

## Discussion:

Everything discussed here is based on our domain(California's data).

Population's effect on housing prices :

From the relation "PopulationHousingAvg", it can be seen that on average, the counties with properties sold at higher prices have a higher population density. Although this is not always true, the general trends seen from this table is what was expected. This is because population leads to a higher demand for housing, thus there's more competition in real estate and in turn, people will pay a premium to get their place of interest.

Crime rate's effect on housing prices:

From the relation "AvgCrimeHousing", it does not have a clear linear relationship like the relation comparing population density and house prices. However, note how the most expensive ones have a lot of property crimes. This is probably because there are more thieves interested in more expensive homes, which is not very surprising. I was expecting the crime rates in more expensive houses to be lower, mainly because those neighborhoods probably have more to spend on public security. But then again, according to the previous relation, those homes are also located in places with higher population density, so it makes sense to have higher crime rates compared to sparsely-populated areas.

From the relation comparing the law enforcement workers with the housing prices, the distribution of total workers is aligned with the violent crime rates in the AvgCrimeHousing relation. We can see that there is definitely a bigger focus on violent crime rates and property crime rates from the counties with the highest housing prices. Looking at the tuple with 1.2 million as the average house price, it has an average of 4117.45 property crimes and 488.8 violent crimes over a year with 811 enforcement workers. Whereas the 400k counties had an average total of 1686 enforcement workers with .623.93 violent crimes and 2422.77 property crimes. We see that violent crimes make bigger impacts on the number of law enforcement employees.

Air quality's effect on housing prices:

From the queries relating the county's housing price and air quality, we can see from the results of queries with labels "AirQuality 5" and "AirQuality 3" that none of the 5 best air quality counties has top house prices. However the avgAQI of counties that have expensive houses are a bit below the average AQI for the whole California state. So probably air quality is one reason that affects the house prices but it's not the most important reason, and people choose to live in places with better air quality.