

REDLINING IOWA

AS BLACK POPULATIONS RISE IN AN AREA, HOW DOES THE HOUSE SALE PRICE IN AMES, IOWA CHANGE?



Brandie Hatch

Data Scientist
Housing Hope

<http://brandiehatch.com/>
[/in/brandiehatch/](#)

AGENDA

- Data Science Problem & Goal
 - Background
 - Investigative Process
 - Conclusions
 - Future Steps
 - Recommendations
 - Questions
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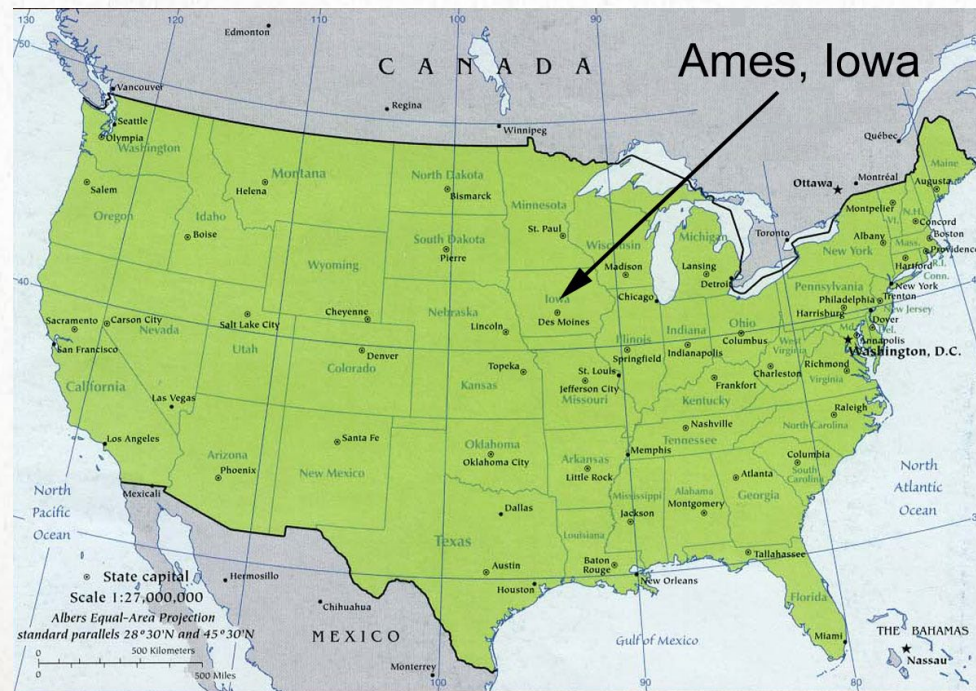


GOAL

Create a model to predict the Sales Price of houses in certain areas of Ames, Iowa based on Census Demographic Data and Location Median Household Income.

PROBLEM

- As the Black or African American populations rise in a particular census tract area, how does the sale price of houses in Ames, Iowa change?

