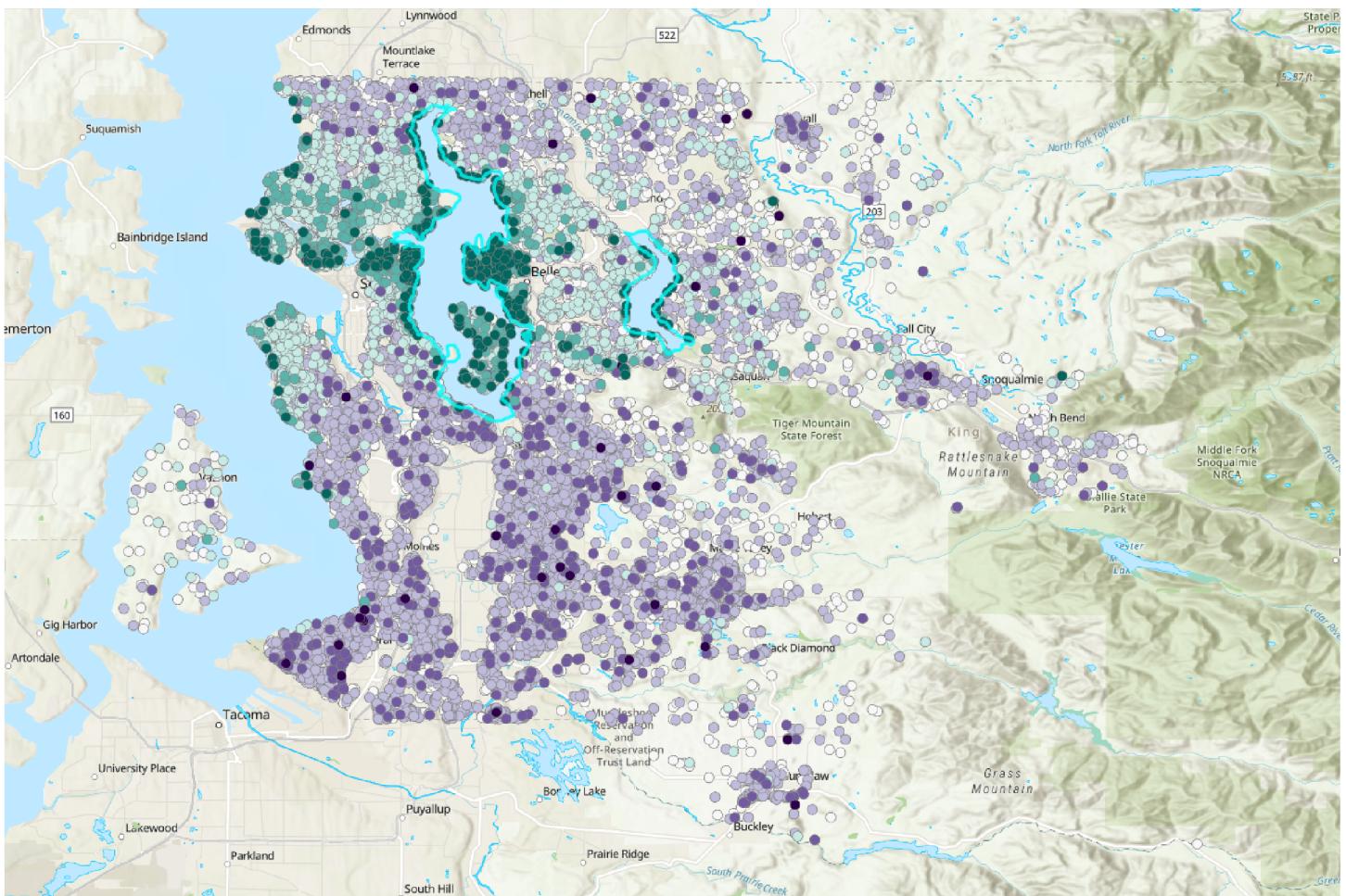


Seattle's Neighborhoods

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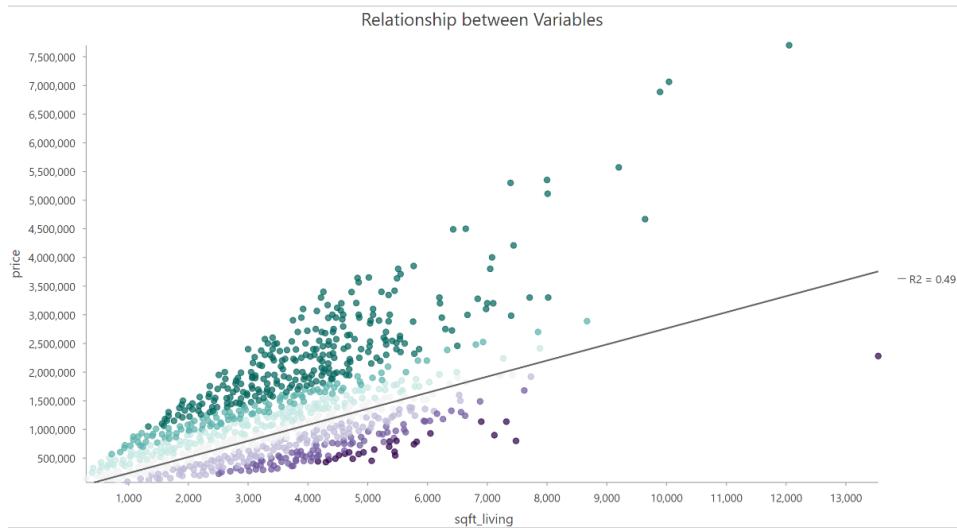
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Seattle is a vibrant city known for its beautiful landscapes and dynamic urban environment, with diverse neighborhoods, each with its unique character. Capitol Hill, known for its nightlife and cultural diversity; Ballard, with its rich Scandinavian heritage and maritime activity; Fremont, the self-proclaimed "Center of the Universe,"; and the Central District, a historic hub of African-American culture and community, all contribute to the city's identity.



With the spatial dataset prepared, I employed machine learning techniques, specifically a Generalized Regression Model due to their effectiveness in handling non-linear relationships and ability to manage many input variables using ArcGIS Pro. This model was trained using a portion of the data, with home prices as the dependent variable and the collected neighborhood-level factors as independent variables. The model's performance was then validated and refined through iterative processes, adjusting parameters and variables as necessary based on validation results.

What I found is that the factor that influences the price of a house the most is the Living space size (in square feet). As you can see in the regression model below.



There is a misconception when it comes to the number of bedrooms in a house. Although it is a factor that does contribute to the value of a house, there seems to be a strong linear relationship between these two variables when the price is more than \$1,000,000. Pearson's r of 0.31 indicates a weak positive linear relationship between the number of bedrooms and the price. The number of bedrooms and the price exhibit a different pattern for prices less than \$1,000,000.

Historical Context

Seattle's journey from a humble logging town to a bustling metropolitan center is a tale of transformation and growth. The city's strategic location, surrounded by water and dense forests, laid the groundwork for its initial development. Over the years, Seattle has evolved into a major hub for technology, commerce, and culture, shaping its neighborhoods and the housing market.

Importance of Housing

Housing has played a crucial role in Seattle's growth, particularly during the tech boom, which attracted a wave of new residents and transformed the city's demographics. This influx has had a profound impact on the housing market, driving demand and reshaping neighborhoods.

2010-2020 Overview

