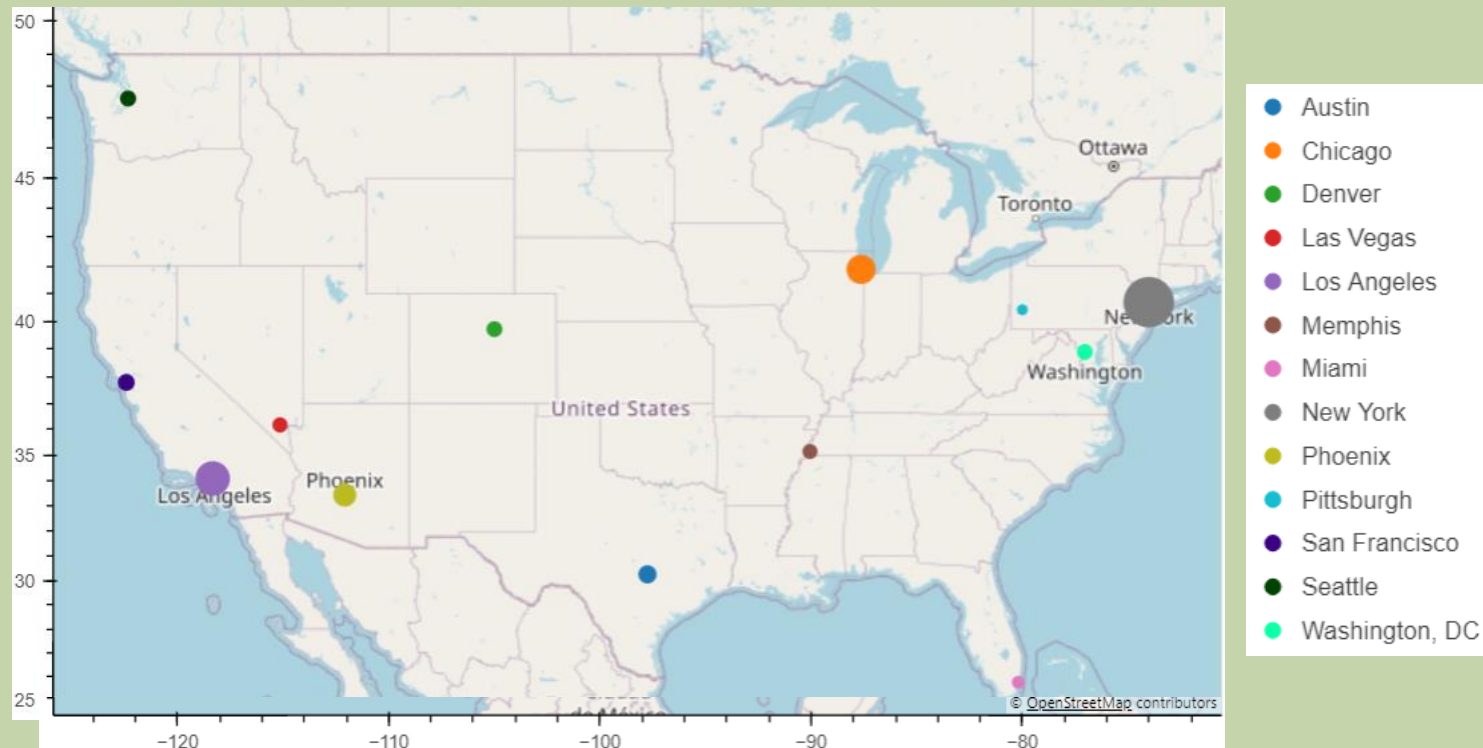


URBAN REAL ESTATE INVESTING, U.S.

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Rebekah Aldrich, Tait Ralston

ABOUT US

We focus on real estate investing strategies within the US looking at trends across property value, property sales, population sizes, job markets, crime, schools, and other factors our clients find key to their situation



MEET OUR CLIENT



BIO

Couple in early 50s with 2 fully independent children located in suburbia Tampa, FL.

Looking to invest remotely in urban/suburban properties as another source of income. As beginners, they want to focus on starter family housing and have asked us to recommend where to focus in the US.

KEY CARE ABOUTS

- Housing up to 1500 sq. ft.
- Housing up to 3 bedrooms
- Homes, Townhomes, Condos
- Evidence of population growth
- Evidence of property value growth
- Evidence rental prices competitive to mortgage

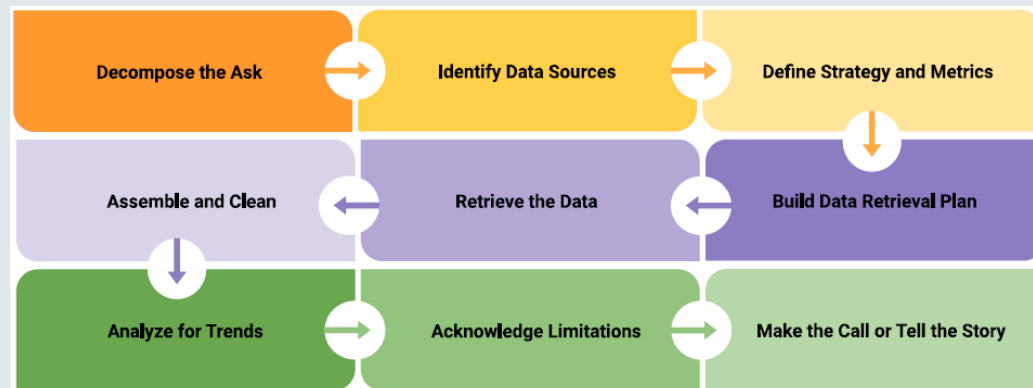
TARGET CITIES

Austin, Chicago, Denver, Memphis, New York, San Francisco

OTHER CONSIDERATIONS

- Good school districts
- Low crime rates
- Positive job market

PROCESS: SCHOOL NOTEBOOK DEMO



```

# Dependencies
import os
import csv
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
  
