Non-contact Temperature Scanner ECE342-Sp21

By: Nathan Raschkes Greg Stapley Yuhao Su Yicheng Xiong

Our Team

Yuhao Su: Focused on proximity sensor block and temperature sensor block.

Greg Stapley: Focused on saving data to the SD, programming and 3D modeling and printing.

Yicheng Xiong: Focused on OLED display and buzzer model.

Nathan Raschkes: Focused on power supply block and charge card model.

Yuhao

Greg

Yicheng

Nathan









Timeline ECE342 Final Project Timeline

PROJECT TITLE	Temp 2	COMPANY NAME	Oregon State University			
PROJECT MANAGER	Karthik Gopalakrishnan	DATE	5/28/21			

		342 Design										342 Build							42 Present											
WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	COMPLETE	W	EEK 1		WEEK 2		WE			WEEK 4		WE			WEEK 6		WEEK 7		V	VEEK 8		WEEK 9		WEEK	10
							MT	WR	FMT	r w I	RF	MT	N R I	F M 1	T W F	RF	МТ	WRI	M	r w R	F M	TW	RF	MT	WR	FM	T W R	FN	TW	R F
1	Project Conception and Initiation																													
1.1	Project Requirements 0	Group	4/2/21	4/5/21	3	100%																								
1.1.1	Project Timeline Creation 0	Group	4/4/21	4/5/21	1	100%					_																			
1.2	Block Diagram Design 0	Group	4/5/21	4/9/21	4	100%																								
1.3	Research 0	Group	4/2/21	4/9/21	7	100%																								
1.4	Weekly Progress Report	Nathan Raschkes	4/5/21	5/21/21	46	100%																								
1.5	Project Requirements Adjustment	Yuhao Su	4/7/21	4/11/21	4	100%																								
1.6	Electrical Schematic Design 0	Group	4/18/21	4/24/21	7	100%																								
1.7	PCB Design 0	Group	4/25/21	5/1/21	7	100%																								
1.8	Coding of the Project 0	Gregory Stapley	4/8/21	5/21/21	43	100%																								
2	Team Exercises, Goals and Communication																													
2.1	Outline of Goals 0	Group	4/8/21	4/9/21	1	100%																								
2.2	Team Meetings 0	Group	4/8/21	5/21/21	43	100%																								
2.3	Communication Plan	Group	4/8/21	5/21/21	43	100%																								
2.4	Obstacles Encountered 0	Group	4/8/21	5/21/21	43	100%																								
3	System Integration																													
3.1	Power Supply Block design	Nathan Raschkes	4/11/21	4/24/21	14	100%																								
3.2	OLED Display Block design	Yicheng Xiong	4/11/21	4/24/21	14	100%																								
3.3	SD Card Block design	Gregory Stapley	4/11/21	4/24/21	14	100%																								
3.4	Prox-Sensor Block design	Yuhao Su	4/11/21	4/24/21	14	100%																								
3.5	Charge Card Block design	Nathan Raschkes	4/25/21	5/15/21	21	100%																								
3.6	Buzzer Block design	Yicheng Xiong	4/25/21	5/15/21	21	100%																								
3.7	Coding of the microcontroller 0	Gregory Stapley	4/25/21	5/15/21	21	100%																								
3.8	Temp-Sensor Block design	Yuhao Su	4/25/21	5/15/21	21	100%																								
4	Project Presentation																													
4.1	Project Objectives	Nathan Raschkes	5/16/21	5/28/21	13	100%																								
4.2	Project Demonostrations 0	Gregory Stapley	5/16/21	5/28/21	13	100%																								
4.3	Quality of the Project Delivery	Yuhao Su	5/16/21	5/28/21	13	100%																								
4.4	Project Documentation	Nathan Raschkes	5/16/21	5/28/21	13	100%																								
4.5	Presentation Slide	Nathan Raschkes	5/16/21	5/28/21	13	100%																								
4.6	Project Performance	Yicheng Xiong	5/16/21	5/28/21	13	100%																								

Customer Requirements

- 1. The system should be accurate.
- 2. The system should alert the user when they have a fever.
- 3. The system should require no contact to function.
- 4. The system should log user information.
- 5. The system should be intuitive.

Added Requirement:

The system should display the temperature in different units.



Proximity Sensor and Temperature Sensor





Power Supply and Charge Model

TP4056 Charging Module



AiTrip 3PCS Micro SD Card Module with chip level Conversion for Arduino, SDHC Card TF Card Adapter Reader

3.7 Volts Rechargeable Lithium Battery

USB cable





OLED and Buzzer Model

Active Piezo Buzzer Alarm 12mm Dia, DC 5V

Current: less than 25mA ; Frequency: 2300Hz(around)

OLED Display SSD1306 Module 0.91 Inch I2C DC 3.3V~5V

3.35v Power; Operating temperature:-40 - 85 °C.





Saving Data to SD and 3D Printing

- SD card reader / Writer
- 3D Modeling
- 3D Printing











Wiring Diagram and PCB Board



Key Achievement

Our Key Achievement Video

Click the link to watch why we feel the case is one of our Key Achievements.



Future Improvements

- Minimizing the size of the system.
- Reduces the cost
- Makes it easier to store the product (Especially in bulk orders)
- Makes the sanitization process quicker (Especially if you need to wipe down a lot of units)
- Adding a handle to the enclosure.
- Makes it more convenient and efficient
- Easier to obtain all the varying heights from all the users
- Battery Indicator / noise.
- To show that the battery is low

