Kyle Lemma
CSE321 Project 3 Problem Definition

1. What topic area did you choose your project to be related to?

My project deals with assistance in Food Waste Management

2. What issue or challenge does your project aim to address?

My project aims to address a problem when cooling in a refrigerator fails. There is no clear way to know that a failure has happened and food may go bad and be wasted.

3. What is the goal/purpose/objective of your project?

My goal is to be able to notify the customer of when their refrigerator may start to be faulty and warn them ahead of time that their food may start to be going bad.

4. How does this project relate to the topic area you chose?

This relates to food waste management because some warehouses or households could experience a power loss or a functional error with any refrigerated area unknowingly and then have food be spoiled when they are supposed to be kept at a certain temperature and humidity range.

5. How does this project address the issue/challenge you selected?

This project will monitor the temperature and humidity of the environment it is in, which will be a refrigerated area. This system will be constantly checking if the temperature or humidity gets out of the range recommended for foods inside the refrigerator. Once the system reads a problem in the refrigerator anyone in this vicinity will be notified about the problem by a buzzer.

6. What are the inputs to the system you need to consider for this problem?

a. These need to be in terms of the problem, not anything related to devices (so no mention of things like GPIO)

b. Each input will need to have a statement of how it is part of the system

Matrix Keypad - Used to arm and disarm the device

DHT11 - Used to monitor the temperature and humidity readings of the refrigerator

7. What are the outputs from this project?

a. These need to be in terms of the problem, not anything related to devices (so no mention of things like GPIO)

b. Each output will need to have a statement of how it is part of the system

LCD Device - Displays live readings of the temperature and humidity

LEDs - Red and Green to show the state of whether the system is armed or disarmed

Buzzer - Used to notify the user of the system when the temperature or humidity has gone out of the dedicated range

8. Are there any constraints?

a. Consider physical behaviors for the implementation and elements of the design.

- The system must run continuously reading in temperature and humidity readings from the DHT11
- The system must show the status of whether the system is armed or not
- The LCD will display live readings of the temperature and humidity
- The buzzer will sound if the temperature or humidity ever get out of the designated range for keeping food safe to eat