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# IoT Based Open and Close Door Using Temperature Sensor

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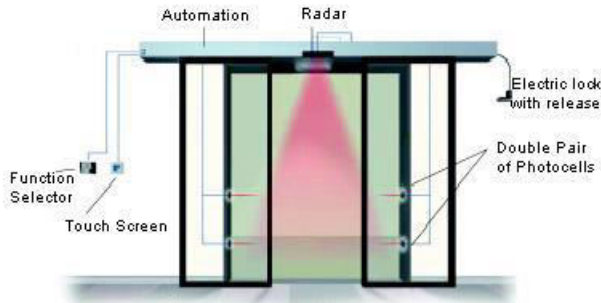
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**ABSTRACT:** Temperature is a very important indicator of a person's body's control system if this rise to a certain level can be dangerous because the temperature supports the entire body's immune system, and supports the healing process. However, high temperatures cause significant reactions in the human body. Therefore, in this paper, the authors propose a non-invasive communication algorithm based on thermography analysis. The purpose of developing this program is to provide body balance without interruption. In this proposed method the viola jones algorithm is used to detect faces in video streaming. In addition, since the temperature will not change in a few seconds, so instead of measuring the surface temperature of each frame, the authors have developed an algorithm that selects the best frame that contains all the features of the face and the temperature because the same is measured. Finally the face temperature is displayed. The simulation results of this established algorithm show human face detection and temperature limitations of FLIR and IR camera videos. The results were verified compared to a standard temperature measurement device.

**KEYWORDS:** Arduinouno kit, Infrared Temperature Sensor, ESP32 Cam Wifi, 16x2 I2C LCD.

## I. INTRODUCTION

The Covid Care Security System simply opens the doors without touching the handles. Covid Care is about work in IT personalized IT companies. Rays of 0.75-1000 micrometer Radiation The skin emits heat dissipation by producing bright colors In the process of thermal imaging the heat produced by an object is shown and used to measure the temperature distribution of organs and tissues. These heat pixels in the picture are captured by a hot camera or thermometer represented as thermography eg in which way we can see the visible heat dissipating heat. Now-day thermography is widely used in clinical trials to treat a critical condition and to increase treatment accuracy and to see results.



II. PROBLEM STATEMENT

Designing an IoT Device that sense body temperature and detect face mask for Everyones safety.

The paper offerings a low cost temperature measurement system for medical diagnostic applications with greater accuracy. Authors have used FLIR and low cost CP-cosmic IR camera videos for measuring Temperature.

III. SYSTEM OVERVIEW

The sensitivity of the LM35 (S1) and MLX-90614 (S2) sensor sensors is programmed in the C ++ language and access via Arduino CT-UNO control. Optimized wifi port holes are enabled from within the 5V internal supply of the CT-UNO controller to transmit collected portal data online. This program is designed without a button pressing system to detect wireless temperature monitoring.

Arduino CT-UNO controller :

CT-uno used is one type of Arduino Mega controller. This microcontroller is based on the ATmega328 data sheet consisting of 14 digital input pins, 6 pulse wide modulation output (PWM) and six analog input pins. This controller has auxiliary ports namely 16 MHz oscillator, USB connection and Power jack with reset button

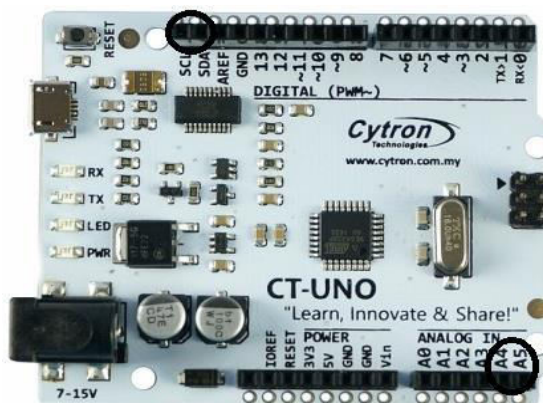


Fig.Arduino CT-UNO kit

Temperature sensor

Two LM35 (S1) heat sensor type MLX-90614 (S2) touch sensors are used in the proposed monitoring system as shown in figs. The LM35 sensor is a direct sensor that directly converts heat output to Celsius. This modification is set to the Arduino panel using. This sensor is better than a thermistor due to linear output and lower impedance benefits. The range of this sensor is between 55 0C to 150 0C.

This equation is usually used for the S1 sensor when it meets the Arduino control and is expressed in value representing the input power and analog value. The sensitivity of this S1 sensor is 10mV / oC. While the infrared sensor (S2) made



of melexis is also used to measure body temperature with PWM output pins. This sensor uses a low-noise amplifier, a 17bit cover-digital coverter to get the right temperature.

