



EJECTON: “Eject” Yourself from any Situation; Help is just One Press Away!

Objectives

Primary

- ◆ Rapid communication
- ◆ Location-tracking accuracy
- ◆ User-friendly design
- ◆ Straightforward usage

Secondary

- ◆ Customizable distress notification
- ◆ Identifiable appearance
- ◆ Minimalist design

User Requirements

Explicit

Ease of communication

Quick identification of the location of distress

Accessibility friendly design

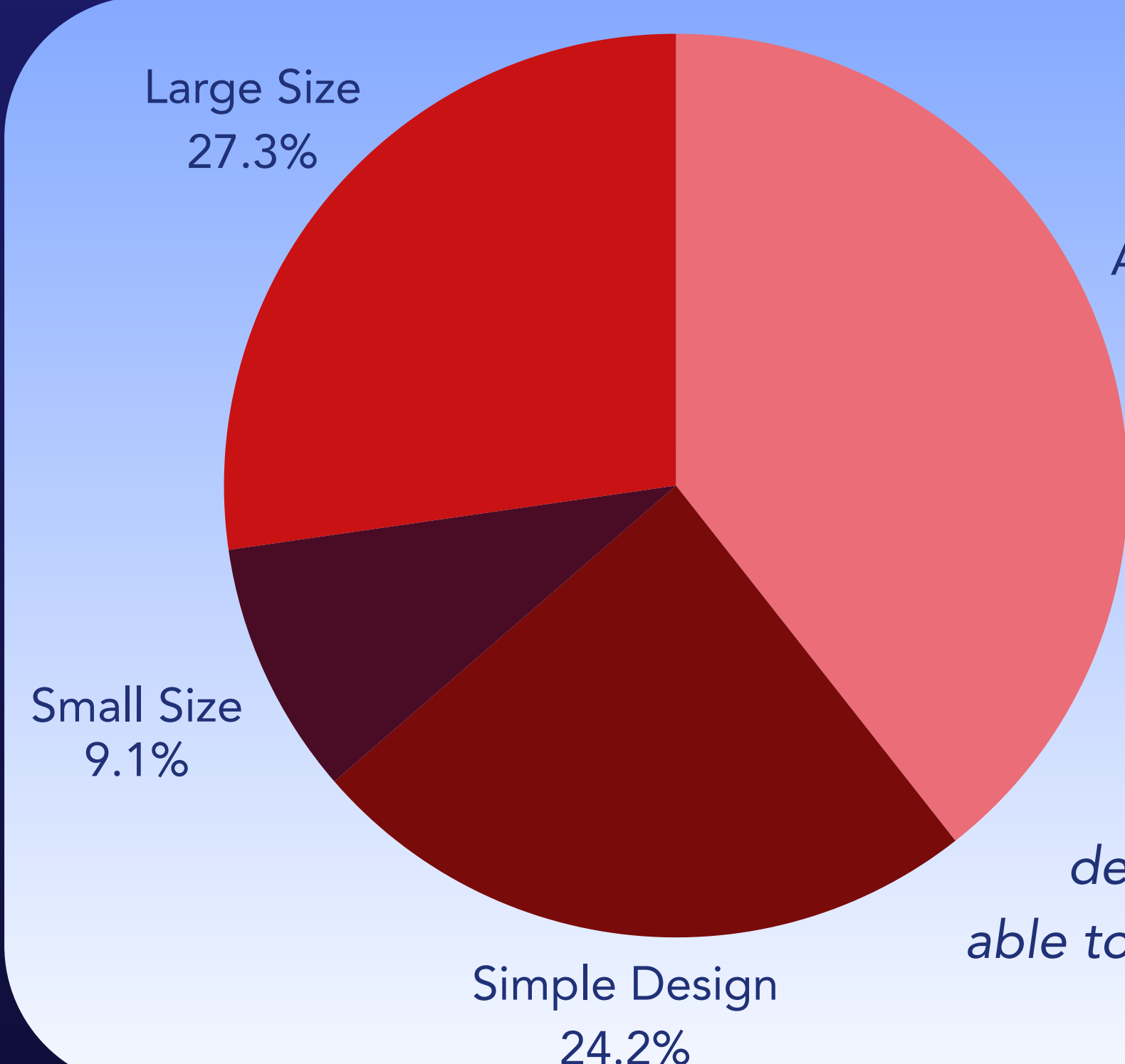
Implicit

Pre-customized distress signal sent through a press of a button

The user's current location sent through said press of a button through a satellite-based GPS tracker

