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CS5631 Term Proposal

Topic: Housing (Rent and/or Buy) Market Analysis of the Grand Rapids, Michigan area.

Summary

I will be moving to Grand Rapids after spring semester and would like to analyze the housing market in areas near my new place of employment. I want to identify affordable rentals for the near future and potentially an area to begin looking for a home to purchase.

Data Abstraction

I plan to utilize government data sources such as HUD and the Census Bureau. Zillow.com and Apartments.com also host area specific market data that is open for public use.

Data is stored in tables and will need to be aggregated, transformed, transposed to be useful for my analysis.

Most public and private data sources that are open source tend to have descriptions of the data. I will use these to find attributes that will be the most useful.

Task Abstraction

Using the above data, I would like to find areas that may have suitable housing options for me to further explore this summer.

Questions	Potential Visualizations
Which area codes are most expensive?	Variation of bar charts. Multiples Plots
Does this match what I think I know?	Expectation vs Observation write up.
Is there an underlying structure in the variance of average prices per Area Code/Suburb?	ANOVA, Clustering, Heatmaps, Boxplots/Histograms, Dendrograms
How much does additional Bedrooms effect the price of an apartment? Per Area Code?	Bar charts based on percentages, differences. Segmentation.
More questions will be identified during EDA and Abstraction.	Possible time series data, if available?

Analysis

Hopefully through analysis I will be able to answer the above questions and more. I would also like to investigate whether the home buying market is likely to change to favor buyers again, rather than the current "Seller's Market".

Conclusion

I believe that using openly available data that I will be able to find an area that matches my requirements and will help me focus my search for housing for my new position.