National Design Project 2023

Remindogatchi
(reminder + tomogatchi)

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Starting Point: Physical Wellness for Seniors

Problems with medication adherence in seniors:

Medication nonadherence is widespread among seniors. According to the Department of Health and Human Services (US)

1. **55%** of the elderly are **non-compliant with their prescription drug orders**, meaning they don't take their medication according to the doctor's instructions.
2. Approximately **200,000** older adults are **hospitalized** annually due to adverse drug reactions

Source: https://www.agingcare.com/articles/medication-problems-elderly-people-have-146111.htm

Reasons for seniors medication non-adherence

- **Vision problems (Physical wellness)**
  - Unable to read small print on pill bottle or sachet - potentially dangerous
- Memory loss
  - Those who suffer from Alzheimer's disease and other related forms of dementia are prone to medication management problems
  - Forgetting to take medications, skipped doses, wind up taking multiple doses
- Limited income
  - Unable to afford medications
  - Unable to afford and engage a caregiver

Reasons for seniors medication non-adherence

- Swallowing problems
  - Dysphagia - difficulty to swallow so may end up crushing or chewing (potentially dangerous as some medications are long-acting formulas that will be released too fast when broken or crushed
- Hearing loss (Physical wellness)
  - Difficulty hearing and understanding instructions from doctors
- Social isolation
  - Those living alone will likely miss their medication schedules

Thoughts

- Why do some elderly have difficulties remembering the time to take medications? They got illness like dementia and Alzheimer's Disease? Cognitive decline? Social isolation? Visual or hearing impairments?

- How can I as a student, reduce these kind of problems? Design something that can help the elderly to remember easily? Set timer? Remind them frequently? Create a routine? Keep medications visible?

Problem Identification

Seniors with chronic illnesses are often prescribed with regular medication. They may have difficulties remembering whether they have taken their medications, leading to a missed dose and subsequently affecting their health.

Associated problems and thoughts:

- There is a need to sort of add a timer or indicator to help elderly remember when to take their medication.
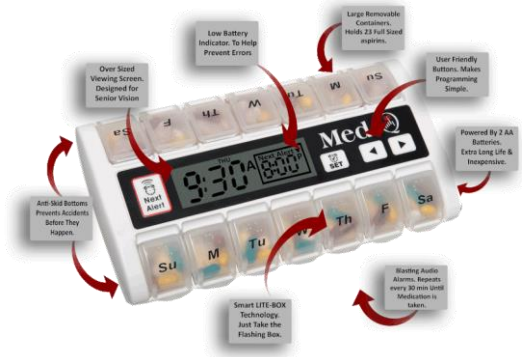- What are the current solutions?

Problems and design opportunities

Based on our research and observations, these are the two areas we will focus on:

- Vision problems (Physical wellness)
  - Clearer labels (i.e. bigger, simpler)
  - Sound indicators (i.e. alarms, beeps, etc)
- Hearing loss (Physical wellness)
  - Visual indicators (i.e. lightings, strobes)

Current ideas and products

Problems with current products

- Too complicated
- Some words on the product are too small
- Some medicines that elderly take are powdered or water medicine
- Some elderly are blind
- Some elderly are deaf so that can't hear the alarm that is set
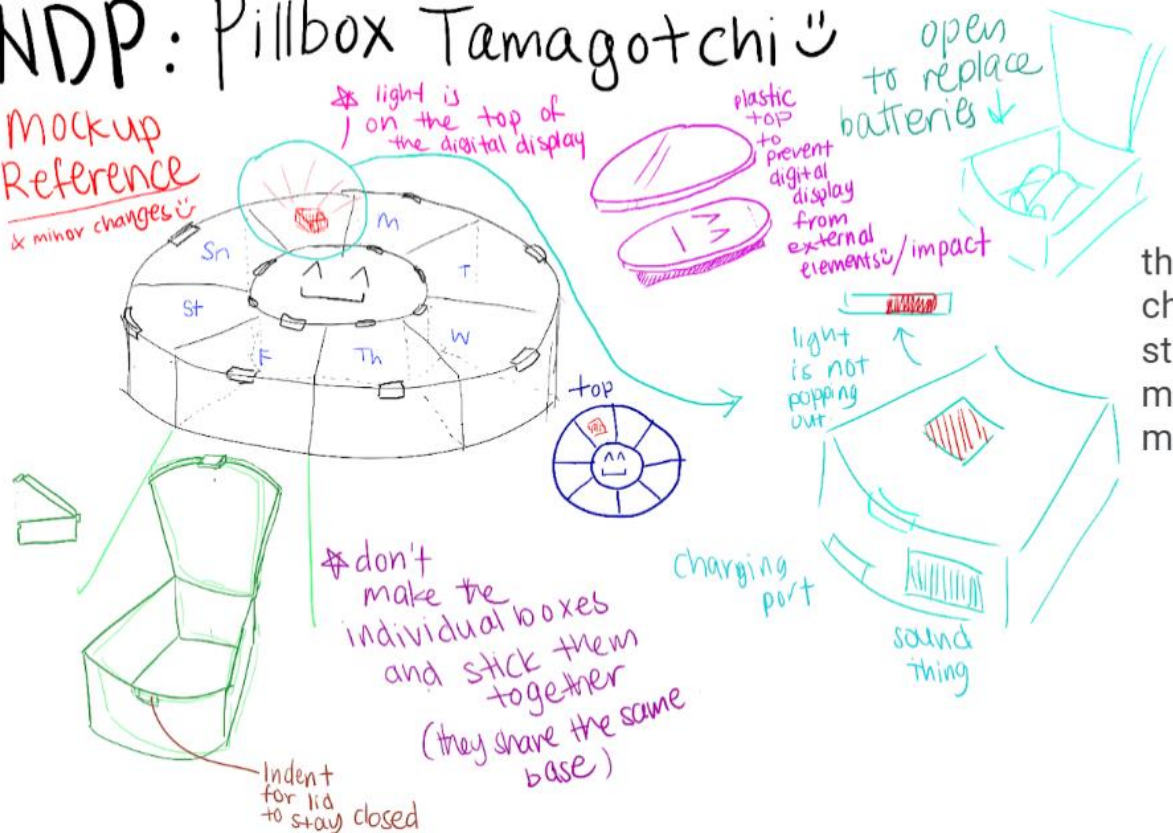- Some elderly may not have the strength to open up the lids / difficulty opening up lids

