



## Beau Home Properties House Price Prediction

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# Presentation Agenda



# Business Overview and Goals

## The Business Problem

- Beau Home Properties
- New California Company
- Real Estate industry
- Automate home value estimation

## Goals

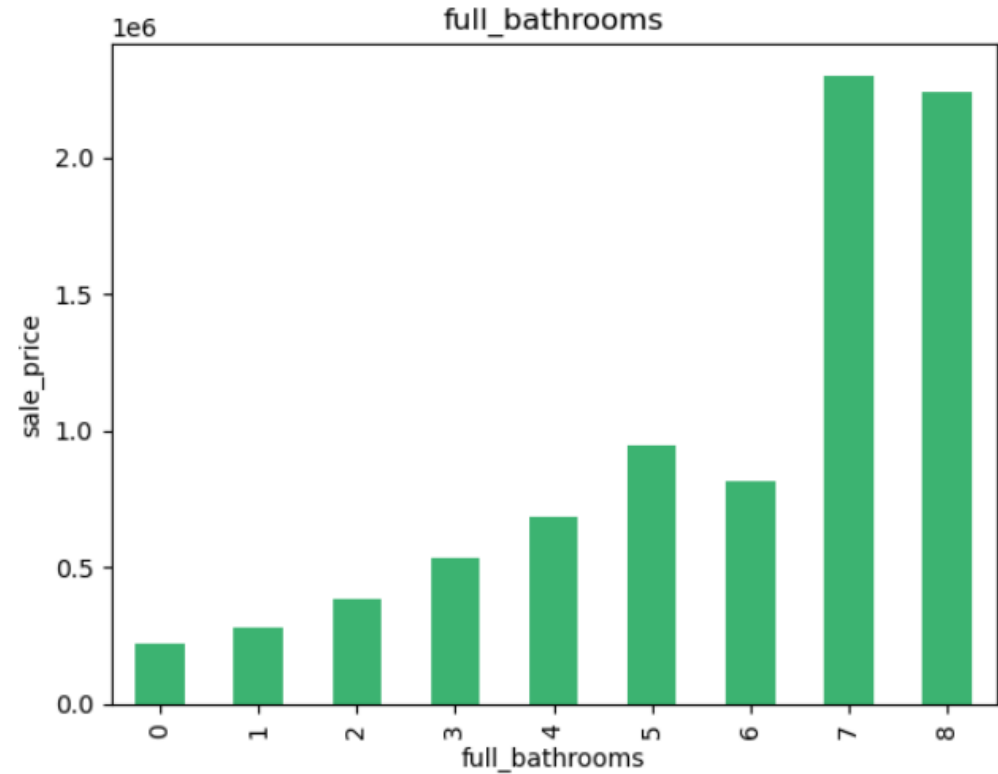
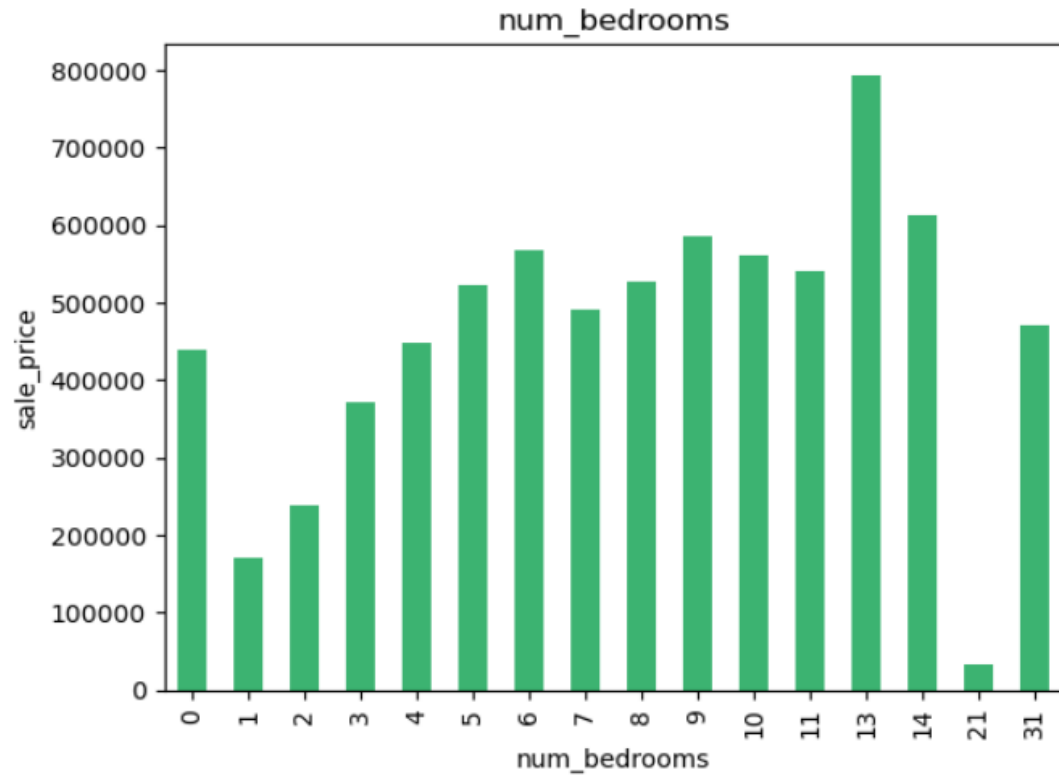
- Identify Key House Features
- Deliver Accurate ML Model

