Eliezer Molina Mello

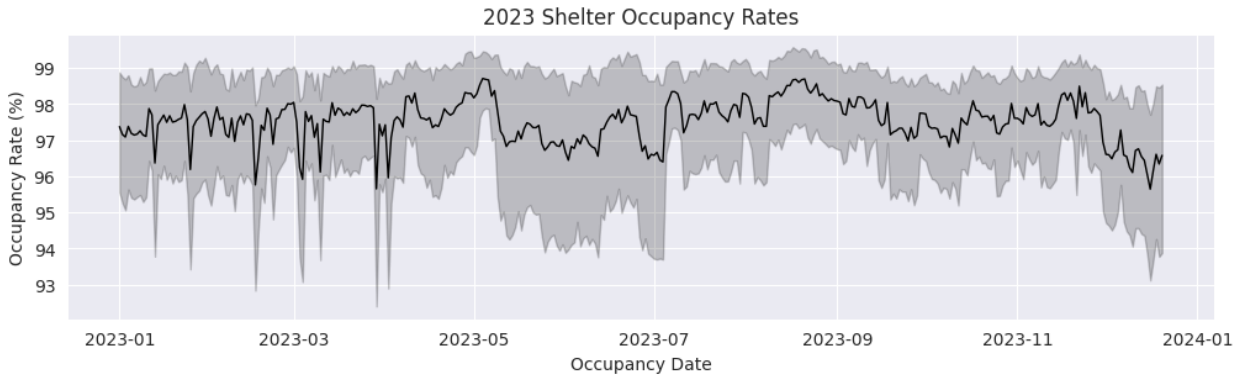
Assignment 4: Final Project

Visualization 1 - Daily Shelter & Overnight Service Occupancy

Link:

https://open.toronto.ca/dataset/daily-shelter-overnight-service-occupancy-capacity/

Screenshot:



Software:

I chose Python as software for my first visualization as this is the software learned and used in class. Also, I only have familiarity with this open-source software.

Intended Audience:

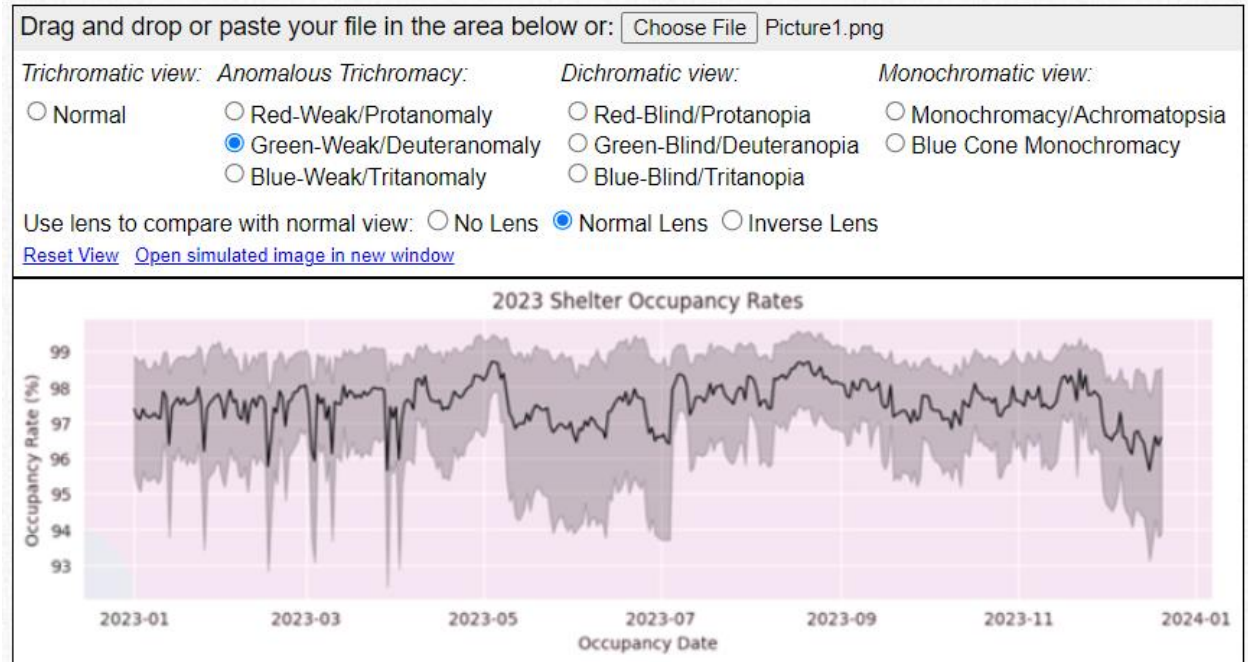
The intended audience is politicians and policy-makers because the visualization's data source derives from a very important and pressing social issue that must be addressed as soon as possible.

