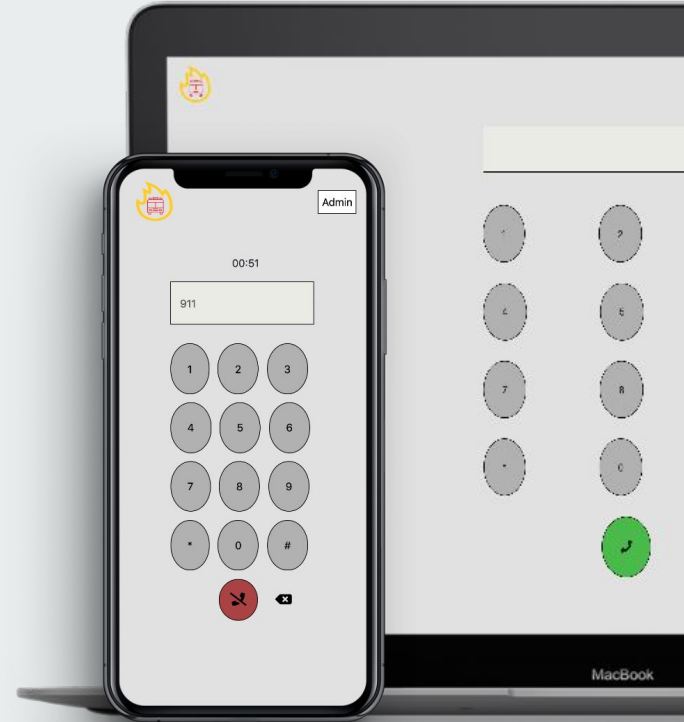




# Squadron

Paul Hewitt, Shrey Patel, Sopuruchukwu Gift Ugwuonah

April 8th, 2020





## Meet the team



Paul Hewitt



Shrey Patel



Gift Ugwuonah

# Problem, Requirements, & Framing

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# Problem Statement

Regina Fire & Protective Service (RFPS) has no modern way of communicating with, and educating both parents and kids during, and after, the RFPS school assembly program. The current means include outdated technology, and sending documents home with students.

- With regards to 911 education, the current method of teaching at schools utilizes a traditional handset phone. The current generation of students have been raised with smartphones, and are having a difficult types interacting with this now 'dated' phone.



