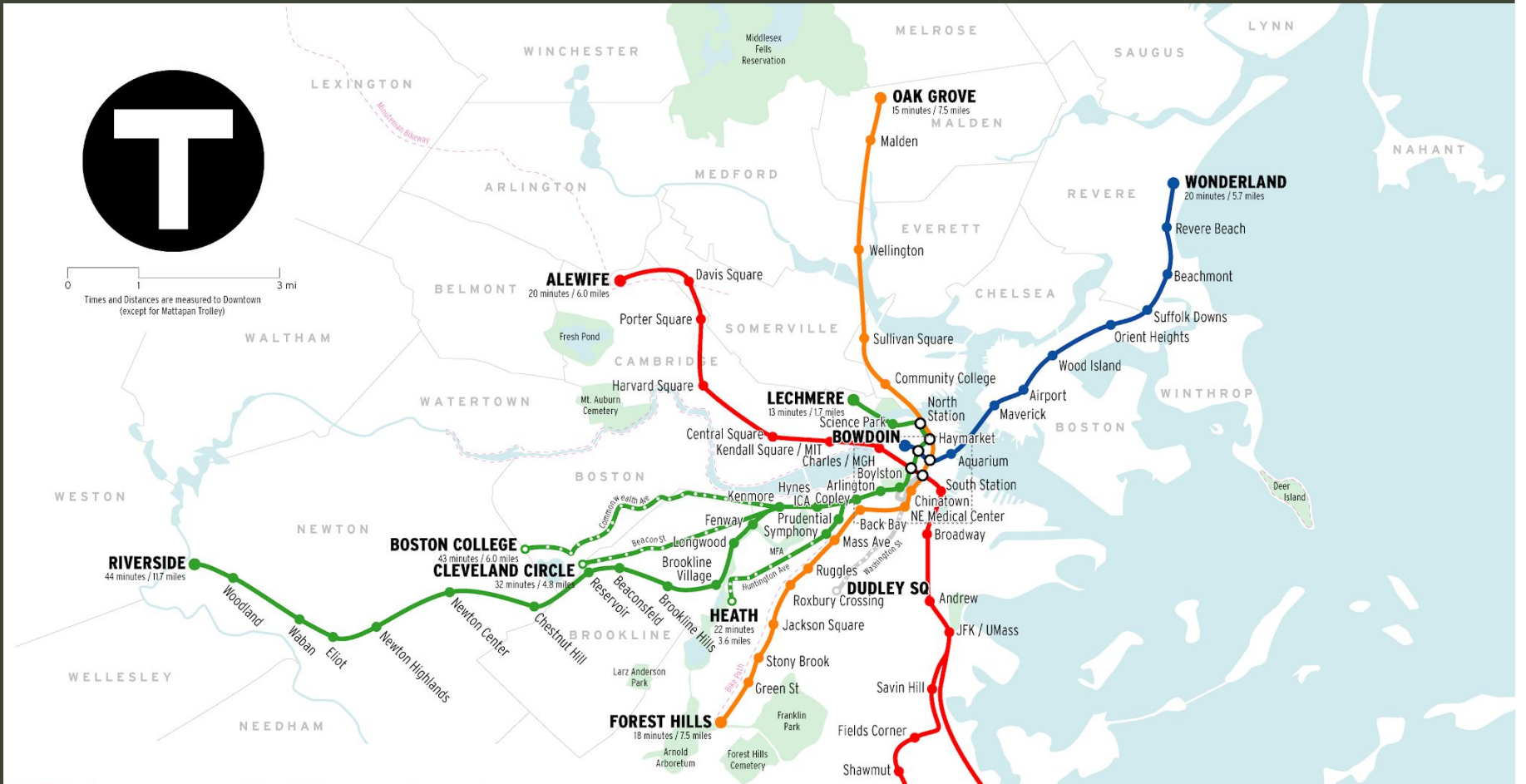# MBTA INTERVENTION

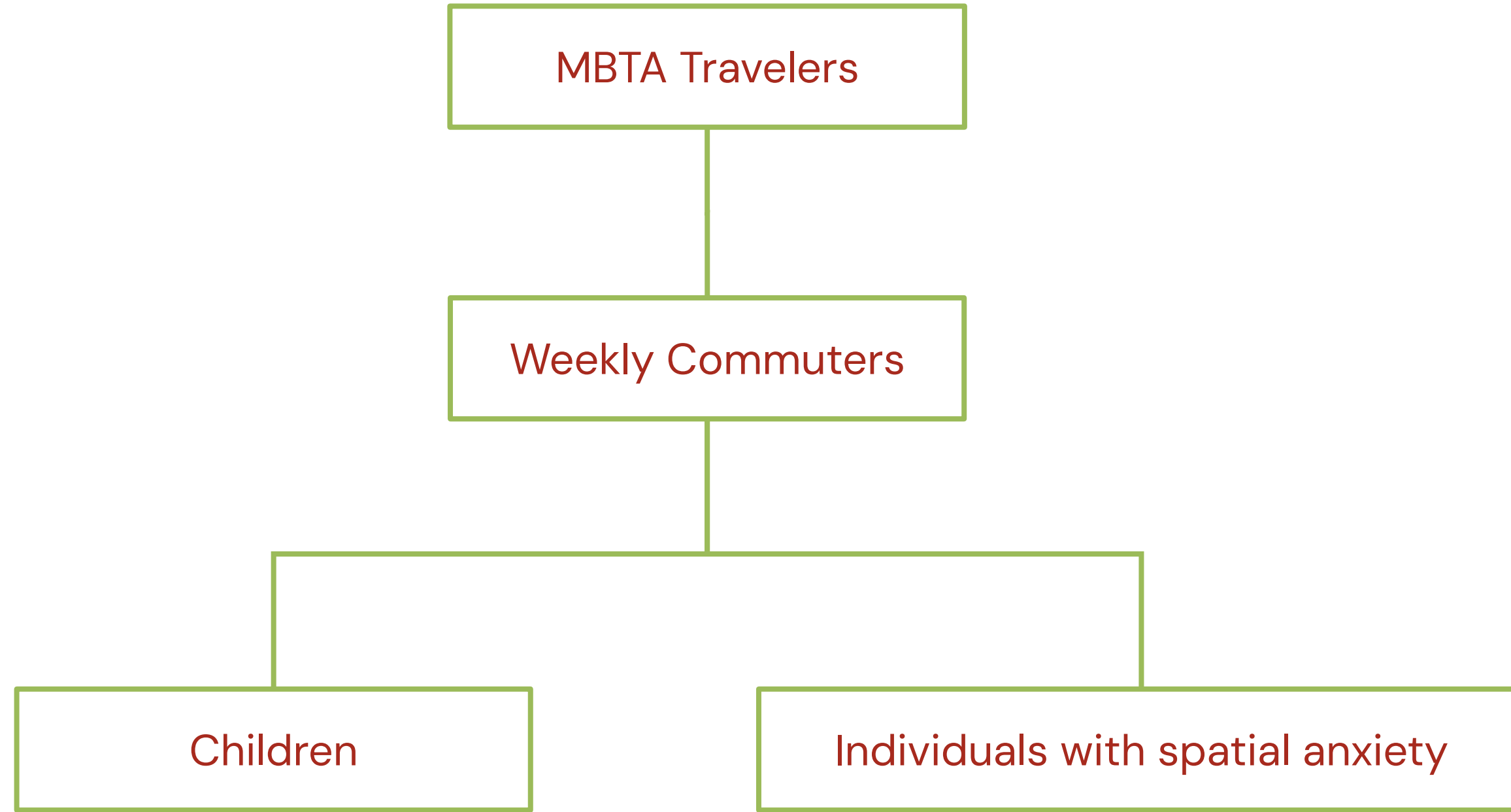**WEEK 7: INTERACTIVE**

PROJECT OVERVIEW

GOALS

- ❖ formally introduce the design process as a method of making
    - ❖ concretize the importance of context and audience within the design process
    - ❖ use methods of sketching and prototyping as catalysts for communicating ideas
- ❖ introduce interaction design as a facet of the design practice
    - ❖ connect graphic/information design and interaction design
- ❖ recognize that design cannot solve all problems, but can help educate and bring agency

