CONTACTLESS TEMPERATURE DETECTOR FOR COVID SAFETY

K. Aparna, S.Mahammad Irfan, S. Sandeep kumar, D. Thanuha

JNTUA COLLEGE OF ENGINEERING, KALIKIRI.

aparna.ece@jntua.ac.in, irfanmahammad678@gmail.com, dthanuha@gmail.com

Abstract— **A low-cost COVID19 Standard Operating Procedures (SOP) compliance system that counts the number of people entering and exiting the neighborhood ensures physical distancing and detection of violations Face mask administrators The system consists of several sensor nodes that communicate with a central server stored on the server are often used for compliance audits, real-time monitoring and planning purposes. The system does not record attendees' private information, nor does it provide contact tracking information.**
In the wake of the COVID19 pandemic, preventing and or limiting the spread of the virus in the community is a gigantic task with governments and administrations around the world using different strategies to limit population movement and social interaction..

Keywords— MicroController, Temperature Detector, LDR system etc..,

I. INTRODUCTION

In this proposed work we implemented the non-contact temperature detector with the help of a microcontroller. With a view to the pandemic, we have developed a contactless temperature detector and a front door drive for Covid security. The first strategy to control the virus is to restrict the population's freedom of movement. and social interactions. The main reason for the proposed system is to build a room where the necessary precautions are taken to prevent the transmission of the virus and only allow a certain number of people to enter the room. To prevent the virus from spreading while people are socially interacting, this method is helpful.

EMBEDDED SYSTEM IMPLEMENTATION

A. INTRODUCTION

An embedded system is an entire computer system that is primarily intended to perform various tasks that want to access, process, store and also control information in various electronic systems. Embedded systems are a mixture of hardware and software, with the Software is commonly referred to as firmware. Which is integrated into the hardware. One of the

most important features of these systems is that it delivers the O / P on time. Support embedded systems to make work more seamless and convenient. Therefore, we often use embedded systems in simple and complex systems. Devices too. Embedded system applications mainly cover our real world for various devices like microwave, calculator, TV remote control, home security and neighborhood control systems, etc.

B. Bringing software and hardware together for embedded system

To make software program to paintings with embedded structures we want to convey software program and hardware collectively .for this cause we want to burn our supply code into microprocessor or microcontroller that's a hardware issue and which looks after all operations to be accomplished with the aid of using embedded device in keeping with our code. Generally we write supply codes for embedded structures in programming language, however the processors run most effective executable documents. The method of changing the ASCII textual content report illustration of your embedded software program into an executable binary picture includes 3

awesome steps:

1. Each of the supply documents need to be compiled or assembled into an item report.

2. All of the item documents that end result from step one need to be connected collectively to supply a unmarried item report, called the relocatable program.

3. Physical reminiscence addresses need to be assigned to the relative offsets inside the relocatable application in the course of a method known as relocation.

The end result of the very last step is a report containing an executable binary picture that is prepared to run at the embedded device.

C. Implementation flow

Level 1:

Consideration of the problems of the existing procedures and solution of the problem taking into account the essential requirements for our proposed system.

Level 2:

Consideration of the hardware requirements for the proposed system For this purpose, we would like to select the following components:

1. Microcontroller

2. inputs for the proposed system

E.g.: sensors, controllers, etc.

3. Outputs (EG: relays, loads)

Level 3:

After considering the hardware requirements, we would now like to take a look at the software requirements. Depending on the selected microcontroller, there is different software for coding, compiling and debugging. We need to write an ASCII text file for the proposed system that will support our needs, and compile and debug the code in the software. Now that we've met all the software and hardware requirements, we need to link the two together in order for them to work on our system. For this we would like to record our ASCII text file on the microcontroller, after you have recorded our ASCII text file on the microcontroller, please connect all input and output modules according to our requirements.

D. Existing Method :

In the existing system, a heat detector gun or Thermopylae is used to sense the person's temperature, but a person is required to carry it, and here the contact between the person is almost 35 cm to get around the Check temperature. There is a possibility of virus transmission through contact between them.

DRAWBACKS FOR EXISTING METHOD :

4. Method not exactly

4. **Possibility of virus transmission.**

D. **Proposed system:**

In order to overcome the disadvantages of the existing system, we are carrying out a project with microcontroller and embedded systems in which we use a laser diode and a receiver to detect the Entry of a Person When the system detects entry, it checks the person's temperature. If the recorded temperature is lower than the specified temperature, the person is admitted, otherwise entry is denied.
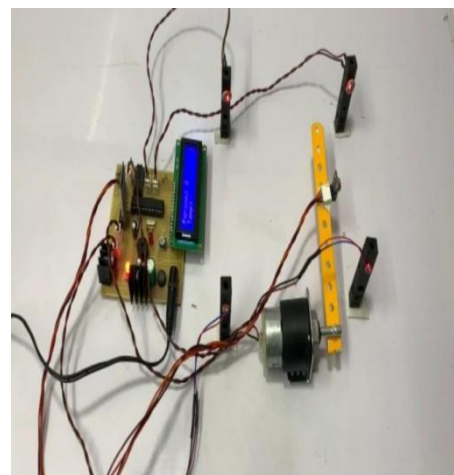
I. ADVANTAGES AND PPLICATIONS

A. Advantages

1. Prevents the transmission of the coronavirus

2. Automatic temperature detection

3. High security

B. Applications

1. Can be used at office entrances.
2. This system can be used in hotel and restaurant Tickets
3. Other public events.

II. HARDWARE AND OFTWARE REQUIREMENTS

A. Hardware Requirements

1. ARDUINO:

The Arduino microcontroller is an easy to apply but effective unmarried board laptop that has received vast traction inside the interest and export market. The Arduino is open-supply, which shows hardware within reason priced and improvement software


2.ATMEGA328p

ATmega48PA/88PA/168PA/328P is likewise a low-electricity 8-bit CMOS microcontroller like-minded with AVR Advanced RISC structure.

