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INFO 4310: HW 1

For this assignment, I explored San Francisco's tree-planting trends to uncover how the city's urban forestry efforts have evolved over time. The visualization focuses on two key aspects: where trees were planted (using a map) and what species were most popular (using a heatmap). The map groups tree plantings by decade, with each decade assigned a unique color, making it easy to see how planting patterns changed across the city. The heatmap dives deeper into the data, showing the top 10 most planted species and how their popularity shifted over time.

I made a few changes to the provided post-process.py script to prepare the dataset. Trees without planting dates were grouped under "1955>," since they were known to have been planted before that year. I also grouped planting years into decades to simplify the timeline and cleaned up the species names to keep only the common names, removing any extra metadata.

For the map, I used color to represent different decades and plotted each tree's location on the map of San Francisco. The transparency of the dots ensures that dense areas don't get too cluttered while still showing hotspots of planting activity. The heatmap, on the other hand, uses a blue gradient to show the number of plantings for each species by decade. The x-axis represents the decades, while the y-axis lists the top 10 species by total plantings, making it easy to compare trends.

I chose these visualizations because they complement each other: the map highlights spatial and temporal trends, while the heatmap focuses on species diversity. Of course, there are trade-offs. For example, the heatmap leaves out less common species to keep things focused, and grouping by decade smooths over finer details. But these choices help keep the visualizations clear and easy to interpret. Overall, the goal was to create something that tells a meaningful story about San Francisco's trees while being visually engaging and easy to understand.