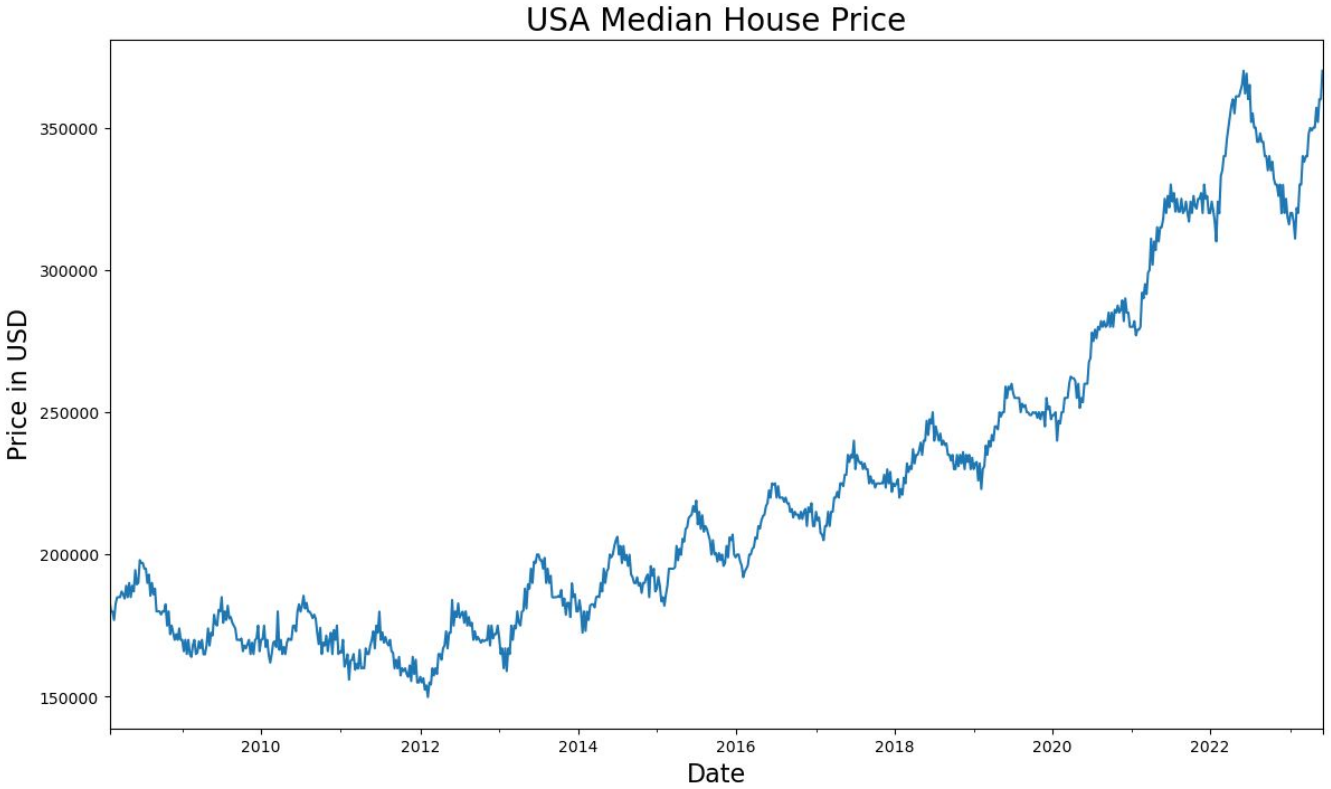
# Real Estate Analysis with Time Series

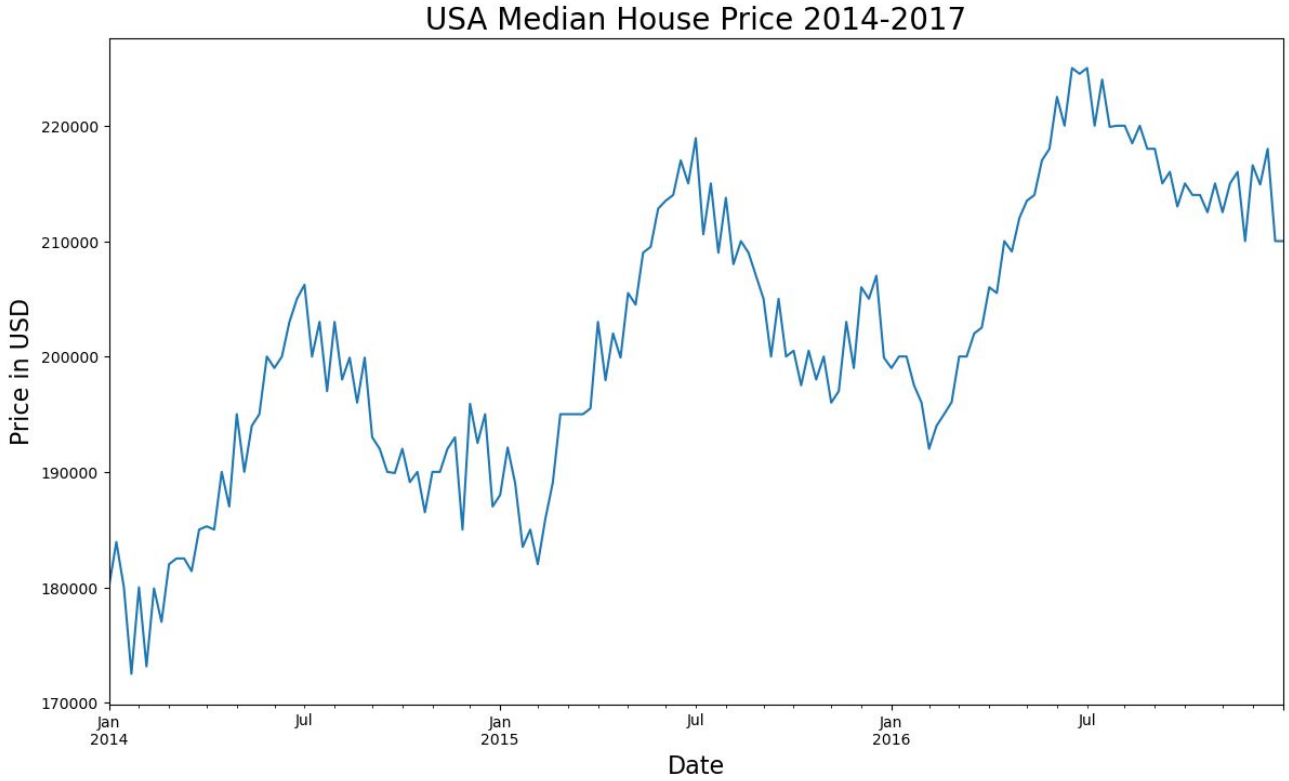
# Business Stakeholders

- Large corporation looking to move their headquarters
- Want to pitch employees on moving and buying homes in their new city
- Open to cities throughout US

# Overview of USA Median House Sales Price



# Snapshot of 2014-2017



# 1st Recommendation

- Suggest employees buy a home in the winter time

- Strong seasonal trend for prices to increase around July and decrease around January

