



# Virgil Response

## Mobile Application

# About Us

Who are we?

- Lukas Garcia – Project Leader
- Bryan Cabrera – Front/Back End Developer
- Samuel Guyah – Google Maps Implementor
- Kyante Belvin – CSS Developer
- Michaens Bernard – Web to Mobile App Developer
- Jordan Lederer – Database MySQL Developer
- Saad Saeed – Quality Assurance Tester

# Vision Statement

The solution to a problem

## Motivation

- Create a mobile application that will use GPS satellite tracking to ping user location when in dire need of help.
  - If user has a low-level data connection or is running their mobile phone on low battery.
  - User can see ranger stations near by, as well as other services provided in the area.
  - Emergency services will know the user's location.

## The Concept

- Idea comes from technology used in low-wing and high-wing aircraft when a sudden drop in altitude, or crash occurs.
  - A mobile black box with a distress signal that links to first responders.
  - A direct connection to emergency services.
  - Emergency services can then pick up the link and come to the aid of the user.

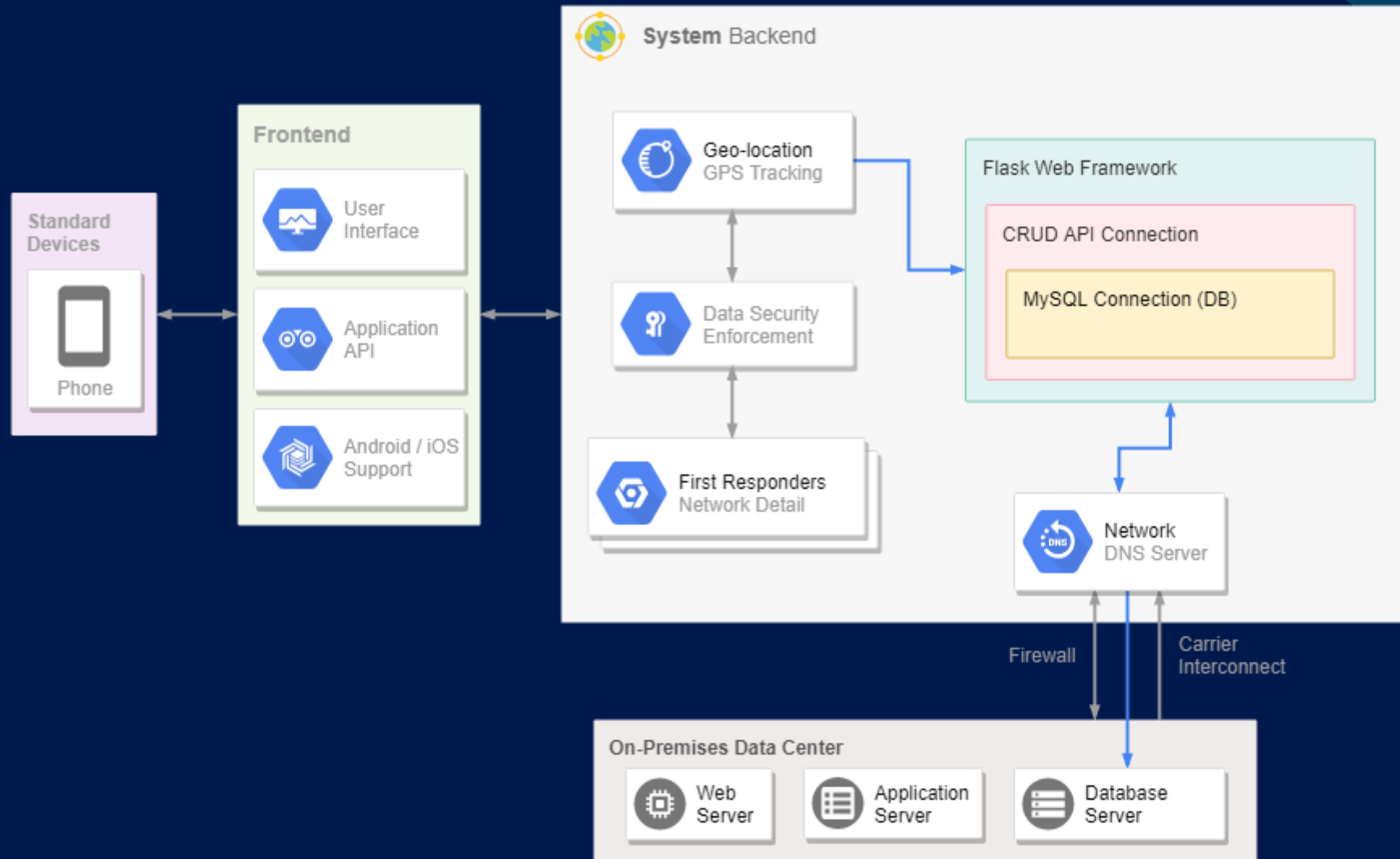
# Stakeholder Definitions

Who is this for?

- Mobile Cellphone Users
  - Users who shall need the mobile app when lost
- Emergency Response Units & Services
  - Emergency response units who come to the aid of a lost user
    - Search & Rescue
    - Medical Response
    - Police/Sheriff Departments
    - Firefighters
    - Maritime Operations (Optional addition)
- IT Tech Support & Staff
  - Support shall support user in setting up account
  - Technical and software developers

# System Architecture Model

Architecture: System Development Model



# Reason for Use

User and system requirements must have a purpose

## User Requirements

- How does this differ to contacting emergency services directly?
  - If user becomes disoriented and/or lost, one push of a button shall request help.
  - At press of a button, application shall relay GPS coordinates to emergency services.
  - Personal and medical information that user enters is provided to response units.

## System Requirements

- How should the system react to use of the application?
  - System shall store login information securely for a straight head-in connection.
  - System must relay information back and forth in regards to all GPS geolocations.
  - Personal and medical information shall be stored in a security-key hashed database.



