1. INTRODUCTION

1.1 Purpose

The objective of this project is to develop a Wristband with Live Tracking and medical assistance of covid infected people so that others can prevent themselves from getting infected. In case of emergency the people under home quarantine can also inform the health department just by pressing a button and get emergency medical support. By pressing the button, a message will be delivered to health department and nearby hospitals, so that an ambulance can be send to the patient's location. They will also get an alert whenever they violate social distancing. In case they violate quarantine rules, the health department will get notification that they have violated the rules and their root map along with information on how many times they have violated social distancing rules can be acquired.

1.2 Project/Product scope

This Wristband can also be used by general public, so that whenever they leave their home they will get an alert signal when they are near to any patient who violated the home quarantine are near to them. In addition this Wristband will also give a reminder to wear a mask and gets a reminder to use sanitizer when they reach home. This project can also be expanded to develop a mobile application for the use of public, so that non-infected people.

Following the COVID-19 outbreak, social distancing has become a part of daily life for many. The importance of keeping a safe distance between people to contain the COVID-19 pandemic is frequently emphasized. The prototype will be a useful and cost-efficient solution to help people respect social distancing rules during work and other activities, particularly when lockdown restrictions are gradually lifted in countries.

2. OVERALL DESCRIPTION

2.1 Product Perspective

2.2 Product Features and Functions

Features of the product :-

- ➢ SOS button
- ➢ GPS tracking system
- ➢ Body temperature sensor
- ➢ Communication system

The product will be capable of performing the following functions :-

- ➢ Wristband with Live Tracking and medical assistance of covid infected people. Live tracking of the user from a server station such as health department. In case person under observation/quarantine violates the quarantine rules and goes beyond the place of quarantine, the health officials will get an alert message.
- ➢ The people under home quarantine can also inform the health centre just by pressing a button (SOS button) and get emergency support if the victim is in critical health condition.

➢ When people goes to public places they will get an alarm signal if they violate social distancing limit. If they are at a distance less than the safe limit from other people the Wristband will give an alarm signal.

➢ In case they violate quarantine rules, the health department will get notification that they have violated the rules and their root map along with information on how many times they have violated social distancing rules can be acquired.

➢ In addition this Wristband will also give a remainder to wear a mask when they go outside home and gets a remainder to use sanitizer when they reach home.

2.3 User classes and characteristics

➢ Health department

❖ They can track the location of quarantine people from a server station.

❖ They can also get the current status of quarantine peoples.

❖ Health officials get an alert message when the people under home quarantine violate quarantine rules.

❖ Also get their root map along with information on how many times they have violated social distancing rules can be acquired.

❖ They can control over the server station by alerting a message to quarantine people for the medical assistance such as remainder for medicines, tabs etc..

➢ People under home quarantine

❖ They can inform the health centre just by pressing a button and get emergency support if the victim is in critical health condition.

❖ They can access the alert message from the health department.

2.4 Operating Environment

Platform for coding and insertion of cloud data

- ➢ Arduino IDE

Wi-Fi Development Board

- ➢ NODEMCU – ESP8266

  - ❖ ESP8266 12-E NodeMCU Kit

- ➢ Location Tracking system

  - ❖ GPS Module
  - ❖ GSM Module
  - ❖ Arduino Uno

- ➢ Sensor system

  - ❖ BME280 sensor module (Read pressure, temperature, humidity and estimate altitude)

- ➢ SOS Button

  - ❖ ESP8266 based Panic Button

3. EXTERNAL INTERFACE REQUIREMENTS

3.1 External Interface and Functional Requirements

- ➢ The device is comfortable enough for patients to wear day n night without noticing it.

- ➢ If the user took the device off alerting the hospital in this case.

- ➢ The design of wristband is very interactive to the users.

- ➢ Wristband held device monitors the patient's vital and geolocation caring for their safety while the fight the virus within the constraints of their home.

➢ The temperature and heart rate sensor collecting crucial information about the patient health.

➢ The device will also track the users location ensuring that they are at home at all time.

➢ All of the data is centralised in a scalable database.

➢ The hospital will have access to dashboard where they will be able to see the health of all patients being monitored.

➢ The patient also has access to a mobile dashboard showing them their heart rate and temperature as well as when they will need to change
their wristband .

➢ Emergency alert button is work for immediate medical assistance.

➢ This device is also helpful to non-victims by alarming them to keep social distancing n reminds them to use sanitizer and mask.