

The background of the slide features a photograph of a bright, modern living room. Large windows on the left provide a view of a city skyline with various buildings and trees. The room is furnished with a white sofa, a dark coffee table with some items on it, and a dining area with a white table and chairs. A large window on the right looks out onto a building with many windows, suggesting a dense urban environment.

# Cost of a Home in San Francisco

Sara Zong  
Jan 22<sup>nd</sup>, 2021

# Motivation:

San Francisco has attracted talent from all over the United States. Some may come and go, but there are many that love the city enough to consider buying a home and staying long-term.

- ◎ Is this a good time to buy a home?
- ◎ What type of property could we afford?
- ◎ Which neighborhood is the most affordable?
- ◎ What price should we offer?

# Motivation:

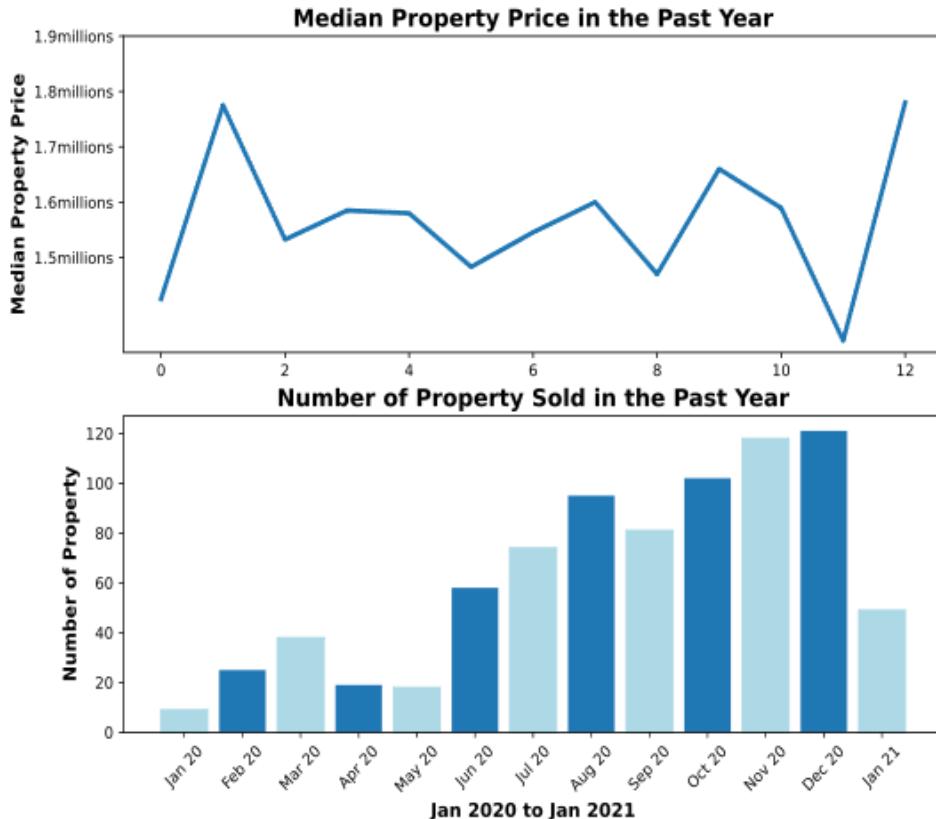
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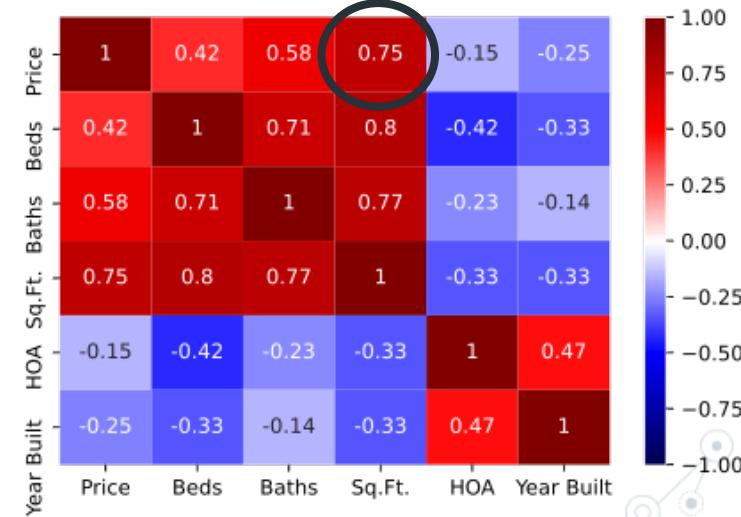
# Method:



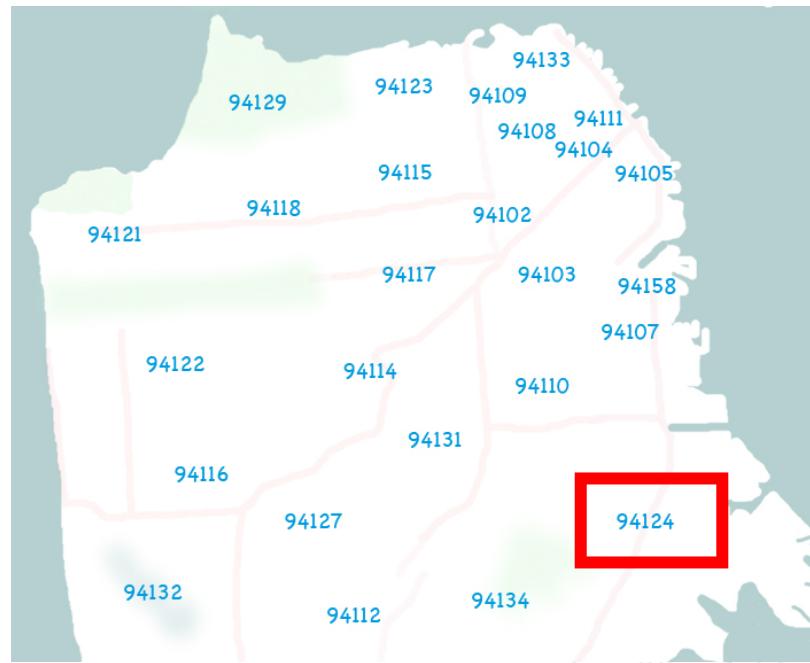
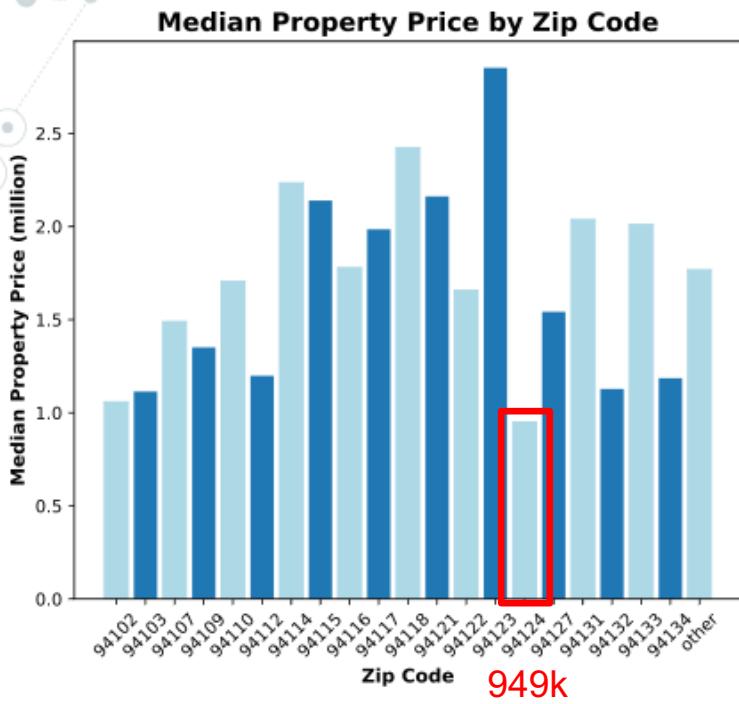
# Price stabilized in the past year



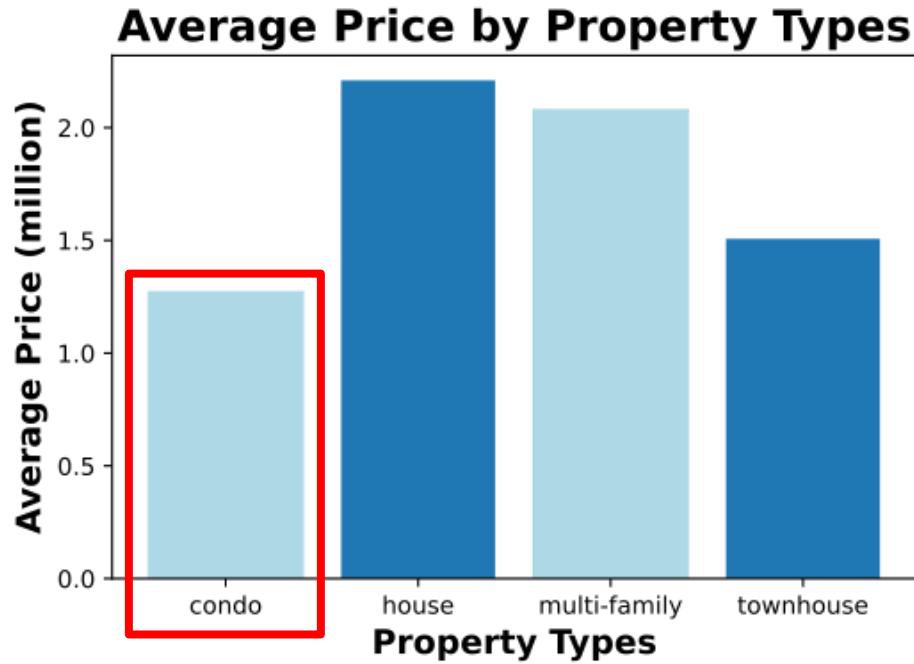
# Size of a property matters



# Some areas are more affordable than the others



# Condo is the most affordable option



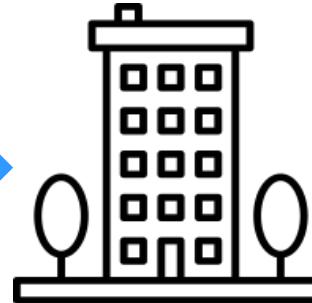
# Condo is the most affordable option



House



Townhouse



Condo

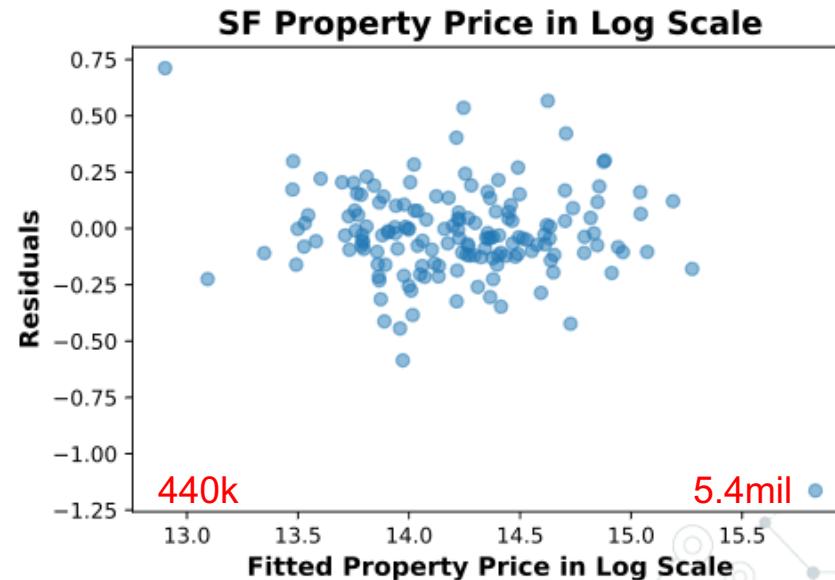


Multi-fam

# LASSO model seems to work okay across price range

$R^2 = 0.834$

$\exp(14.25) \approx 1.54\text{mil}$   
 $\exp(14) \approx 1.2\text{mil}$



# Conclusions:

- Now is a good time to start looking (stabilized price and historical low interest rate!)
- The type of property and location to consider depends on the budget and other factors, but most affordable: condo, Bay View neighborhood
- Unfortunately, price prediction is not very accurate (need more listings, more features)



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# Thanks!

Any questions?

# Appendix:

San Francisco Homes for Sale

Price No min to No max More Filters (2) ▾

Showing 31 of 2160 Homes · House, sold 1yr · Sort

Photos Table

SOLD BY REDFIN JAN 5, 2021 3D WALKTHROUGH

 \$1,200,000 637 Hamilton St San Francisco, CA 94134

\$/Sq. Ft. **\$840** Year Built **1951**  
On Redfin **18 days** Lot Size **3,400 Sq. Ft.**  
HOA **None** Status **Closed**

Address	Location	Price	Beds	Baths	Sq.Ft.	\$/Sq.Ft.	On Redfin
R 637 Hamilton St	Portola	\$1,200,000	4	2	1,428	\$840	18 days
R 817 Guerrero St	Eureka Valley	\$2,200,000	2	2	—	—	43 days
R 1583 46th Ave	Outer Sunset	\$1,250,000	3	2	—	—	52 days
R 4450 24th St	Noe Valley	\$1,760,000	3	2	1,550	\$1,135	191 days
R 1601 15th Ave	Golden Gate	\$2,150,000	4	4	3,315	\$649	284 days
R 195 Dalewood ...	San Francisco	\$1,575,000	3	2	1,503	\$1,048	3 days
R 9 Rosemary Ct	Parkside	\$2,035,000	0	—	0	—	24 days
R 536 Panorama ...	Midtown Ter.	\$1,675,000	3	3	1,934	\$866	85 days

## Features for 806 listings:

- Beds
- Baths
- Size(Sq.Ft.)
- HOA
- Year Built
- Property Type(4 categories)
- Zip Codes(21 categories)

# Appendix: Coefficient from LASSO

<u>Features Table 1:</u>	<u>Coef:</u>	<u>Features Table2:</u>	<u>Coef:</u>	<u>Features Table2:</u>	<u>Coef:</u>
House (Prop Type)	0.117	94112 (zip code)	-0.073	94110 (zip code)	—
Multi-fam (Prop Type)	-0.029	94124 (zip code)	-0.072	94131 (zip code)	—
Townhouse (Prop Type)	0.019	94132 (zip code)	-0.042	94107 (zip code)	0.0028
Beds	-0.017	94134 (zip code)	-0.038	94133 (zip code)	0.016
Baths	0.046	94121 (zip code)	-0.014	94118 (zip code)	0.021
HOA	0.041	94122 (zip code)	-0.014	94117 (zip code)	0.023
Log Sq.Ft.	0.36	94116 (zip code)	-0.012	94114 (zip code)	0.028
Property Age	0.017	94103 (zip code)	-0.0093	94115 (zip code)	0.029
		94127 (zip code)	-0.0088	94123 (zip code)	0.047
		94109 (zip code)	—	other (zip codes)	0.017

# Credits:

- [www.redfin.com](http://www.redfin.com)
- [www.slidescarnival.com](http://slidescarnival.com)
- <https://en.wikipedia.org/wiki/Scikit-learn>
- <https://medium.com/cs-note/web-crawling-by-using-selenium-python-3-4fff0bdb4c65>
- <https://missionlocal.org/san-francisco-restaurant-health-inspections/>
- <https://therealdeal.com/tristate/2020/04/01/greenwich-mansion-with-loads-of-privacy-seeks-10m/>