Uniquely shaped, bright design to help users in tactilely and visually identifying it

Visual Data 1



Of the 33 individuals (aged 65+ who claim to live alone) surveyed about elements of a communication device they valued most, accessibility design was voiced highest, followed by a large design, then a simple design. With this in mind, we were able to create our effective emergency alert device: the EJECTON.

Problem Statement

The **EJECTON** is an emergency alert device created with those with low dexterity in mind, addressing the community issue of a lack of sufficiently quick aid for individuals experiencing urgent situations, especially for elders that live alone at risk of medical emergencies.



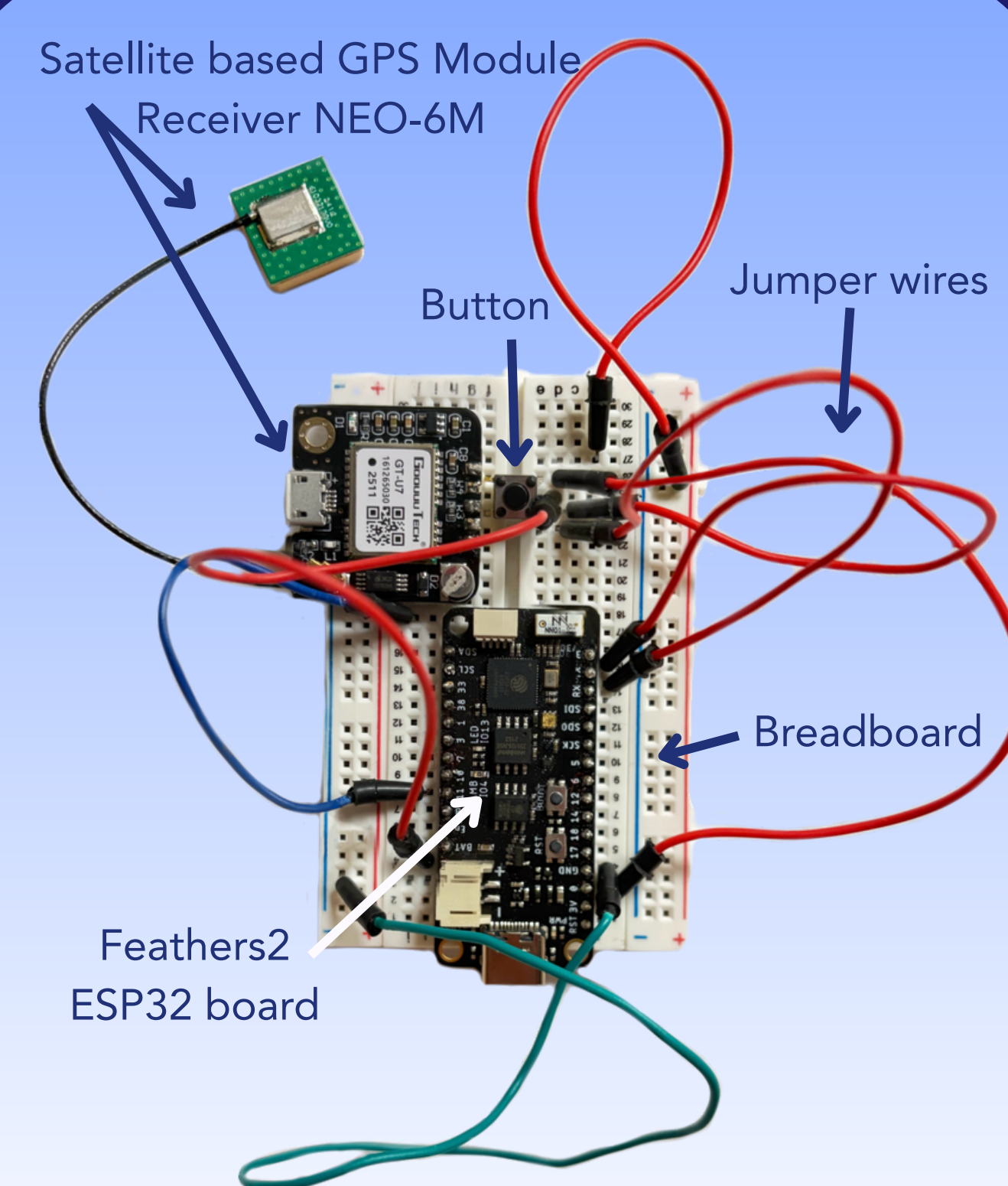
PROTOTYPE



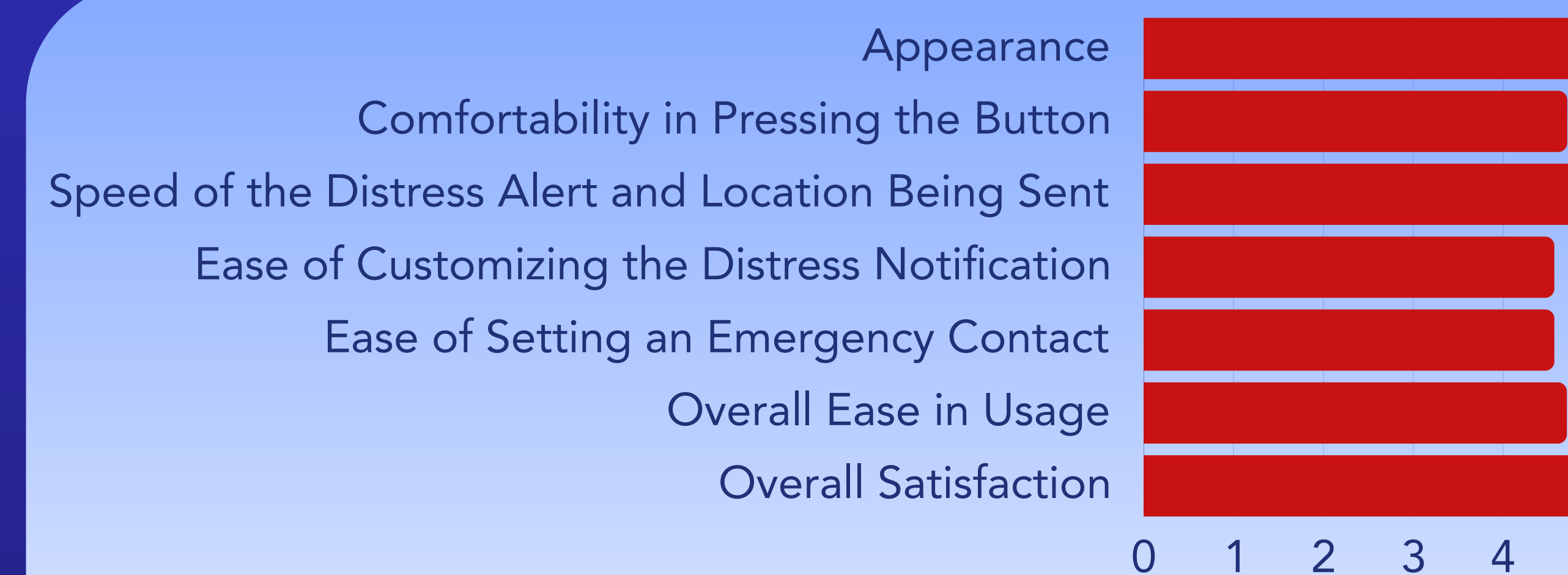
Pushing the large visor (labeled to the left) pushes the coded button and activates the **EJECTON**, sending a distress alert and the user's current location to a user-chosen emergency contact through a mobile app we created through Blynk (to the left). The core of the body is a wire skeleton covered with soft clay and plush filling, all covered with bright red felt.