Message/Information:

The message I am trying to convey with this visualization is to show, with real data, the dire situation Toronto shelters are facing. It is very clear that most shelters are at capacity with average occupancy rates of no less than 95%.

Design Principles Considered:

I chose a line chart as this is the most appropriate graph showing change over time, and I considered all design principles when designing this visualization. For substantive qualities, I made sure to include the data source at the beginning of this assignment as well as in the appendix code. For perceptual qualities, I chose a line chart with proper labels and titles so that the visualization can be easily understood. Regarding aesthetic qualities, I chose only greyscale colors as a way to make my visualization visually accessible and this was confirmed by uploading the graph into the Colour Blindness Simulator discussed in class:



About Reproducibility:

My visualization is 100% reproducible. I used Python, Pandas, and Seaborn to plot my line chart. These are all open-source software and tools that anyone can use, reproduce, and enhance. I have also provided all code use with relevant comments and descriptions for easy understanding.

About Accessibility:

I made sure that my visualization was visually accessible to people with color blindness and on the autism spectrum discussed in class. This ensures the contrast ratio between the colors in the graph is very low.

Visualization Impact:

The individuals who might be impacted by my visualization are Toronto policymakers, as they are the ones who can act on the high occupancy rates. If they can act on it, then hopefully we can see those rates decrease over time and make shelters more accessible to anybody who needs it.

Visualization Features Consideration:

I only chose to include two features or columns, occupancy date and occupancy rate. For this visualization, I wanted to create a simple yet informative line chart. There are other features that could be of importance such as shelter type and number of beds, but this can be further explored by anybody who would like to enhance the report.

'Underwater Labor' Contribution:

The main 'underwater labor' contribution is the people working at the shelters since they are the ones who share all the information based on the occupancy of their respective shelters and make an effort to input such information into their system. Another contribution was made by the Toronto Data team as they were the ones who published this data to the public.

Appendix – Python Code:

The Python code used to create this visualization is located on my personal GitHub page which I have already shared in the Google Sheets class list. Here is the direct link to the Python notebook:

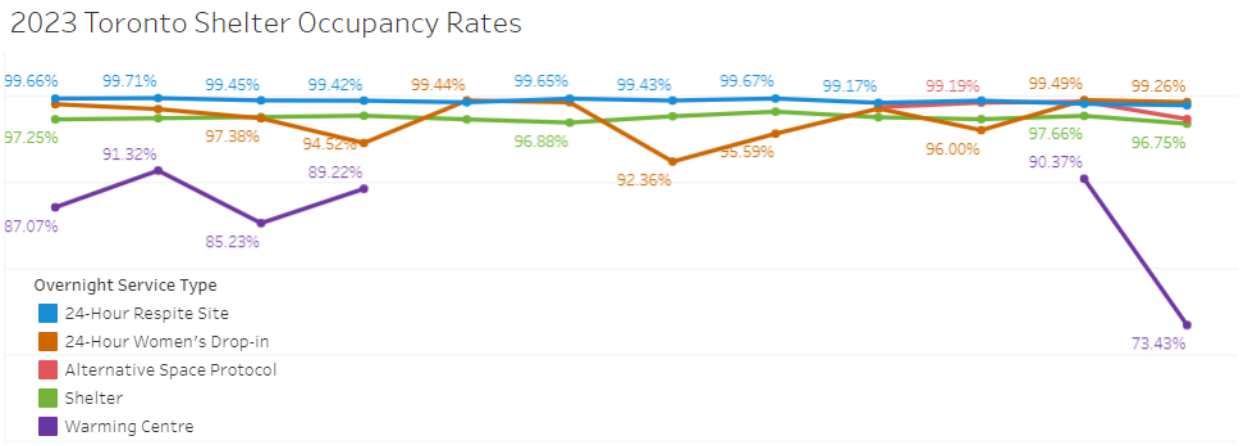
https://github.com/Elimello/DSI_data_viz_repo/blob/main/Assignments/Eliezer_Molinamello_Assignment_4_Python_Code.py

Visualization 2 - Daily Shelter & Overnight Service Occupancy

Link:

https://public.tableau.com/views/Data_viz_assignment_4/Dashboard1?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link

Screenshot:



Software:

Tableau Public

Intended Audience:

The intended audience for this visualization is the general public as well as anybody interested in learning more about shelter occupancy rates in Toronto.

