

Pill Dispenser

To Help Students Who Forget To Take Their
Medications





Many Students on Campus Often Forget to Take Their Medication

Students suggested a way of timely reminding themselves to take their medication

They also suggested a way of keeping track of whether or not they had already taken their medication

90% of interviewed students believe that this pill dispenser will help them to keep track of their medication intake and allow them to remember to take their medication on time



Design Process



1

Divergent Thought

Brainstorm

Users?

Empathy Map

Practicalities
of ideas

2

Convergent Thought

Select Idea

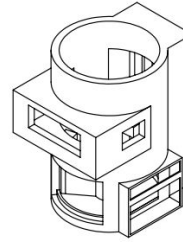
Decision
Matrix

Assign roles
to members

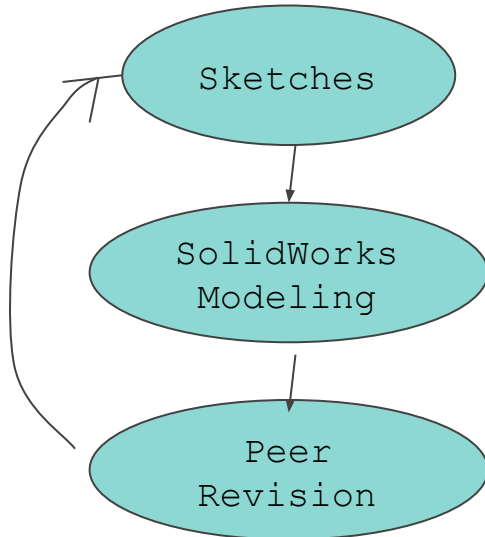
Sketches

Development
Plan

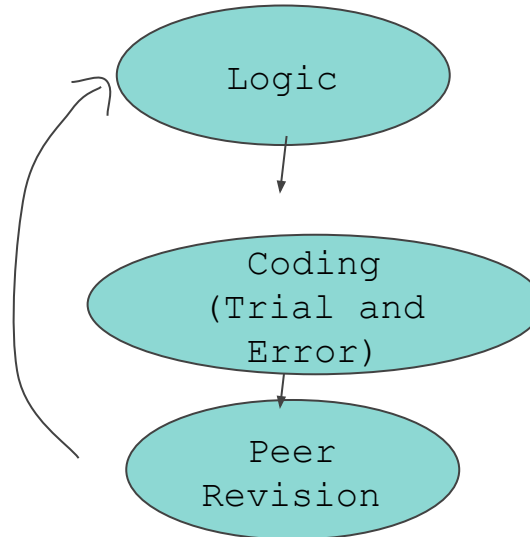
Design Description



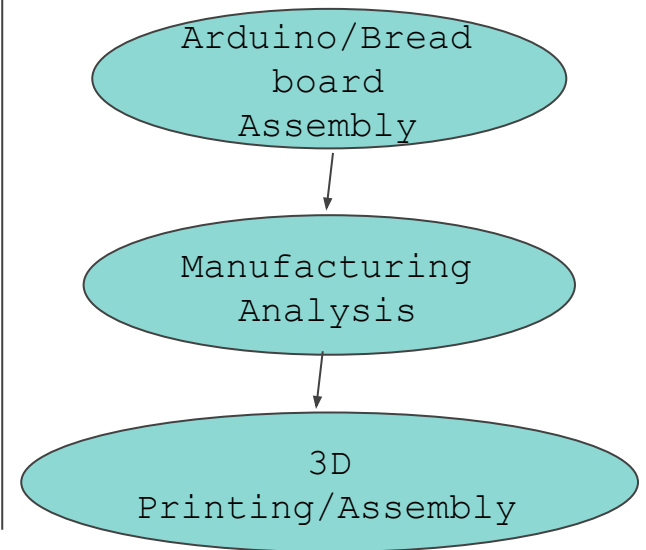
CAD Modeling



TinkerCad Circuitry



Production





```
17 string input;
18 int iLength, iN;
19 double dblTemp;
20 bool again = true;
21
22 while (again) {
23     iN = -1;
24     again = false;
25     getline(cin, input);
26     system("cls");
27     string::stream(input) >> dblTemp;
28     iLength = input.length();
29     if (iLength < 4) {
30         again = true;
31         continue;
32     } else if (input[iLength - 3] != '.') {
33         again = true;
34         continue;
35     } while (++iN < iLength) {
36         if (isdigit(input[iN])) {
37             continue;
38         } else if (iN == (iLength - 3)) {
39             continue;
40         }
41     }
```

