



GENERAL ASSEMBLY

Data Science Course



Task at hand

An investor has approached my construction company; she thinks there is an opportunity in Ames, Iowa to buy, renovate and sell houses.

Questions

- Are there any particular features that impact sale price?
- Does location matter?
- Where should we invest our time and money?

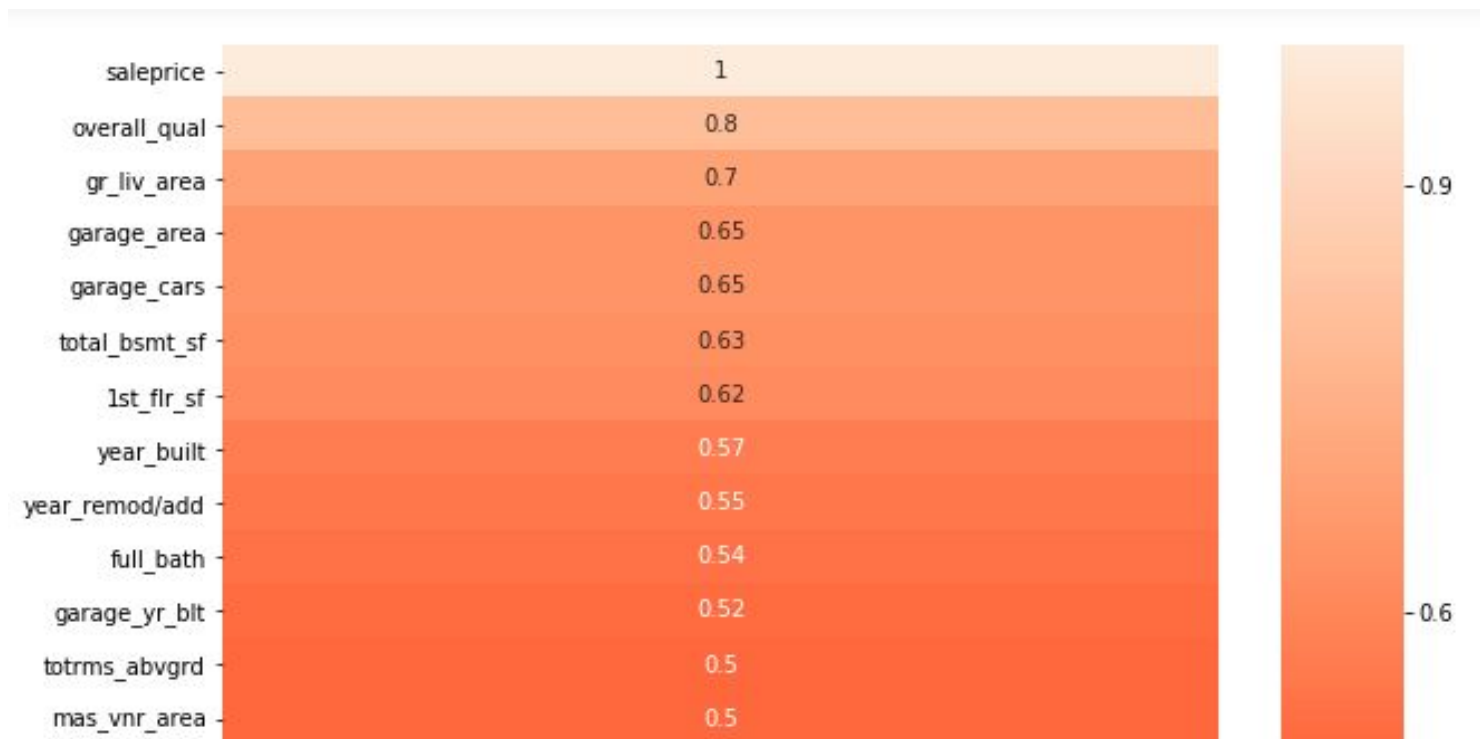
Ames Iowa Data

- Data set contains information from the Ames Assessor's Office used in computing assessed values for individual residential properties sold in Ames, IA from 2006 to 2010.
- The data has 82 columns which include 23 nominal, 23 ordinal, 14 discrete, and 20 continuous variables (and 2 additional observation identifiers).

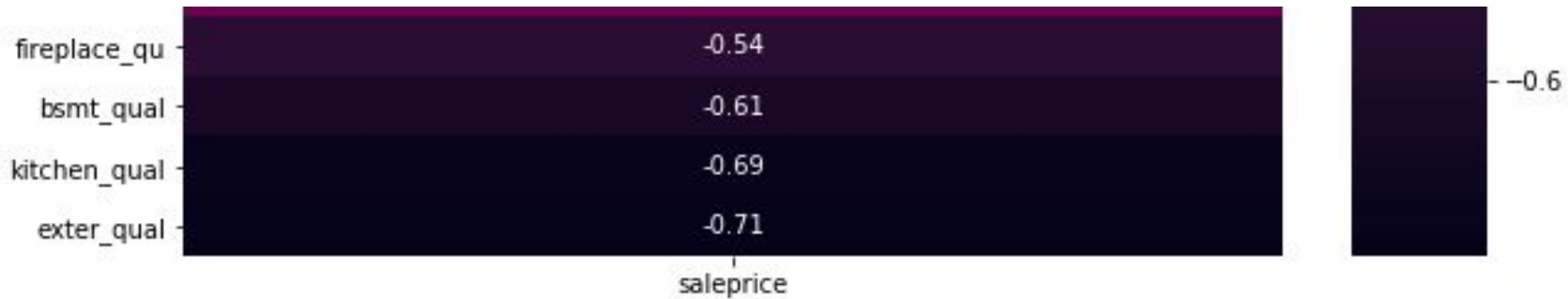
The approach

- Clean the data
- Looked at correlations
- External research on what makes a house valuable: location!

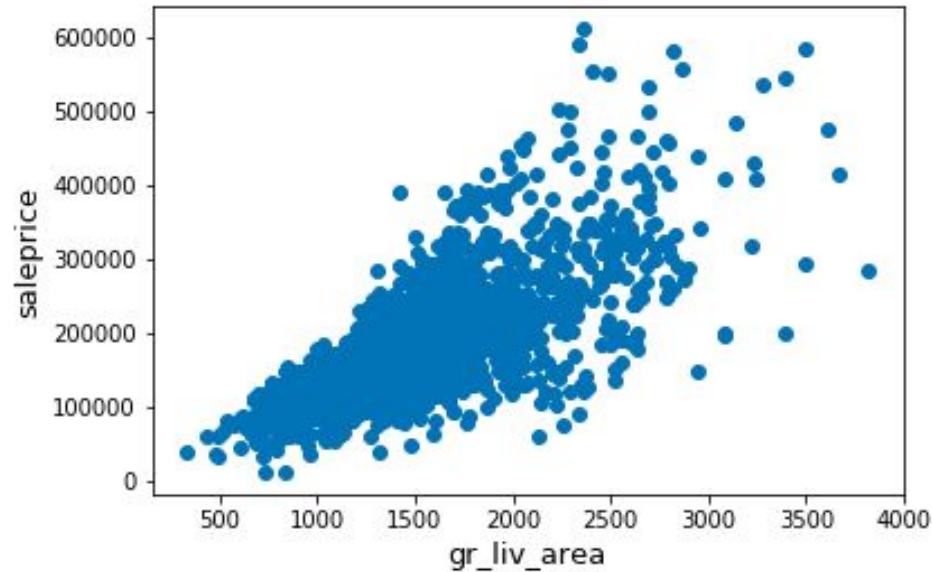
What features have highest positive correlation with sales price?



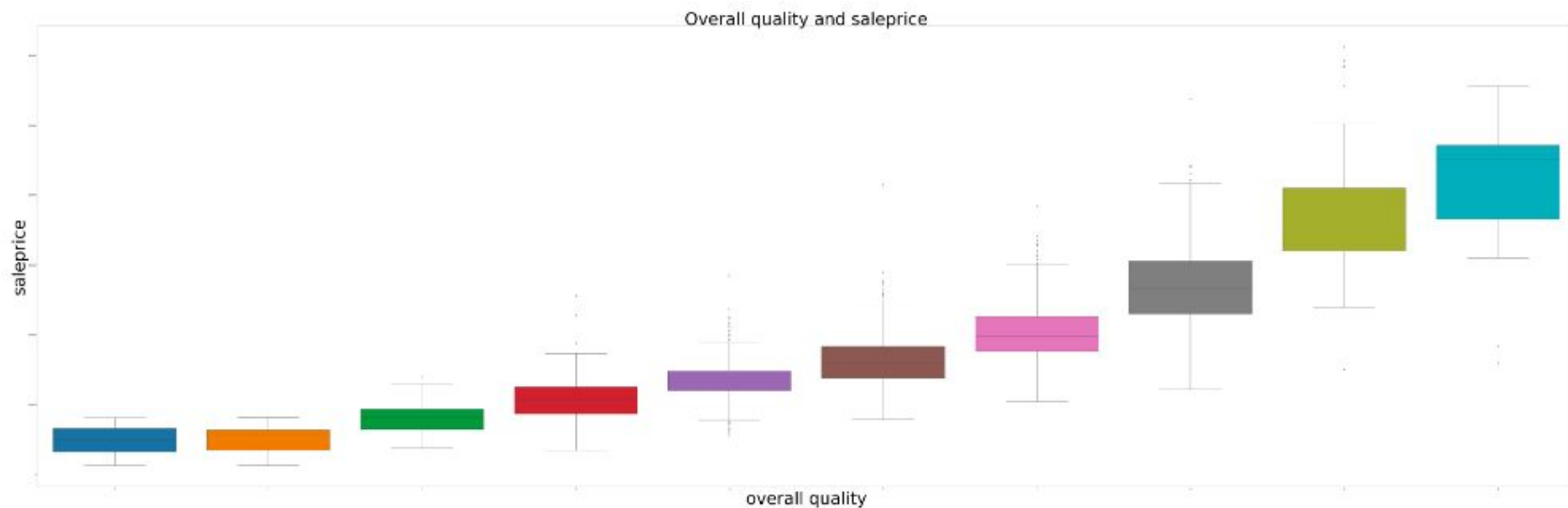
What features are negatively correlated with sale price?



Above grade (ground) living area square feet against sales price

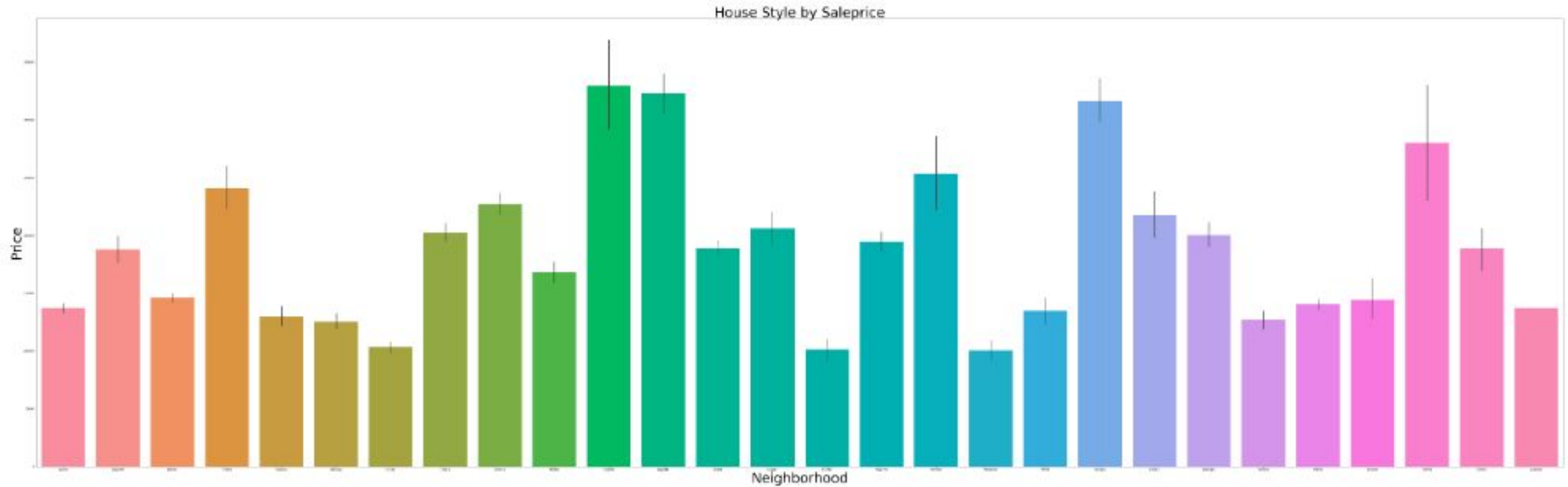


Overall Quality (1-10, 10 being very excellent)

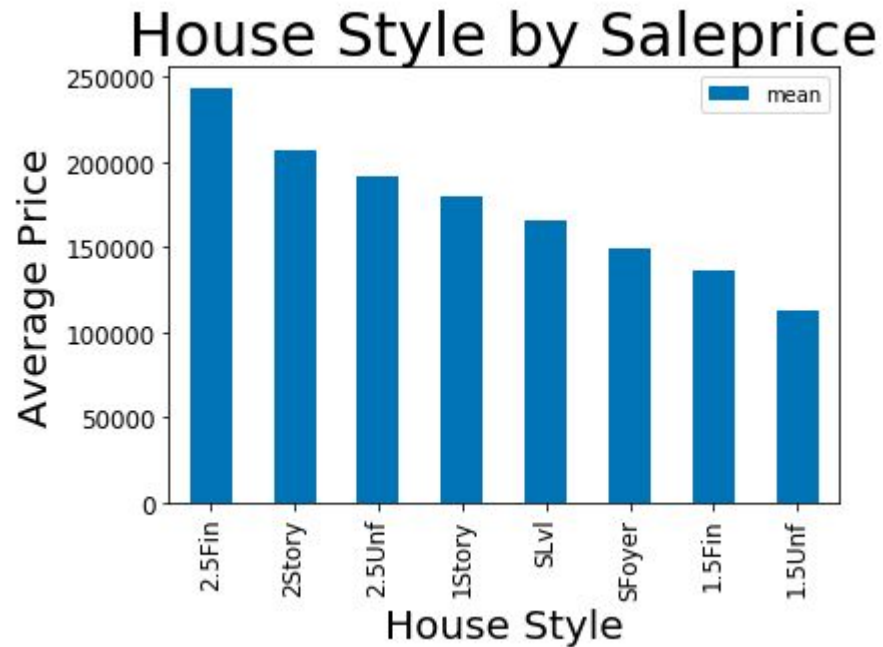


Neighborhoods and Price

A huge range! \$100,231 to \$329,675



House style and average price



Feature Engineering

- We investigated whether or not there were stronger correlations with sale price if we combined features such as garage cars, garage area, kitchen quality number of kitchens.
- We did this for both train and test data and found there were stronger correlations when we put our features together!

- Some notable ones:

garage_cars	garage_area	0.693842
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exter_qual	kitchen_qual	-0.719911
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total_bsmt_sf	gr_liv_area	0.821746
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Conclusions

It seems like there is potential for us to make a profit off of buying, renovating and selling houses in Ames Iowa.

- Buying houses that are big/ have greater square footage in neighborhoods where houses are higher valued in general
- Renovate house so we can have a high rank in quality and condition
- Ensure garage quality is up to par, and if house does not have a garage, build a garage that can fit at least two cars for it
- Renovations alone on the house will increase the value!

Further Research

- Economy
- Average age of neighborhoods
- Take an in depth look at nominal values such as distance to train
- Does more concise data exist?