### Past Experiences

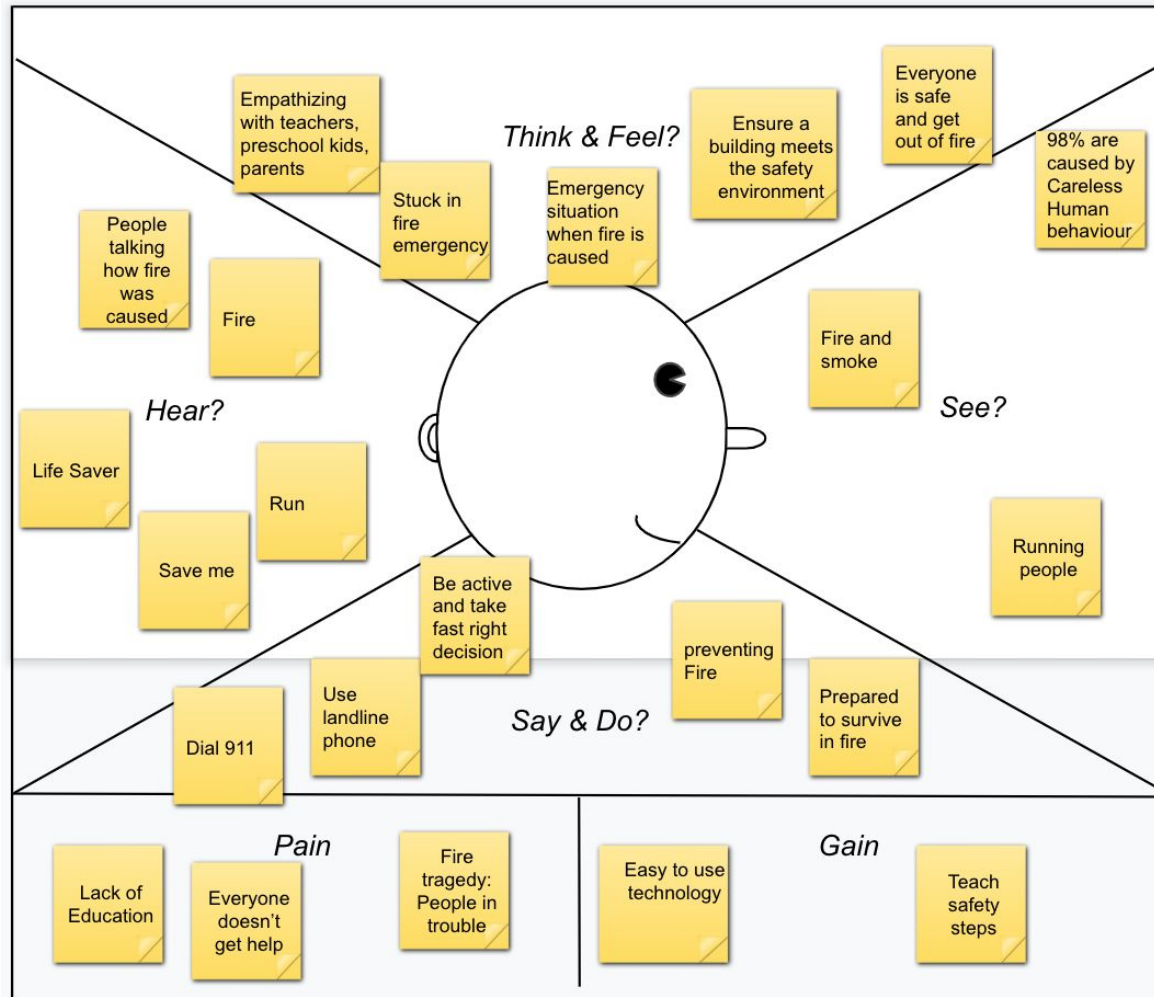


### Users



### Goals And Needs



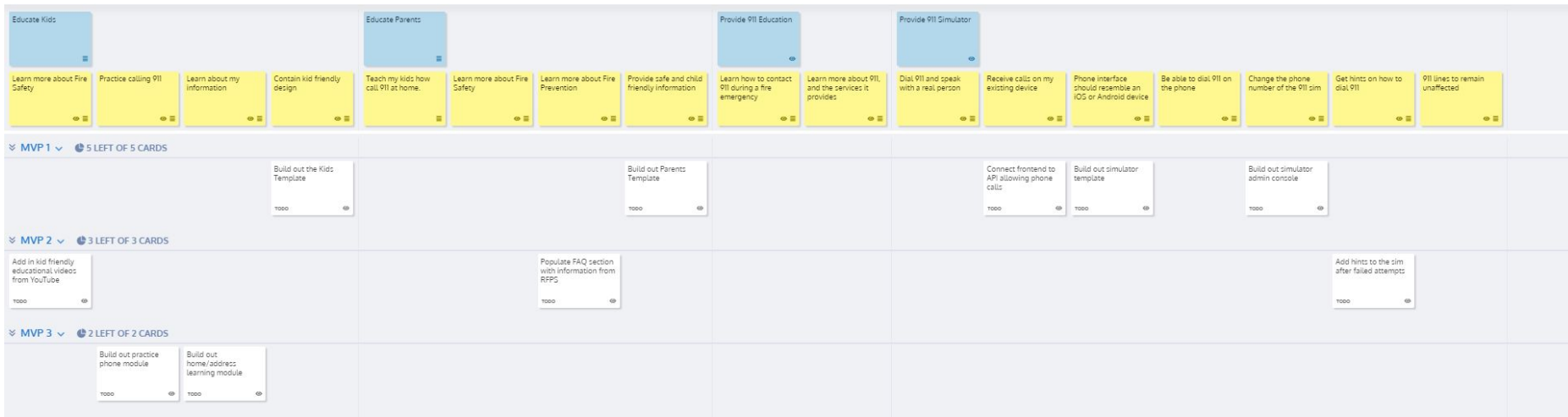




# Squadron's Solution

Build a web application with three distinct modules

1. **Phone module.** This will look, and function like a real phone. Upon dialing 911, a real, live phone call will be sent out to the number of RFPS' choice
2. **FAQ/Tips module.** This is a simple FAQ, in which RFPS can upload tips and QAs in order to provide more information to parents and kids at home
3. **Demo module.** Similar to the phone module, but not a real, 'live' phone. This allows kids to practice using the 911 simulator at home without placing an outgoing call





