Project 2: Ames Housing Data

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Ames, IA Realty 🔌:



Our goal:

Help our clients get their homes ready to sell and, since we're the best in town, figure out how to get them the *best price*.

Our data:

Ames, IA housing data from the Ames Assessor's Office used in computing assessed values for individual residential properties sold in Ames, IA from 2006 to 2010.

Our problem statement:

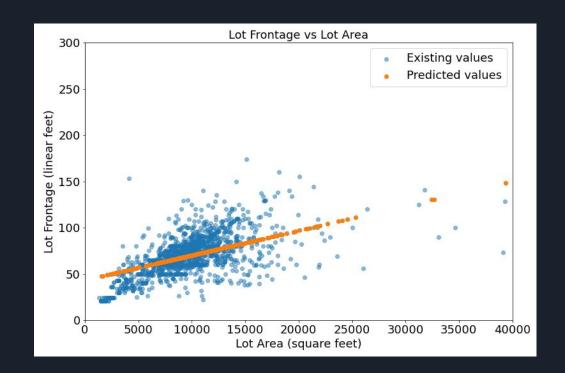
- What characteristics of a home are most likely to increase the sale price?
- What improvements can our clients make to increase their home sale price before putting their home on the market?

- Brief overview of the data:
 Overall home quality
 - Overall home quality and features related to home size show the strongest correlation to home sale price.

	Feature correlation to Home Sale Price	100
SalePrice -	1	- 1.00
Overall Qual -	0.8	
Gr Liv Area -	0.7	
Garage Area -	0.65	
Garage Cars -	0.65	- 0.75
Total Bsmt SF -	0.63	
1st Flr SF -	0.62	
Year Built -	0.57	
Year Remod/Add -	0.55	
Garage Yr Blt -	0.55	- 0.50
Full Bath -		40000000
TotRms AbvGrd -		
Mas Vnr Area -		
Fireplaces -		
BsmtFin SF 1 -		- 0.25
Open Porch SF -		10 (18)
Wood Deck SF -		
Lot Frontage -		
Lot Area -		
Bsmt Full Bath -	0.28	- 0.00
Half Bath -	0.28	
2nd Flr SF -	0.25	
Bsmt Unf SF -	0.19	
Bedroom AbvGr -	0.14	
Screen Porch -	0.13	0.25
3Ssn Porch -	0.049	
Mo Sold -	0.033	
Pool Area -	0.023	
BsmtFin SF 2 -	0.016	
Misc Val -	-0.0074	0.50
Yr Sold -	-0.015	
Low Qual Fin SF -	-0.042	
Bsmt Half Bath -	-0.045	
ld -	-0.051	V-05-1/2-00
MS SubClass -	-0.087	0.75
Overall Cond -	-0.097	
Kitchen AbvGr -	-0.13	
Enclosed Porch -	-0.14	
PID -	-0.26	1.00
	SalePrice	

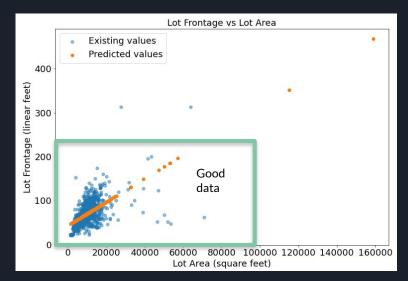
Data cleaning: Null values

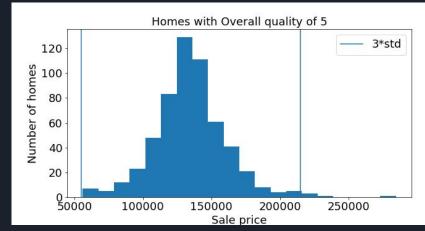
- Most null values in the data set were filled with zeros.
- For missing Lot frontage values, a simple linear regression model was created to impute values.



Data cleaning: Outliers

- Obvious outliers were removed from this dataset.
- Outliers from each overall quality ranking value were also removed.