OBJECTIVE

- ❖ create an interactive tool that improves the experience on Boston's public transportation system – the MBTA
    - ➤ Week 7: record research and observations of the current condition of the T; begin brainstorming potential plan of interactivity
    - ➤ Week 8: choose plan of interactivity; begin developing interactive prototype
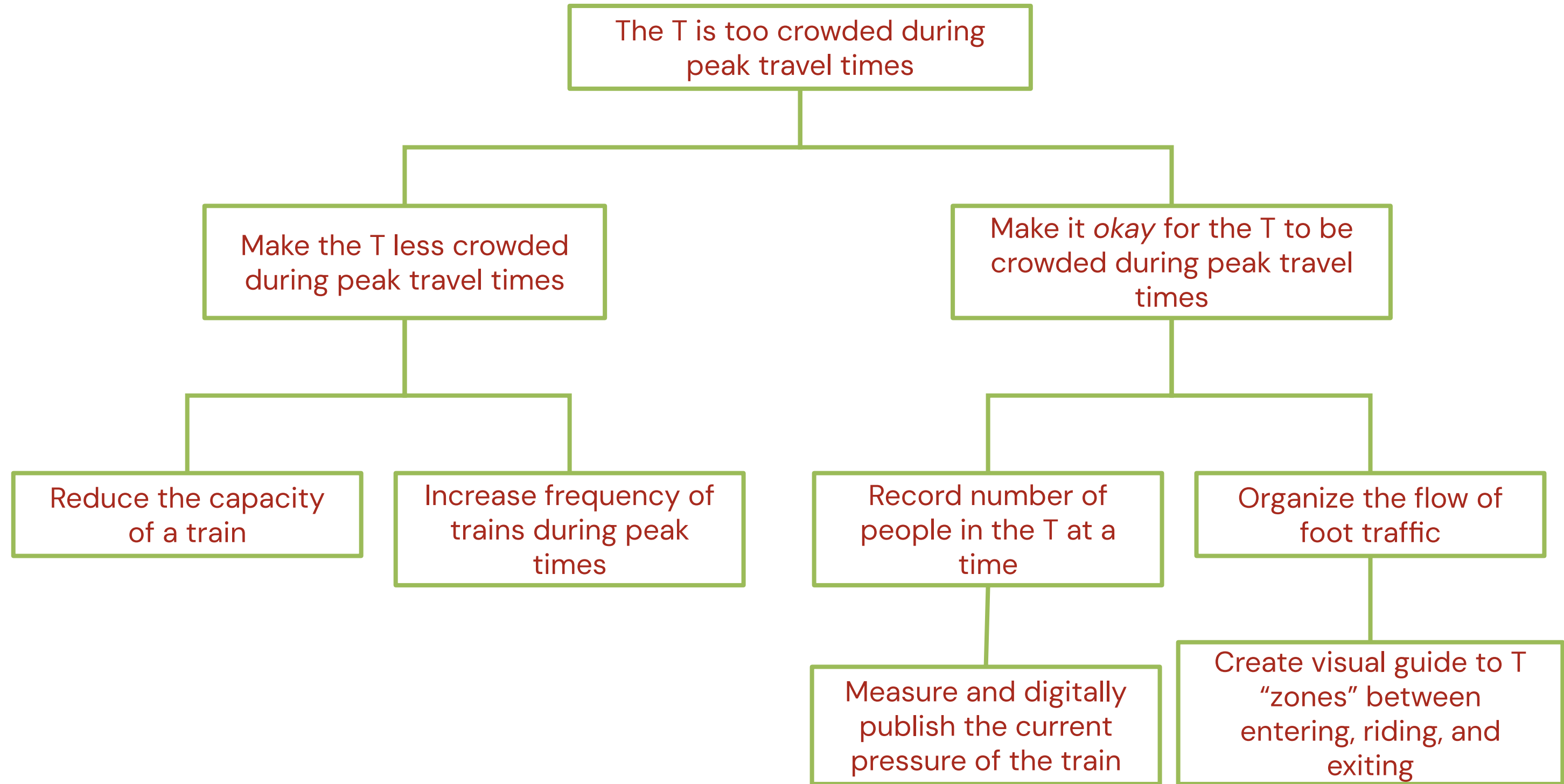   - ➤ Week 9: finalize interactive prototype

