



Factors Affecting the Value of Your Home



by Kevin Trinh

Problem Statement

The housing market is a complex system influenced by various factors such as location, size, amenities, condition, and more.

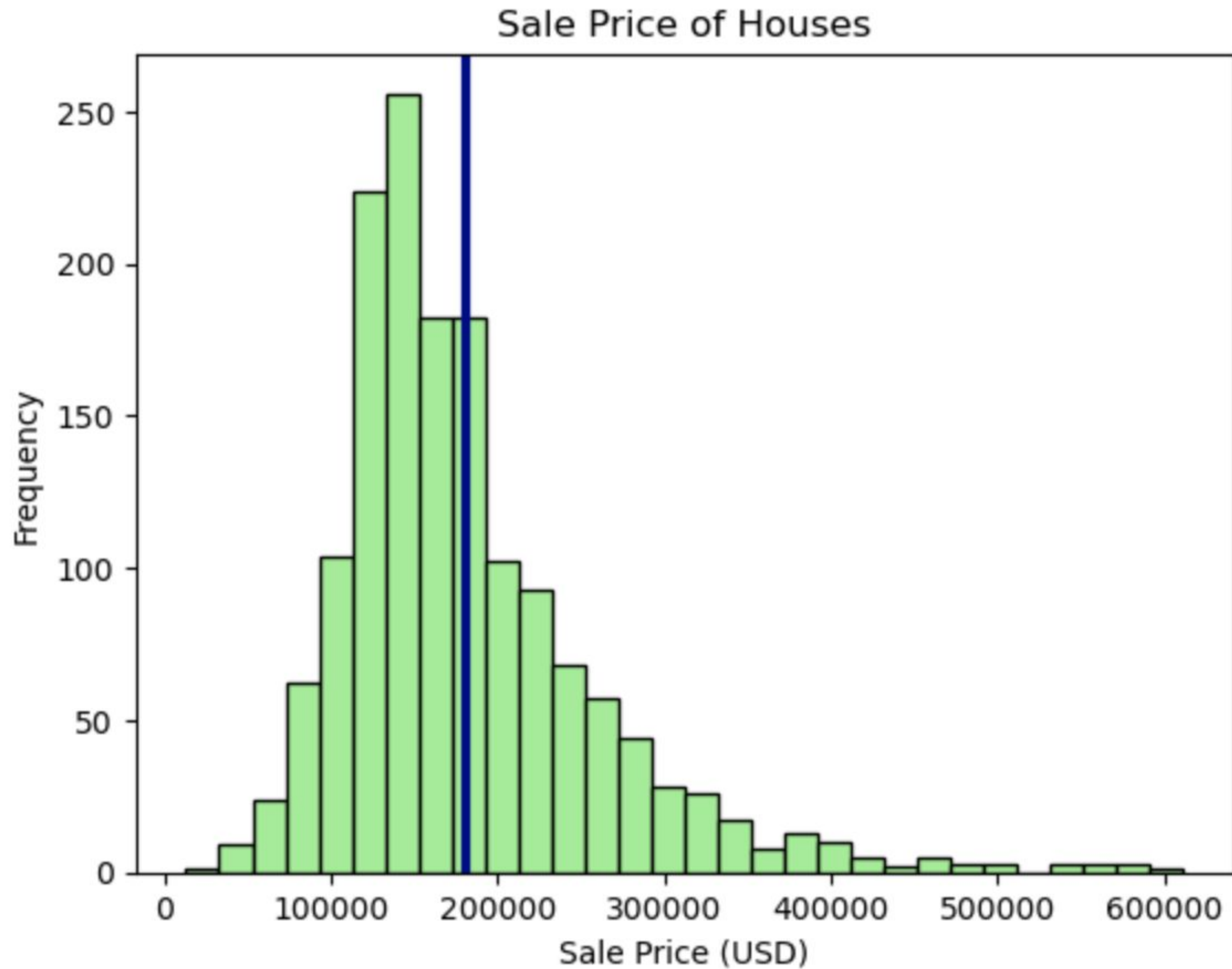
Understanding the relationship between some of these features and housing prices is crucial for current or future homeowners to decide whether or not they should remodel and sell or purchase a new home.

