# UTD Tech Report

A Mobile App for Managing Infectious Diseases on Campus

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# 1. Introduction

With the number of COVID-19 cases announced in and around the vicinity of UTD, students, staff, and faculty are constantly receiving daily health checks even though they do not come to campus. It has also  
become difficult for students, staff, and faculty to determine the rate of new COVID-19 cases and visualize which places in the UTD campus are affected the most.

The goal of this project is to build a mobile app and system that a) provides live information of COVID-19 on campus, b) sends notifications to users, c) allows students, staff, faculty, and visitors to report COVID-19 cases, d) displays historical data and c) provides user access to COVID-19 news. This project can be used for any future infectious diseases and/or emergency health issues.

Three apps were designed and implemented by three teams, each comprising five graduate students. Before presenting the app UIs, we discuss the apps’ high-level features.

# 2. App Features

## Heatmap

Users can view the campus and all its building units with a heat map representing the frequency of cases found in each building in real-time. This feature allows users to get a quick look at the current state of COVID infection on campus. Users can tap on buildings to get more detailed information (e.g., the specific number of cases).

## Search

Users can search buildings by their names and codes to get their real-time status.

## Notifications

Users are provided notifications regarding newly identified cases in places they have recently visited or places they regularly visit on campus.

## Self-Reporting

This feature allows users to self-report COVID-19 infections and vaccinations through the UTD system.

## News and Information

This feature provides current news regarding the virus outbreak. It provides useful links for testing centers, vaccination-related information, and information regarding cases in the broader community in which they reside. Since this information comes from a university-affiliated source, it is considered more accurate than other sources on the internet apart from associated government entities.

In addition, this feature allows the user to view historical data related to campus infections, sanitization efforts, etc.

