



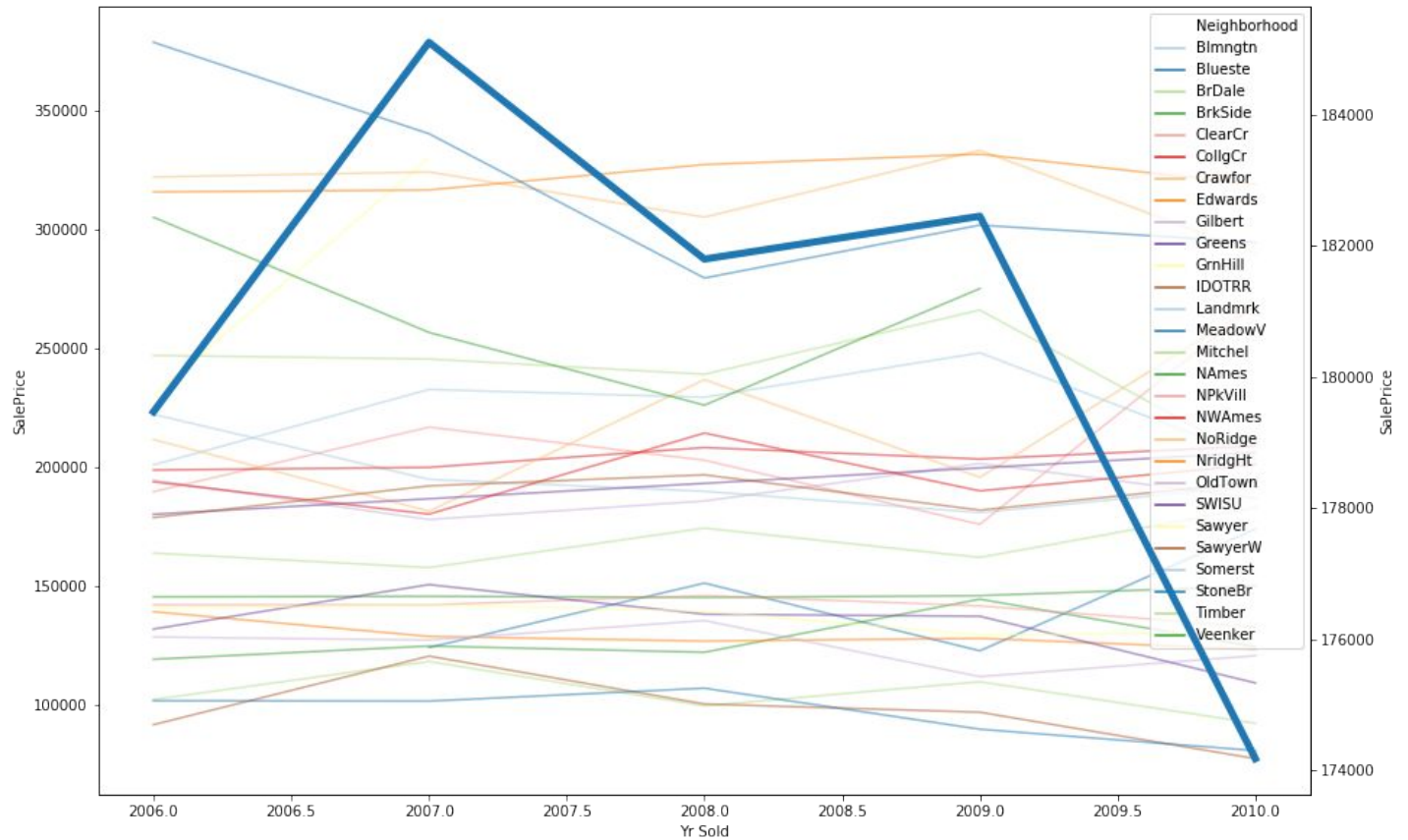
MAKE MONEY IN AMES



Falling House Prices

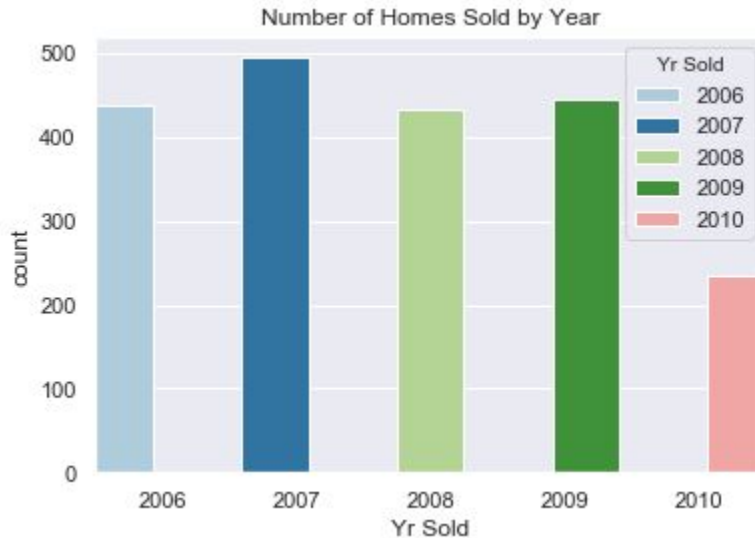
Ames, Iowa has seen falling house prices over the years...

The housing market crash in 2008 has had a big impact on sales prices



Average price of homes in each neighborhood YoY: -4.5% 2009-2010

HOME SALES FROM 2006 - 2010



There is a significant drop in home sales from 2009 to 2010 (-48%)

Prices have dropped at the same time but not at the same rate as sales

A cluster of five yellow stars of varying sizes is positioned in the upper right area of the slide, above the main title.

LOW PRICES

But can you make a profit in Ames?



1. HOUSE FLIPPING

What is house flipping?



Make FAST money!



- Intent: quick reselling
- Make quick repairs and fast fixes
- With high reward comes high risk
