



Monthly Realtor Meeting Ames Housing Prices

Agenda

- 01 Problem
- 02 Explore Data
- 03 Modeling
- 04 Evaluate Model
- 05 Recommendation



! Help Customers :

- Listing Sales Prices
- Reliable Recommendations

! Problem:

- What are things that homeowners could improve in their homes to increase the value?
- How can we use data to further investigate this problem?



Ames Data set:

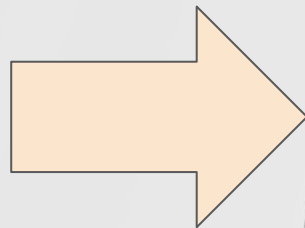
Homes sold from 2007 - 2010 with ~ 80 features

➤ Categorical

- Neighborhood
- House Style
- Overall Condition and quality

➤ Numerical

- Size of the house
- Years built / remodeled
- Numbers of Bedrooms & Bathrooms

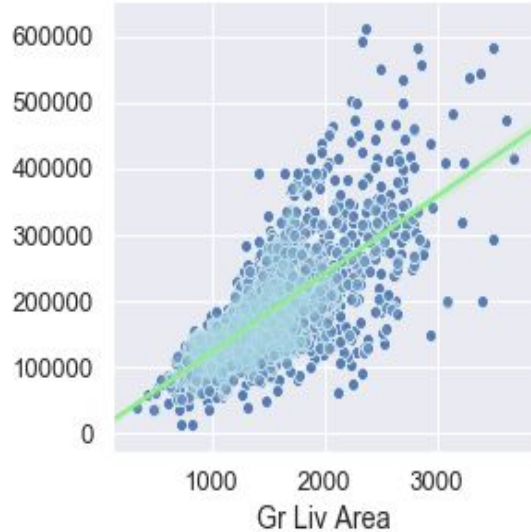


DATA CLEANING

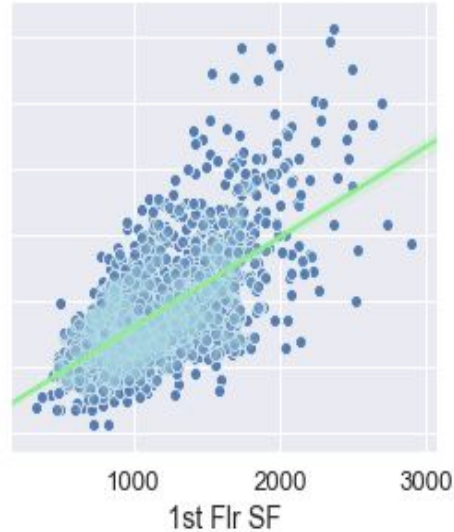


Relationship between Sales Price and Size of the house

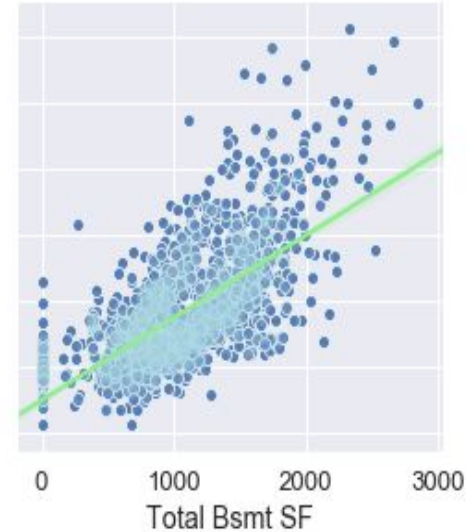
Living Room



First floor

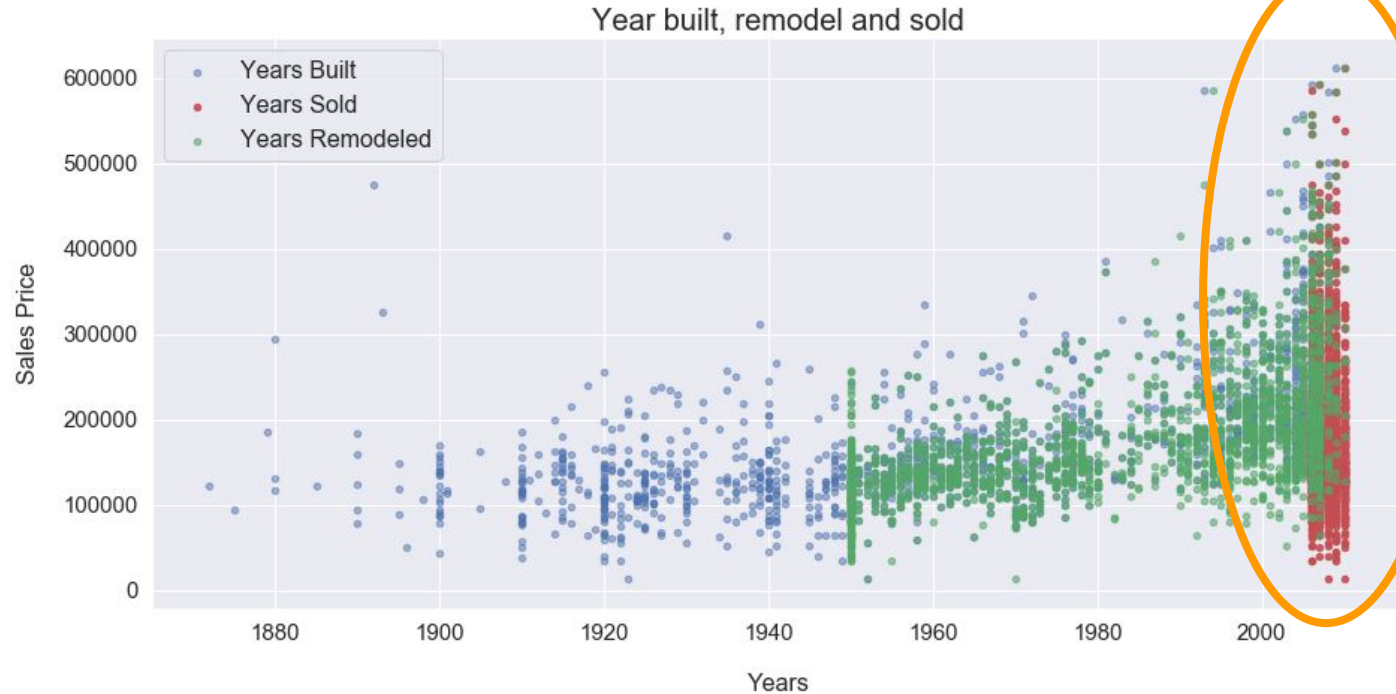


Basement



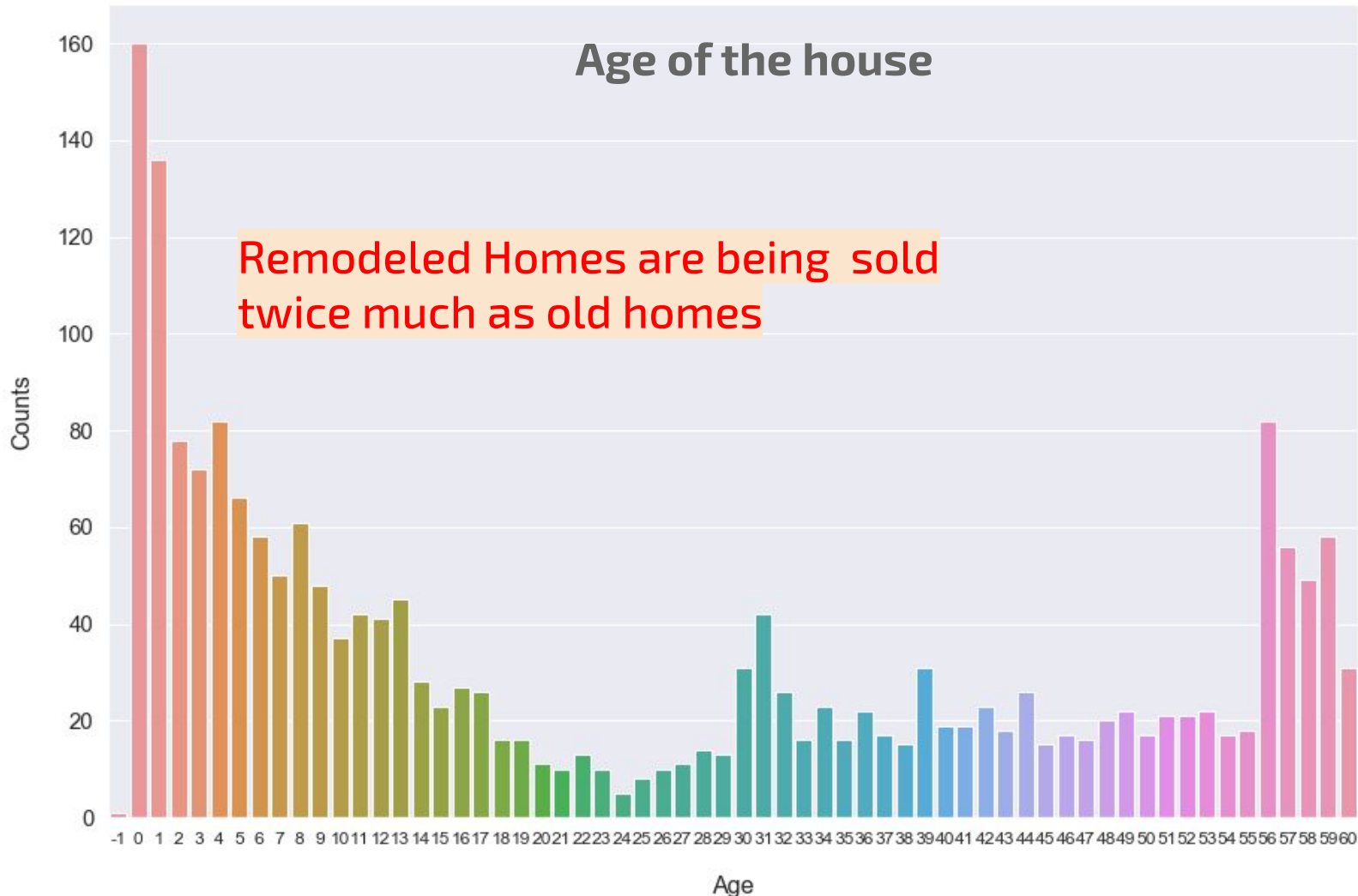
Greater size = Higher Price

Timeline of the house

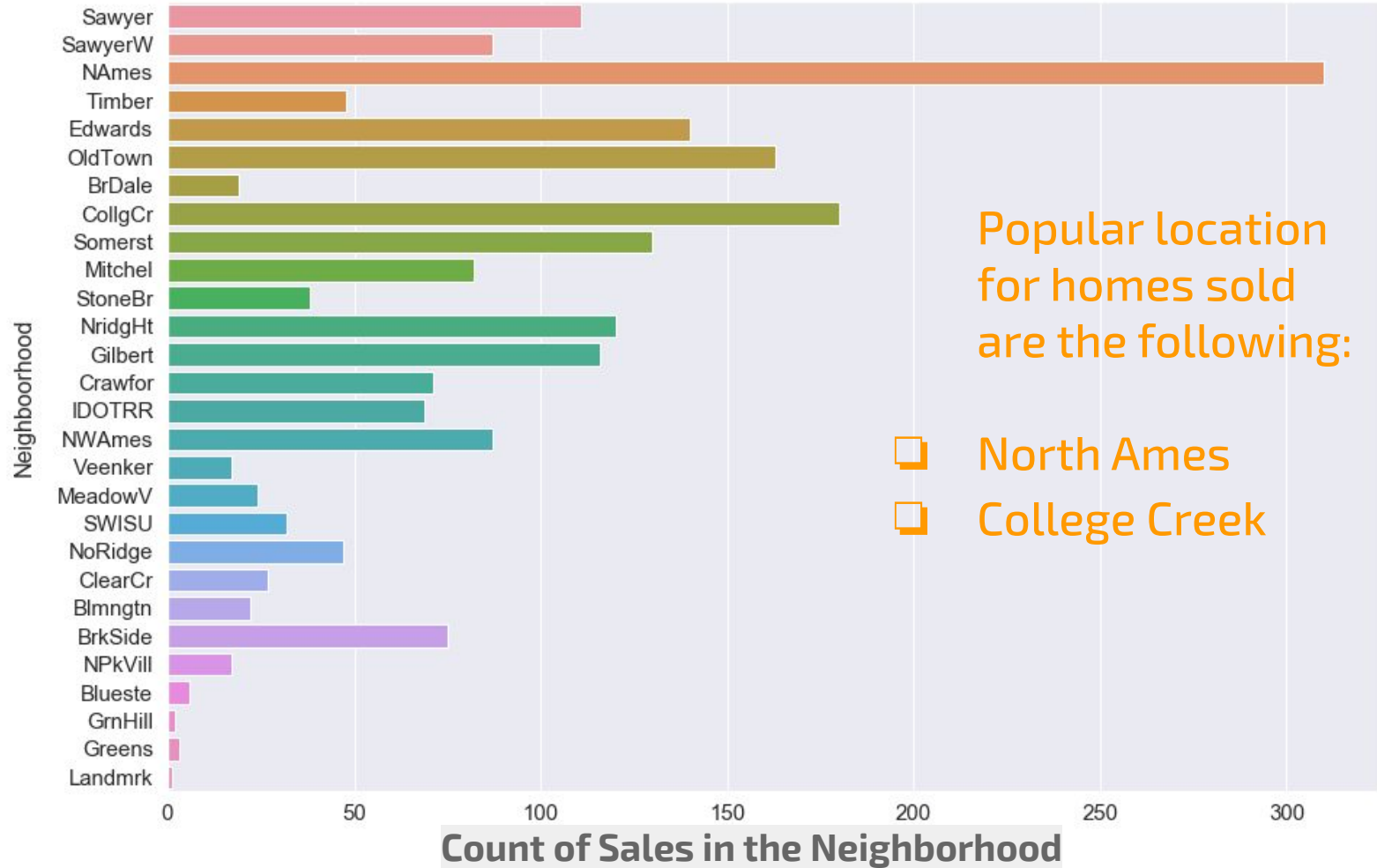


Overlap needs further investigation

