Project Team 11:

MBTA Headways

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COSI 116A - Prof. Dylan Cashman, Brandeis University

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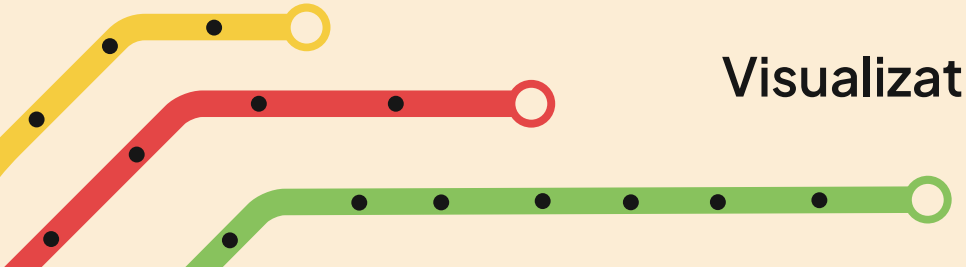
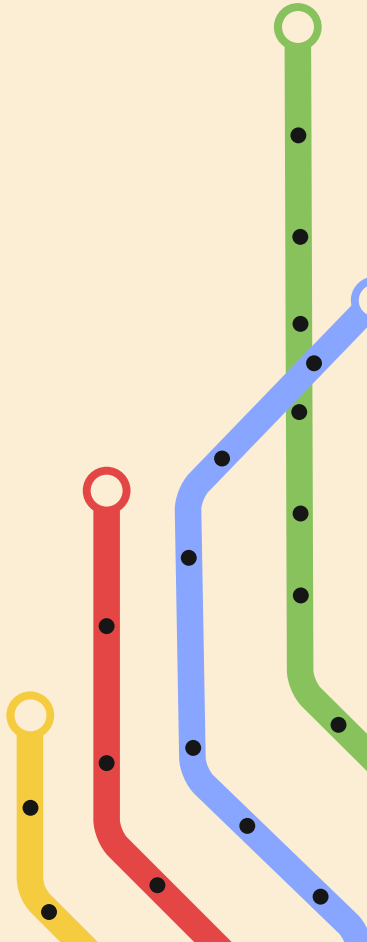


Problem Statement

- Helps users understand how **headways** are distributed across different MBTA subway lines
- Understanding patterns within headway data and headway trends over time
- ***3 Visuals***
  1. Map view
  2. Comparative bar chart
  3. Stop-specific bar chart



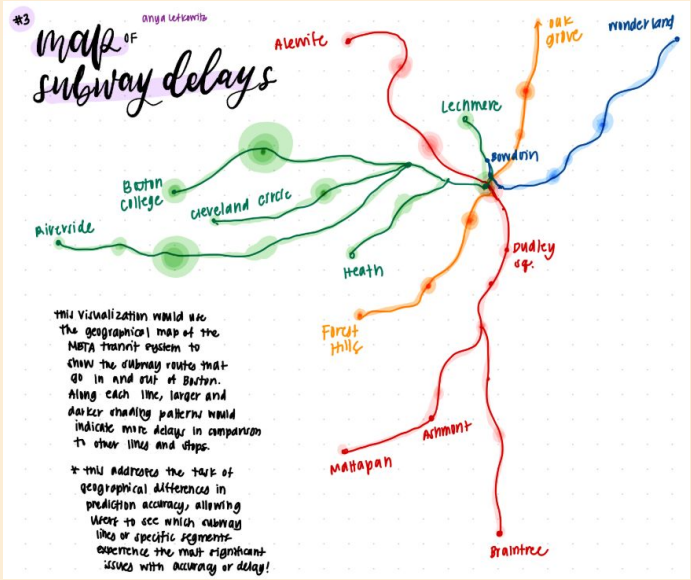
Data Description

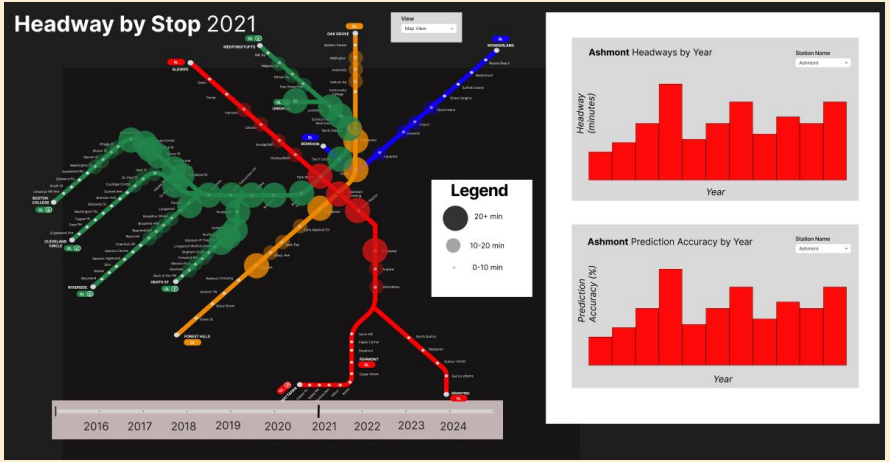
- Utilized MBTA's **Rapid Transit Headway** data from 2016–2022
- *Primary data and reprocessing information:*
  - grouped data by `stop_id`, `direction_id`, `destination`
  - aggregated `headway_time_sec` to preserve avg. headway per stop
  - matched `stop_id` to `stop_name`