```

```

# Read in files for each state
  
```

```

# Austin, TX 2019-2021 Grad Rate Data
austin_grad_df = pd.read_csv("resources/
# Extract the 'DIST_ALLR_GRAD' (District
austin_grad_df = austin_grad_df.fillna(0)
  
```

```

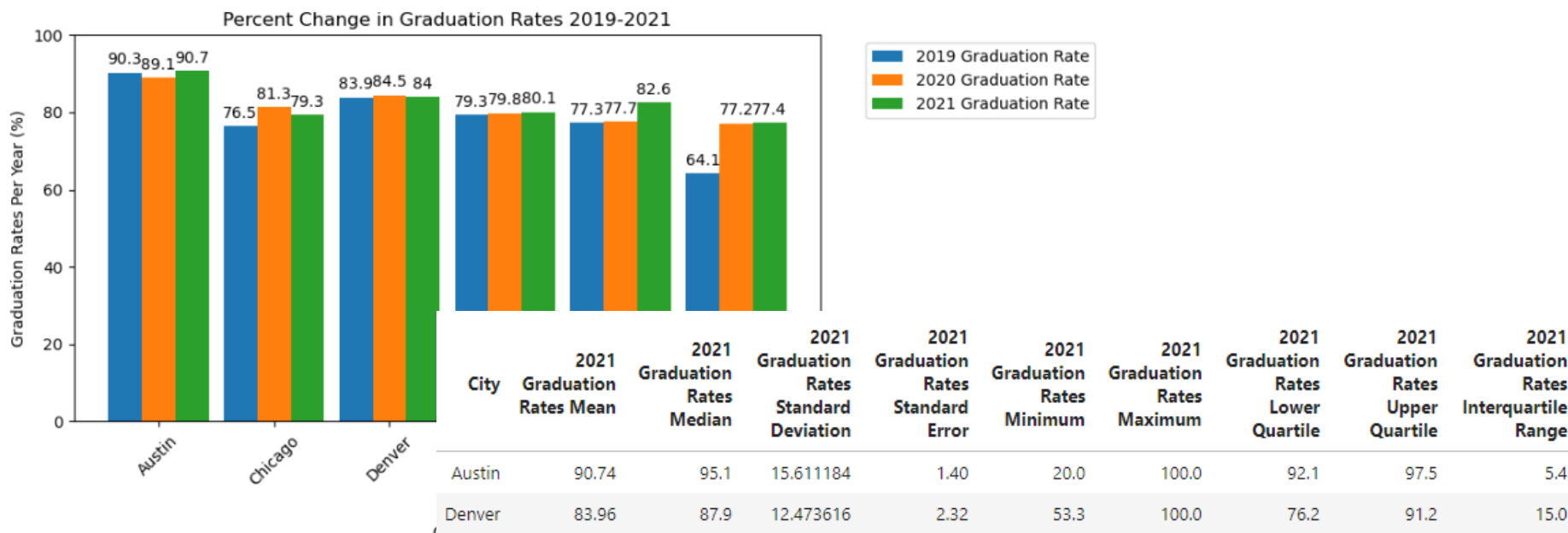
# Create separate variables for each column
austin_2019_grad_rate = austin_grad_df['
austin_2020_grad_rate = austin_grad_df['
austin_2021_grad_rate = austin_grad_df['
  
```

```

# Calculate mean graduation rate for each city
mean_austin_19 = austin_2019_grad_rate.mean()
mean_austin_20 = austin_2020_grad_rate.mean()
mean_austin_21 = austin_2021_grad_rate.mean()
  
```

```

print("From this visual we can see Austin and Denver have the highest graduation rates out of the six cities")
  
```



From this visual we can see Austin and Denver have the highest graduation rates out of the six cities

DATA SOURCES



POPULATION GROWTH



[Census Data API](#)

[Census Data Wrapper](#)

Used Census dependency within Jupyter Notebook. Limited dataset due to 2022 Census information being unavailable.

PROFITABILITY

[Census Python API](#)

Monthly vs. Annual data sets
Unable to limit scope for desired homes

CRIME

[Austin](#), [Chicago](#), [Denver](#), [Memphis](#), [New York City](#), [San Francisco](#)



Official city government data is incredibly helpful, however large file sizes and not every city has the same level of organization

PROPERTY VALUES

<https://www.attomdata.com/>

Used API to show house/sales in our 6 cities created Data Frames for each city Combined all cities the graph sales date by price

SCHOOLS

[Austin](#), [Chicago](#), [Denver](#), [Memphis](#), [New York City](#), [San Francisco](#)

Very descriptive education/school from each city/state found. Had to par down some of the files before importing due to spreadsheet complexity.

