

TECHNOCRATS INSTITUTE OF TECHNOLOGY, BHOPAL (M.P.)

Department Of Electronics And Communication Engineering



NON CONTACT TEMPERATURE SCREENING SYSTEM

The Major Project

Technocrats Institute of Technology
Department Of Electronics And Communication Engineering

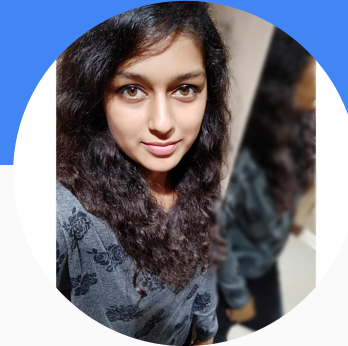
Our Team



Tarun S Negi



Bhavya Grewal



Pari Neekhara



Govind Patel

Covid19!



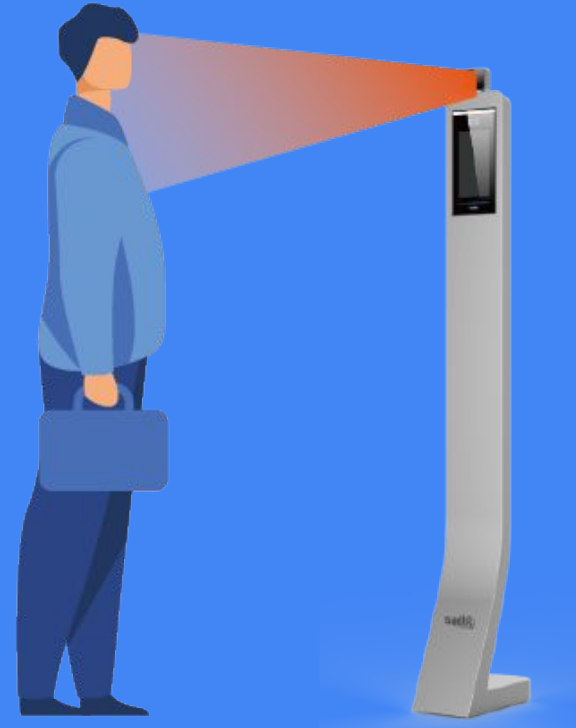
COVID-19 is a serious global infectious disease outbreak. Coronavirus is primarily spread between people during close contact.

One of the strategies in the control of this outbreak is screening, As per Government, Temperature screening is proposed as a prerequisite to enter all site-controlled areas /activities.

Solution !

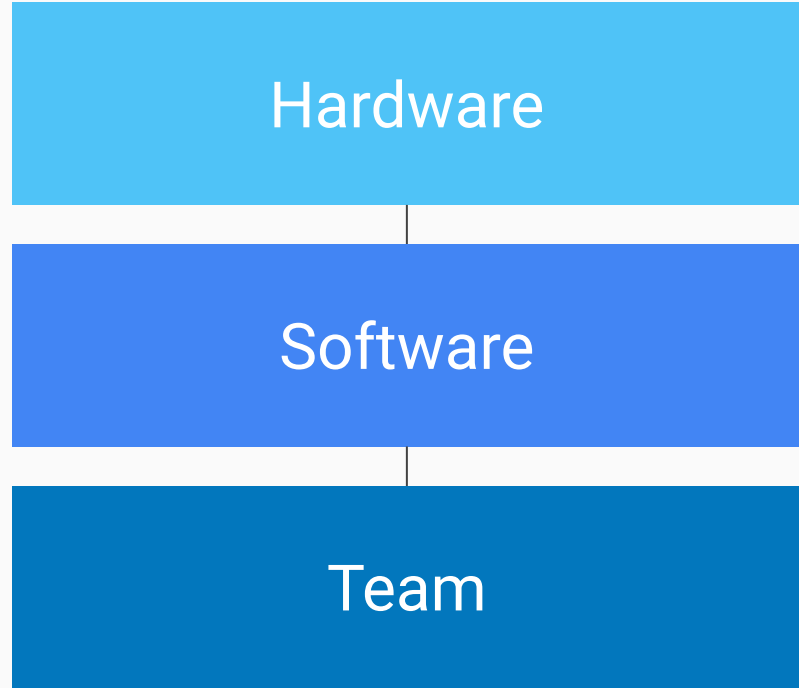
Our project is to build a **No Contact Temperature Screening System**.

