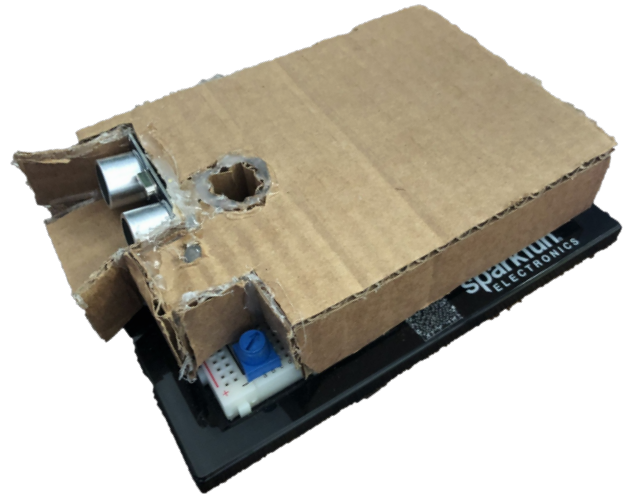# Arduino Shark Tank Challenge

Sam Gombiner

Personalized Timed Door Alarm (P.T.D.A)

The Problem

Are doors always being left open? Is someone not shutting the refrigerator?
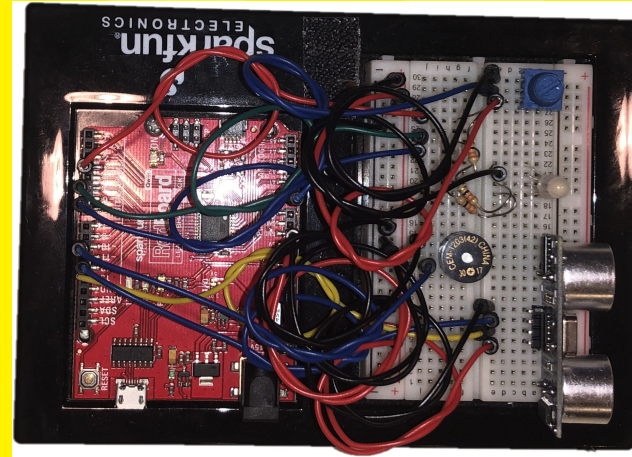
Doors being left wide open can negatively impact your concentration, mood, and more. Whether it's your parents coming in and not closing the door, or wanting others to keep the door shut, we at Gombiner Inc. have a product for you.

The Solution

Gombiner Inc. brings you the Personalized Timed Door Alarm, or the P.D.T.A.

The P.D.T.A sounds a loud, annoying, shrill noise when the door is left wide open after a certain amount of time, personalized by you (up to 10 seconds). You can control this amount of time by spinning a knob, up or down. A light will stay green when the door is closed, yellow when it's opened, and red when the door is still opened after the set amount of time. It reads the "openness" of the door by measuring the distance between the door and the sensor, and deciding if it's over a certain threshold.

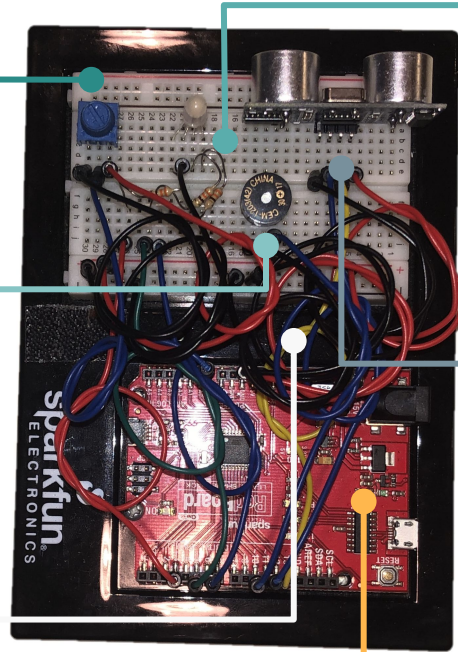The Prototype

Product Overview: Parts

Potentiometer

Potentiometers are variable resistors that measure and allow you to control the voltage

Buzzer

A buzzer has a small metal disk that when pulsed electricity though at different rates creates sound

Jumper Wires

A jumper wire is an electrical wire, or group of them in a cable, with a connector or pin at each end

RGB LED & Resistors

RGB LED's are three differently colored Light-Emitting Diodes (LEDs) built into one component