JOB MARKET

[U.S. Bureau of Labor Statistics API](#)

Free registration highly recommended
Good [documentation](#) on potential calls
Inconsistent granularity on location level

APPROACH HIGHLIGHTS & LESSONS LEARNED

ANALYSIS DETAILS

WORKING WITH REPORTED RATES

Collected data

Minor data cleaning

View trend over time with line chart

Use trend lines when “messy”

Use ANOVA, T tests to verify differences

WORKING WITH REPORTED VALUES

Collected data

Cleaned data

Calculate key care abouts (e.g. mean, change rates)

Charted means

Calculated statistics to better understand population (e.g. standard deviations / quartiles)

LESSONS LEARNED

KNOW YOUR LIMITS

How messy is data source

Inconsistent reporting

Timeliness of outside communication

Git capability

FREE DATA LIMITATIONS

Free API call restrictions

Inconsistent timeline availability

What is available? (e.g. graduation rate vs. school rating)

Maxing out our API call limit

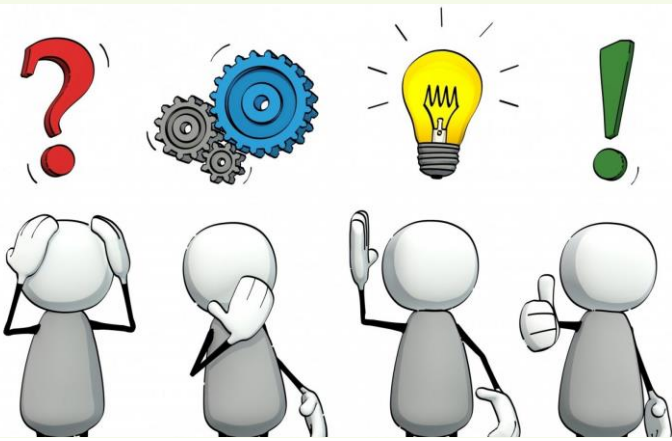
HOW DID WE REACT?

Leverage each other on time/qty limits

Shifted timelines but kept same length

Reduced target cities

Reduced crime scope (property specific)

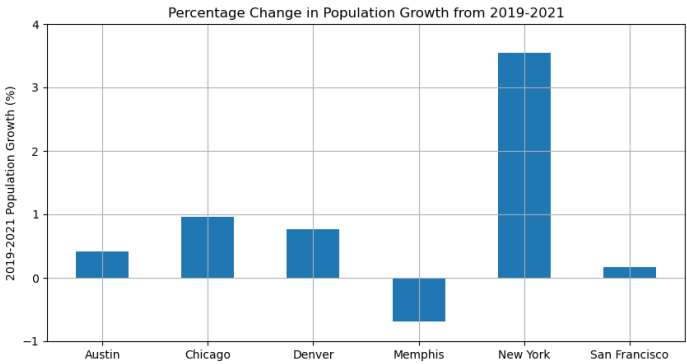




FINAL RECOMMENDATION: DENVER, CO

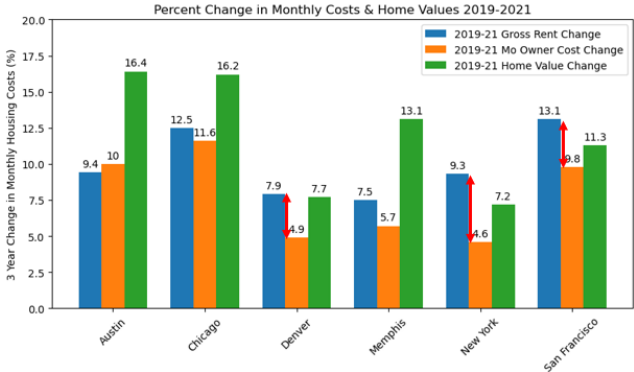
POPULATION GROWTH

Third in population growth



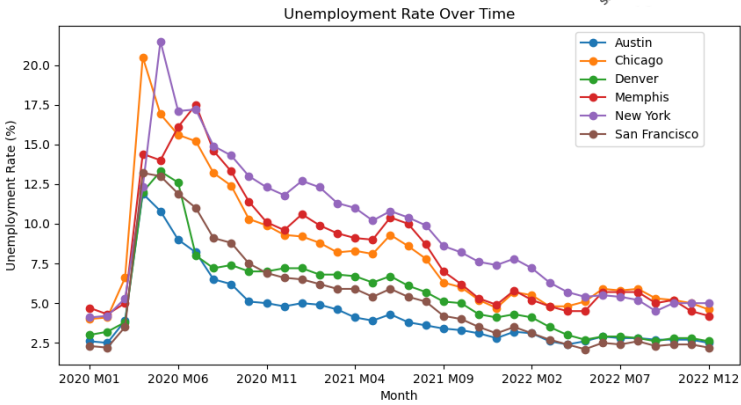
PROFITABILITY

Third in potential profitability growth



ATTRACTIVE

Top in job market
Maybe Top in Crime Rate
Second in graduation rates





NEXT STEPS



Once have reduced target cities, further dive into specific location details(e.g. city vs. suburb; zip codes; specific schools)

Clarify Profitability

- Find mortgage + property tax costs to compare to rental for target housing
- Average time to re-coup investment money
- Long term vs. short term rental

