

Ames Housing Dataset

Project 3 Submission- DSI Immersive – Pramod Paul

29/4/2019

Goal/Objective

- 1) Story behind the data
- 2) Predict house price based on fixed features
- 3) Based on residuals from 2), investigate which all houses to buy and renovate to turn a profit?



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Home to Iowa State University and 30 miles north of the Des Moines state capital is [Ames](#), a community of many woodland parks and a four-time recipient of Best Places to Live recognition. Campustown is a major gathering place with a variety of restaurants, shops and nightlife venues, and Ames residents can receive quality healthcare services at Mary Greeley Medical Center. Ames is also headquarters for the Iowa Department of Transportation.



Ames Tribune Photo

Effects of 2010 Ames flood linger

By Sarah Haas, sarah.haas@iowastatedaily.com Oct 18, 2010  3

2010 Floods

Ames, Iowa

Earlier floods
in 1975, 1993
and 2008



Hilton Coliseum surrounded by flood waters on Aug. 10, 2010.

Photo: Logan Gaedke/Iowa State Daily

arcgis.com

Documents/... *data_descri... ArcGIS - A... Iowa (IA) pr... Ames Real E... Info/Pandas... IA Real Esta... rate of depr... tornado alle... Effects of 2... an... ... +

ArcGIS ▾ AmesFloodPlainTags 

New Map Create Presentation

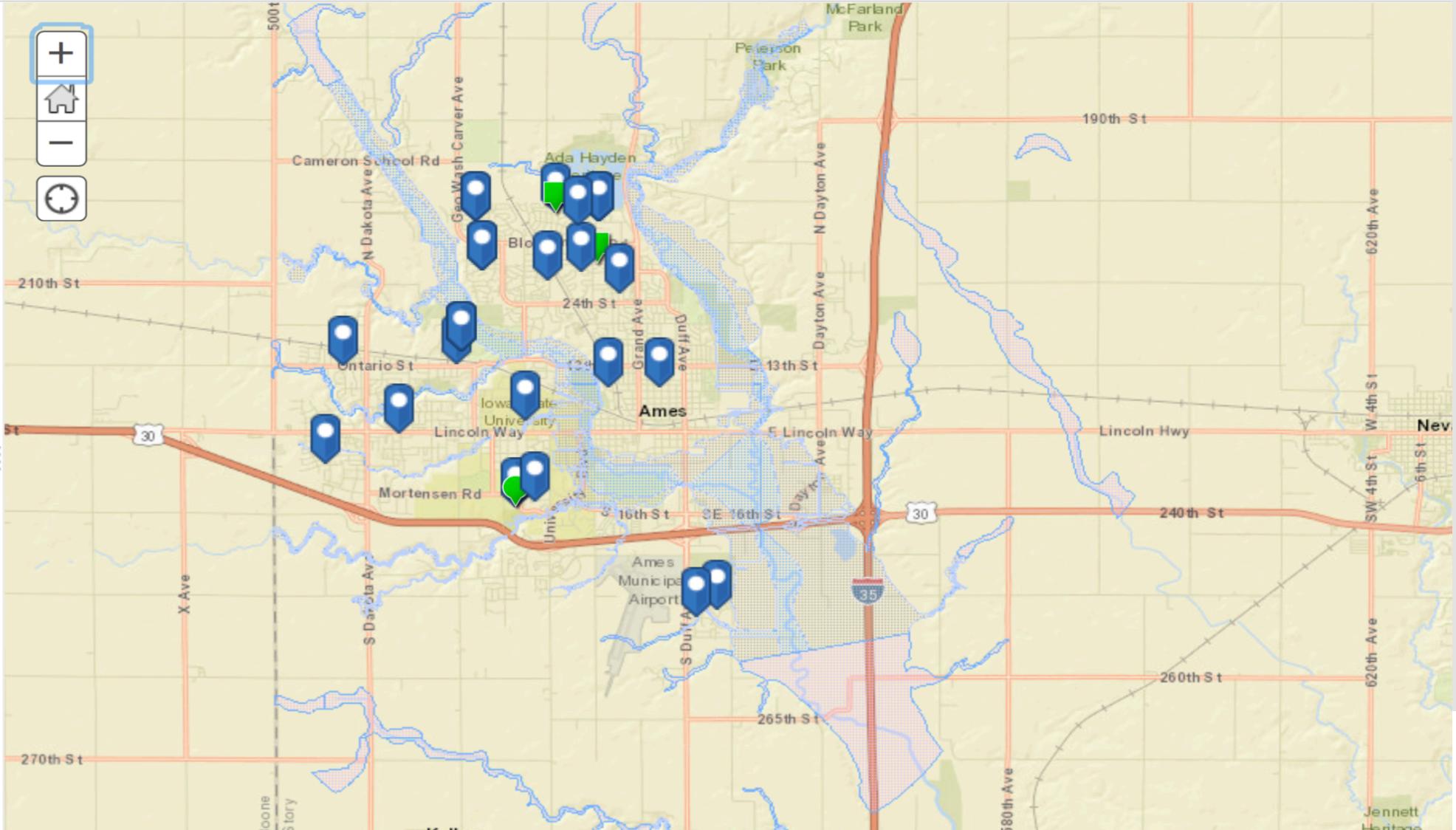
Details Add Edit Basemap | Save Share Print Measure Bookmarks Veenker, Ames, IA, USA

Legend

Ames Flood Plain Zoning Web Service

FLOOD PLAIN ZONING OVERLAY DISTRICT

- General Flood Plain Overlay 
- Floodway Fringe Overlay 
- Floodway Overlay 

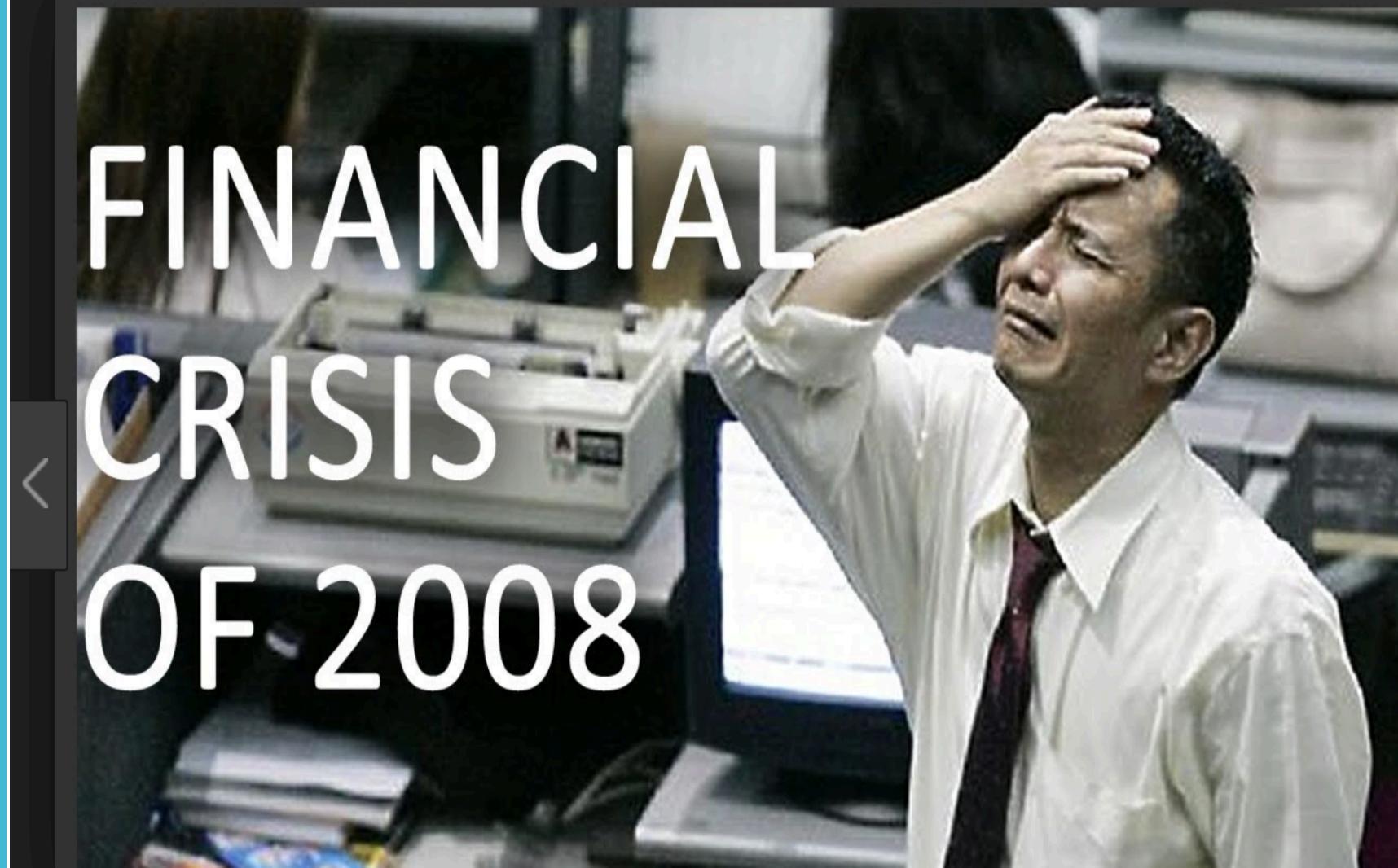
The map displays the Ames, IA area with a grid overlay. It features several blue lines representing rivers and streams. Overlaid on the map are three types of floodplain zones: General Flood Plain Overlay (blue), Floodway Fringe Overlay (green), and Floodway Overlay (yellow). These overlays are concentrated along the Des Moines River and its tributaries, such as the Raccoon River and Little Raccoon Creek, which are shown in blue. The Ames city boundary is indicated by a dashed line. Major roads like University Avenue, Lincoln Way, and 30th Street are labeled. Parks like McFarland Park and Peterson Park are also marked. The Ames Municipal Airport is located in the lower center. The map includes a legend on the left and various navigation tools at the top.

