

# PREDICTING PROPERTY RENTAL PRICE

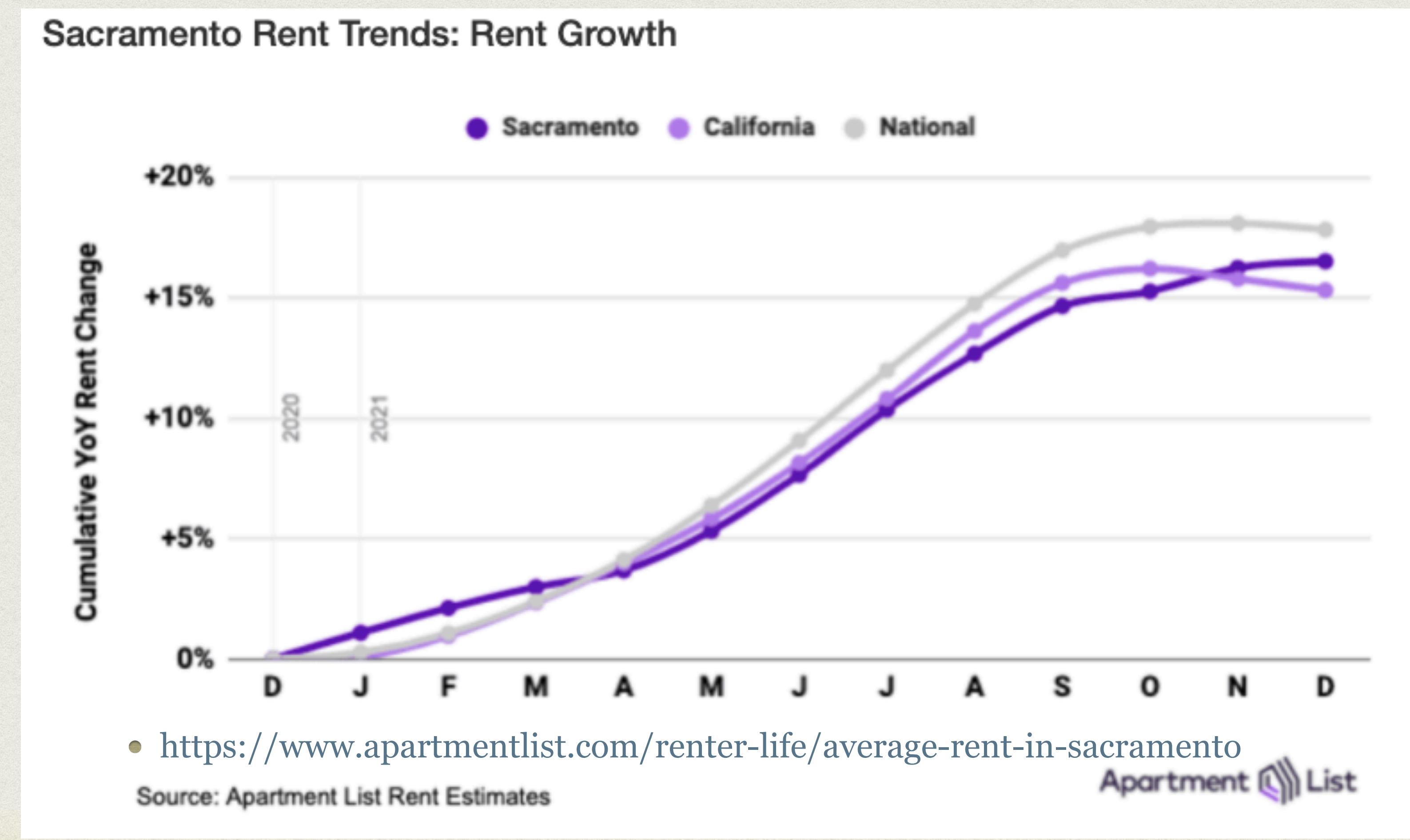
*By:*

*Asteway Kebede*

*Jan, 2022*

# INTRODUCTION

- Build a model to predict renal prices



# THE DATA

# Capture Local Market

sacramento apartments / housing for rent

CL sacramento > housing > apartments / housing for rent

include nearby areas

MILES FROM LOCATION  
miles from zip use map...