# What City?

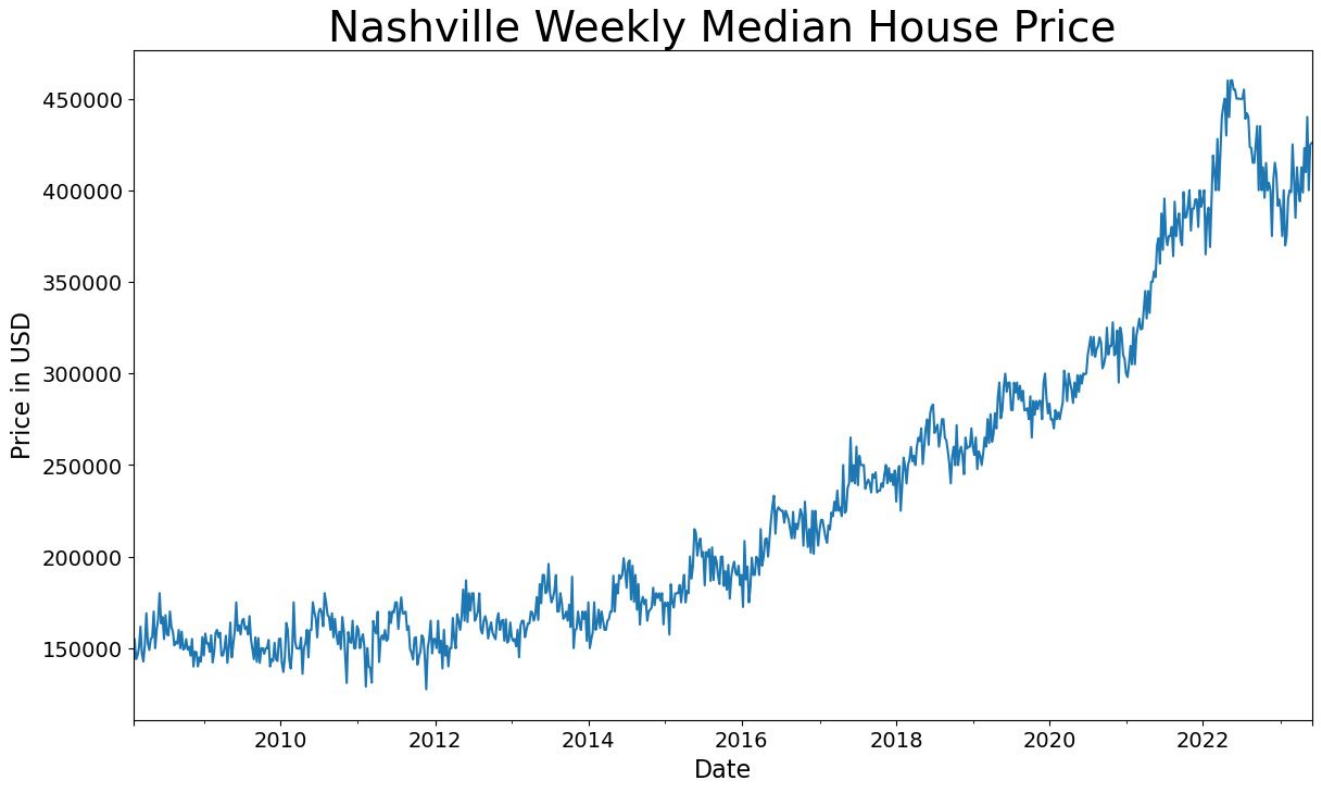
Looking at what city has increasing home value

Employees are likely to accrue value in their home as

Greetings from
NASHVILLE
TENNESSEE

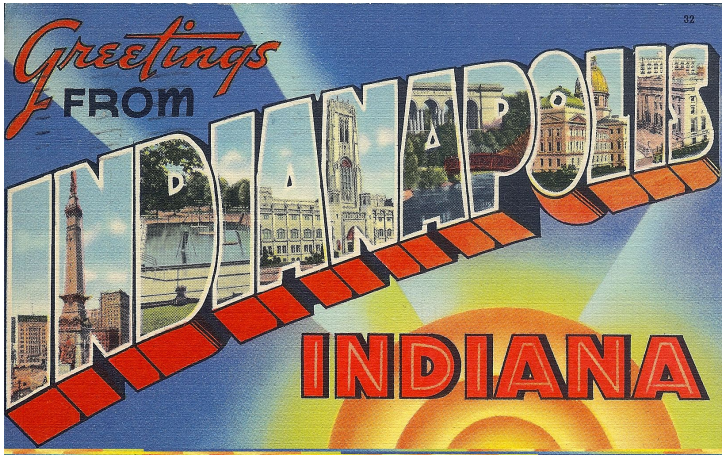
BRIDGESTONE ARENA
FOR SMASHVILLE
NISSAN

# Nashville


Nashville Weekly Median House Price
Price in USD
450000
400000
350000
300000
250000
200000
150000
2010
2012
2014
2016
2018
2020
2022
Date

