



Predicting Home Prices

How can understanding the predictions help you increase the value of your home?



Agenda

- What data are we looking at?
- What do we see in the data?
- How does the model work?
- How can you use these insights to increase the value of your home?



Data Summary

What's inside the data set?

What data are we looking at?

- Houses Sold in Ames, IA from 2006-2010
- 2930 homes, 82 variables
- Objective quantitative data
 - Square footage
 - Lot area
- Subjective qualitative data
 - Exterior quality
 - Kitchen quality
 - Overall quality/condition



Any issues with the data?

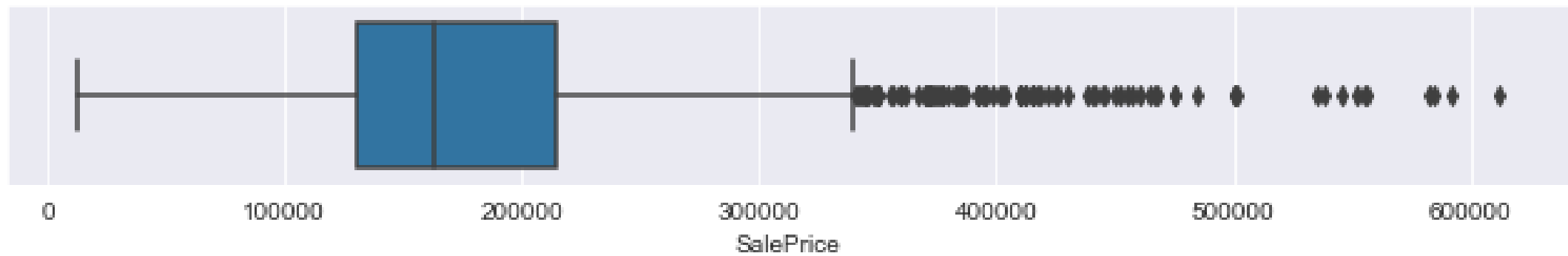
- For subjective home features like exterior quality, we don't know how the rating was derived.
- A few outliers with large square footage and partial sales, also a garage that was built in 2077!
- A lot of 'missing' data that implied that the homes didn't have those features. E.g. Pools



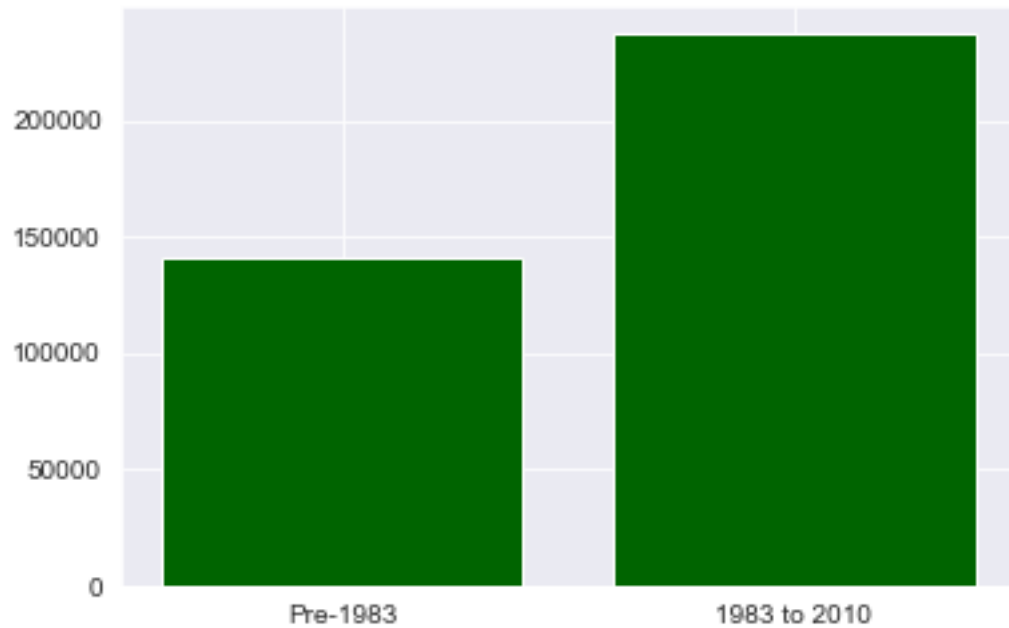
Let's look at some visualizations!



Distribution of Sales Prices



Mean sale prices for homes built
before 1983 and post 1983



Age of Home and Sale Price

- Homes prices in Ames, IA jump dramatically when the home has been built after 1983.

Overall Quality

- Though Overall Quality is a subjective measure, it seems to be a very strong indicator for house price.





