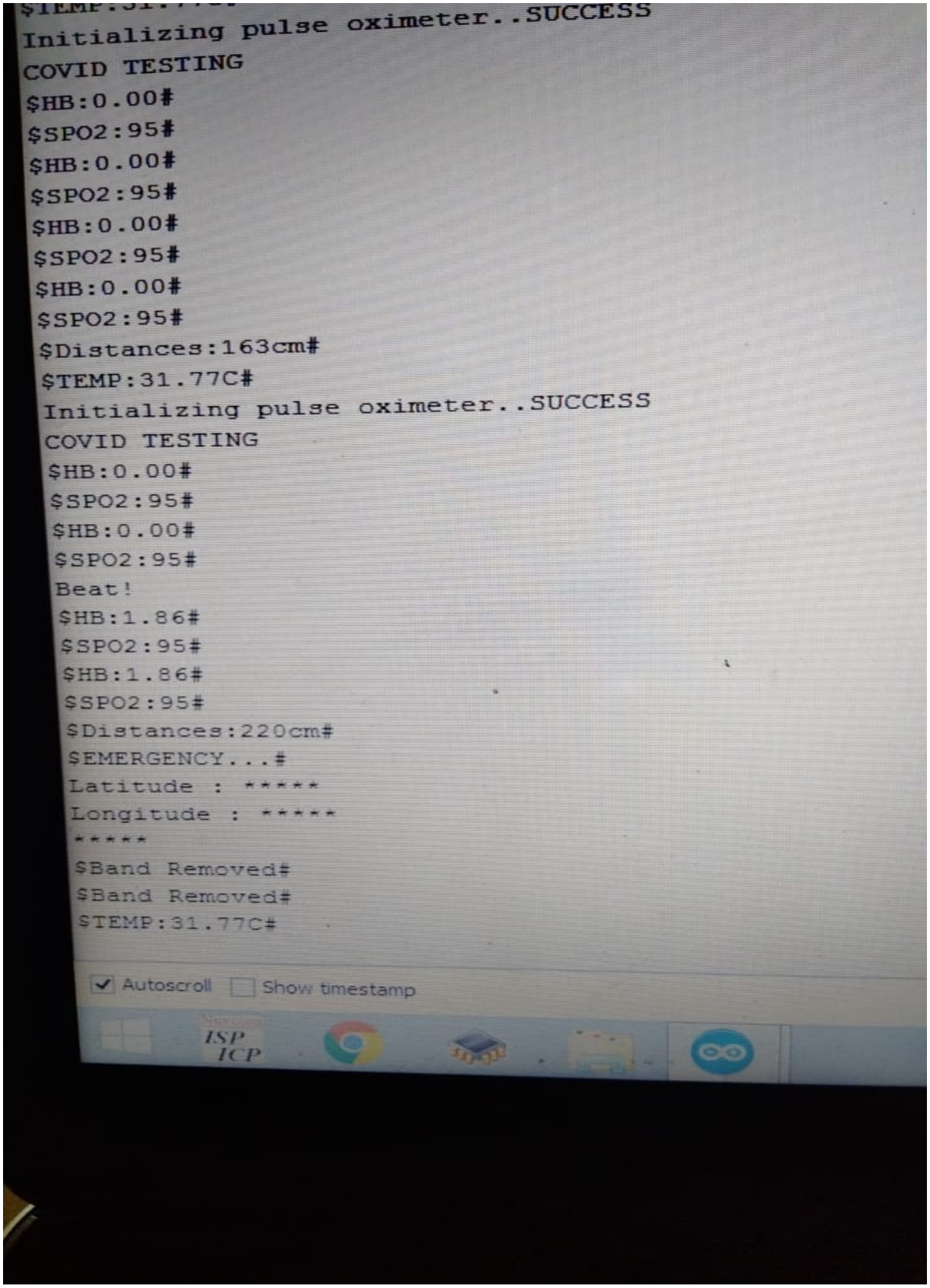
In this module we use Wi-Fi module for connecting to internet and update it to user. Here we used ESP Wi-Fi module for IOT Connectivity. User Intimations will be through Telegram Application and IOT will be achieved in this module.

