1. Ideas

size = annual ridership
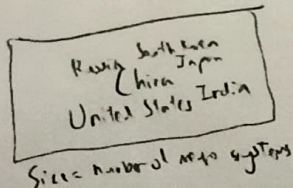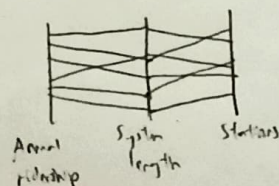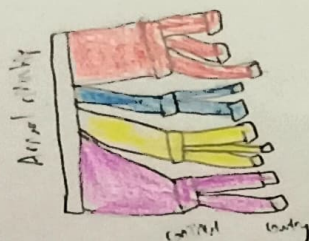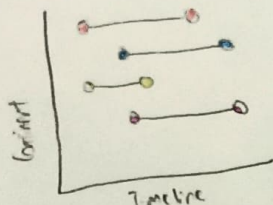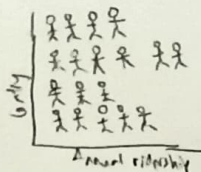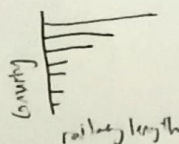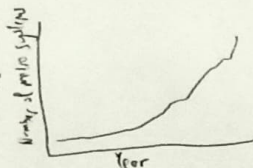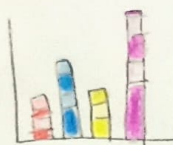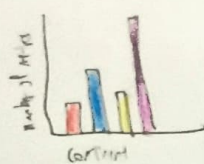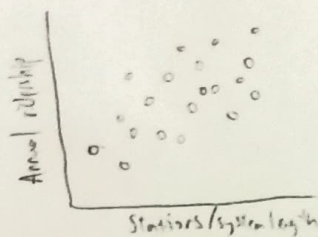
saturation = system length

Annual ridership / Stations/system length

Number of metro / Continent

Continent → country → annual ridership

Number of metro system / Year

City / Annual ridership

Continent / Timeline

Country / railway length

Annual ridership / Continent, country

Annual ridership / System length / Stations

Russia, Southern Japan, China, United States, India

Size: number of metro systems
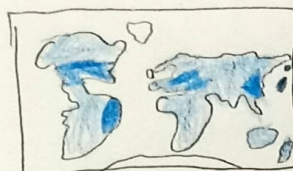
Annual ridership / Station

3. Categorise

Metro Systems Around The World

- Map to show locations of metro systems
- Show distribution of annual ridership between countries / continents
- Difference of year of open service between continents / countries.
- Relationship between metro stations and annual ridership.

4. Combine and Refine
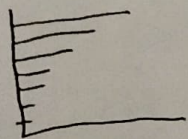
- Able to use a filter to select specific countries

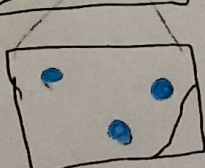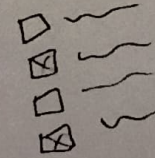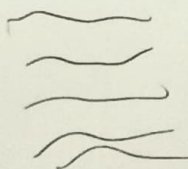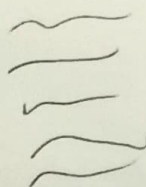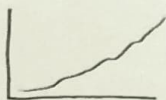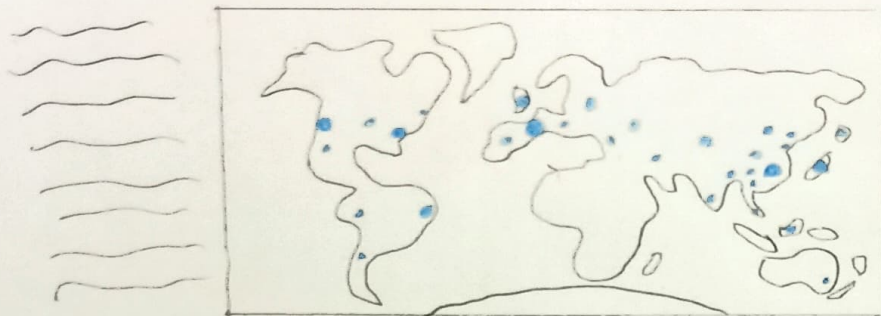- Able to zoom in and pan on the map, useful for areas with a concentration of different metro systems

5. Questions

- Is it better to group the metro systems based on the country or the continent/region?
- Will these idioms be reasonable to implement using Vega-lite?
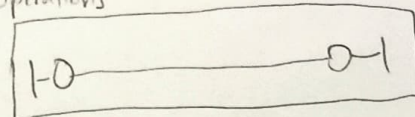
Layout

METRO SYSTEMS AROUND THE WORLD
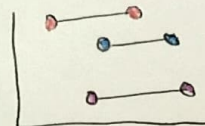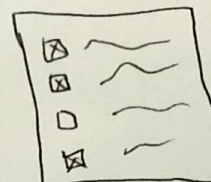

Operations

Filter to adjust the completion date of metro systems shown on the map.