AUDIENCE

PROBLEM DEFINITION

Problem

The T is too crowded during peak travel times

General Solution

Make the T less crowded during peak travel times

Make it *okay* for the T to be crowded during peak travel times

Functional Solutions: What to do...

Reduce the capacity of a train

Increase frequency of trains during peak times

Record number of people in the T at a time

Organize the flow of foot traffic

Specific Solutions: How to do it...

Measure and digitally publish the current pressure of the train

Create visual guide to T "zones" between entering, riding, and exiting

RECENT NEWS

Red Line undergoes 16-day partial shutdown

Affecting ~44,000 T-riders; expected to resume service on both line Oct. 30

MBTA Red Line begins 16 day partial shutdown Saturday (msn.com)

Power shuts down on the Green Line

Electric failure of trolley's overhead pantograph

10/16/23

10/14/23

10/21/23

MBTA reveals new Green Line "supercar" design

Opened poll allowing for the city of Boston to choose between 3 potential designs; indication of green line development

EXPERIENCE LOG

A RIDE ON THE GREEN LINE

Within the past week, I rode (3) round trips on the Green Line – 8 AM, 5 PM, and 10 PM. 5 PM was definitely the busiest time, and people struggled to find a place to stand.

POWER SHUTDOWN

Roommate testimony: all riders remained on train for an extended period of time and were then evacuated – Saturday crowd – distrust in riding the Green Line the remainder of the weekend
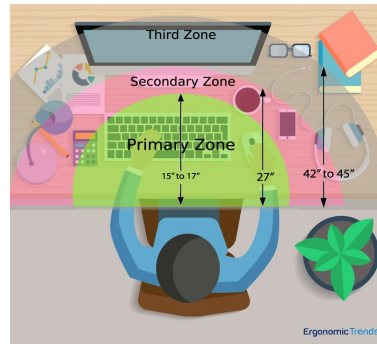
A RIDE ON THE ORANGE LINE

In the past month, I have taken the Orange Line to/from BBY Station (4) times. Each time has been smooth, timely, and spacious in comparison to the GL.

