

# Data Analysis - King Country House Sales



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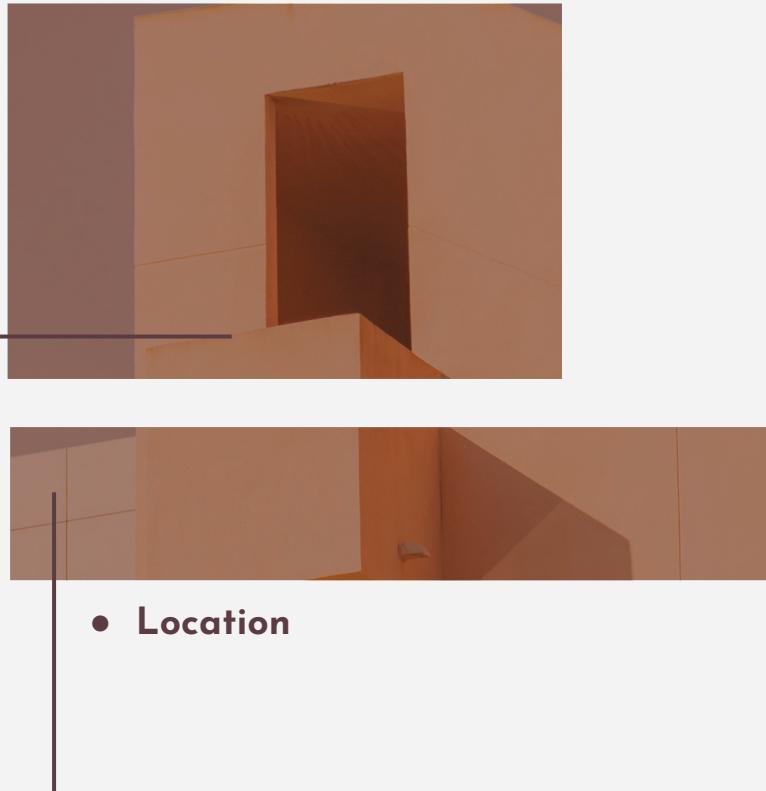
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# About the Analysis

- Prediction of house sale prices
- Recommendations to increase sales price



- Methodology



- Location

# Data Understanding, Preparation and Munging

## 1. Subset:

- bedroomsNumber - of Bedrooms/House
- bathroomsNumber - of bathrooms
- floorsTotal - floors (levels) in house
- condition - How good the condition is ( Overall )
- grade- overall grade given to the housing unit, based on King County grading system

## 3. Subset:

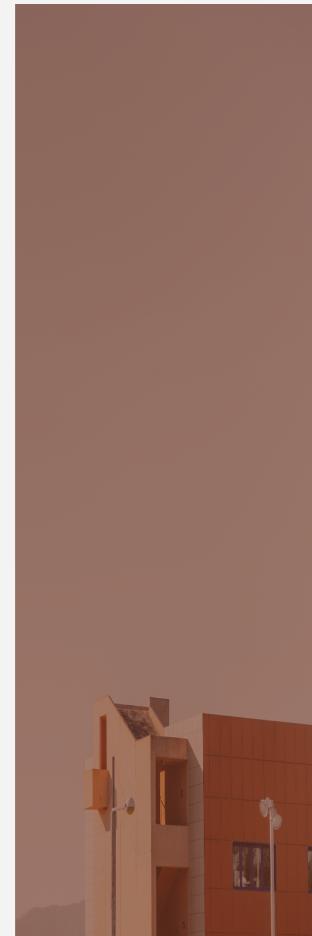
- waterfront - House which has a view to a waterfront
- view - Has been viewed
- yr\_built - Built Year
- yr\_renovated - Year when house was renovated