- Can be a great investment but could also cost thousands

THINK SMART - USE A MODEL



- Need to know house prices
- Predict new house prices after fix
 - Estimate how much changing one feature will impact price
- Estimate ROI
 - Helps choose which houses are worth flipping



2. MODEL FEATURES

What factors should I consider?

FEATURE SELECTION



Linear model incorporates **40** features.

Features selected based on correlation and visual interpretation.

Features also chosen based on what home buyers would consider.

What the model considers...

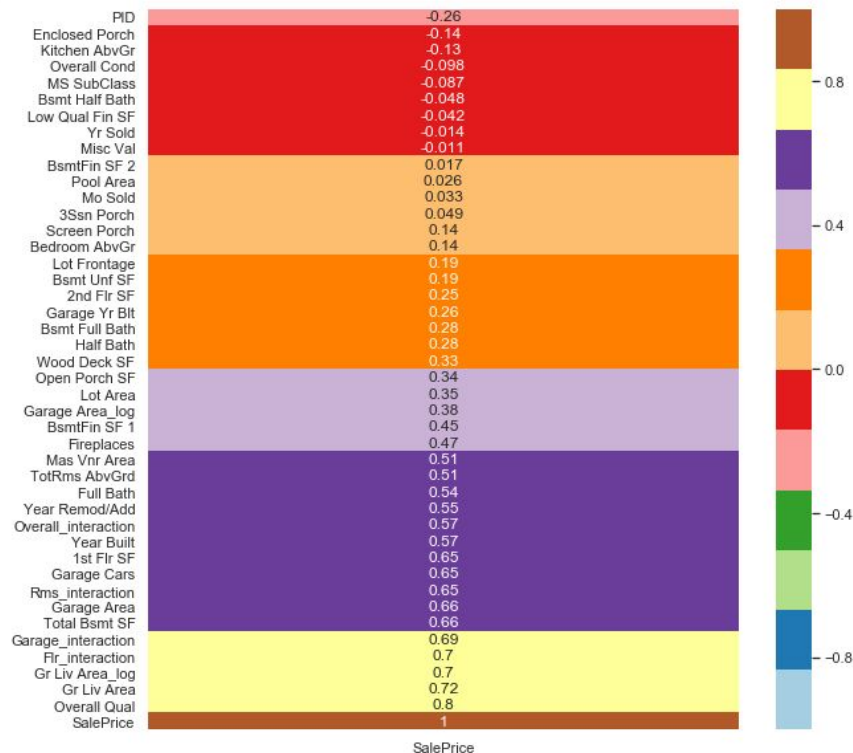
- Overall conditions
- Year values
- Exterior conditions
- Utilities (heat, A/C)
- Location
- Land features
- House features (basement, number of floors, etc)
- Garage features (car, size)
- Area features (neighborhood, train, street, etc)

This model will only work in relation to Ames.