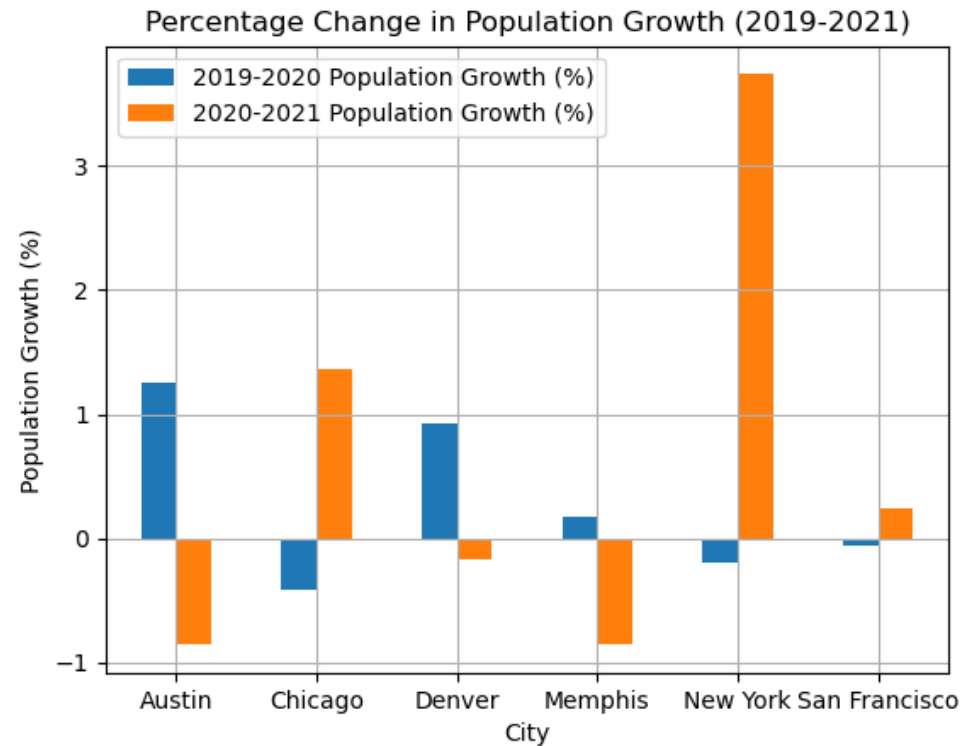
Clarify attractiveness

- Pull property crime rate out from overall crime rate
- School performance on standardized test results

ADDITIONAL SUPPORTING ANALYSIS

POPULATION ANALYSIS BY GROWTH PERCENTAGES

Sources: [Census Data Wrapper](#), [Census Data API](#)

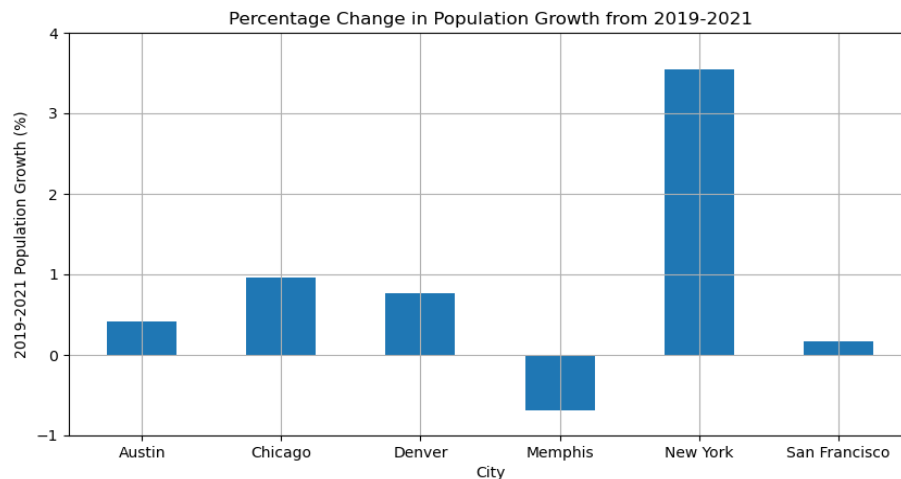


NEW YORK CITY

Shows the highest overall population growth for the years analyzed.

CHICAGO, DENVER, AUSTIN, SAN FRANCISCO

All show overall population growth in the same timeframe.

