Your First Home Purchase in Ames, IA

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Agenda

- Introduction
- Context & problem
- Explore data
- Recommendations
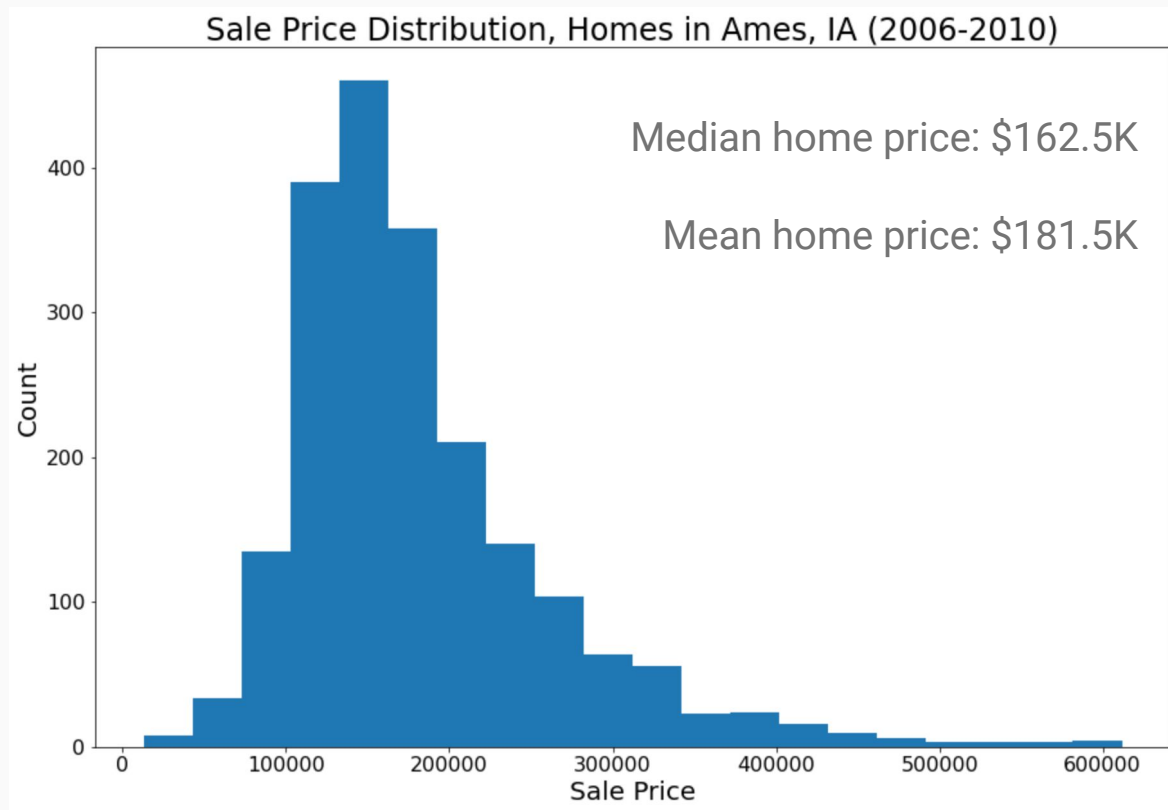- Questions

Introduction

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Context

- We'll explore data on homes that sold in Ames, IA over a 5-year period
- The goal of this research:
  - Determine which variables of a home in Ames have a strong impact on the sale price, with the goal of helping you better understand the local housing market so you can strategically buy your first home

Exploring Data

Sale Price Distribution, Homes in Ames, IA (2006-2010)

Median home price: $162.5K

Mean home price: $181.5K

Exploring Data

- A look at the dataset:
  - 2051 properties
  - Data from years 2006-2010
  - Single-family homes, two-family conversions, duplexes, and townhomes
  - ~80 variables
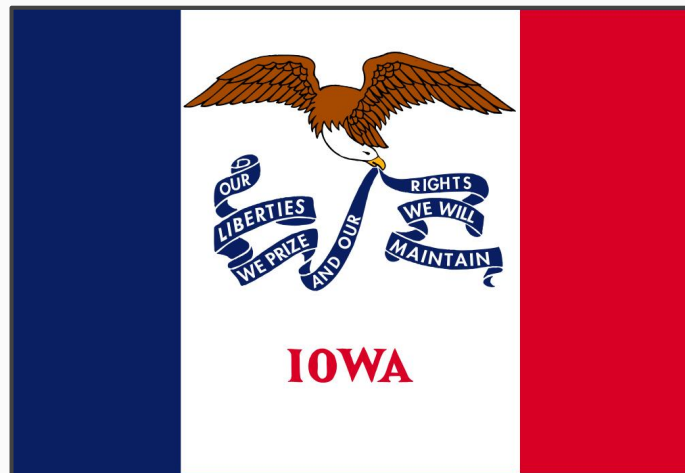
Exploring Data

Model Type	Variables	RMSE
StandardScalar & LassoCV	34 numeric variables	29,101
StandardScalar & RidgeCV	34 numeric variables	29,110
StandardScalar & LinearRegression	34 numeric variables	29,115
StandardScalar & LassoCV	**8 numeric variables**	**32,724**
OneHotEncoder, StandardScalar & RidgeCV	8 numeric variables, 3 categorical variables	46,097
OneHotEncoder, StandardScalar & RidgeCV	8 numeric variables, 2 categorical variables	46,131
Baseline model using mean SalePrice		76,414

Exploring Data

Variable	Correlation with SalePrice
Overall Qual	0.800
Gr Liv Area	0.697
Garage Area	0.650
Garage Cars	0.648
Total Bsmt SF	0.629
1st Flr SF	0.618

Variable	Correlation with SalePrice
Year Built	0.572
Year Remod/Add	0.550
Full Bath	0.538
Garage Yr Blt	0.534
Mas Vnr Area	0.512
TotRms AbvGrd	0.504

Exploring Data

- Model takeaways:
  - Overall quality has the largest impact on sale price, but may not be the most useful variable
  - Above ground living area has a high impact on sale price
  - Year built is another major factor in predicting sale price

Variable	Coefficient
Overall Qual	28,823
Gr Liv Area	23,108
Year Built	12,137
Garage Area	9,530
Total Bsmt SF	7,530
1st Flr SF	7,037
TotRms AbvGrd	733
Full Bath	-2,680

Exploring Data

- The average house in Ames, IA:
  - Overall quality is a **6/10**
  - **1,499 SF** - living area above grade
  - Built in **1972**
  - **473 SF** - garage
  - **1,057 SF** - basement in total
  - **1,164 SF** - 1st floor
  - **6** total rooms above grade (not including bathrooms)
  - **2** bathrooms above grade

$181.5K

Recommendations

Original Goal

- Determine which variables of a home in Ames, IA have a strong impact on the sale price, with the goal of helping first-time homebuyers in Ames better understand the local housing market so they can strategically buy their first home

Recommendations

- If you have a good idea about the home quality and square-footage above grade that you desire, but are worried about the expense of a mortgage payment, buying a home: built before 1972, without a garage or basement, and fewer than 6 rooms may make it easier for you to buy into the market

Recommendations

- Saving to buy your first home can take a long time, and getting into the market can be hard for first time homebuyers
  - Understand what your non-negotiables are
  - Oftentimes higher quality, larger living space and more rooms, garages, and basements make a home more desirable and more expensive
  - To get into the market at an affordable price, you may need to scale back on size or amenities

Additional Thoughts

- Your first home doesn't need to be your forever home
- In the long-term, you may be able to update your home to add additional features
- Opting for a house out of your price range isn't smart, but may allow you more purchasing power if you have a steady roommate

Questions?

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Sources

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