Message/Information:

The message I am trying to convey is to bring awareness about the critical situation Toronto shelters face, which is record high occupancy rates. I also wanted to break the rates by service type, which will provide a better context than the previous visualization. Based on what was discussed in class I wanted to make a moral appeal as I made sure to appeal to the audience's moral and ethical values.

Design Principles Considered:

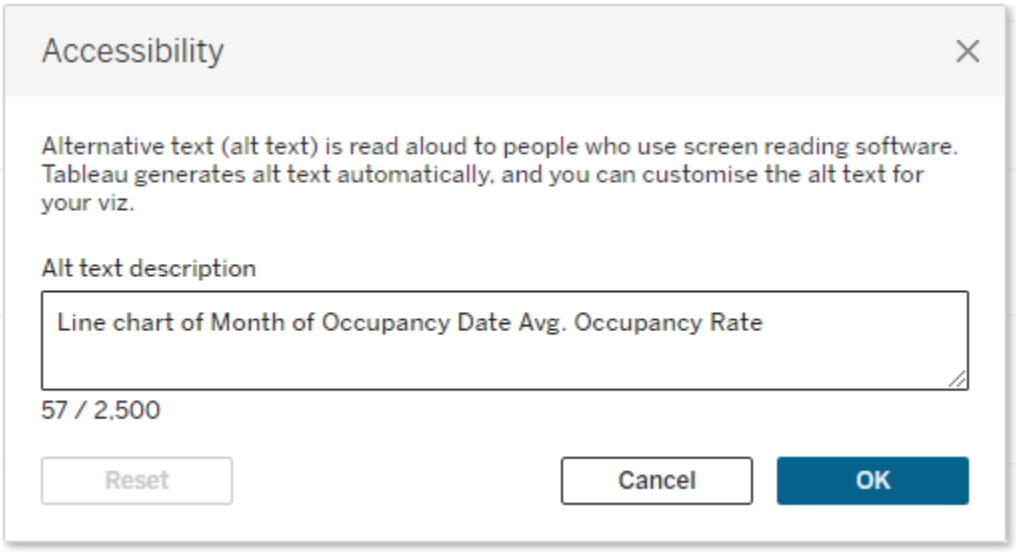
Once again I chose a line chart to display monthly occupancy rates in 2023 following good design principles. Regarding substantive qualities, I shared the data source and its URL for easy exploration. Regarding perceptual qualities, a line chart was the visualization type chosen for this purpose. Lastly, for aesthetic qualities, I made sure to use non-bright colors that could be easy for the eye.

About Reproducibility:

This visualization is not reproducible. This is because Tableau is a “pre-packaged software”, meaning that there is no coding involved when creating the visualization. This has a negative impact as this visualization cannot be reproduced or enhanced. The only way this visualization can be reproduced to a degree is by using the source data, which is public data.

About Accessibility:

As discussed in class, adding an alternative (alt) text is very important for visually impaired users. In Tableau there is an option to add alt-text to the visualization which I made sure to add before publishing online. See below a screenshot of the “Accessibility” feature in Tableau.



Visualization Impact:

The overall Toronto residents and communities will be positively impacted by my visualization. This is due to the data being shown, which displays information about shelters across the city, not just a ward or neighborhood.

Visualization Features Consideration:

Besides adding the occupancy date and occupancy rates, similar to the first visualization, I also added the overnight service type feature that further breaks down the shelters by service offered.

‘Underwater Labor’ Contribution:

The ‘underwater labor’ that contributed to my data source is the shelter workers who had to input daily information into the shelter systems as well as all Toronto government employees who were involved in the distribution of the data, from data analysts to database and web developers.

Appendix – Tableau Data Structure Screenshots: