

PREDICTING PROPERTY RENTAL PRICE

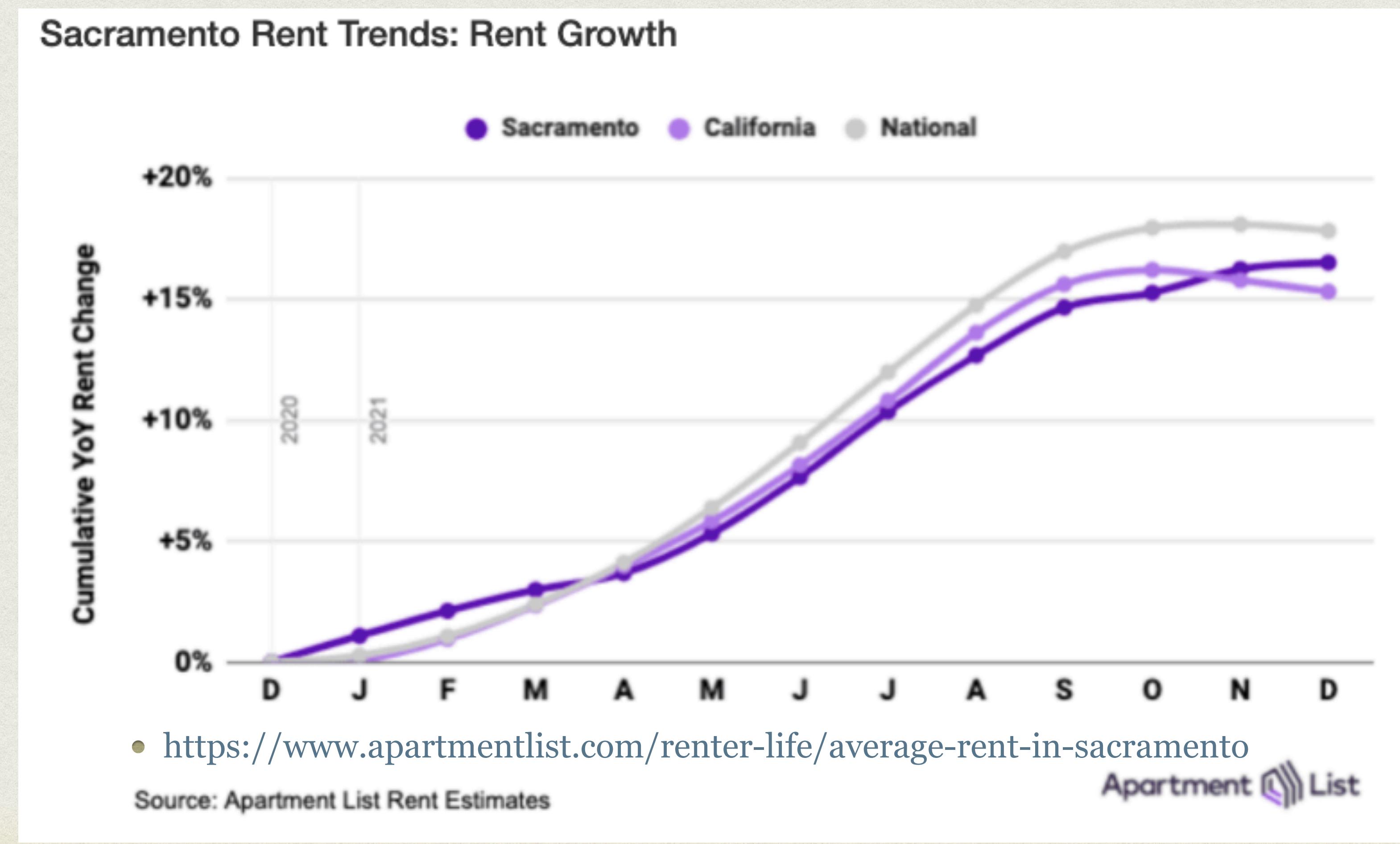
By:

Asteway Kebede

Jan, 2022

INTRODUCTION

- Build a model to predict rental 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

FT²
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 - 2461ft² - (8909 N Liscarney Way,

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★ Jan 26 ***WoW WoW WoW*** This is it and call this home. 4 Bd/3 Ba & 2461 Sqft \$1,256 4br - 2461ft² - (8909 N Liscarney Way,

CHESAPEAKE COMMONS

★ Jan 26 Stylish Club House, Tranquil Courtyard, Tennis Court \$1,658 1br - 704ft² - (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 - 1080ft² - (sacramento)

\$1,960

Gorgeous upstairs one bedroom with scenic view available 2/1/22! \$1,960 1br - 850ft² - (North Natomas)

\$2,378

Pet friendly, washer and dryer in unit! Spacious 2 bedroom 2 bath \$2,378 2br - 1136ft² - ()

\$2,280

Huge Walk In Closet In This Stunning 2 Bedroom! \$2,280 2br - 1060ft² - ()

1 Bedroom Ready for you Now! \$1,514 1br - 475ft² - (150 Lincoln Avenue, Woodland, CA)

2BD 2BA, Oversized walk-in closets, Located in Elk Grove \$2,072 2br - 1067ft² - ()

\$1,800

3 bedrooms, and 2.5 baths. \$1,800 3br - 1273ft² - ()

\$700

LEASE TODAY
8777850404

lease takeover at the u apartments

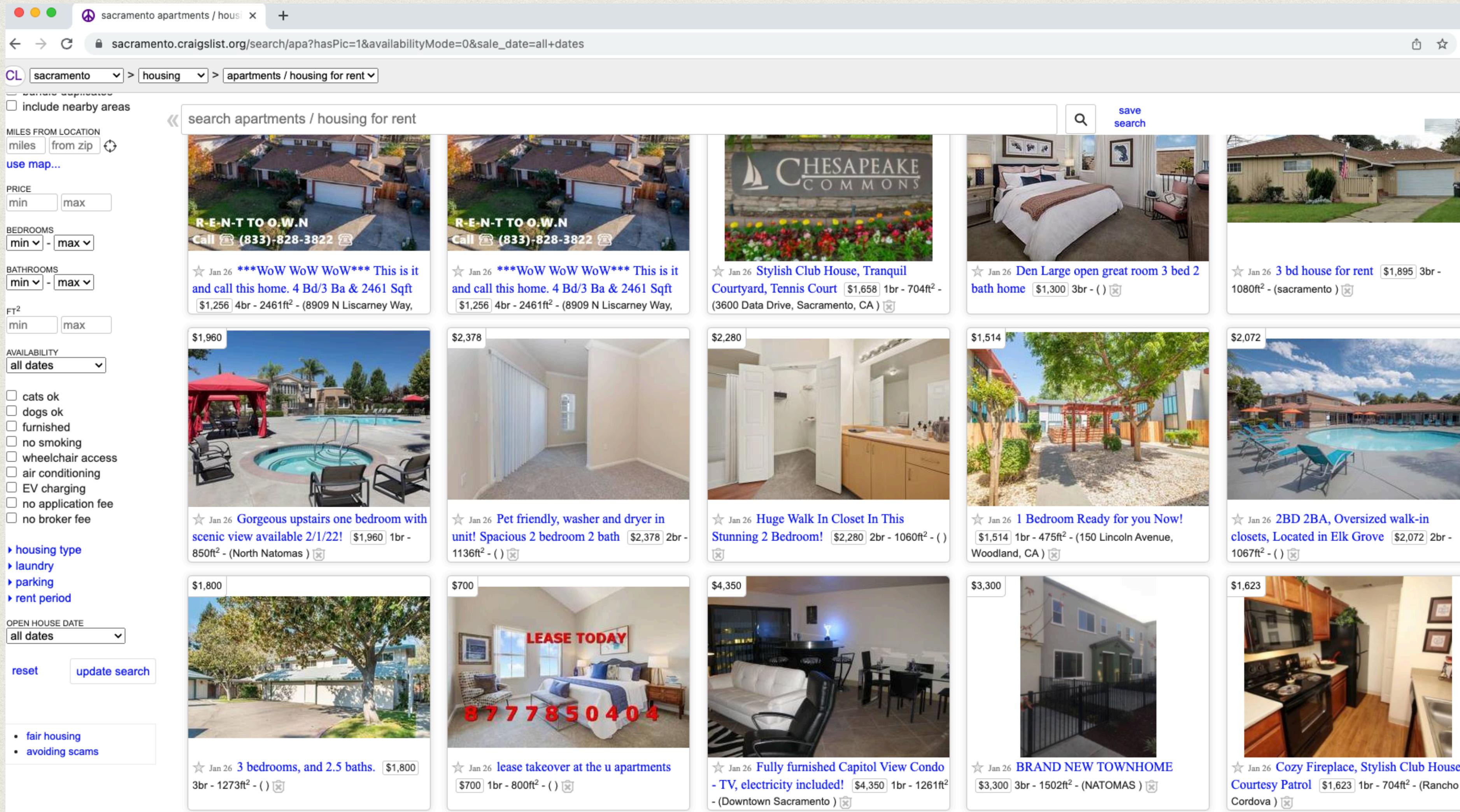
\$4,350

Fully furnished Capitol View Condo - TV, electricity included! \$4,350 1br - 1261ft² - (Downtown Sacramento)

BRAND NEW TOWNHOME \$3,300 3br - 1502ft² - (NATOMAS)

\$1,623

Cozy Fireplace, Stylish Club House, Courtesy Patrol \$1,623 1br - 704ft² - (Rancho Cordova)



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

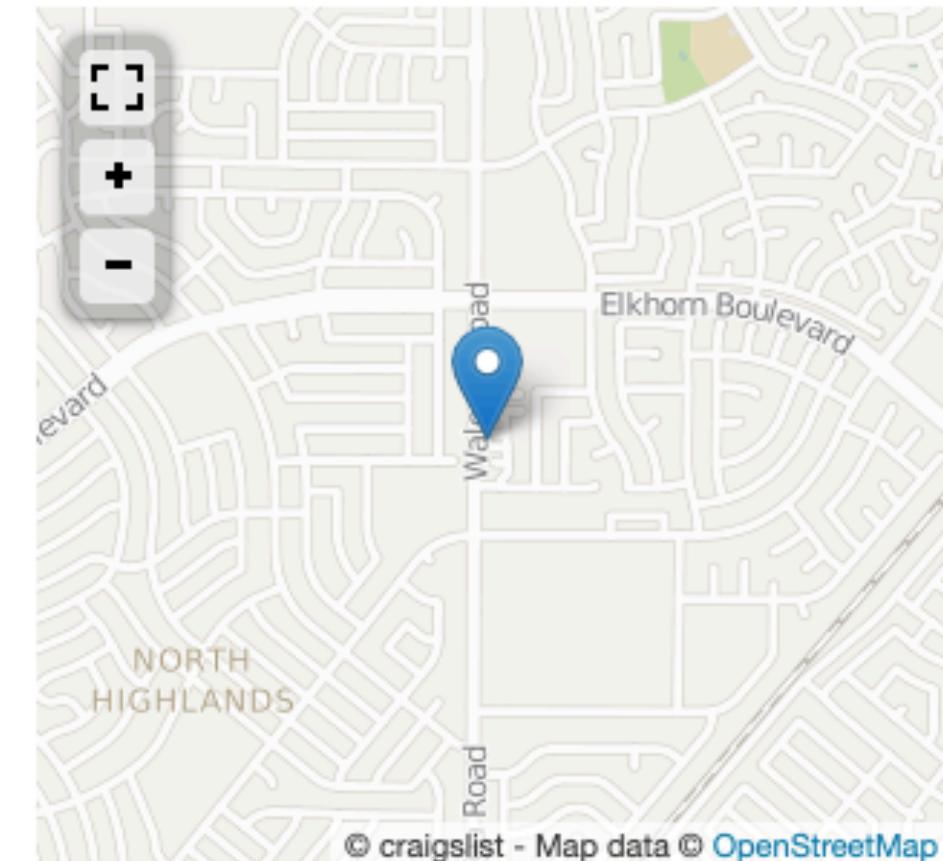
SCRAPE THE DATA

\$2,100 / 2br - 938ft² - 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 938ft² available jan 25

cats are OK - purrr

dogs are OK - woof

flooring: wood

apartment

w/d in unit

no smoking

carport

- 2,700 listings
- 12 Features

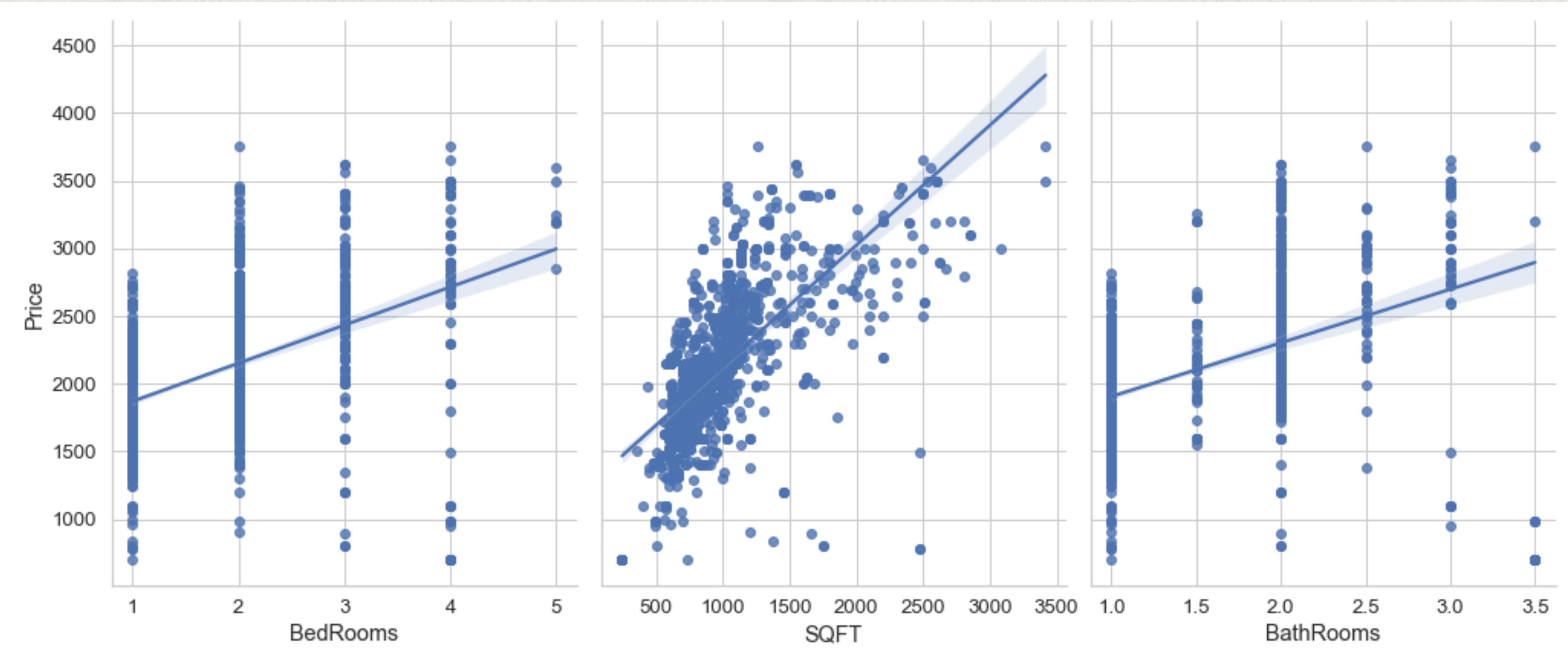
Tools

- BeautifulSoup
- Selenium
- Requests

EDA

- After EDA:

- 1,724 Listings & 9 Features

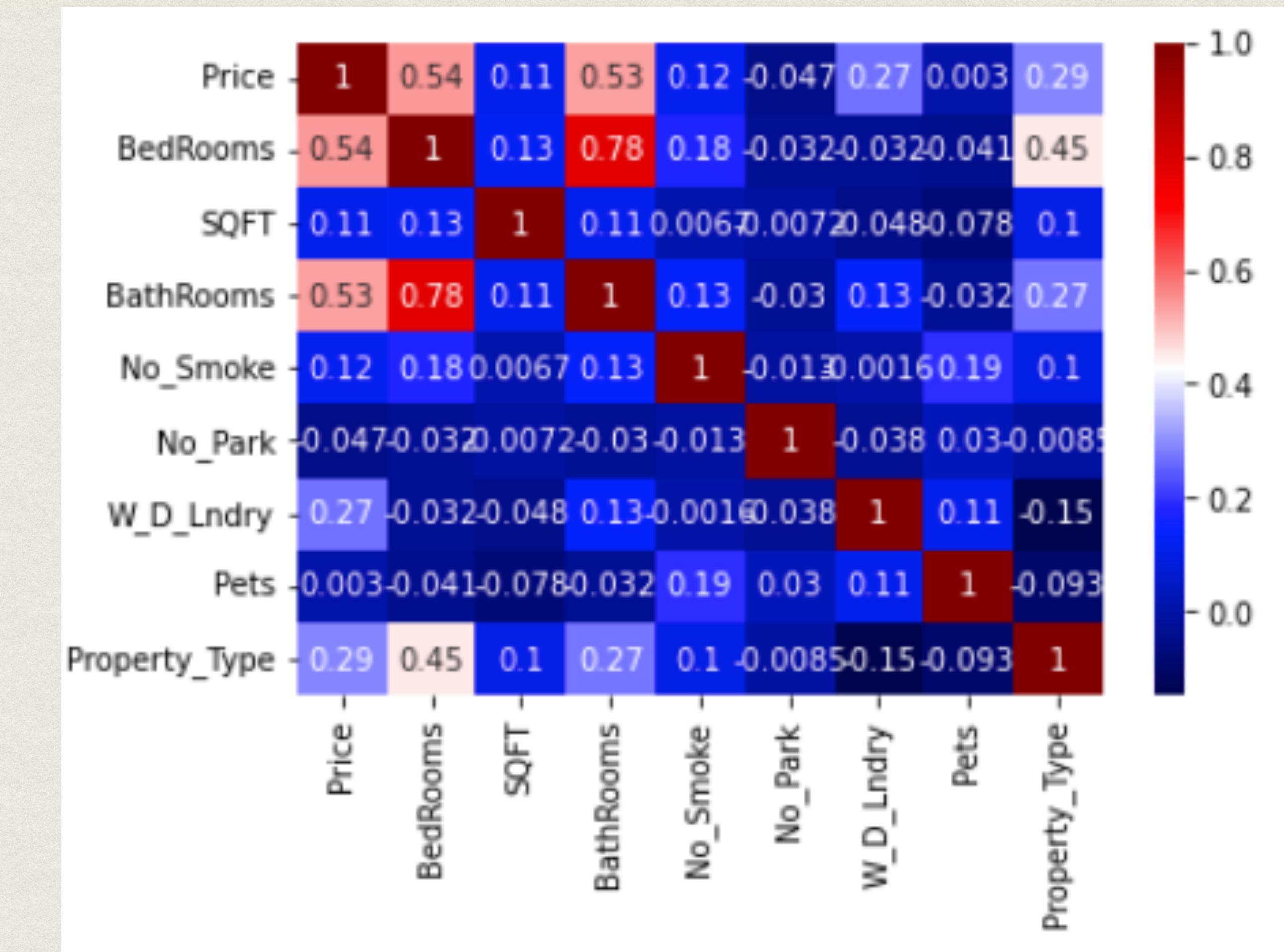


Tools

- Pandas & Numpy
- Matplotlib & Seaborn

MODEL SELECTION

- Feature Engineering
 - Dummy Variables
 - Interaction Terms
- Regularization



MODEL SELECTION

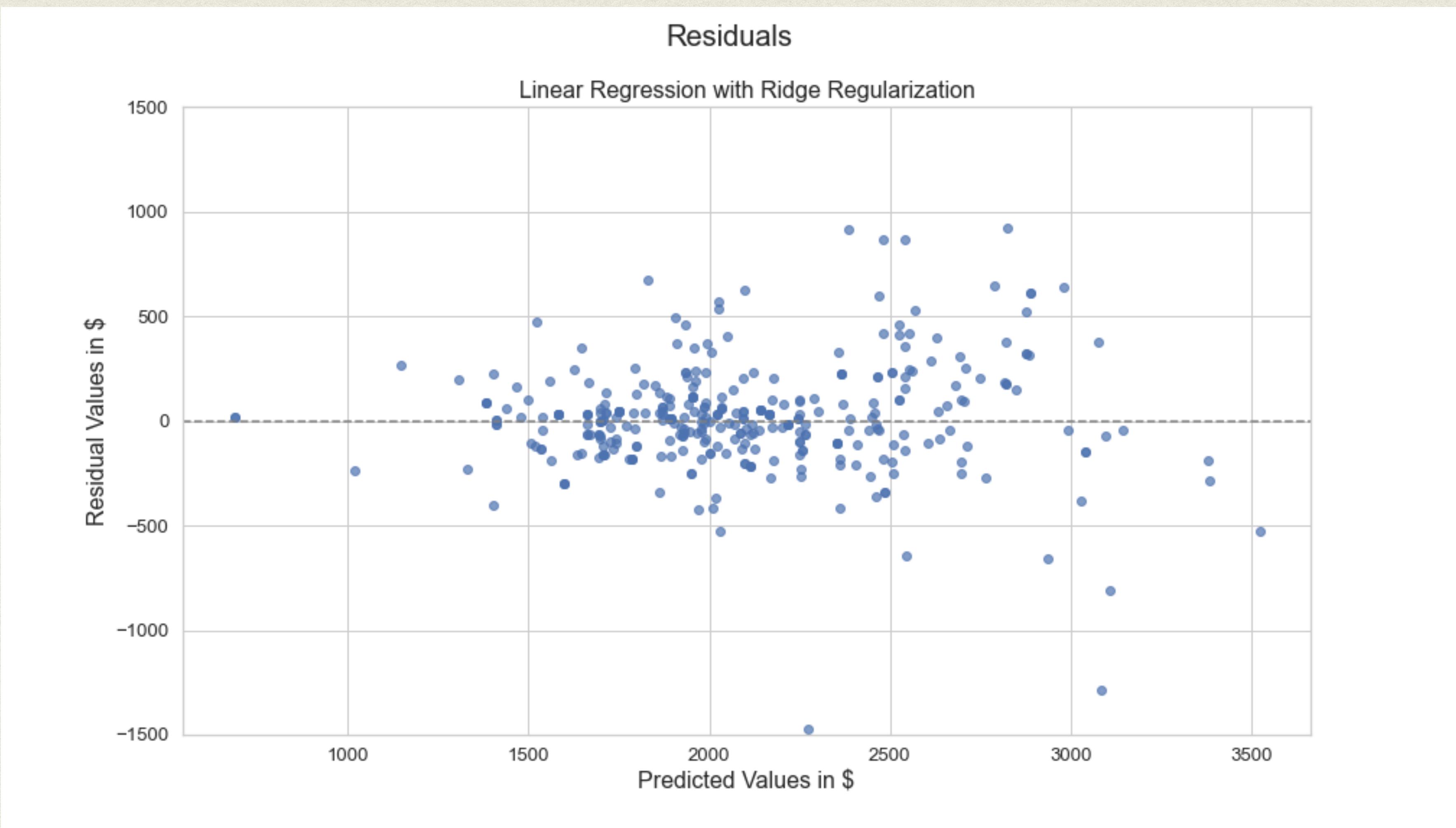
- Simple Linear Regression
- Ridge
- Lasso
- Polynomials

Tools

- Scikit-Learn
- StatsModel

RESIDUALS

- Lasso showed greater variance
- Ridge more consistent



MODEL FIT



| |
|--------------------------------|
| Ridge - training score: 0.7431 |
| Ridge - test score: 0.7521 |
| RMSE - training: 256.49 |
| RMSE - test: 256.54 |
| MAE - training: 169.55 |
| MAE - test: 169.67 |

FUTURE WORK

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