Provide 911 Simulator

Dial 911 and speak  
with a real person

Receive calls on my  
existing device

Phone interface  
should resemble an  
iOS or Android device

Be able to dial 911 on  
the phone

Change the phone  
number of the 911 sim

Get hints on how to  
dial 911

911 lines to remain  
unaffected

Connect frontend to  
API allowing phone  
calls

Build out simulator  
template

Build out simulator  
admin console

Add hints to the sim  
after failed attempts



# User Stories

If you click into each card, you still see a detailed user story.

These include, the who, the what, the why, and emotions related to each story

## Card

### Dial 911 and speak with a real person

As a user, I would like to be able to dial 911 and speak with a real person on the other side of the line. This way, the phone call actually feels legitimate, and personal. This will make me more confident calling 911 moving forward

Created by Paul Hewitt  
Created about a month ago  
Card color ☐ Default



# MVP (Minimum Viable Product) Vision

## MVP 1

- Create a real, working, phone simulator
- Build, but not populate the other modules

## MVP 2

- Populate the FAQ module with questions and answers
- Add temporary educational videos into the Demo module
- Add hints to the phone simulator to guide struggling students

## MVP 3

- Build practice phone for Demo module
- Add activities to Demo module to reinforce fire preparedness education

Idea to <code>

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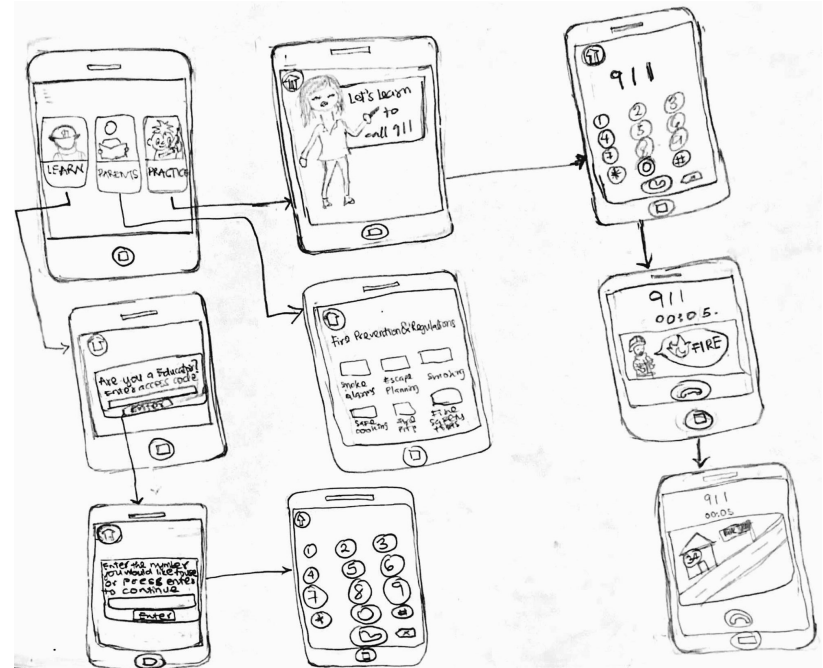
# Low Fidelity Prototypes