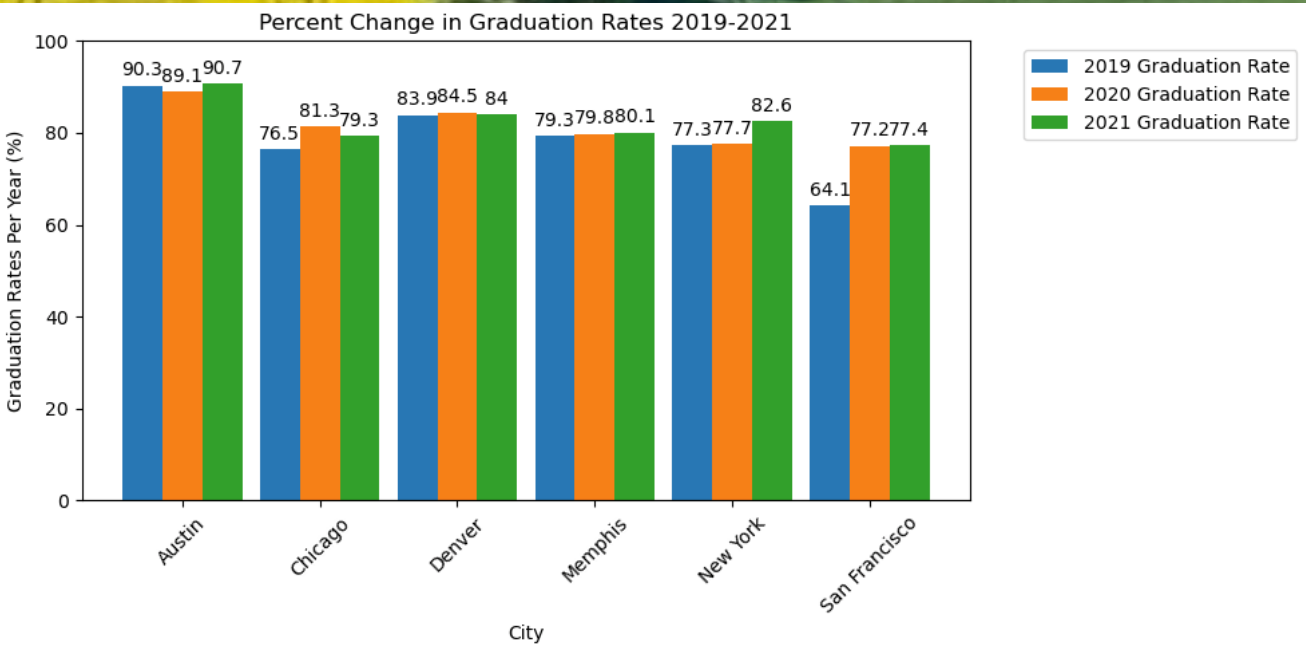


MEMPHIS

Shows an overall decrease in population size for the years analyzed.

SCHOOL ANALYSIS BY GRADUATION RATE PERCENTAGES

Sources: [Austin](#), [Chicago](#), [Denver](#), [Memphis](#), [New York City](#), [San Francisco](#)



AUSTIN, DENVER

Show the best overall graduation rates in their schools for the analyzed years. The middle 50% of Austin schools have a graduation rate between 92.1 and 97.5. The middle 50% of Denver schools have a graduation rate between 76.2 and 91.2.

SAN FRANCISCO

Show the greatest improvement in graduation rate percentage over the 3 years analyzed compared to the other cities.

CHICAGO, DENVER

Show a decrease in graduation rate from the 2020 to 2021 school years.

City	2021 Graduation Rates Mean	2021 Graduation Rates Median	2021 Graduation Rates Standard Deviation	2021 Graduation Rates Standard Error	2021 Graduation Rates Minimum	2021 Graduation Rates Maximum	2021 Graduation Rates Lower Quartile	2021 Graduation Rates Upper Quartile	2021 Graduation Rates Interquartile Range
Austin	90.74	95.1	15.611184	1.40	20.0	100.0	92.1	97.5	5.4
Denver	83.96	87.9	12.473616	2.32	53.3	100.0	76.2	91.2	15.0

ANALYSIS OF CRIME IN CITIES

Sources: [Austin](#), [Chicago](#), [Denver](#), [Memphis](#), [New York City](#), [San Francisco](#)

DENVER, AUSTIN

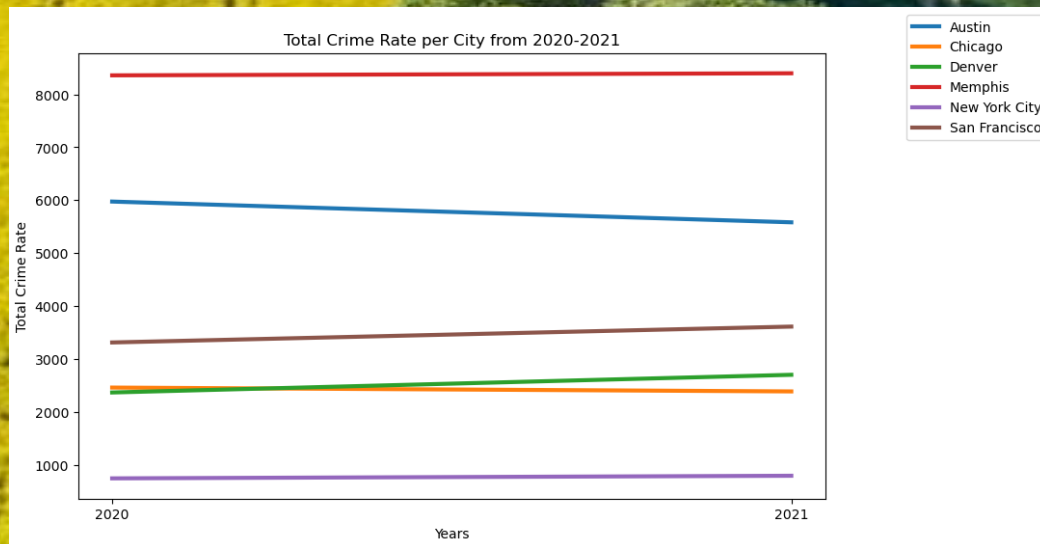
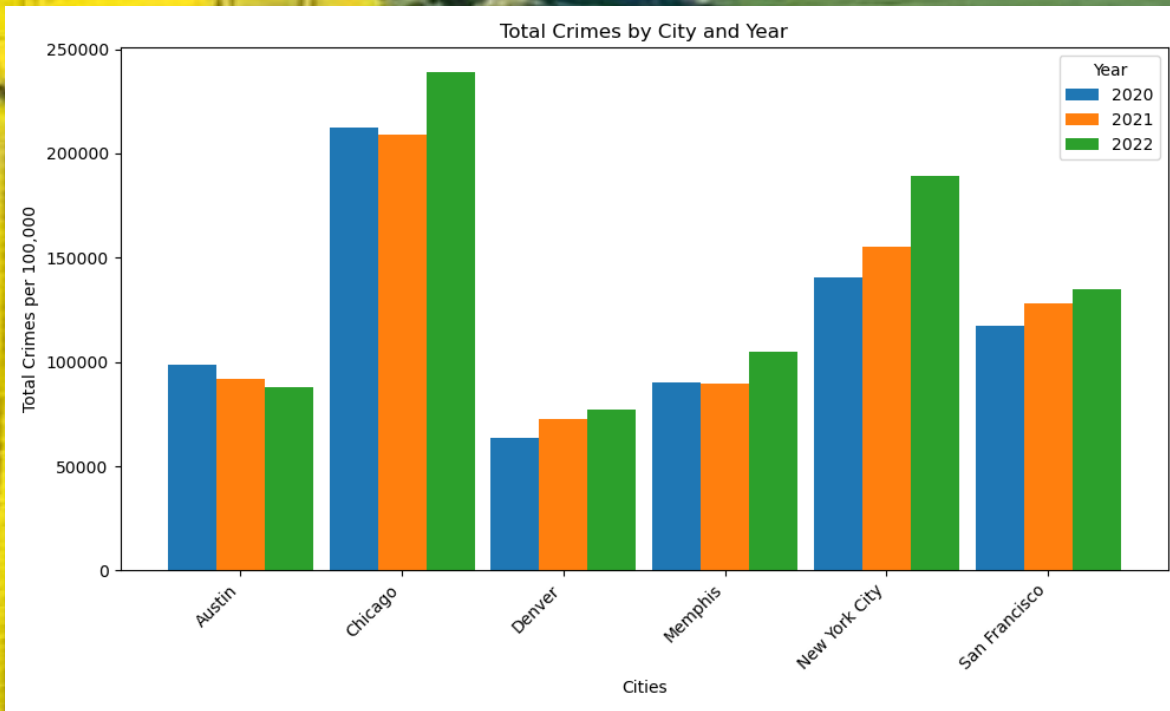
The two lowest in terms of overall amount of crime. Denver, however, is showing an increase in the amount of crime over the years, whereas Austin is decreasing.