Filter to show and hide specific regions from the timeline.

Focus
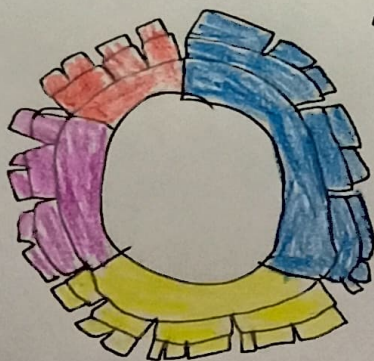
- This sunburst chart shows the distribution of annual ridership across regions.

- First layer is continent/region.
- Second layer is country
- Third layer is the specific metro system

Annual Ridership

Metro System
Country
Continent / Region
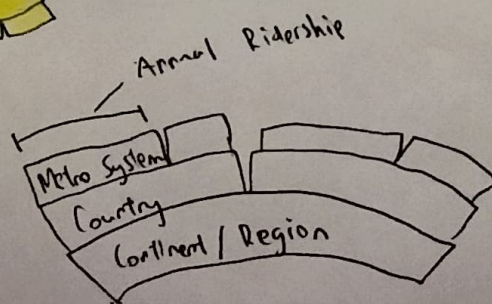
Discussion

- Will the sunburst have too many metro systems on the third layer? Might have to change sunburst to two layers instead.

- Does the line graph show a meaningful change of metro systems around the world through out the years?

- Will there be interesting differences for different regions on the timeline?

Author: Evan Churg
Date: 25/9/2024
Sheet: 3
Task: Data Visualisation 2

METRO SYSTEMS
# AROUND THE WORLD

South Korea
China   United States
             India Japan
Russia

Country

Annual ridership   System length   Stations

Operations

South Korea
China   United States
Russia   India Japan
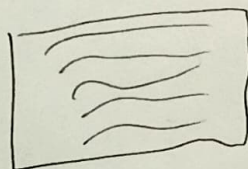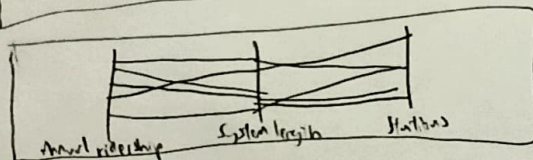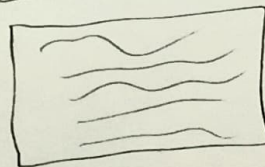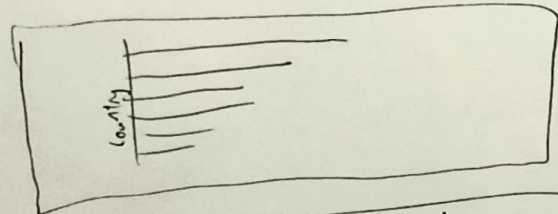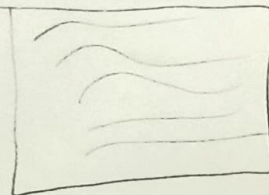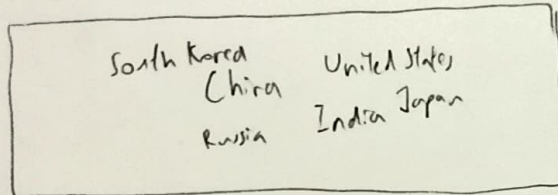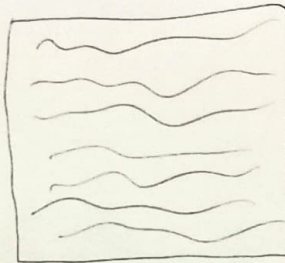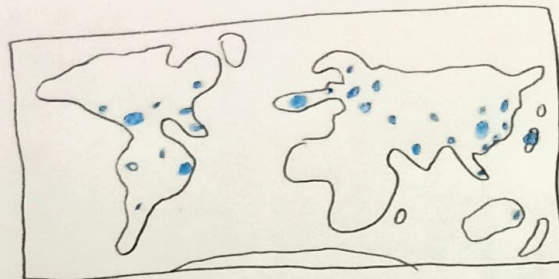
Country
Frequency

Tooltips show the frequency/number of metro system in the particular country

Focus

Can colour coordinate different metro systems based on the continent/region.