## Low-Fidelity Prototypes

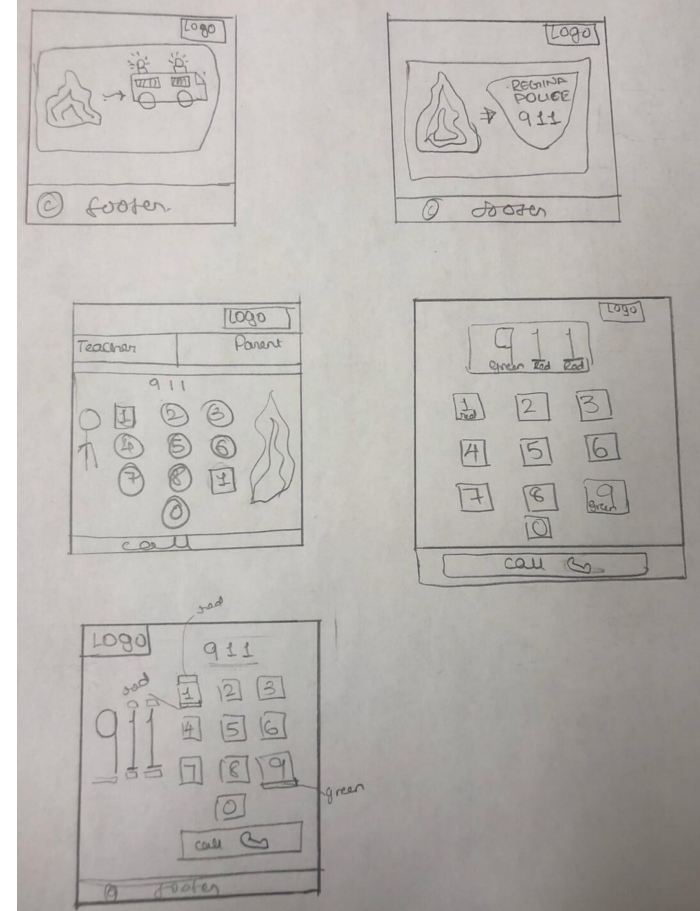
- Each team member independently made their own Lo-Fi Prototypes for the web application
- The team then did a “show and tell” of their prototypes, with pros, cons, and justification discussed
- Key, and similar elements were identified, and compiled
- These key elements formed the basis for the High Fidelity Prototypes

- Gestalt Principle:
  - Symmetry and Proximity.
- Signifiers:
  - The Icons and names of the buttons on the homepage helps the user know what each module is used for .
- Considering that the app is being used by kids, I thought it was best to make the app interactive and easy to use (Low Coupling & Low ceiling)



# Shrey's Lo-Fi Prototypes

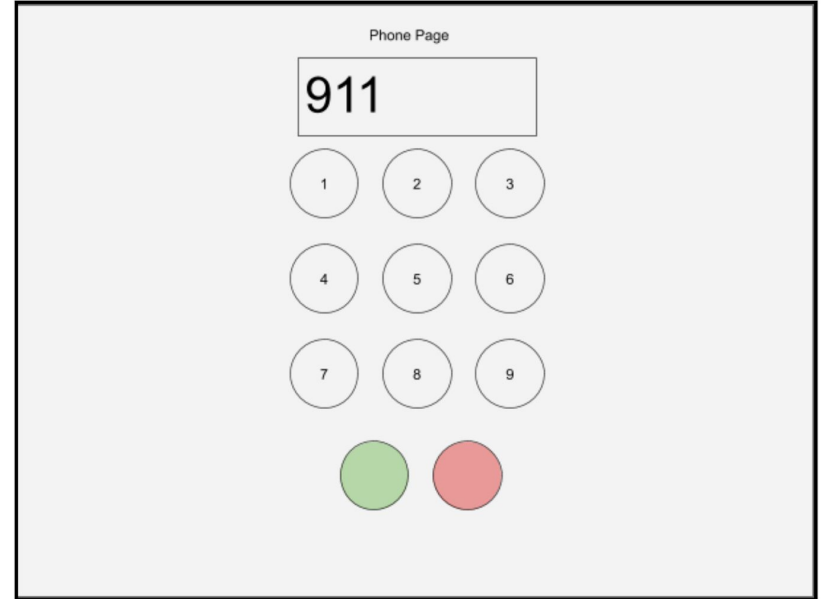
- Affordances:
  - picture of fire and fire truck
  - the shape of 9 and 1 buttons are different
  - Because kids can interact
- Signifiers:
  - green for call and hang up
- Gestalt:
  - symmetry





# Paul's Lo-Fi Prototypes

- Skeuomorph
  - Model the phone simulator after existing iOS/Android designs
- Affordances
  - CTA buttons different colors, indicating they can be interacted with
- Signifiers
  - Green for make call, Red for end call
- Gestalt
  - Keeping everything symmetrical
  - Whole module is 'enclosed' in an invisible rectangle in centre of page





# Lo-Fi Themes and Similarities

- Main menu with 3 buttons
- 3 Modules
  - Parents
  - Kids
  - Phone
- Limit the use of the Phone Module
- Practice or demo mode
- Accessibility
- Responsive design



