



Red Alert

A Web-based Client Communication Portal

Team Members: Sal Galan, Calvin Harper, Nick Nannen, Myles Dailey

Mentor: Han Peng

Client: Glenn Austin & Hans Yeazel from State Farm

Problem Statement Introduction

- **Our sponsor operates within the realm of insurance**
 - World wide insurance industry is multi trillion dollar market
 - Almost anything you can imagine can be covered by insurance
 - US laws impose that some forms of insurance coverage are mandatory, i.e Auto
- **State Farm is one of the largest insurance providers in the United States**
 - Millions of clients across the nation with varying policies and needs
 - Tens of thousands of employees (Agents)
 - State Farm strives help more people, in more ways
 - Communicating with clients needs to be efficient and effective



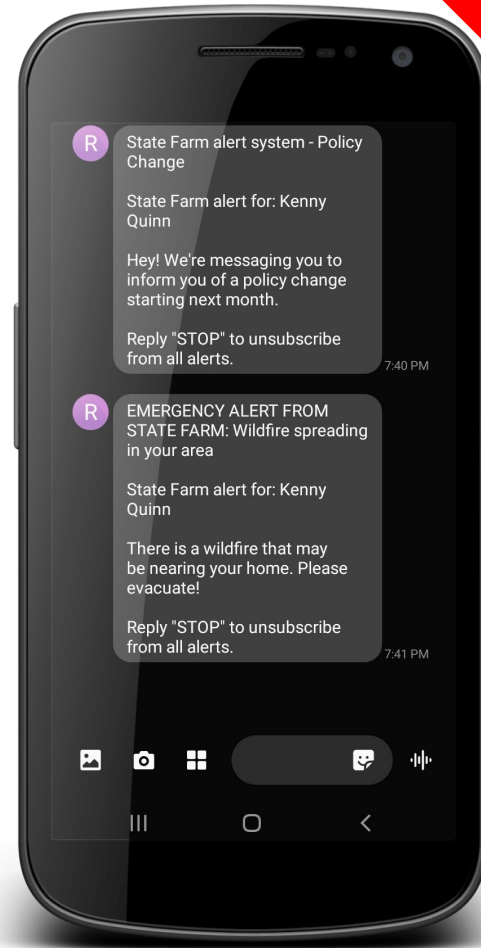
Problem Statement

- Why were we hired?
 - State Farm agents are able to communicate and notify customers, but only on very broad scale
 - Agents have a lot of clients, sometimes thousands
 - There is not currently a way to send specific notifications to relative subsets of clients
 - No system to visualize and send their client(s) notifications based on their exact geographic location
 - During times of crisis/potential danger(ie. forest fire), agents should be able to notify their clients quickly and easily
 - Send simple and/or helpful notifications not related to dangerous situations



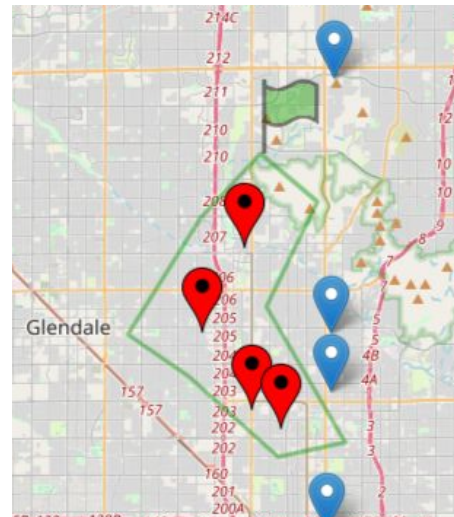
Solution Overview

- **Web-based alert system**
 - Better communication with clients
 - Uses text notifications and email
- **Primary use case is for emergency communication**
 - Can be used for more intuitive general communication
- **Emphasis on a more visual customer selection**
 - Draw to select feature
- **Searches can be done using other attributes**



