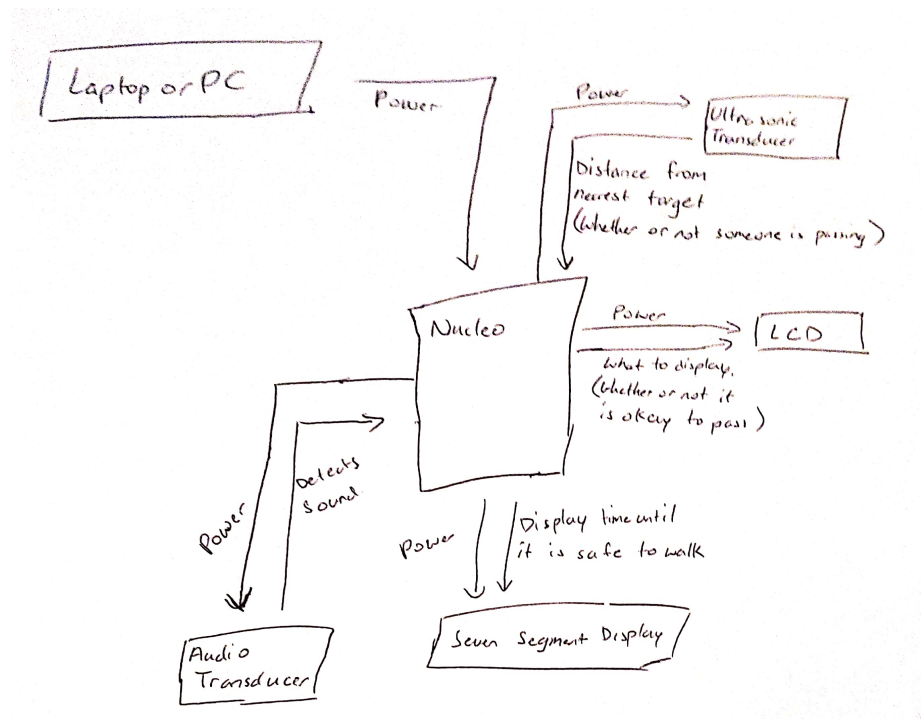# Project 3: Initial Plan

Ben Miller

11/7/2020

How variables are being defined

We are defining variables based on the input and output they are interacting with.

A diagram mapping connections

Laptop or PC

Power

Power

Ultrasonic Transducer

Distance from nearest target (whether or not someone is passing)

Nucleo

Power

LCD

What to display. (whether or not it is okay to pass)

Power

Detects sound

Power

Display time until it is safe to walk

Audio Transducer

Seven Segment Display

Necessary tools

The Watchdog API will be used to act as a safeguard in case of system failure. A polling loop will be used to detect when someone is passing the ultra sonic transducer. The polling loop will also be used to detect if audio is being received. If no audio is detected, a timer is started. The timer restarts if audio is detected. If a period of time passes and no audio is detected, power will stop to some parts of the system.

How we know when our goal is met

We will know the system works when it can approximate the distance between two people and properly enforce social distancing measures. Ben and his roommate will test the system and ensure that it can accurately calculate when two people are six feet apart.