Realtor Pricing Tool Study

Prepared for Premier Properties, LLC
By Jen Wadkins

Introduction:
Model or Comps?

Business Questions

What are the primary factors influencing housing prices in the King County metro area?

Can we effectively use a regression model for realtors to determine a proper list price?

Is a model-based system more accurate for determining list price than the traditional comps-based system?

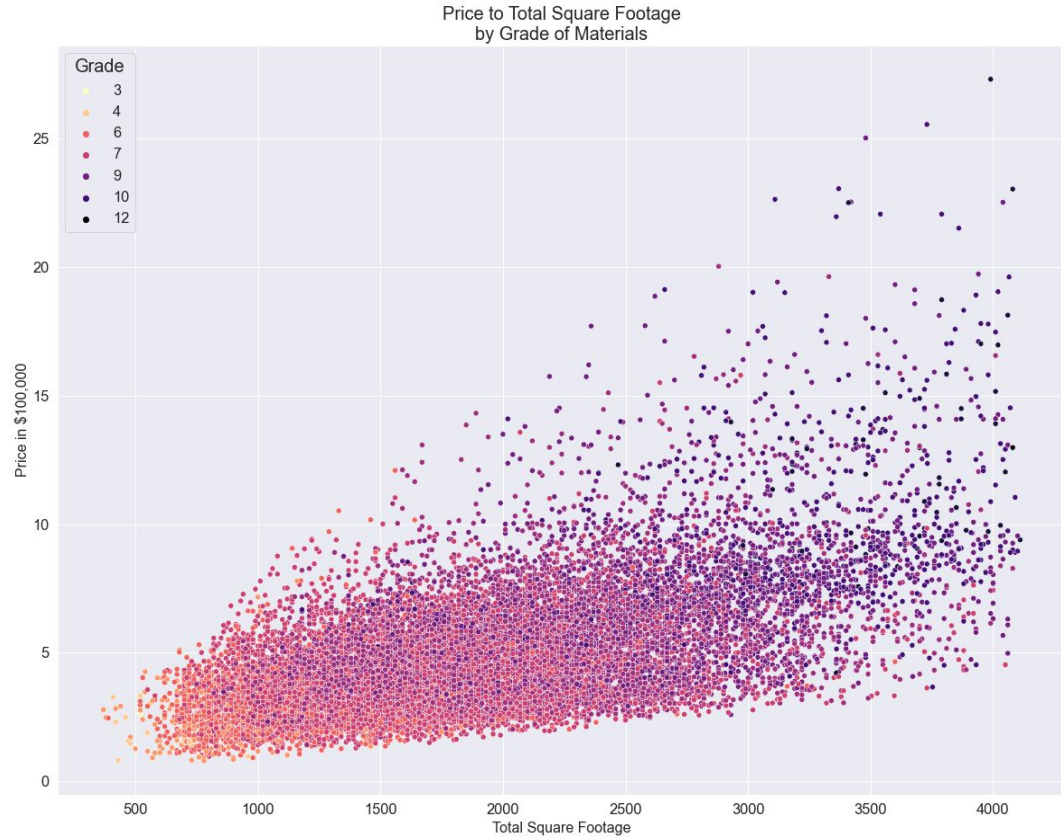What easy-to-use features can we add to our model to increase its accuracy?

Important Feature

Square Footage

How big is the house?