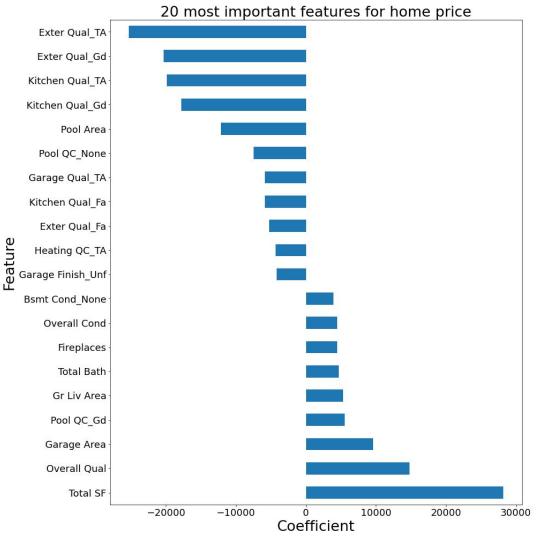


• Feature selection:

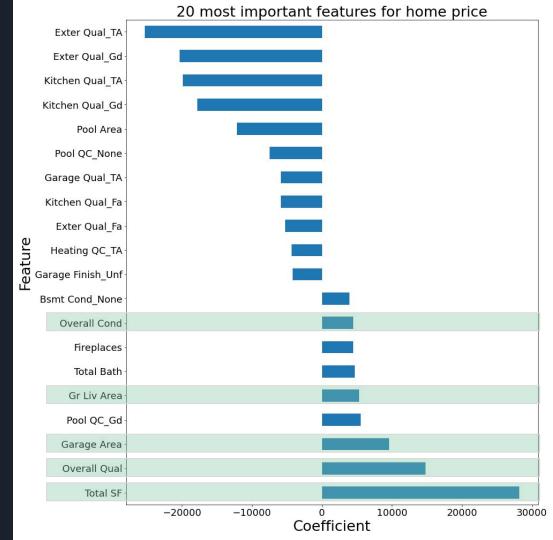
 We only consider variables that are capable of being changed by the homeowner.

• Modeling:

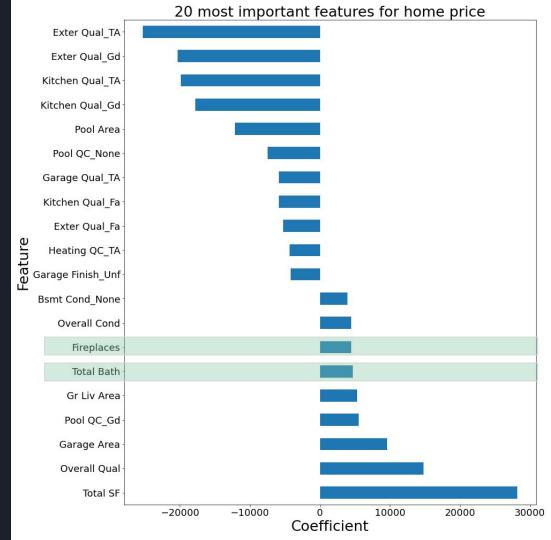
 We use a Lasso linear regression model, which adds a penalty term to variables and is capable of removing values it deems insignificant.



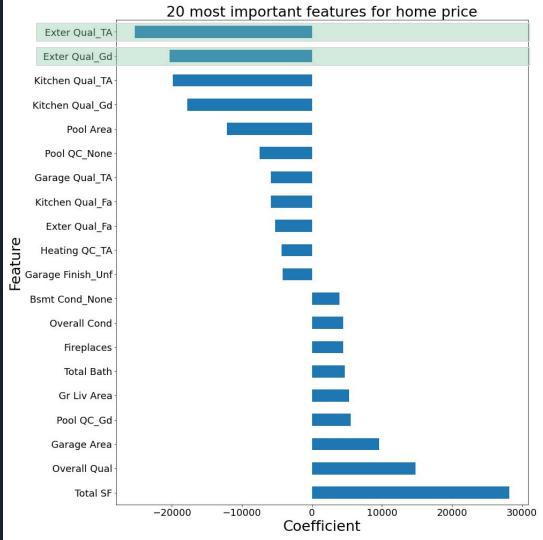
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- Increase the quality of your home's exterior.
- Increase the quality of your home's kitchen.