MEMPHIS, SAN FRANCISCO

Both cities are more in the middle when it comes to crime, but both show increases to crime more steeply.

CHICAGO, NEW YORK CITY

The highest amount of crime of all cities. Both show incredible amounts and increases between years.



JOB MARKET TRENDS

Source: [U.S. Bureau of Labor Statistics](https://www.bls.gov)

DENVER, COLORADO

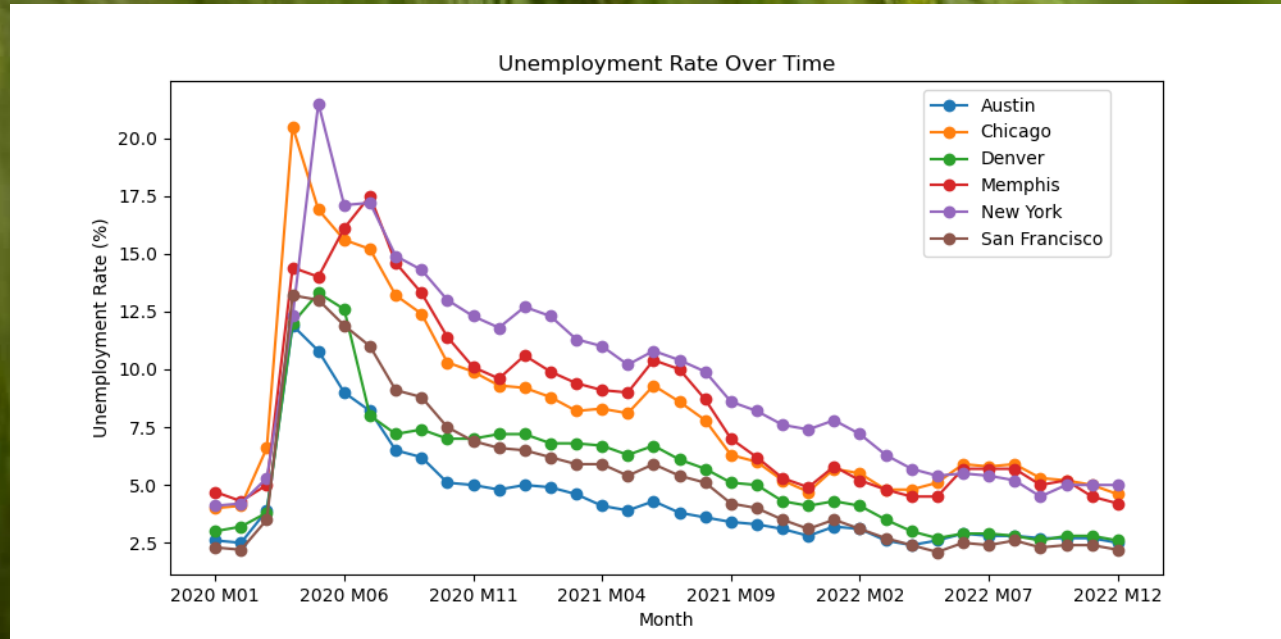
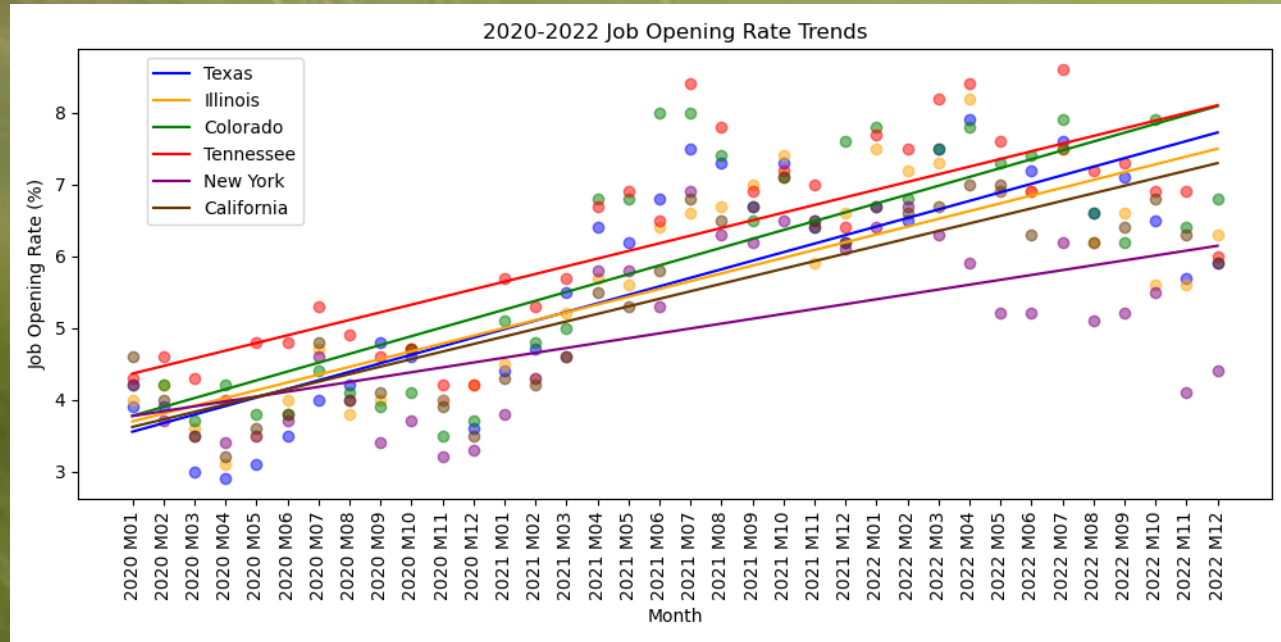
Has the best overall job trend helping attract more people to the area compared to other target cities