INTERACTION SCENARIOS

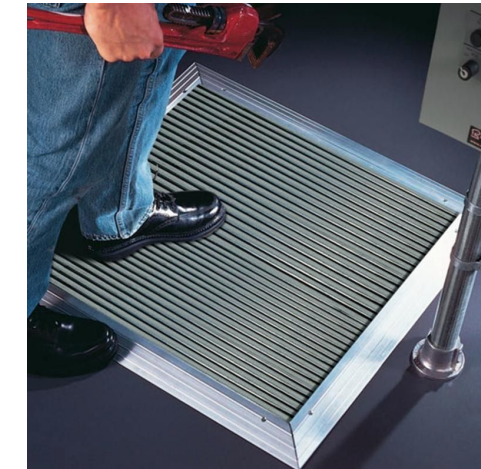| STANDING ZONES	FLOOR PRESSURE MATS – INTEGRATE INTO T–APP	EXISTING TECHNOLOGIES
- Regulate flow of foot traffic in T–cars as people board, ride, and exit - Visual pattern/guide on floor indicating where people should be located based on # of stops left - Specific doors for entrance/exit	- Floor of T constructed of pressure mats – digitally report and publish - If less than 25% of mats are activated, the T is not crowded - If between 25% – 50% of mats are activated, the T is busy - If between 50% – 75% of mats are activated, the T is moderately crowded - If over 75% of mats are activated, the T is extremely crowded	Safety Mats | Pressure Mats | RS (rs-online.com)
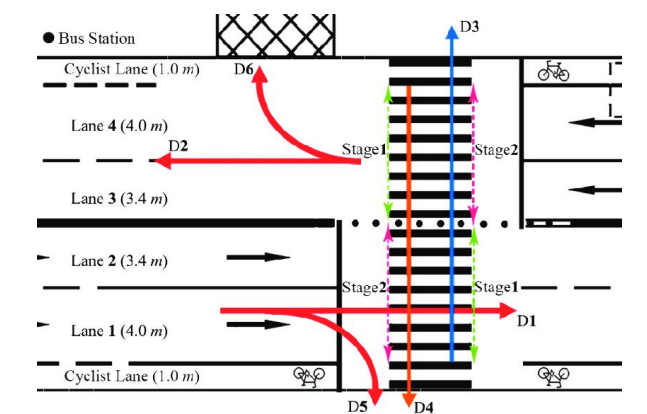
EXISTING SOLUTIONS
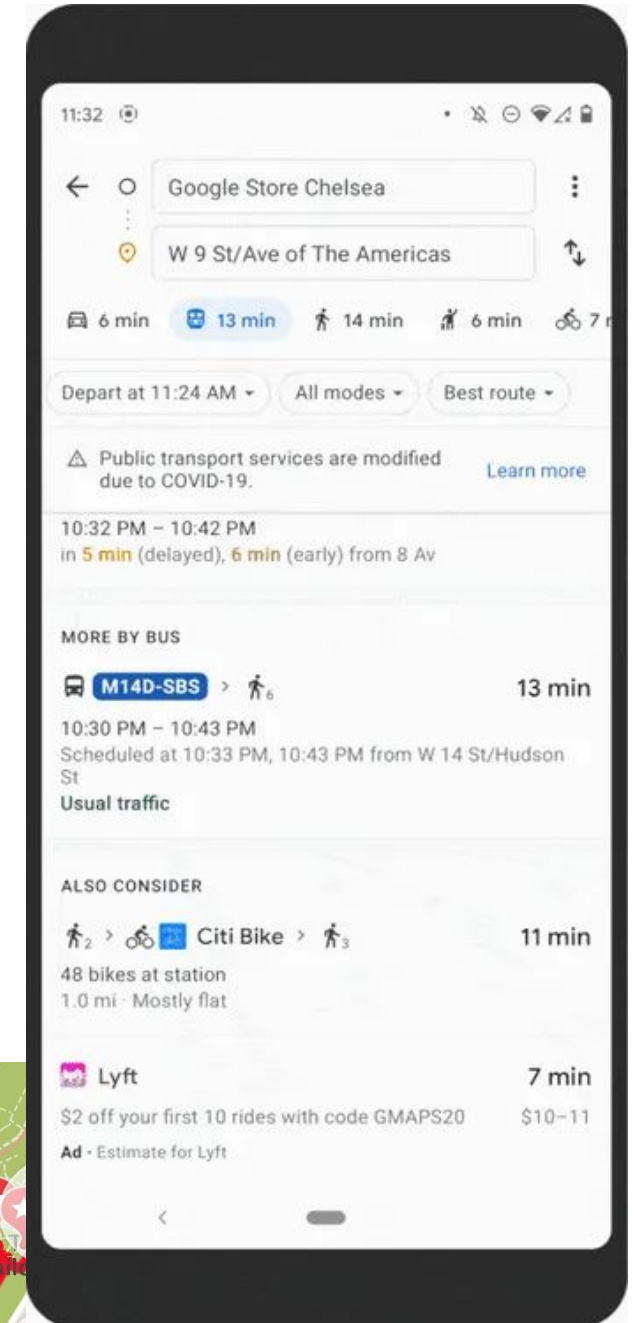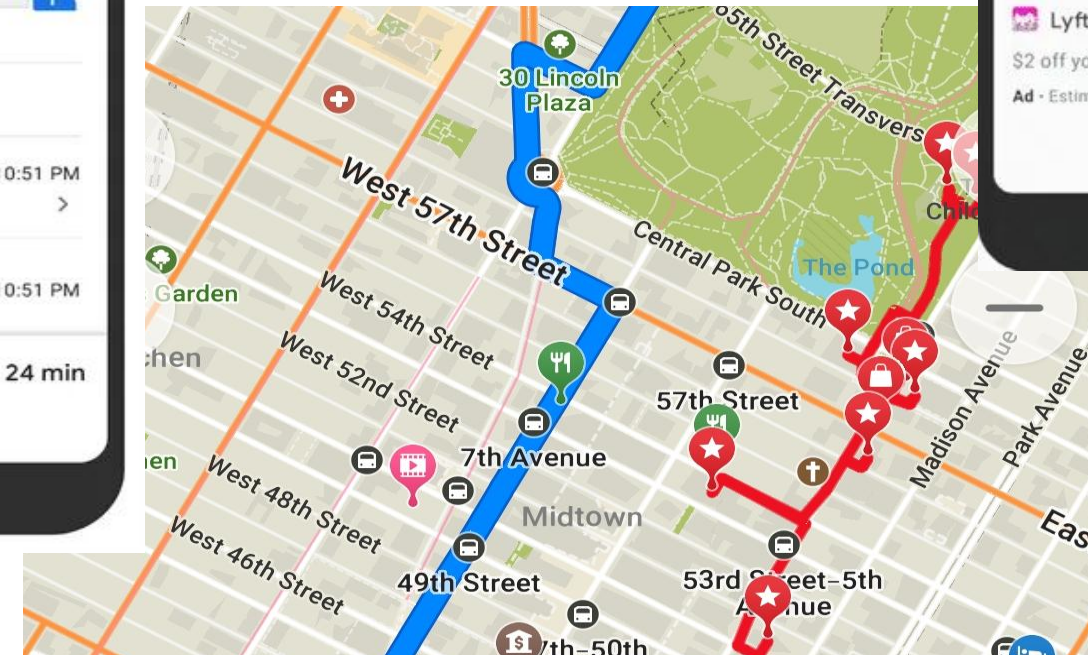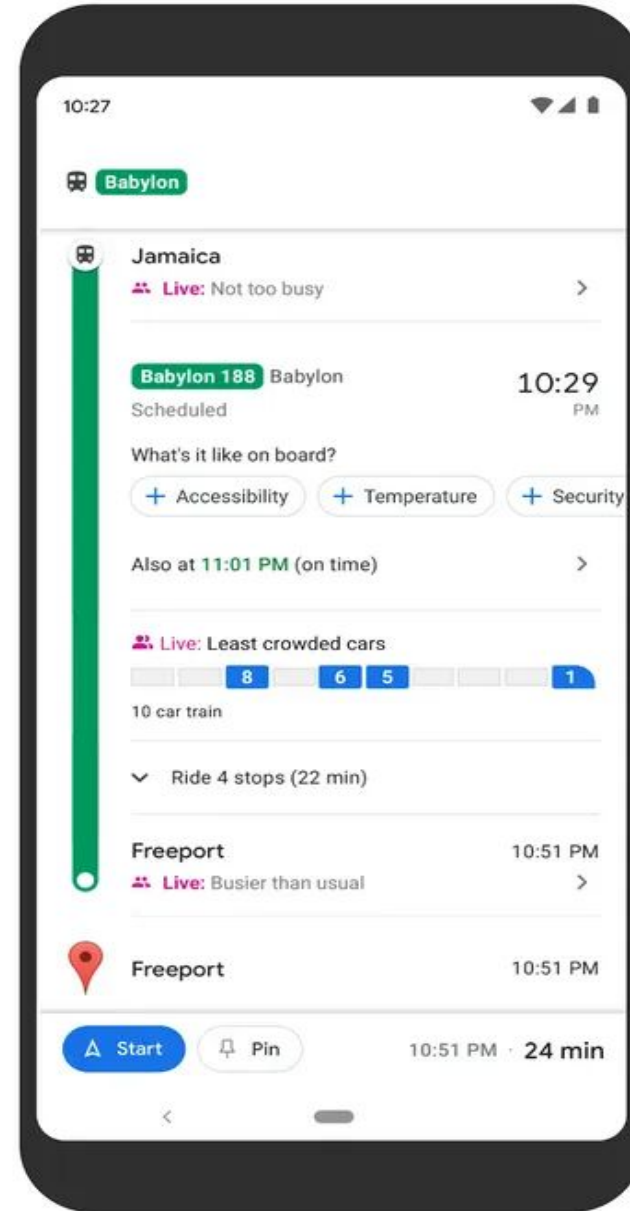
DESIGN

