# Visualize OD data with Flowmap.blue

Praktikum XII - Visualisasi Data & Informasi

# Flowmap.blue

- Flowmap.blue is an open-source tool that helps visualize the movements between 2 geographic locations.

# Origin-Destination (OD) data

- OD data, or "flow data," serves the function of representing geographic movement. It comes either in "long" form or as a matrix. In the first case, each row will have the OD pair (origin and destination) and the number of trips between the origin and destination.

| Origin | Destination | # of Trips |
|---|---|---|
| France | Italy | 567 |
| Italy | France | 1234 |
| UK | Italy | 890 |

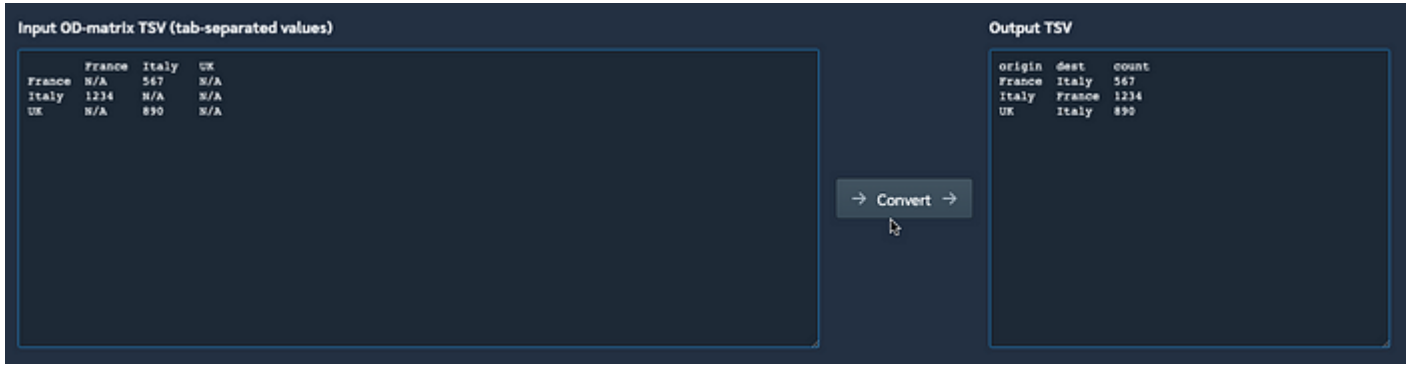
"Long" form data

| | | Destination | | |
|---|---|---|---|---|
| | | France | Italy | UK |
| Origin | France | N/A | 567 | N/A |
| | Italy | 1234 | N/A | N/A |
| | UK | N/A | 890 | N/A |

OD matrix

- Flowmap.blue has a matrix converter that allows you to convert a matrix into a long form and copy/paste the tabular output in a spreadsheet.

- In Flowmap.blue, you'll need to use long form data.



# Why should I care about OD analysis?

- helpful for a myriad of reasons:
- urban planning,
- transportation networks design,
- real estate investments,
- supply-chain logistics,
- human migration policies, etc
- Mobility data is important to understand what inefficiencies exist in the modern geographic spaces to help develop a better response
- OD analysis helps identify today's geographic gaps for better resource allocation tomorrow.

# Data

- San Francisco Bay Area's BART ridership data for 2021
- https://www.bart.gov/about/reports/ridership

- Template
- https://docs.google.com/spreadsheets/u/1/d/1aEgwtGUGc0TdnsO0jIm50hshCZ-m4DHms3P0Qq9IYdA/edit#gid=1438429083