ATmega48PA/88PA/168PA/328P is based on effective commands from the

program is free. The energy of the Arduino isn't always its cap potential to crunch code, however as an alternative it's cap potential to have interaction with the out of doors global via its input-output (I/O) pins. The Arduino has 14 virtual I/O pins classified zero to thirteen for you to be wont to show automobiles and lighting fixtures on and rancid and read the kingdom of switches. Each virtual pin can sink or supply approximately forty ma of current. This is extra than ok for interfacing to maximum gadgets, however does imply that interface circuits are hard to modify gadgets apart from easy LED's.

This is what the Arduino board looks like. demise penalty within clock cycles to reap almost 1 unit according to MC performance, permitting the machine to optimize electricity intake in line with processing speed. AVR middle combines superior coaching set and 2 widespread operation registers. All 32 registers are at once linked to the mathematics good judgment unit (ALU), which permits impartial registers to be accessed in a single idle coaching in every clock cycle. The ensuing structure is reasonably-priced add-on code, and its throughput is 10 instances that of a widespread CISC microcontroller.

BLOCK DIAGRAM:
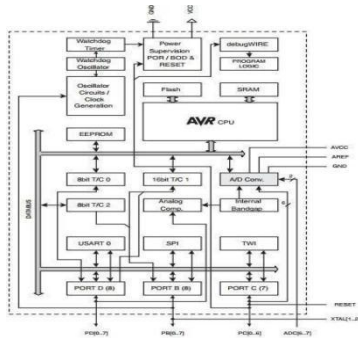
3:Power supply:
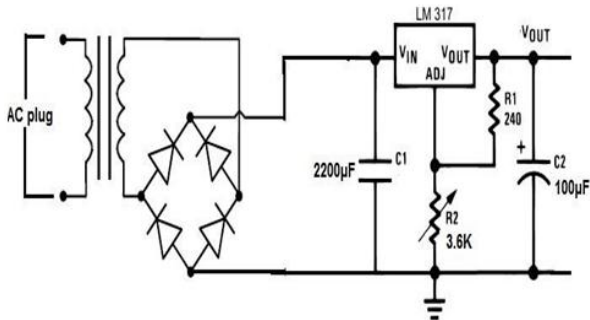
A power offer unit could be a part that provides a minimum of one electrical shopper with power. It always converts one variety of current to another, however it may convert another style of energy into electrical energy, for example B. solar, mechanical or chemical energy. An influence supply unit supplies the elements with power. typically, the term refers to the devices that are designed into the component being powered. Pc power supplies, for example, convert electrical energy into electrical energy and are usually situated in conjunction with at least

one fan on the back. Most computer power supplies also have a voltage switch at the input, which, reckoning on the geographical location, is one hundred ten V / a hundred and fifteen V or 220 V / 240 V. thanks to varied} voltages equipped by the sockets within the various countries, this switch position is decisive.

LDR SYSTEM:

A light-dependent resistor (also known as a photoresist or LDR) is a device whose resistivity is a function of the electromagnetic radiation it receives. When light falls, ie when photons fall on the device, the electrons are in the band of the semiconductor valence. The material is excited to the conduction band. These photons in the incident light must have an energy that is greater than the forbidden band of the semiconductor material for electrons to jump from the valence band into the conduction band. So if light with sufficient energy hits the device, more and more electrons are excited in the conduction band, which leads to a large number of charge carriers. The result of this process is that when the circuit is closed, more and more current begins to flow through the device and therefore the

resistance of the device is said to have decreased. This is the most common LDR working rule.

Software Requirements Arduino IDE:

Arduino IDE, where IDE stands for Integrated Development Environment, political software introduced by Arduino.cc that is mainly used for writing, compiling and loading the code in the Arduino device. Almost all Arduino modules are compatible with this software, the code is open and readily available to install and compile code in a snap.

Introduction to Arduino IDE:

• Arduino IDE is open source software, mainly used for writing and compiling the code in the Arduino module.

• It's official Arduino software that makes compiling the code too easy, even for a normal person with no technical knowledge, to get wet feet during the learning process.

• It is available for operating systems such as MAC, Windows, and Linux and runs on the Java platform, which has built-in commands and functions that play an important role in debugging, editing, and compiling code in the environment.

• A range of Arduino modules available including Arduino, Arduino

Mega, Arduino Leonardo, Arduino Micro and many more.

• Each of them contains a microcontroller on the board that is actually programmed and receives the information in the form of a code.

• The main code created in the IDE platform, also known as a sketch, finally generates a hexadecimal file which is then transferred and loaded into the board's controller.

• The IDE environment mainly consists of two basic parts: editor and compiler, the first is used to write the necessary code and then compile the code and load it into the specified Arduino module.

• This environment is compatible with the C and C ++ languages.

III. CONCLUSION

An effective resolution to make sure COVID-19 safety compliance is given during this work. The system depends on open supply software system and wide out their sensors to create a coffee price and simple to put together and customize set up. It relays helpful period of time info wirelessly to a dashboard, which may be wont to monitor and assist in COVID-19 SOP. The system is presently restricted to entry level scanning. Future efforts are targeted to expand the detection for the

entire floor area, contact tracing, and support for added queues. The system are often extended simply with tokenism time and is quickly pliant to totally different situations.

IV. FUTURE SCOPE

Future efforts might be centered to enlarge the detection for the whole ground area, touch tracing, and guide for extra queues. The device may be prolonged without difficulty with minimum time and is fast adaptable to one of a kind situations.

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