

PELTIER LAPTOP COOLER



SOUTHERN
UNIVERSITY COLLEGE

南方大學學院

Introduction

This project builds a compact external laptop cooler that combines a Peltier module, turbo blower and PWM fans. An Arduino reads temperature from an MLX90614 and **adjusts fan speed automatically** while **allowing manual override**; system status is shown on an I²C LCD. Tests show meaningful surface temperature reduction under **heavy load**.

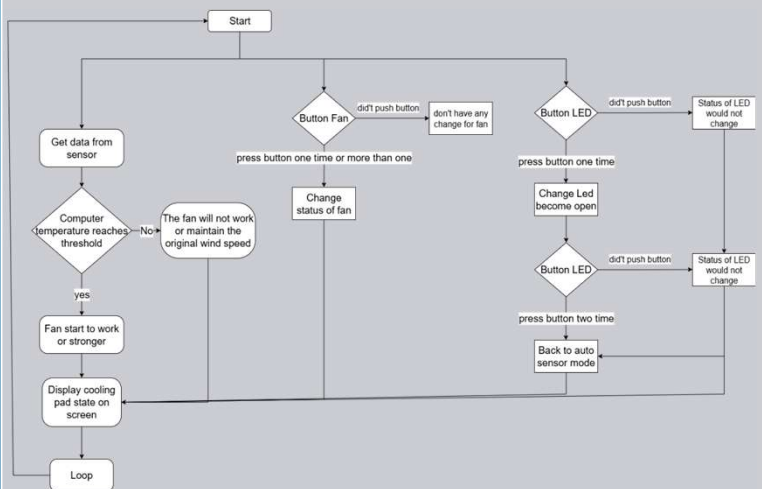
Main idea

- Portable external cooling using Peltier + turbo blower + PWM fan, controlled by Arduino with MLX90614 for **automatic temperature-based fan control** and **manual override**.
- **Real-time status on I²C LCD**;
- powered by 12V supply with buck for 5V peripherals.

Key Features

- Automatic temperature control (MLX90614)
- Three fan speed settings (quiet, medium, and full) with manual override
- Real-time LCD status display (temperature, light intensity, fan/LED status)

Flowchart



Team Members

Desmond Lim Jun Sheng | Dr. Irene Kong Cheh Lin

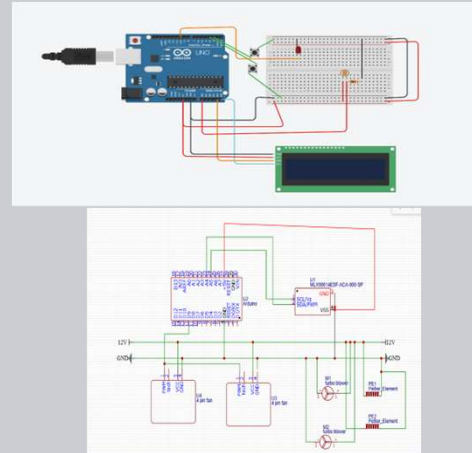
Contact us

clkoh@sc.edu.my

SDG

SDG 9: Industry, Innovation and Infrastructure

System Architecture / Wiring



Prototype



Results

Heavy Load Tests	Temp CPU (°C)	Temp GPU (°C)
Laptop without cooler	100	68
Laptop with general cooler	100	66
Laptop with peltier cooler	94	60

Address

Faculty of Engineering and Information Technology,
Southern University College,
81300 Skudai, Johor.