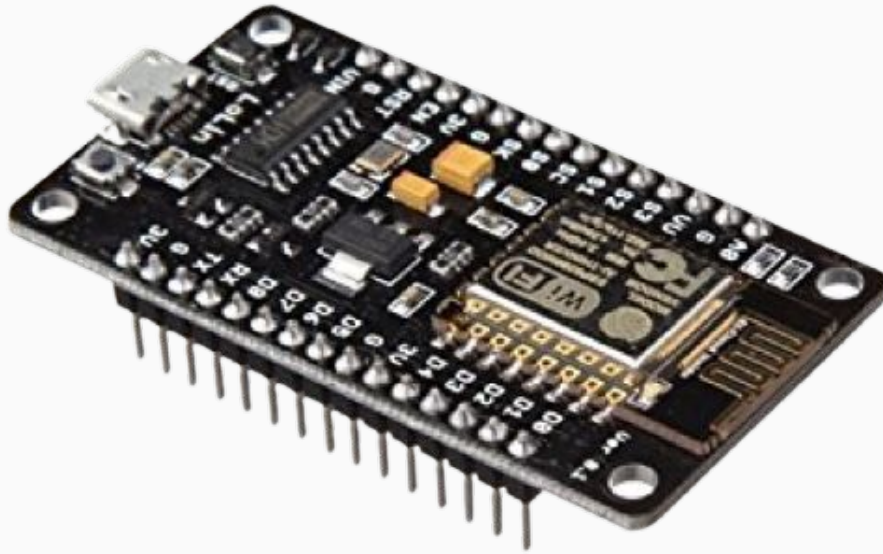
- No Contact Temperature Screening System can be a system in which the temperature of the person can be screened with no physical contact with anyone,
- displays the temperature & allows the person to enter if temperature is less than threshold temperature and that data is recorded in Google Sheets automatically.



Technocrats Institute of Technology
Department Of Electronics And Communication Engineering

Things
Required





NODE MCU

NodeMCU is a low-cost open source IoT platform. It initially included firmware which runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which was based on the ESP-12 module.



IR Thermometer

- The MLX90614 sensor can measure the temperature of an object without any physical contact with it.
- MLX90614 sensor calculates the temperature of an object by measuring the amount of IR energy emitted from it.

OLED

- Oled or Organic light-emitting diode is a light-emitting diode and used to create digital displays in devices such as television screens, computer monitors, portable systems such as mobile phones, handheld game consoles and PDAs.

CABLES

- USB Cable required for connecting peripherals to the computer system.
- Jumper Wires required for connecting terminals of the electronic components.

Google Sheets

- Google Sheets is an online spreadsheet application that lets you create and format spreadsheets and work with other people.
- We use Google Sheets as an IoT cloud to log the data generated by a temperature sensor.

Arduino IDE

- The Arduino Integrated Development Environment (IDE) is a cross-platform application.
- It is used to write and upload programs to Arduino compatible boards like Nodemcu and later upload it to the controller for desired functioning. It allows to write programs in c/c++.

How it works!

- The Non contact temperature screening module will be installed at the entry point in the organisation. The person will have to stop at the gate for a maximum of 1 or 2 second. The thermo sensor (MLX90614, IR Thermometer) will scan the person for his/her thermal temperatures. The thermo sensor (MLX90614, IR Thermometer) will scan the person for his/her thermal temperatures. Then this analog data will be converted to digital output by the module's processing unit i.e Single Conditioning ASSP called MLX90302 which converts the signal from the sensor to digital value and communicates using I2C protocol.

How it works!