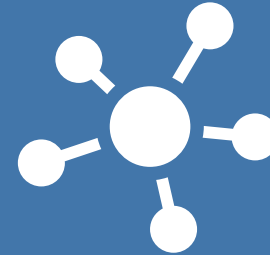
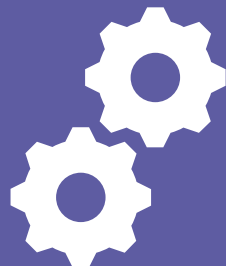
About the models

What was the process?



We chose a few different models for our purposes—some are more interpretable than others

We fed all the housing data into our models and let the computer crunch the numbers



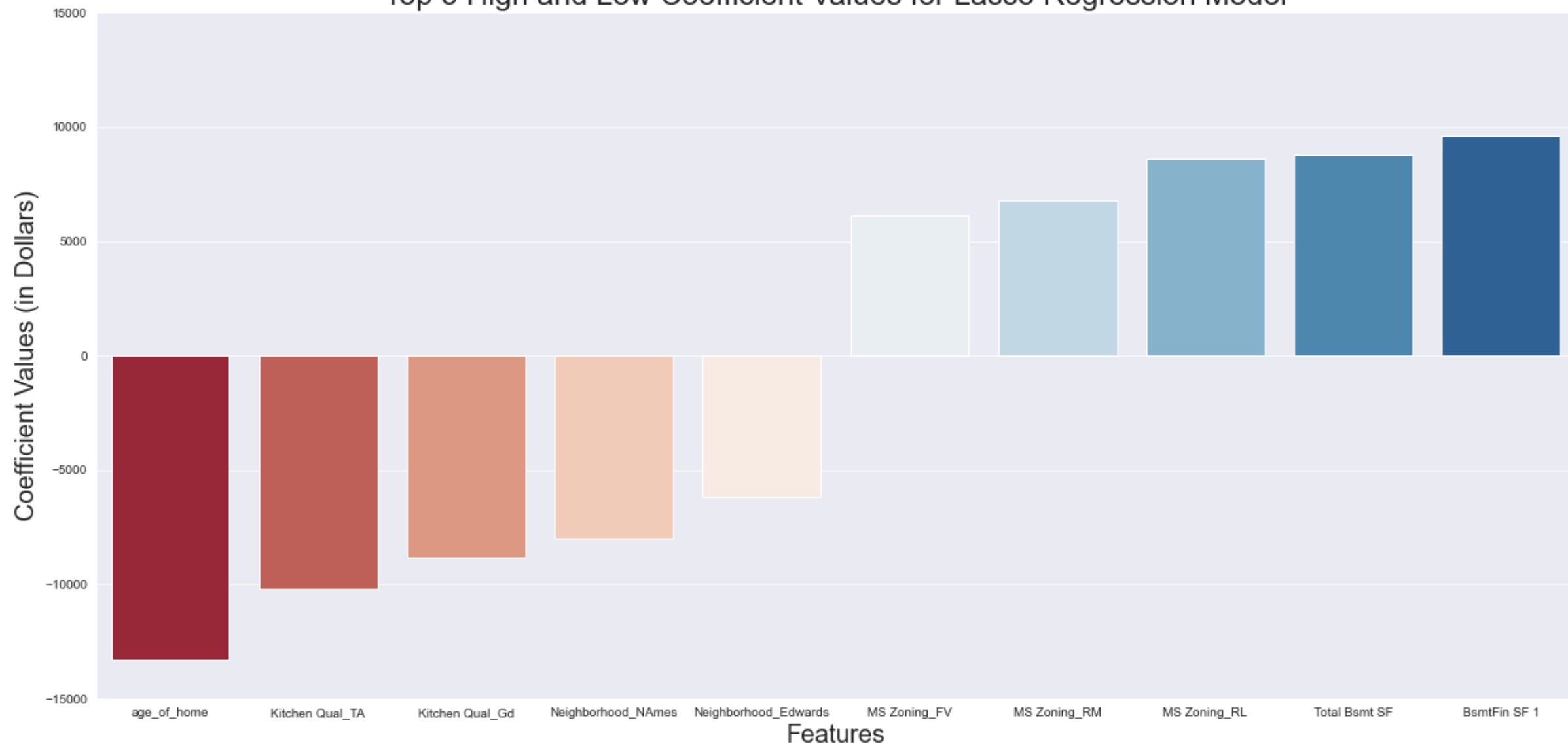
Our models found features of homes that are strongly correlated with home price


And now we get to share those results with you!





Top 5 High and Low Coefficient Values for Lasso Regression Model





Controllable features of a home that impact your sale price most dramatically

Feature Name	Coefficient (in dollars)
Kitchen Qual_TA	-17353.52449
Kitchen Qual_Gd	-16072.64169
Bsmt Qual_Gd	-11528.71693
Total Bsmt SF	19.312078
BsmtFin SF 1	21.700437



What did we discover?



Remodel your kitchen!

~\$16,000

Finish your basement!



~\$21 per sf



Thank you!