# 3. App UIs

# Team 1

Kevin Nguyen

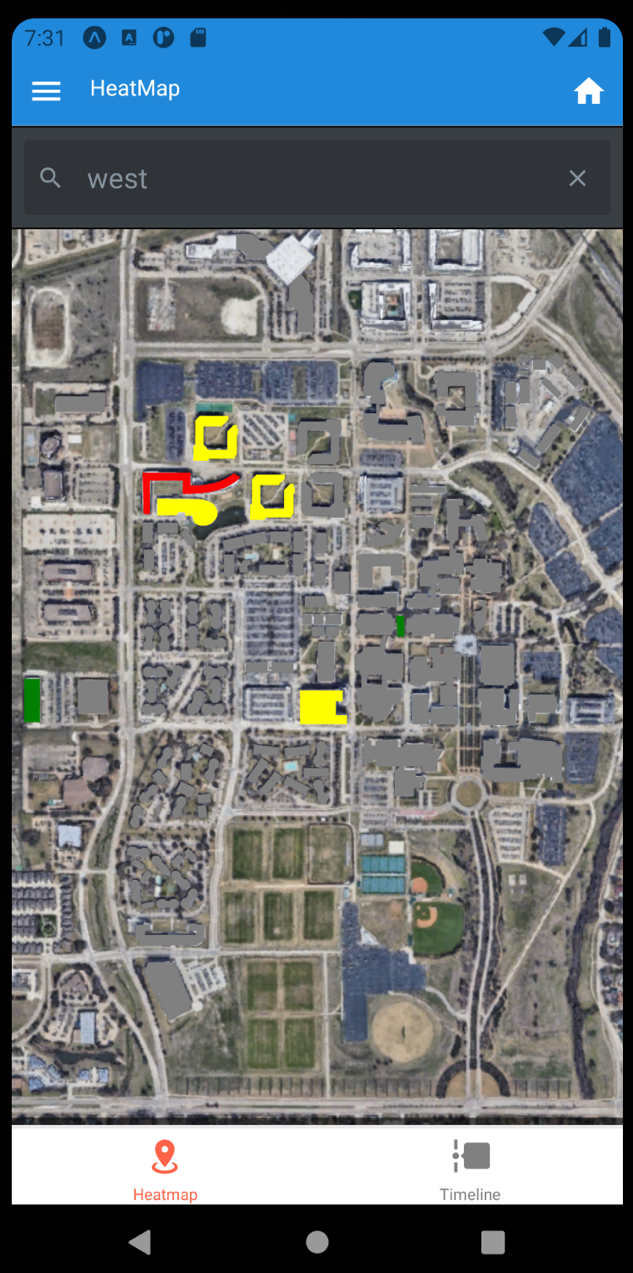
Swathi Poseti

Austin Mordahl

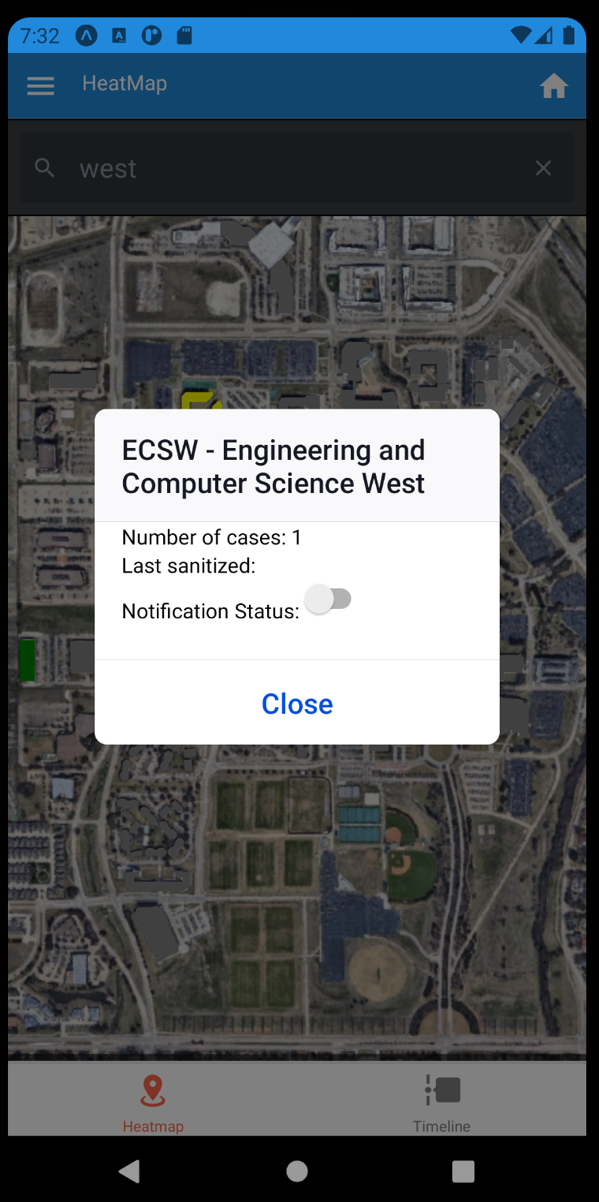
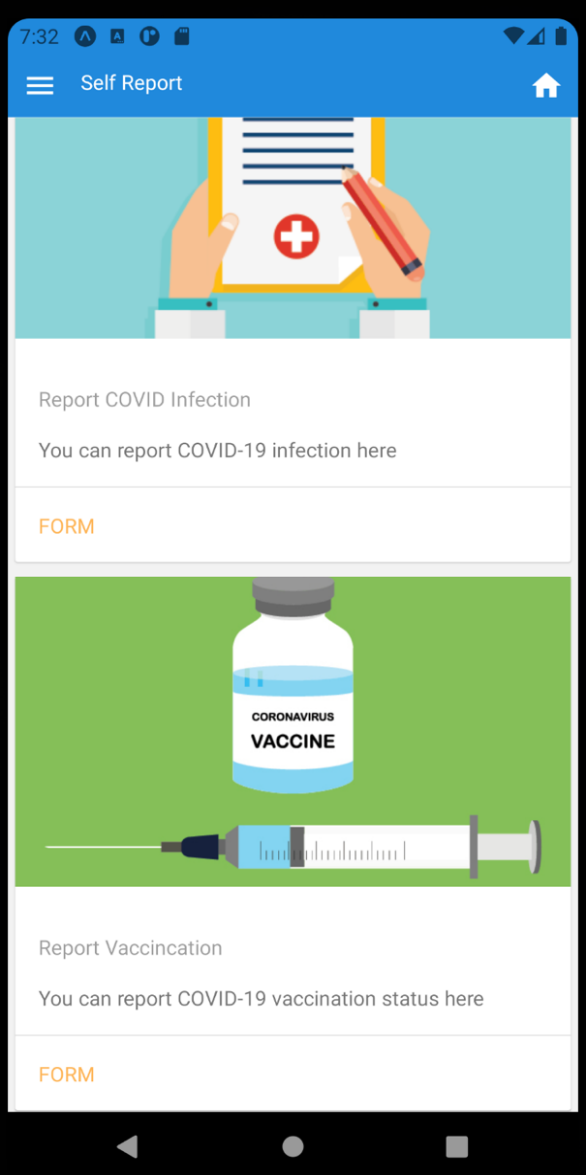
Abdul Hadi Khan