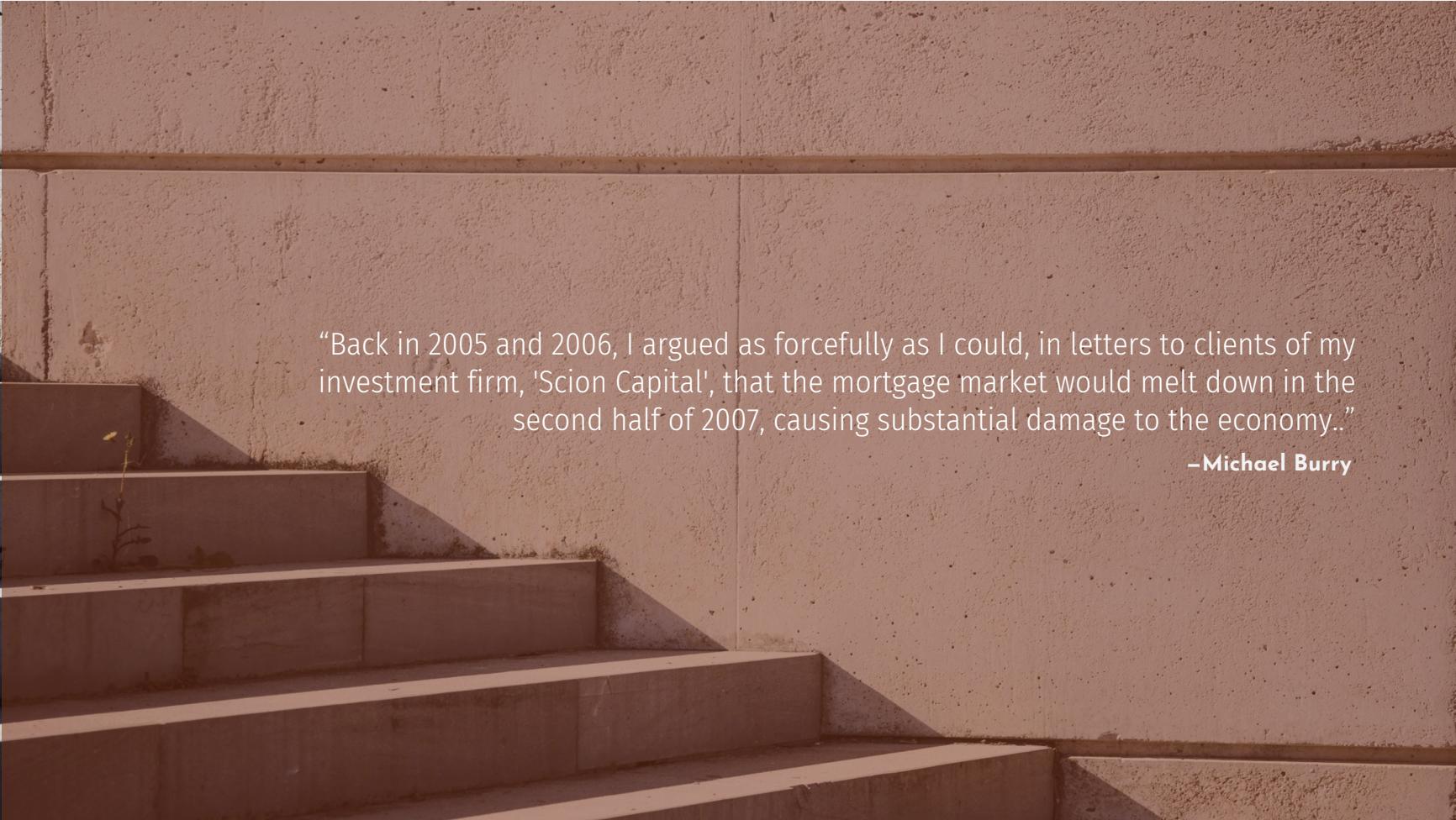
## 2. Subset:

- sqft\_livingsquare - footage of the home
- sqft\_lotsquare - footage of the lot
- sqft\_above - square footage of house apart from basement
- sqft\_basement - square footage of the basement

## 4. Subset:

- sqft\_living15 - The square footage of interior housing living space for the nearest 15 neighbors
- sqft\_lot15 - The square footage of the land lots of the nearest 15 neighbors
- date\_month - month the house was sold
- zipcode - zip
- lat - Latitude coordinate
- long - Longitude coordinate

