

Group 2

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Project Overview





We developed an interactive dashboard that presents a comparative analysis of home prices against the national average, home price appreciation relative to population growth, and affordability by state map.

The dashboard incorporates a dropdown menu allowing users to select specific states for analysis, thereby enabling the identification and highlighting of housing trends across the United States.



Purpose

- Buying and selling homes
 - Understand local real estate market
 - Use information to negotiation when buying or selling houses
 - Gain insights into demand for housing vs supply leading to higher prices
- Investing in real estate
 - Investors can identify areas with high growth potential
- Economic development
 - Identify expensive/low cost areas
 - Attract business / plan for affordable housing



Methodology: Data Sources and Project Characteristics





Data Sources

- Geojson map
 - <https://eric.clst.org/tech/usgeojson/>
- Plotly Map JS code
 - <https://plotly.com/javascript/line-and-scatter/>
- CSV to JSON Converter
 - <https://www.convertcsv.com/csv-to-json.htm>
- National Home Value Data
 - FRED: <https://fred.stlouisfed.org/series/MSPUS>
 - CSV
- Census Data
 - <https://www.census.gov/data/tables/time-series/dec/pop-change-data-text.html>
 - CSV



Project Characteristics

- Languages
 - HTML
 - Javascript
 - SQL
- Programs
 - VS Code
- Web Framework
 - Python Flask



Assumptions and Limitations / Challenges





Assumptions & Limitations

These maps display affordability without considering:

- Credit History
- Capital (presented at time of purchase)
 - Such as assets presented at any level i.e. per capita, county, or state level
- Nor Conditions
 - Characteristics of the latter include, but are not limited to :
 - Loan Amount
 - Interest Rate
 - Loan Term
 - These are important as they impact the lender's decision to approve the loan and impact the borrower's ability to make payments over time.
- Though our work considers Income per state, it does not consider Debt which in turn affects Debt-to-Income ratio, a key aspect under "Capacity" which helps Banking Institutions determine a borrower's ability to repay the loan.
- The basis of our work relies on Income per State (DTI) and Home Values which is considered under Collateral.



Challenges

- Getting the data to read CSV files (JS does not love CSV)
- Once we got CSV read the function would not work between states
- Converting CSV files into JSON files
- Hard Code tweaking JSON files to be read appropriately after converting
- ...AND time we initially wanted to include individual counties and not just states as well as monthly comparisons instead of just yearly

Interactive Dashboard

- Interactive Dashboard: Features and Functionality
- Visualizations

Dashboard

State Housing Information

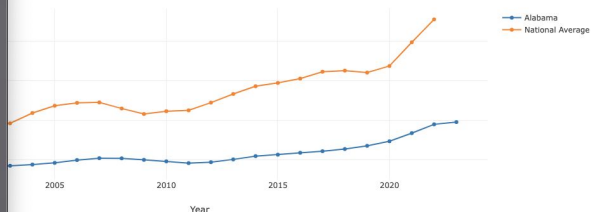
Use the interactive charts below to explore the dataset

State

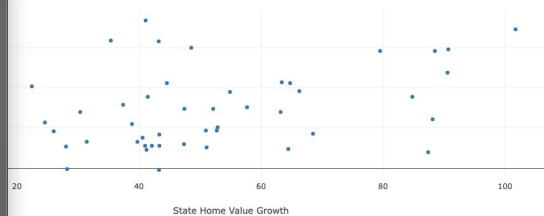
Home Affordability Map

- ✓ Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Rhode Island
- South Carolina
- South Dakota
- Tennessee

