



CSU  
Bakersfield

# Contact Tracing PATH-O-GEN

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## What is Contact Tracing?

The goal of Contact Tracing is to identify all potential people the user has been in contact with, to notify them if said user has become infected with COVID-19, while also alerting them that they might be infected. So that they can take any precautions they feel necessary.

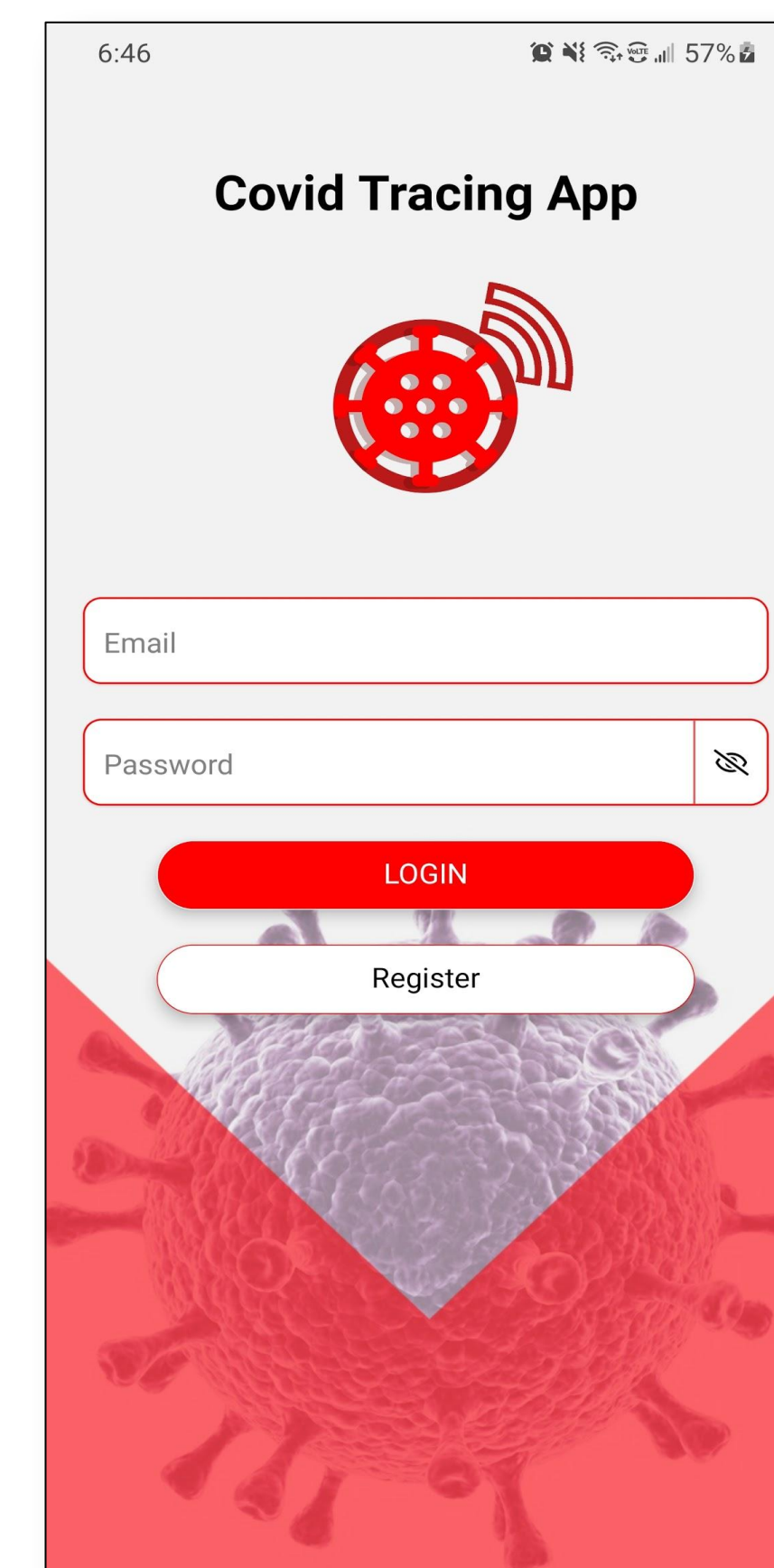
## Features

Hotspot map  
Threat level notification  
Self examination  
Resources and tips

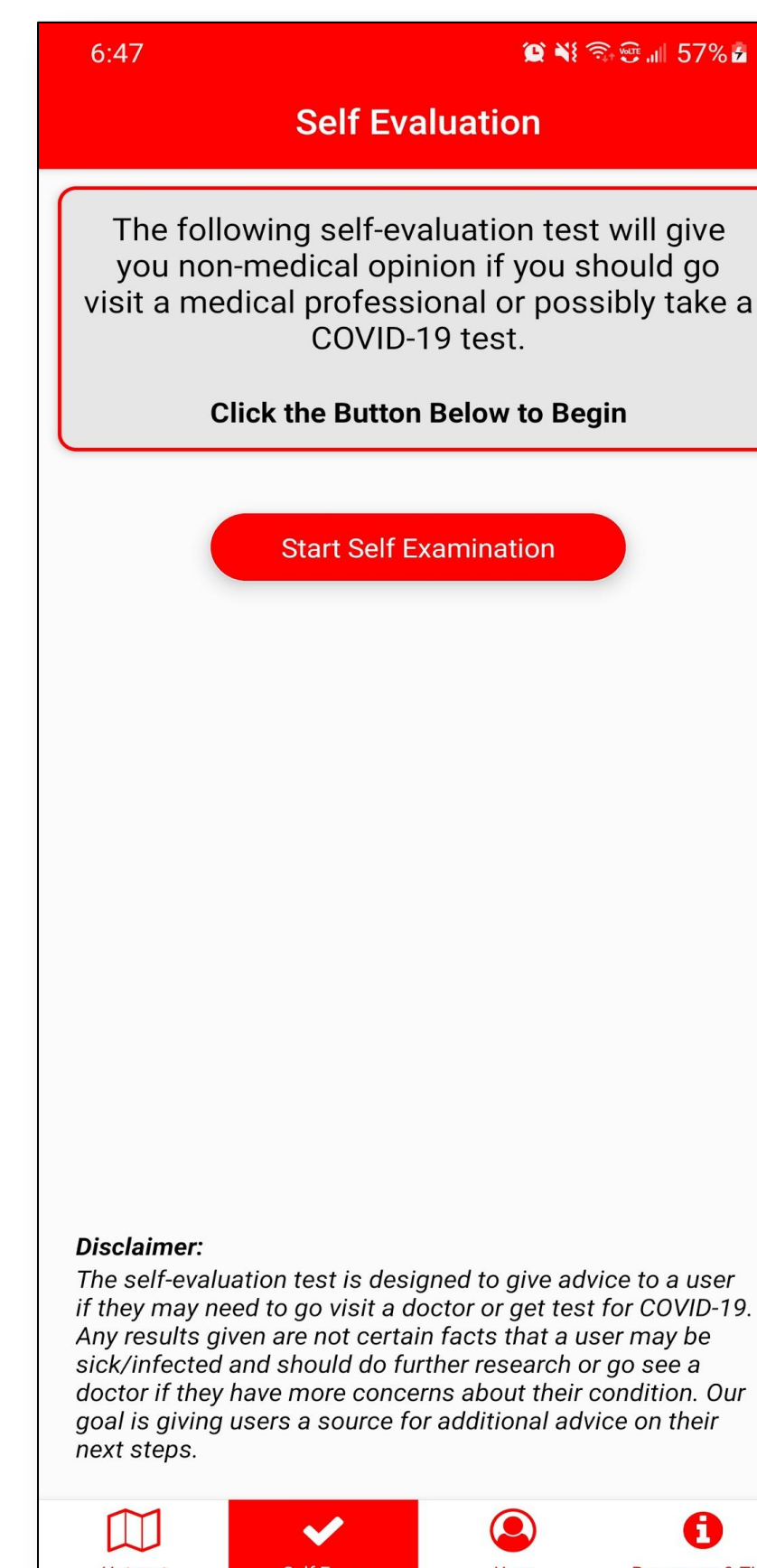


## Implementation

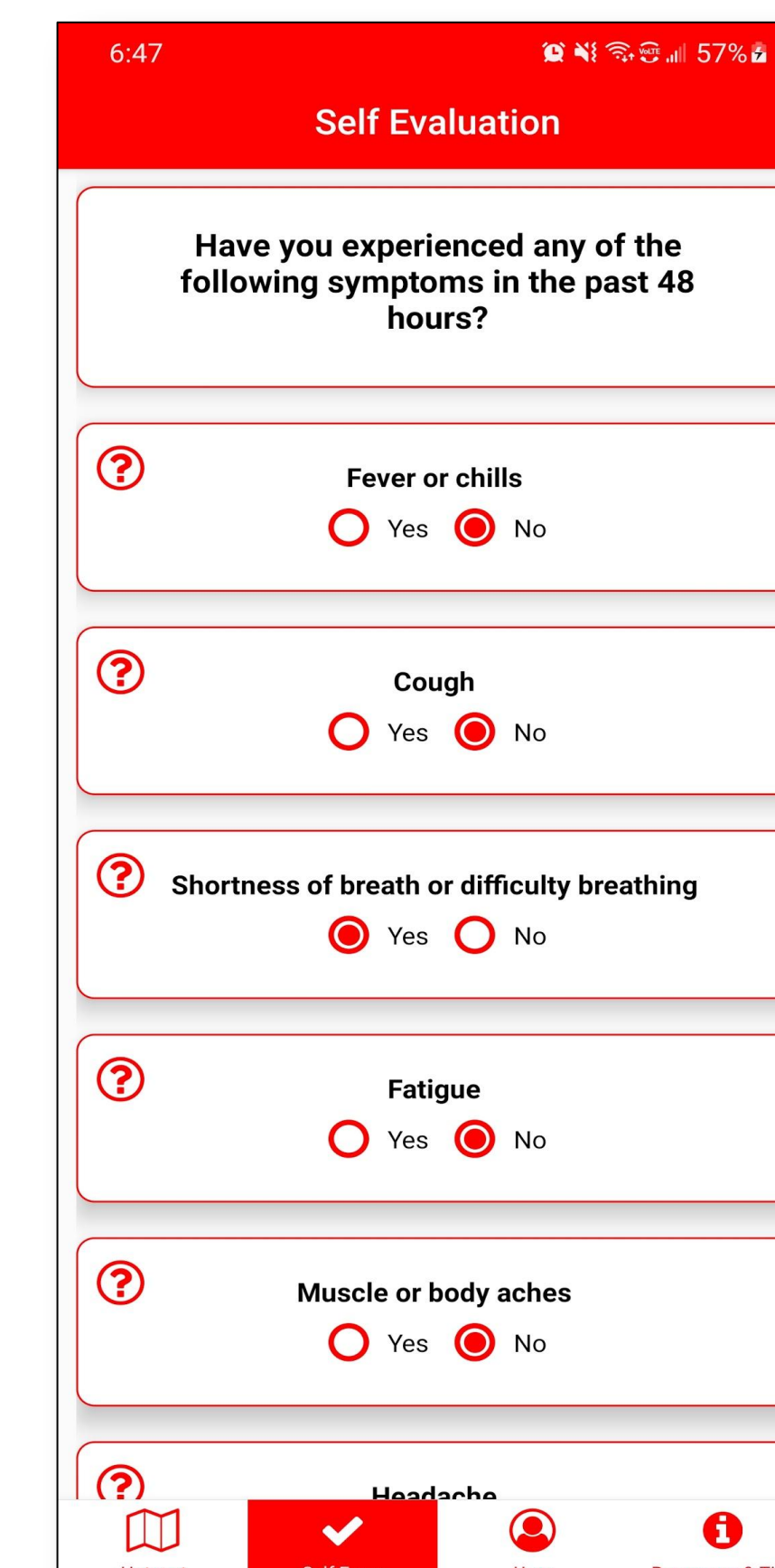
Users run the app in the background to find other nearby users, via Bluetooth, who are also running the app. As they come in contact their user ID, location, and time get stored into a table. This exchange occurs through our REST API backend server calls. This contact then triggers their location to be recorded once every minute, for 15 minutes. We use locations to determine the average distance between users as well as for the hotspot map.



