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Visualization Technologies 1
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Final Project Writeup
https://poonev.github.io/VisTechSpring23/Homework/Data%20Project/index.html

The Museum of Modern Art in New York City has extensive datasets on their collections and artists available to the public. Within the MoMA's "Artworks" collection, this project focuses specifically on one particular artist: Ludwig Mies van der Rohe.

Mies van der Rohe was a German American architect and furniture designer and regarded as "one of the pioneers of modernist architecture." He created numerous projects ranging from furniture to architecture to art, using a variety of mediums such as pen, pencil, printmaking, watercolor, and much more. From domestic spaces like the famous Barcelona Pavilion to large, large-scale office towers like New York City's Seagram Building, he imbued his buildings with a fluid spatial harmony reflective of his oft-quoted aphorism, "less is more." Mies van der Rohe is currently the 3rd most represented artist in the MoMA collection.

By looking at Mies van der Rohe's works, we want to understand the quantity of artworks produced by Mies van der Rohe (collected by the MoMA), the variety of mediums he used to create these artworks, and if there was a change in mediums as he continued to produce more works.

A few questions considered to further push this project:

- What was Mies van der Rohe's most and least popular medium used as his career advanced?
- Did Mies van der Rohe's choice of medium change over time?
- Did Mies van der Rohe have more furniture or architecture projects?
- When did he produce the most work and with what medium?

Through a density scatterplot, we can visualize on a timeline the amount of works he produced each year and with what mediums used to produce those works. The x-axis shows the year, specifically plotting the start date of each artwork in the dataset. The y-axis shows the quantity

of mediums within each medium category which are: acrylic, charcoal, collage, colored pencil, crayon, glass, gouache, graphite, ink, lithograph, paint, pen, pencil, print, steel, and wood. Every "medium" category is organized by a different color, assigned in JavaScript. The process of exploratory data analysis made up the majority of time and work for this project. The process began by manually cleaning up the "date" variable to only include a 4-digit year, as opposed to some original data points that contain phrases such as "after 1940." After loading the dataset into JavaScript, filtering data was the first step. Only strings containing "Mies van der Rohe" are needed from within the "artist" variable. Next, to filter the "medium" category, arrayKeywords and for loop were used to pick out certain words needed to consolidate the category. For example, "pencil on tracing paper" becomes only "pencil." After consolidating the "medium" category to simplistic words, the number of occurrences is counted of each time the medium is mentioned in the dataset by year, using for loop and d3.rollup(). This gives a year and all the "medium" tallies. For example, in 1910, there is 1 charcoal and 2 pencil occurrences. Since the dataset is very large, complicated, and has special instances, such as missing datapoints, saving the console.log of the filtered dataset and creating a clean csv file will reduce the number of errors when drawing the scatterplot. After determining a minimum and maximum for "date" and "medium quantity," JavaScript is used to draw the axes and points. A tooltip feature is then implemented for users to hover over each data point and view more information about each specific point, specifically the year, the medium, and number of works. If there are notable or famous projects within a bubble, the hover feature will also display that extra note. The complete dataset can be downloaded at the bottom of the page.

While what is completed for this project so far is just the start, there are many additions and improvements that could be made to learn more about this topic. Implementing a feature for the bubbles to expand to show the name of artworks included in that bubble could be the next step for this project. Additionally, this could expand to include additional data, such as an image of the artwork, dimensions, museum date of acquisition, or other relevant information. On the other hand, it could pull a few projects as case studies, such as the German Pavilion or Seagram Building. One project, like the German Pavilion, could include several pieces of artworks using different mediums. Creating a pie chart to show these mediums within this project could be interesting to study at a smaller scale. Another option could be to implement an interactive timeline slider for users to view artworks' images as users choose the date.