PRICE  
min max

BEDROOMS  
min - max

BATHROOMS  
min - max

FT<sup>2</sup>  
min max

AVAILABILITY  
all dates

cats ok  
 dogs ok  
 furnished  
 no smoking  
 wheelchair access  
 air conditioning  
 EV charging  
 no application fee  
 no broker fee

► housing type  
► laundry  
► parking  
► rent period

OPEN HOUSE DATE  
all dates

reset update search

• fair housing  
• avoiding scams

search apartments / housing for rent

save search

R-E-N-T TO O.W.N  
Call (833)-828-3822

★ Jan 26 \*\*\*WoW WoW WoW\*\*\* This is it and call this home. 4 Bd/3 Ba & 2461 Sqft \$1,256 4br - 2461ft<sup>2</sup> - (8909 N Liscarney Way,

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CHESAPEAKE COMMONS

★ Jan 26 Stylish Club House, Tranquil Courtyard, Tennis Court \$1,658 1br - 704ft<sup>2</sup> - (3600 Data Drive, Sacramento, CA)

Den Large open great room 3 bed 2 bath home \$1,300 3br - ( )

3 bd house for rent \$1,895 3br - 1080ft<sup>2</sup> - (sacramento )

\$1,960

Gorgeous upstairs one bedroom with scenic view available 2/1/22! \$1,960 1br - 850ft<sup>2</sup> - (North Natomas )

\$2,378

Pet friendly, washer and dryer in unit! Spacious 2 bedroom 2 bath \$2,378 2br - 1136ft<sup>2</sup> - ( )

\$2,280

Huge Walk In Closet In This Stunning 2 Bedroom! \$2,280 2br - 1060ft<sup>2</sup> - ( )

1 Bedroom Ready for you Now! \$1,514 1br - 475ft<sup>2</sup> - (150 Lincoln Avenue, Woodland, CA)

2BD 2BA, Oversized walk-in closets, Located in Elk Grove \$2,072 2br - 1067ft<sup>2</sup> - ( )

\$1,800

3 bedrooms, and 2.5 baths. \$1,800 3br - 1273ft<sup>2</sup> - ( )