It does not consider macroeconomic factors.

Did not consider outliers.

CORRELATIONS



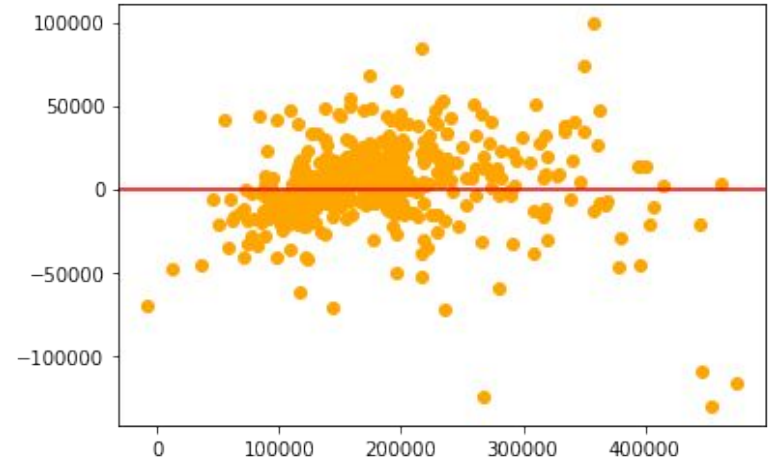
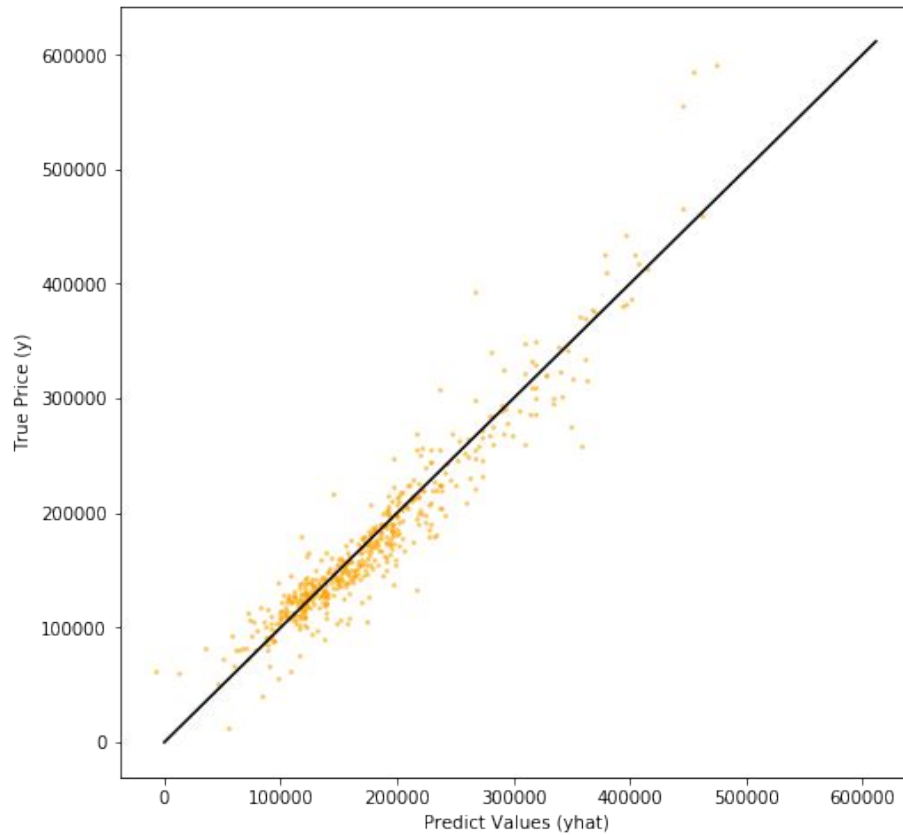
Features with higher correlations were included into the model