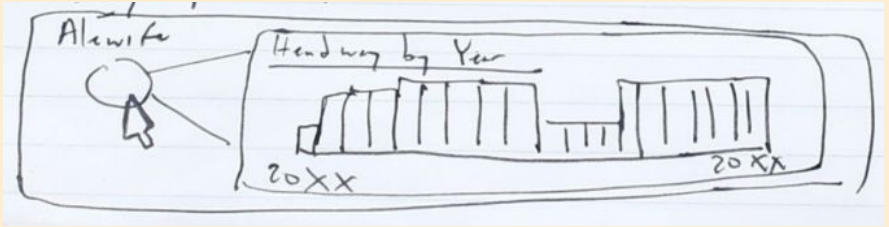
Interview Results

- **Anya:** delay experiences in varying transit types (especially during specific seasons)
- **Rose:** wide variety of experiences with MBTA, helpful to hear from people who are both familiar and unfamiliar with the MBTA system
- **Ananya:** dissatisfaction with MBTA digital tools and current prediction accuracy models

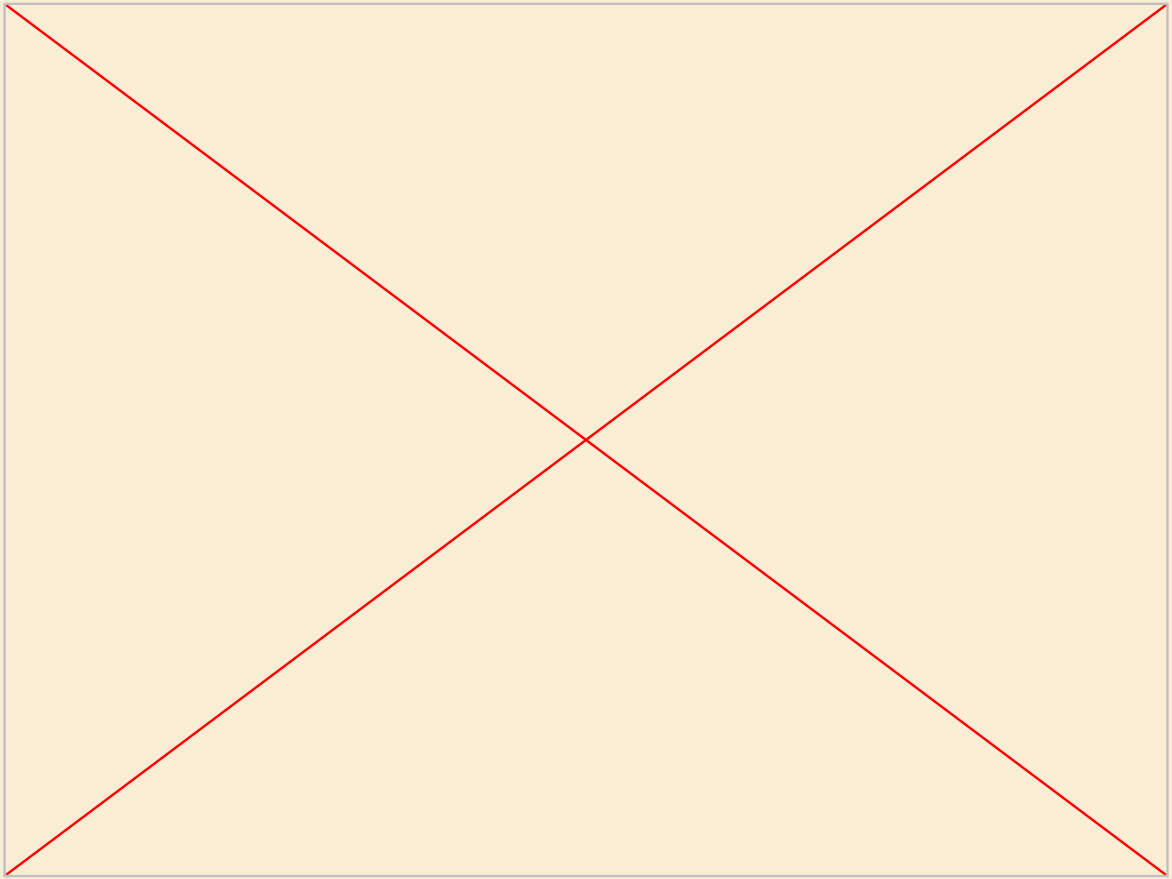
Sketches


#3
anya letkowitz
map of subway delays
Alewife
oak grove
wonder land
Lechmere
Bowdoin
Boston college
cleveland circle
Riverside
Heath
Dudley sq.
Forest hills
Ashmont
Mattapan
Braintree
this visualization would use the geographical map of the MBTA transit system to show the subway routes that go in and out of Boston. Along each line, larger and darker shading patterns would indicate more delays in comparison to other lines and stops.
+ this addresses the task of geographical differences in prediction accuracy, allowing users to see which subway lines or specific segments experience the most significant issues with accuracy or delay!


Headway by Stop 2021
Legend
20+ min
10-20 min
0-10 min
2016
2017
2018
2019
2020
2021
2022
2023
2024
Ashmont Headways by Year
Headway (minutes)
Year
Ashmont Prediction Accuracy by Year
Prediction Accuracy (%)
Year


Alewife
Headway by Year
20XX
20XX

Visualizations



Thank you!