\$700

LEASE TODAY  
8777850404

lease takeover at the u apartments

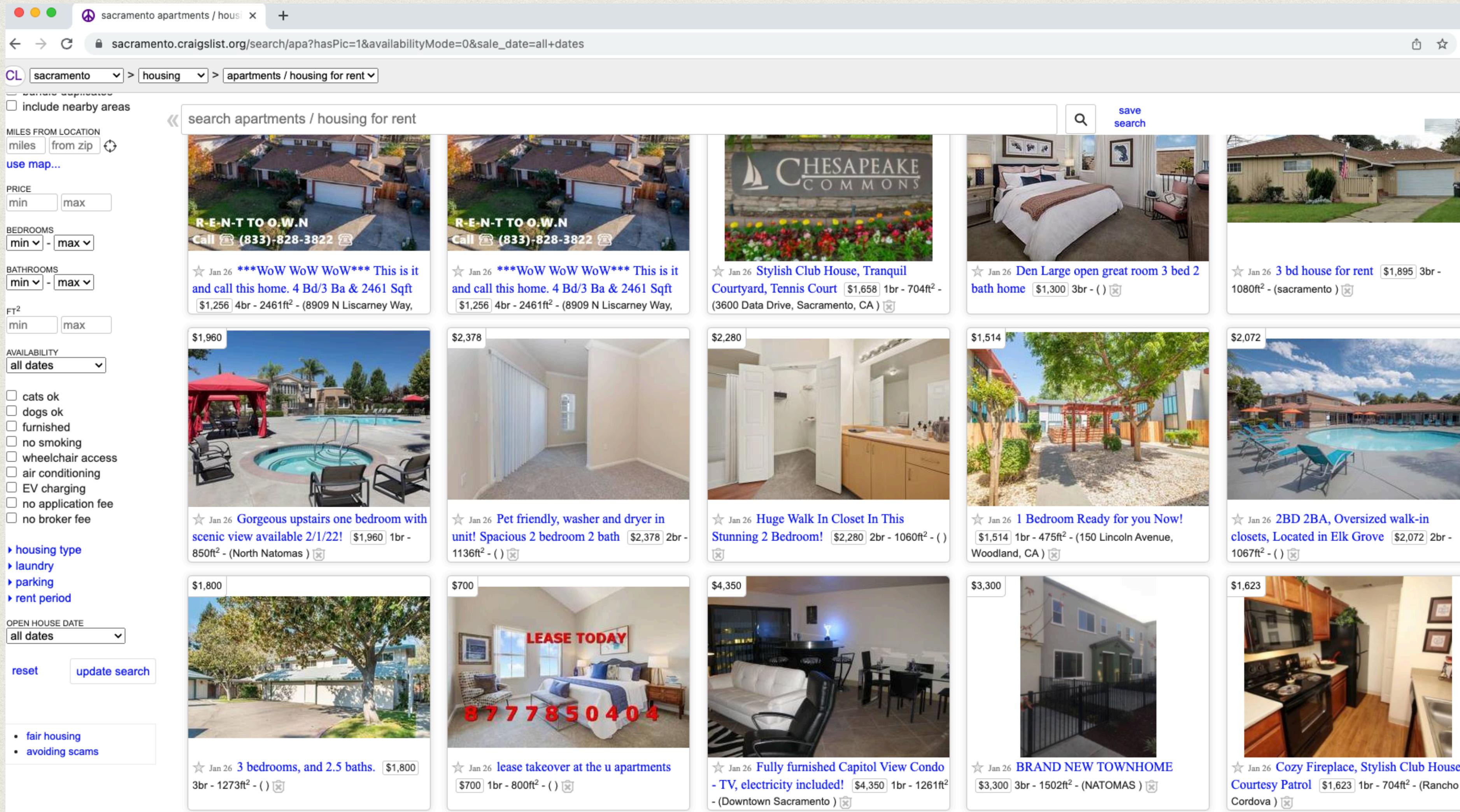
\$4,350

Fully furnished Capitol View Condo - TV, electricity included! \$4,350 1br - 1261ft<sup>2</sup> - (Downtown Sacramento )

BRAND NEW TOWNHOME \$3,300 3br - 1502ft<sup>2</sup> - (NATOMAS )

\$1,623

Cozy Fireplace, Stylish Club House, Courtesy Patrol \$1,623 1br - 704ft<sup>2</sup> - (Rancho Cordova )



Sacramento Craigslist Housing Posts <https://sacramento.craigslist.org/>

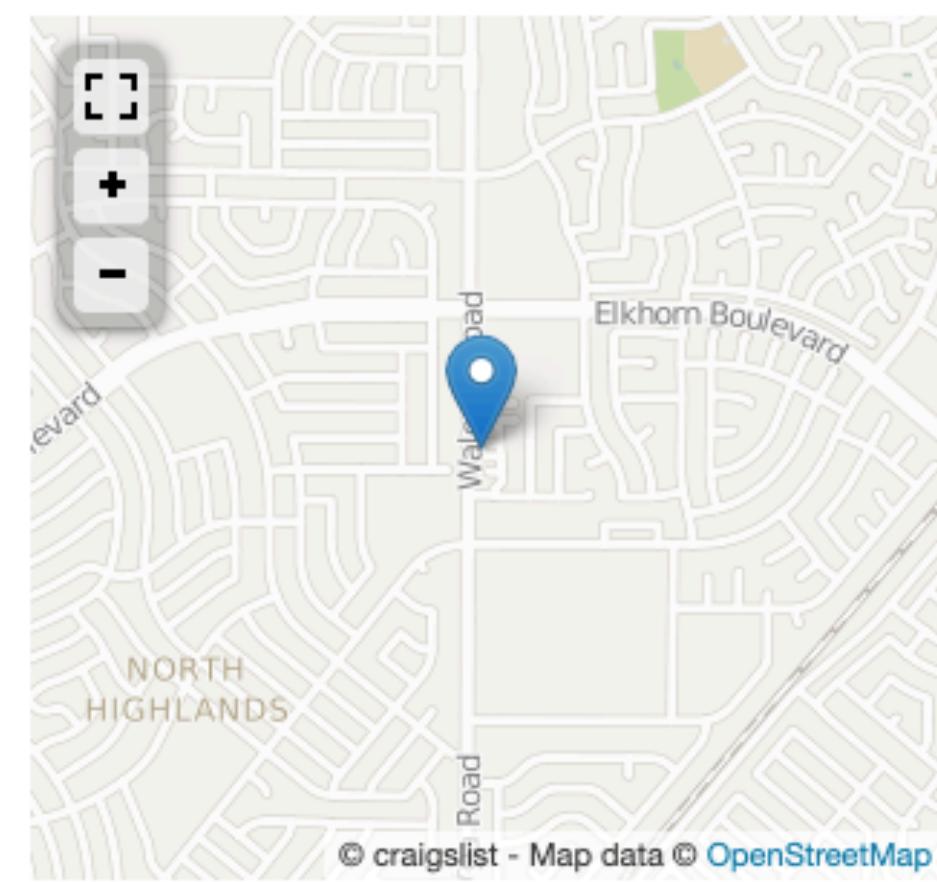
# SCRAPE THE DATA

\$2,100 / 2br - 938ft<sup>2</sup> - Amazing Roommate Style Two Bedroom Two Bath includes W/D! (Sacramento, CA)