- This digital output will be sent as an input to NodeMCU for further processing. The NodeMCU will analyse the input based on the program uploaded to it. Here we have written the program such that it will analyse the temperature on one basis i.e if the temperature is more than normal temperature of humans i.e 37°C (98.8°F) then it will not allow the person to enter the organisation, or if the temperature is in the normal range then it will allow the person to enter the premises.

How it works!

- After that the NodeMCU will send the data to the OLED display for displaying the temperature to the respective person, and then the data will be sent to Google Sheets for recording purposes. The data recorded in the sheets can be used in the future for analysis, like when a particular person was not well, or when there were more cases in the organisation, and many more as per the needs of the organization.

How it works (in easy way...)

Person will have to stop at the gate for a maximum of 1 or 2 sec.

The thermo sensor (MLX90614), IR Thermometer will scan the person for his/her thermal temperatures.

MLX90302 send digital output. This digital output will be sent as an input to NodeMCU for further processing

1

2

3

Cont...

The NodeMCU will analyse temperature on the basis of programming uploaded to controller using IDE.

4

Display it over the OLED screen so that person can see the temperature.

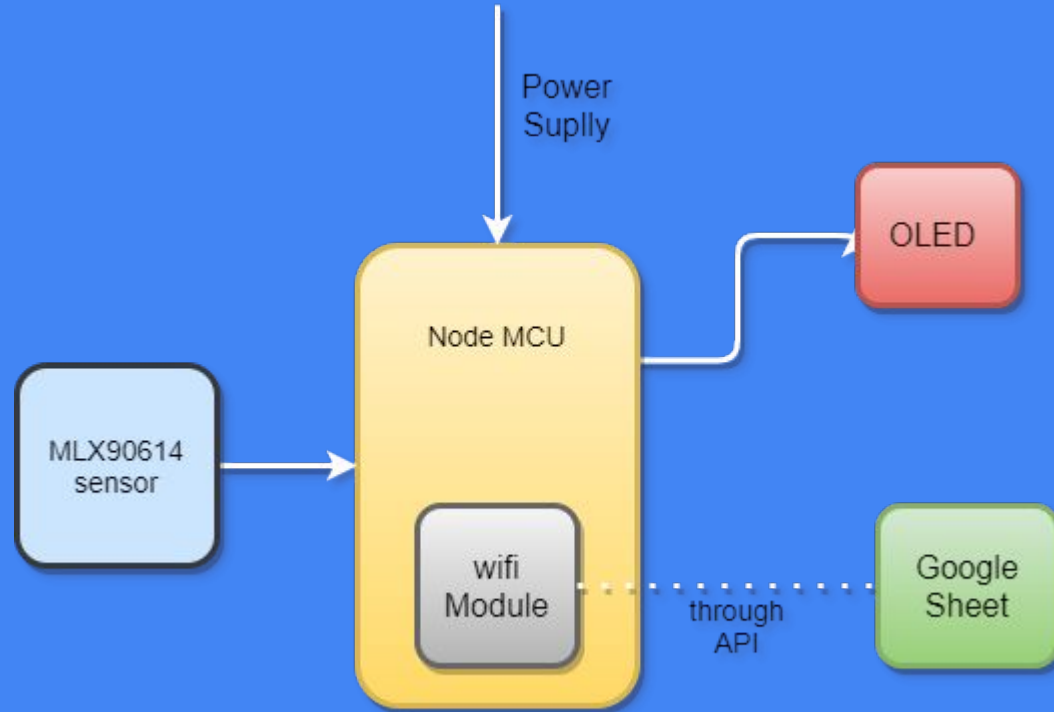
5

And the data will be sent to Google Sheets for recording purpose

6

Technocrats Institute of Technology
Department Of Electronics And Communication Engineering

