* Lets pick 6 or so routes to focus on (and allow a user to select)
* We can do a dual or triple map that would sho 2018-2019-2020 and the route selected
  + We can probably just use bus frequency between stops as a measure of busy-ness
  + Routes change, but we can do some math on that - take total length divided by stops to determine the time to each stop, and if that ratio is lower or higher earmark it as more or less used in relation to each other - it’s a way to process some of the data
* Limiting the routes will help us focus and not become to broad or dense on the map
  + We could allow multiple routes to be selected I imagine
  + One thing we could see if we have is revenue my route, adjusted for length as well
* Since morteza said to ignore the live data, I think this should be ou focus
  + We can use that as a way to describe what we are shown as a subset of data, that could be scaled as needed if we wanted to add more lines

Jordan Notes

* Static map showing all the routes with step to go to next 6 month chunk
* Cluster points for stops
  + Click on points to show details on stop
    - Stop name
    - Stop frequency
* Bar graph/ scatterplot or counter for…….linked to economic groups
  + Number of routes
  + Frequency of routes
  + Number of stops

Teacher notes

* Frequency of bus stops for a census group
* Just do pre covid, during covid, post covid
* Just do weekends or just 1 day
* Point in polygon

Parallel coordinate

X axis different variables

Each line is a census tract

Y axis is pickup frequency

Linked to map

<https://www.rtd-denver.com/coronavirus>

<https://www.rtd-denver.com/service-changes/combined-covid-19>

<https://www.denverpost.com/2020/04/19/rtd-coronavirus-covid-denver-transit/>

<https://towardsdatascience.com/visualizing-bus-trajectories-in-denver-85ff02f3a746>

<https://www.rtd-denver.com/business-center/open-data/gtfs-developer-guide#realtime-feeds>

<https://gis-rtd-denver.opendata.arcgis.com/> \* in the email Morteza sent us

<https://www.denvergov.org/Government/Agencies-Departments-Offices/Community-Planning-and-Development/Blueprint-Denver>

<https://geospatialdenver.maps.arcgis.com/apps/webappviewer/index.html?id=3993b545b2c4468ab005b35b6d6ebf8c>

<https://kepler.gl/demo>

<https://studio.unfolded.ai/home>

<https://www.nhgis.org/> census data

**Data acquisition:**

Acquired 3 GTFS samples from Aug19, Pandemic, and Sep20

(Each of these GTFS data is collected through 5-6 months)

Acquired route shapefiles from a friendly individual at RTD

**Processing in R:**

Processed the amount of trips performed by each bus route

Processed the amount of times a bus has stopped at each stop

**Processing in ArcGIS**

Using the stop data (with latitude and longitude), we had imported the stop frequency data as XY points

Using the spatial join tool in ArcGIS, we had acquired the JoinCount data (amount of stops) and total frequency (total amount of stops made at each stop) within each census tract using [Intersect]

Iterated this process 3 times for each of the time periods

Cleaned the data (removed unnecessary features)

**Exported the data as a GeoJSON file**