2 bedroom 2 bath 938Sq.Ft. From \$2,100/mo

\* Unit 050 - Available Now



2BR / 2Ba 938ft<sup>2</sup> available jan 25

cats are OK - purrr

dogs are OK - woof

flooring: wood

apartment

w/d in unit

no smoking

carport

- Over 2,700 listings
- Over 10 Features

## Tools

- BeautifulSoup
- Selenium
- Requests

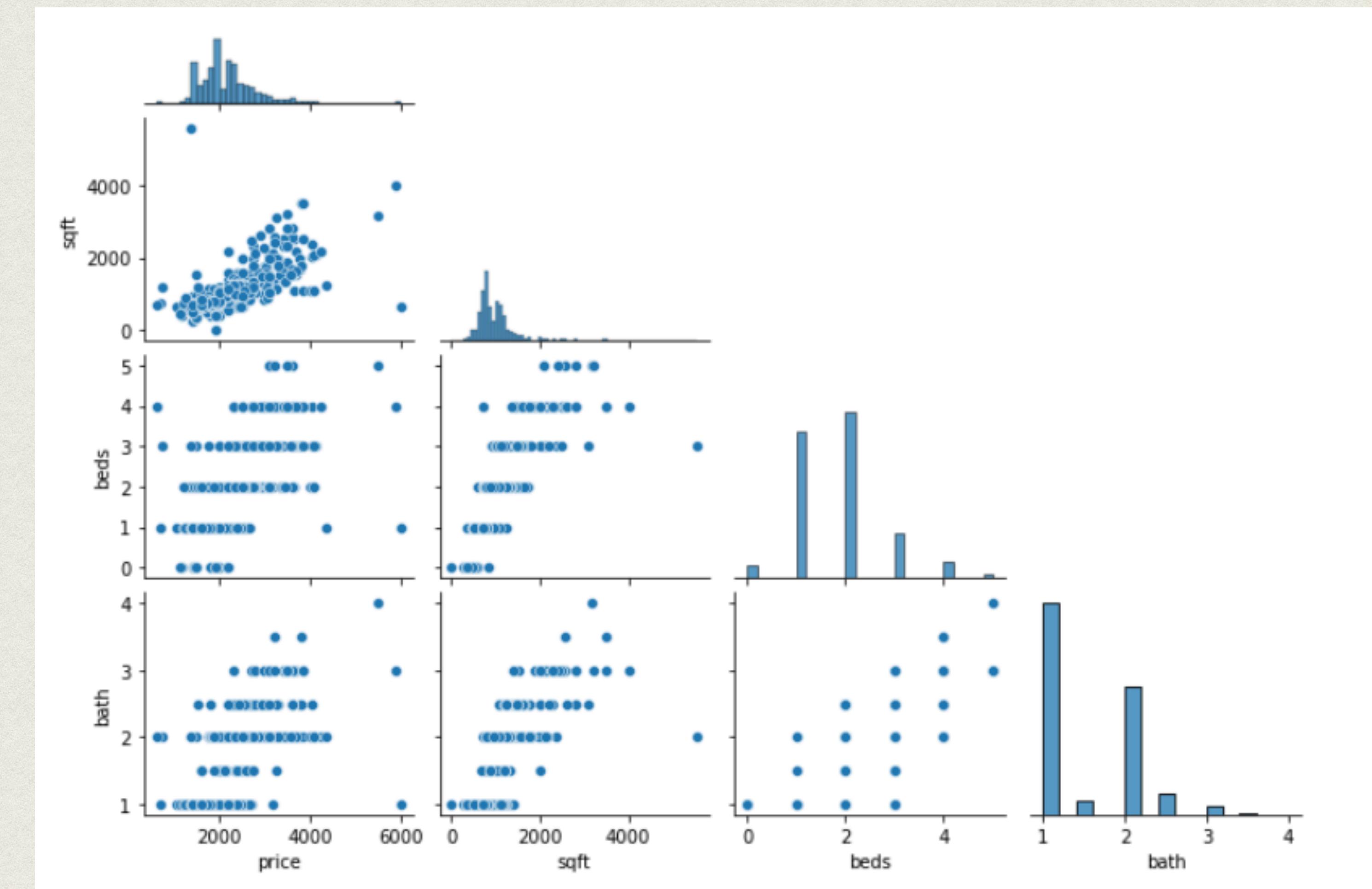
# EDA

- After EDA:

- Over 2, 400 listings
- Over 10 Features

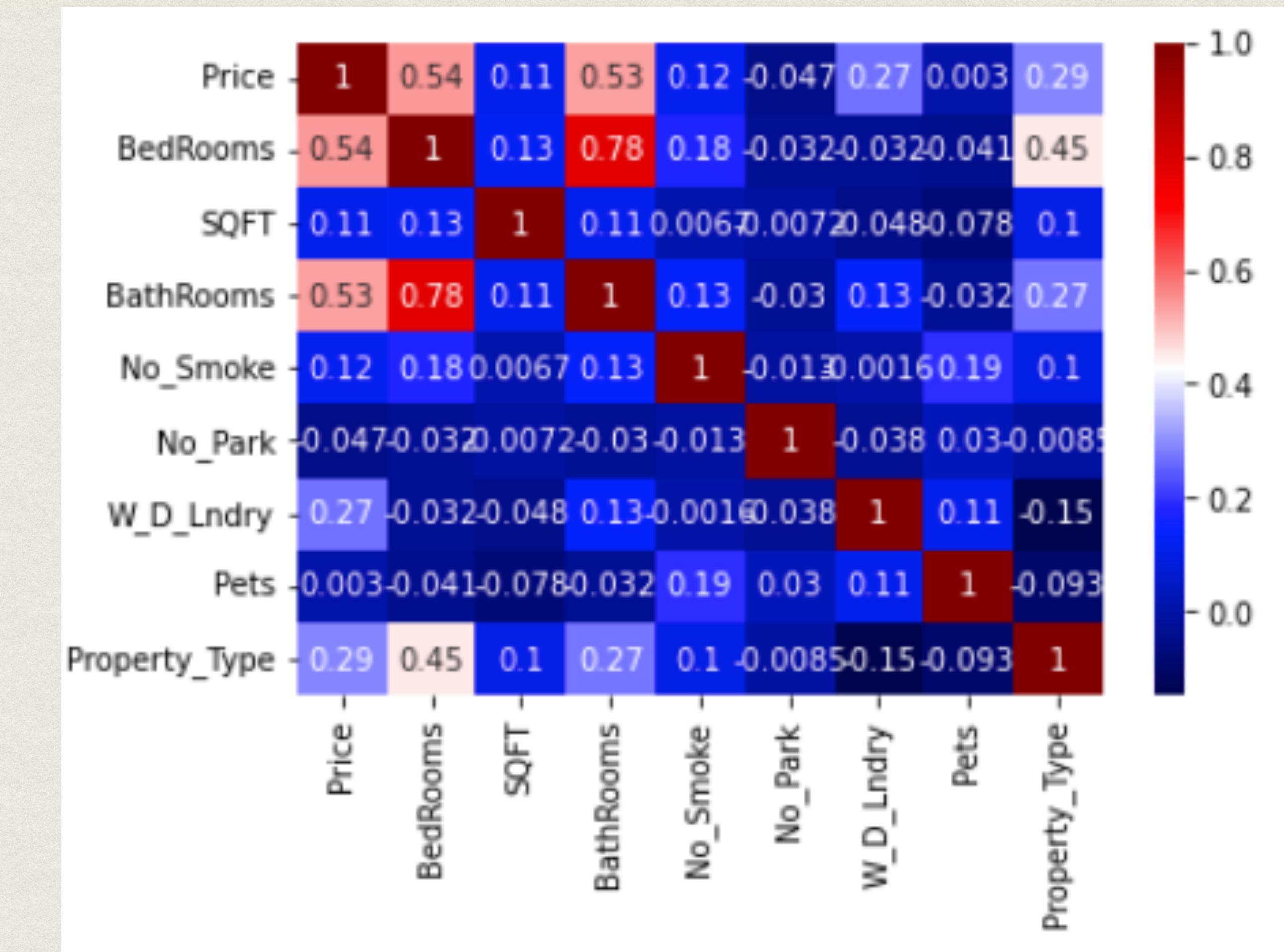
## Tools

- Pandas & Numpy
- Matplotlib & Seaborn



# MODEL SELECTION

- Feature Engineering