Grade

Quality of build materials
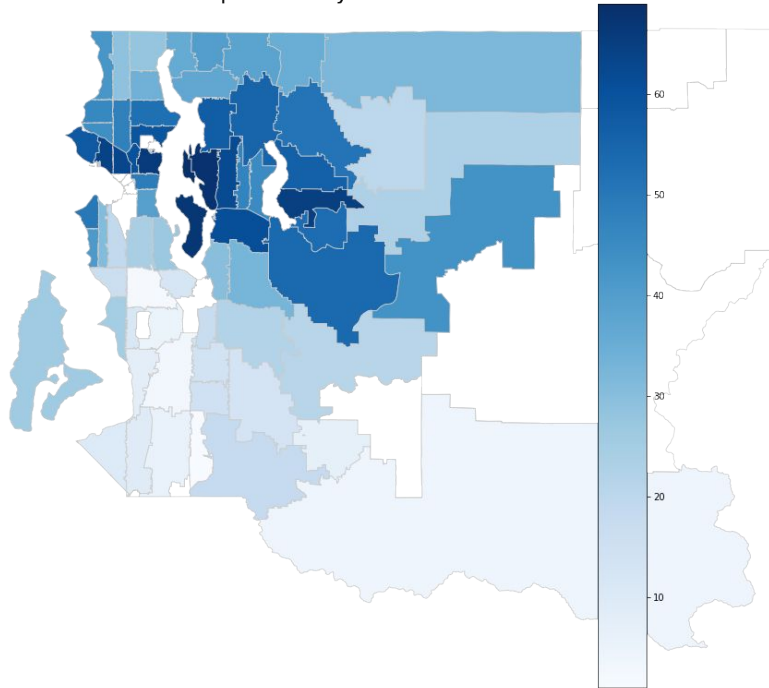And finishes

Important Feature

Zip Code
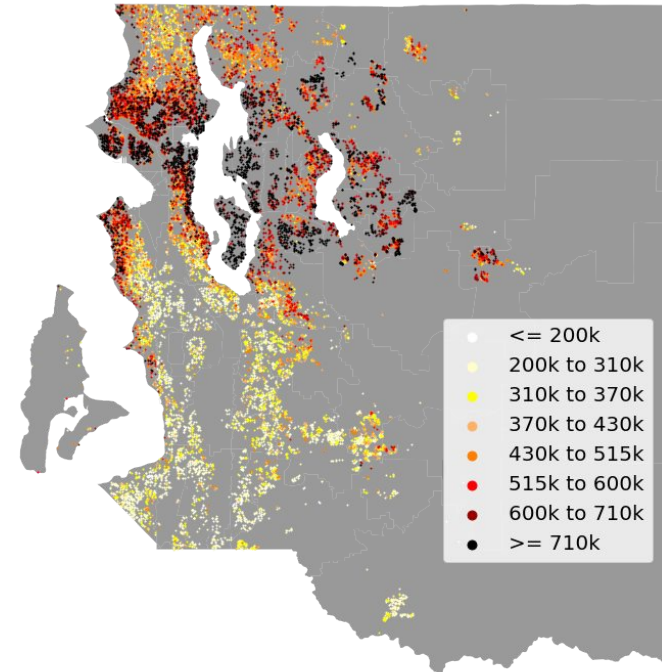
A glimpse of zip code importance

Most important feature

Location is everything.

Zip Codes by Median Rank

Home Sales in King County Metro Area

<= 200k
200k to 310k
310k to 370k
370k to 430k
430k to 515k
515k to 600k
600k to 710k
>= 710k

88%

Sounds decent, but average error is 55k either direction

Average error on properties under 500k is still 40k

Model provides at best a baseline.

Realtor Simulator

Realtor simulator - the "comps model"

Uses fewer features

Provides the properties that would need to be located after running model

Was more accurate on our new test data

Target property and comps found by realtor simulator

This property:
Actual price: 665000
Model estimate: 783695
Realtor simulator estimate: 663722

Model or Comps? Pros and Cons

Model

Pros

- Can be used without housing data on hand
- Does not need frequent updating

Cons

- Wide error range gives only a starting point
- Still requires human intervention to determine final price

Comps

Pros

- Is a familiar method for realtors
- Can capture subjective elements that a model misses
- Can still be done programmatically

Cons

- Requires entire data set be present to function
- Must be updated frequently, preferably daily, for most accurate results

Conclusions and Recommendations

If we want to use the model, it needs to perform better.

- Experiment with higher granularity location using lat/long

- Source better data that has sale type to weed out non-market sales.

- Add easy-use features for realtors that might improve the model and capture some of the subjective elements that the model is currently missing.

Future Work

Improve model:

- Utilize lat/long for more granular location, and provide an address lookup tool to easily obtain these values
- Get School ratings from GreatSchools.org via scraper
- Integrate additional King County GIS map information in concordance with lat/long to determine proximity scores to various public features (parks, services, waterfront), non-discriminatory census statistics and other publicly available information
- "Walkability" metric like Redfin distance to grocery, restaurant etc

Realtor simulator - Determine coefficient multipliers for view, basement, waterfront, renovations, comparative sq footage that would allow the realtor simulator to take these elements into account

GUI for use of tool by realtors

Thank you!