METRICS

	Train	Test
MSE	486.6M	574.7M
RMSE	22K	24K
R^2	0.92	0.9

The R^2 of the train and test model are very similar

Low bias and low variance

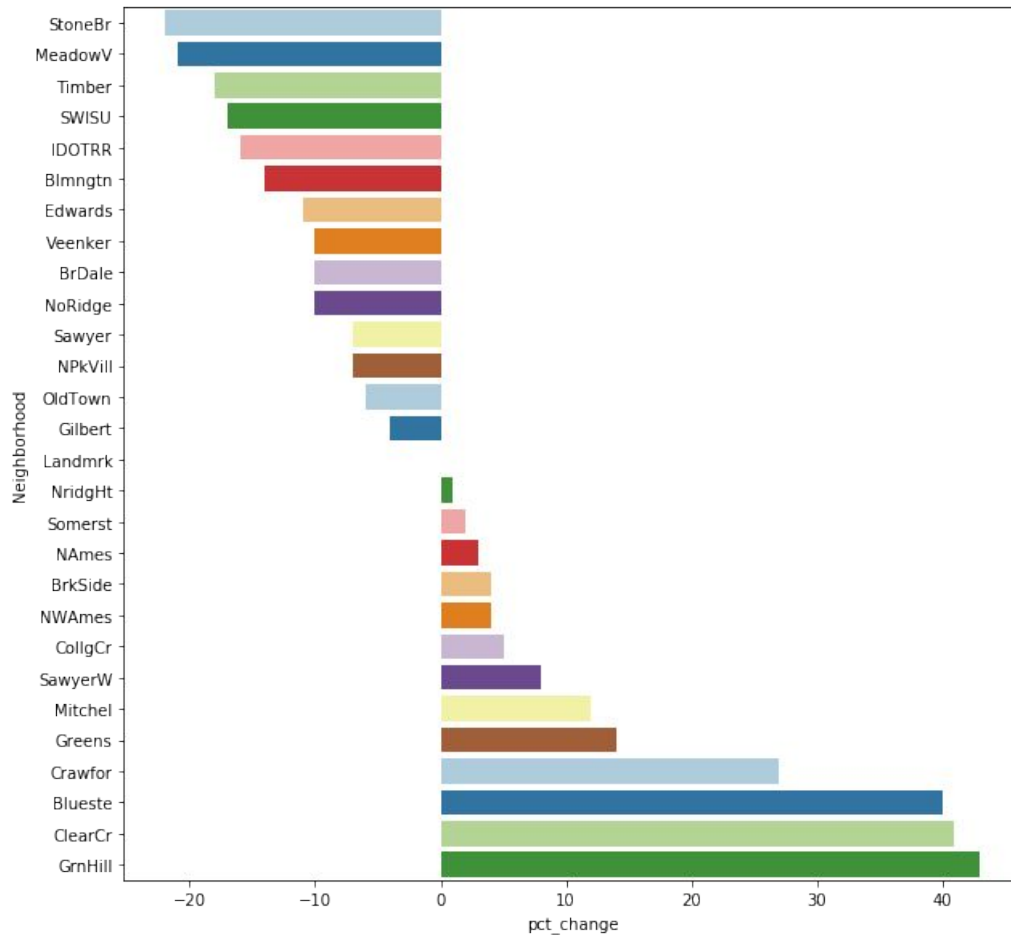