Idea sketches (improving on existing designs)
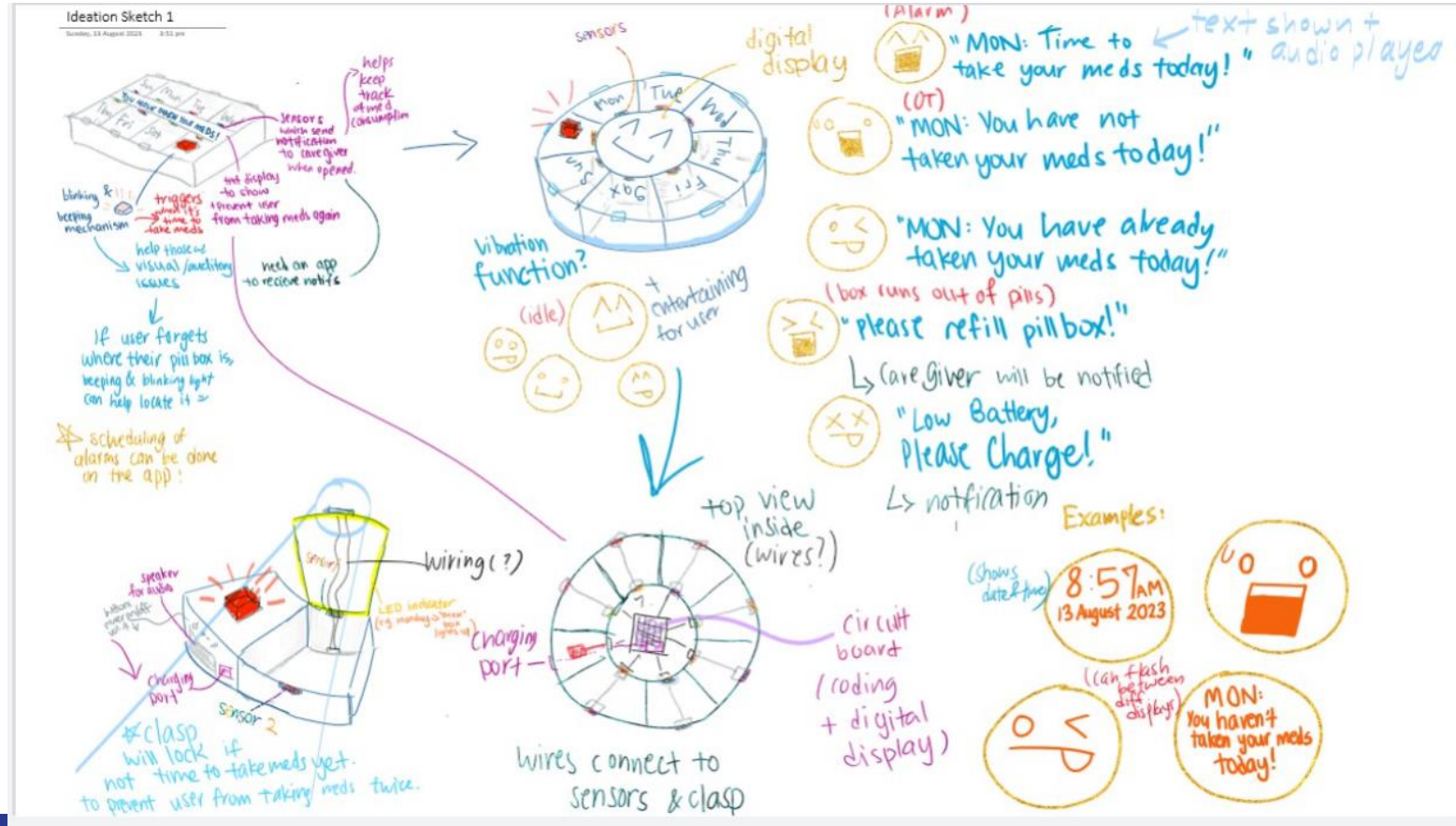
Idea sketches (improved version)