DESCRIPTION

DESIGN OBJECTIVES

PHYSICAL

❖ Design a train surface pressure system that will collect data based on the number of people in the train

❖ Establish a graphical system that assigns train car numbers

DIGITAL

❖ Design an app that translates and relays the pressure data to the general public

➢ The app will provide train options based on train and train car capacity

LOGISTICS

PHYSICAL

The surface pressure system would be installed beneath the top layer of the train floor. The design would be seamlessly integrated into the MBTA trains and would not be visible.

DIGITAL

As the digital interface collects data, the trends of the train capacities at certain times will be predicted, and these predictions will be offered to app users.
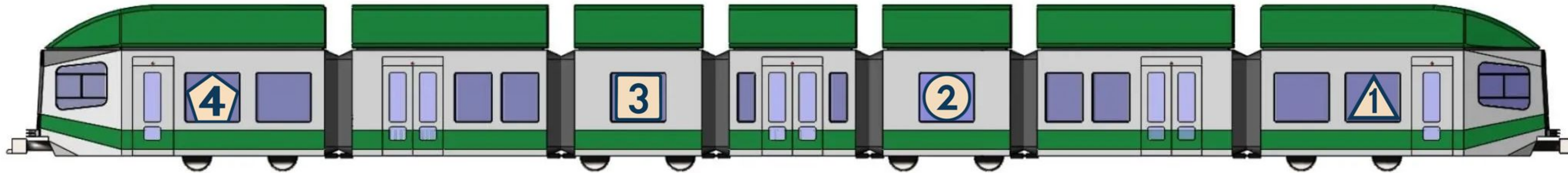
Language like "The train is typically X% full at _:__" would be used and accessible in the app.

Moreover, to improve accuracy, the system would record data when the train is moving.

