LCA Project

Infrared Laser Thermometer

Group members

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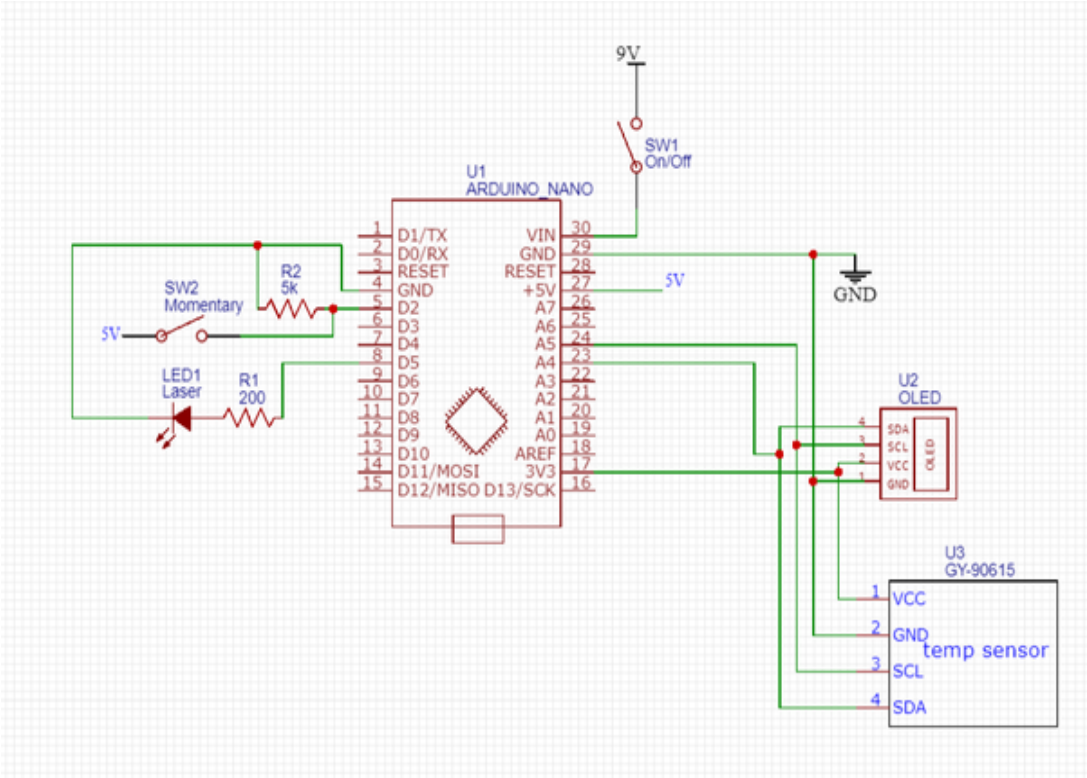
Overview

We are making an Infrared Laser Thermometer using Arduino. It senses the temperature of anything it's laser points at and displays the temperature on a digital screen.Infrared thermometers are widely used in many work environments to determine an object's surface temperature. Oftentimes in a machine or electronic circuit, rising temperatures are one of the first signs that something is wrong. A quick non-contact check with an infrared thermometer can let you know what is happening with the temperature of a machine so you can shut it off before it causes permanent damage.

Components Required

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

Circuit Diagram



Working

Infrared radiation is just another type of radiation that exists on the electromagnetic spectrum. We cannot see it but if you were to place your hand near something hot like a stove top, then you would be feeling the effects of infrared radiation. All objects emit energy in the form of infrared radiation. Most handheld thermometers use a lens to focus light from one object onto a thermopile which absorbs the IR radiation. As more IR energy is absorbed, the hotter it gets and the heat level is converted into an electrical signal which is eventually converted to a temperature reading.