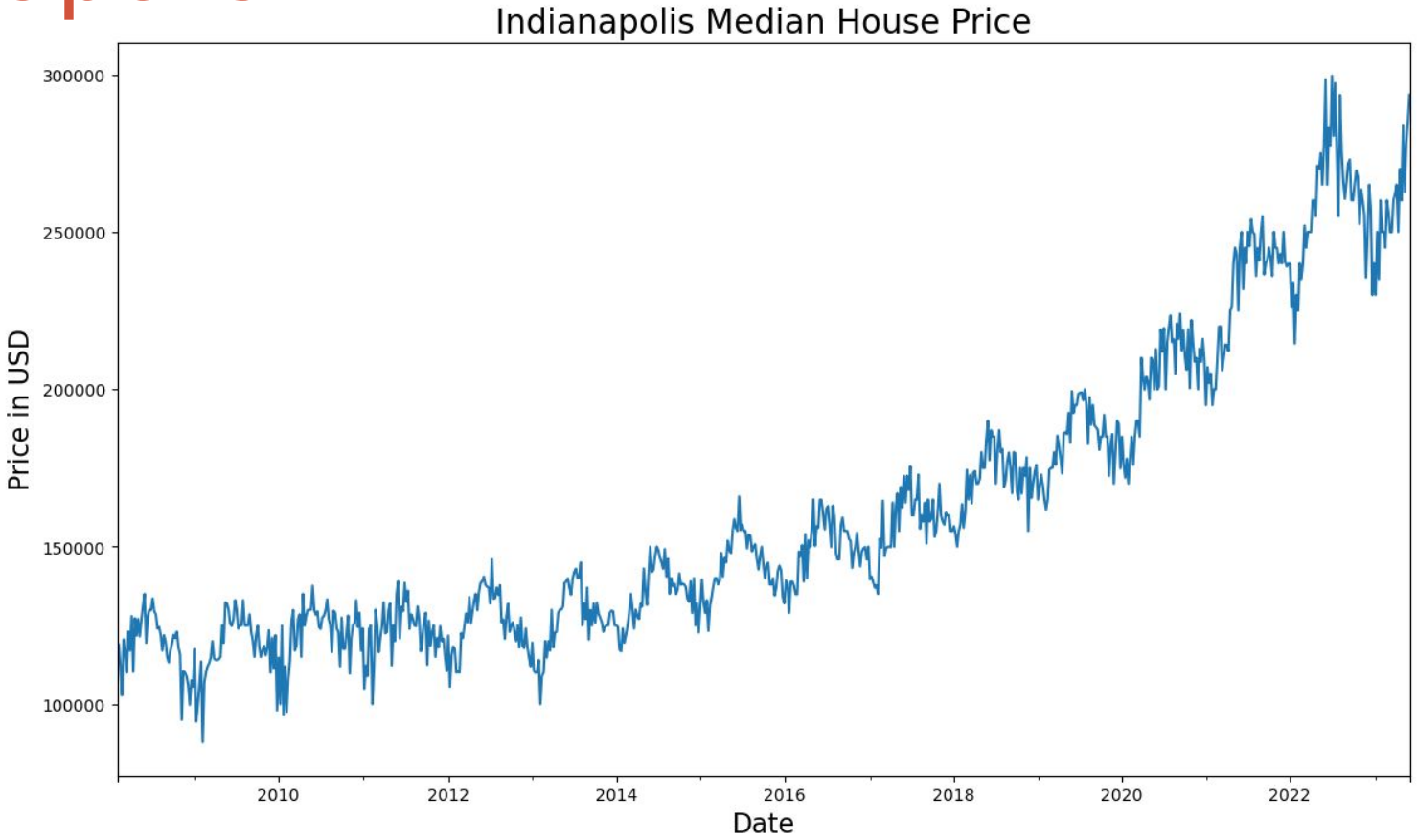
# What about a cheaper city?

