Food Waste Reduction

Inventory Notifier

CSE321 Fall 2021: Project 3

Misha Nelyubov

December 3, 2021

# Introduction

TODO

# Specifications and Features

TODO

# Integration of Required Features

TODO

## Watchdog Integration

TODO

## Synchronization Integration

TODO

## Bitwise Driver Control Integration

TODO

## Critical Section Protection

TODO

## Multithread Implementation

TODO

## Interrupt Implementation

TODO

# Design Process

TODO

# Block Diagram

TODO

# State Diagram

TODO

# Bill of Materials

The following hardware will be required to create the timer:

* NUCLEO L4R5ZI microcontroller
* 4x4 matrix keypad (8-pin)
* JHD1804 LCD
* 4-pin ribbon cable for connecting LCD to breadboard
* HC-SR04 Distance Sensor
* MH-FMD Buzzer Module (Low Level Trigger)
* Solderless breadboard
* USB 2.0 A to USB 2.0 Micro B cable
* Jumper wires (no less than 21)

# Instructions

## Schematic

TODO

## Construction Instructions

TODO

## Usage Instructions

TODO

# Test Plan Instructions

TODO

# Revision History Timeline

TODO

# References

\* NUCLEO datasheet: https://www.st.com/resource/en/reference\_manual/dm00310109-stm32l4-series-advanced-armbased-32bit-mcus-stmicroelectronics.pdf

\* HC-SR04 distance sensor datasheet: https://www.digikey.com/htmldatasheets/production/1979760/0/0/1/hc-sr04.html

\* Buzzer datasheet: https://www.mouser.com/datasheet/2/400/ef532\_ps-13444.pdf

\* MBED OS API: timer https://os.mbed.com/docs/mbed-os/v6.15/apis/timer.html

\* MBED OS API: Watchdog https://os.mbed.com/docs/mbed-os/v6.15/apis/watchdog.html