

PILL DISPENSER

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Computer Programming
Independent Project
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INTRODUCTION

This project was created in order to support patients who need daily medication. Specifically, many existing pill dispensers have limited portability, do not have an app where caregivers track the patient's medication history, do not prevent double dosing, or are difficult to set up. Moreover, some do not have the ability to sort the correct number of pills, requiring the caregiver to sort them in advance. Addressing these concerns can allow for safer management of medical conditions, especially conditions impacting neurological functions.

KEY FUNCTIONALITIES

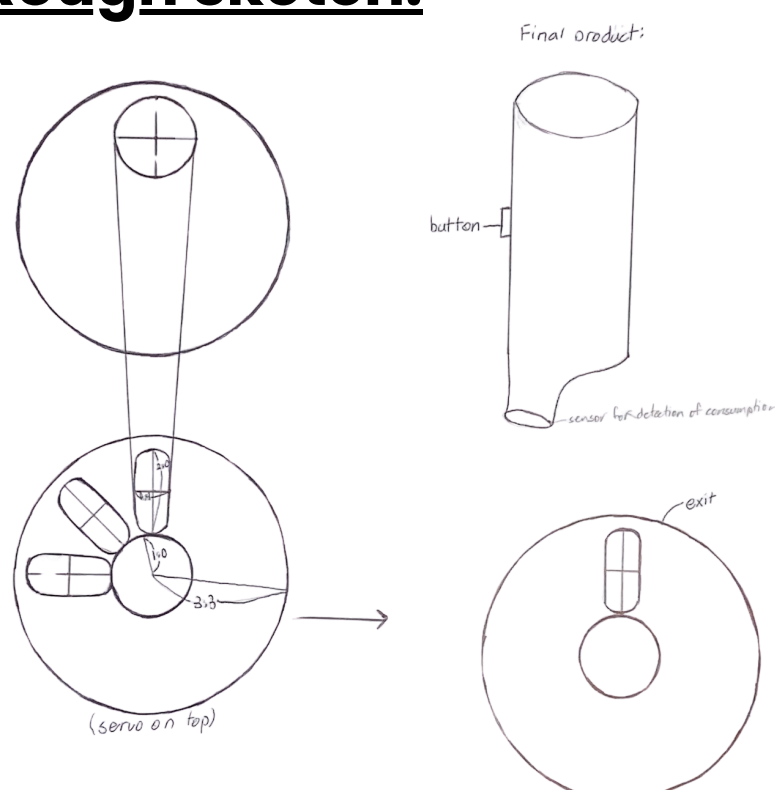
A chute lowers the pills to the middle spinning piece. Each time a button is pressed, the servo spins the middle piece 90 degrees, allowing the pill to be dispensed through a hole in the bottom piece. To ensure only one pill is dispensed at a time, the middle piece only fits one pill.

This dispenser is connected to the internet, so caregivers can easily use an app to adjust the time the medication is given at and keep track of how many were taken in a day.

Pills Taken Today	Hour	Minute
2	14	47

DESIGN PHASES

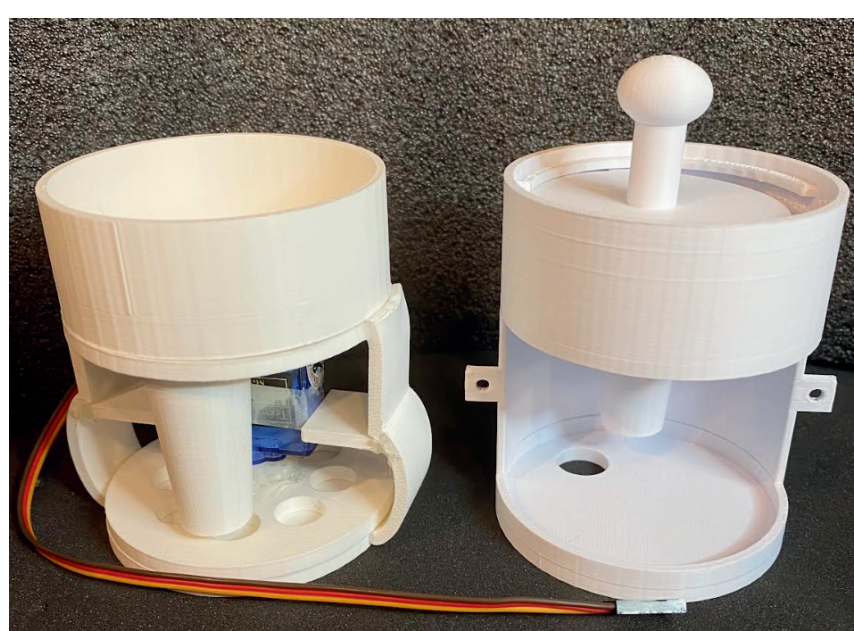
Rough sketch:



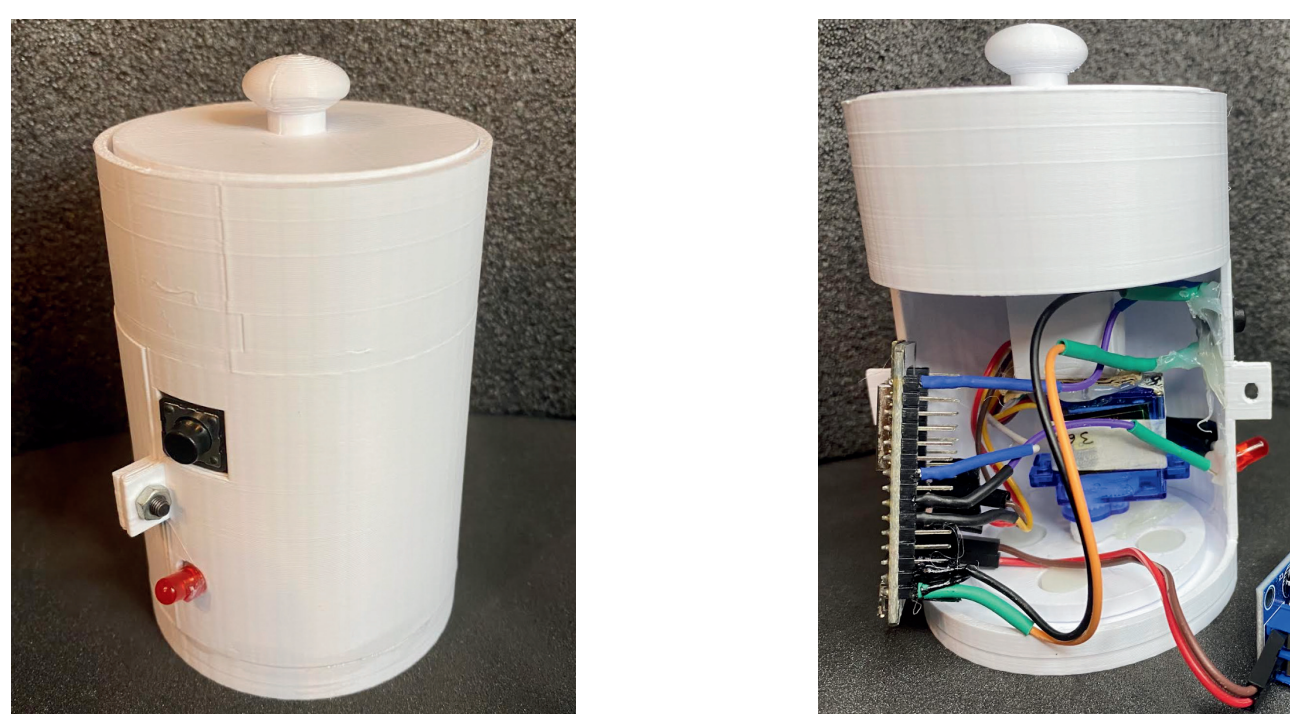
3D cardboard model:



3D printed plastic prototypes:



Final model:



The red light turns when it is time for the patient to take the pill, ensuring that the patient is aware when they need to take it. It is only when the red light turns on that the person is allowed to take medicine, thus preventing overdose.



Project video

NEXT STEPS

The lid should have a system preventing overdose by allowing only the caregivers to be able to access it. There should also be a notification system alerting caregivers if the patient has not taken medication for too long. Additionally, there should be a way to check if the medicine was delivered properly or if it got stuck.