Distance Sensor

Distance sensors work by sending pulses of light or sound out from a transmitter, then timing how long it takes for the signals to bounce off an object and return to a receiver
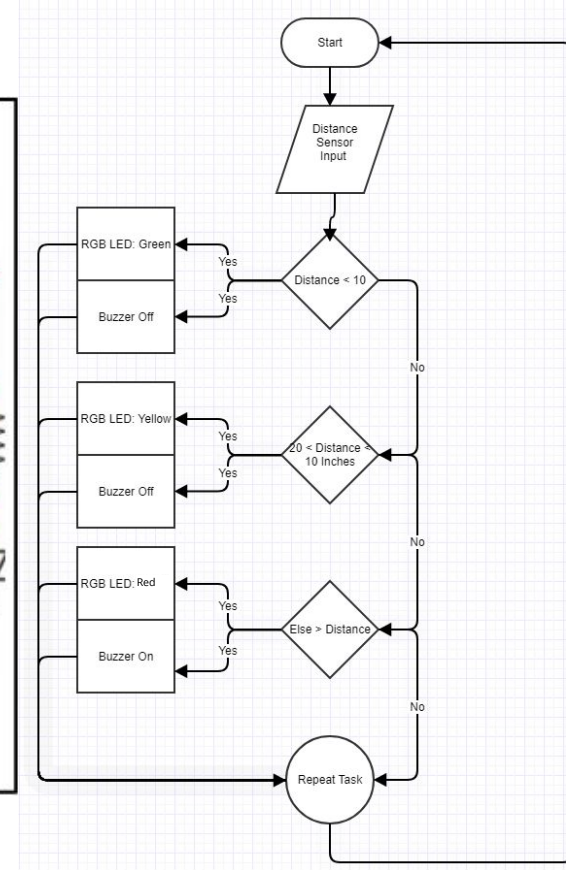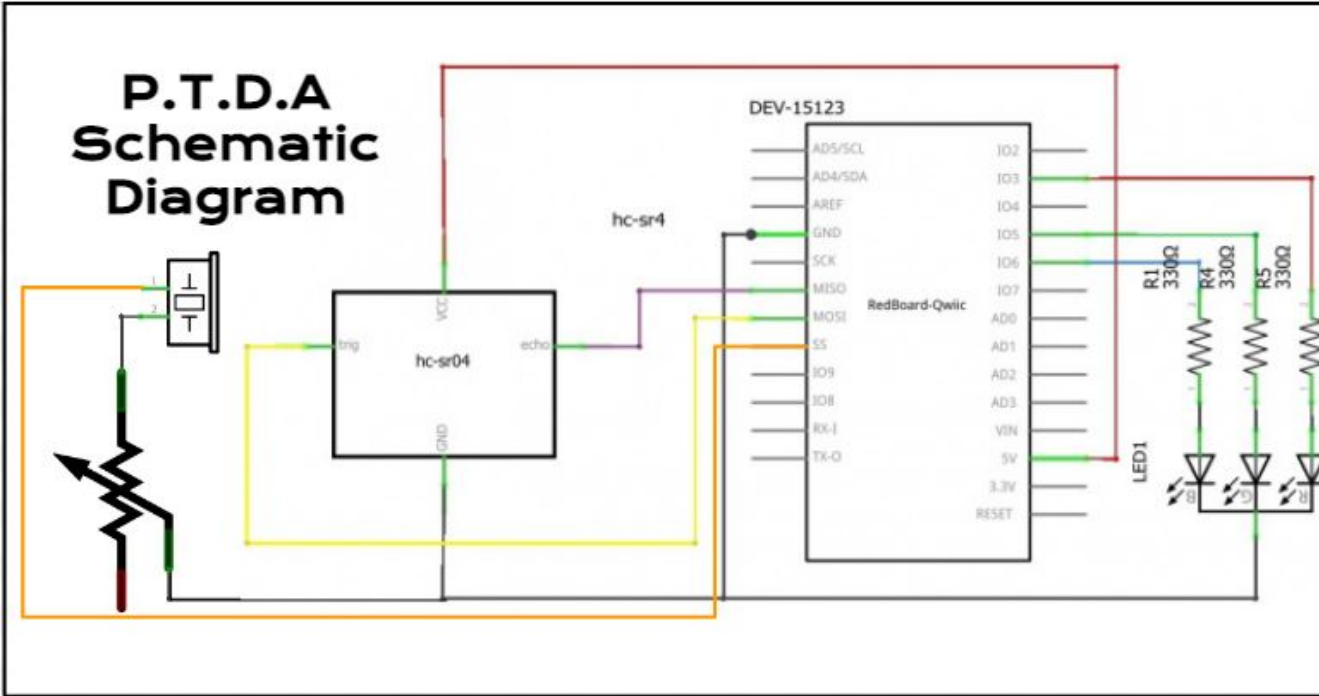
Arduino Uno & Breadboard

The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino.cc. The board is equipped with sets of digital and analog input/output pins that may be interfaced to various expansion boards and other circuits

The P.T.D.A

Product Overview: Schematic Diagram & Block Flow Diagram

P.T.D.A Schematic Diagram

Cost Per Item

$2.52	Arduino UNO R3 DHgate
$0.36	Breadboard DHgate
$0.12	Buzzer DHgate
$0.02	RGB LED Banggood
$0.09	Potentiometer
$0.06	Jumper Wires
$2.50	Labor 10 minutes (10/60)*$15 per hour
$7.02	Total Cost Per Unit

$14.04	**Total Expense Per Unit**
$24.99	**Price Per Unit**
$10.85	**Profit Per Unit**

Age: 55 to 59 years, 3,469,237 Million People
1% is approximately 34,692

$14.04*34,692 = 487075.68   Revenue
$24.99*34,692 = 866953.08   Expenses
$866953.08 - $487075.68 = $379877.4

Financial Projections

Earnings In First Year: $379877.4

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Thank You!