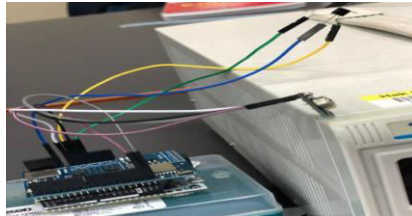


Fig Temperature Sensor Connection

#### IV. PROPOSED SYSTEM

Fever Click on the nerves and measure the person's body temperature. A Wi-Fi module transfers data to a cloud database, which stores data. The ESP Wi-Fi module was chosen because it allows for easy IP connectivity. According to this data, the results are displayed in an Android app developed by "Temperature Monitor". Powerful upgrades are provided with the help of Firebase and sensor. These updates can be viewed by a physician through a mobile app. This is illustrated in the diagram.

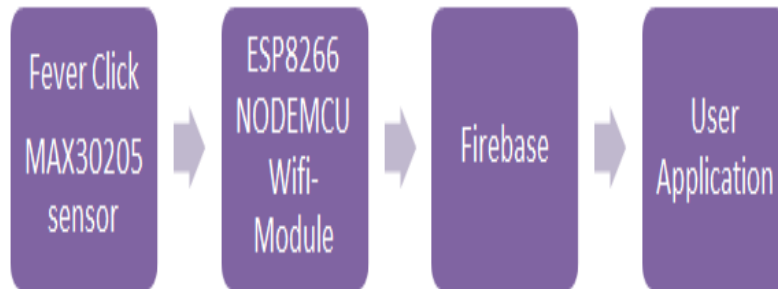


Figure proposed system

#### V. IMPLEMENTATION

At the start of the algorithm temperature measurement the author was mainly made in the MATLAB R2012a Windows 8.1 phase, with an Intel Core i3 CPU with 4 GB of RAM. The proposed system was developed in two different steps: in the first measurement the algorithm was intended and resolved using FLIR E63900 cameras that burn one video with a person with a normal body temperature. , and another video was taken by CP-USC-TA10L2-360 - Infrared camera. The authors compared the results of both camera videos in calculating and extracting a single frame between all frames to provide complete face detail in a default and consistent frame rendering. In addition, simulation results are verified with a standard temperature measuring device.

The results were obtained by processing a different set of IR video sequences as including the rating algorithm. However, video sequences from "one FLIR camera and IR camera videos. Tests are performed on one FLIR camera & six IR cameras for different video sequences. In each video sequence different framing options were used. temperature measurement results are calculated and presented in the form shown in the table.

#### VI. RESULT

The patient's body temperature can be measured by the simple contact of the skin with the nerve. The above tests have been started in 5 patients of different ages with high temperatures and confirmed positive results. This method



provides a more efficient and effective way of communicating with physicians, especially in patients who are bedridden or who need regular medical checkups

#### VII. CONCLUSION

So this program can help reduce human effort and the risk that it can cause it after direct contact with the virus.

We have successfully developed a system that would monitor the temperature of the human and send the temperature values to the doctor/Security Guard. In this way, any abnormalities in the body's thermoregulation mechanism are found and hence several disorders can be prevented.

#### REFERENCES

- [1] "Wireless Network for Health Monitoring Heart Rate and Temperature Sensor"; L. Tang and H. Kiourmars
- [2] Y. Wongsawat, J. Arnil Y. and Punsawad; "Wireless Sensor Network based Smart System for Healthcare Monitoring"; International Conference on Robotics and Biomimetics 2011.
- [3] F.H. Yahaya and Y. M. Yusoff, H.Z. Abidin, R.A. Rahman; "Development of a PIC-based wireless Sensor node utilizing XBEE Technology"; IEEE International Conference on Information Management and Engineering 2010.
- [4] J. Damodhar and P. A. Reddy; "A real time monitoring system for Physiological Signals using Wireless Sensor Network".
- [5] Carlo Alberto Boano, Matteo Lasagni, Kay Romer, Tanja Lange. "Accurate Temperature Measurements for Medical Research using Body Sensor Networks".
- [6] SO Roopesh, Appaji and M Abhishek, H N Suma. "Prognostic Health Monitoring System";
- [7] "A Brief Study on the Facts And Figures of Body Temperature"; S. Sudha, A. Mukunthan.
- [8] Adam Tenforde. "The Effects of Cooling Core Body Temperature on Overall Strength Gains and PostExercise Recovery".



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