- Regularization
- Interaction Terms



# MODEL SELECTION

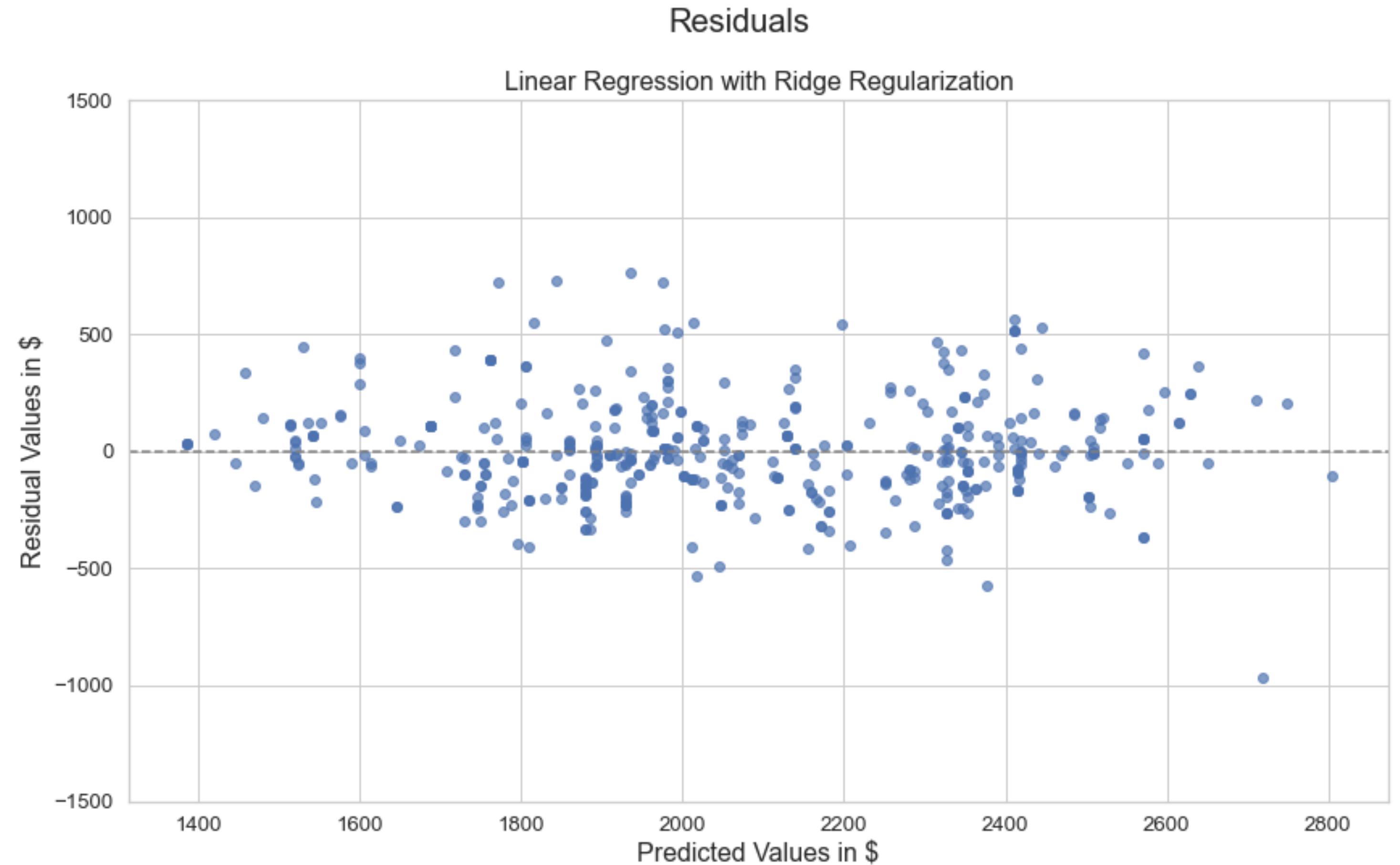
- Simple Linear Regression
- Ridge
- Lasso
- Polynomials

