

# Project 2 : Ames Housing Data

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# PropAm, a prominent real-estate arbitrage (house-flipping) firm in the US

Before



After



# Problem Statement

To find ways to increase the firm's revenue by tapping into the fresh Ames market.

To be done in three steps:

1. Explore housing transaction data
2. Come up with accurate price prediction model
3. Report on ways to increase revenue

## **Data used:**

Housing data from Ames, Iowa Assessor's Office (Kaggle) during the period between 2006-2010.

# Findings



After an analysis of:

- 81 different factors
- 2051 transactions

Factors influencing sale prices the most:

1. Size of property (**Square Footage**)
2. Neighborhood of property (**Location**)
3. Recently modelled (**Remodelled**)

# The bigger the better (Square Footage)



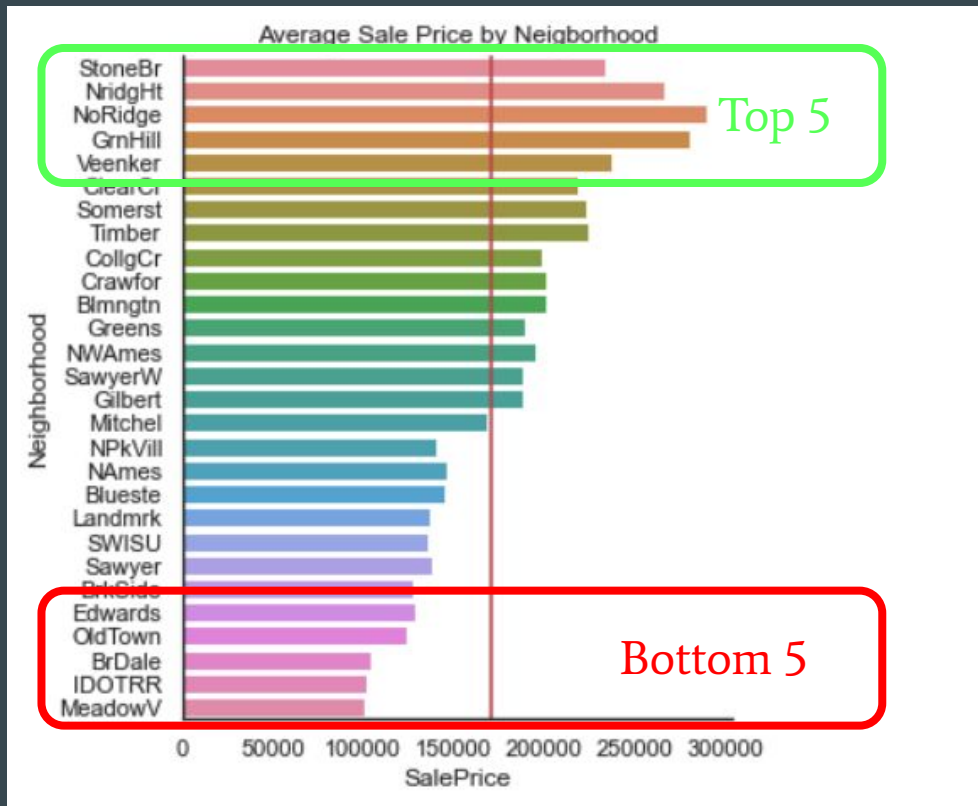
Total area defined as:

Sum of the Living Area and  
Basement Area

Generally speaking,

Larger houses fetch higher prices

# Location, Location, Location (Neighbourhood)

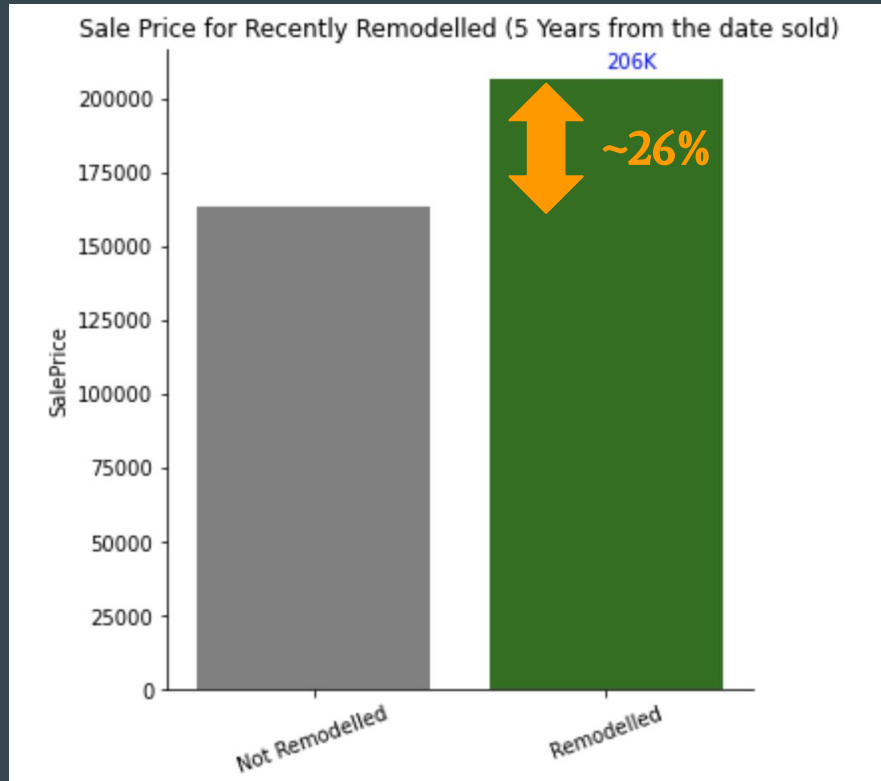


Top 5 neighbourhoods in Ames:  
(StoneBr, NridgeHt, NoRidge,  
GrnHill, Veenker)

Fetch about twice the average  
sale price compared against

Bottom 5 neighbourhoods in Ames:  
(Edwards, OldTown, BrDale,  
IDOTRR, MeadowV)

# Out with the old, in with the new (Remodelled)



~26% price difference between remodelled vs not remodelled houses

Recently remodelled defined as having renovation/ modification done within 5 years prior to sale

Same % on a larger house would also mean higher absolute price differences!



# The importance of quality



Houses with better quality fetch better prices generally.

Towards the end of the spectrum (upwards of 7 in quality levels), prices start deviate further from the trendline.

Very high quality levels of 7-10 represents a significant uptick in sale prices, compared to moderate/poorer quality levels 1-6.

What should I change/add during a remodel?