Region
☑ —
☑ —
☐ —
☑ —

Able to filter on continent/region.

Selecting a specific point on the map will highlight the corresponding metro system on the parallel coordinate chart
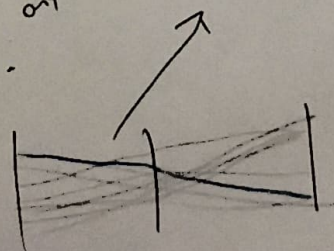
Discussion

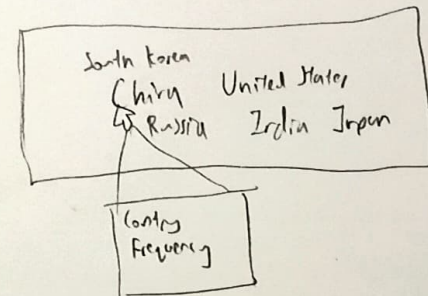- Would a word cloud show interesting and visually appealing differences between countries?

- Does a parallel coordinate plot work well with my dataset? Will it show any meaningful trends?

- Should there be some normalisation done for the bar chart? Average metro length instead of total metro length.

Layout

METRO SYSTEMS AROUND THE WORLD

Operations

Country
Number of metros
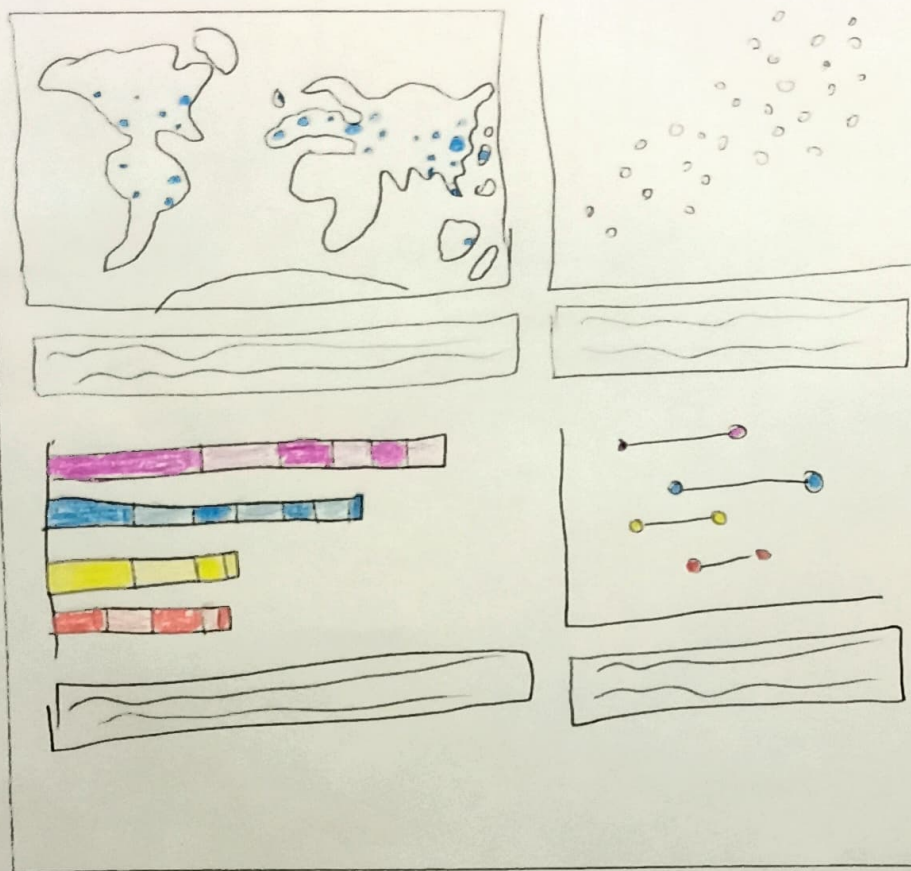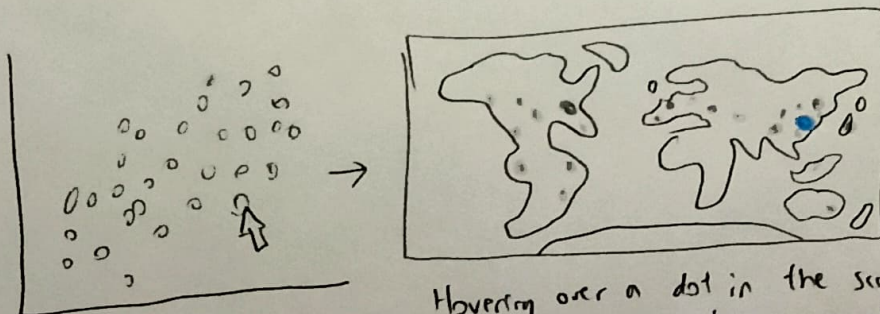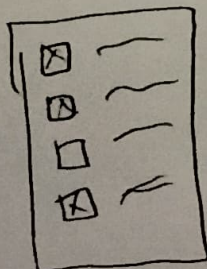Additional information