## Lo-Fi Customer Discussion

- Customer liked the idea of using any phone number to receive calls
- Customer warned us of scope creep, reinforcing the phone was the key deliverable
- Mini games and activities may be unnecessary, keep them in backlog for now
- Have the hints on the phone module disabled initially, do not make it too easy
- Ensure the phone admin make is password protected

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# High Fidelity Prototypes

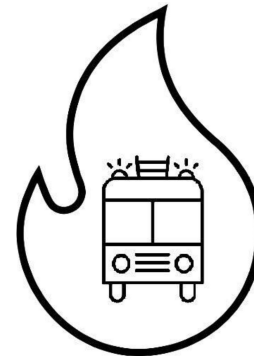
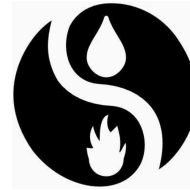


## High-Fidelity Prototypes

- Using the themes and similarities from the Lo-Fi prototypes, as well as customer and supervisor feedback, the team began designing Hi-Fi prototypes using Balsamiq
- Responsive design was kept in mind
- The app will most likely be used on a smartphone, so the team had to be weary of screen width
- Team logos were also designed, with the customer picking the final design

# Logos

- Different types of logo, to stop the fire, water is important
- The top logo is like marketing logo, aim is to aware people and provide every possible measure to stop fire



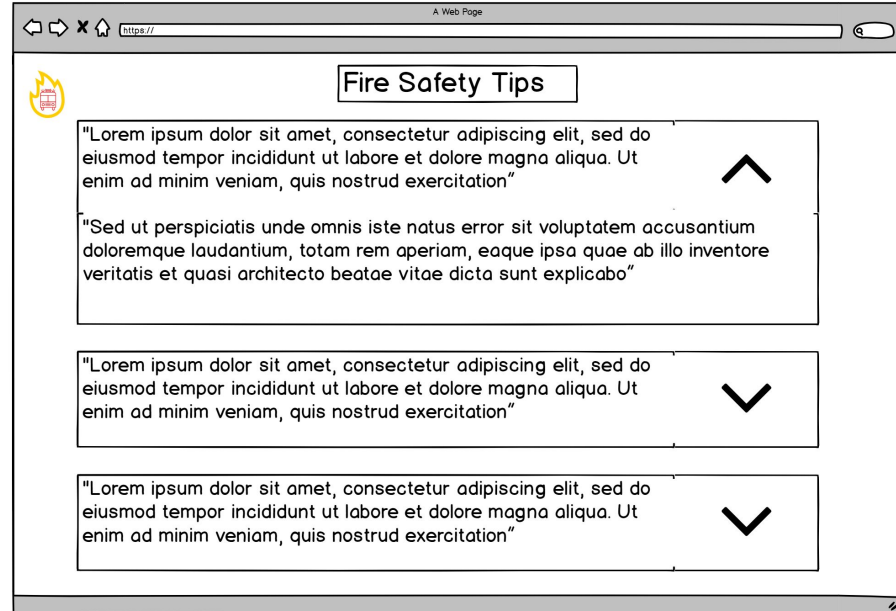
# Main Menu

- Gestalt Principle:
  - Symmetry.
- Signifiers: Icons and proper labelling to let the user know what each module is used for.
- Affordances: Good affordances; the user knows that the buttons are clickable