## Bottom Line Up Front

- Produced a model that can predict house prices within a margin of error of \$59,000 USD

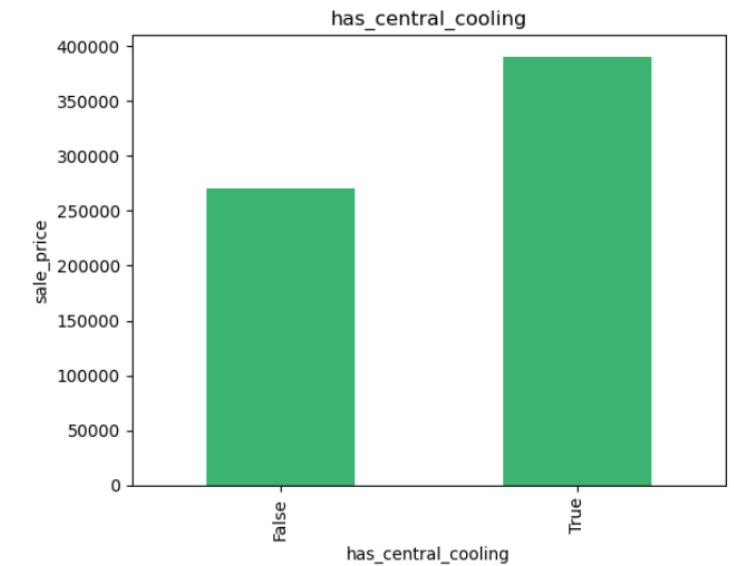
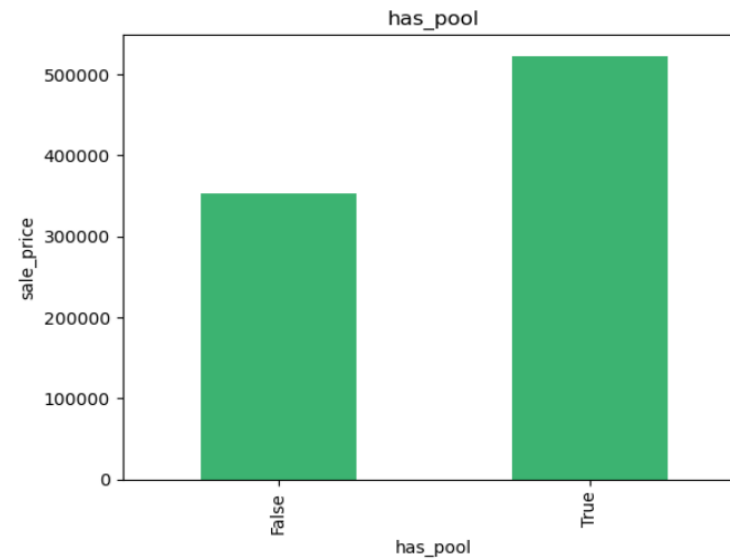
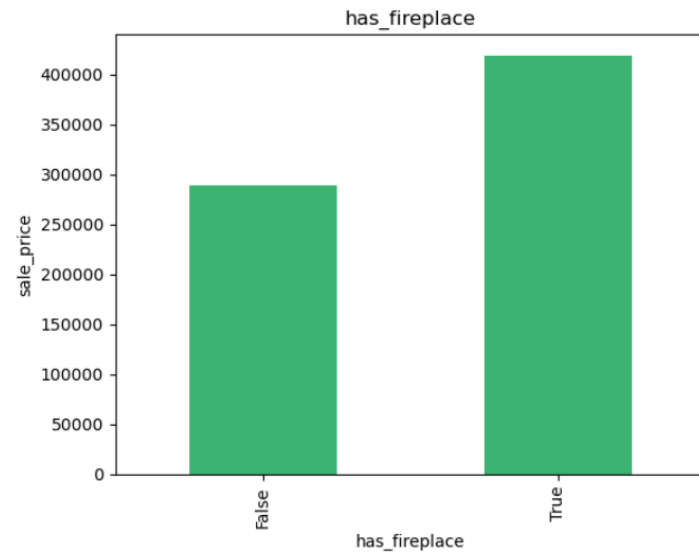
## Feature Highlights:

**15 features were identified as factors that influenced house prices.**



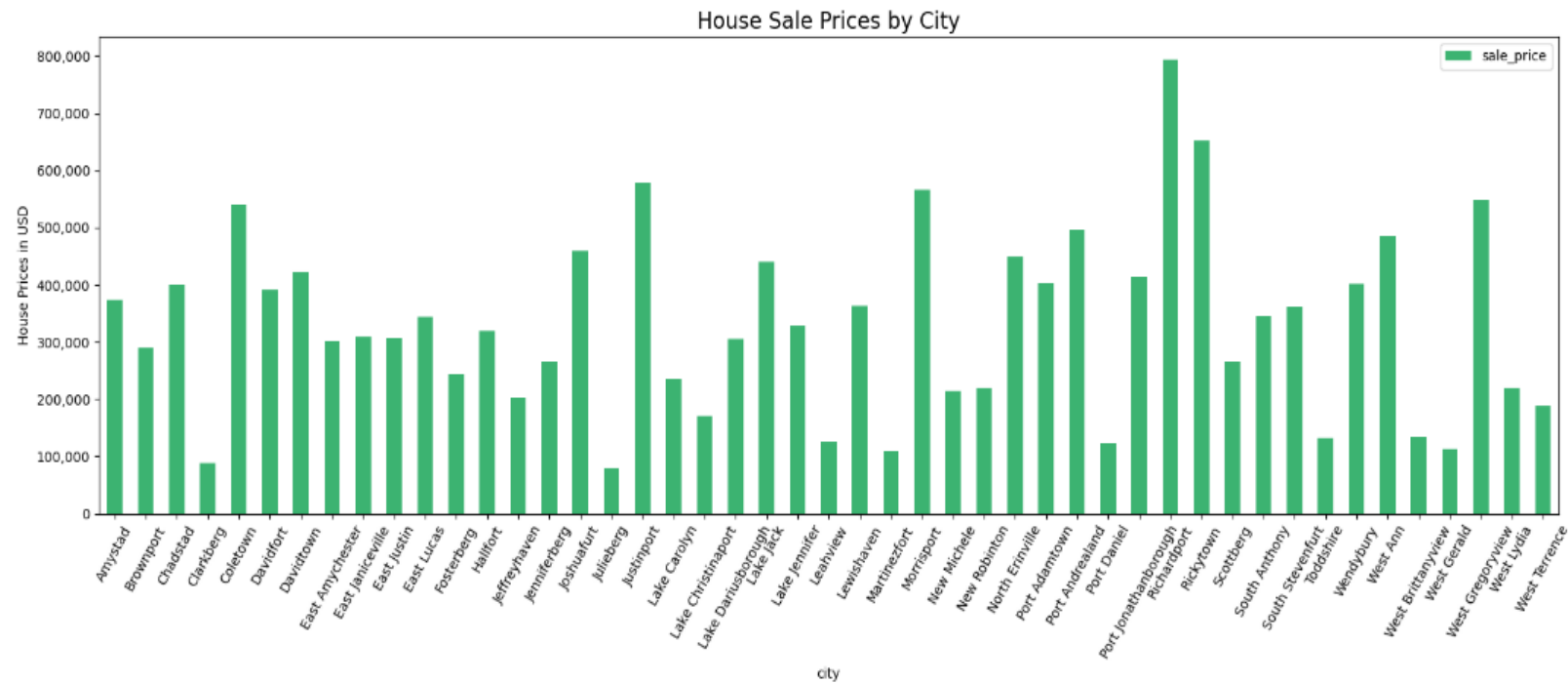
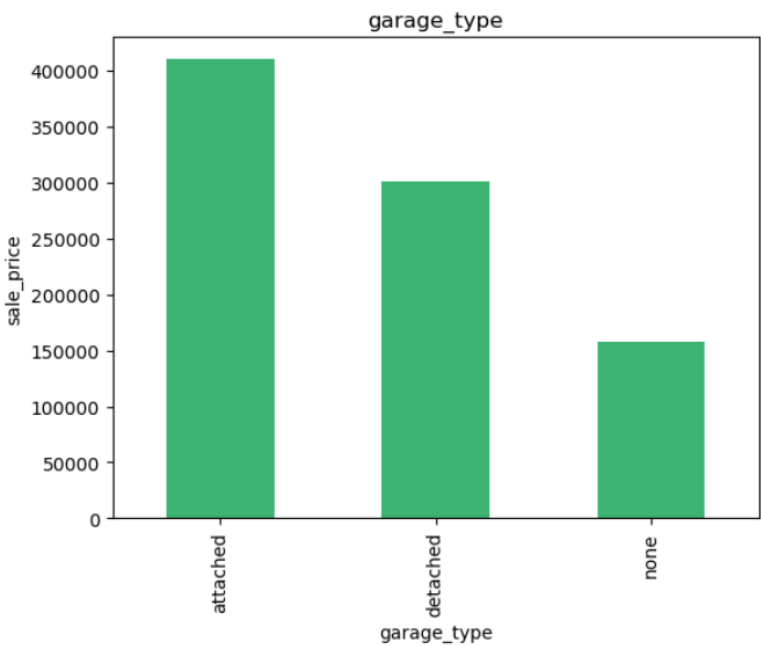
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# Feature Highlights:

Garage Type and City are the only categorical variables in the dataset.



# Linear Regression Model

The Linear Regression model is used as baseline and will later be compared to other models.



## Results

- $R^2$ : 0.63
- MAE: 94602.7
- RMSE: 172306.61

## Interpretation

- Model is explaining about 63% of the variance in house sale prices.
- MAE is telling us that our model is off by about 94,602 USD in a given prediction, and the RMSE is off by 172,306 USD in a given prediction.

# Random Forest Model

This is the second model



## Results

- $R^2$ : 0.77
- MAE: 59265.3
- RMSE: 135676

## Interpretation

- Model is explaining about 77% of the variance in house sale prices.
- MAE is telling us that our model is off by about 59,265 USD in a given prediction, and the RMSE is off by 135,676 USD in a given prediction.



# XG Boost Model

This is our final model



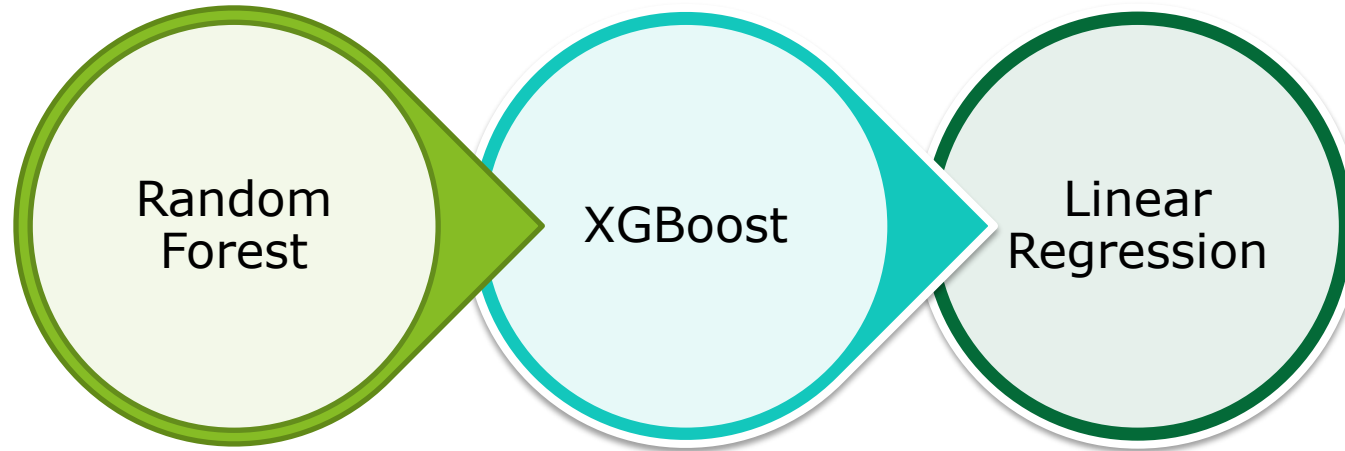
## Results

- $R^2$ : 0.75
- MAE: 62197.7
- RMSE: 141526

## Interpretation

- Model is explaining about 75% of the variance in house sale prices.
- MAE is telling us that our model is off by about 62,197 USD in a given prediction, and the RMSE is off by 141,526 USD in a given prediction.

# Model Comparisons & Recommendation



	Model	R-squared Score	MAE	RMSE
1	Random Forest	77.448343	59265.3	135676
2	XGBoost	75.461871	62197.7	141526
0	Linear Regression	63.627396	94602.44	172306.61

## Recommendation

- It is best for Beau Home Properties to use the Random Forest Model for House Price prediction.

# Thank you for your time!

## Questions?

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