Tooltip for bar chart will show the country, the frequency of the number of metros in the specific country, as well as additional information.

Focus

Hovering over a dot in the scatter plot will highlight the corresponding metro system on the proportional symbol map.

Filter which would filter out continents/regions for both the bar chart and the timeline.

Discussion

- Will a bar chart suffice in showing difference between different continents/regions? Might not be as detailed as a sunburst.

- Would the scatter plot show meaningful and interesting trends between system length and annual ridership? Will there be outlier points on the scatter plot?

- Would the timelines have a significant difference between the regions?

Layout

METRO SYSTEMS AROUND THE WORLD

South Korea   United States
China   Japan
Russia   India
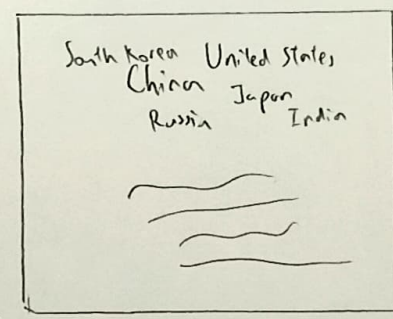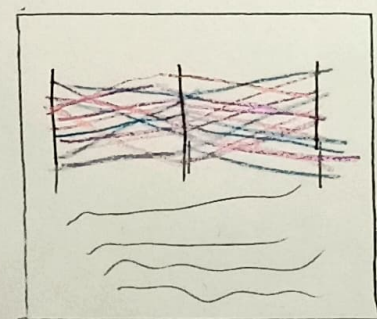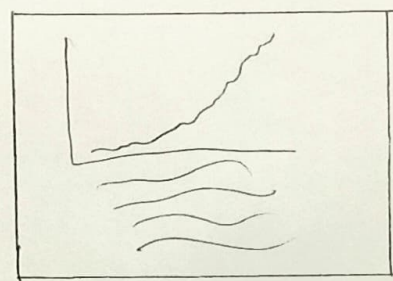
Operations

Filter for
continents/regions
to be applied
for timeline and
parallel plot.

Focus

Selecting a year on the line graph will only show the metro systems which existed during the year on the map.

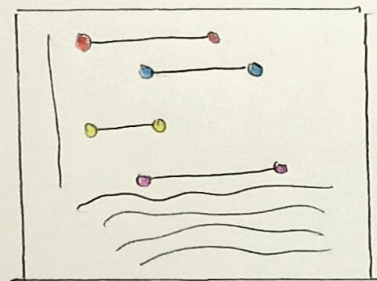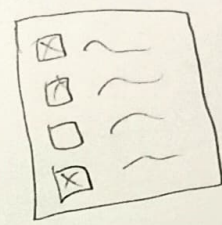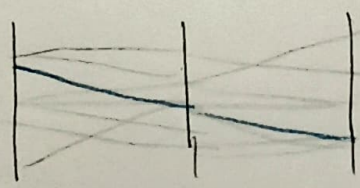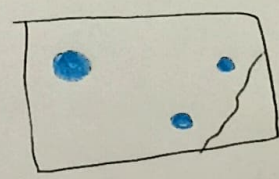Selecting a line on the parallel plot will highlight the corresponding metro system on the map.

Zoom in feature for the map, useful for areas with a concentration of different metro systems.

Discussion

- Will the filtering on the line chart be able to be achieved on Vega-lite?

- Is it possible to add a zoom in feature to the map using Vega-lite? Or will I have to use Vega?

- Will a word cloud show reasonable difference between countries?

- Will these ideas fit properly in two columns to maintain good sightlines?