PHYSICAL MOCKUPS

Assigning number icons to train cars in a universal manner
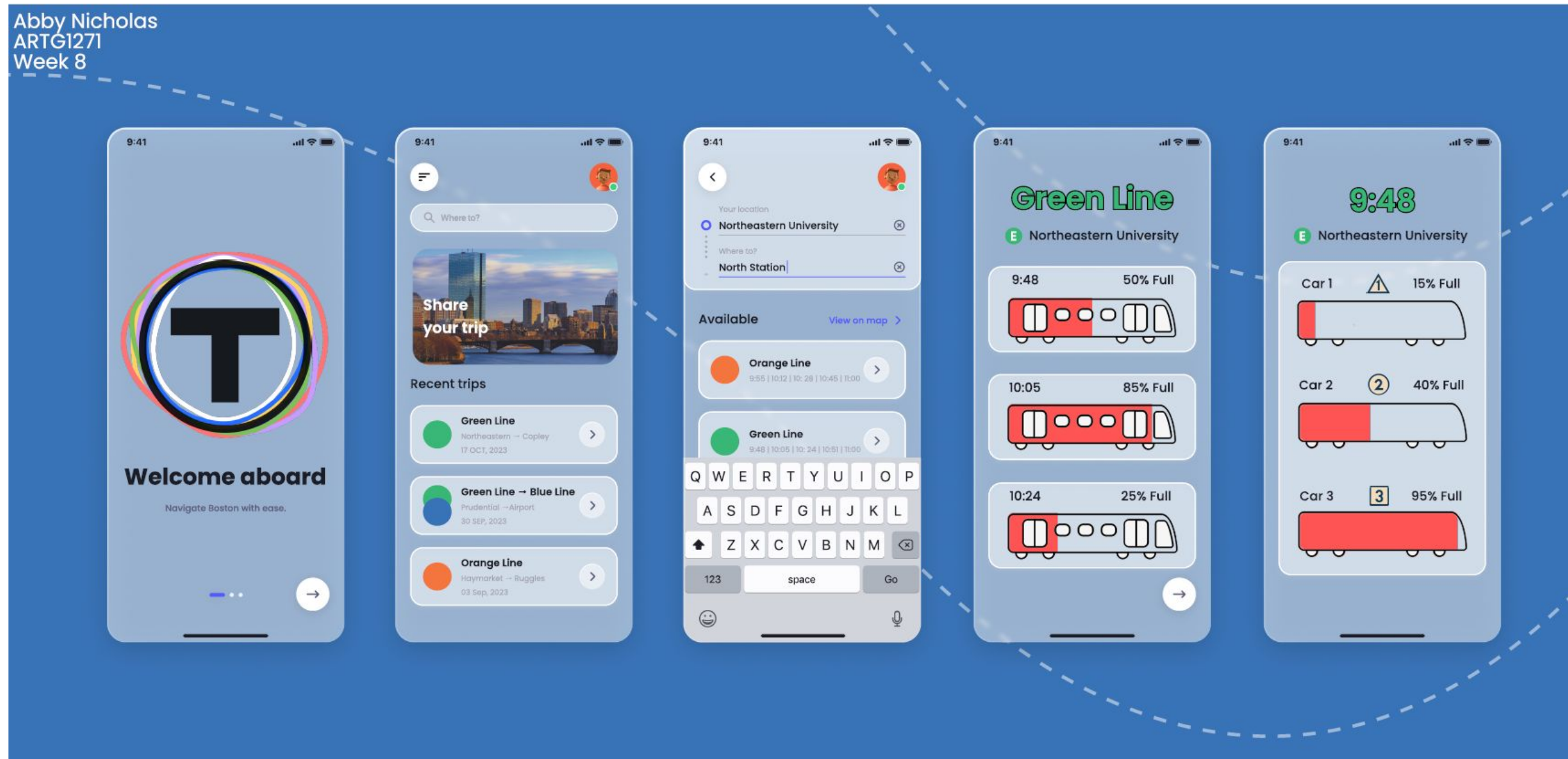
PHYSICAL MOCKUPS

Assigning number icons to train cars in a universal manner

APP PROTOTYPE

Creating an app that allows a user to see train capacities prior to boarding

Figma Prototype

FUTURE WORK

SYMBOL DESIGN

In this iteration, I was undecided on the proper color scheme for the train number symbols. I want the colors to be universal and stand out outside each MBTA line. I do not think navy and cream are the most appropriate fit to accomplish this.

APP DEVELOPMENT

A future iteration would include a more developed app including the capacity prediction, an information screen about riding a high capacity train, and a more intuitive layout.

USER FEEDBACK

I am interested in the feedback this proposal would generate in real-world application. In a much wider scope, I would like to gather feedback from the public eye and a variety of MBTA commuters.

PRESSURE SYSTEM PROTOTYPE

With more time, I would develop an example of data collection using a C++ simulation. This would display how the pressure system would predict capacity.