CONTACTLESS TEMPERATURE SENSING WITH ALERT INDICATION FOR COVID-19

AIM:

Design and Development of Contactless temperature sensing with alert indication for Covid-19.

PURPOSE:

Covid-19 brings lot of changes in human life. It creates lot of impact on human health. Still virus impact ended and we have to take precautions every day. But taking daily tests is not possible and it is expensive for daily workers. To resolve this issue we can read temperature of human body. Body temperature raise when affected with Covid virus. Contact based temperature measurement is not suggestible and chance to get virus from one to one while measuring. Also alerting is also important when temperature more than desired value. This kind of temperature announcement helps in industries, offices, schools and colleges. Here project title is contactless temperature sensing with alert indication for covid-19.

DESCRIPTION:

This project includes IR sensor which is connected to Arduino digital pin. Siren controlled by relay which is connected to Arduino digital pin. 10K potentiometer interface with Arduino analog pin.

WORKING:

In this project we are going to read body temperature with MLX90614 sensor. This sensor placed beside IR sensor. When anyone comes near to IR sensor then it sends signal to Arduino and Arduino reads temperature of body using MLX90614 sensor. When temperature more than desired limit then siren will be ON. Here we cans set desired temperature limit from 10K potentiometer. Temperature value and desired limit value displaying on 16X2 LCD display.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller   :   Arduino Uno

LCD   :   16X2 LCD Display

Crystal   :   16 MHz

Temperature Sensor   :   MLX90614

Potentiometer   :   10 K Variable Resistors

IR Sensor   :   DC 5V

Relay   :   12V DC Electromagnetic

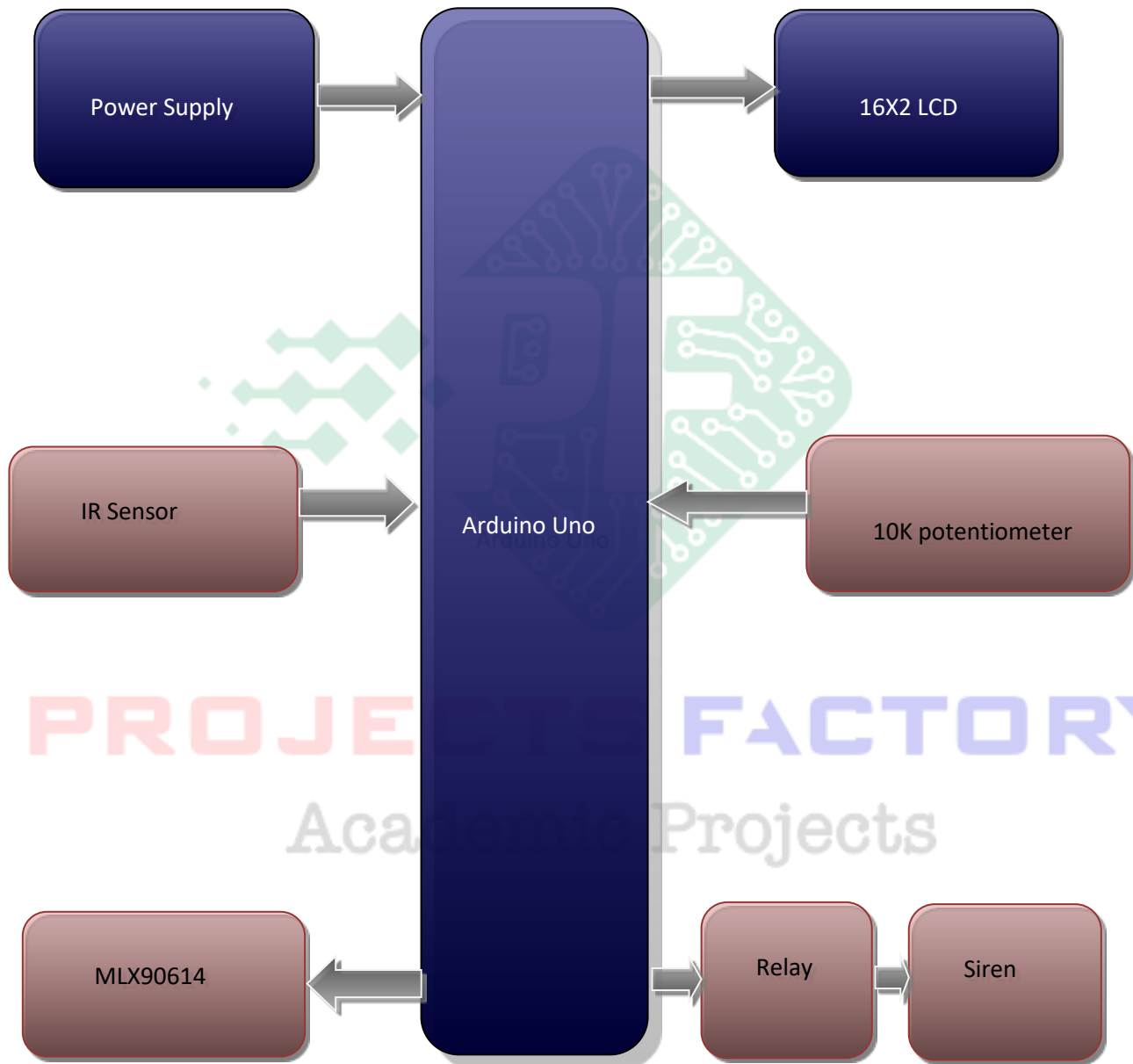Siren   :   DC 12V/5V

Power Source   :   12v 2 amp Adaptor

SOFTWARE:

Arduino IDE

Proteus based circuit diagram

APPLICATIONS:

➢ Covid-19 precautionary Application

➢ Virus spreading precaution Application

BLOCK DIAGRAM:

```
┌──────────────┐        ┌──────────────┐        ┌──────────────┐
│ Power Supply │ ─────> │              │ ─────> │   16X2 LCD   │
└──────────────┘        │              │        └──────────────┘
                        │              │
┌──────────────┐        │  Arduino Uno │        ┌──────────────────┐
│  IR Sensor   │ ─────> │              │ <───── │ 10K potentiometer│
└──────────────┘        │              │        └──────────────────┘
                        │              │
┌──────────────┐        │              │        ┌───────┐   ┌───────┐
│  MLX90614    │ <───── │              │ ─────> │ Relay │──>│ Siren │
└──────────────┘        └──────────────┘        └───────┘   └───────┘
```

POWER SUPPLY BLOCKDIAGRAM:

```
Step down         Bridge          Filter          Regulator        Output
Transformer   →   Rectifier   →              →                →
```

INTERFACES COVERD:

- IR sensor, Relay and Siren interface
- MLX90614 interface