Faraz Khalid

## Heat Map Search

## Notification Self-Reporting

# Team 2

Jean-Felix Abellera

Carlos Hevia

Joshua Ruiz

Teena Thomas

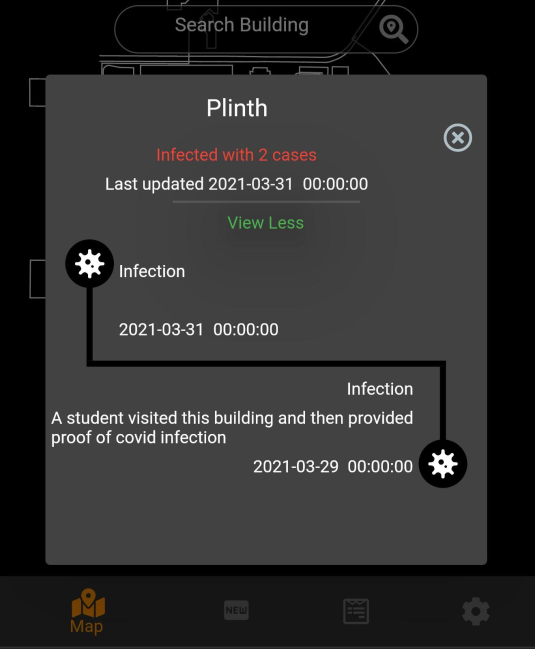
Chinthoorie Yogalingam

## Heat Map



|  |  |
| --- | --- |
| Icon | Functionality |
|  | A search bar appears where the user can type the building name or code. |
|  | A pop-up window is shown where the user can select the filter criteria based on date and/or infection rate. |
|  | Toggles between showing and hiding the building structures in the university map. |
|  | Toggles between showing and hiding the non-building structures in the university map. |
|  | Resets all the search and filters criteria to default. |
|  | Displays the icons details. |

## Building Infection History



# Team 3

Naif Alatrash

James Chen

Evan Guo

Jean-Felix Abellera

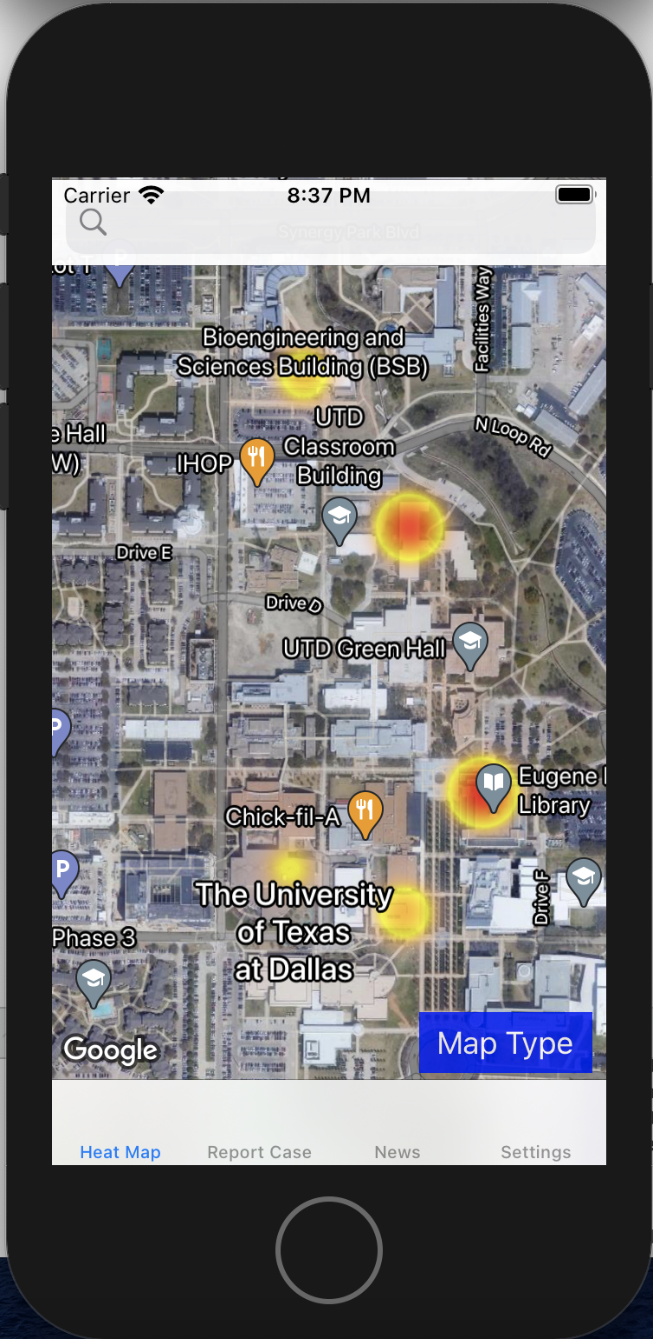
Carlos Hevia

Joshua Ruiz

Michael Smith

Meng-Hsiang Chang

## Heatmap



The heat map displays a building’s color relative to other buildings’ colors. If all infected buildings have relatively the same number of cases, all building’s colors will be relatively the same. Vice versa, if one building has a higher number of cases compared to other buildings, the building will have a deeper color while all other buildings will have lighter colors.

## Search



Users may type part of the building’s official name or the building’s acronym to be directed to that building.

If a user taps on a building, the system displays the building’s information related to COVID, such as the number of cases over a specific time period and time since the building was last sanitized.

## Map Visualization

If a user does not like how the map is displayed, they can change the map display with button’s tap.