Wheel mechanism/Coverings

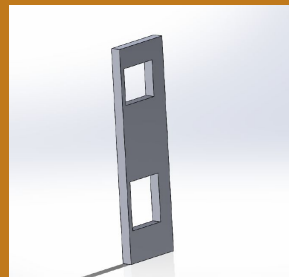
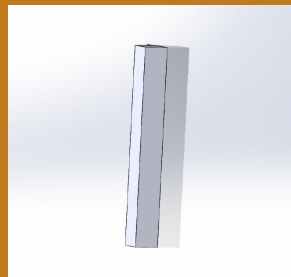
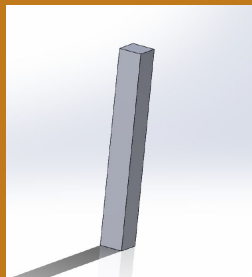
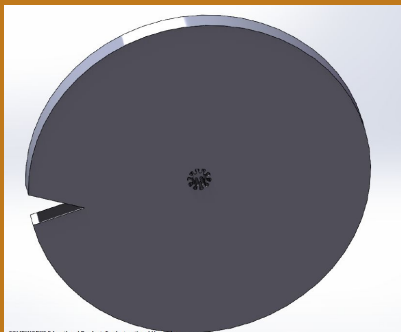
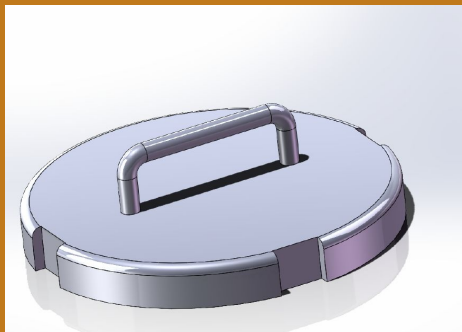
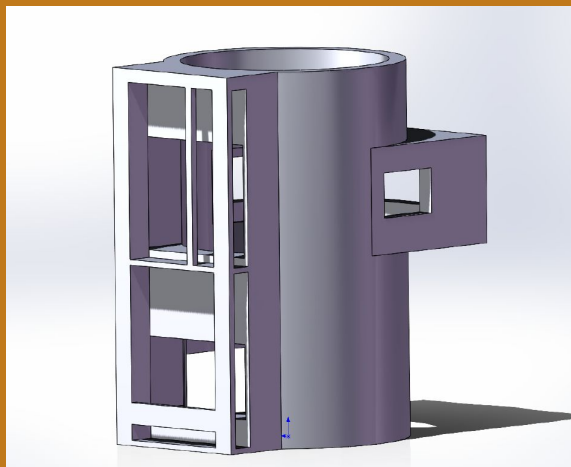
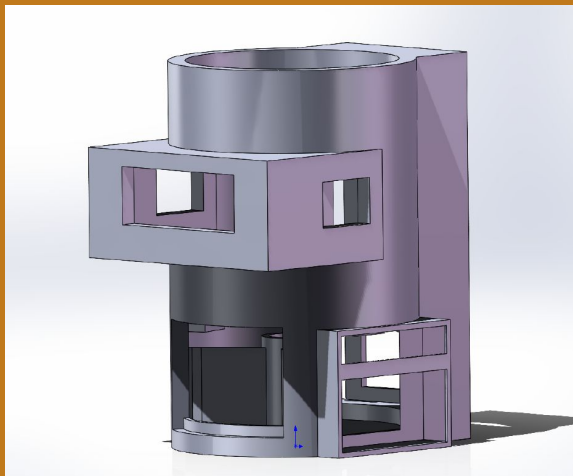
- Prevent multiple pills to drop.
- Rotation mechanism
- Friction
- How to support wheel
- How to attach wheel to motor