2000-2023 Average Housing Prices Per Year



2010-2020 State Home Value Growth vs State Population Growth

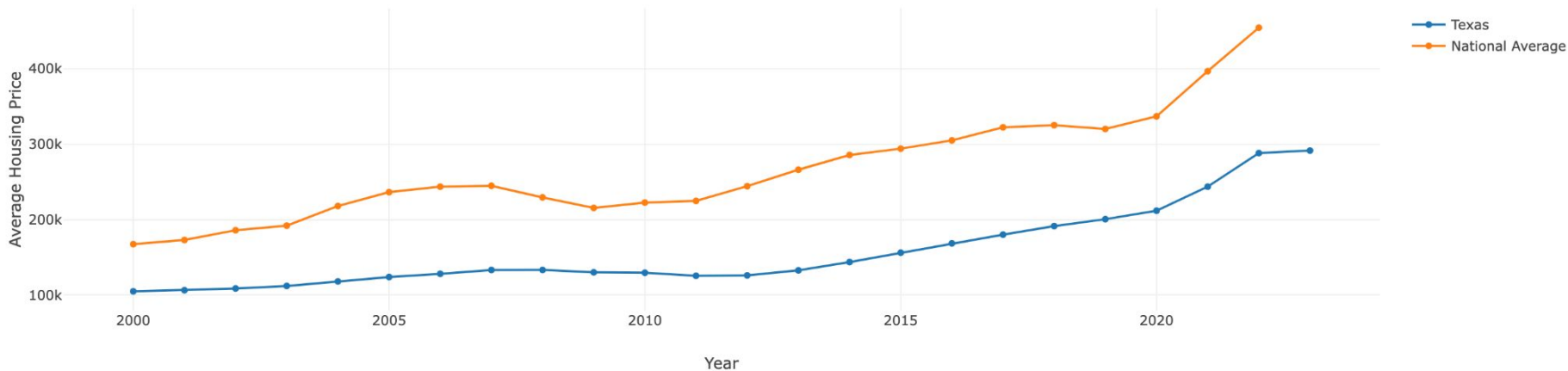


Visualizations

- Selecting States and Highlighting Trends
- Home Price Appreciation vs. Population Growth
- Affordability by State Map

Selecting States and Highlighting Trends

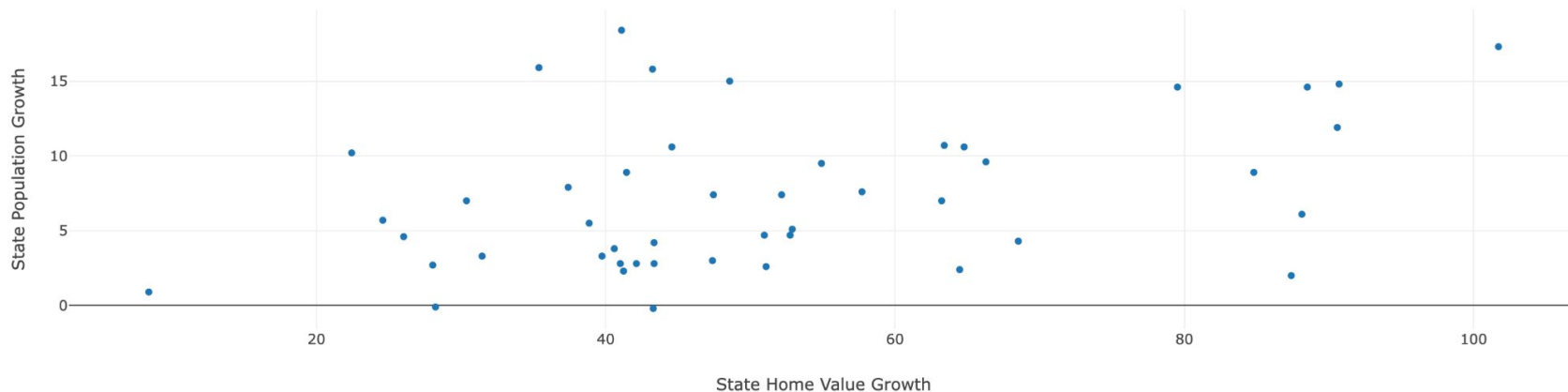
2000-2023 Average Housing Prices Per Year



