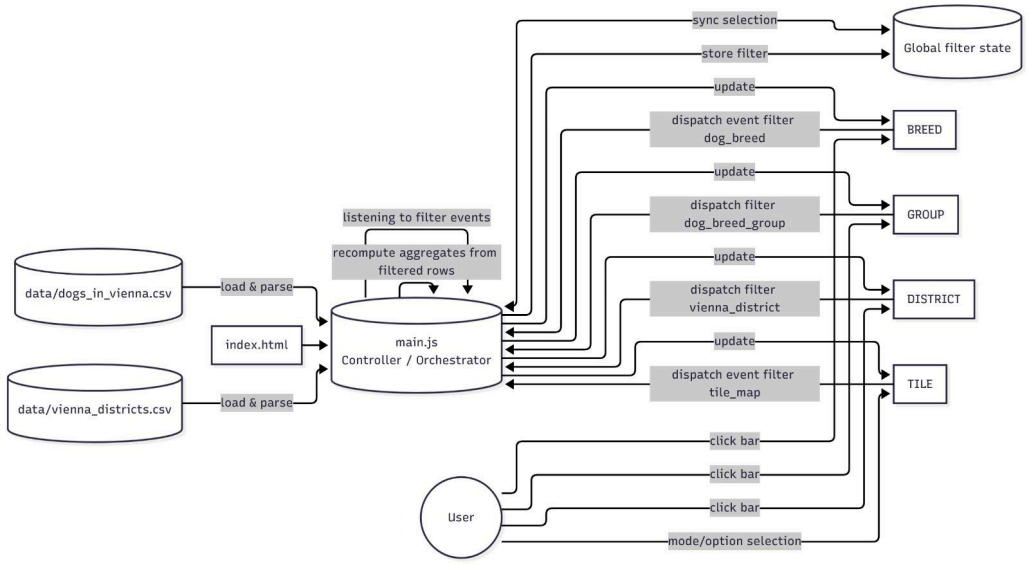
Checkpoint V: Third Prototype

Group: 21
Date: 2025/10/14

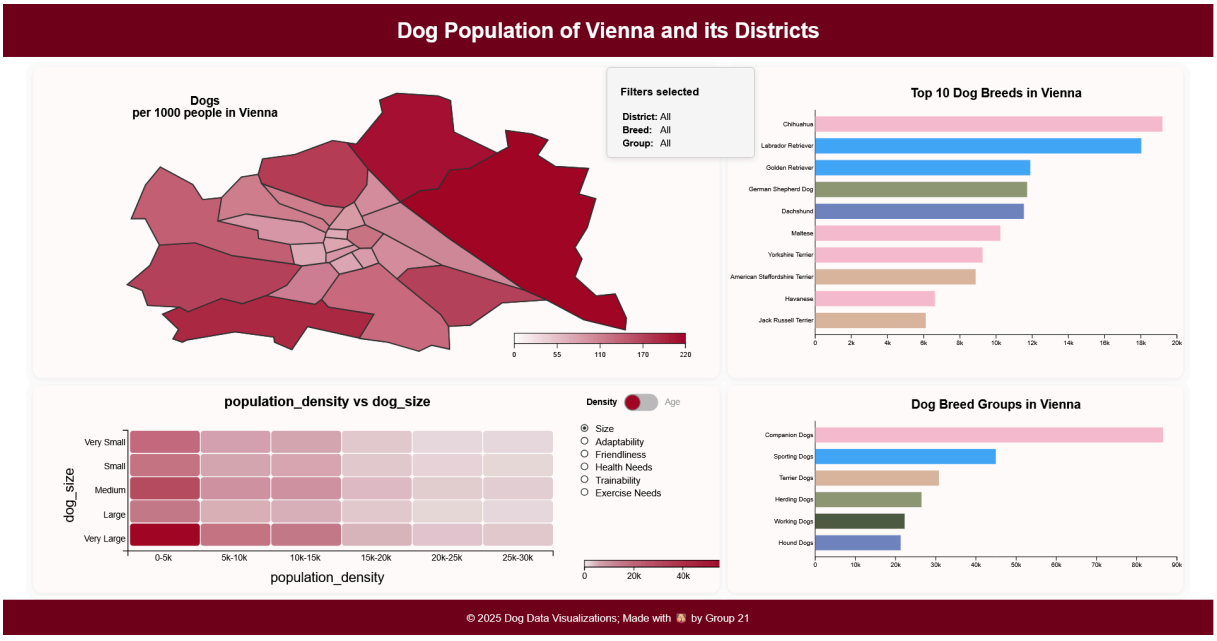
Prototype Architecture

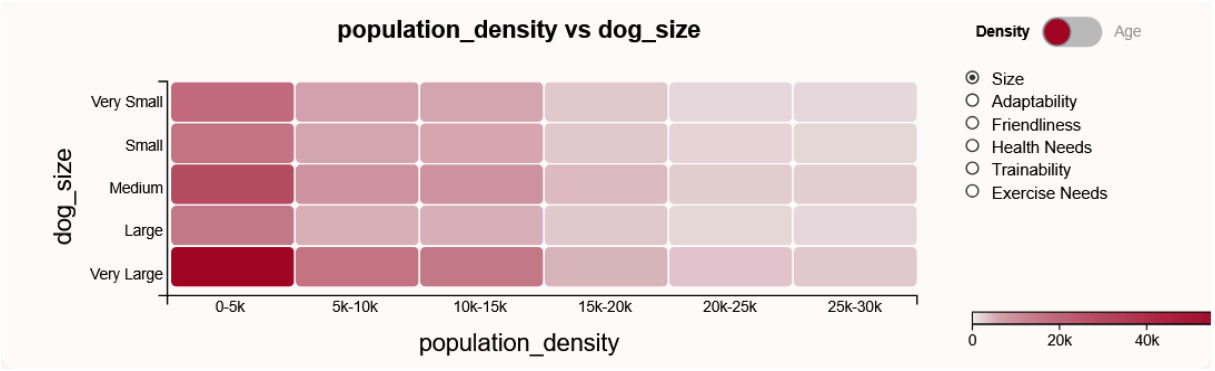


Prototype architecture remains largely unchanged despite the seemingly new drawing.

The only change is the addition of “TILE” and its interactions with “main.js” and “User”.

Dashboard Layout





Tile Map chart.

Data Processing

We added the data processing for the Tile Map chart. First, on the main script, the raw dataset is divided into five bins along the y-axis. The chosen x-axis is similarly binned into six ranges. Next, for each combination of y-bin and x-bin, the sum of all dog_counts and the number of records are aggregated to form the values displayed in the chart. Finally, missing combinations are filled with zero-value tiles to ensure a complete grid for visualization. The main script then sends this data to the tilechart js file, which displays the bins it receives, with a color defined by the total dog count of that bin. To manage the resulting high variance a square root scale was implemented to better visualize lower values.

Chart Interaction

Interaction with the Tile Map is possible via the selectable modes and options. The modes allow for setting the data for the x-axis while the options do the same for the y-axis. This is done on the tileChart file, which sends an updated heatMapState (modes and options) to the main script, which recomputes the bins' data based on the new attributes and calls for the chart to update. Furthermore, the Tile Map uses a hover interaction which lets users see details for each tile by hovering over them.

Chart Integration

The added Tile Map chart is integrated with the other charts via the filter options. By selecting a filter from the choropleth map or one of the bar charts, the Tile Map will also be filtered using those filters, and colored like the rest of the charts. This enables analysis of specific areas, dog breeds or their groups.