# Free vs. Paid App

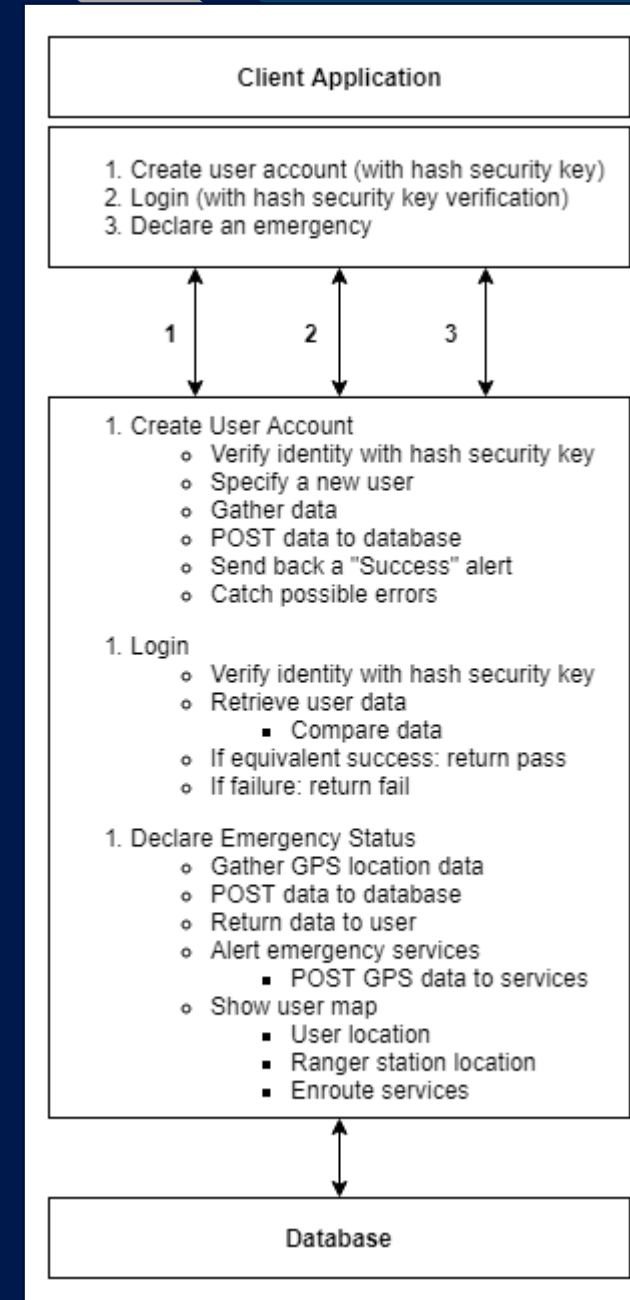
A paid-quota app keeps safety in mind

- A paid-quota based application keeps most use of malicious intent away
  - Misuse of application
  - Keep company and service costs low
- User should contact GPT Support directly to request an account via our website: [GPT Homepage](#)
  - GPT Support creates user account, and sends a one-use password.
  - User changes password and adds additional information on application.
- GPT secures user information for billing, support, and contact issues

# Class Diagram

What is the initial concept design?

1. User contacts GPT Support
2. In turn, account is made and user identifies themselves once phone is connected
3. User logs into the application and sets up information
4. Once user is declaring themselves lost, system starts tracking and geolocation services
5. Signal terminated when user makes face-to-face contact with aid.





