SafetyFox

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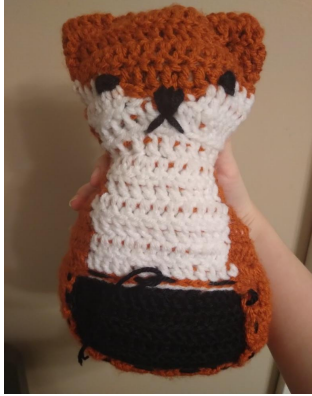
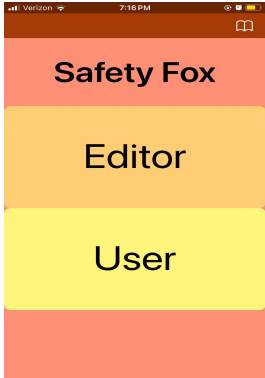
So What? Who Cares?

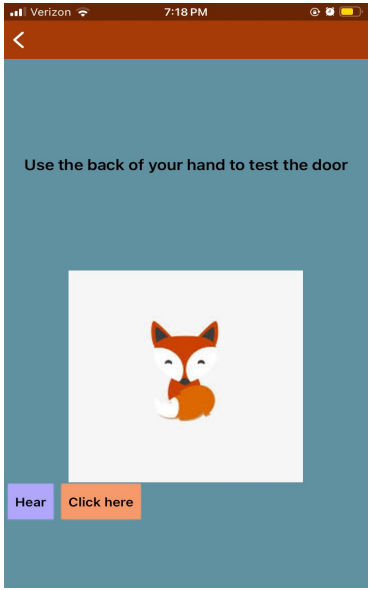


- Space
  - Reduce the number of children dying in house fires
- Problems
  - Children panicking, being unprepared for the situation, and not knowing how to escape
  - For example, children could just end up hiding in a closet
- Solution
  - We built an application called SafetyFox that displays preset exit instructions on a child's electronic device
  - The instructions are written and spoken, parents can edit the instructions
  - The application can detect a fire alarm and has educational resources to prepare families
  - SafetyFox is based on research with local fire departments and children
  - We also made an enclosure that is shaped like a fox plushie and makes a child feel more secure, it also has a kN95 mask in the head to filter smoke
- Results
  - The application is running and has been tested, no children or real smoke/fire were used in testing
- Future
  - Use in active shooter situations, air raid attacks, natural disasters
  - Application able to detect fire alarms, bluetooth function coded
  - Application published

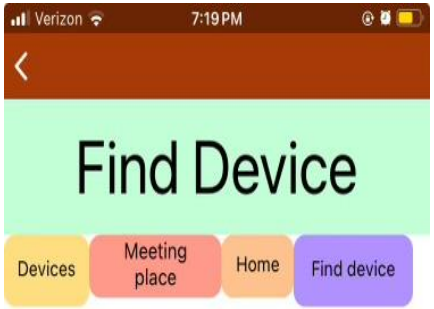


SafetyFox Application

- An example of the modify-able instruction pages
- There are pre-set instructions to give parents an idea of what to write



- This page is where a parent can press a button and go to a different part of the app (such as an editing page, the page to locate devices, etc)
- Page also contains educational resources



- The app will allow parents to use bluetooth to find a child's device, thereby finding the child
- Prevents a child getting lost if they get scared and run away after escaping a fire

- This page is where the parents would be re-routed to the instruction page they want to edit

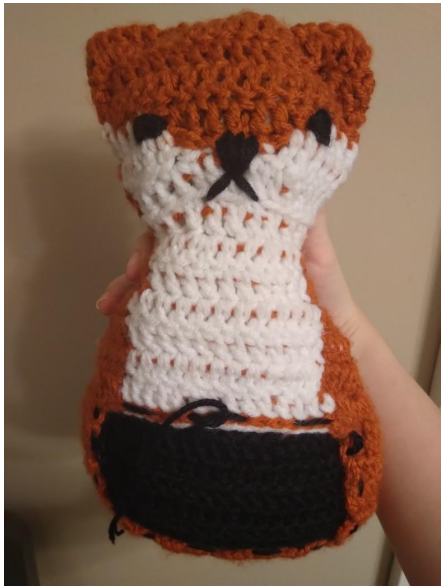
SafetyFox Enclosure

- While we were brainstorming for SafetyFox we came to the conclusion that younger children may need to be obligated to use it, and we wanted to add an extra level of comfort to our product so we came up with our enclosure

- The enclosure is made to act as a plushie and calm the child during a fire.

- The enclosure also has a kN95 mask installed inside of the head of the plushie to filter smoke and give the child extra time to escape before they suffocate due to smoke inhalation.

- Our prototype is currently a crocheted plushie, but we plan to have them manufactured with fire-resistant materials.



Research

- Fire rescue call rates had increased by over 700 calls from 2019 to 2020 and were continuing to rise (Milwaukee Fire Department yearly report)
- Met with a firefighter from the West Allis Fire Department
- Asked questions about children dying in fires, responses children have to fire alarms and firefighters, and other necessary preliminary information
- Survey
- Presented ideas and simple fire safety information to elementary schoolers at Golda Meir, after presentation we handed out QR codes for survey that gave us a deeper idea of the resources needed in our community
- Survey had questions such as safety devices in their homes (smoke detectors, fire extinguishers, etc.), if they had a device/what kind of device they had,what they knew about fire safety
- Through the survey we found out that many children had devices(phones/tablets), most homes had smoke detectors, and that many children only knew “stop, drop, and roll” or PASS (acronym for using fire extinguishers)

Implementation and Testing

- We programmed our app using a site called MIT app inventor
- At the moment the app is not available, but in the future the app will be available on the app store and Google play
- The app will function on iOS and android
- Testing
  - We tested the enclosure on ourselves, placing devices of varying sizes in the enclosure and attempting to breathe through the mask, all tests were successful
  - We tested the app using a program designed for testing apps created on MIT app inventor called MIT ai2 companion, all tests were successful
  - The buttons, text boxes, text-to-speech, and every other encoded components were functional

Our Future

- Next steps
  - In the future, we plan to have our app fully coded with it able to detect fire alarms and have bluetooth for finding devices functional
  - We are currently in the process of publishing our app, but we would like to have it fully live
- Future uses
  - We want to create other apps by changing some small factors of our current application such as color scheme and text
  - Future apps would be used in active shootings, terrorist attacks, and more