Global financial
crisis 2008-2009

Ames, Iowa

Rock bottom
real estate prices
in 2010-2011

FINANCIAL CRISIS OF 2008



Ames Real estate

Buyers - market

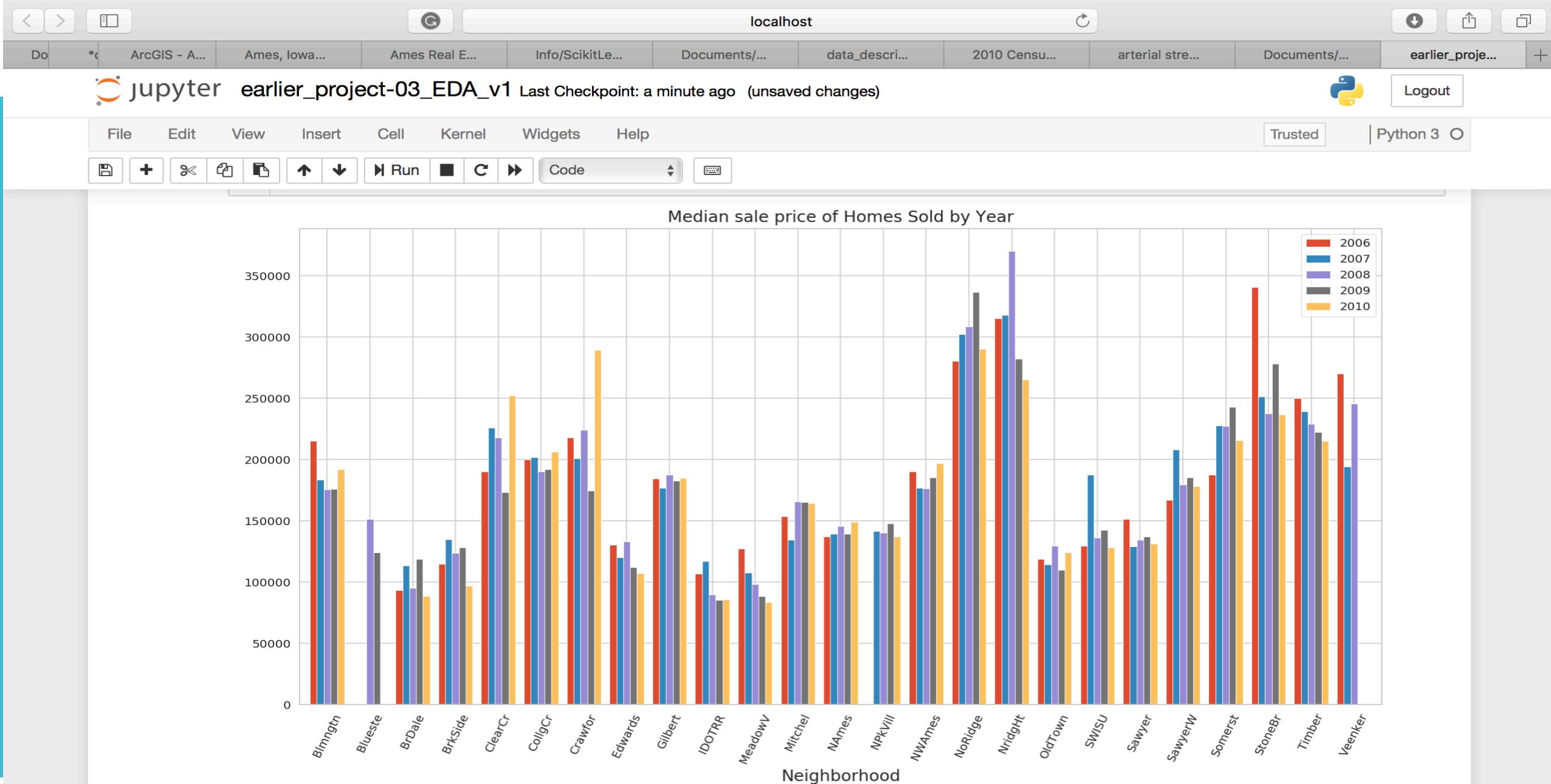
- 1) Ames in the 'Tornado Alley' in Midwest US.
- 2) Ames flood history: latest in 2010
- 3) Global financial crisis in 2008 -2009

Real estate company looking to buy houses at rock bottom prices and then selling later to make a profit

Ames 2010 Demographics

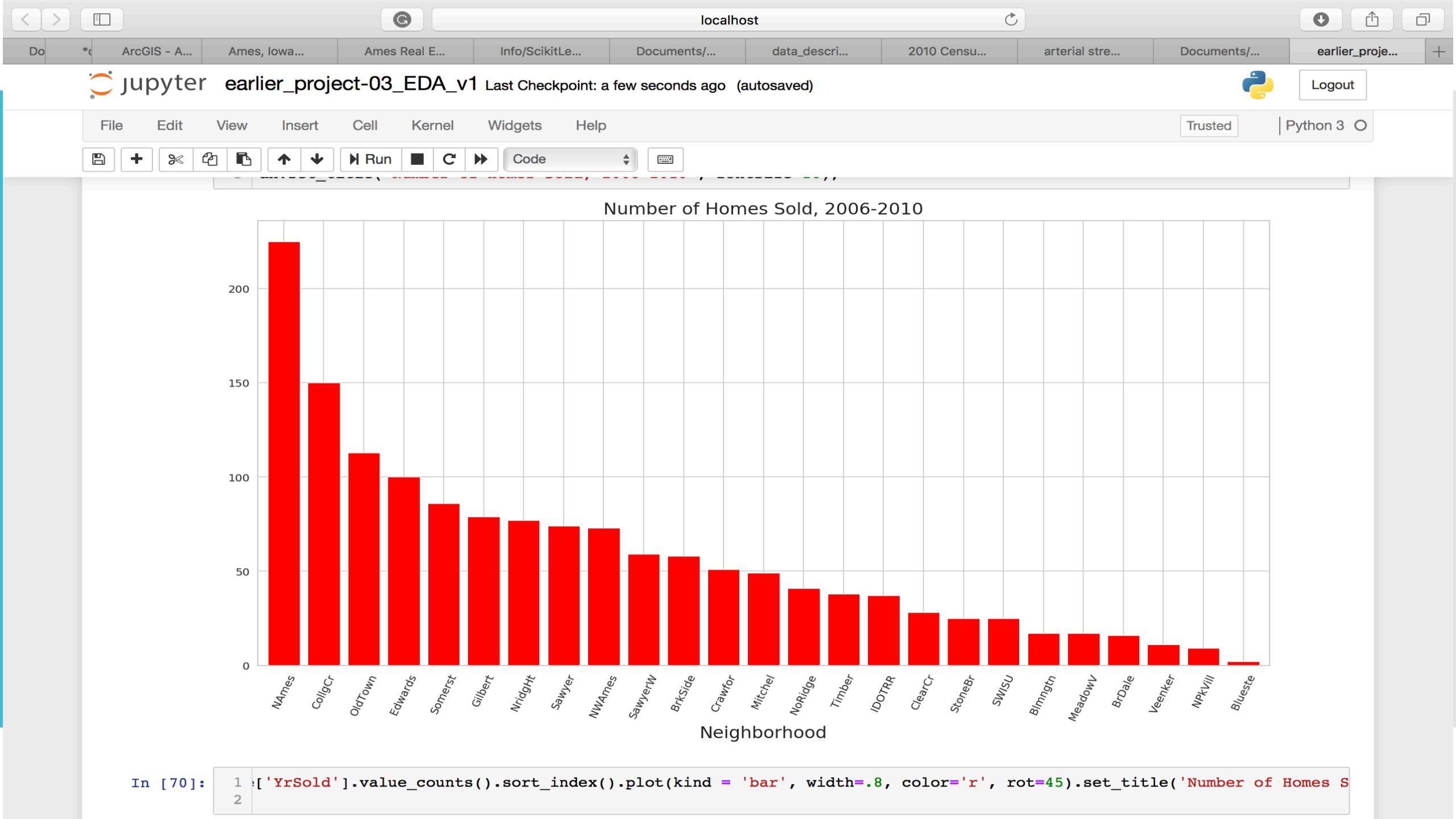
1

- 1) University town: High rentals in areas around ISU
- 2) 88.03% of the workforce employed in white-collar jobs
 - : who work in teaching (17.25%), office and administrative support (11.91%), and food service (8.57%).,
 - : Education industry: 28 % population
- 3) Median age: 23 years
- 4) Total population: 58K



In []: 1 import pandas as pd

In []: 1 #r_house_final_corr()



Fixed Characteristics Model Features:

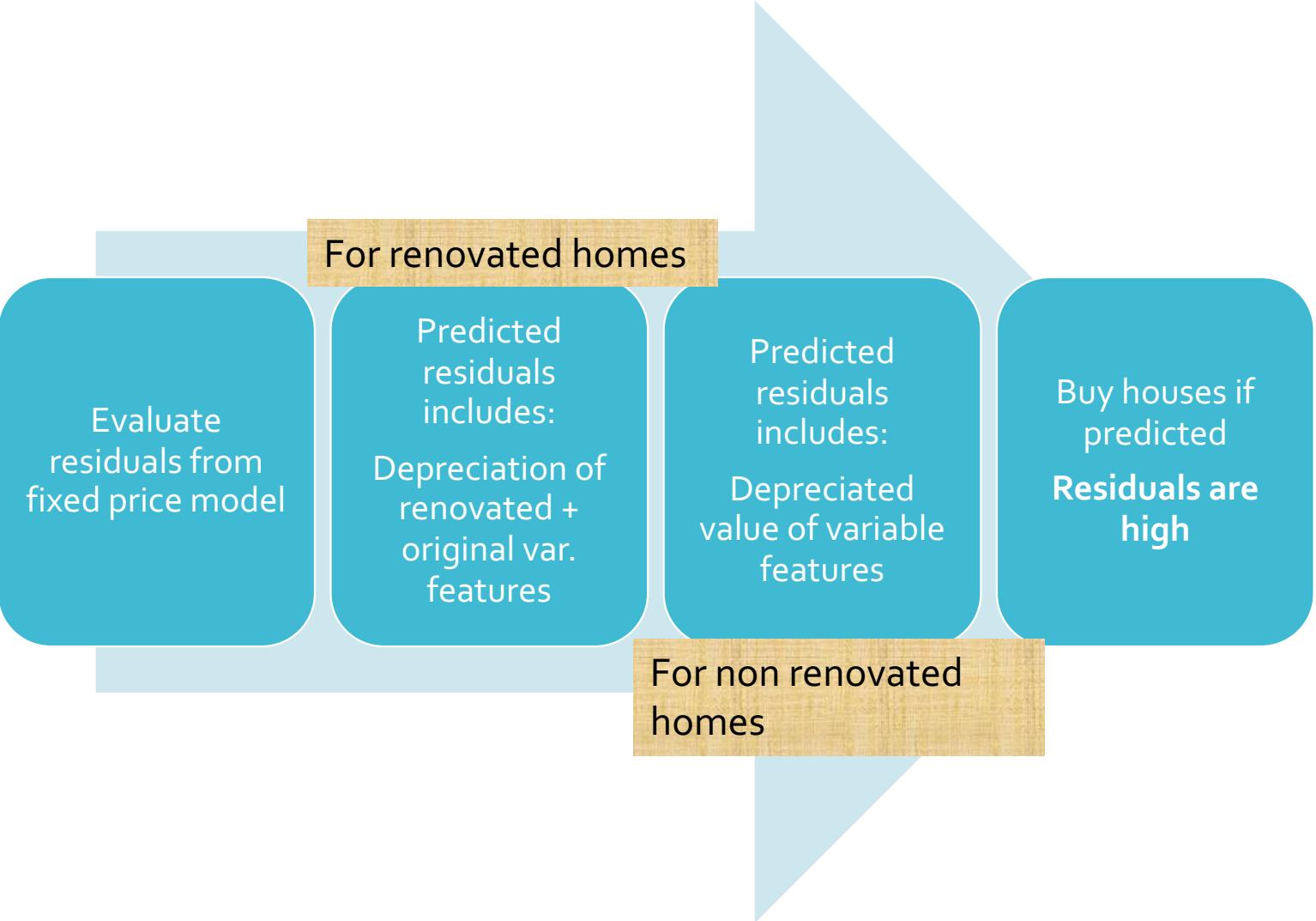
GrLivArea: 0.708624
GarageCars: 0.640409
TotalBsmtSF: 0.613581
1stFlrSF: 0.605852
YearBuilt: 0.522897
YearRemodAdd: 0.507101

Fixed Characteristics Model

Approach taken based on Income of end customer
Divide into 3 segments

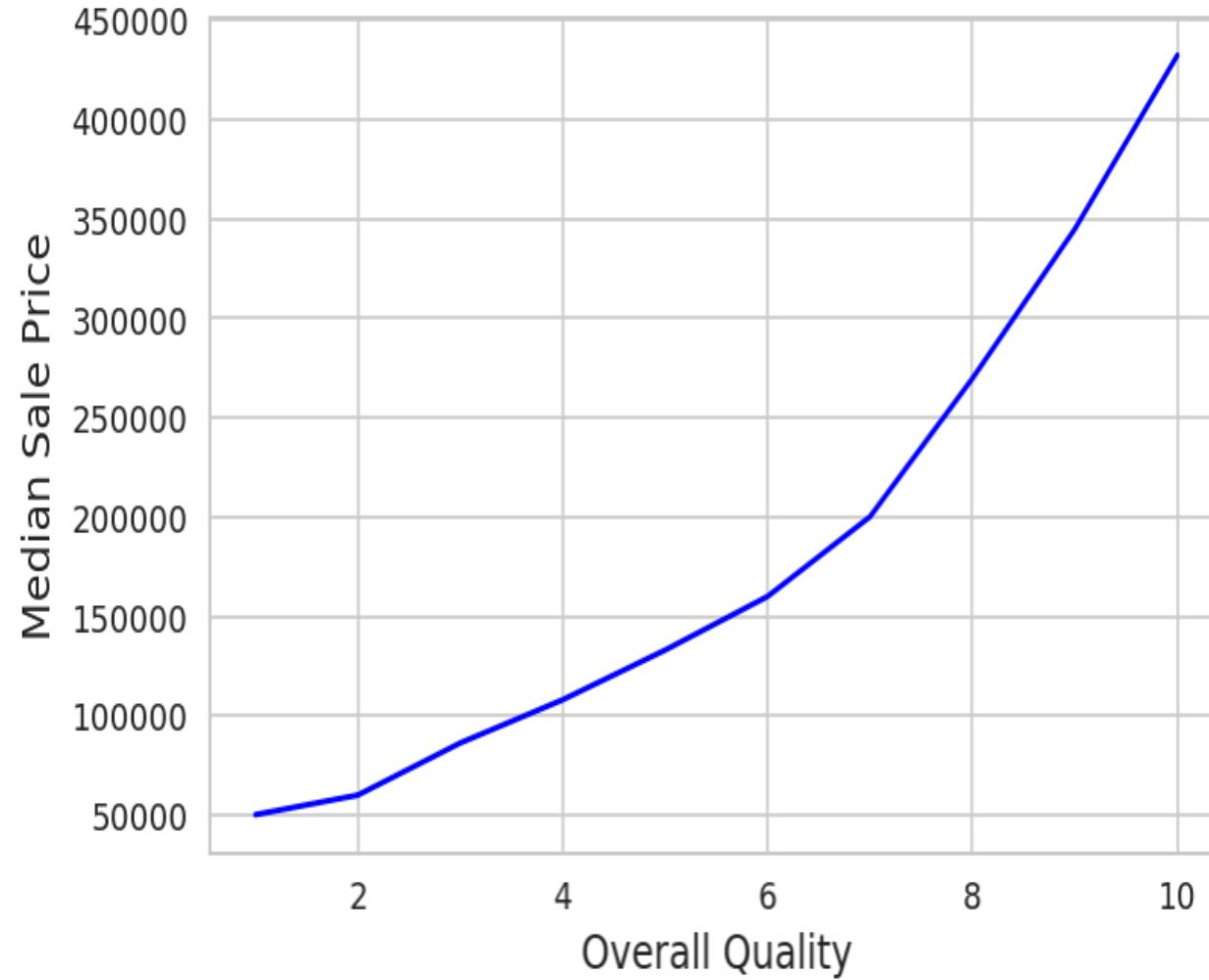
- 1) Low to Middle income customer looking for rent or ownership**
Lot area < 4000, Sale condition – Normal
- 2) Luxury market: High income customer looking for ownership or investment. (Lot area < 4000 & SalePrice > 200,000)**
- 3) Abnormal home sales: Possibility of turning higher profit if bought cheaply at auctions and renovated and sold**

Approach:



Recommendations where predicted var residuals are high

Improve Overall quality rather than overall condition



Overall Quality
components

+

Garage shed for
additional car +
wood deck

(Based on
coefficients from
2nd model)

ExterQual

KitchenQual

GarageCars

BsmtQual

Wood deck

Other
recommendati
ons where
predicted
residuals are
high

- 1) Look to buy houses(sales condition = abnormal) and luxury house segment.
- 2) Then look at the low to middle class segment.

Things to improve on this model.

- 1) Look at MSZoning areas-
RH,RL,RHP : Lot areas are fixed
So look at price per sqft based on sum of ground living area and first floor area.
- 1) Look at expensive neighborhoods.