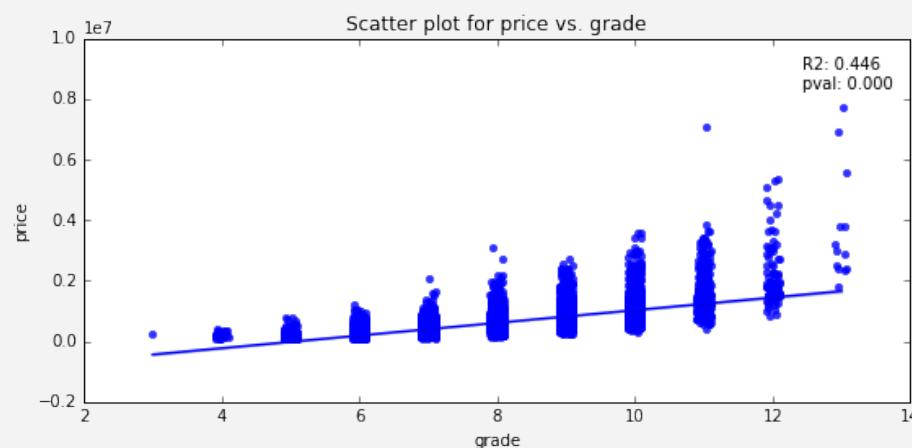
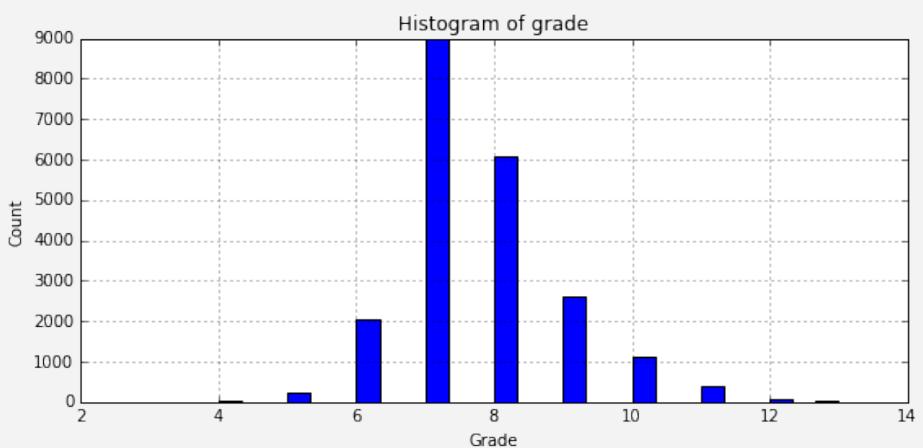


A photograph showing a modern architectural feature: a series of thick, light-colored concrete steps or ledges. On the second step from the bottom, there is a small, dark rectangular planter containing a single, thin-stemmed plant with small leaves. The background is a plain, textured wall.

“Back in 2005 and 2006, I argued as forcefully as I could, in letters to clients of my investment firm, 'Scion Capital', that the mortgage market would melt down in the second half of 2007, causing substantial damage to the economy.”

—Michael Burry

# Exploratory Data Analysis



# Exploratory Data Analysis

OLS Regression Results						
<b>Dep. Variable:</b>	price		<b>R-squared:</b>	0.446		
<b>Model:</b>	OLS		<b>Adj. R-squared:</b>	0.446		
<b>Method:</b>	Least Squares		<b>F-statistic:</b>	1.740e+04		
<b>Date:</b>	Thu, 18 Feb 2021		<b>Prob (F-statistic):</b>	0.00		
<b>Time:</b>	08:15:15		<b>Log-Likelihood:</b>	-3.0100e+05		
<b>No. Observations:</b>	21596		<b>AIC:</b>	6.020e+05		
<b>Df Residuals:</b>	21594		<b>BIC:</b>	6.020e+05		
<b>Df Model:</b>	1					
<b>Covariance Type:</b>	nonrobust					
	<b>coef</b>	<b>std err</b>	<b>t</b>	<b>P&gt; t </b>	<b>[0.025</b>	<b>0.975]</b>
<b>Intercept</b>	-1.061e+06	1.23e+04	-86.398	0.000	-1.09e+06	-1.04e+06
<b>grade</b>	2.092e+05	1585.811	131.897	0.000	2.06e+05	2.12e+05
<b>Omnibus:</b>	19879.380		<b>Durbin-Watson:</b>	1.968		
<b>Prob(Omnibus):</b>	0.000		<b>Jarque-Bera (JB):</b>	2043866.894		
<b>Skew:</b>	4.081		<b>Prob(JB):</b>	0.00		
<b>Kurtosis:</b>	49.955		<b>Cond. No.</b>	52.0		