The breadboard contains various components each performing a separate function:

- ◆ The button is concealed under the visor of the **EJECTON**, which once pressed, will run the code.
- ◆ First, the information collected by the NEO 6M is sent to the featherboard. The featherboard has access to the internet, which sends a signal through the web from the featherboard to our mobile app, created through the Blynk application. The jumper wires connect the pins from the NEO 6M to the pins on the featherboard, which is connected to the breadboard itself.



Visual Data 2



We had 7 elders in our community (aged 67-78) test the **EJECTON** and give us feedback on 6 categories/features of the **EJECTON** on a scale of 1-5 in satisfaction, with 1 as dissatisfied and 5 as satisfied. The average score for each is displayed above.

*“I have tremors in my fingers, so I love how the button is big enough for me to press with my palm. My kids worry about me a lot... but if I had [the **EJECTON**], they would definitely be pleased to know I can contact them with it if I ever need to.” (A neighbor, Mrs. Gonzales (aged 78) who tested the **EJECTON**)*

Results

EJECTON effectively sends quick distress alerts and the user's current location to a designated emergency contact while remaining accessibility-friendly:

- ◆ **Simple system:** One button press quickly sends the user's customized distress alert and current location to a chosen emergency contact through our mobile app.
- ◆ **Physical ease:** The large button provides ease in pressing for users with low dexterity.
- ◆ **Ease in locating the device for use:** Its bright color aids users in quickly locating it visually, and its unique shape aids users in tactilely locating it.

Conclusion

The **EJECTON** effectively aids users in receiving sufficiently quick aid in urgent situations by quickly sending a chosen emergency contact their customized distress alert and their current location with a simple press of a button.

The **EJECTON** remains identifiable particularly for younger generations, but in future iterations, we wish to further expand audience appeal by offering:

- ◆ Personalization: name engravings, pictures printed onto the body, different colors
- ◆ Different features: clips on the back to attach to clothing, adhesive on the back to attach to surfaces, further coding to attribute a number of button presses to the level of urgency of the emergency (ex: 1: very urgent, 2: less urgent, 3: least urgent)

Citations

- ◆ Gray, Autumn. “Senior Resources.” Prime Time Publishing, www.primetimenm.com/2024/06/04/senior-resources/. Accessed 4 Mar. 2026.
- ◆ Gurley, R.J., et al. “Persons Found in Their Homes Helpless or Dead.” The New England Journal of Medicine Homepage, www.nejm.org/doi/full/10.1056/NEJM199606273342606. Accessed 5 Mar. 2026.
- ◆ Socorro Gonzales, May 24, 2026, neighbor 78 years old [Interview]

Design Process, Ideas, and Iterations

- ◆ **Identified** the safety risk for isolated, elderly individuals through anecdotes of local firefighters as well as personal accounts of elderly family members who lived alone facing medical emergencies when help was not nearby
- ◆ **Surveyed** elderly individuals in our community to understand what our target audience looked for in a communication device
- ◆ **Brainstormed** and **tested** several ideas and iterations of our communication device before creating the **EJECTON**

A keychain with a button

Pros:

- ◆ Portability

Cons:

- ◆ Unrealistically small for the size of the coding components desired
- ◆ The button is small, requiring users to press it with their fingers which may make our device inaccessible for those with limited dexterity



A large button encased in a clay body that looks like the crewmate character from the mobile game, Among Us. When pressed, sends a distress text to a chosen emergency contact.

Pros:

- ◆ Cost-efficient materials
- ◆ Large button = accessibility friendly
- ◆ Identifiable design particularly amongst younger people who can share information about or purchase this for their elderly loved ones

Cons:

- ◆ A hard, clay body could harm the user and be prone to breaking
- ◆ Difficult to distribute widespread, as each unique device would require a unique telephone number which would be difficult to acquire

