



Ames Housing Price Prediction

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Problem Statement



- To create a Model based on the Ames Housing Dataset to predict the price of a house.
- To Identify what are the features that will influence price of a house in Ames.

Background

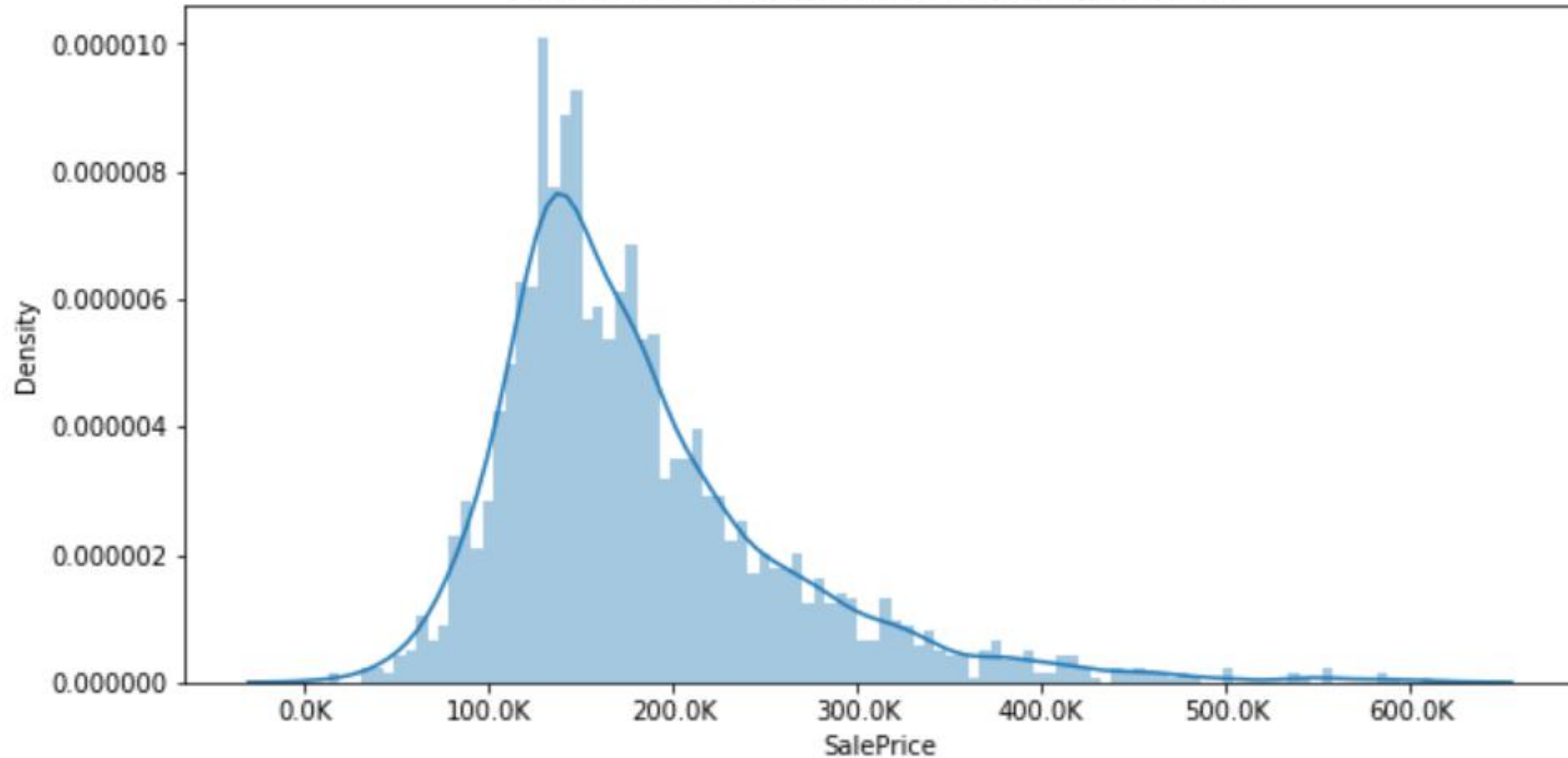


- Data set contains information from the Ames Assessor's Office used in computing assessed values for individual residential properties sold in Ames, IA from 2006 to 2010.
- Training Data
 - 2051 rows of observations with 81 columns
- Test Data
 - 879 rows of observations with 80 columns

