

Data Visualization and **AUSTIN HOME** Analytics **AFFORDABILITY:**

GROUP MEMBERS:

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*“YOU CAN HAVE DATA WITHOUT
INFORMATION, BUT YOU CANNOT HAVE
INFORMATION WITHOUT DATA.”*

~ DANIEL KEYS MORAN

*“DATA REALLY POWERS EVERYTHING THAT
WE DO.”*

~JEFF WEINER, LINKEDIN



PROJECT MOTIVATION SLIDE:

CAN A FIRST TIME BUYER AFFORD TO BUY A HOME IN AUSTIN?

- Analysis covers home sales in Austin for the following years:
 - 2013 – 11,583 Sales
 - 2014 – 11,092 Sales
 - 2015 – 11,394 Sales
 - 2016 – 11,554 Sales
 - 2017 – 10,488 Sales (1/1 – 11/30)
- Analysis determines the median sales price per year for each of zip code in the City of Austin
- Median sales price by zip code will identify the zip codes (in any) a first time home buyer can afford to buy a home in
- First time homebuyer profile assumptions:
 - Assumed age bracket is 25-44 for all years
 - Median Income by year:
 - 2013 - \$58,281
 - 2014 - \$60,070
 - 2015 - \$64,201
 - 2016 - \$67,104
 - 2017 - \$69,950 (imputed)
 - Down Payment – 3.5% of sales price
 - 30% of income can be used for mortgage payment (principle, interest, mortgage insurance, taxes and property insurance)



PROJECT QUESTIONS TO BE ANSWERED

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QUESTION # 1

Based on stated assumptions. How much house can our typical "first-time homebuyer" afford to buy in each year of the sample?

QUESTION # 2

Do the affordable zip codes remain the same over the analysis period? If so, does the data explain why?

QUESTION # 3

What zip codes (if any) in the city of Austin would our "first-time homebuyer" be able to afford to buy a home?

QUESTION # 4

If no zip codes are deemed affordable, our analysis will then change focus to "What income would a first-time homebuyer have to earn to afford a home in Austin?" How much more than the median income is required?



DATA SOURCES:

DATA WAS ACQUIRED FROM THE FOLLOWING SOURCES IN THE FOLLOWING MANNERS:

- Austin MLS Data – CSV download
- Zillow – API call converted to CSV
- Redfin – CSV download
- Census data – CSV download
- Data USA – CSV download
- House Canary – JSON data



DATA CLEAN UP AND EXPLORATION

DATA PROCESS

- Format Columns
- Organize Raw Data
- Identify Zip Codes
- Qualify Sales Price Data
- Calculate Median Sales Price by Year and Zip Code
- Identify Zip Codes that are Affordable
- Chart and Graph Results

DATA INSIGHTS

- Impressed by the number of overall sales over the sample period
- Dramatic increase in median prices
- Relatively flat income increases when compared to the median price appreciation

DATA CHALLENGES

- Zip Codes weren't available from each data source
- Neighborhoods weren't delineated the same from each source
- ##### add additional challenge



DATA ANALYSIS – JUPYTER NOTEBOOK

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HOME AFFORDABILITY
ANALYSIS

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DATA ANALYSIS – CHARTS & GRAPHS

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HOME AFFORDABILITY
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DISCUSSION POINTS



POST MORTEM



QUESTIONS

