MODELING HOME PRICES

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SUMMARY

The custom home builders at *HomeBoyz* need a way of accurately pricing their homes.

A model designed to predict the value of a home in *King County, Washington* is proposed as a solution to this.

The model indicates that the following features are most important in determining a home's selling price:

❖ *Grade*

❖ *Square footage of the interior*

❖ *Total number of bathrooms*

❖ *Total number of bedrooms*

BUSINESS UNDERSTANDING

❖ The purpose of the model is to accurately predict the market value of a home in King County based on several key features.

❖ Its main uses will be:

- *giving initial estimates based on floor plans*

- *ensuring that custom homes are built to maximize equity*

- *maintaining customer trust*

DATA UNDERSTANDING

❖ Model was trained on data describing over 20,000 home sales in *King County* from May 2014 to May 2015

❖ Model attempts to predict *selling price* from the following features provided by the dataset:

- *grade (quality index)*

- *square footage of the home + neighboring homes*

- *number of bedrooms + bathrooms*

- *condition*

- *single-story vs multi-story*

- *with basement vs without basement*

- *renovated before vs never renovated*

RESULTS

- ❖ *Adding a single full bathroom increases the value added per square foot by 0.877%*

- ❖ *Adding a single bedroom increases the value added per square foot by 0.522%*

- ❖ *If the grade increases by 1, then the price of the home increases by 20.89%*

- ❖ *If the condition increases by 1, then the price of the home increases by 10.90%*

- ❖ *Price increases by 0.0773% per 1% increase in the average home square footage of the 15 nearest neighbors*

- ❖ *Price increases by:*
  - *4.38% when going from a home not renovated → home renovated at least once*
  - *8.10% when going from a home without basement → home with basement*
  - *5.64% when going from single-story home → multi-story home*

CONCLUSION

❖ The model indicates that the following features are most important in determining a home's selling price:

- *Grade*

- *Square footage of the interior*

- *Total number of bathrooms*

- *Total number of bedrooms*

LIMITATIONS & NEXT STEPS

❖ More analysis should be done to determine how location and seasonality affect home prices

❖ Features that are demographic in nature should be considered
- for example, gathering census data on the average income per household in *King County*

❖ Understanding how exactly a grade is assigned to a home in *King County* is imperative
- would allow greater insight into which attributes contribute to a home's value

THANK YOU

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