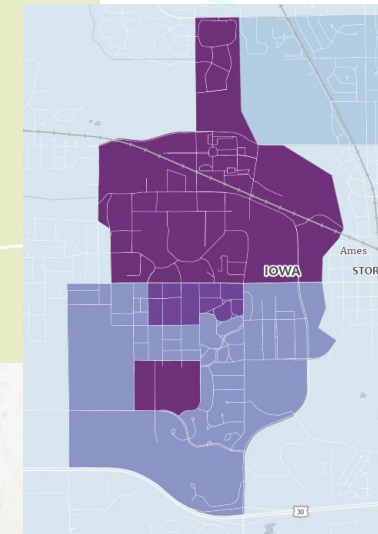
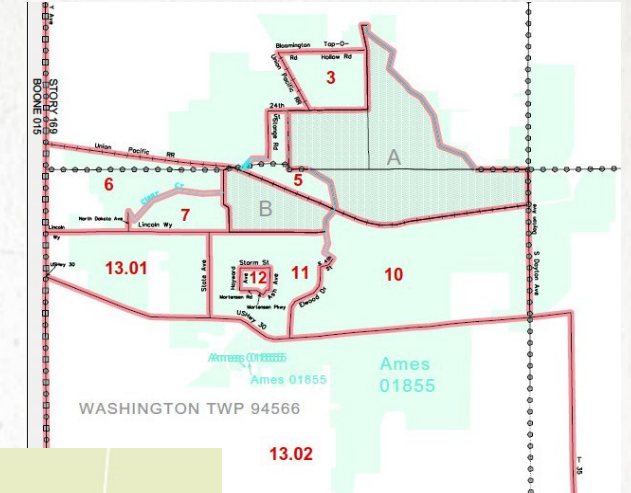
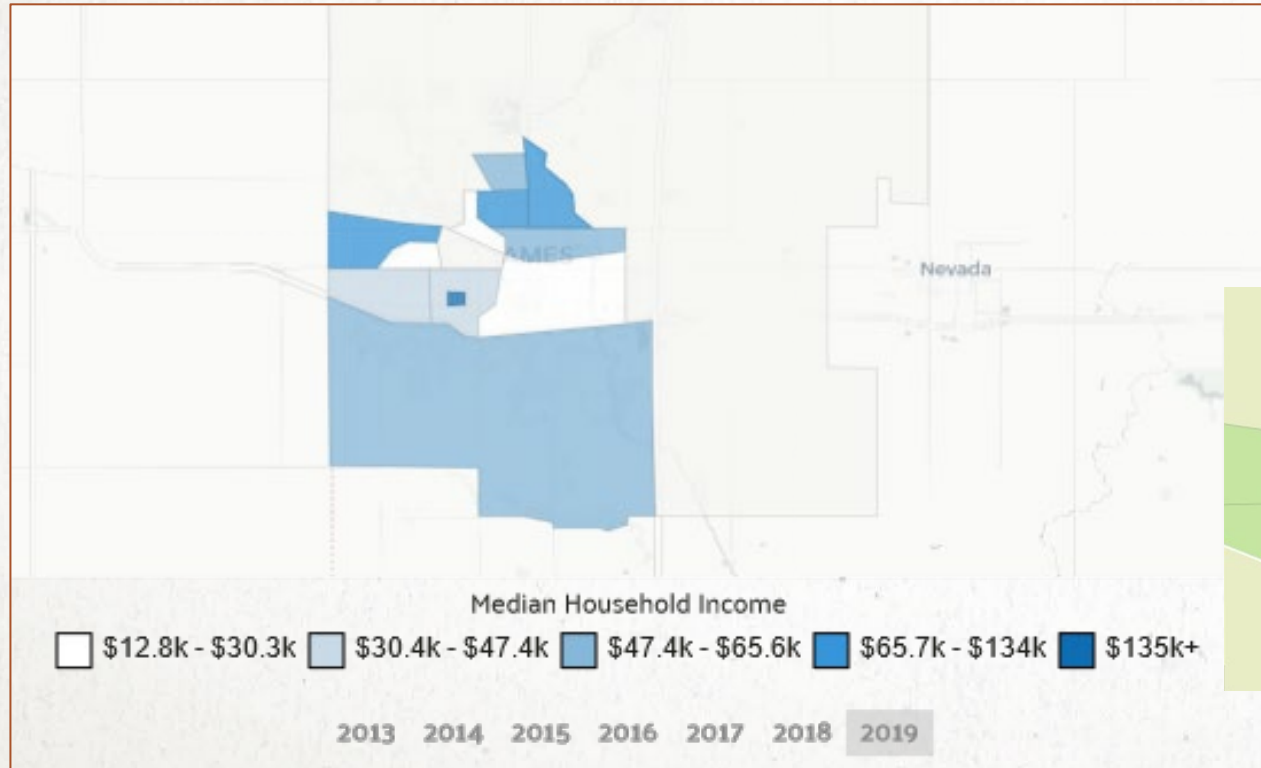


