Project Title: Public School Spending on Educational Services Over Time

Datasets: https://www.census.gov/programs-surveys/school-finances.html, https://www.realtor.com/research/housing-insights-in-top-rated-school-districts/

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Rationale

Students require different services in public education, and it is the responsibility of the school to provide resources to support each child. Federal, state, and local governments assign different amounts of funding to each school for educational services, such as special education, child nutrition, vocational programs and more. However, outside funding sources from parents (PTA), contribute to extracurricular activities, playground equipment, teacher gifts, classroom supplies, and more that can greatly impact students' educational experiences.

We have chosen to base our findings on data from the US Census Bureau's survey of school system finances and Realtor.com's review of housing insights in top rated districts. Our dataset is unique as it allows users to explore the revenue sources and distribution of funding for specific public school programs at varying levels of granularity. Although there are many existing visualizations about median housing price and school quality (average SAT score, student improvement in five years, etc.)[1], these visualizations do not take the school funding breakdown into account. By combining these two datasets, users will be able to get a clearer understanding of how local finances affect child outcomes.

The existing infographics and visualizations for our dataset are extremely rudimentary, with simple bar charts showing overall distribution across all schools in the United States or in a State. Users cannot find information specific to individual concerns about a particular county, making it difficult to contextualize revenue and funding. Many of these visualizations using this dataset and related datasets use graphs[2] instead of geographic maps. Using maps helps to parallelize the logic of the data with the dynamics of the graphic, one of the fundamental guidelines for data visualization. In our visualization, users will be able to enter a school district name and see the median housing price, amount spent per child, and the breakdown of funding sources through a series of graphics on a dashboard. Presenting the data on a per child basis helps the user to more intuitively understand the funding across a county. Multiple graphics in a dashboard allow for clear encodings that allow the user to explore different aspects of the dataset.

We also want to explore more recent phenomena and events, such as how housing prices have risen dramatically in recent years, and how the No Child Left Behind policy—which informed a significant portion of school district spending—was formally replaced in April of 2015.

The target use cases of this visualization are taxpayers who are invested in how public schools are spending their share of tax income, parents who want to maximize their return on investment in their housing by seeing if their school district are allocating money appropriately for their child, and educational policymakers who are interested in seeing disparities in school spending, given a certain geographic location. It is our hope that after reviewing our visualization, users

will be able to make more informed decisions regarding pressing issues, such as school choice and the allocation of local funds.

Timeline:
4/11: Create a github and ensure that everyone understands how to use it
4/12: Clean dataset, combine datasets into one csv, and host data on node server
4/19: Finalize drawings and mock-ups of the visualization, divide coding responsibilities
4/26: Rudimentary visualization implementation - map generated, but interactions other than pan/zoom/search not yet implemented. Assign responsibilities for progress report.
4/30: Final Project Progress Report in class
5/5: Other interactions implemented (mouse over, highlight, provenance, etc.)
5/7: Final Project Presentation and Demonstration completed

References
1. Examples of visualizations for school district data from Stanford: https://edopportunity.org/
2. Examples of visualizations for school district data from the New York Times: https://www.nytimes.com/interactive/2017/03/30/upshot/good-schools-affordable-homes-suburban-sweet-spots.html, https://www.nytimes.com/interactive/2017/12/05/upshot/a-better-way-to-compare-public-schools.html