Linear Regression Model and Residuals



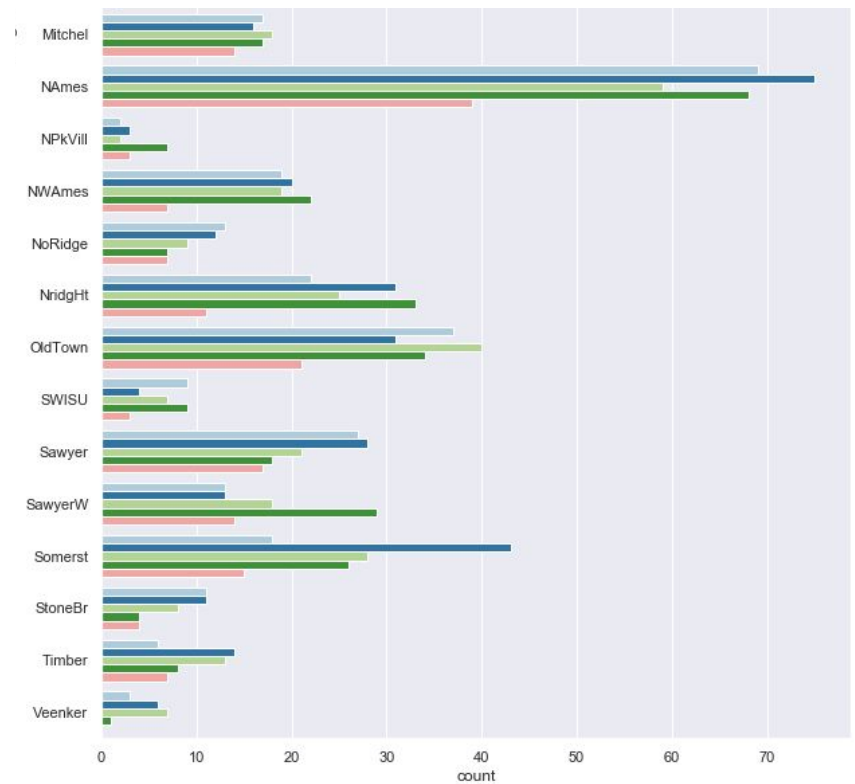
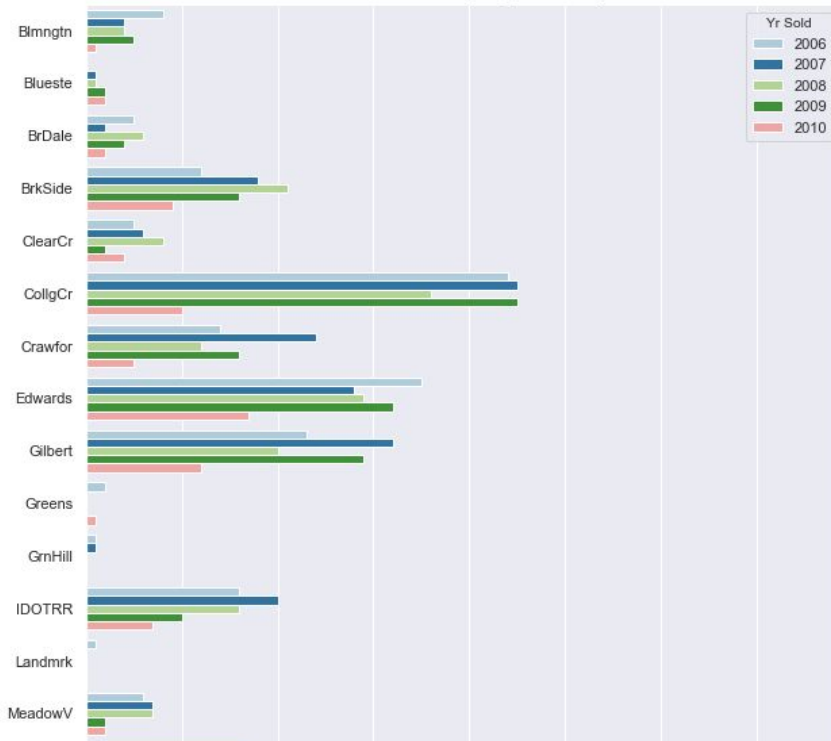
3. AMES DATA

Where should I flip homes?

