# R esearch Question:

How has COVID-19 affected BART and MTA ridership? We will be cross-referencing the timeline of COVID-19 in the Bay Area and in NYC to see how different state government responses to this epidemic have affected the BART and MTA ridership. Our goal is to analyze the significance of the impact of COVID-19 on each subway system and to evaluate effectiveness of government regulations on inhibiting commute.

**M ethods:** We hope to analyze the change in ridership over time for both the BART and MTA

subway system, with regards to the overall transit system as well as individual stations. With the BART data in a matrix format on a spreadsheet, we can easily deduce the average number of entries and exits per station. The MTA data, being a .txt file, would first need to be converted to CSV before we can do any data cleaning. Since the data is presented at the turnstile level, we would need to aggregate each row for a given station to come up with total ridership numbers for that station. After calculating various change-over-time metrics, we hope to visualize the changes concurrently with major developments in COVID-19, specifically the dates of reported cases, deaths, and government interventions. Most of our data analysis will be either conducted in Excel and/or JupyterHub.

# D ata source link(s):

[h ttps://www.bart.gov/about/reports/ridership](https://www.bart.gov/about/reports/ridership?fbclid=IwAR0brvBRKzXO0J0S0yt4x3OXgkmRZyx48YyHEIsPgKUy-n7w0wsrr6BXCY0) (monthly average, by day of week)

[h ttp://web.mta.info/developers/data/nyct/turnstile/turnstile\_200328.txt](http://web.mta.info/developers/data/nyct/turnstile/turnstile_200328.txt) (turnstile, by week)