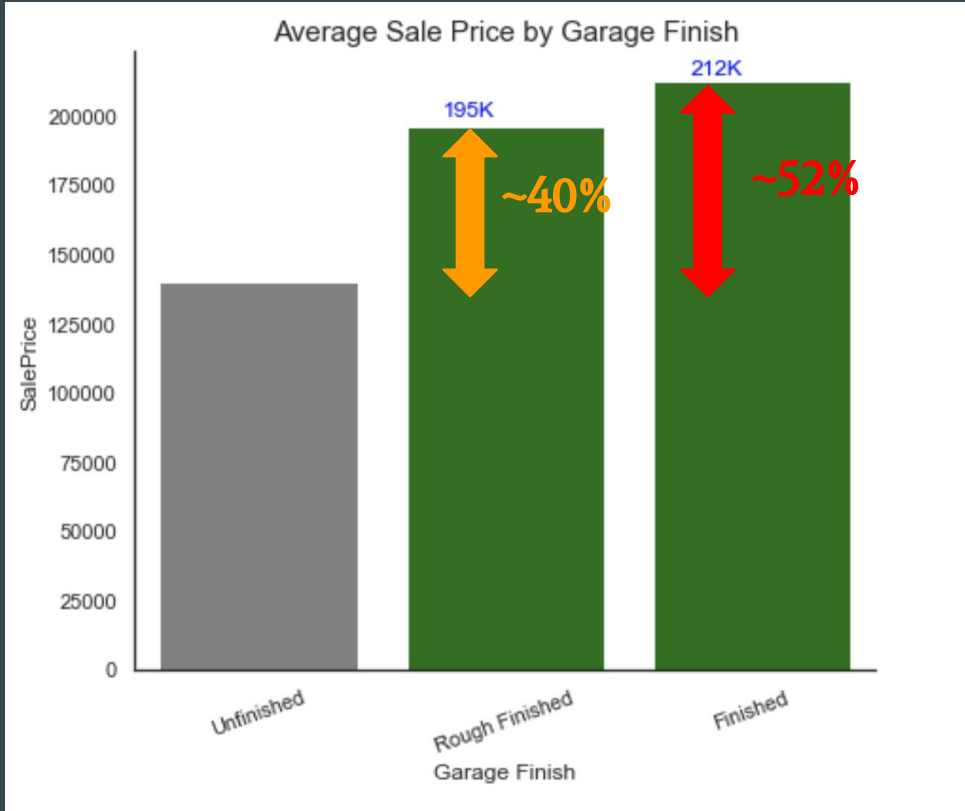
# Kitchen Quality



Good Kitchen Quality fetch a ~47% over Typical/Average

Excellent Kitchen Quality fetch a ~93% premium over Typical/Average

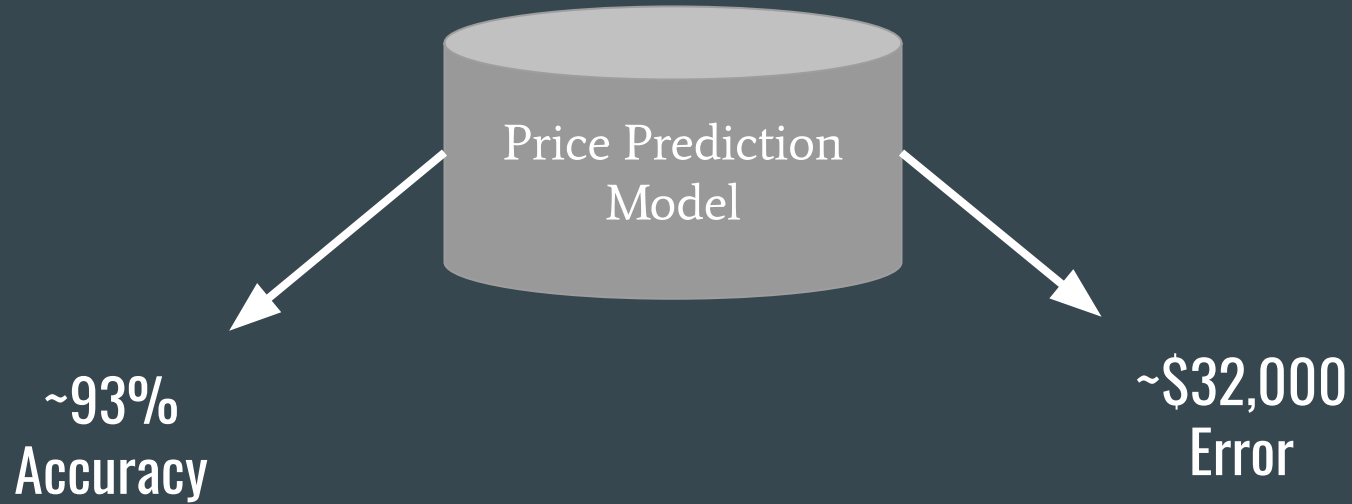
# Garage Finish



Rough finished garages fetch a ~40% premium over unfinished

Finished garages fetch a ~52% premium over unfinished

# Findings



# Conclusion (TLDR)



Ideal house for flipping  
should be:

1. Relatively large ( $> 2750$  SF)
2. Located in 1 of top 5 neighborhoods  
(StoneBr, NridgeHt, NoRidge, GrnHill, Veenker)
3. Relatively low quality
  - Garage finish (unfinished/half finished)
  - Kitchen Quality Fair, Average/Typical