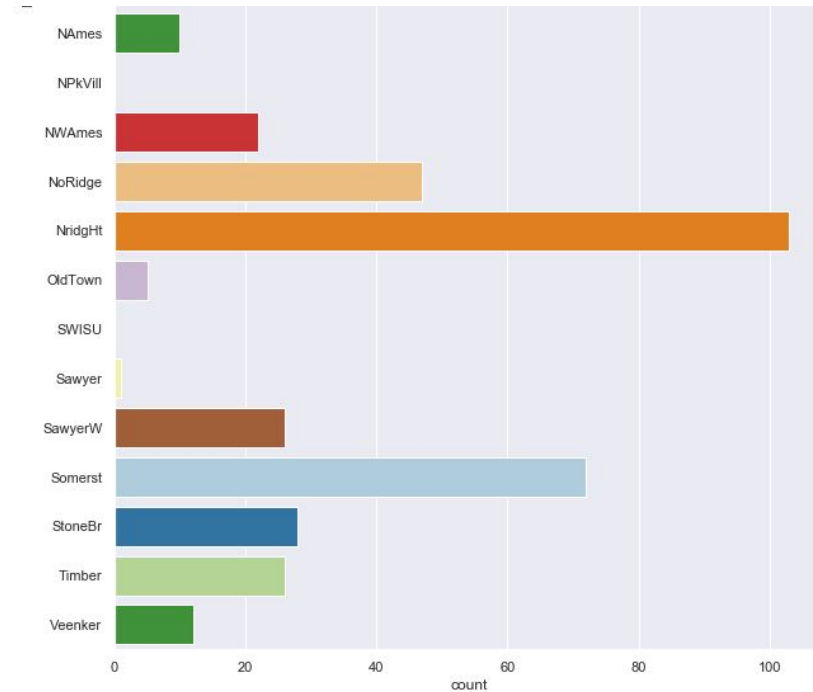
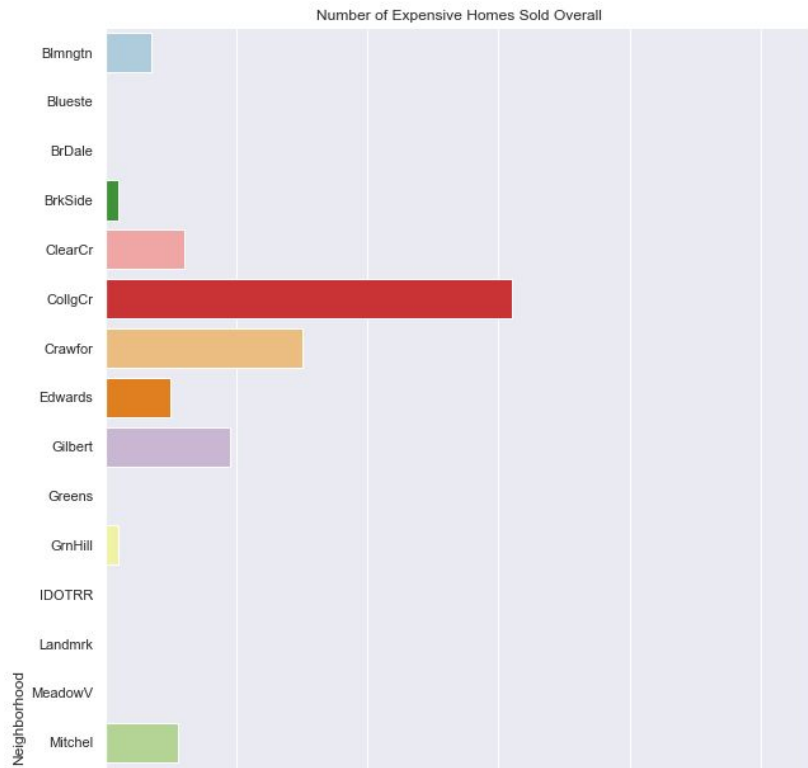