- https://flowmap.blue/

# “properties”, “locations”, & “flows”

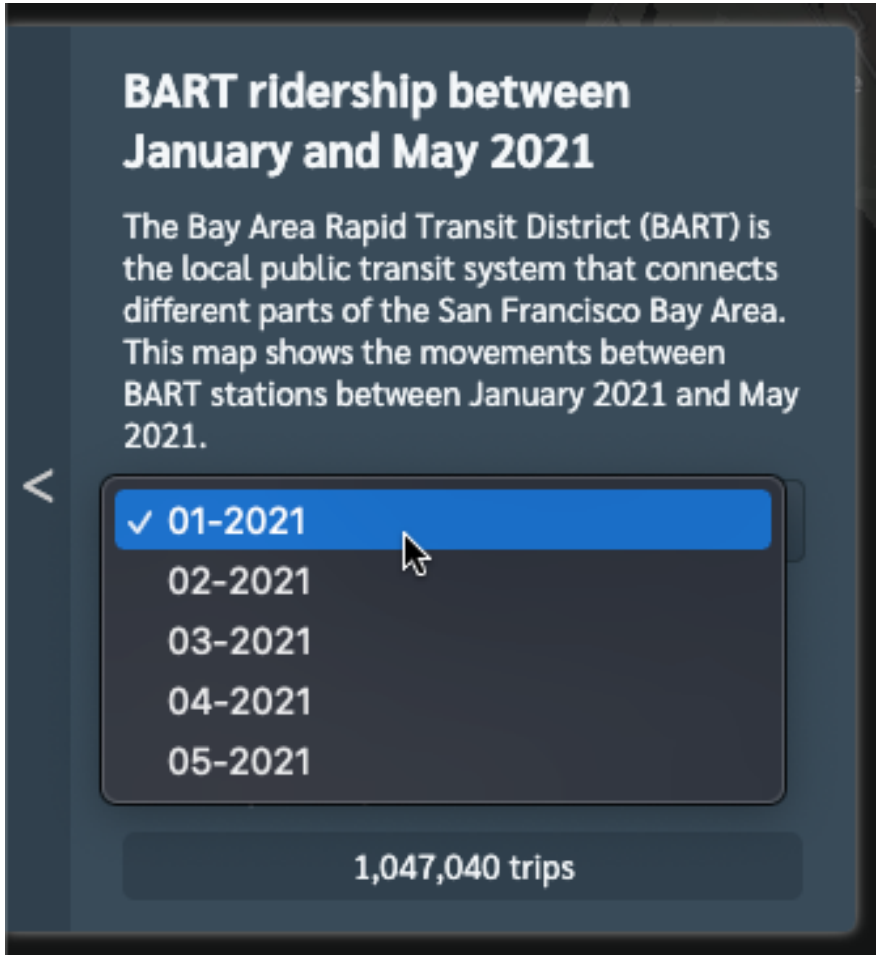
- **Properties (metadata of the visual created)**
- chart title, a description, the data source and your own info.

| property | value |
|---|---|
| **title** | BART ridership between January and May 2021 |
| **description** | The Bay Area Rapid Transit District (BART) is the local public transit system that connects different parts of the San Francisco Bay Area. This map shows the movements between BART stations between January 2021 and May 2021. |
| **source.name** | BART ridership data |
| **source.url** | https://www.bart.gov/about/reports/ridership |
| **createdBy.name** | Chloe |
| **createdBy.email** | |
| **createdBy.url** | |

format the map by selecting the colors, animation/cluster feature, and word choices for the toolbox

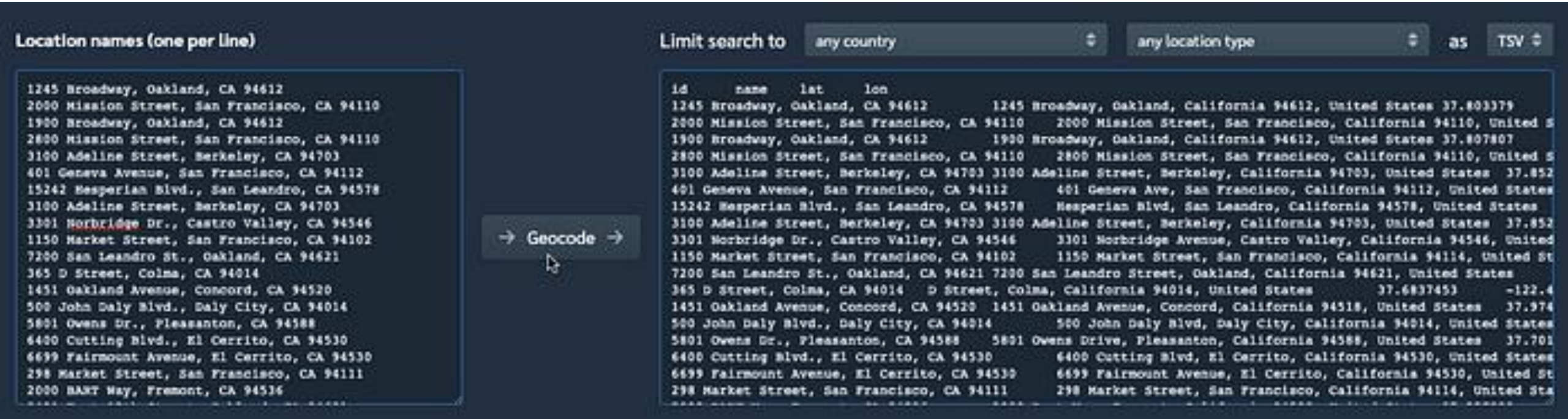
| property | value | comment |
|---|---|---|
| **colors.scheme** | SunsetDark | |
| **colors.darkMode** | yes | |
| **animate.flows** | yes | |
| **clustering** | yes | |
| **flows.sheets** | 01-2021,02-2021,03-2021,04-2021,05-2021 | ← Here you can list multiple comma-separated **sheet names** if you want to split your flows data into several subsets. There will be a drop-down menu in the UI with the subsets to select from. Here is an example: → |
| **msg.locationTooltip.incoming** | Inbound trips | ← Here you can customize some of the messages. |
| **msg.locationTooltip.outgoing** | Outbound trips | |
| **msg.locationTooltip.internal** | Internal & round trips | |
| **msg.flowTooltip.numOfTrips** | Number of trips | |
| **msg.totalCount.allTrips** | {0} trips | |
| **msg.totalCount.countOfTrips** | {0} of {1} trips | |

