SYNOPSIS – MINOR1 PROJECT

ODD SEMESTER 2022

SECURITY SYSTEM

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THE IDEA

Our project consists of a temperature sensor and metal sensor in a gate, which can be integrated in the existing metal detecting gates present in areas like malls, shopping complexes, airports, bus and railway stations etc.
The temperature sensor present in the gate would measure the temperature without a person to operate it while simultaneously detecting metal components when the person is passing through the gate. If the person's temperature is higher than the permissible range, they would be asked to give their contact details such as email id and address. Then a cautionary mail will be sent to people.
The existing technology and equipment in the market are costly and not Smart or IOT based devices, which means that our equipment is far more technologically advanced, while being cost effective. Not just cost effective, our project has very low running cost as it does not require additional people to be hired in order to operate it.

COMPONENTS

1. NodeMCU esp8266

NodeMCU is an open-source Lua based firmware and development board specially targeted for IoT based Applications. It includes firmware that runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which is based on the ESP-12 module. NodeMCU can be powered using Micro USB jack and VIN pin (External Supply Pin). It supports UART, SPI, and I2C interface

2. IR Temperature Sensor

The MLX90614 is a Contactless Infrared (IR) Digital Temperature Sensor that can be used to measure the temperature of a particular object ranging from -70° C to 382.2°C. The sensor uses

IR rays to measure the temperature of the object without any physical contact and communicates to the microcontroller using the I2C protocol.

3. Piezo Sound Buzzer

Piezo sounders contain a piezoelectric vibration plate (also known as a piezo element) within a moulded case. Sound is emitted when

a voltage is applied and the piezo element inside the case vibrates.

4. Arduino Nano

The Arduino nano is a small version of ATmega328P released in 2008.The features of this board are similar to Arduino uno board. It has an operating voltage of 5 volts .It has a flash memory of 32KB.It supports 12C and SPI communication.

FLOWCHART