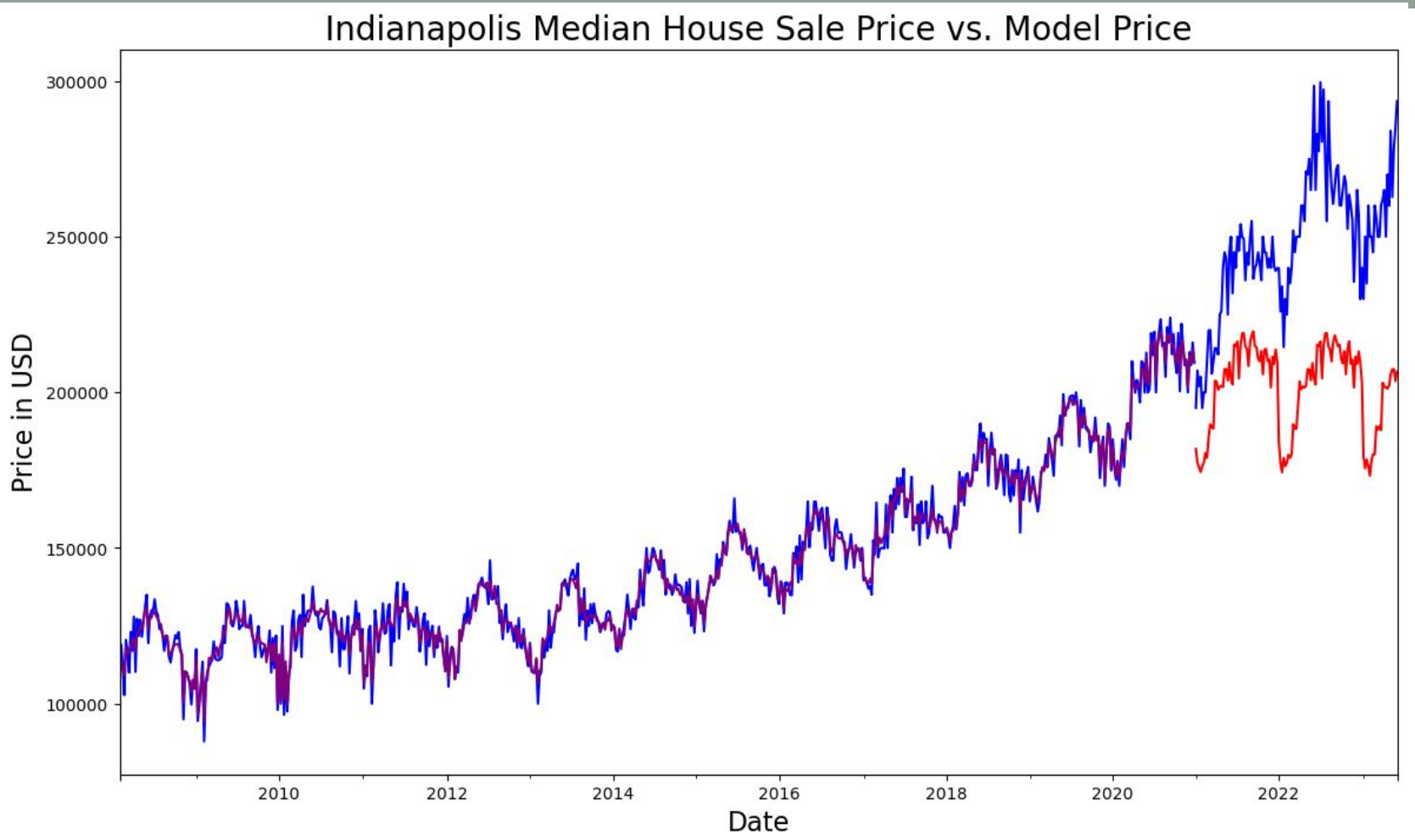
| | Metro Area | State | February 2008 | June 2023 | % ROI |
|---|---|---|---|---|---|
| 1 | Nashville, TN | TN | $142,000 | $425,750 | 199.82 |
| 2 | Dallas, TX | TX | $137,550 | $405,000 | 194.44 |
| 3 | Denver, CO | CO | $217,250 | $595,000 | 173.88 |
| 4 | Portland, ME | ME | $202,750 | $555,000 | 173.74 |
| 5 | Killeen, TX | TX | $100,000 | $271,500 | 171.50 |
| 6 | Boise City, ID | ID | $188,000 | $500,000 | 165.96 |
| 7 | Greenville, SC | SC | $126,288 | $334,500 | 164.87 |
| 8 | Austin, TX | TX | $189,950 | $499,950 | 163.20 |
| 9 | Indianapolis, IN | IN | $113,001 | $293,550 | 159.78 |
| 10 | Ogden, UT | UT | $185,750 | $479,500 | 158.14 |

