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| **Dalton** | **Our Team**  Dalton Driver, Drew Johnson, Saniya Kulkarni, Sarah Nystrom, and Martin Rybicki.  **Our Question**  Based on the currently available real estate data, are people more likely to rent or buy.  **Our Data**  Our dataset is from Texas Real Estate Research Center that contains **169 rows** and **10 columns** related to housing market activity. To analyze whether it’s more advantageous to **rent vs. buy**, we need to consider key financial factors for both options. Since the dataset focuses on **home sales, prices, and inventory**, we incorporated additional economic assumptions to make a comparison.  **Data Cleansing**   * We converted Date to datetime format. * We checked for missing values. |
| **Sarah** | **Our Process**  We used Scikit-learn, Python Pandas, and MatPlotLib to visualize the data. We applied **Scikit-Learn** for:   1. **Regression Analysis:** Predict future housing prices based on available features. 2. **Clustering:** Group similar housing markets. 3. **Classification:** Predict if sales will increase or decrease based on features.   **Our Assumptions for Analysis**   * Mortgage Terms: 30-year fixed, 7% interest rate. * Down Payment: 20%. * Property Tax: 1.2% of home value per year. * Home Insurance: 0.5% of home value per year. * Maintenance Costs: 1% of home value per year. * Estimated Rent: 6% of home value per year. * Investment Return on Savings (for Renters): 7% annually. |
| **Drew** | **Our Results**  **Chart 1: Homeownership vs Rent Costs**   * As expected, in most cases, renting is currently cheaper than buying. There is a difference of $1700-$1900 per month difference between renting and mortgage payments. * The home prices in Austin are high, currently the average is $xxx,xxx, making mortgage payments and the associated costs of insurance, maintenance, and upkeep much more expensive than rent. * As you can see, the gap between ownership and renting appears to be widening over time, indicating buying is becoming increasingly more expensive relative to renting. |
| **Saniya** | **Chart 2: Rent vs buy Difference Trend**   * You can see the difference between homeownership is negative, meaning renting remains cheaper than buying a home. And as the previous chart showed, the difference has grown over time. * If (and it’s a big if) the renter was able to invest $1000 of the difference per month for 10 years at 7%, it could yield $174,000. While homeowners build equity, renters could build investment wealth and have more liquid cash flow. |
| **Martin** | **Forecasting**   * We predicted the next year of Renting vs Buying in Austin, and renting will remain cheaper than buying. The difference will continue to widen. In February of this year, the difference was -1925. Our results show that by mid-2025, that gap will likely widen to -1957. * However, following the recent volatility of the stock market and unemployment rates, continued analysis would need to be done due to the following factors:   + A volatile market can make potential homebuyers hesitant to make such a large financial commitment. It could also put pressure on sellers to drop home prices.   + Market instability could signal a broader economic downturn. This, paired with the layoffs in the federal government, could lead to fewer people being able or willing to commit to homeownership.   + The Federal Reserve MAY lower interest rates if the market continues to signal a weakening economy. But if inflation continues, mortgage rates may not fall much or at all.   **What We Would Do Next**  While this data gives us an overall sense of what is going on in the housing and rental markets, if we had more time, we would try to find a more robust data set so we could drill down into various elements (location, beds/baths, sq.ft., etc.) and make more specific predictions. |