# Mock User Interface Diagrams



Figure 1:  
Application Opener

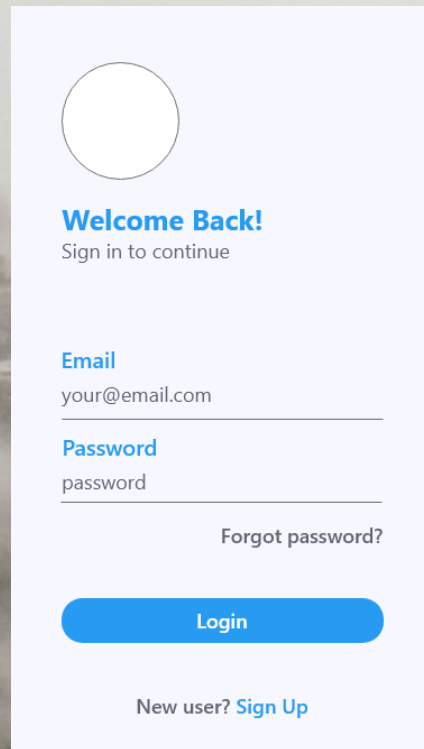


Figure 2:  
User Login Page

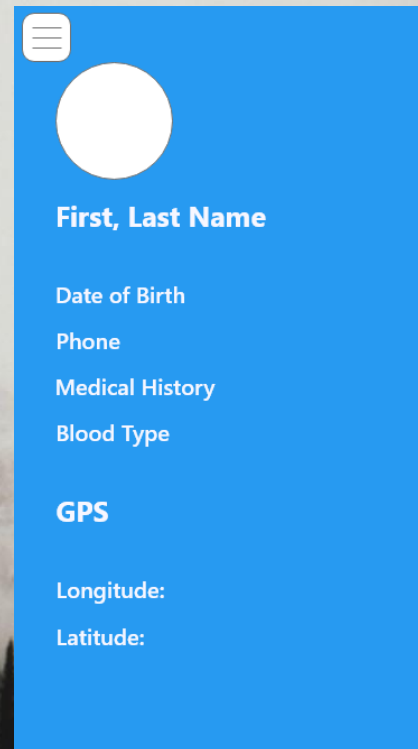


Figure 3:  
User Basic Information

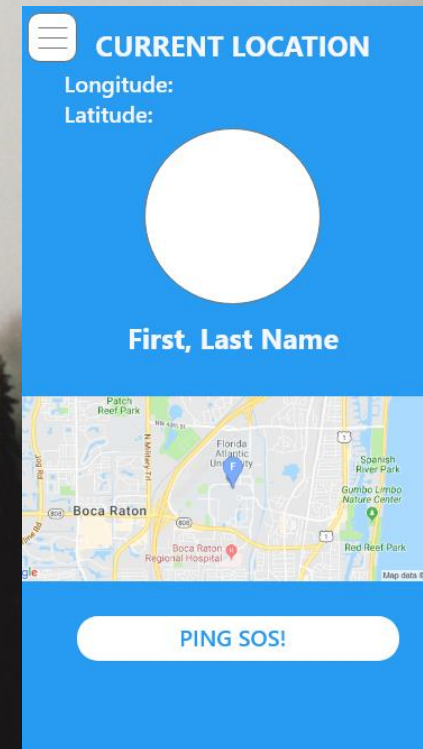


Figure 4:  
Lost User GPS Location

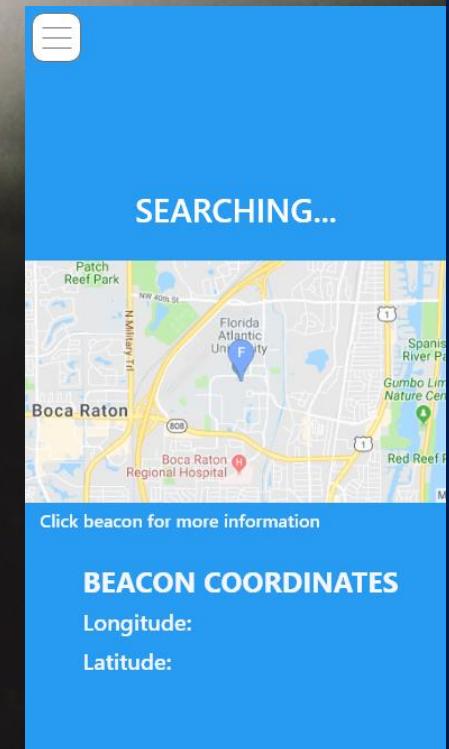


Figure 5:  
Emergency Service  
Locations

# Security Statement

Keep user in mind, from beginning to end

- Since the start of the development process, the design was implemented with the mindset that the user needs to be in a constant secured state.
- Original design called for users who were in the area to see those who might need help. These users could've been anyone, but this discrepancy was a huge issue, from safety to criminality.
  - Design got shifted in the direction that only other emergency services in the area, like ranger stations, police stations, etc. could be notified about the situation.
- Security is key, not only because it stops unwanted users from prying on the weak, but because we also need to prevent data leaks.
  - All data sent back and forth is hashed-keyed in the database.
  - Only GPT Support shall see these networked-transfers of data.