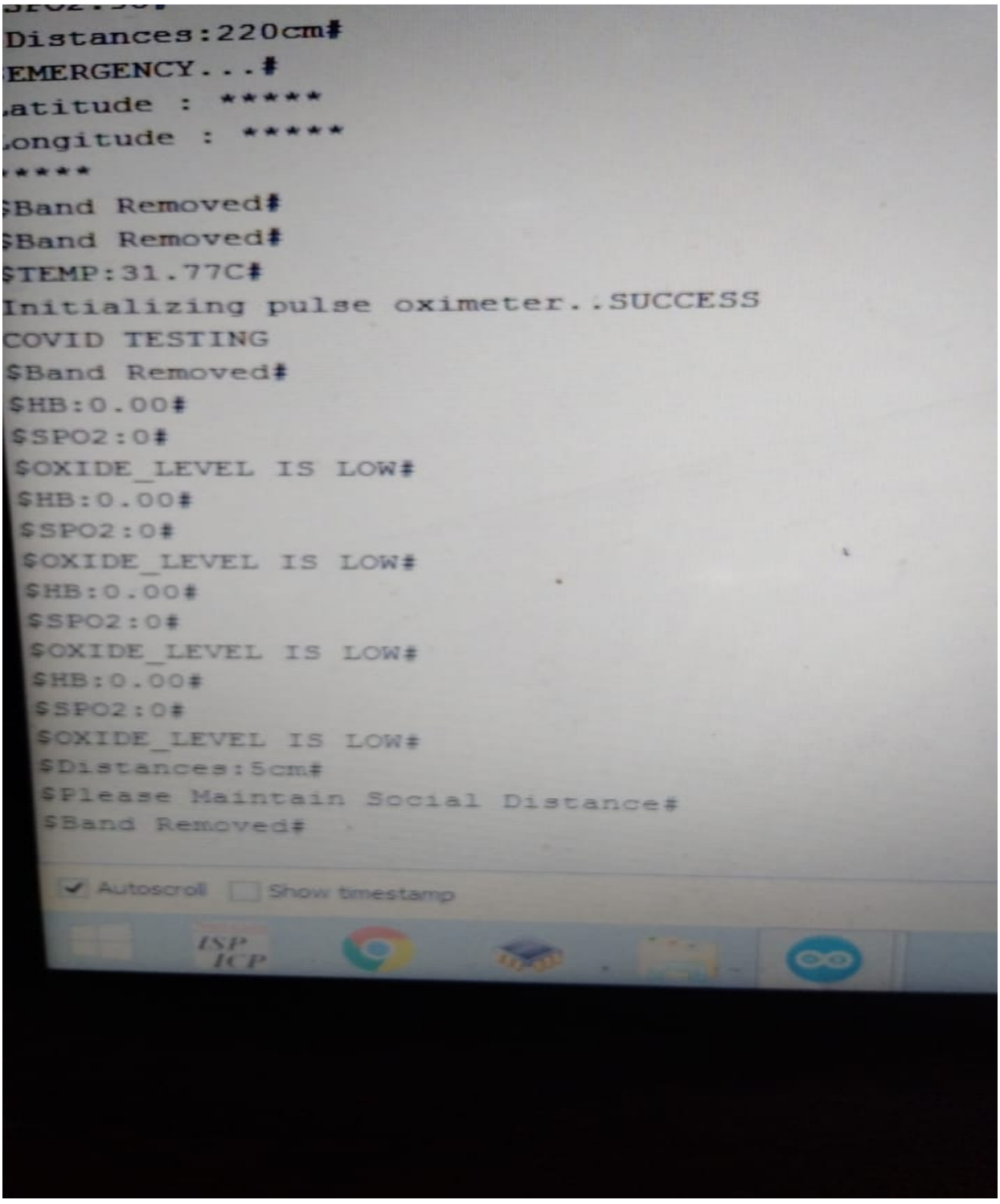
VI. DESIGN (FLOW DIAGRAM):



VII. RESULTS: -







VIII. CONCLUSION: -

The proposed IOT -based system can play a significant role in saving lives and be of great service in the health sector. It can be an excellent asset for healthcare professionals and the authorities to confront the virus. Infected and suspected cases can also get the necessary healthcare and can be adequately monitored by this system. As physical distance can be maintained with the help of the system while providing treatment, the risk of healthcare service providers to get infected from treating any patient can be reduced. From march-2020 many countries are suffering from COVID-19 till now. So, India has come up with the vaccine named **COVAX,** India's indigenous COVID-19 vaccine is developed and manufactured in Bharat Biotech's and also collaboration with Indian Council of Medical Research (ICMR). Till now only 30% of Indian population is vaccinated. In order to get through the 3rd wave of COVID-19 all the Indian population must be vaccinated. By vaccinating and using the COVID wearable band we can reduce the spread of COVID-19.

RESULTS AND DISCUSSION: -

The system helps to reduce the spread of COVID- 19 We use a band called "VARIABLE BAND".
The Arduino board is connected to PC through USB cable. We use a software called ARDUINO Ide When patient wores the band it starts initializing and displays patients' health details like body temperature,detectingheartbeat, oxygen level and track the location of the patients through General packet radio service (GPRS). There are ultra-sensors, emergency switch these are connected to Arduino board. If we don't maintain 60m then it displays a message called "MAINTAIN SOCIAL DISTANCE" is detected by ultra-sonic sensors. If the patient doesn't wear a band, then it display's a message as "BAND REMOVED".

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