Predicting Ames, Iowa Housing Prices

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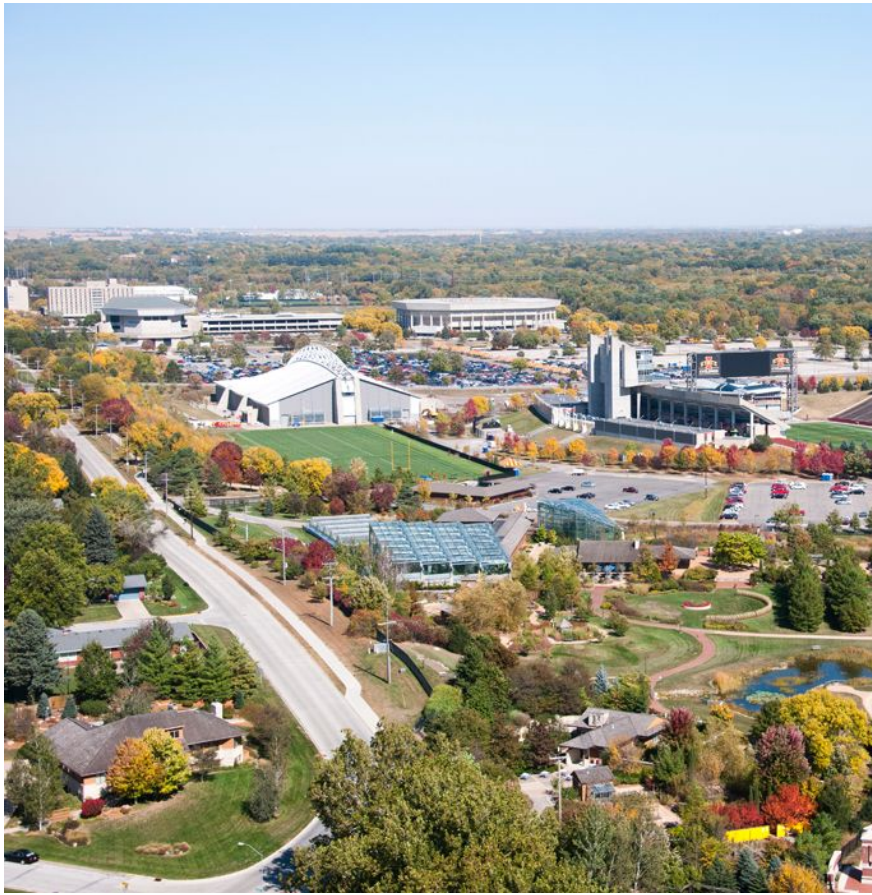
GA Project 2 Submission

Introduction

What sells a house?

In this project, we take a look at what factors determine the price of a home in the college town of Ames, Iowa via available property data.



Methodology

Cleaning and exploring available data

Deciding which factors are correlated with price, or creating them. Reduce/eliminate collinear predictors as much as possible.

Creating models and testing dataset predictions and scoring them via RMSE

Findings

Good Predictors

1. Indoor Living Area and Utility Space (1st Level Space, Garage Space, etc.)
2. Measures of House Quality
3. No. of Features (fireplaces, kitchens, etc.)
4. No. of rooms (bedrooms, bathrooms, etc.)
5. Age of property
6. Total Lot Area

Less Predictive Variables

1. Outside Features (porches, open area, fences, etc.)
2. Measures of feature conditions
3. Quality of finishings
4. Other rarely seen features like swimming pools and misc.

Final Model

- Ridge Regression with a RMSE of $ 30,000.
- Mean of sale price is $ 181,000.
- +-17% Predictive of House Value.

Problems Encountered/Missing Information

- No access to sale date which could have large implications on sale price.
- No information on nature of sale -- is it a regular purchase? A foreclosure? Affects price of sale.
- No address/location data to add desirability of neighbourhood factor

Recommendations

- Further research on property locations to estimate area desirability.
- Perform OLS variable estimation to select variables before regression