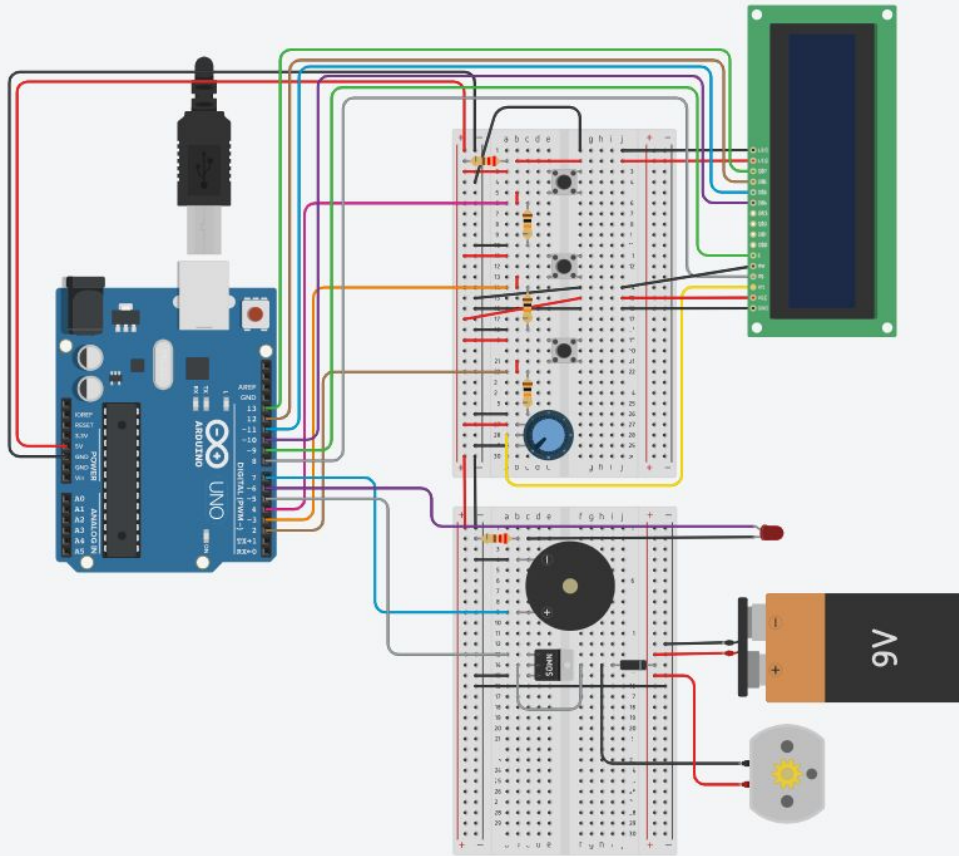
Design Challenges

Arduino Programming

- Setting the timer and keeping track of the current time
- Looping through the setup for the machine on only the first iteration
- Creating a user input process
- Learning the library and displaying to the LCD

Solutions





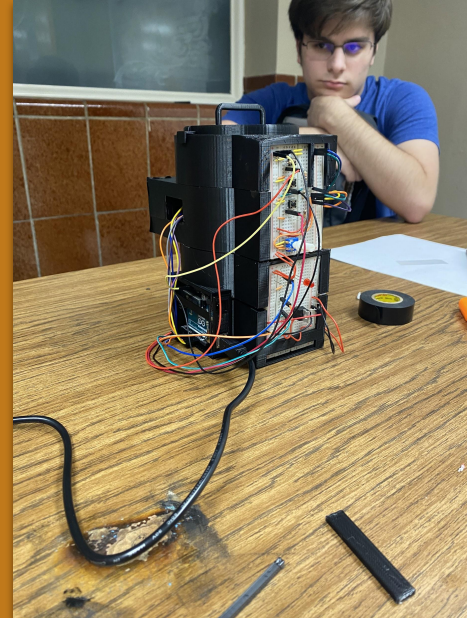
Solutions

- An automated pill dispenser with a ringer.
- Trial and Error
- Timer



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Design Limitations

- Refilling the pill container
- Portability
- Battery life and dependency