BACKGROUND: REDLINING

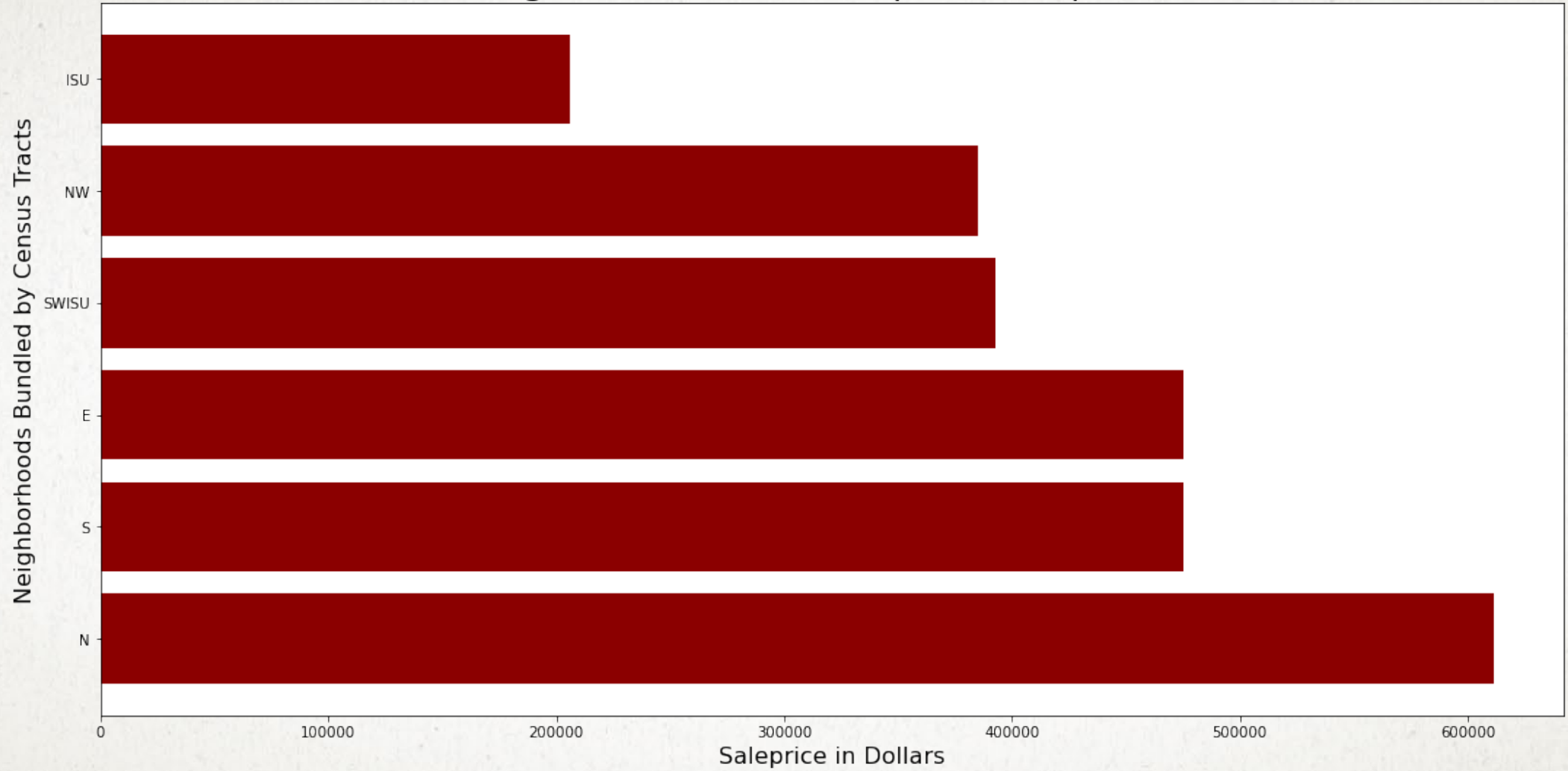
Black homeowner rates have only increased 1.2% between 1970 and 2019