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Lukas Garcia (Project Leader), Bryan Cabrera (Front/Back End Dev), Samuel Guyah (Google Maps Dev), Kyante Belvin (CSS Dev), Michaens Bernard (Web-to-Mobile Dev), Jordan Lederer (Database MySQL Dev), Saad Saeed (QA Tester)

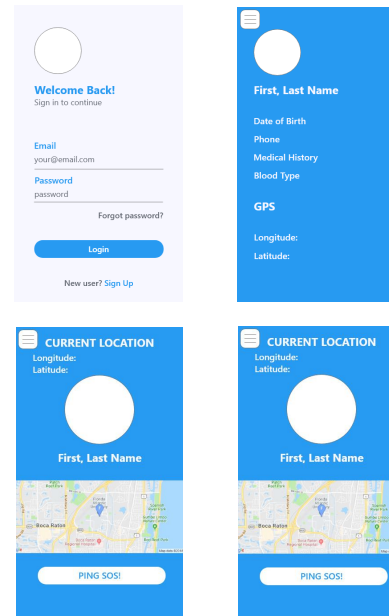
Department of Computer & Electrical Engineering and Computer Science

## Vision Statement

- Create a mobile application that will notify emergency response units when a person becomes lost in a forest.
- Allow lost users to be in touch with emergency services and ranger stations in area.

## Stakeholders

- Mobile Cellphone Users
  - Lost users within national forests and parks
- Emergency Response Units
  - Emergency response crews that go find lost users
- IT Staff
  - Crew and staff that service the application between both mobile users and emergency response units



Mobile App User Interface



## Development Approach

- Incremental development process
- Apply different application functions as application is developed

## Peer-to-Peer Security

- Connection between mobile user and emergency response is strictly firewalled
- GPS geolocation is security key hashed

## Architecture

- Front End connection made between user and mobile phone
- All interactions made on mobile device



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<http://lamp.cse.fau.edu/~lgarcia2013/gpt>