International Journal of Advances in Engineering and Management (IJAEM)
Volume 3, Issue 7 July 2021, pp: 3213-3215 www.ijaem.net ISSN: 2395-5252

Iot Based Viral Flue Control System

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Submitted: 15-07-2021 Revised: 25-07-2021 Accepted: 28-07-2021

ABSTRACT -The people through out the globe need to be protected from COVID-19 by breaking the corona chain. This is only possible by preventing the infected people entering in to crowded places like school and colleges , IT sectors and industries , Govt offices .Despite of many precautionary measures taken by the government for prevention of corona the support from the people is very less . Variation in the human body temperature or high raise in the human body temperature is one and only, very primary and easily detectable symptom of corona virus. Even though COVID-19 may not be detected from body temperature change its symptom may be detected.This paper suggests a mask and human body temperature detection and sanitization along with smart gatesystem for the primary identification and breaking of COVID chain.It can be widely used in all public sector.This project does not need any manual assistance and is capable of accurately performing it's task of maintain a proper datasheet of person and his body temperature details..

Key Words: Rassperry pi, Aurdino uno,PI camera,LED display ,Buzzer, Servo motor ,Sensors;

I. INTRODUCTION

The Raspberry pi based face mask detection along with arduino based smart gate and sanitization system is a rising technology that is anticipated to contribute an extensive range of healthcare applications.This brings remarkable advantages for state in controlling the social gathering and monitoring covid effect people. Raspberry pi is utilized to moniter facemask of every individual and gives a warning through buzzer in the absence of face mask .The programing language used in image processing by Raspberry pi is Python along with Open cv.The Raspberry Pi features a fanatical camera input port that allows users to record HD video and high-resolution photos.The Arduino is utilized in scanning human body temperature through mlx90614 sensor and obtaining his data through RFID Reader. The temperature reading of every individual along with his details would be stored in a excel sheet. Only after the detection of normal body temperature he would be allowed in

II. PROPOSEDARCHITECTURE

2.1 Raspberry Pi 3

IT is a coffee cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a typical keyboard and mouse. It is a capable little device that permits people of all ages to explore computing, and to find out the way to program in languages like Scratch and Python. It's can do everything you'd expect a personal computer to try to ,from browsing the web and playing HD video, to creating spreadsheetsand playing games. The Raspberry Pi may be a rock bottom computer that runs Linux, but it also provides a group of GPIO (general purpose input/output) pins that allow you to regulate electronic components for physical computing and explore the web of Things .

2.2Arduino uno

It is an open-source microcontroller board supported the Microchip ATmega328P microcontroller and developed by Arduino.cc.The board is given sets of digital and analog input/output (I/O) pins which can be interfaced to varied expansion boards (shields) and other circuits. The board has 14 digital Input/output pins (six capable of PWM output), 6 analog I/O pins, and is programmable with the Arduino IDE (Integrated Development Environment), via a sort B USB cable.It are often powered by the USB cable or by an external 9-volt battery, though it accepts voltages between 7 and 20 volts. it's almost just like the Arduino Nano and Leonardo. Layout and production files for a couple of versions of the

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hardware are also available.

2.3 PI camera

It tends to be utilized to take top quality video, and in addition, stills photos. It underpins 1080p30, 720p60, and VGA90 video modes, and still capture. It appends by means of a15cm lace link to the CSI port on the Raspberry Pi.

2.4 Buzzer

A Buzzer is a electronic device which makes a beeping noise. Buzzer include alram devices,timers,and confirmation of user input such as a mouse click or keystroke.

2.5 Servo motor

Servos are controlled by sending an electric pulse of variable width, or pulse width modulation (PWM), through the control wire. It can only rotate 90° in either direction for a total of 180° movement.

2.6 Temerature Sensor

The MLX90614 it can be defined as acontactless IR digital temperature sensor,that uses IR rays to measure the temperature of the object without any physical contact and communicates to the microcontroller using the I2C protocol. Operating Voltage 3.6V to 5V.It can measure temperature in range of -20 to 120°C.

2.7 RFID Reader

Radio –frequency identification reader leverages radio waves to transfer data from RFID chips to the reader,it is used to gather information from RFID tag and hence track indivisual object. There is no need to can RFID tag directly nor thus it require line-of-sight to a reader.