- Redlining is the historic act of deeming particular areas as excessively risky for investment.
- Many of the same neighborhoods that were redlined in the past continue to have high poverty rates, lower median household incomes, and higher levels of marginalized populations.
- Certain areas too risky for home loans
- Directing some home buyers to certain neighborhoods
- "Houses that are essentially the same with the exception of one being in a majority Black neighborhood and one in a majority white neighborhood have almost a 50 percent difference in value", Twedt-Ball said in The Gazette Iowa newspaper

INVESTIGATIVE PROCESS



Neighborhoods and Saleprice Comparison



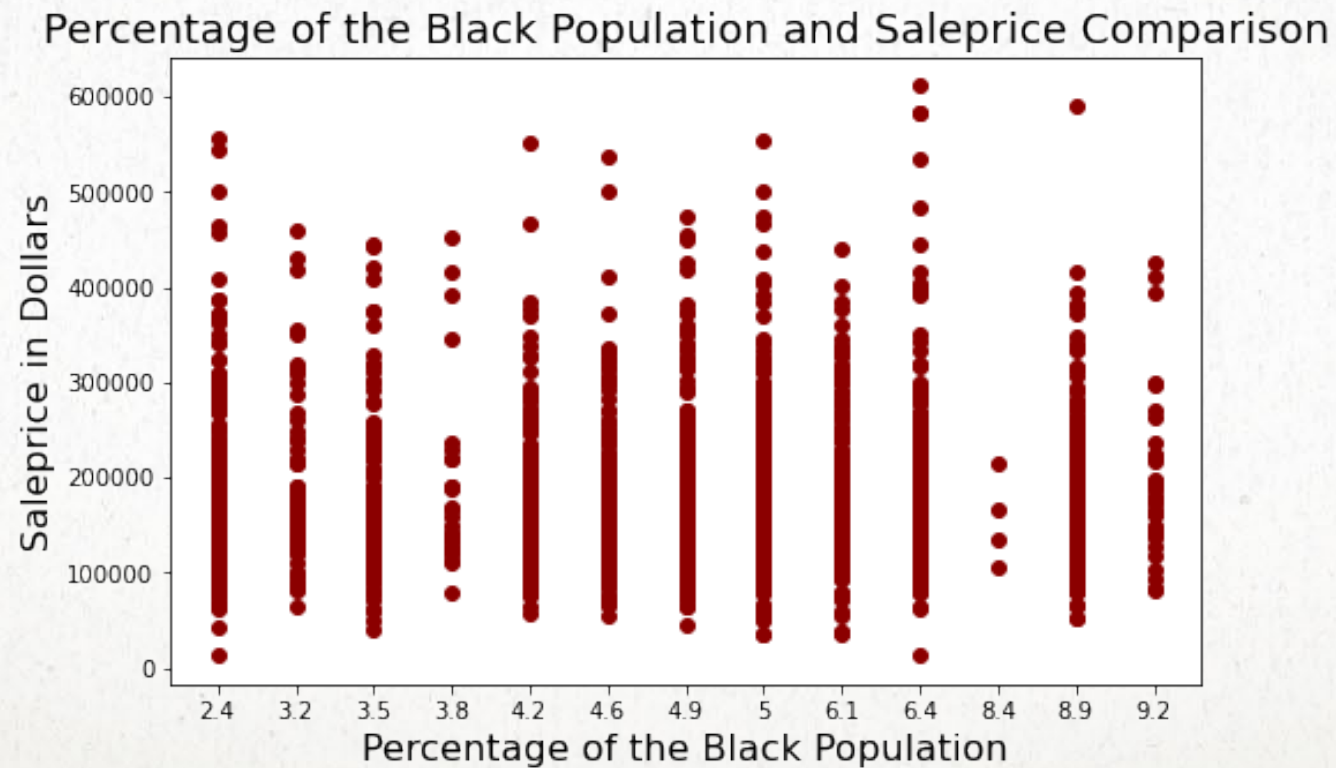
MODEL FINDINGS

- Overall, as the model works to predict sales price
- Potential error around \$26756.00

Metric	Train	Validation
MAE	23636	26756
RMSE	33826	43176
Coefficient of Determination	0.8038	0.7679

CONCLUSIONS

My problem was to see if there was a distinct relationship between the higher Black populations in a census tract area in connection with the house sale prices.



CONCLUSIONS

I was able to create a model that utilized the data for population density by race and the Ames, Iowa Housing data set to predict the sale price of houses. The model had high bias and high variance, so it still needs some adjustments for more accurate predictions.

FUTURE STEPS

- Remove outliers for the year the house was built and the year the house had an addition or remodeling features.
 - Either find 2010 population census data that is closer to the Ames, IA data set (2006-2010) or find Ames, IA housing data for 2020.
 - Adding in more features to help with the high bias.
For example, using sale condition because whether a sale is normal, abnormal, partial, between family, or adjoining land could help determine sale price.
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RECOMMENDATIONS



- Continue to be aware of and combat against possible segregation redlining tactics.
- Consider creating learning resources for Black Iowans to educate themselves about their options for becoming homeowners.