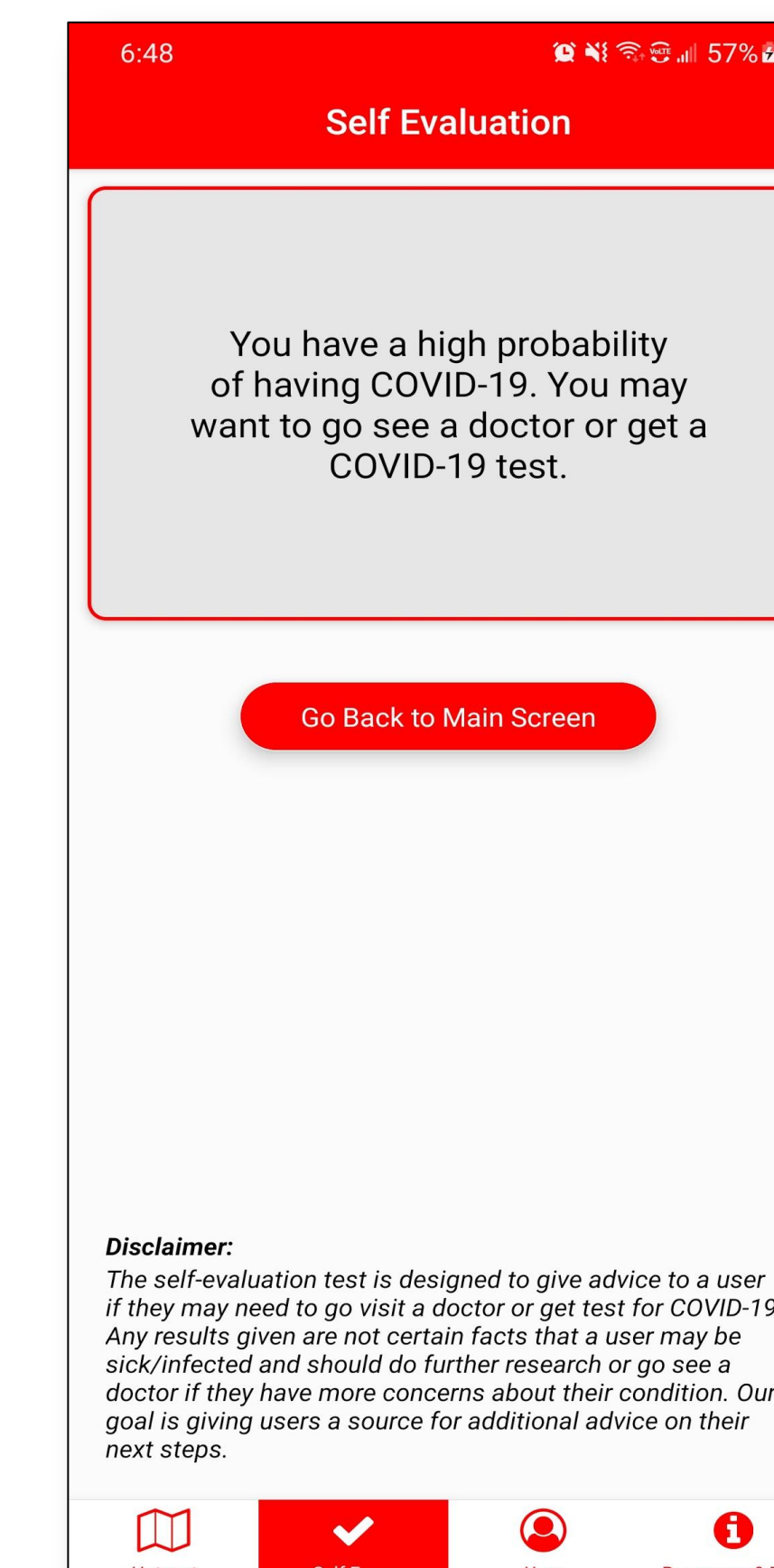
Login Screen



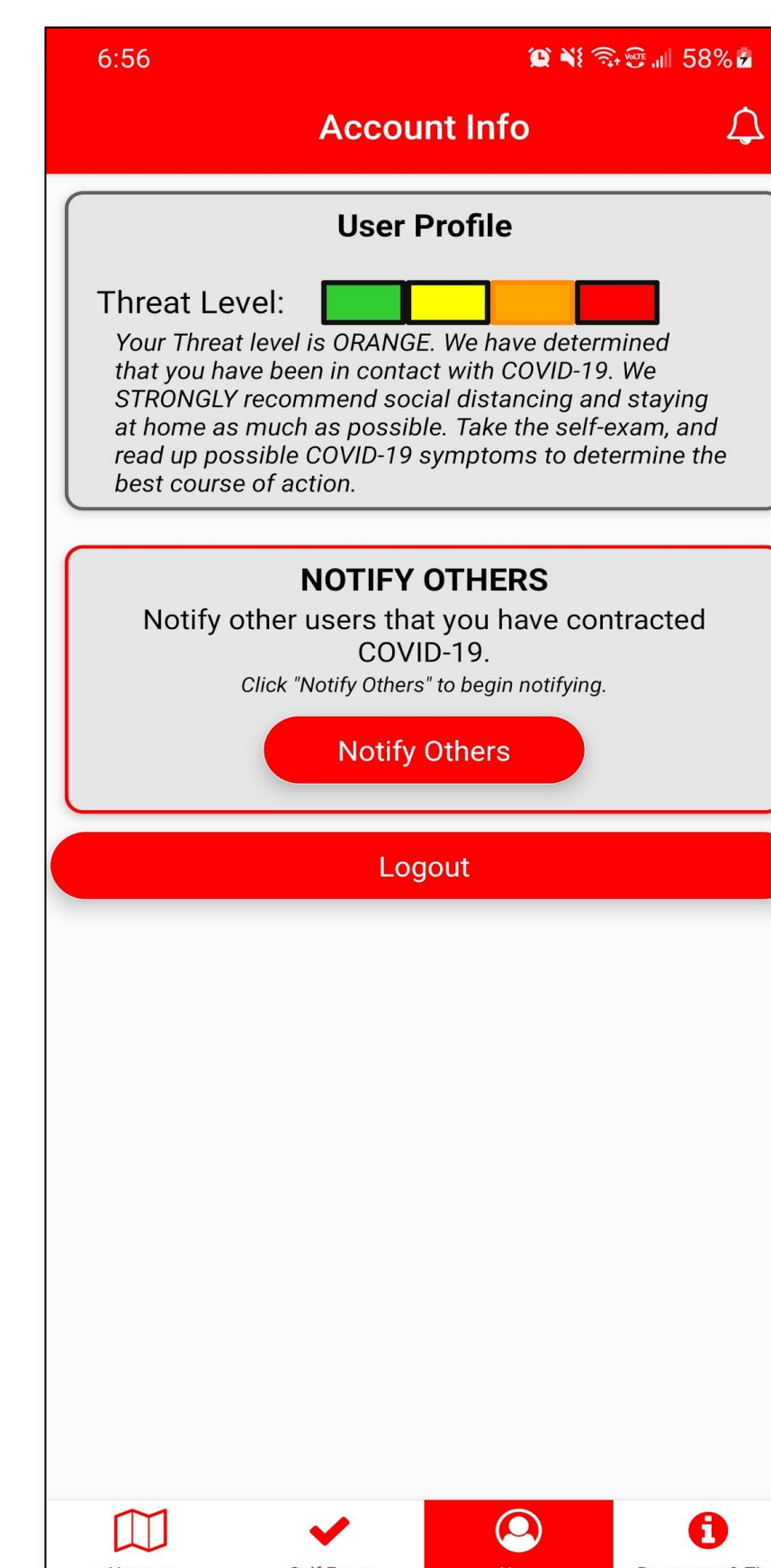
Self Exam Screen



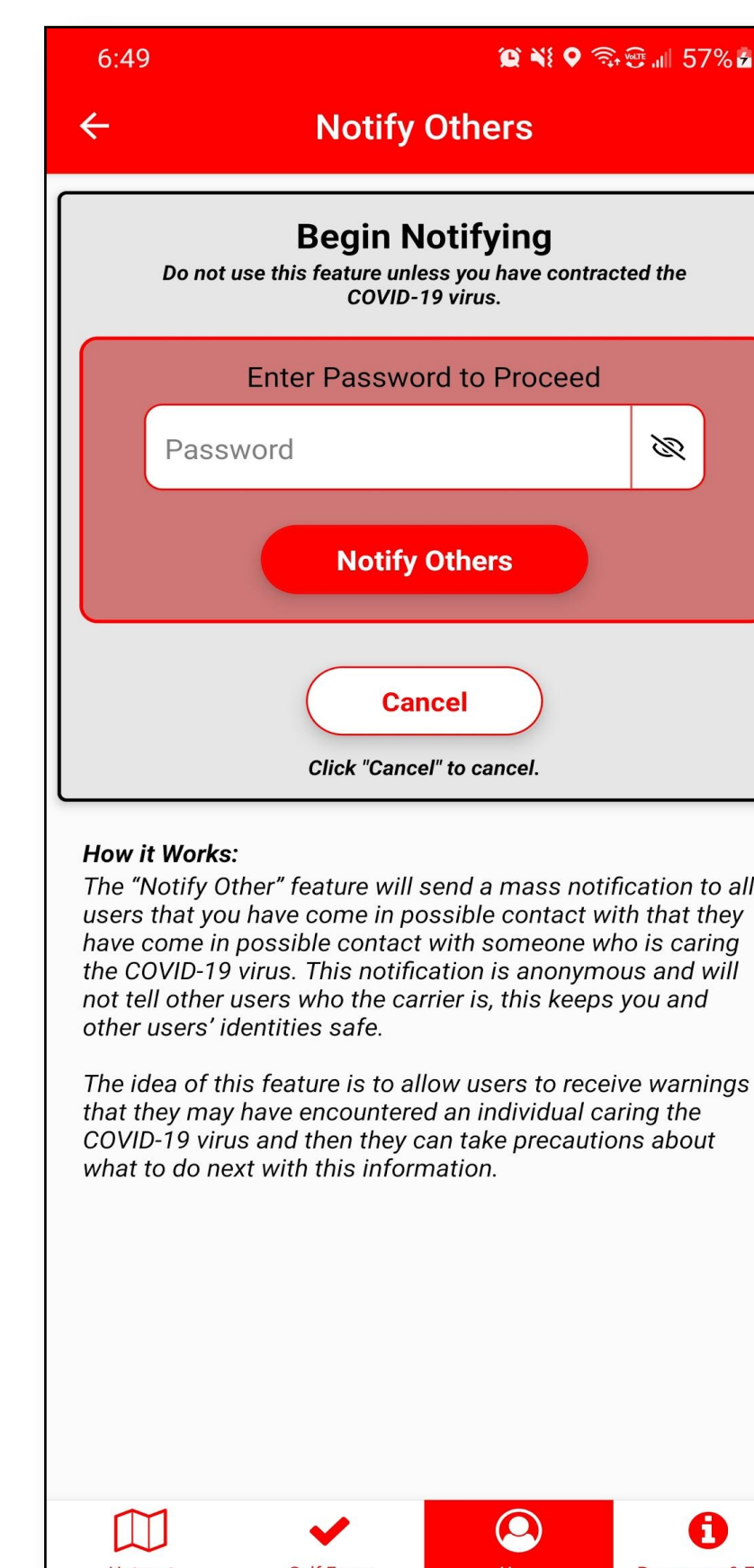
Questions Screen



Results Screen



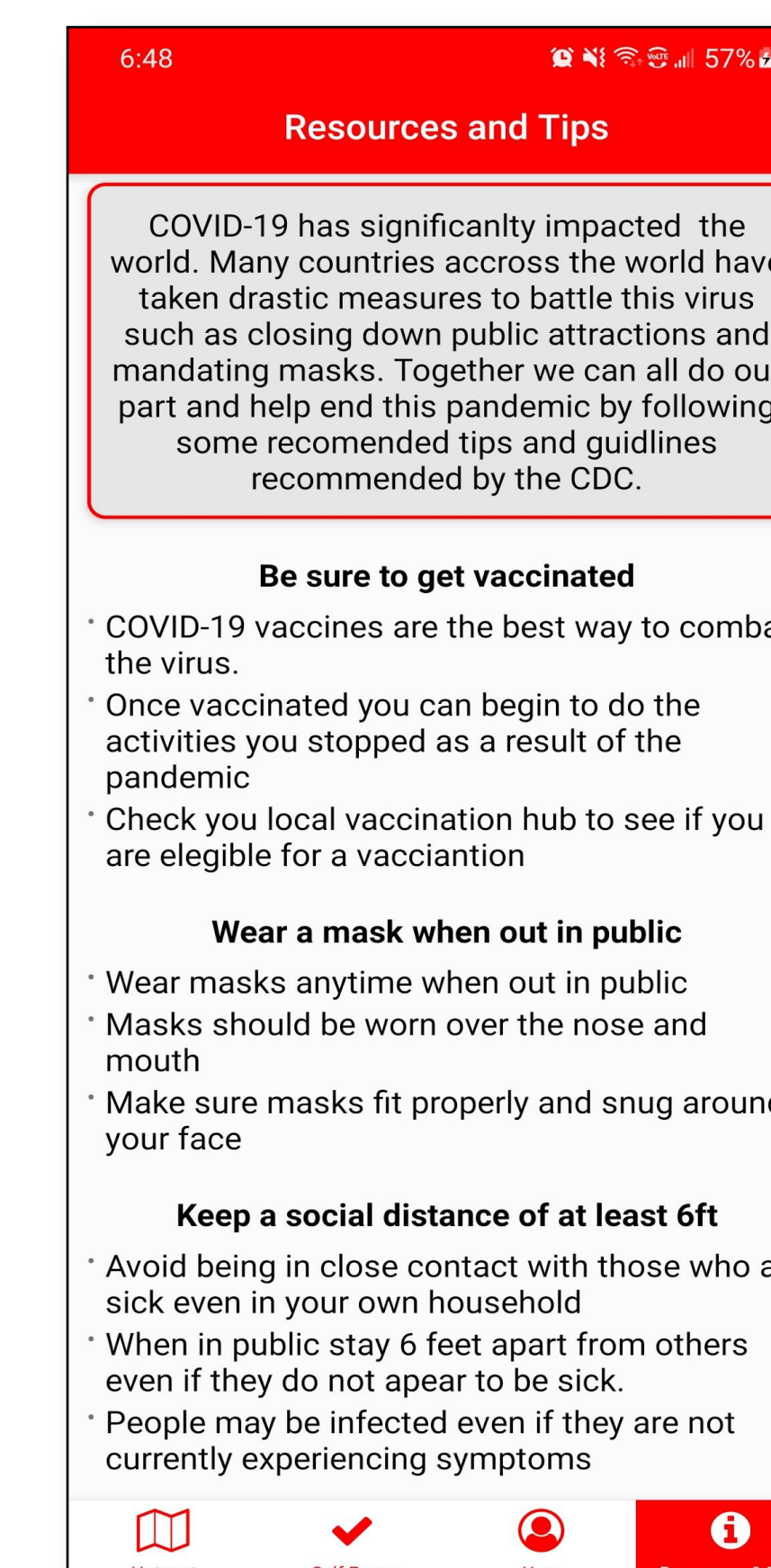
