Locker Project

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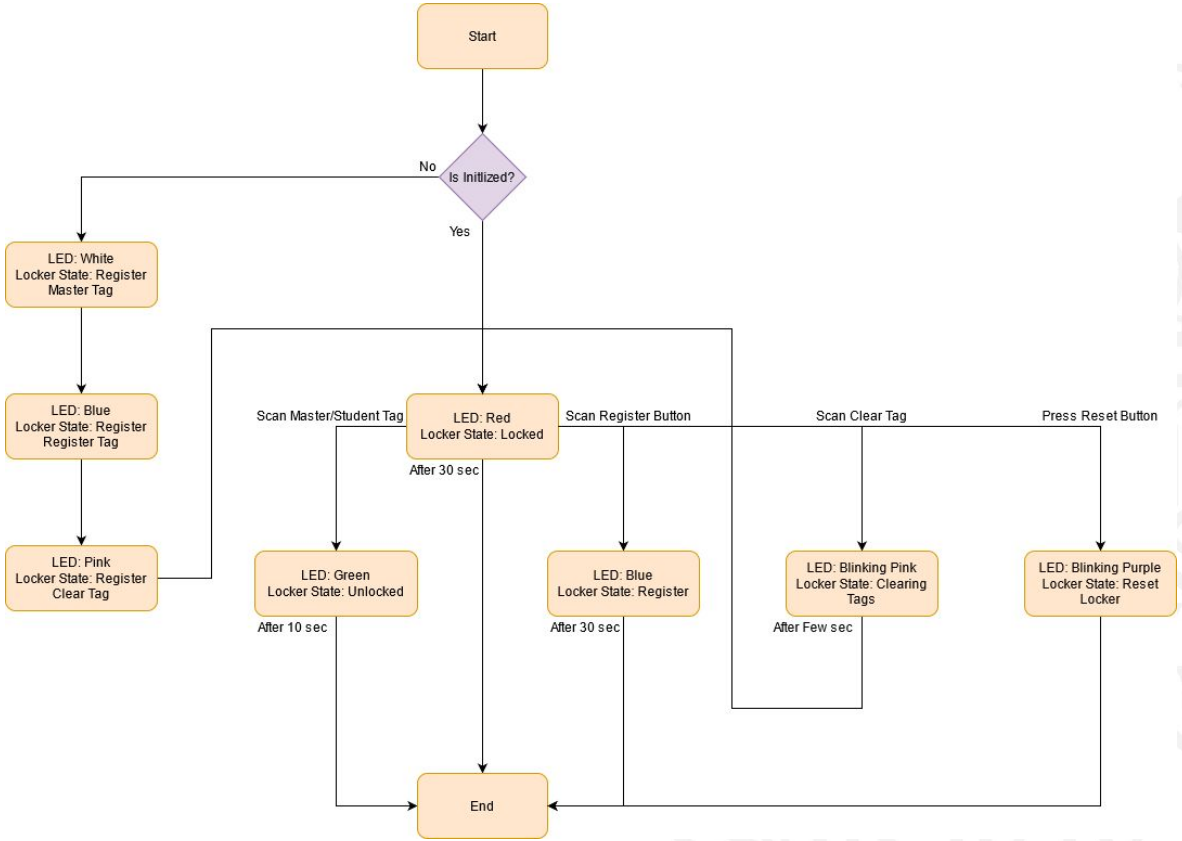
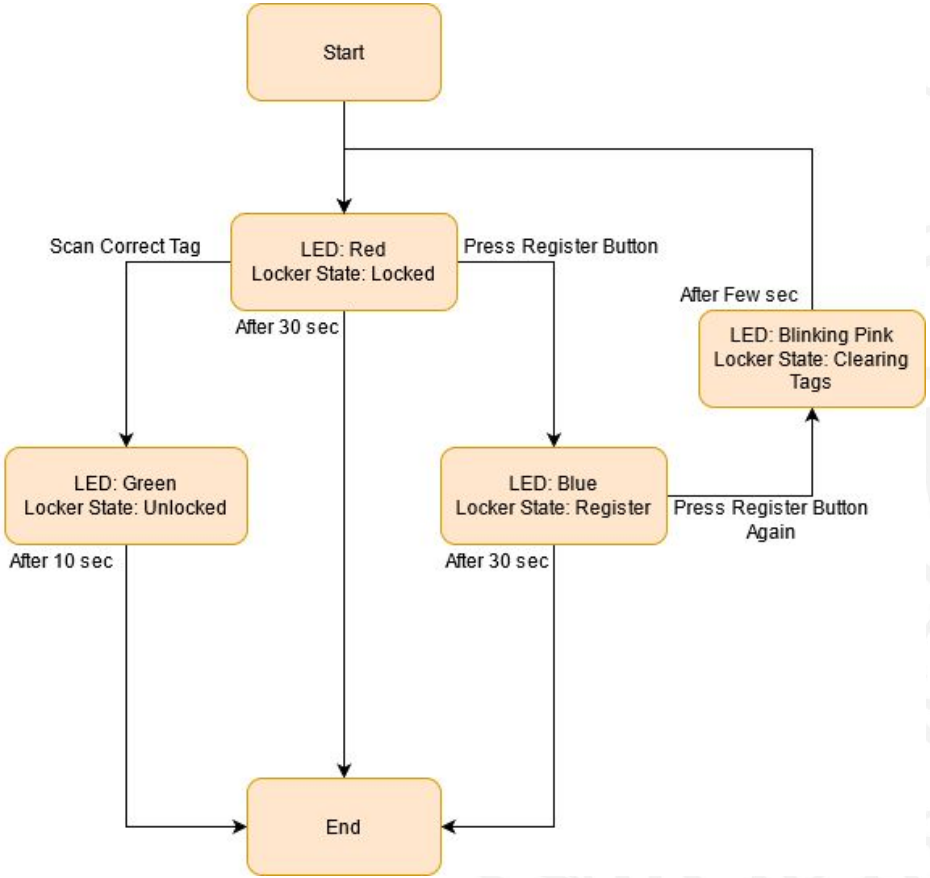
Introduction