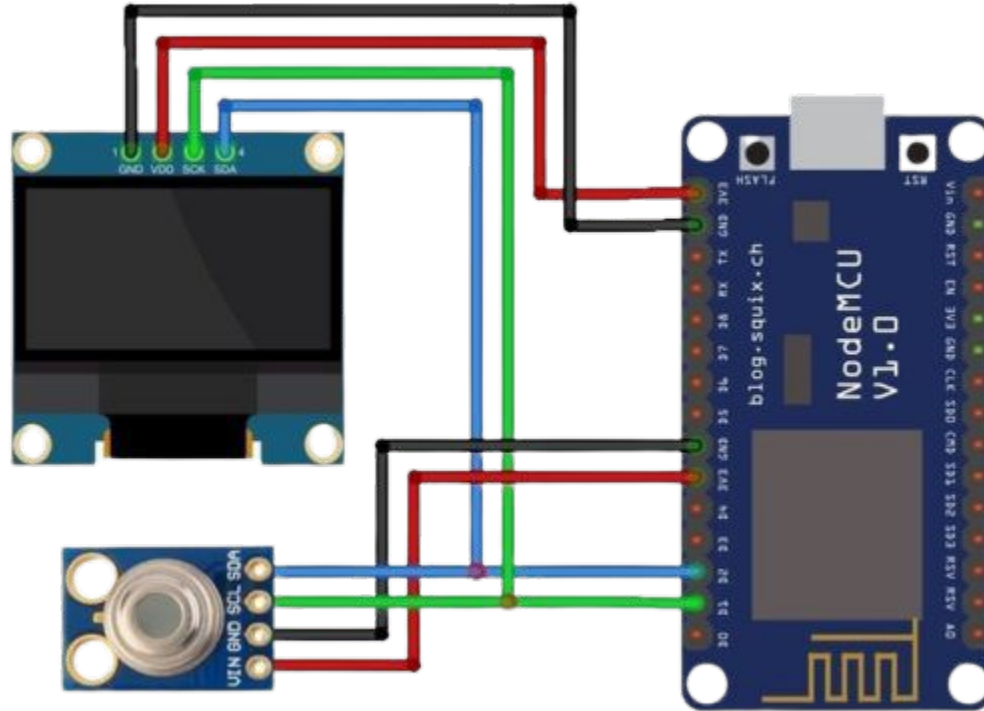
Block Design



Technocrats Institute of Technology

Department Of Electronics And Communication Engineering

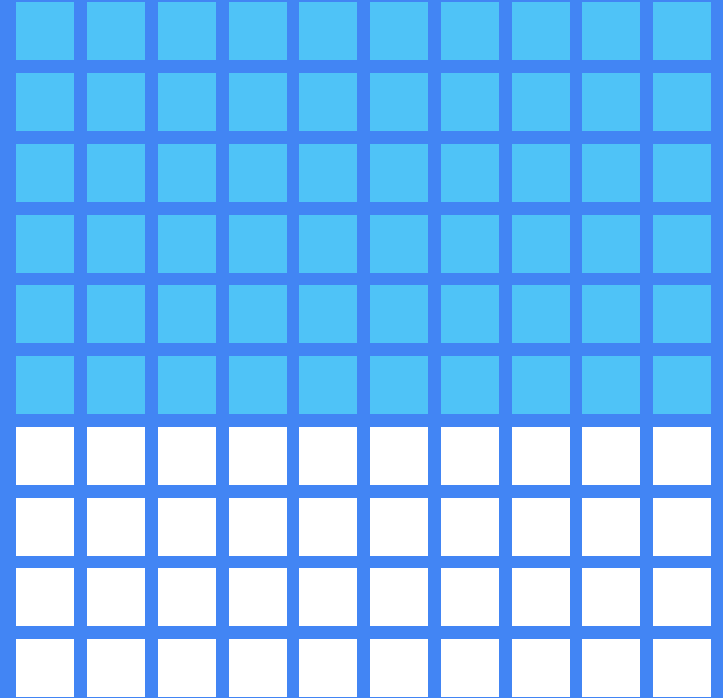
Design



CONCLUSION

Future?

Will add more feature in
coming days...



Technocrats Institute of Technology
Department Of Electronics And Communication Engineering

THANK YOU