COLORADO, TENNESSEE, TEXAS

Have the highest job opening rate trends of the target states.

SAN FRANCISCO, (AUSTIN, DENVER)

Have the lowest unemployment rates of the target cities.



PROFITABILITY GROWTH

Source: [Census Python API](#)

SAN FRANCISCO (CHICAGO, DENVER)

Considering rental pricing, mortgage, and home value growth, San Francisco is the most well-rounded performer out of the target cities. Chicago and Denver are runner ups.

CHICAGO, SAN FRANCISCO

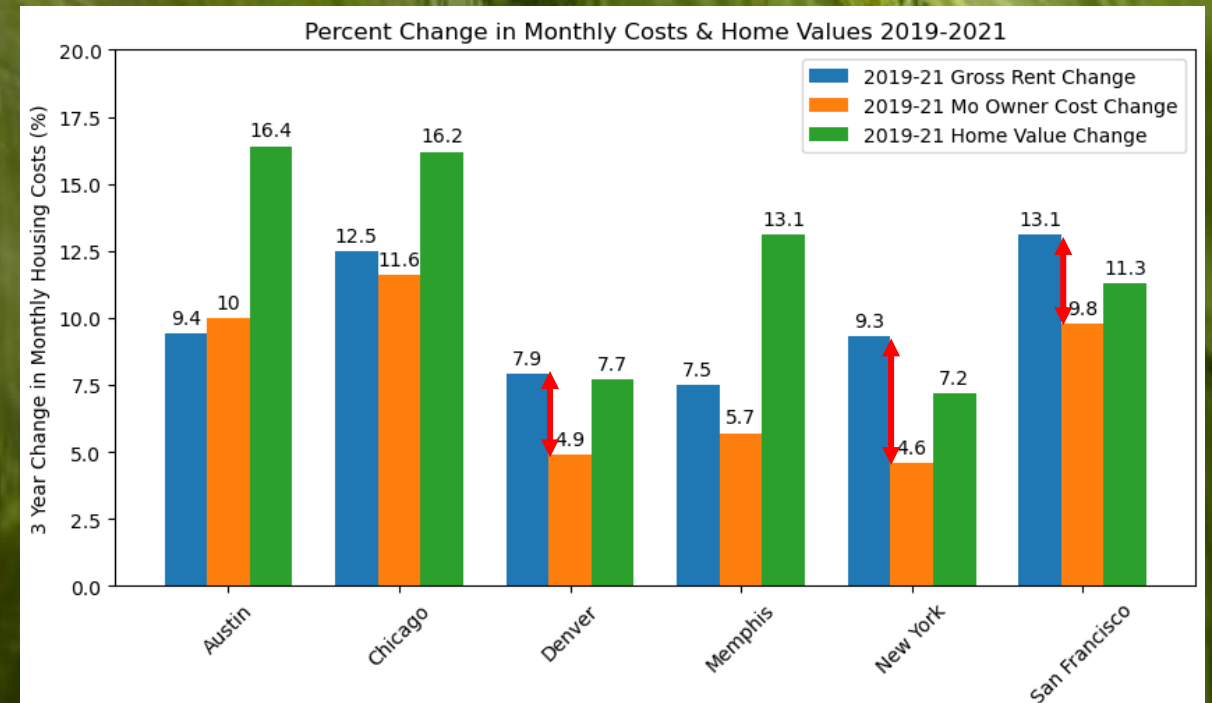
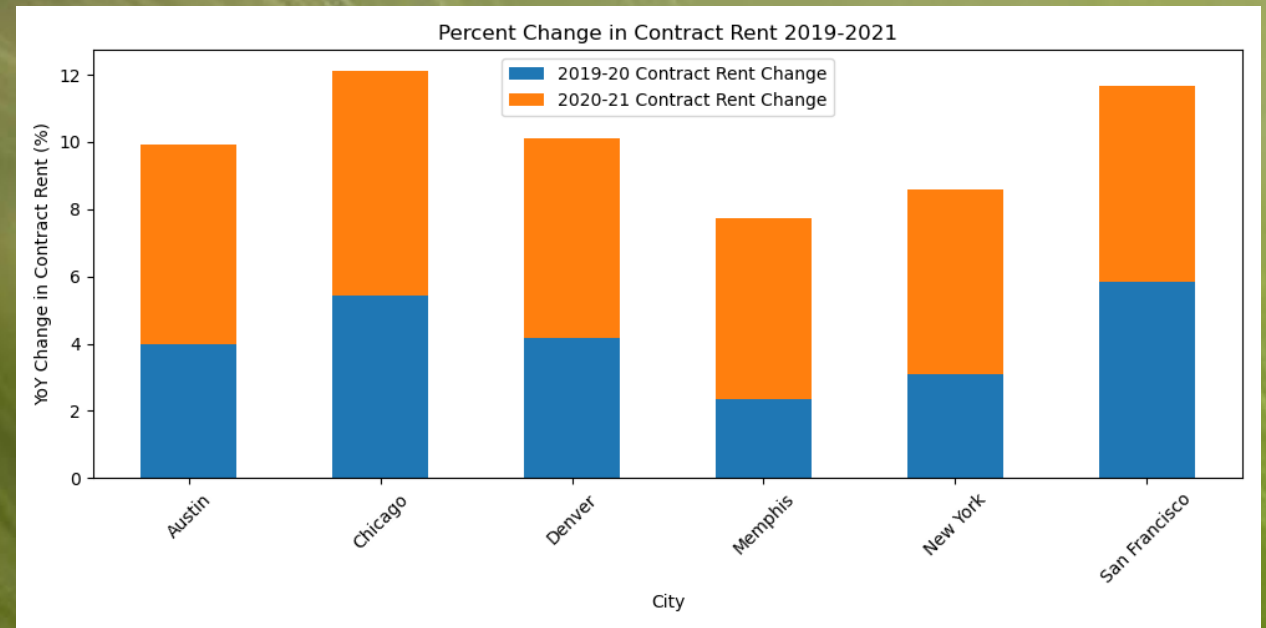
Show the most growth in rental prices with Austin and Denver in the next grouping.