the flows.sheets “value” cell contains comma-separated values. Those will inform the month/year drop-down **you see** below. For each drop-down value, you’ll need to create a separate tab on the template.



# Locations

- Populate locations, including the GPS coordinates. If you only have the location names without the GPS coordinates, you can use Flowmap.blue's geocoding tool.
- Copy/paste the result on the "locations" tab of the spreadsheet.

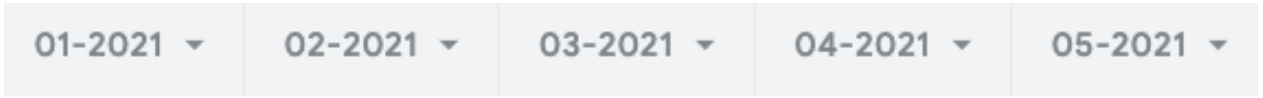


# enter the data: id, name, latitude, and longitude.

| id | name | lat | lon |
|---|---|---|---|
| 12 | 12th Street / Oakland City Center | 37.803379 | -122.271843 |
| 16 | 16th Street Mission | 37.765009 | -122.419685 |
| 19 | 19th Street Oakland | 37.807807 | -122.268595 |
| 24 | 24th Street Mission | 37.751992 | -122.41872 |
| AN | Antioch | 37.996448 | -121.780665 |
| AS | Ashby | 37.852932 | -122.268903 |
| BE | Berryessa / North San Jose | 37.370635 | -121.874812 |
| BP | Balboa Park | 37.72124 | -122.4477 |
| BF | Bayfair | 37.696616 | -122.134042 |
| BK | Berkeley | 37.87023 | -122.26797 |
| CV | Castro Valley | 37.69135 | -122.07598 |
| CC | Civic Center | 37.779722 | -122.413611 |
| CL | Coliseum | 37.753603 | -122.196678 |

# Flows

- the number of trips taken between the origin and the destination. If you're not interested in creating a filter, you can simply fill out the "flows" tab. However, if you want to create a drown-down, you'll need to create a new tab for each value you want added to the drop-down




- On each tab, enter the origin, destination, and the aggregated number of trips.

| origin | dest | count |
|---|---|---|
| RM | RM | 147 |
| EN | RM | 637 |
| EP | RM | 580 |
| NB | RM | 451 |
| BK | RM | 1700 |
| AS | RM | 480 |
| MA | RM | 932 |
| 19 | RM | 509 |
| 12 | RM | 820 |
| LM | RM | 194 |
| FV | RM | 557 |
| CL | RM | 554 |
| SL | RM | 280 |
| BF | RM | 198 |

# Share the template “Anyone with the link.”

- Copy/paste the link in the dedicated box on Flowmap.blue. Click “Open” to view the final result in Flowmap.blue.

- You can zoom in or out, filter on the month by using the drop-down menu, or toggle the settings (bottom left corner). While Flowmap.blue is a convenient, low-code and user-friendly tool