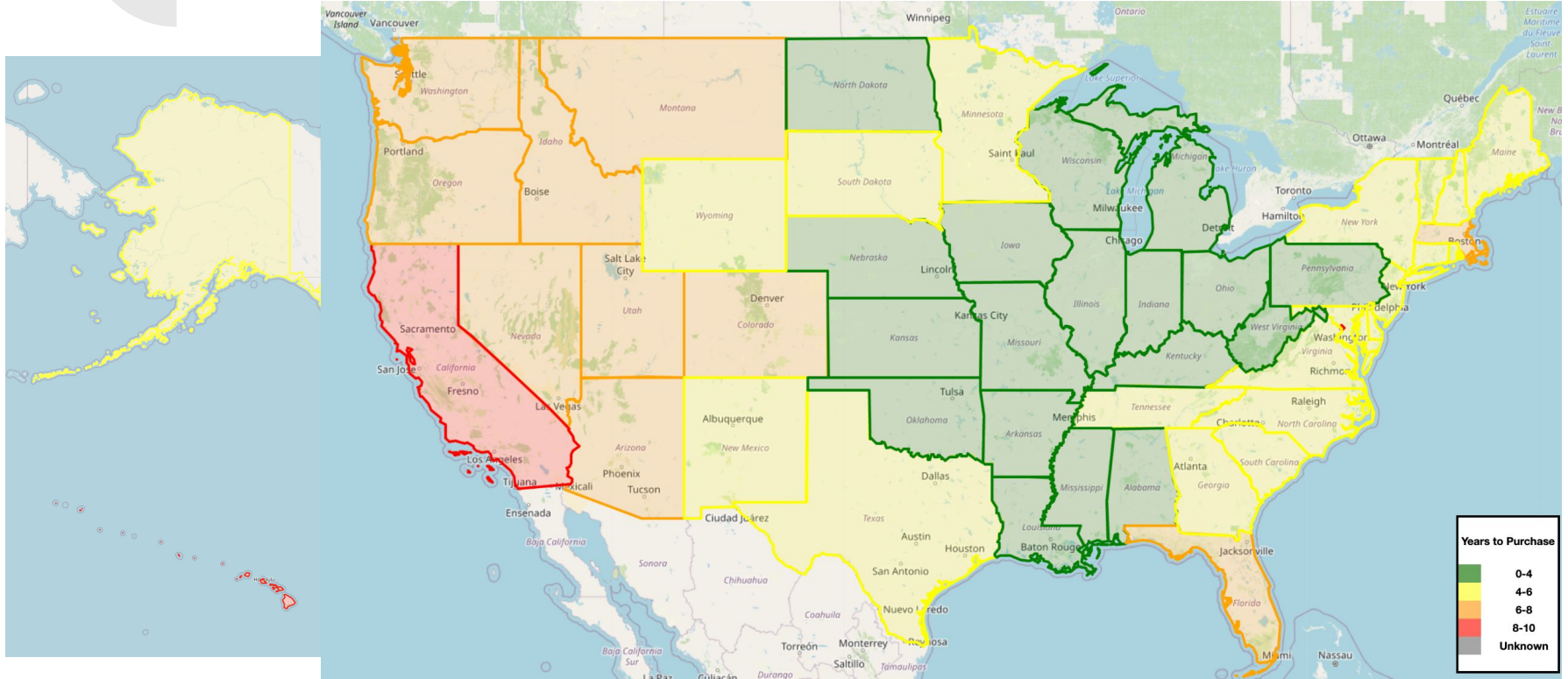


Home Value Growth v State Population Growth

2010-2020 State Home Value Growth vs State Population Growth



Home Affordability Map



Conclusions

- Based on the Line Graph, in every state home values are increasing, some are higher than the national average like California, Hawaii, and some are much lower like West Virginia, Arkansas, and Iowa. Regardless they are all trending upward.
- Based on our scatter plot, Population Growth is not directly affecting the Housing Pricing Increase as the data shows no real correlation between states with high growth rates and states with high home value growth rates
- Viewing the Plotly we can see the Midwest has generally the most affordable houses based on the average income of their population vs Home Values

Shout Outs

- To the semi-colon (;) for truly showing why it is The Reigning, Defending, Undisputed Hide & Seek Champion of the World throughout the Project
- To Console.log for being the best troubleshooting tool that money is not needed to by

Questions?