Methods

- Imported libraries and datasets
- Cleaned data on housing features
- Calculated summary statistics
- Conducted exploratory data analysis
- Visualized data on several important variables that can affect housing prices
- Created a model to predict housing prices using specific features
- Evaluated model and formed conclusions
- Provided recommendations to homeowners



Findings

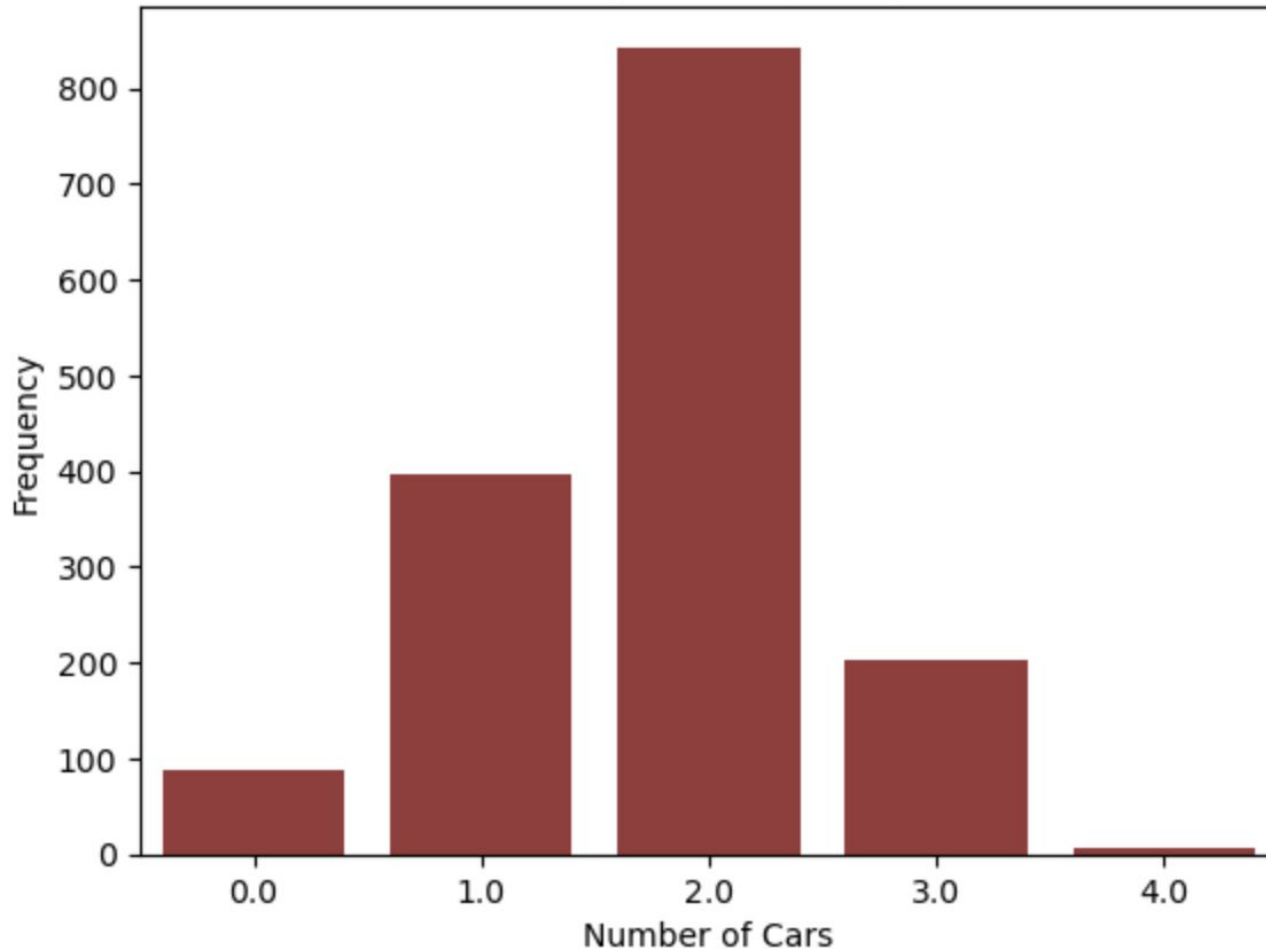


Average Sale Price of Houses in Your Area:

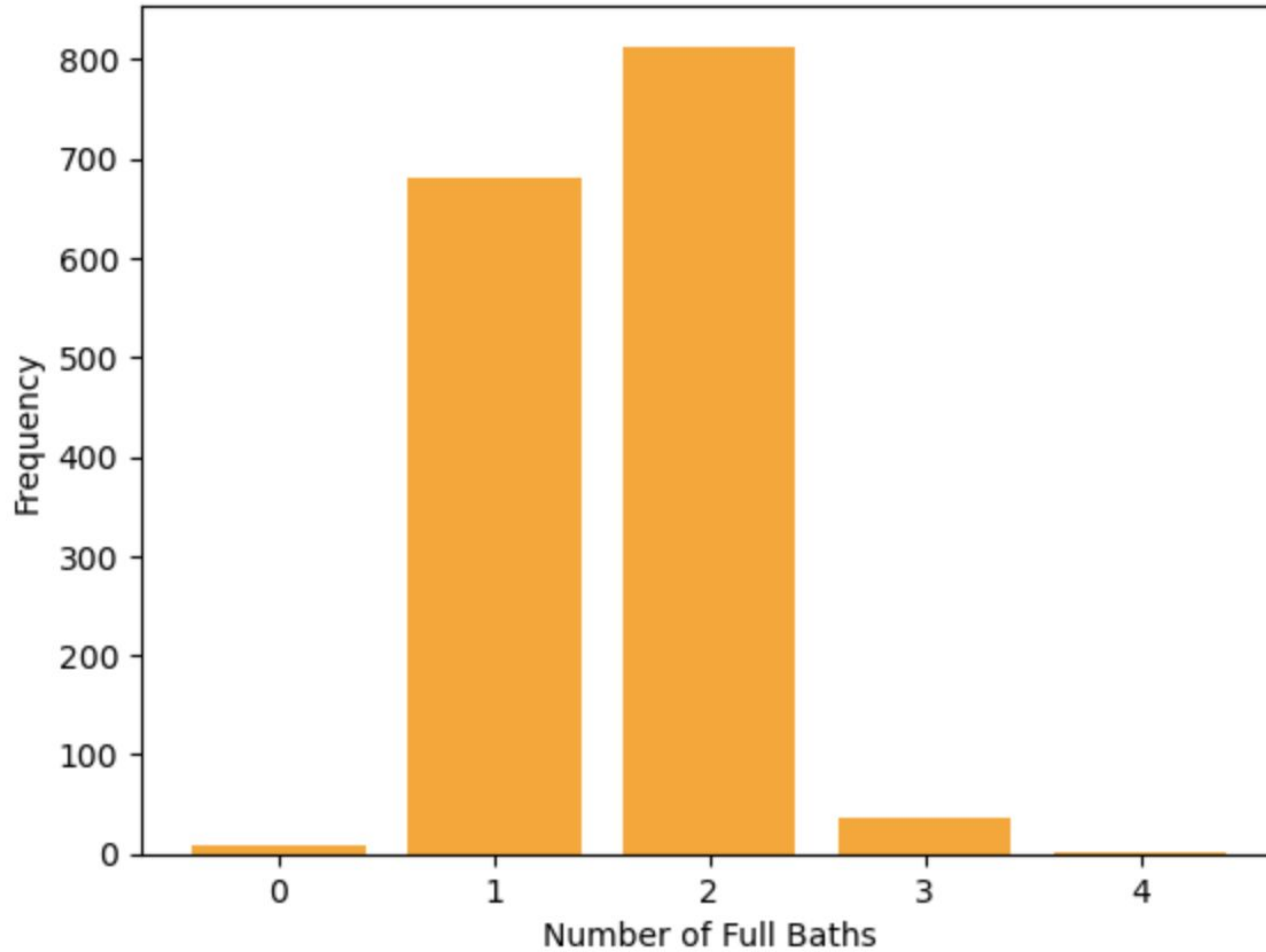
\$181,062.00



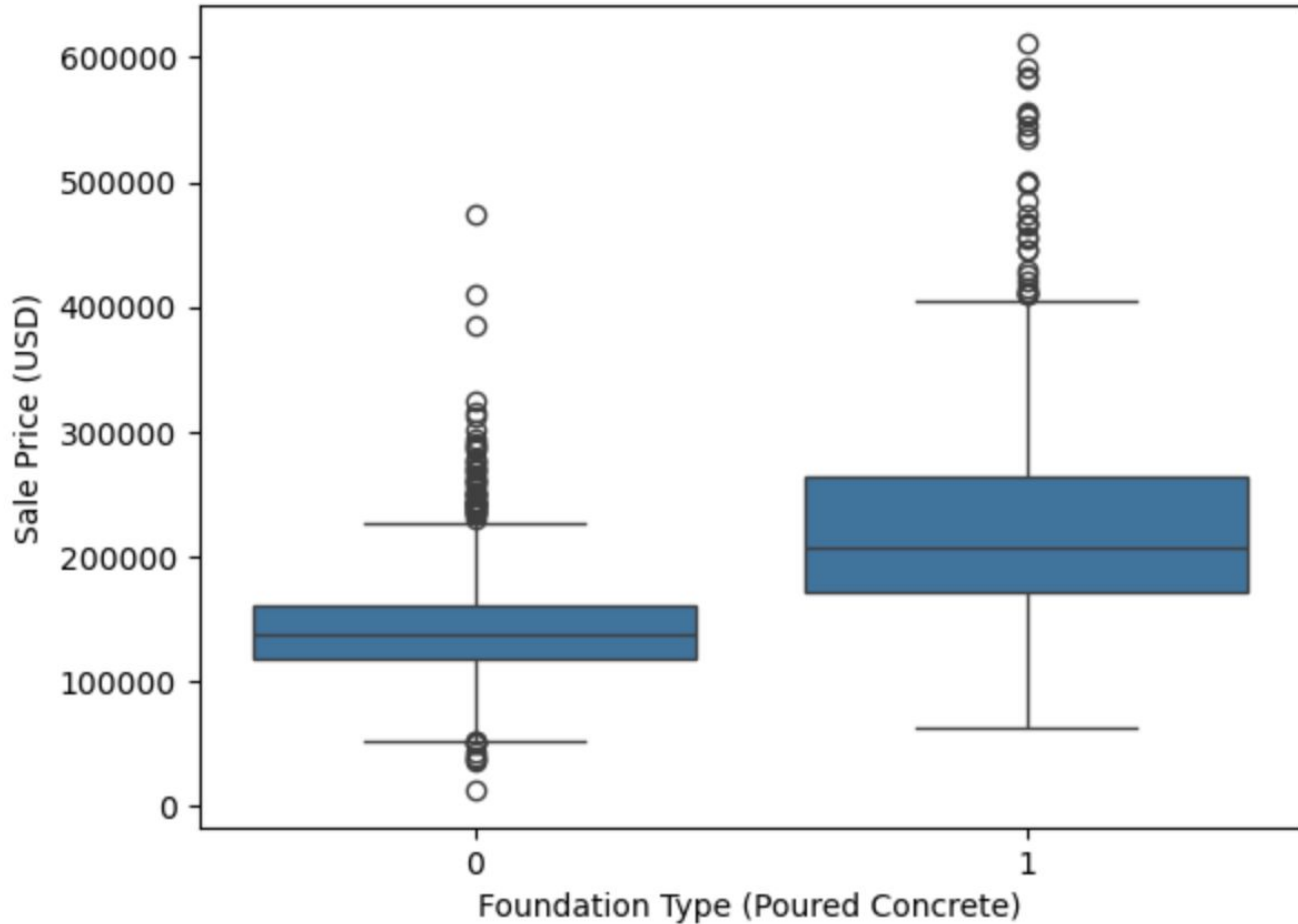
Garage Car Capacity



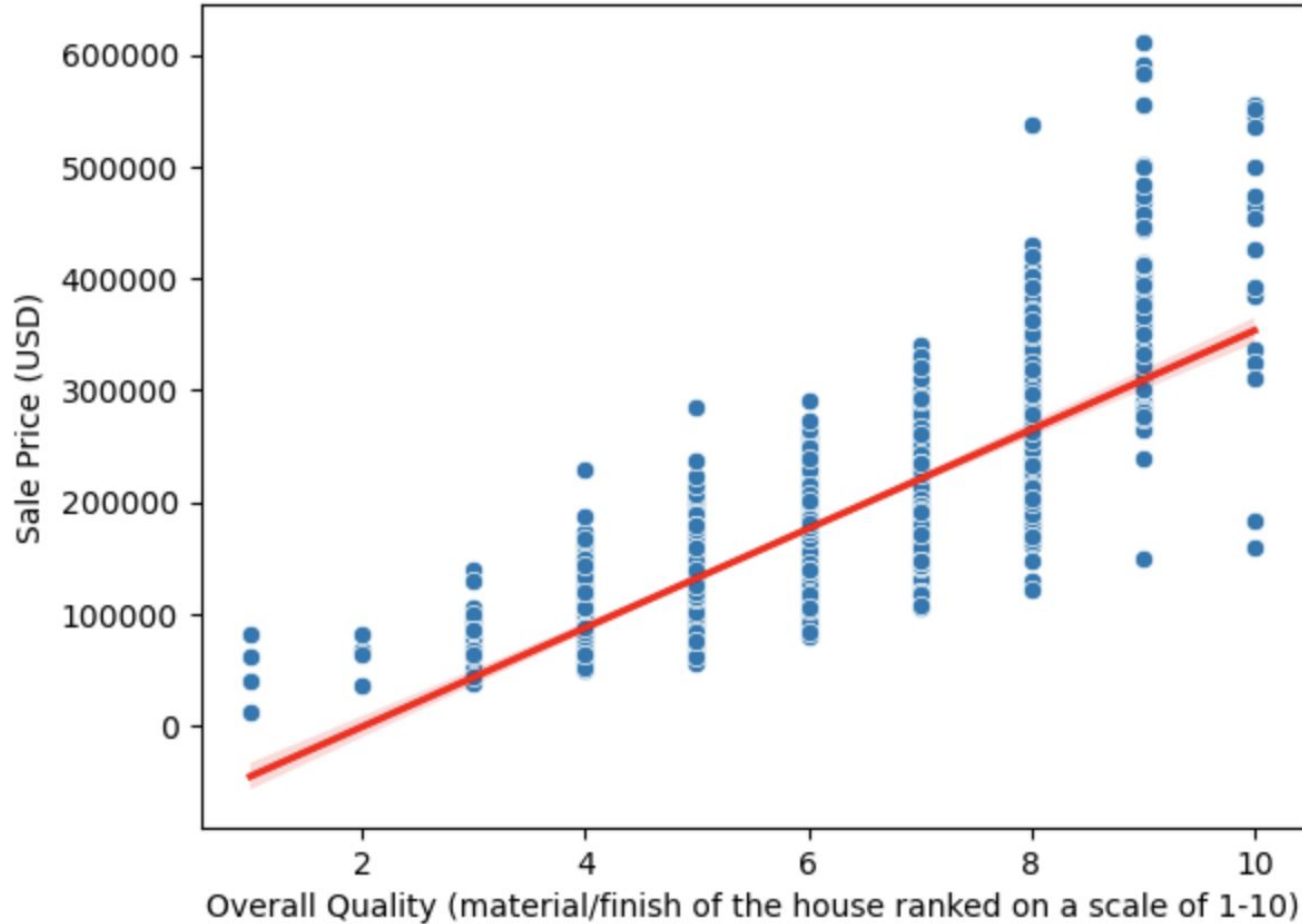
Number of Full Baths



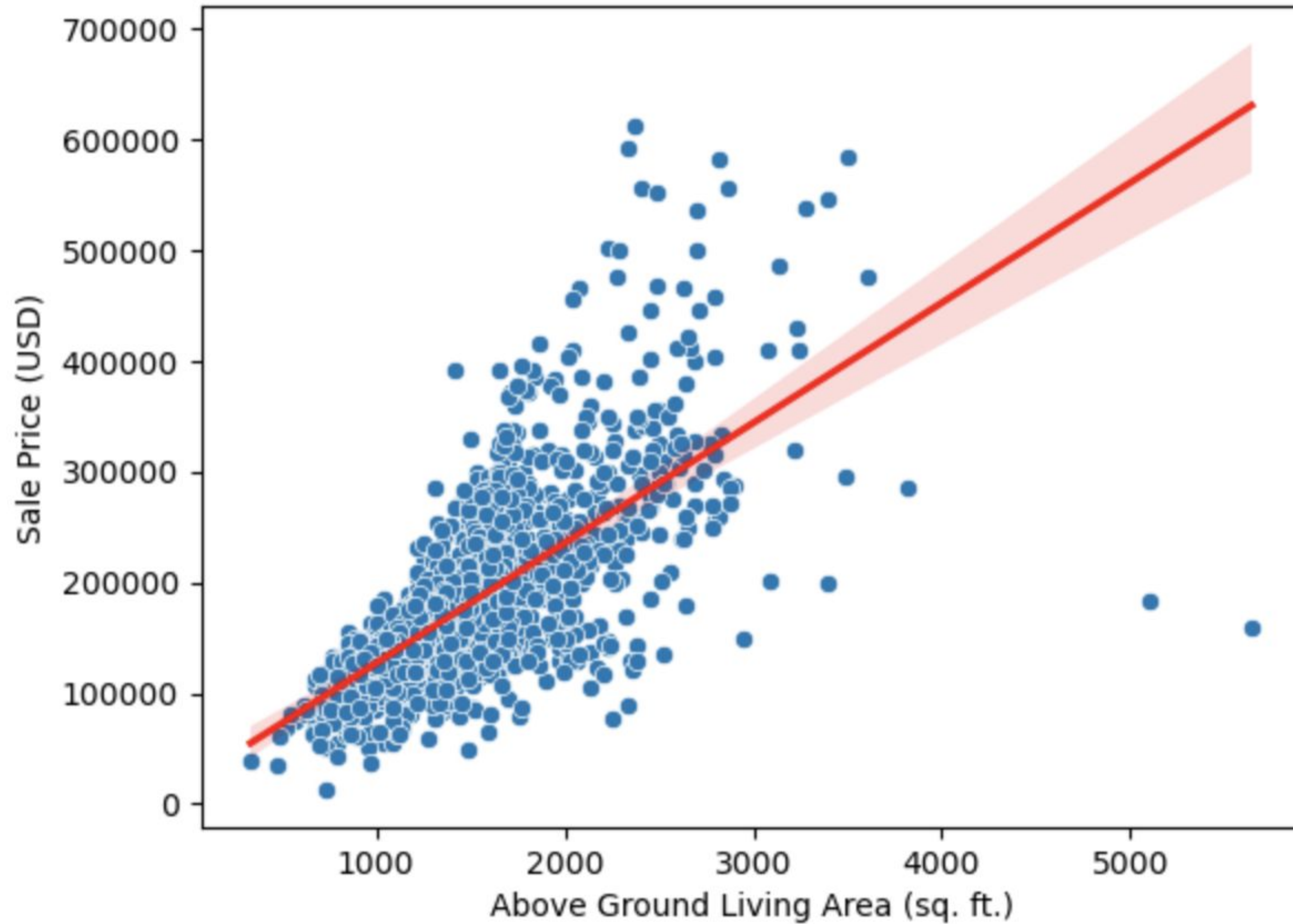
Foundation Type vs Sale Price



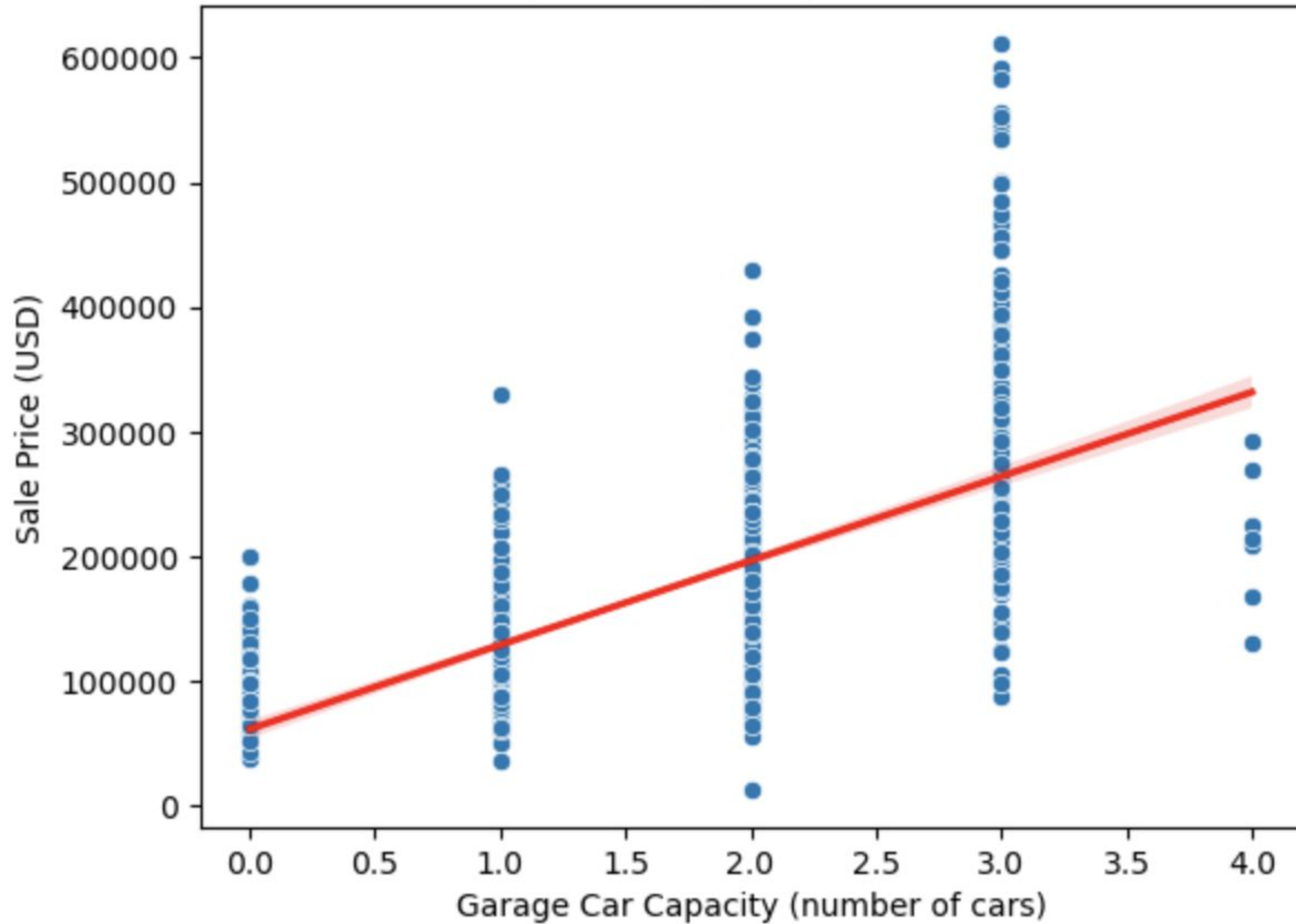
Overall Quality vs Sale Price



Above Ground Living Area vs Sale Price



Garage Car Capacity vs Sale Price



How can my
model help you
with your
remodel?