THANK YOU

- Brandie Hatch
- <http://brandiehatch.com/>
- </in/brandiehatch/>



SOURCES

- Median Household Income Ames, IA: https://datausa.io/profile/geo/ames-ia#income_geo
- 2020 Census Demographic Data Map Viewer, Population Density, Race Alone or In Combination, Hispanic Origin, and Group Quarters: <https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=2566121a73de463995ed2b2fd7ff6eb7>
- Past Housing Policies, Practices Contribute To Iowa's Racial Homeownership, Wealth Gaps | Iowa Public Radio | by Katarina Sostaric | <https://www.iowapublicradio.org/racial-justice/2020-12-18/past-housing-policies-practices-contribute-to-iowas-racial-homeownership-wealth-gaps>
- Racial Disparities in Home Appreciation | Jul 15, 2019 | Michela Zonta | <https://www.americanprogress.org/article/racial-disparities-home-appreciation/>
- Why the homeownership gap between White and Black Americans is larger today than it was over 50 years ago | <https://www.cnbc.com/2020/08/21/why-the-homeownership-gap-between-white-and-black-americans-is-larger-today-than-it-was-over-50-years-ago.html>
- The American Dream While Black: "Locked in a Vicious Cycle" | <https://www.nbcnews.com/specials/american-dream-while-black-homeownership/>
- Black Americans And The Racist Architecture Of Homeownership | NPR Code Switch | May 8, 2021 11:20 AM ET | By Ailsa Chang, Christopher Intagliata, Jonaki Mehta | <https://www.npr.org/sections/codeswitch/2021/05/08/991535564/black-americans-and-the-racist-architecture-of-homeownership>
- Research: More oil and gas wells in redlined neighborhoods Historically marginalized communities are exposed to more wells with their accompanying pollution | By Dylan Svoboda | April 13, 2022 | <https://publichealth.berkeley.edu/news-media/research-highlights/research-more-oil-and-gas-wells-in-redlined-neighborhoods/>
- City of Ames: <https://www.cityofames.org/>
- Neighborhoods of Ames, IA from Prediction Model of Ames Real Estate Prices: https://rstudio-pubs-static.s3.amazonaws.com/337439_24918eaefe724411be93e41ede48b256.html