# FAQ/Tips Module

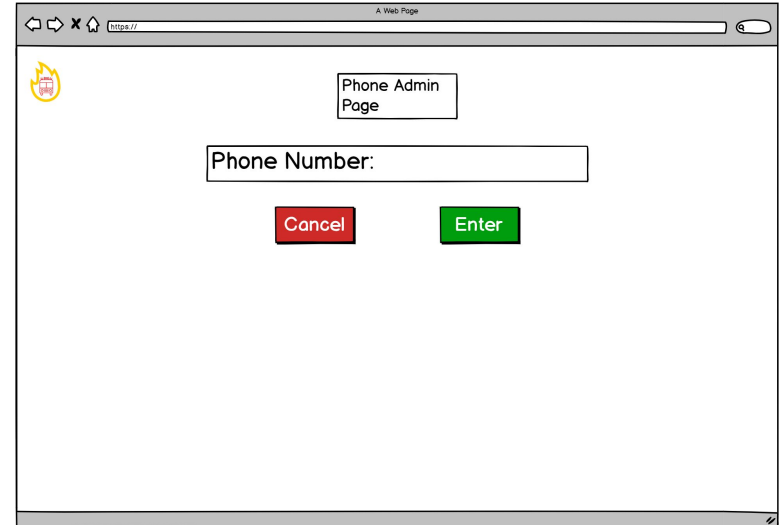
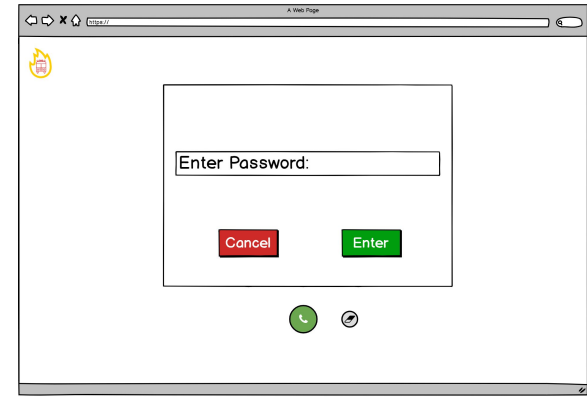
- Gestalt Principle: Enclosure
- Signifier: The down arrow lets the user know it is dropdown menu.
- Skeuomorph: this imitates the existing FAQ Page for most apps/websites





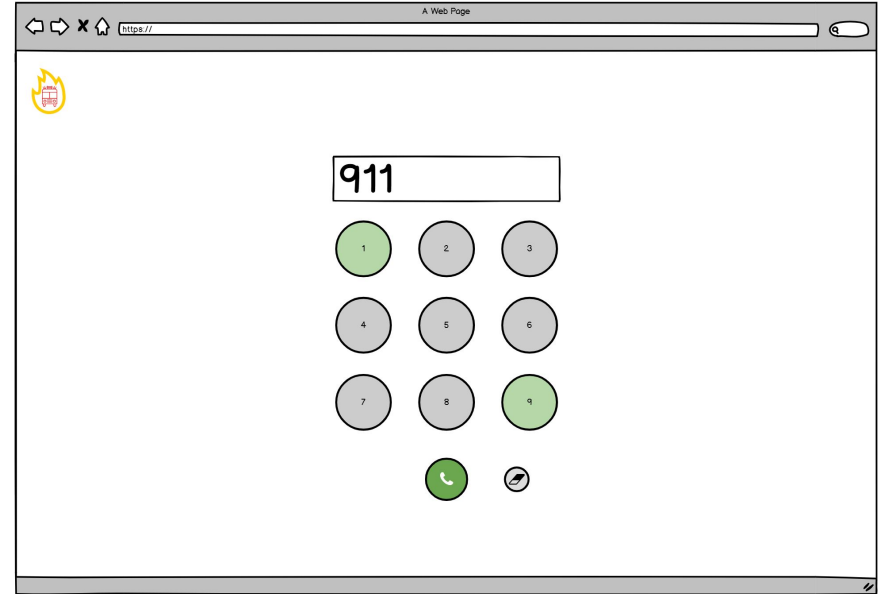
# Admin Module

- Affordances
  - Well defined buttons with clear labels
  - Password and Phone Number are clear input boxes
- Signifiers
  - Color coded buttons
  - Messages when an invalid password is entered (not shown)
- Mapping
  - Enter button on right, cancel on left as is standard/natural



# Phone Module

- Skeuomorph
  - Model the phone simulator after existing iOS/Android designs
- Affordances
  - CTA buttons different colors, indicating they can be interacted with
- Signifiers
  - Green for make call
  - On 3 failed attempts, hints are displayed
  - Icons in buttons to reinforce their purpose
- Gestalt
  - Keeping everything symmetrical
  - Whole module is 'enclosed' in an invisible rectangle in centre of page
- Mapping
  - Phone keyboard uses ITU E 1.161 International Standard.