Different areas of Ames have seen varying impact on sales prices

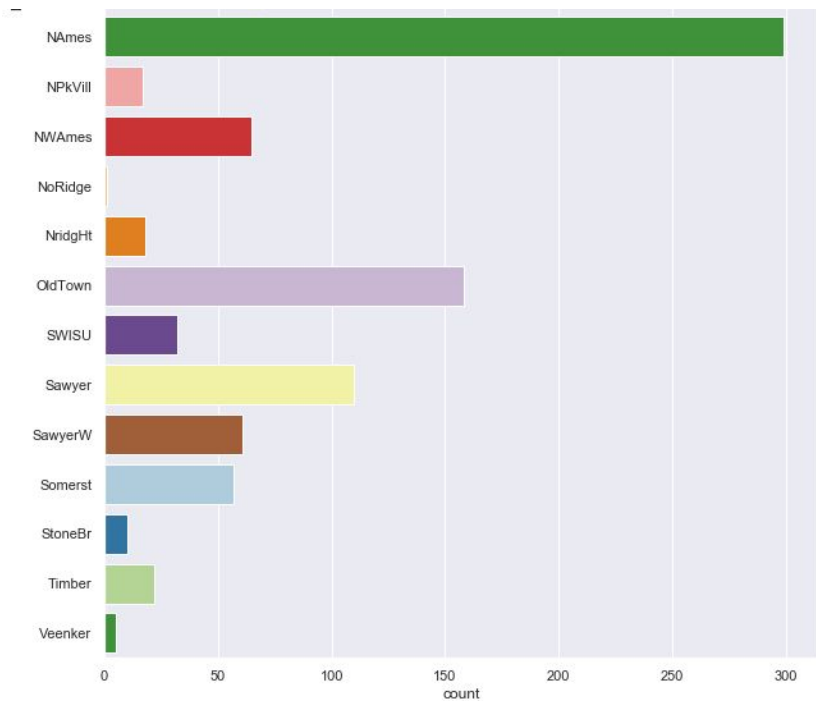
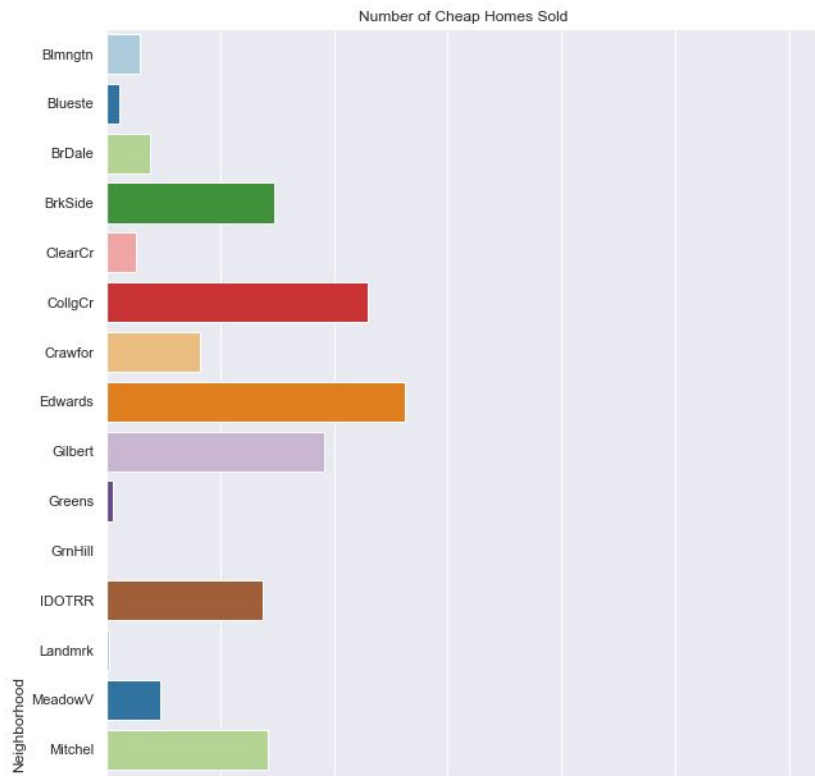
Number of Homes Sold by Neighborhood by Year



Overall number of home sales by neighborhood and year



Number of expensive home sales by neighborhood



Number of cheap home sales by neighborhood

TOP 3 AREAS WITH CHEAP HOME SALES



Neighborhood	% Cheap	% Remodeled	% Total Home Sales	% Change Price
Sawyer	99	39	6	-7
Brookside	97	97	4	4
Old Town	97	90	9	-6

TOP 3 AREAS WITH EXPENSIVE HOME SALES



Neighborhood	% Expensive	% Remodeled	% Total Home Sales	% Change Price
North Ridge	98	44	2	-10
North Ridge Heights	84	44	7	1
Stonebrook	74	26	2	-22

TOP 3 HOME SALE AREAS



Neighborhood	% Expensive	% Remodeled	% Total Home Sales	% Change Price
North Ames	3	31	17	3
College Creek	34	30	10	5
Old Town	3	90	9	-6

TOP 3 INCREASE IN SALES PRICE



Neighborhood	% Expensive	% Remodeled	% Total Home Sales	% Change Price
Clear Creek	48	56	1	41
Crawford	43	86	4	27
Mitchel	13	34	4	12

STRATEGIES



Cheap

High remodeling opportunities with cheap home prices

Harder to sell in those neighborhoods

Expensive

Low remodeling opportunities

But higher sales prices can be an opportunity for higher ROI with little remodeling

Sales %

High sales volume areas didn't see as much impact

LIMITATIONS



- Information about how remodeling impacted time on market and sales price would be helpful
- Data on house value before and after remodeling
- Specific areas that were remodeled
- Macroeconomic details



Additional slides for feature modification