User Profile  
Screen



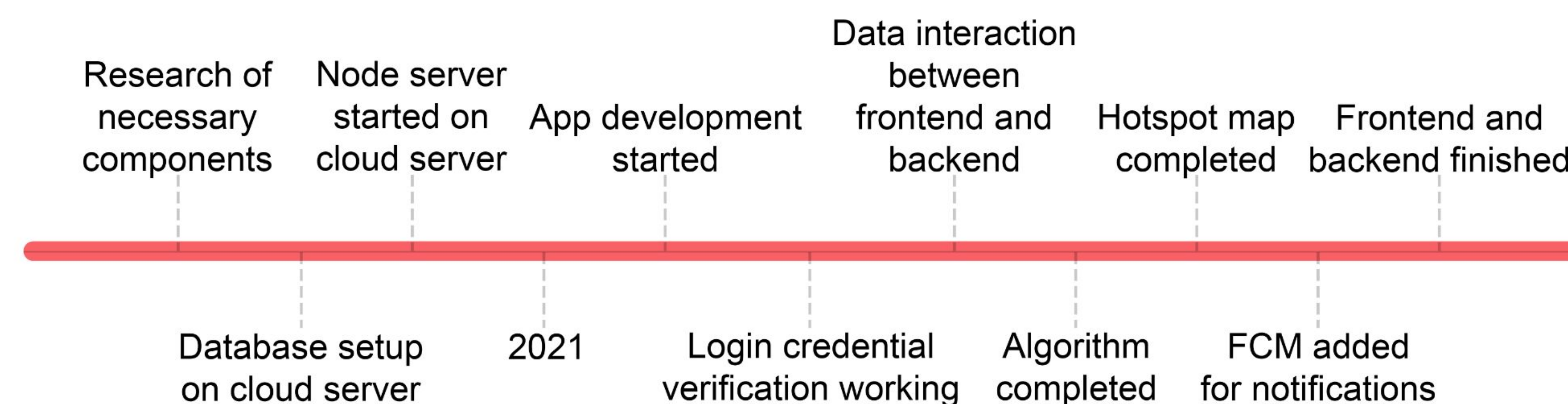
Notifying Others of  
COVID-19 Contact



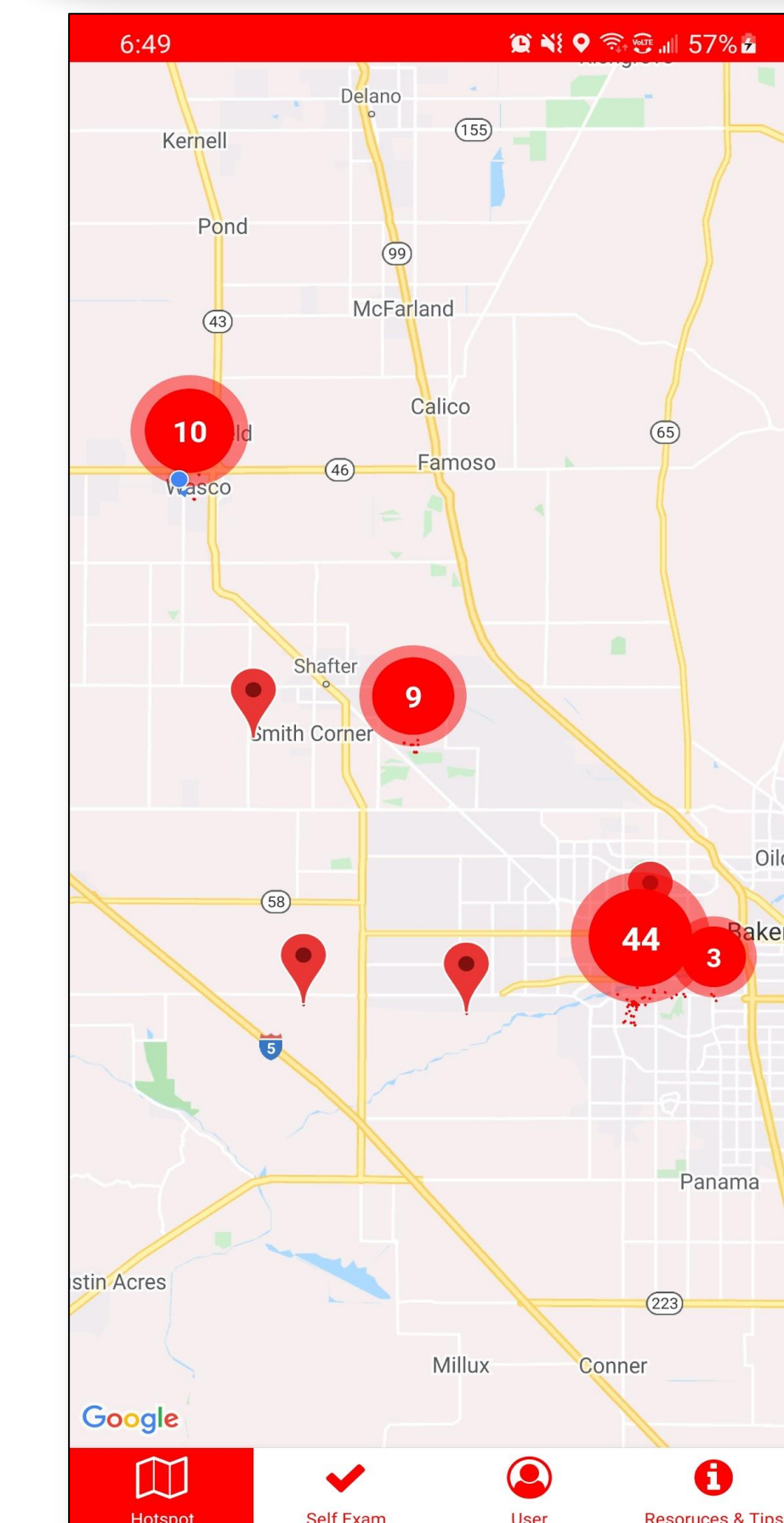
Receiving  
Notifications



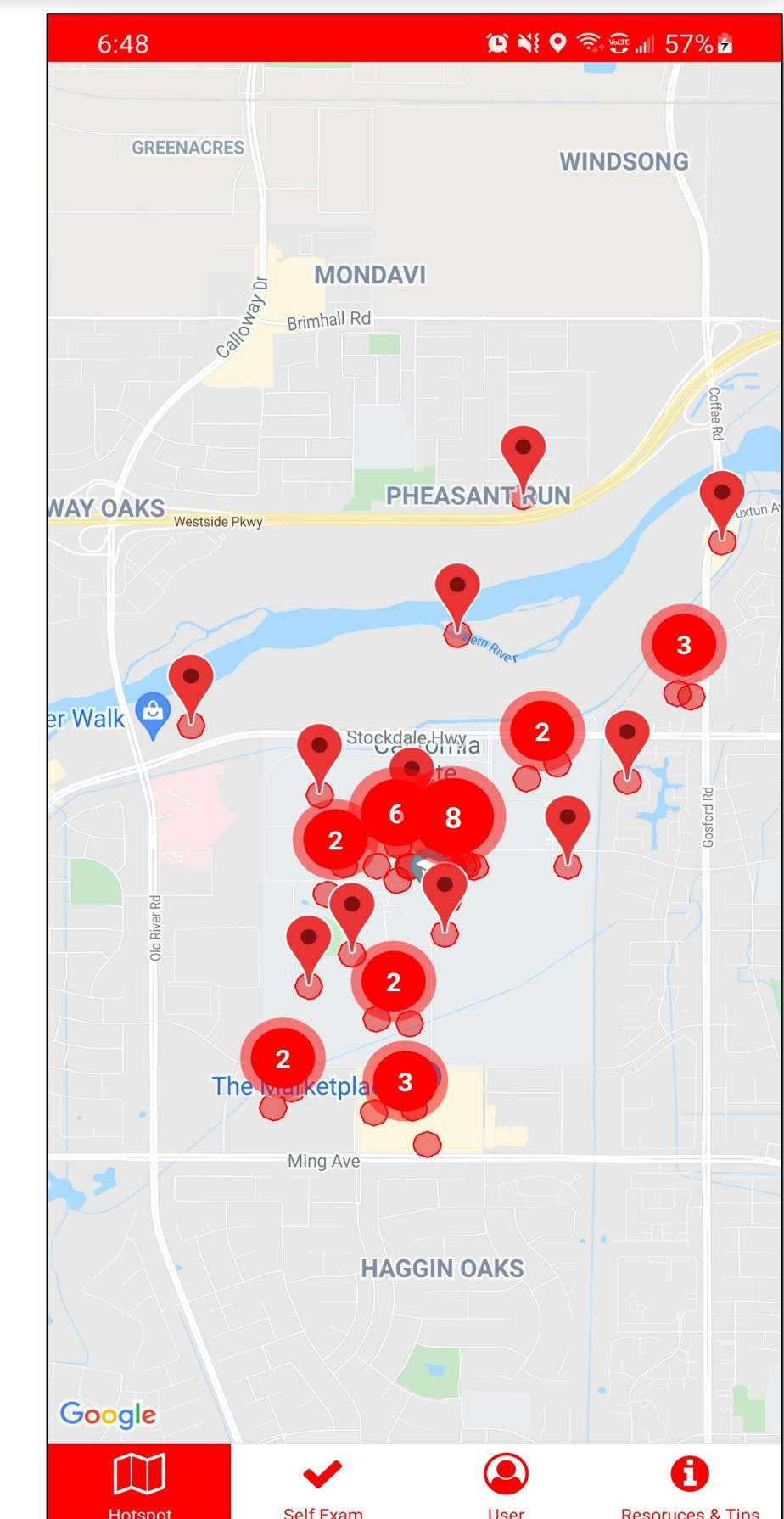
Resources & Tips  
About COVID-19



## Hotspot Map



Zoomed Out View



Zoomed In View

Displays clusters of confirmed COVID-19 contact tracing called from REST API that was stored in the database. Points cluster as user zooms out.

## BLE Communication

Bluetooth Low Energy used to passively communicate when users are in range, then send it to the backend server API.

## Assessment

What we accomplished:

- An app capable of providing information about COVID-19, hotspots, and notifying about contact with a COVID-19 carrier.
- REST API that handles our requests from the app to the database.
- Database and algorithm interaction to provide our contact tracing loop.