## Hi-Fi Customer Discussion

- Customer picked out her favorite logo, the firetruck inside the flame
  - Requested color to be added
- Supervisor suggested changes to module names which were implemented
  - Parents module was renamed to FAQ/Tips, Kids module renamed to Demo
- Both customer and supervisor wanted the admin button to be more visible
- Customer loved the webapp implementation, allowing it to be used on any and all devices with an internet connection
- Customer loved the ability to call any number

# Implementation

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# The Tech



# The Tech Stack

## Frontend

Angular 

Bootstrap 

## Backend

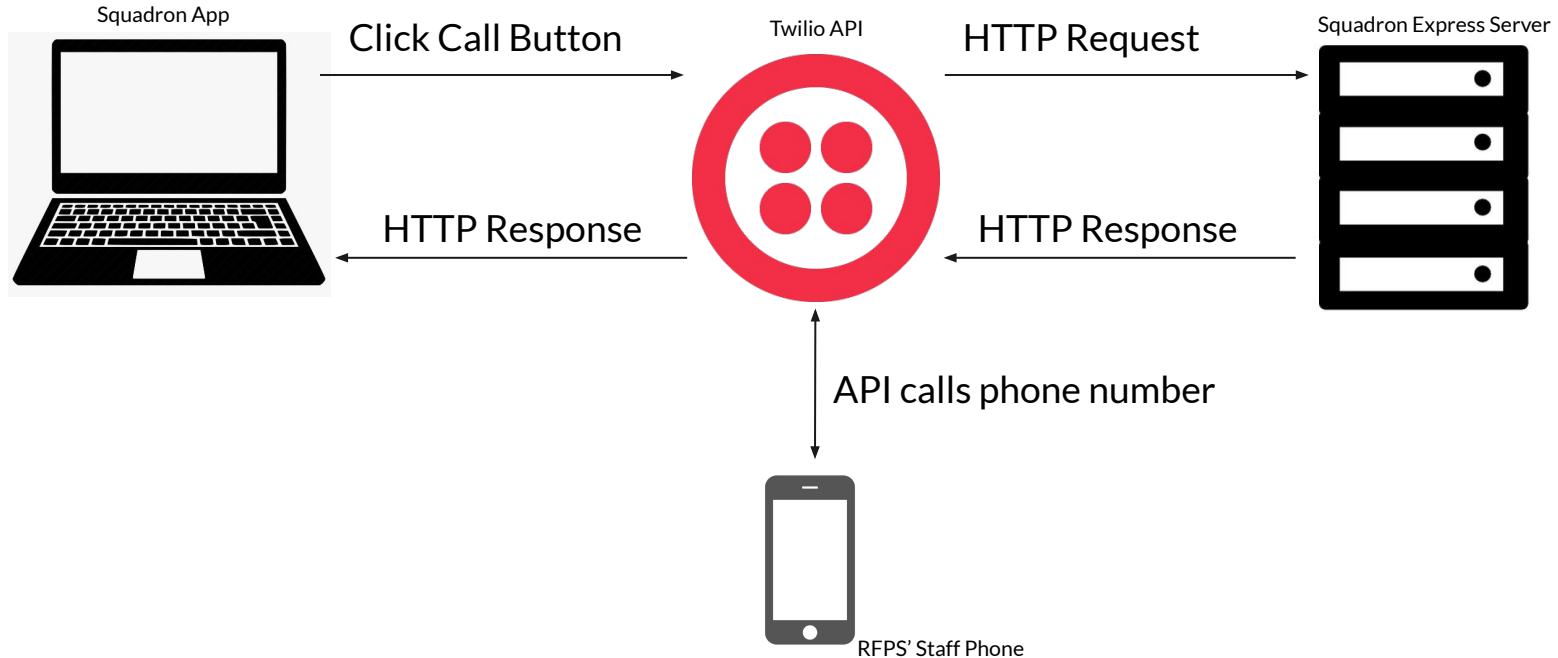
NodeJS 

Express 

## API

Twilio 

# How Squadron Works



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# Screenshots





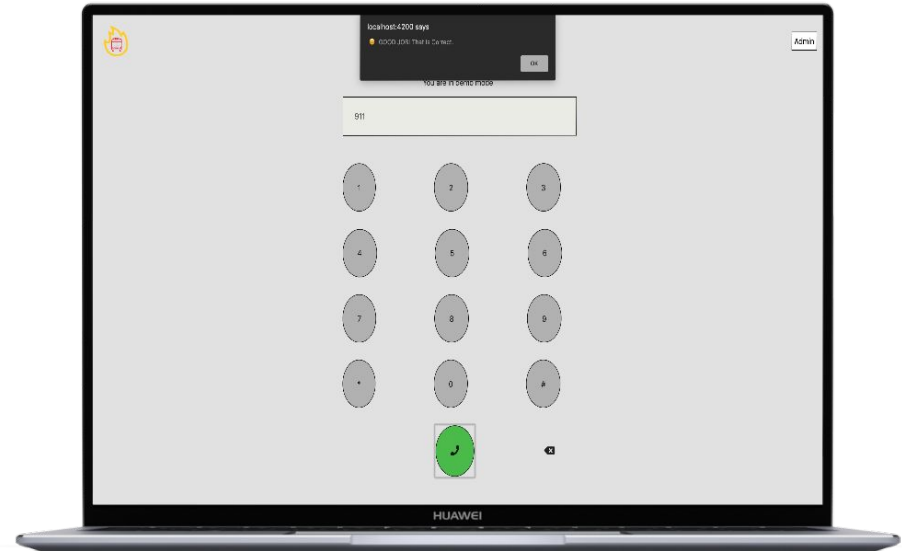
# Main Menu



# FAQ Module

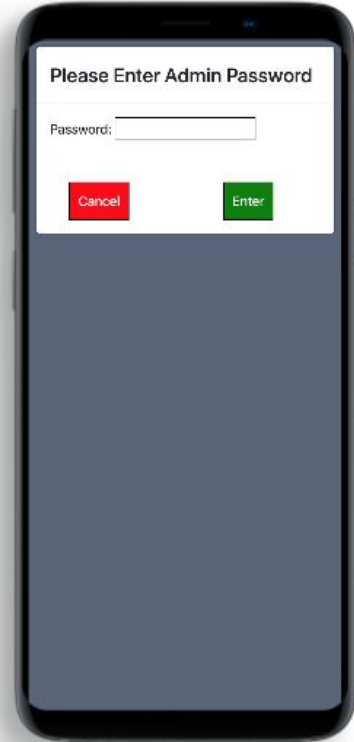


# Demo Module





# Admin Password



# Admin Page



# Phone Module

Hints are being displayed



# Phone Module

Call in progress



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# Demo



# GitHub Stamp of Approval

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# GitHub Checklist

- ✓ All previous deliverables uploaded in clearly marked folders
- ✓ Video link and final powerpoint presentation uploaded
- ✓ ReadMe contains Table of Contents
- ✓ ReadMe contains installation steps, and link to application
- ✓ Repo contains front and and backend code
- ✓ ReadMe contains how-to documentation



# Reflection



# How did you feel about this project?

## Likes


- Working with a real customer to build a real, impactful solution
- The way the team was guided through the design process by the instructor was extremely beneficial
- Working with new tech
  - Twilio
- Having labs as guaranteed project work time was great