Model Results

- The coefficient of determination shows how well different features in a model explain the variability of the target.
- Approximately 90% of the variability in the sale price of homes can be explained by the features in my model.
- On average, the model's predictions are only off by about \$20,000 to \$25,000, which is great, especially in this economy.






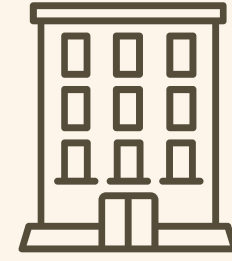


Conclusions and Recommendations

- **Factors that may increase housing prices:**
 - **Multi-car garage**
 - **Number of full bathrooms**
 - **Concrete foundation**
 - **Above ground living area**
 - **Overall quality of the material and finish of the house**
- **Remodel or add to your home before you sell**
- **Make sure important features are present in a home before you buy**



Limitations and Future Studies

Limitations	Future Studies
 <p>Only looked at the top 20 features that can affect housing sale prices</p>	 <p>Should look at additional features in future studies</p>
 <p>Data used in this study are based on one city in Iowa</p>	 <p>Data for other cities should be collected and analyzed for improved results</p>
 <p>Model can explain 90% of the variability in sale prices</p>	 <p>There is always room for improvement to get an even better coefficient of determination</p>

Sources

- Ames Housing Datasets:
 - train.csv
 - test.csv
- Ames Housing Data Documentation:
 - <https://jse.amstat.org/v19n3/decock/DataDocumentation.txt>
- Zillow (Sold Houses in Ames, IA):
 - <https://www.zillow.com/ames-ia/sold/>

Thank You!

Client Testimonials

Danica R.

Thanks to Kevin, I
was able to purchase
a brand new home
for the best possible
price!

Caroline M.

Wow! Kevin's
predictive model on
housing prices is
super cool and
accurate.

Joshua P.

Kevin helped me
make the decision to
remodel my home
and it was sold for a
very competitive
price!