2.8 IR sensor module

An infrared sensor is one of the basic and very popular sensor module in an electronics device as well as electronics filed. this sensor can be used to detect obstacles and it is one of the common application in the real time. This sensor comprise of the following componentssuch as LM358 IC2 IR transmitter and receiver pair, Resistors of the range of kilo ohms,Variable resistors,LED light emitting diode.

2.9 LED display

A light emmiting diode(LED) display is a leveled surface panel display that uses an array of light-emitting diodes as pixels for a display screen. Their brightness allows them to be used outdoors where they're visible within the sun for store signs and billboards. LEDs are flat panel displays that emit light when an electrical current passes through the sunshine emitting diodes. Light-emitting diodes came into existence in 1962 and were primarily red in color for the primary decade.

III. IMPLEMENTATION ANDWORKING

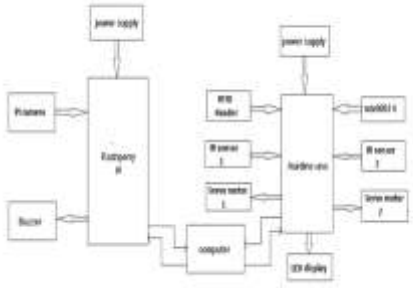

Fig 1: Block diagram

The system consists of various modules such as Pi camera and buzzer interfaced with Rashperry Pi and RFID Reader, IR sensor ,Servo motor mlx90614 and LED with Arduino Uno Board. Our proposed system for breaking Covid chain is a IOT based viral flue control system ; it has the ability to detect face mask of an individual through image processing and giving warning beep sound in its absence, it scans the body temperature of and stores the temperature reading , it also consists of smart sanitation system . In the case of absence of face mask, a warning beep sound is given and in the case of extremely high body temperature access would be denied.When a person goes through system, the pi came scans his face for mask, only on the absence of the buzzer gives a warning beep sound. Next the Human body temperature and his details are identified using mlx90614 sensor and RFID Reader on the basis of data extracted his entry is allowed or prohibited. The system also consists of a smart sanitation system. The system consists of embedded hardware and software co- designed for this dedicated application and support various features.

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IV. EXPECTED OUTCOME

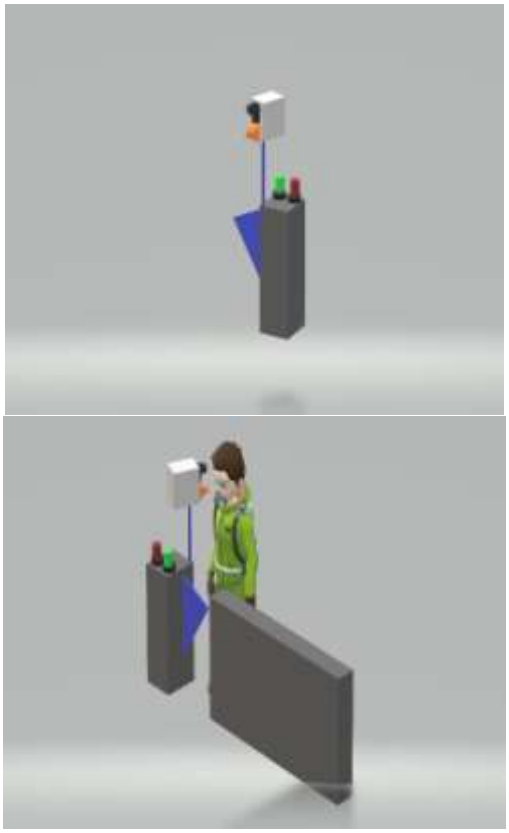

Fig2 : IOT based viral flue control system

The proposed design will help the people in early detection of the Covid-19. The use of 'IOT viral flue control system' would not only automate the covid 19 detection task but avoid the reversing of considerable work force by manually checking defaulters rather than manual checks. In the project, the outputs of the temperature sensor mlx90614 and scaned data of RFID Reader will be used to monitor the body temperature of the infected individuals. And these values would be stored in excel sheet , from which the doctor would be able to access the patient's medical history upon need.

V. APPLICATIONS:

- Railways Entry.
- Airport Entry.
- Offices Entry.
- Schooln colleges..
- Museums and Amusement Parks Other Public Places.

VI. ADVANTAGES

- Full Automatic Detection
- Automatic Operation

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