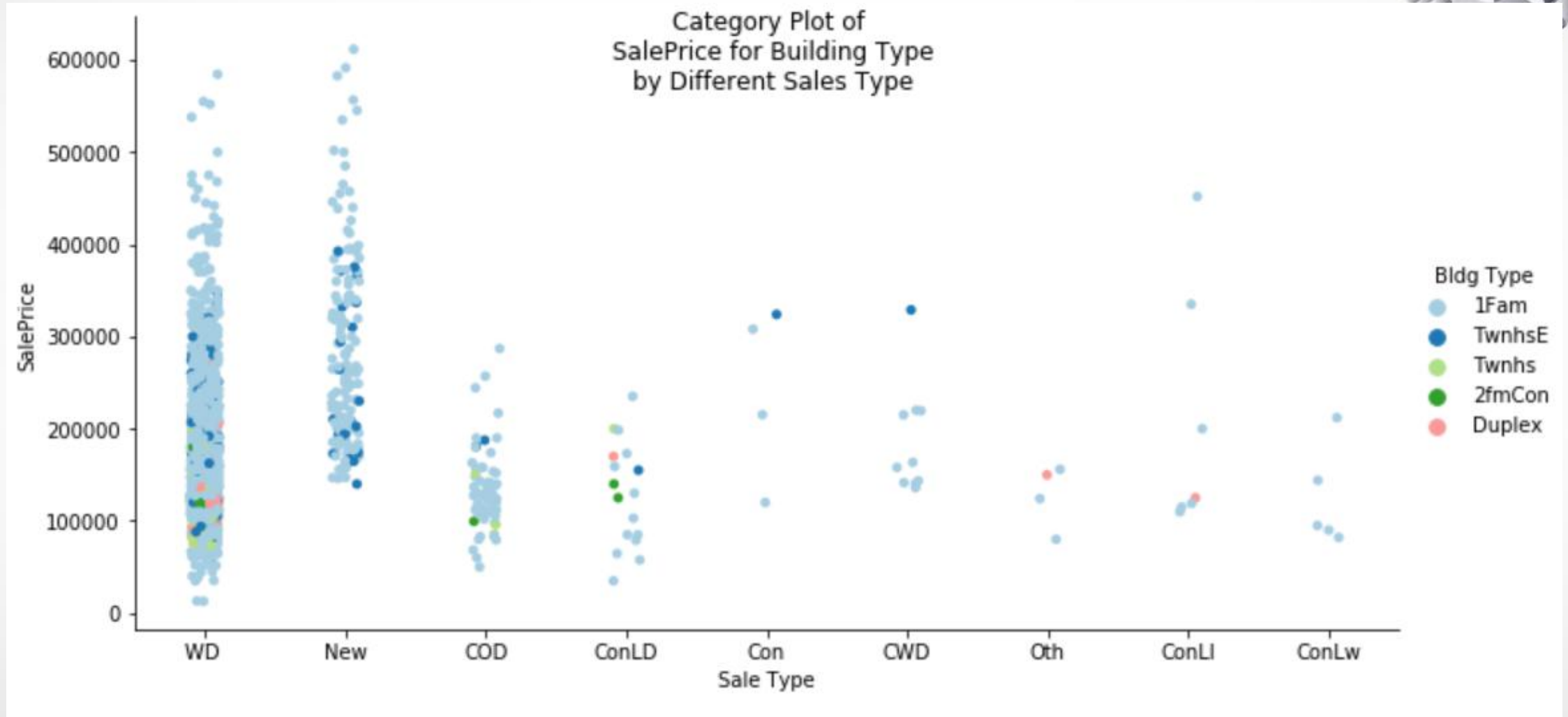
Distribution of Target in Training Data



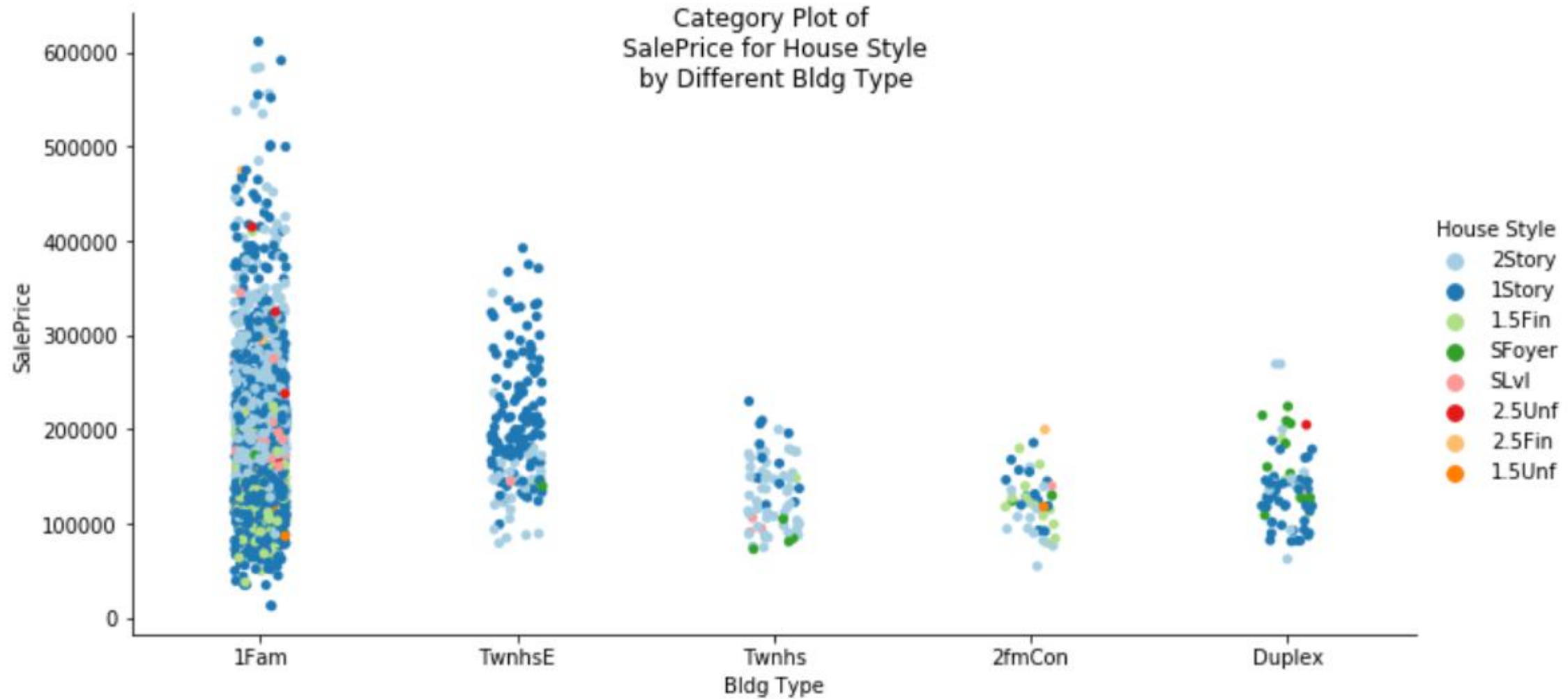
Density Plot & Histogram for Train Data SalePrice



Category Plot of SalePrice for Building Type by Different Sales Type



Category Plot of SalePrice for House Style by Different Bldg Type



Introduce New features & Interaction Term



- Property Age
- Remodel Age
- Remod/Add

- Overall Qual*Exter Qual
- Lot Area*Remodel Age
- Property Age*Lot Area
- Gr Liv Area*TotRms AbvGrd

