

Abstract

The mobile application is designed to provide user location based tracking of Covid-19 confirmed cases and statuses within distance of the user. The user will be able to assess the risk score of their location, assess daily changes of Covid-19 statuses, and identify nearby testing facilities for coronavirus.

The application is assumed to track user location as well as have users provide their own location selections. The application is able to aggregate data from testing facilities and state public health reporting within a particular city, zip code, county or area. In Massachusetts, the State Public Health Report provides covid related information including confirmed cases and hospitalizations based on city and county. Once the user's location is tracked, the received location will be matched to its corresponding area in order to fill in information regarding confirmed case statuses and changes.

Interface and Experience

Visibility

The application relies on color and icons to signify actions for the user to navigate. After logging in, users are shown the icons available on the home screen. The actions correspond to each of the four iconic symbols. Users may select the medic icon in order to reach the screen that identifies nearby testing facilities. Users may select the symbol that resembles a thermometer, or threshold seeking device, in order to reach the screen that informs them of their current risk status. Users may select the location tracking icon to reach a heat map of their location after selecting their area. Users may select the icon that resembles a graph in order to assess changes in Covid statuses.

Feedback

Feedback is provided through completion of each action. Selecting each icon will in turn bring the user to the corresponding screen. The top of each screen is labeled with the purpose of the screen in order for users to determine if the action they selected was appropriate. For example, choosing the home screen will in turn bring the users to the home page that provides the different possible actions, and the home screen is available in the purple home icon on each of the screens. When the user clicks an active signifier, the screen will change in order to render the feedback of the user's action.

Conceptual Model

Many of the screens provided in the app, including the testing facilities and heat map, are situated across the rendering of the user's location. So that the user's entered location provides a scaled map of the area. The app may also include a map similar to Google Maps in order for the user to have a more integrated conceptual model with other apps that many users already use. The risk score calculation provides graphical visualization of the cases changes in the user's selected location. The data will be simplified in order to convey the increase or decrease of three case statuses: confirmed, recovered, or quarantined. These visualizations of the app will allow the user to easily digest the information provided.

Affordances

Each icon affords clicking for the user. When the user is prompted to enter location, the dropdown menu affords selection. The login screen affords inputting user information. The icons in the home screen afford visualization of the user's location. Each screen can return to the homepage. In testing sites, each of the testing icons affords clicking which then provides more information about the testing site. The available actions allow the user to assess risk, digest provided data, and find available testing information.

Signifiers

The red medic icon signifies an action related to a medically related screen. This icon signifies the screen providing Testing information. The pin icon signifies a location related action. This icon provides the heat map and prompts the user to enter their location. The graph icon represents the screen identifying cases and status changes. The thermometer represents the screen assessing risk. The home screen is signified by the purple house available in each screen of the app.

Mapping

For the heat map and testing facilities, each of the pins or available testing sites should provide scaled rendering of the selected area's geographic location. Such that the testing sites that are deemed closest to the user are spatially closer to their pin on the screen. Then the heat map shows locations of confirmed cases within a selected area so that users know the precise location in their community of the confirmed cases. These spatial rendering allow the users to understand the relationships of the different location pins to themselves.

Constraints

The app provides many constraints for the user's action. The user must initially login in order to be given the home screen with action options such as testing, risk assessment, heat maps, and case changes. Further, the user is prompted to enter the location before they are given access to their personalized heat map. This is a logical constraint forcing the user to specify which area

of location they are being provided before they have access to a map of said area. The flowchart below also demonstrates the constraints of possible actions that each screen is able to provide.

Marvel link

<https://marvelapp.com/prototype/931beib>

