

Abstract:

For my app, I want to use data from testing sites to determine heat maps within the city of Boston and find out where within the city it's generally safe. With the data from the number of tests, the number of positive tests and the addresses, my app would be able to determine the percentage of CoVid positives within each area of Boston and create relevant heat maps. The app would be used as an indicator of where it's relatively safe to walk around or go to. The data can be further extrapolated to form a general prediction about which areas may worsen in the near future. For example, if a testing site is receiving an increasing number of positive tests within the Fenway area, the app can indicate that users should refrain from visiting the Fenway area for the next two weeks or so.

Interface and User Experience:

Discoverability

On the first screen of my app, users would see a map, a search bar, saved locations button and the zoom buttons. The search bar, saved locations and zoom buttons are signifiers for some of the affordances my app has. The search bar indicates the affordance of searching for locations. The saved locations button indicates the affordance of keeping pins on the map and the zoom buttons are signifiers for the affordance of zooming in and out. Theoretically, users would also be able to pinch to zoom on a smartphone however.

Feedback

My app provides hover state for all the signifiers or buttons by changing color when they are hovered on. When clicked on, they will do their respective actions or lead users to the next screen (ie. the zoom buttons would make the map zoom in, the search bar would pull up a keyboard). Each testing site also has a hover state in which they change color when hovered on. When they are clicked on, the data screen would slide up.

Conceptual Model

My app is heavily based on different map apps (Google maps, Apple maps, etc.) that potential users are already using. I have stripped those down so my app does not include the advanced affordances those apps have (such as street view, satellite view). For my app, I added heat maps, testing site locations and the affordance to check data for each testing site. Because users have already used map apps before, the conceptual model for my app is easy to follow and already familiar. The added affordances are easy to get to and understand as well.

Affordances

My app's main affordances are users will be able to see a heat map, testing site locations and data from each testing site. Users will be using my app to see which areas they are able to visit comfortably, and the information they need can be obtained from the heat map and data from each testing site. The heat map is easy to get to just by zooming on the map and the data from each testing site is given just by clicking the testing site. Some secondary affordances my app offers is being able to search places and saving locations for easier access. These secondary affordances do not solve the users problem but makes the app have a better user experience.

Signifiers

All the signifiers in my app are round buttons. Every button has a hover state, wherein they will change color. They are also a different color from the map itself, which allows users to easily spot the signifiers.

Mapping

Most of the actions users will do on my app will be on the map itself. Accessing some affordances such as the data from the testing site or saved locations will bring up a different screen, covering up the map. I have all the buttons needed on the bottom of the screen to allow for one handed use as well.

Constraints

To combat physical constraints, most signifiers or buttons are on the bottom of the screen to allow for one hand use. Some of the testing sites may be further up, which could cause users to reach more if they have a particularly big phone. However, theoretically, they would be able to pinch and pull on their phone to move the map so the location of the testing site buttons in respect to the actual screen can be changed. Since my app is very similar to popular Google maps/Apple maps, I don't think there are significant cultural constraints, and users can easily interpret or understand my app.

Changes and Iterations:

Marvel (post user test)

Some of the different changes that I implemented include adding a visual reference using GPS to where the user is currently. This allows the user to easily access information around them without the need to search. I also added the ability to save locations so users can check in on locations that they want to know about frequently. Within these Saved Locations screens, a user can also set a location as the home screen so they can load the app and immediately see that area. I also added labels to the testing sites on my map so that it's easier to tell which one is which.

Marvel Prototype: <https://marvelapp.com/prototype/b95e07g>

Adobe XD

First iteration:

When I put my prototype into XD, I got feedback to include an option to add locations. So I added a different screen where you could add locations to "Saved". Within "Saved Locations", you are able to further set a default home location that you can load to whenever you open the app. For the information, I also included hospitalizations as another data point.

<https://xd.adobe.com/view/087b5bdd-c1a7-4805-b42e-61bf64676010-5d28/>

Second iteration:

After user tests, I needed to add some feedback over the buttons. I added some hover states and cleaned up some of the animations. I also re grouped and sorted out the objects in XD just for a better workflow.

<https://xd.adobe.com/view/d0cc18a6-d986-4d5c-bb1d-d84c69a31e2e-859f/>

Third iteration:

For my third iteration, I tackled the problem of it being unclear on the first screen that users could zoom in on the map. There were no signifiers indicating this affordance (unless it was actually used on a smartphone and culturally, people would be inclined to pinch in and out). I added zoom in and out signifiers in the form of buttons under the saved location. I then made the search bar smaller, and moved the saved locations and zoom buttons to the bottom right. This is for the ease of the user as all the buttons are now on the bottom, so users can interact with the app with only one hand.

Note: I added hover states for the zoom out button in the first screen, and also the zoom in button after you have already zoomed in. Theoretically, my app would be able to zoom even more than just the two screens shown, so in that context they are not false affordances. Just for the purpose of this class, I was only able to draw two screens of the map.