## Dislikes

- Would have been interesting to have class check ins with other groups to see what they are developing

## Overall

- Overall, very cool project
- Working with the local fire department is an awesome experience
- Solution has the potential to be used in the community, and save lives
- Developing a product that fire services around Canada do not have



# What did you learn about yourself as you collaborated and worked through this project?

- Paul
  - I need to stop assuming people know what I am thinking. Need to slow down sometimes, and articulate and document ideas
  - Taking time to properly follow the design process is always worth it, no matter how badly you want to start coding
- Gift
  - I tend to want to work alone which is not good.
  - Time management is a really good skill and that has helped me alot.
- Shrey
  - I learned time management is a crucial skill and procrastinating everything at the last moment is not going to help. Additionally, I also learnt project management was so much important for the success of this project.



# How will you use what you have learned on this project going forward?

- Paul
  - The significance/importance of Discoverability. With proper design, each application you should have a rewarding, yet, almost obvious experience. In industry, frustrated customers can turn into lost customers, and this all starts with proper design
- Gift
  - Understanding that people and process should precede focus on technology is very important. Going forward I adopt the fast feedback cycle.
- Shrey
  - Coordination of progress with team before every timeline is the foremost that I will use going forward. Affinity diagram is what I am going to keep using as it helps to share ideas and for discovering innovative ideas for the project's success



University  
of Regina