# Conclusion (TLDR)

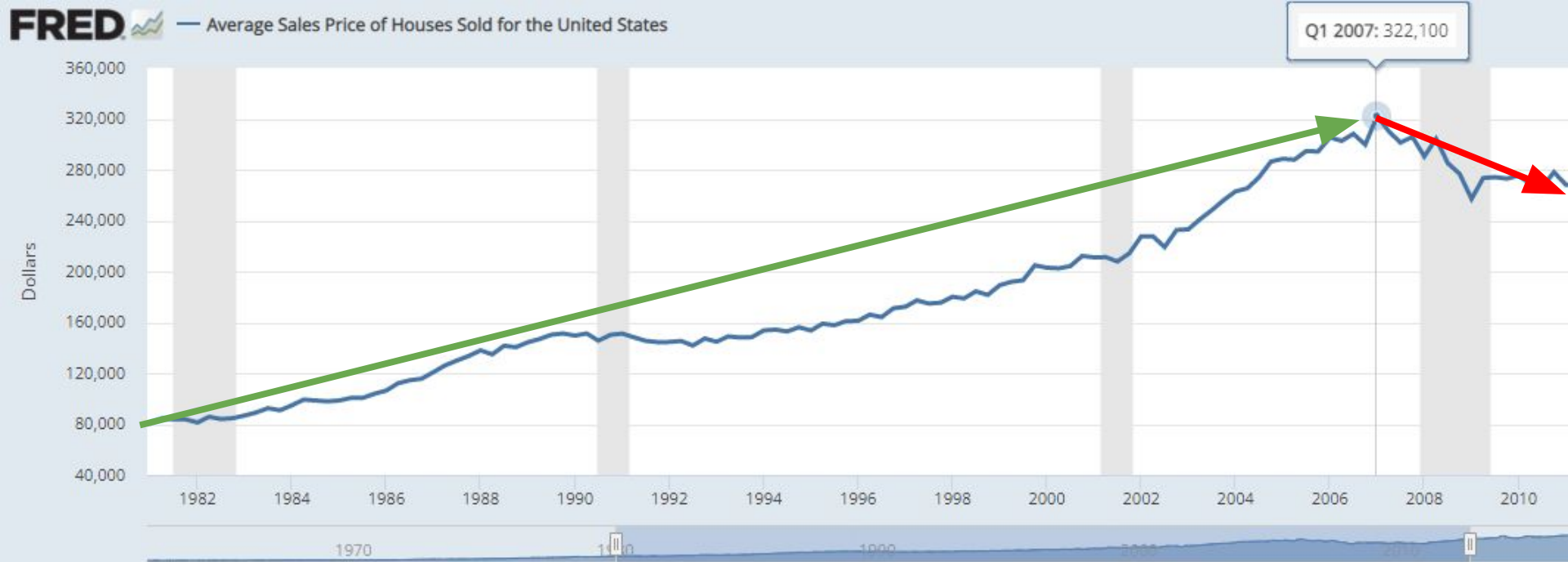


What to remodel the house:

1. Improve kitchen quality  
Good: ~47 % premium  
Excellent: ~93% premium
2. Improve Garage Finish  
Rough finish:  
~40% premium  
Finished: ~52% premium

# Limitations/ Outside research

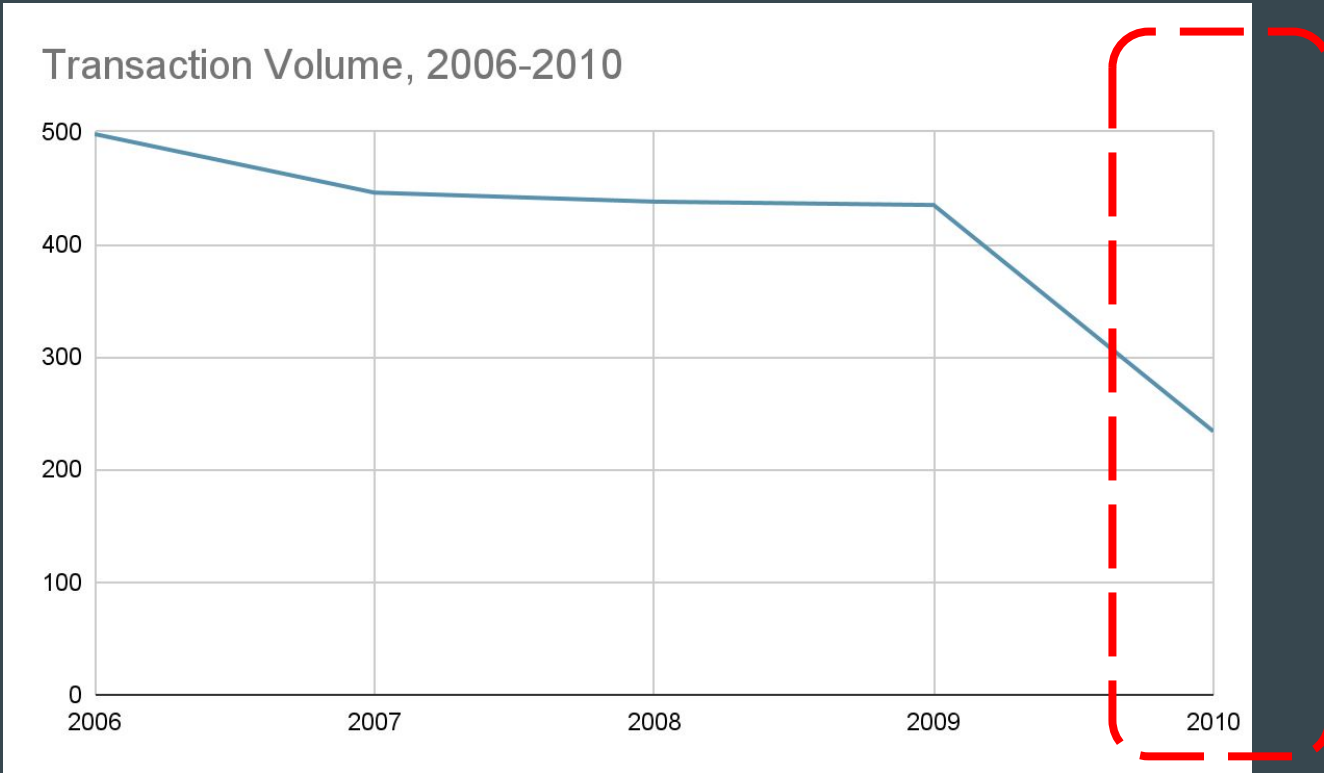
Housing  
Bubble



Sources: <https://fred.stlouisfed.org/series/ASPUS>



# Limitations/ Outside research



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