<https://xd.adobe.com/view/d0cc18a6-d986-4d5c-bb1d-d84c69a31e2e-859f/>

Research

Boston CoVid Testing Sites:

Testing Site	Address
New Health Charlestown	15 Tufts Street
East Boston Neighbourhood Health Center	164 Orleans Street
Mass General (Boston)	125 Nashua Street
Nazzaro Community Center	30 N. Bennet Street
Massachusetts General Hospital	55 Fruit Street
Charles River Community Health Center	495 Western Ave
South Boston Community Health Center	409 West Broadway
Mobile Testing - Fenway Health	161 Park Drive
Whittier St. Community Health (Mobile)	112 Centre Street
Whittier St. Health Center	1290 Tremont Street
Whittier St. Community Health (Mobile 2)	450 Melnea Cass. Blvd
Whittier St. Community Health (Mobile 3)	2343 Washington Street
Harvard St. Neighbourhood Health (Mobile)	502 Dudley Street
The Dimock Center	45 Dimock Street
Brookside Community Health Center	3297 Washington Street
Upham's Corner Health Center	415 Columbia Road
Harvard Street Neighbourhood Health (Mobile 2)	24 Washington Street
Harvard Street Neighbourhood Health	632 Bluehill Avenue
Bowdoin Street Health Center	230 Bowdoin Street
DotHouse Health	1353 Dorchester Ave
Brigham Health Drive Through Testing	1245 Centre Street
Harvard Street Neighbourhood Health (Mobile 3)	101 Nightingale Street
CVS Drive Through	1921 Centre Street
Greater Roslindale Medical Center	4199 Washington Street
Harvard Street Neighbourhood Health (Mobile 4)	1000 Bluehill Avenue
Codman Square Health Center	637 Washington Street

Harbor Health, Daniel Driscoll	398 Neponset Avenue
Carney Hospital	2100 Dorchester Avenue
Mattapan Community Health Center	1575 Bluehill Avenue
Northeastern University	Cabot Center, 400 Huntington Ave
Tufts University	171 Harrison Ave

Boston CoVid Case Dashboard:

As of September 22

Active Cases: 2475

Recovered Cases: 13467

Total Cases: 16703

Deaths: 761

(from cityofboston.gov)

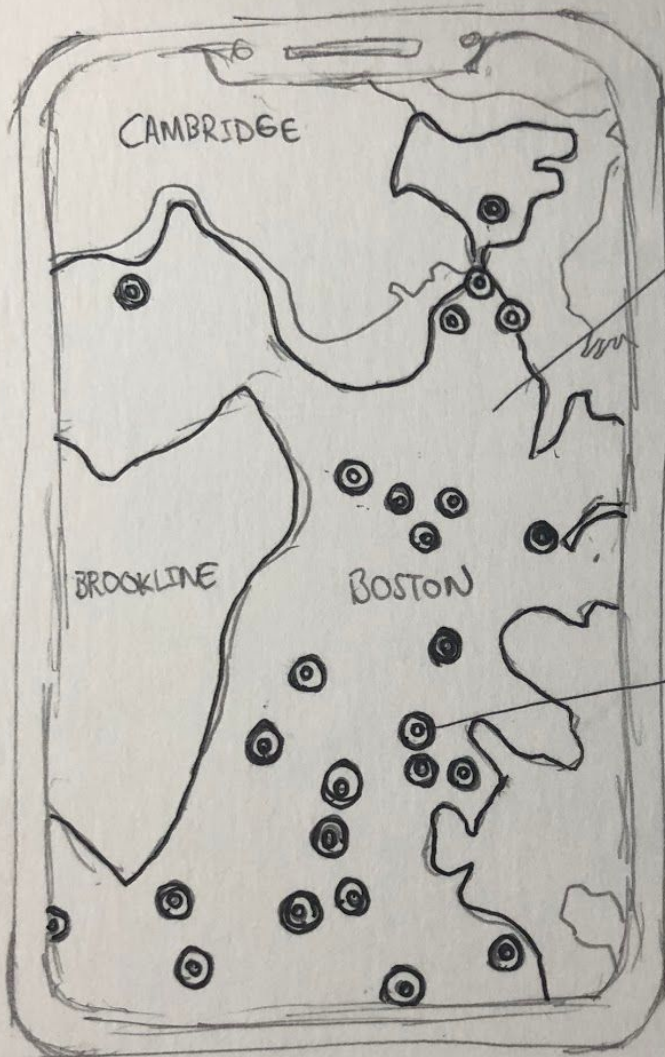
Week	Tests in Last 14 Days	Total Positive Tests	Percent (Positive Tests)
Sep 02	60883	882	1.45%
Sep 09	93910	887	0.94%
Sep 16	118323	887	0.75%

(from mass.gov)

Data Used in App:

For the data for my app, I think it makes sense that the data comes directly from the official government sites (ie. City of Boston, Mass.gov, etc.) and the individual testing sites. Not all testing sites provide data, but ideally I would like to get the number of tests conducted, number of positive tests and the addresses of people that tested. The addresses will be used to form an estimate of the geography that each testing site is covering. From the addresses, I also want to form heat maps from CoVid positive people. The app would also utilize GPS information from most modern phones to show the user where they currently are.

Marvel Sketches:



City of Boston is the only part of map that won't be grayed out. App won't afford zooming out beyond this view.

Testing sites would ideally be blue and circles, signifying that they are buttons and afford clicking.

Cultural/social signifier using map apps, pinching in/out to zoom in/out. Dragging to move.