NEW YORK, SAN FRANCISCO, DENVER

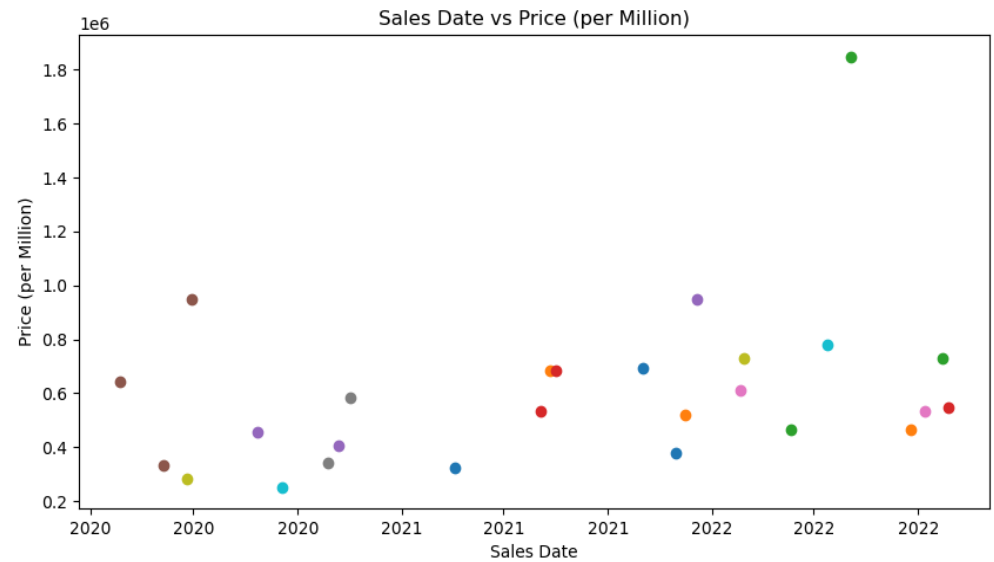
Show rental costs outpacing mortgage costs more than others with New York being the strongest.

AUSTIN, CHICAGO

Show the most growth in home value with Memphis & San Francisco in the next highest grouping.



STARTER HOME SALES TRENDS



SALES TRENDS

This chart shows the recent sales of house within our 6 cities, the houses also meet these parameters 1-3 bedrooms, square foot max of 1500 sq. ft, and zoned residential with sales in a range from 1/1/2020-12/31/2022. We Got No results for Denver, Memphis, New York, and San Francisco.



HOUSES AVAILABLE TO BUY

A Chart was not able to be made because there were no houses available in any of the 6 cities that we searched and also met these parameters, are houses with 1-3 bedrooms, square foot max of 1500sq. ft. , and zoned residential.