NDP: Pillbox Tamagotchi ☺

Mockup Reference
& minor changes ☺

☆ light is on the top of the digital display

plastic top to prevent digital display from external elements ☺/impact

open to replace batteries ↓

light is not popping out

+ top

☆ don't make the individual boxes and stick them together (they share the same base)

Indent for lid to stay closed

charging port

sound thing

these are minor changes and some stuff to make the making of the mock up easier

Mock-up pictures

Mock-up shows the possibility of how the actual product may work.

Display shows emoji indicating display is on low battery and needs a change of batteries

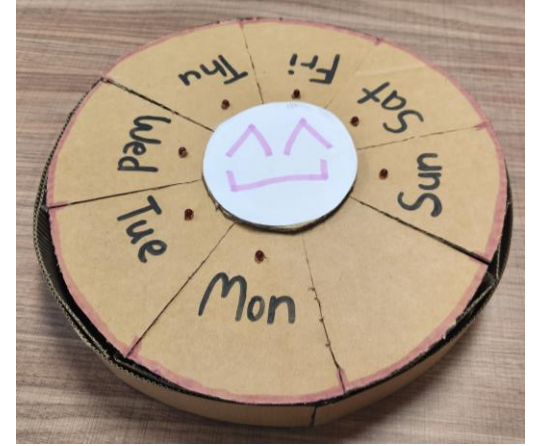Display shows emoji reminding user to take medication for the day

Mock-up pictures

Display shows emoji indicating medication has been taken for the day

Display shows emoji indicating missed dose and LED for the day lights up


Display shows emoji indicating idle function

Probable usage scenario

1. Product reminds the user via the display and lit LED for the day
2. User passes by product and reminded by the LED and display indicator
3. User proceeds to open up the compartment for the day to retrieve medication
4. Once medication has been taken, LED indicator will be automatically turned off
5. Main display will indicate the "medicine taken" emoji
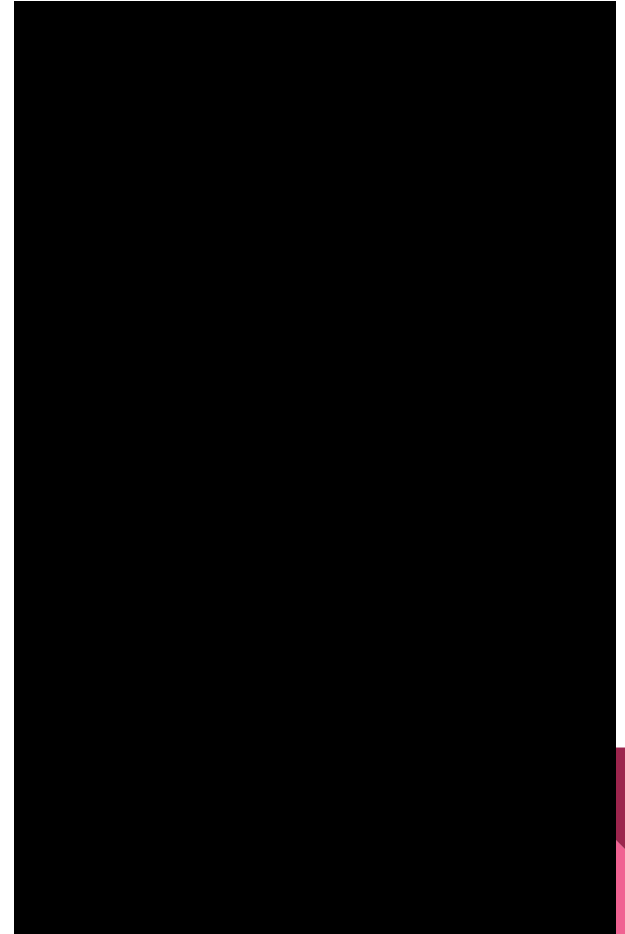
End of presentation

Team Greenridgeans and their Remindogatchi

Thank You