

LCA PROJECT REPORT



Group Members

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Abstract

The project is about making an Infrared thermometer using an arduino, laser and temperature sensor. The casing of the thermometer is made up of a 3D printed body. All

the components of the thermometer are enclosed and secured within this body.

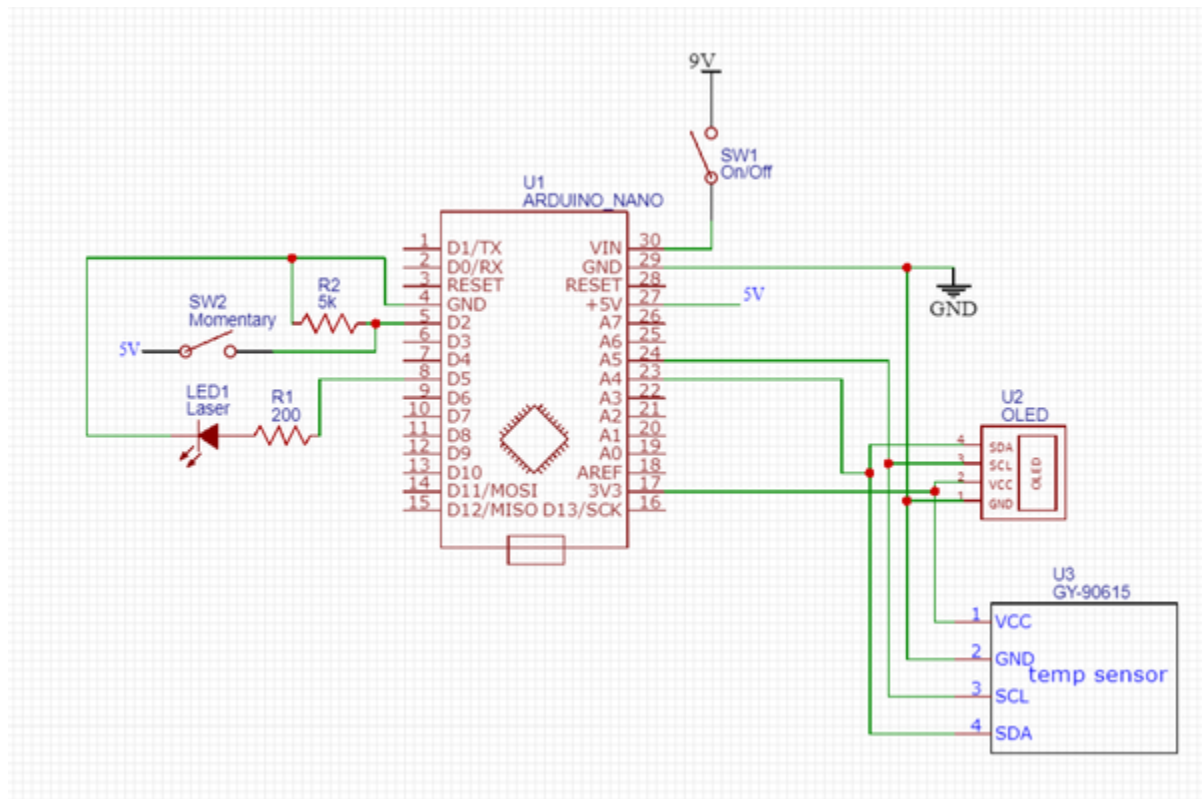
Introduction

An instrument used for measuring temperature is known as a thermometer. The first thermometer was invented in 1593 and consisted of water enclosed within a glass tube. With the passage of time new types of thermometer were created and each was better than the previous. The latest type of thermometer is an IR thermometer. These thermometers consist of IR sensors and have vast use in industrial and clinical environments. IR thermometers proved to be very useful during COVID-19.

Components Required

1. Momentary Button Switch (x1)
2. Resistor (5K Ohm) (x1)
3. Resistor (200 Ohm) (x1)
4. 5V Laser (x1)
5. Arduino Nano (x1)
6. On/Off Switch (x1)
7. OLED 0.96" Screen (x1)
8. GY-906 Temperature Sensor (x1)
9. 9V Battery (x1)
10. Custom 3D printed enclosure (x1)

Circuit Diagram



Working

The arduino nano is controlling the whole circuit. The 9V battery is connected to the arduino through an on/off switch. When the switch is turned on the whole circuit comes to life. The VCC of the OLED & temperature sensor is connected to pin 17 i.e 3V3 of arduino. The ground of the OLED and temperature sensor is connected to pin 29 i.e ground of arduino. Negative terminal of the battery is also connected with pin 29 of the arduino. SDA and SCL of both OLED and sensor are connected to pin 23 and 24 i.e A4 and A5 respectively. The 5V of the arduino is connected to a 4 pin momentary button. The laser, temperature sensor and OLED stays on until the momentary button is pressed.

Simulated Results

The thermometer showed 35.9 degree Celsius temperature of humans and 109.9 degree Celsius of a working soldier. We tested the solder on multiple objects and got temperatures very close to accurate temperatures of those objects.

Conclusion

The thermometer is working perfectly and gives reading of temperature very close to original temperature of objects