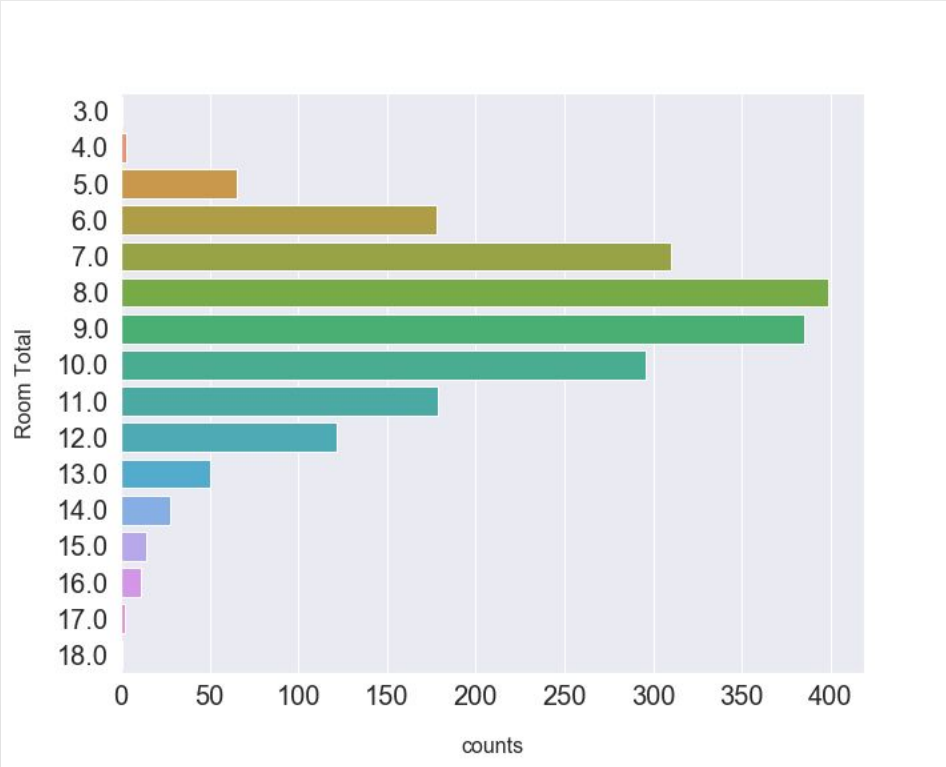
Age of the house



Neighborhood



Total Rooms in the house



Room includes :

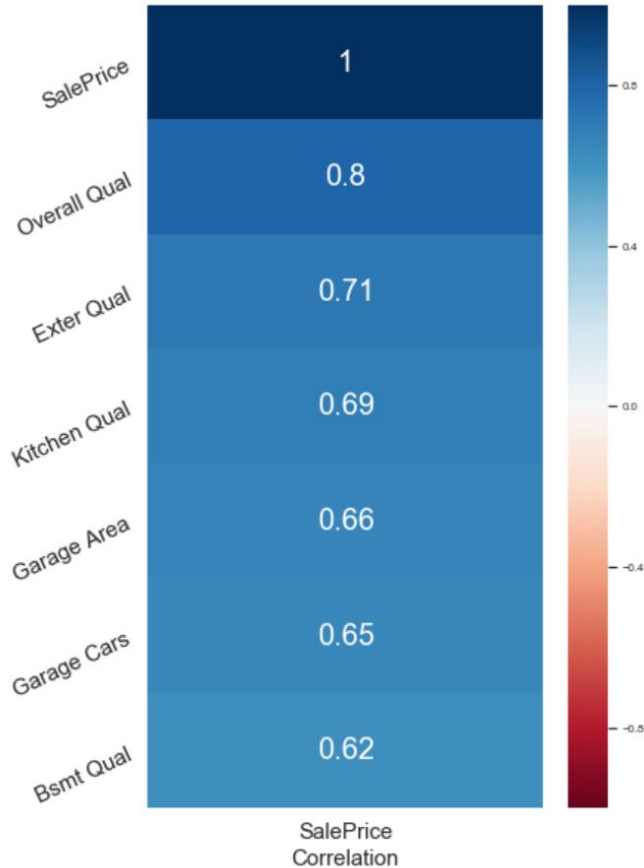
- Bathroom
- Bedrooms
- Living room
- Basement

Most homes are sold
between 7 - 10 rooms in the house :

- Most common 2-4 Bedrooms
- 1-2 Bathrooms
- 1 Basement

Features that can affect Sales price because of correlation (mutual relationship)

- Overall Quality
- Kitchen
- Exteriors
- Basement
- Garage



The background is a light gray gradient. On the left side, there is a complex network of thin black lines connecting various black dots of different sizes, forming a web-like structure. Scattered across the middle and right portions of the image are several thin-lined triangles of various sizes and orientations. In the top right corner, there is a sparse collection of small, faint circles.

Modeling

Modeling : Linear Regression

Splitting Data into two sets:

Testing

Training

Using features
that have a correlation to Sales Price
to predict Sales Price



Lasso Regression Model

The coefficient in Lasso regression model (table below) shows us what are the features that are influencing our sale price the most.

name	abs_coef
overall SF	0.110378
Overall Qual	0.100414
Garage Cond	0.050882
Garage Yr Blt	0.043265
sold_age	0.038273



Using error analysis,
predicted values have an
estimate error of
20,000 \$ margin



Recommendations:

What are things that homeowners could improve in their homes to increase the value?

Renovation

Improving overall quality

Kitchen

Garage

Basement

Bathrooms

Fireplace

AC

Improving all these features will most likely result in higher prices



Thank
you!!