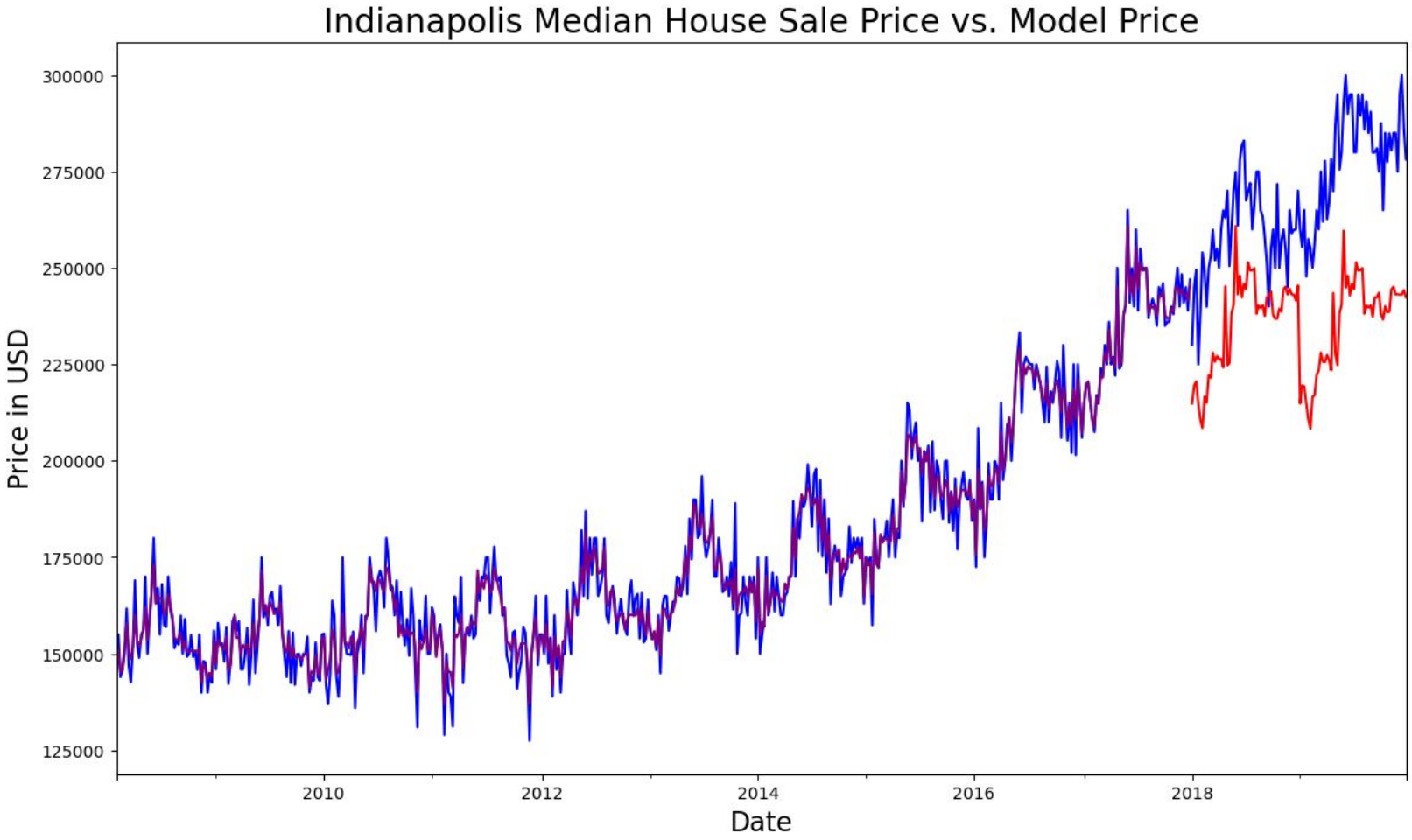

Greetings
FROM
INDIANAPOLIS
INDIANA

firestone
verizon
HITACHI
TIRE RACK

# Indianapolis




Indianapolis Median House Sale Price vs. Model Price
Price in USD
300000
250000
200000
150000
100000
2010
2012
2014
2016
2018
2020
2022
Date


Indianapolis Median House Sale Price vs. Model Price
Price in USD
300000
275000
250000
225000
200000
175000
150000
125000
2010
2012
2014
2016
2018
Date

# Recommendations

- Select Nashville for strong expected ROI
- Select Indianapolis for strong ROI and cheaper house prices
- Move the company for the winter and encourage employees to buy

# Next Steps

- More features for enhancing the model
- Fine tuning the model to better account for fluctuations around 2020
- More complexity in housing type (size, location within city etc.)

# Anything else coming to Nashville?

RAYS
NASHVILLE, TN
NASHVILLE
STARS