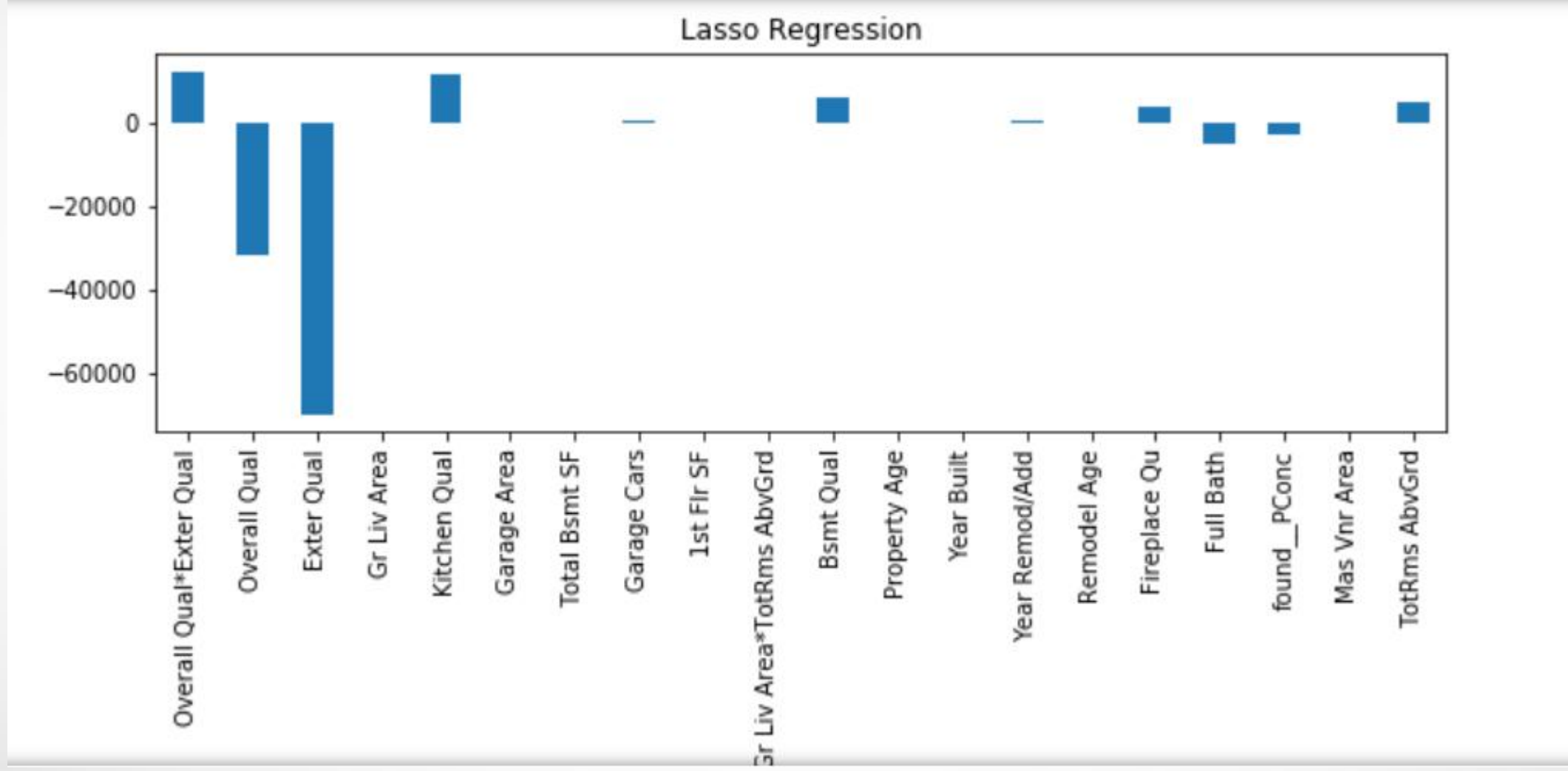
Feature Selection: Filtering method



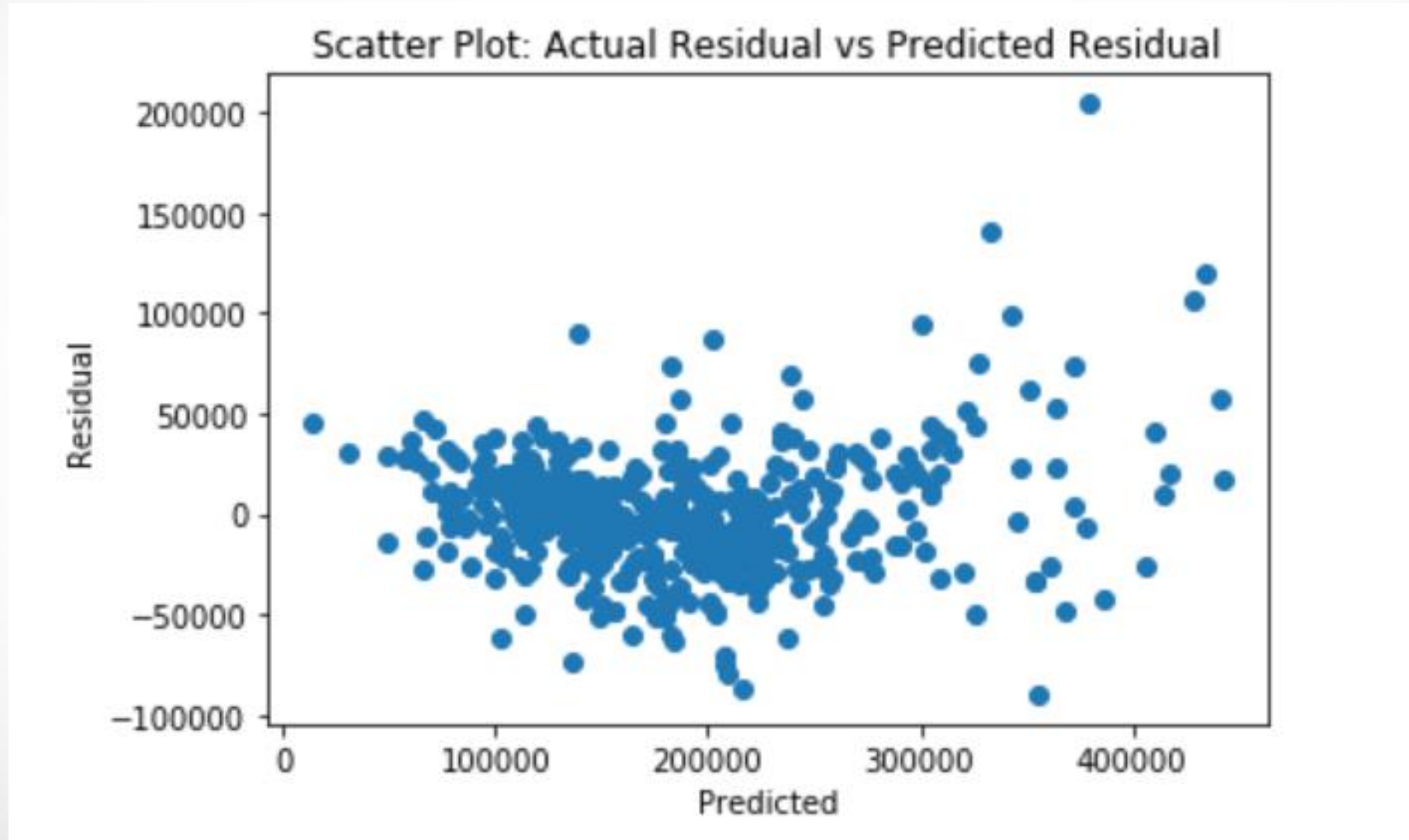
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1 SalePrice 1.000000
Overall Qual*Exter Qual 0.831130
Overall Qual 0.802145
Exter Qual 0.713830
Gr Liv Area 0.710394
Kitchen Qual 0.693803
Garage Area 0.653946
Total Bsmt SF 0.651207
Garage Cars 0.648313
1st Flr SF 0.632308
Gr Liv Area*TotRms AbvGrd 0.630515
Bsmt Qual 0.613037
Year Built 0.572300
Property Age 0.572300
Remodel Age 0.550952
Year Remod/Add 0.550952
Fireplace Qu 0.539521
Full Bath 0.538515
found__PConc 0.529523
Mas Vnr Area 0.506247
TotRms AbvGrd 0.506078
Name: SalePrice, dtype: float64
```

Lasso



Actual vs Predicted Residual



Conclusion

- Top features 9 that influences House sale Price are:
 - External Quality,
 - Overall Quality,
 - Interaction of External Quality & Overall Quality,
 - Kitchen Quality,
 - Basement Quality,
 - Full Bath,
 - Poured Contrete Foundation
 - Total Room Above Ground and
 - FirePlace Quality.



A dark, moody seascape with a sailboat on the horizon and mountains in the background. The image is split into two horizontal sections. The top section is a lighter, hazy grey, showing a distant mountain range and a small sailboat on the horizon. The bottom section is a darker, textured blue-grey, showing the surface of the water. A solid blue rectangular box is positioned on the right side of the image, containing the text "THANK YOU" in white, bold, sans-serif capital letters.

THANK YOU