

Final Project Report

Data description

Data processing

Story Country, IA/City of Ames data was downloaded from the Beacon website by setting **Sale Date** to be 18 month and filtering **Bedrooms** from 0 upto 8 one by one. Then we processed those datasets as follows:

1. Got rid of all records before 2016 January, since we were more interested in the housing sale in 2016.
2. Created a new feature **house age** defined by using 2016 subtracting the year of house was built and then grouped this feature **house age** into 13 groups.
3. Add the longitudinal and latitudinal information using Google API into the data set.

After the above processing, there are 952 observations left to the following visualization.

Data variable description

Variables	Description	Range
Parcel ID	Unique ID for each house	
Address	House Address	
Sale Price	House Price in dollars	\$29 ~ \$830K
Sale Date	Sale Data	1/1/16 - 12/1/16
Sale Condition	Sale Condition	6 levels characters: Abnorml, AdjLand, Alloca, Family, Normal, Partial
Assessed Value	Assessed price	\$300 ~ \$707.3K
Parcel Type	House type	4 types characters: vacant land, dwelling and interior lot, condominium unit building and interior lot, single-family dwelling
Year Built	House built	
Total Living Area	Living area	Numeric: 0 - 4615F
Finished bsmt Area	Finished basement area	Numeric: 0 - 2114F
Lot Area	Lot area	Numeric: 0 - 157600F
Bedrooms	Number of bedrooms	Numeric: 0-8
Central Air	Weather the house has central Air	2 levels characters: yea, no, no data
Fireplaces	Number of fireplaces	0 - 3
Occupancy	Building Type	7 levels characters: single family detached(includes detached townhouses; condominium unit; townhouse:end unit; townhouse:inner unit; two-family conversion:originally built as one-family dwelling; duplex; no data
Style	Style	9 levels characters: one and one-half story: 2nd level finished; one story; split foyer two story; split level; one and one-half story: 2nd level unfinished two and one half story: 3rd level unfinished; two and one-half story:3rd level finished; no data
Neighborhood	Neighborhood near the house	34 levels characters
INSTRUMENTNUMBER	Deed book data and page	Numeric numbers

House Map Location

Sale price distribution

In this section, we were interested how the house sale price changes at different location. On overall average of sale price in story county in 2016 was \$180K - \$190K. It located near Grand Avenue, 13 street and 24 street and near Ontario street as well. We noticed that the highest house sale on average was tent to centered near the northridge heights park area in 2016 (Fig. 1). What's more, for most of those houses with high saling prices were mostly recently built (the median built year for house with saling prices greater than \$300K were 2003).

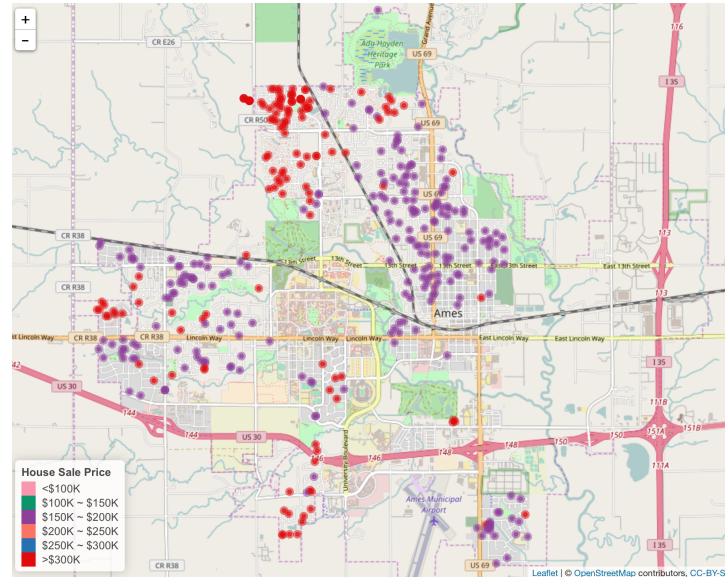


Figure 1: House sale price in 2016. Red dots represents the price larger than \$300K while the purple dots denotes the average price around \$200K in 2016 in story county, IA.

How to use the shinyApp

- Download the folder `AmesHousePrice2016`
- Open `AmesHousePrice2016.Rproj`
- Open the shiny app file in scripts folder called `amesHousing16App.R`