Between 2010 and 2020, Seattle experienced significant housing development trends, including a rise in apartment complexes and the gentrification of certain areas. The city grappled with the challenges of affordable housing as it sought to accommodate a growing population. During this period, Seattle saw the addition of over 63,000 new housing units, even as the population increased by about 130,000 residents.

Market Trends

As of November 2023, the housing market in Seattle shows stability, with median listing home prices around \$798,000 according to Marco Santarelli. The sale-to-list price ratio remains at 100%, indicating a strong market where homes sell for the asking price.

Affordable Housing

Seattle continues to face challenges in providing affordable housing. Despite efforts from both the public and private sectors, the gap between housing availability and affordability expands which is influenced by high demand and limited supply.

Future Changes and Projections

Growth Projections

The future of Seattle's housing market is likely to be shaped by ongoing population growth, economic trends, and urban planning initiatives. The city's ability to increase housing density could play a crucial role in moderating price growth and improving affordability.

Upcoming Developments

Planned housing developments and potential policy changes, such as new zoning laws, are expected to influence Seattle's housing landscape. These developments could provide opportunities to address the current challenges in housing supply and affordability.

Conclusion and Reflections

Seattle's housing development is a dynamic and complex issue, reflecting the interplay of economic forces, demographic changes, and policy decisions. The city's future will depend on the collective efforts of policymakers, developers, and community members to foster an inclusive and sustainable urban environment.

References

Cohen, Josh. "What would it take to bring Seattle home prices down to earth?" *Crosscut*, 16 Sept. 2022, [crosscut.com] (<https://crosscut.com/news/2022/09/what-would-it-take-bring-seattle-home-prices-down-earth>). Accessed 27 Feb. 2024.

Aydin, Orthun. "Build House Valuation Models with Machine Learning." *Esri Learn ArcGIS*, [learn.arcgis.com] (<https://learn.arcgis.com/en/projects/build-house-valuation-models-with-machine-learning/#create-a-regionalized-general-linear-regression-model>). Accessed 27 Feb. 2024.

Santarelli, Marco. "Seattle Housing Market Trends and Forecast for 2024." *Norada Real Estate Investments*, [noradarealestate.com]

(<https://www.noradarealestate.com/blog/seattle-real-estate-market/>). Accessed 27 Feb. 2024.