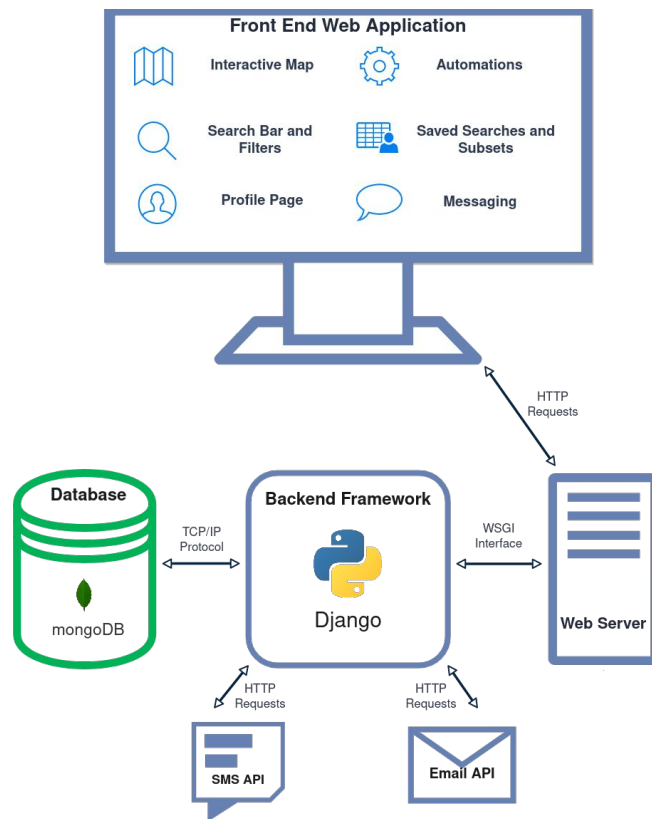
Key Requirements

- Ability to search and select clients with a "draw-to-select" tool
- Ability to re-execute and save previous searches
- Ability to create subsets of clients
- Notifications should have a priority level (emergency, social)
- Ability for agent to choose notification types (email/sms/both)
- Ability to create "automations" for notifications



Architecture and Implementation Overview

- **Front-End Web Application**
 - Includes six main modules
 - Communicates with backend via web server
- **Backend Framework**
 - Django, Python-based web framework
 - Queries database and calls SMS and Email APIs
- **Mock Client Database**
 - MongoDB
 - Stores mock client data for application testing
- **SMS and Email APIs**
 - SMS - Twilio Messaging API
 - Email - Django Mail Library



Prototype Demo



Challenges and Resolutions

	Challenges	Resolutions
Address Plotting	<ul style="list-style-type: none">• How to send client address from the backend to the frontend	<ol style="list-style-type: none">1. Divide address into separate components2. Send client information as JSON3. Store in html element4. Use javascript to grab client JSON5. Process data as needed
Sending SMS online	<ul style="list-style-type: none">• Most services are paid• Cater to larger organizations	<ul style="list-style-type: none">• Twilio - \$0.0075 per message
Mapping Interface	<ul style="list-style-type: none">• High costs for most services	<ul style="list-style-type: none">• Leaflet - Open Source Javascript Map
Drag to Select	<ul style="list-style-type: none">• How to detect clients within a shape	<ul style="list-style-type: none">• Use javascript libraries to detect points within polygons• Restrict drawn areas to n sided polygons.• Tool: Browserify



Testing Plan - Unit Test

- **Separate Our Unit Tests by Key Modules.**
 - **Dashboard Module**
 - **Examples of Unit Test:**
 - **show_dashboard, send_message, Save_automation**
 - **User Accounts Module**
 - **Examples of Unit Test:**
 - **Show_profile_page, User_login**
 - **Map Module**
 - **Examples of Unit Test:**
 - **Plot_client_search_results, clearMap, draw_Polygon**



Testing Plan - Integration Test

- **Separate Our Integration Test into Four Modules**
 - **Interactive Mapping Functionality - Test displaying and selection of clients**
 - **Notification System(SMS/Email) - Test Sending of Notification**
 - **Page Navigation - Test for Correct routing between pages.**
 - **Automtations - Test for correct automation at set time.**



Testing Plan - Usability Testing

- **Ensure Red Alert is efficient and effective**
 - **Envisioned Usage of State Farm Agents**
 - **Create test with descriptions on how to run the modules.**
 - **Modules Included**
 - **User Login**
 - **Dashboard Usage**
 - **Saved Searches**
 - **Saved SubSets**
 - **Automations**
 - **Profile Page**



Conclusion

- **Red Alert**
 - **Problem:** State Farm Agents need a simple method for quick and effective communication with clients.
 - **Solution:** Red Alert (Our Web Based Application)
 - **Goal:** Assist With Bringing Clients Closer to their Agent
 - Utilizing Efficient and Functional Communication
- **Future Focus**
 - Testing
 - Documentation