- The Depew High School locker project focuses on customized lockers for individuals with physical disability. According to the needs of the client, each lock has to be designed specifically for each user to solve their problem with accessing the locker independently.
- The purpose of the Alden High School Locker is to design an automated and easily operated locker for Alden High School. The locker we designed is a prototype and the idea is that they can run multiple of them off of one battery.

Alden Flowchart



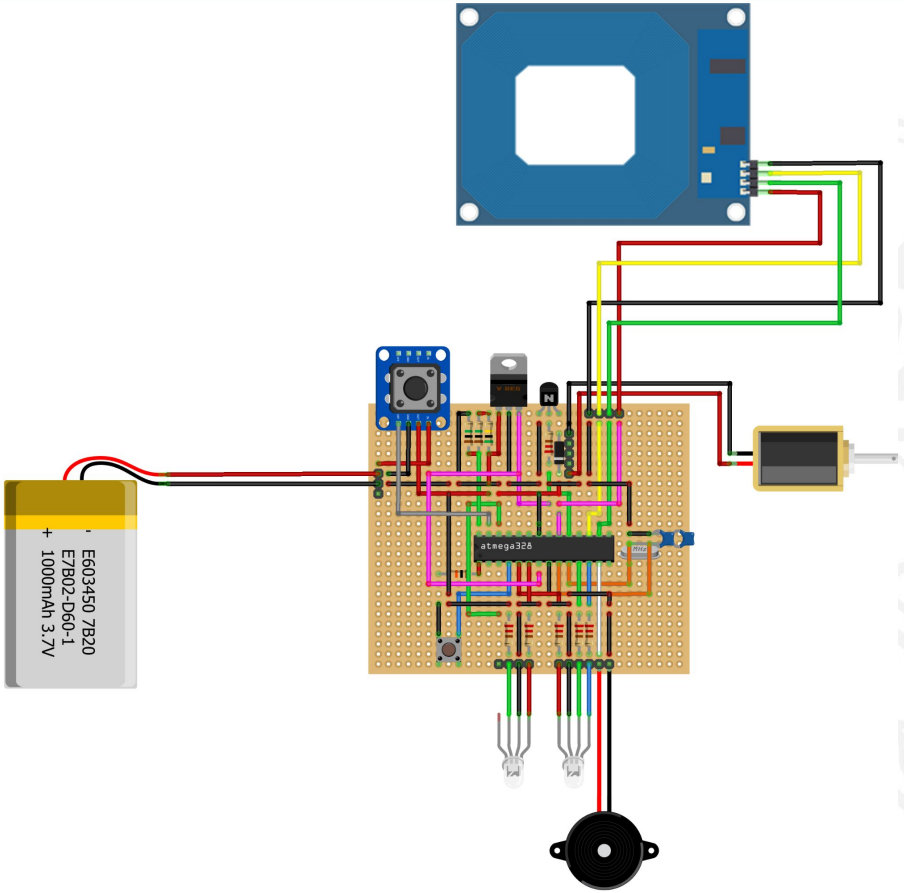
Depew Flowchart



Schematic

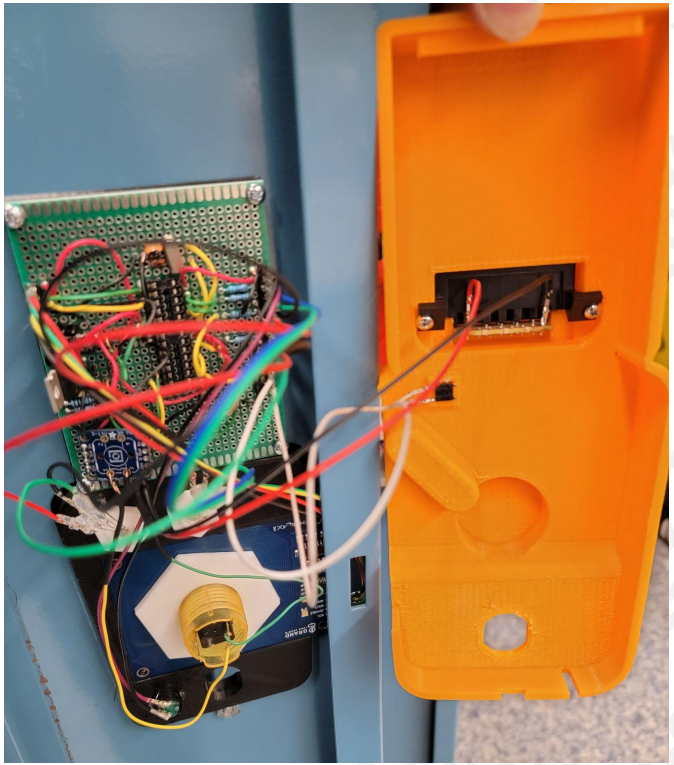
Major Components:

- DeWalt 12v Lithium Ion Battery
- RFID Card Reader
- Solenoid
- 5V 2 Terminals Buzzer



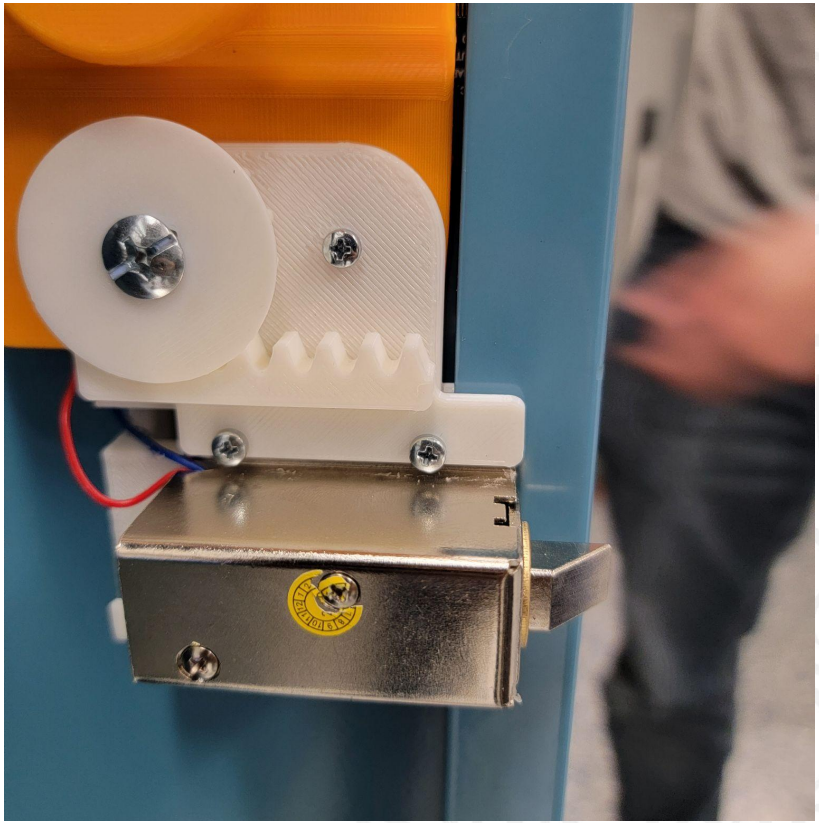
Case Outside

Case Inside



Mechanical Override

We used a gear and rack to move the solenoid horizontally for achieving the manual override feature.



Depew Locker Spring

We install a magnetic push latch for each locker. This latch push open the door automatically once unlock.

Possible Upgrades

- Improve Mechanical Override
- Manufactured Circuit Board
- Improve some parts of the case
- Design a case that works with the Alden Latch
- Design it with a bigger battery like 20v Dewalt
- Disable reset button to Students
- Put multiple lockers in parallel with one battery
- Improve on issues that come up during testing
- Improve energy efficiency

Demo

- Open (Outside View):

- Open (Inside View):

- Register & Clearing :

- Mechanical Override: