Predicting King County's Housing Market Prices

Data Tech Consultancy

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Overview

Business proposal

- Develop a better model of predicting housing price in the region

Results

- Our methods have improved the ability to predict the sale price of a house

Recommendations

- The 3 best predictors of the house price are: Distance from city centers, square feet of living space, and the age of the house

Business Problem

Building a Better Model

- To help real estate agents establish accurate house prices in King County.
- To help home buyers find market value of houses they are interested in.
- To help clients assess their homes and get an estimated selling price.

FOR SALE

Data & Methods

The Data
- Houses sold in King County between May 2014 and May 2015
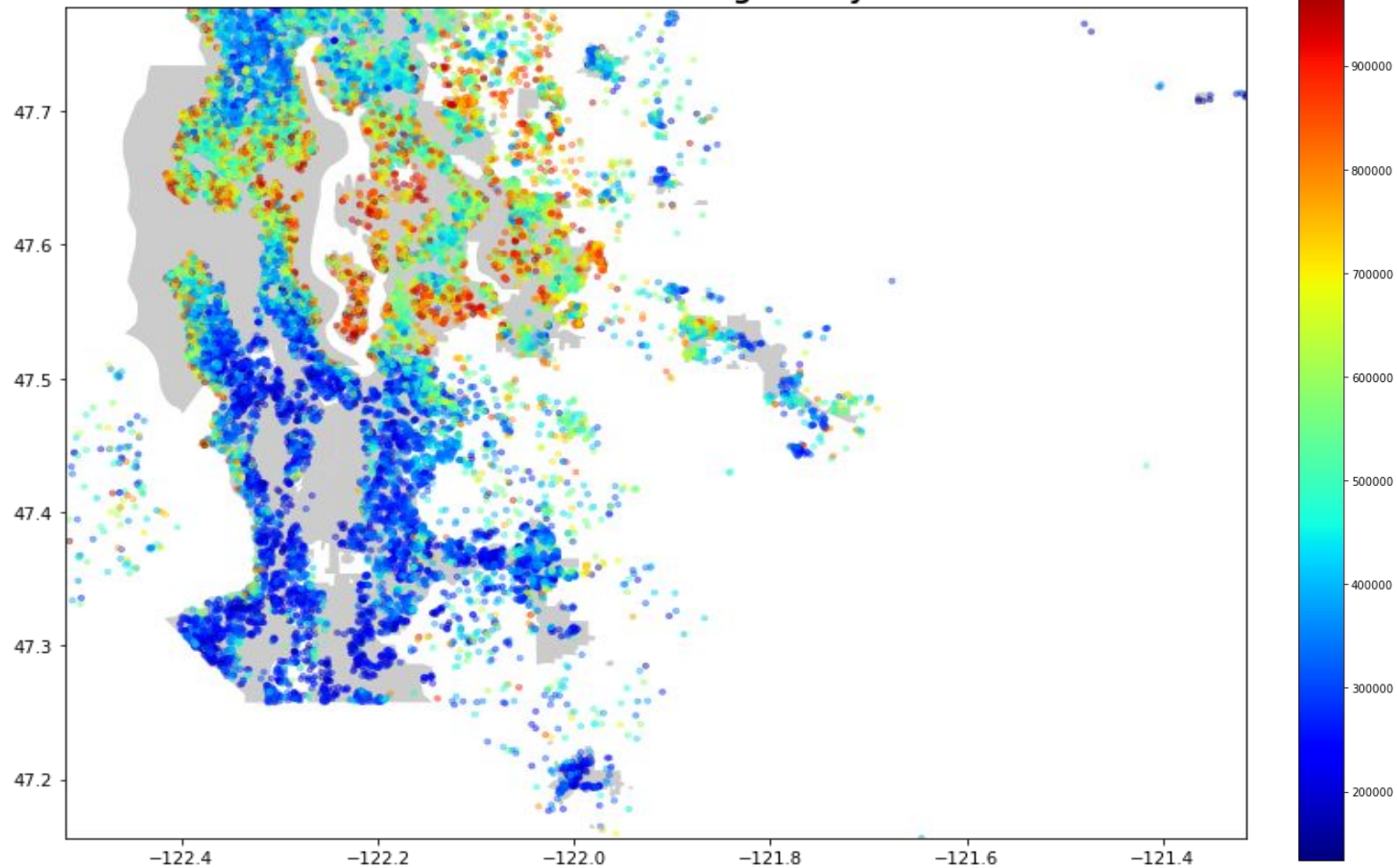- Population census 2010
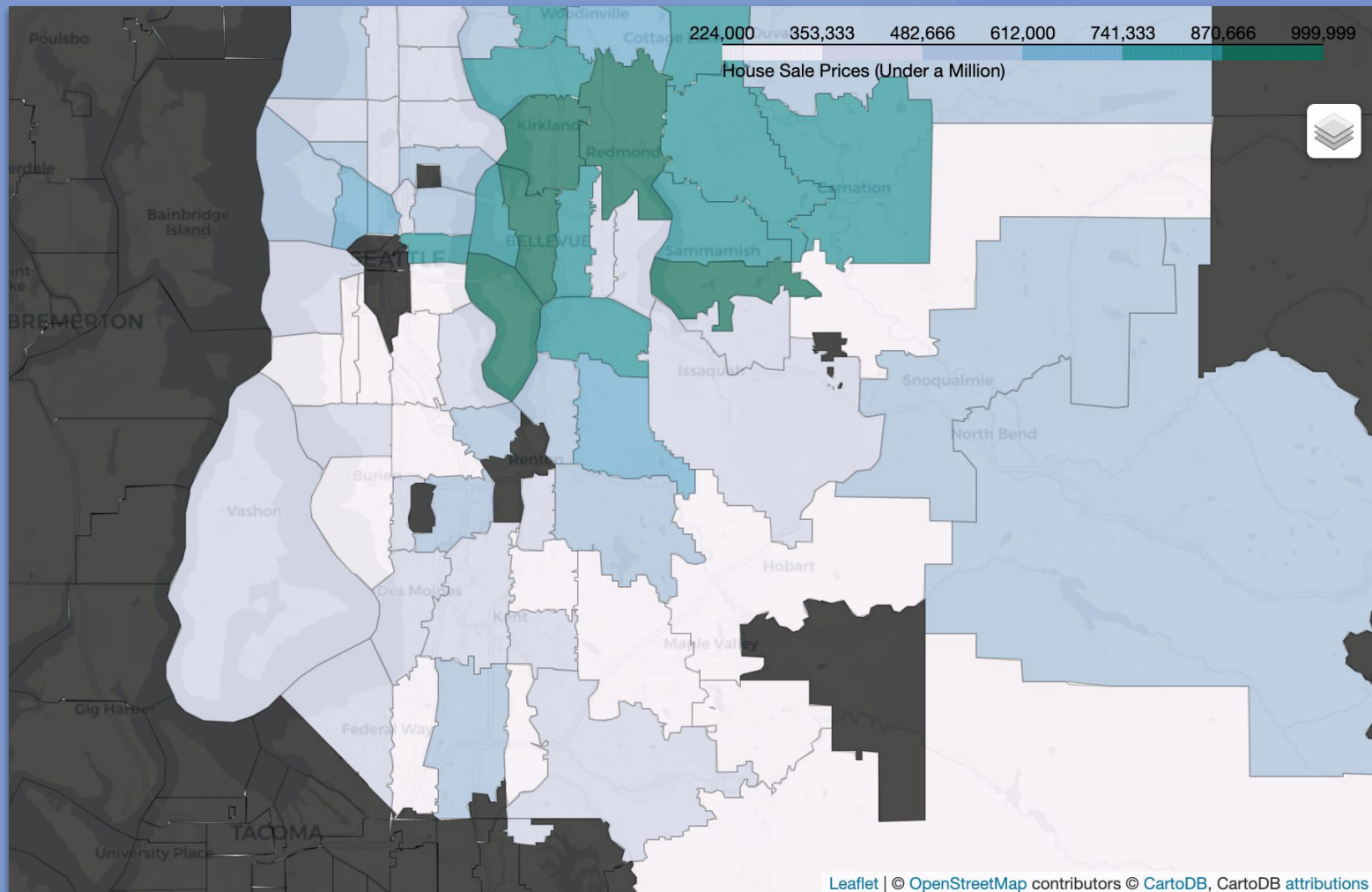
The Preparation
- Cleaned data and added features

The Modeling
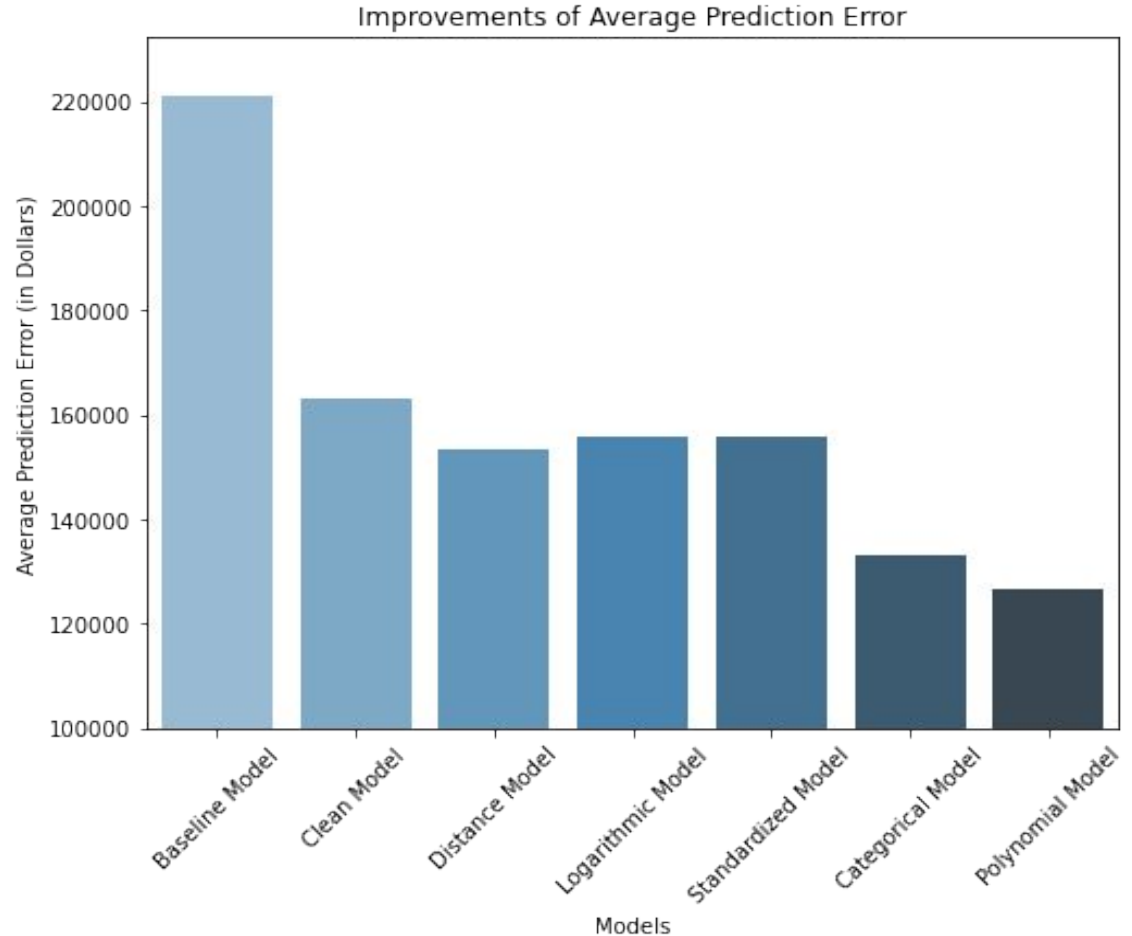- Used multiple regression model to predict prices

House Prices in King County

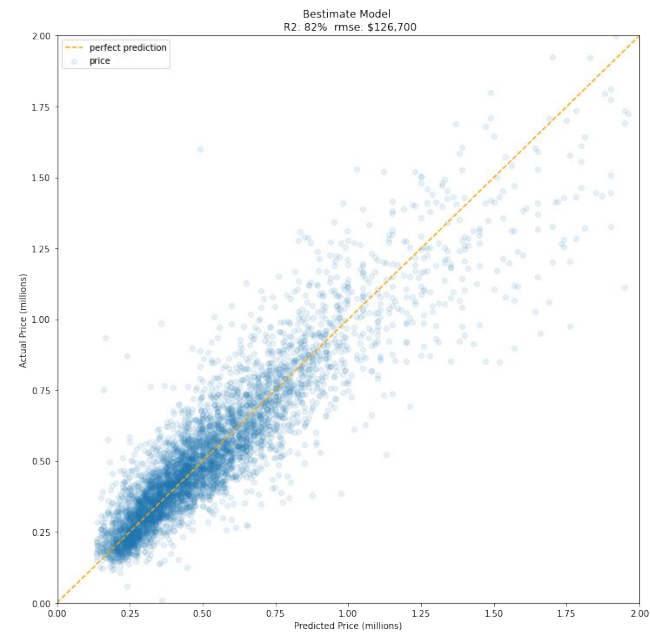House Sale Prices (Under a Million)

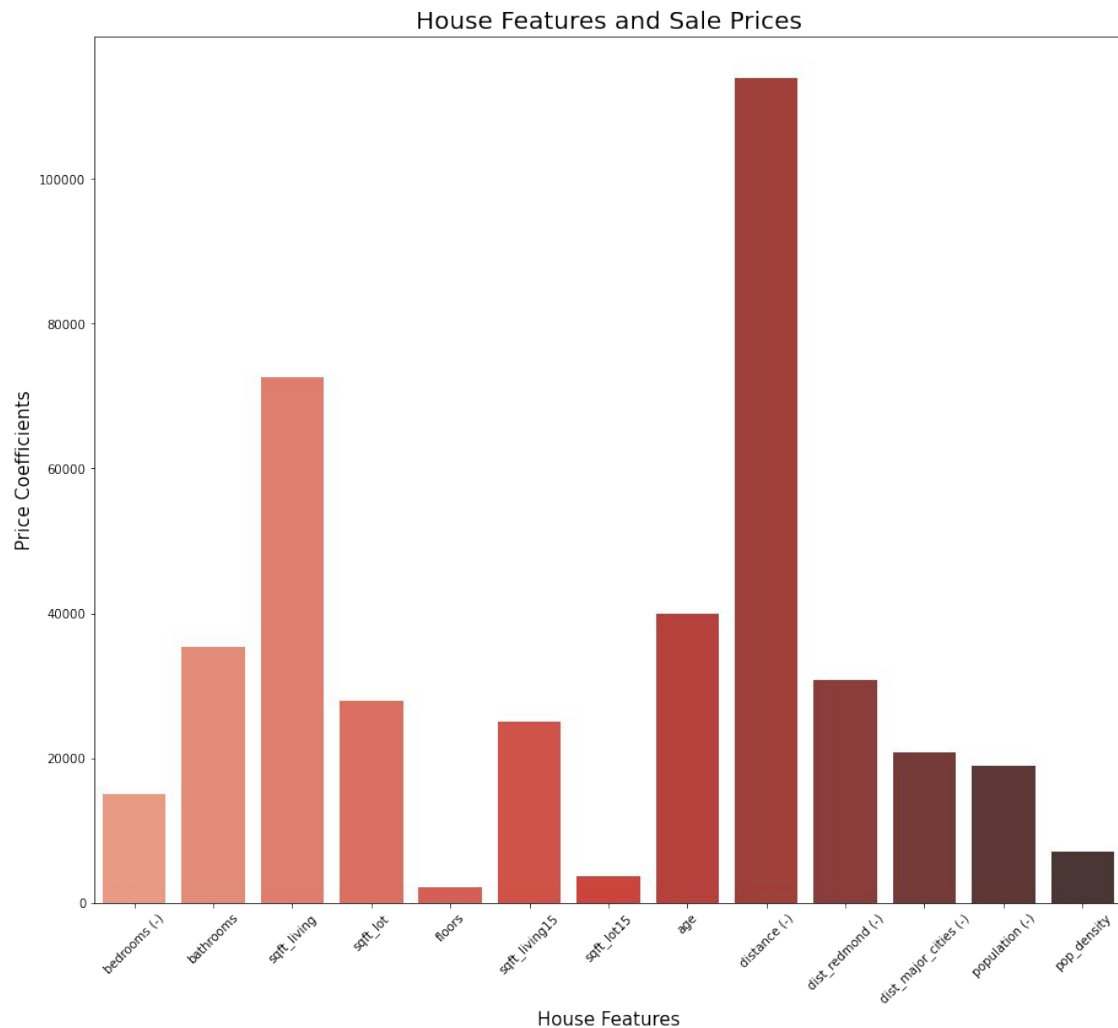224,000   353,333   482,666   612,000   741,333   870,666   999,999

Model Performance

Improvements of Average Prediction Error

Baseline vs. Bestimate

Baseline Model
R2: 61% rmse: $221,000

Bestimate Model
R2: 82% rmse: $126,700
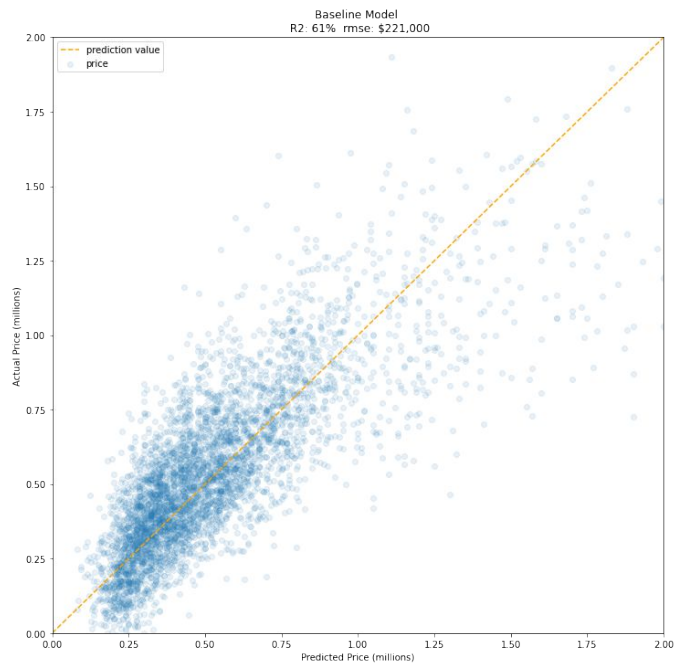
Results: Inferential Model

House Features and Sale Prices

King County House Price Predictor

Bedroom: 2

Bathroom: 2

Square Footage: 1200

Age: 5

Predicted Price: 403500

Predict

Recommendations for customers

- Upgradeable features for home sellers:
  - Bathroom ($33,000 added per unit)
  - Grade improvement ($89,000 per upgrade)
  - Renovation ($97,000)
- Features that are relevant to buyers:
  - Distance from city centers (-$5,500 per mile)
  - Each extra square foot ($146)
  - Improvement in View ($60,000 per unit)
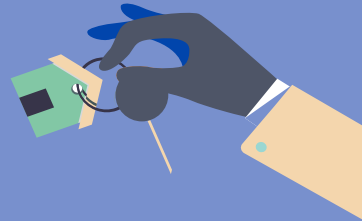
Effect of Month on Sales Price with all other factors being Equal
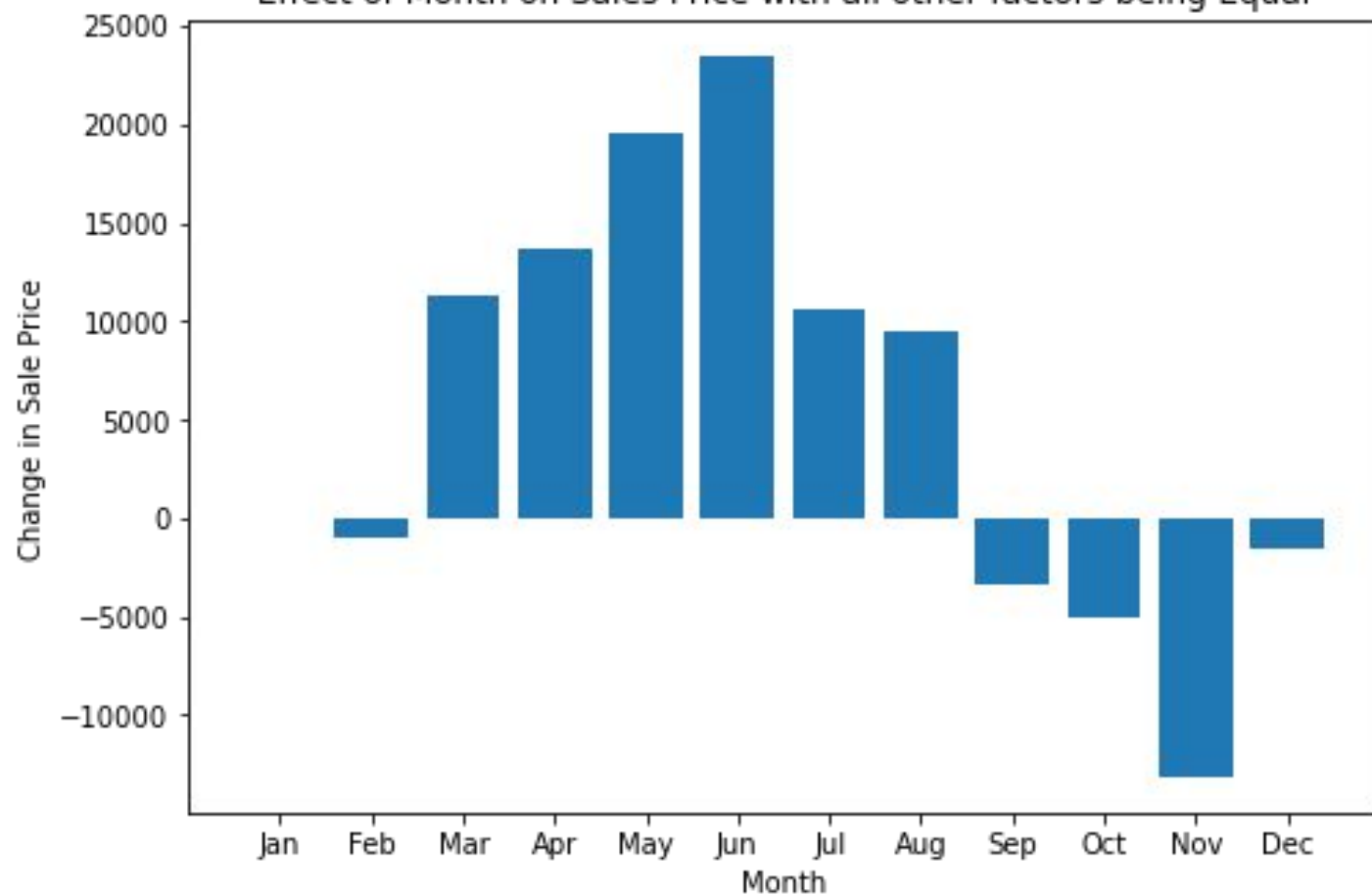
Next Steps

- More years of data
- Include crime data by location
- Include school districts data

THANK YOU!

Any Questions?

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