Tools

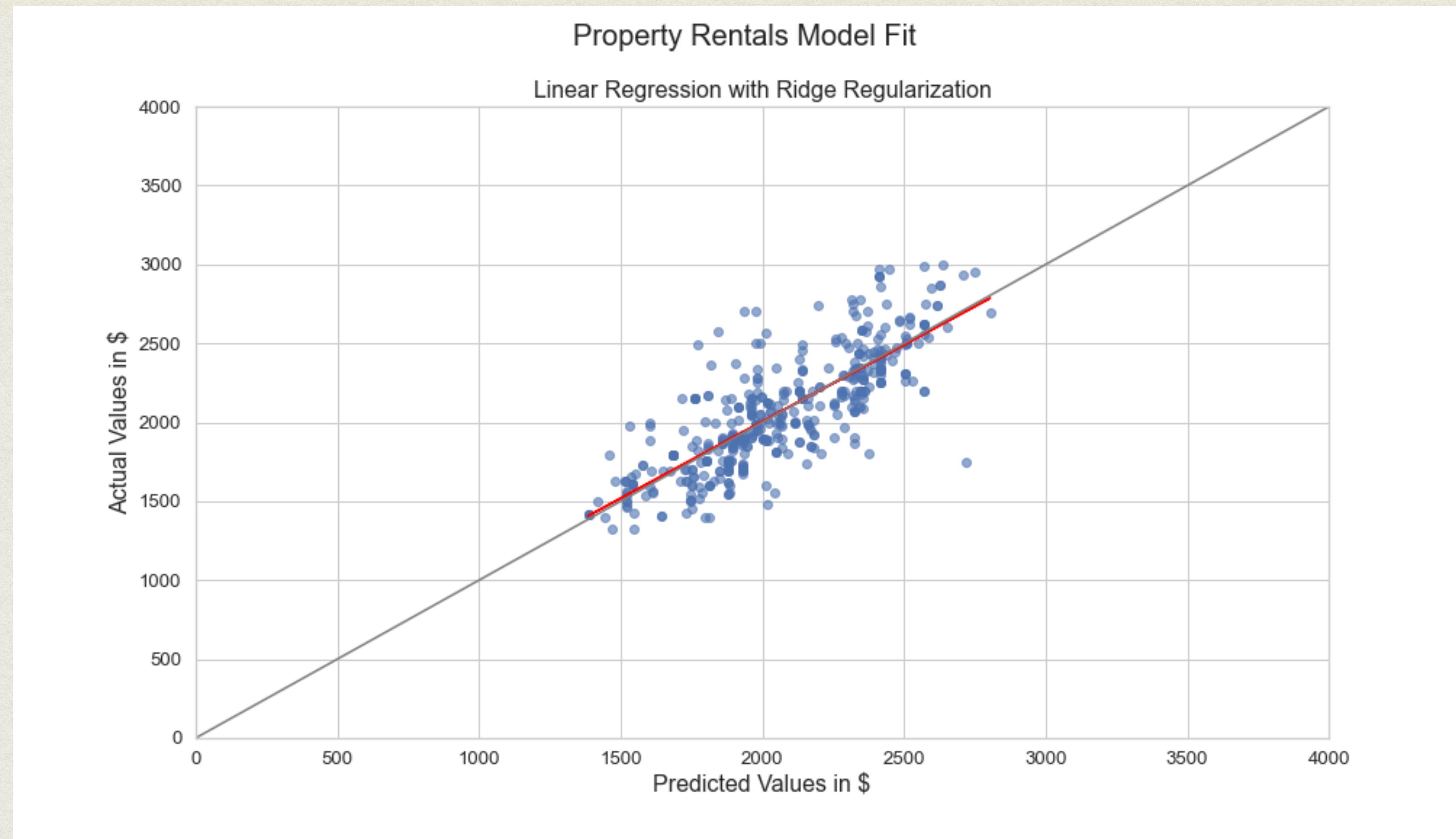
- Scikit-Learn
- StatsModel

# RESIDUALS

- Lasso showed greater variance
- Ridge more consistent



# MODEL FIT



Ridge - training score: 0.6746031094742542  
Rige - test score: 0.6898606383099264  
  
RMSE - training: 250.68140099376248  
RMSE - test: 256.0903058470375  
  
MAE - training: 180.91952088286098  
MAE - test: 181.50082233865282

# FUTURE WORK

- Incorporate local city data
- Gather data over a longer range