# Multiple Regression Model

The most important variables for the final Multiple Regression Model are:

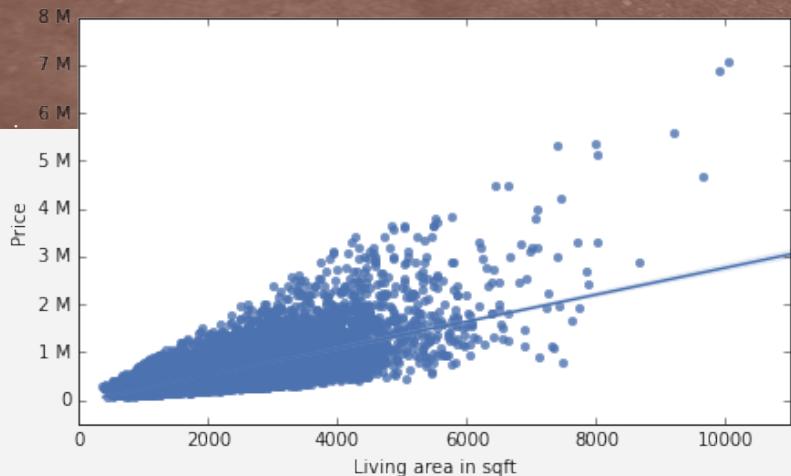
- Location
- Living area
- Renovation status
- House grade

Including these and further relevant features in a final multiple regression model, these predictors could together explain more than 80% of the variance in housing selling prices in King County.

# Recommendations

Increase the interior living area

Explains round about 50% of the price



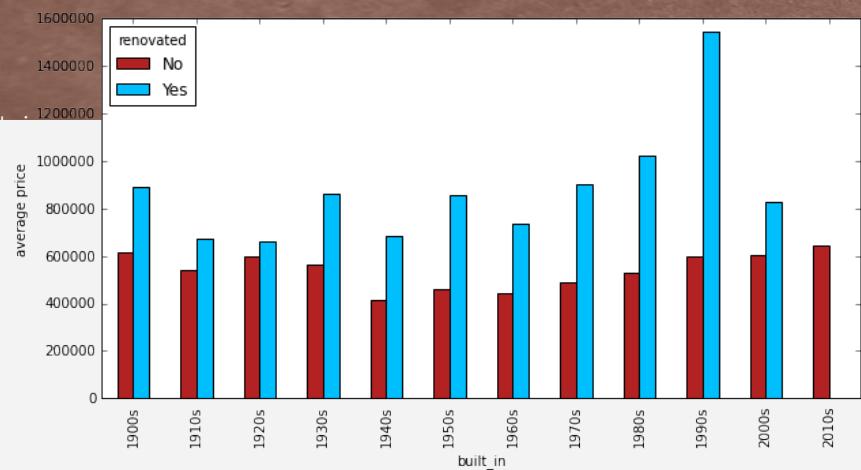
Location! Location! Location!

explains >40% of price

# Recommendations

## Renovate the house

Less then 5% of houses are renovated



## Increase the grade of the house

explains >50% of price

# Summary

- Several variables were found with a significant impact on house selling prices in King County
- Most important ones: location (zipcode), total living area, renovation status and house grade
- using these and further features in a multiple regression model, these predictors could together explain >80% of sales prices in King County

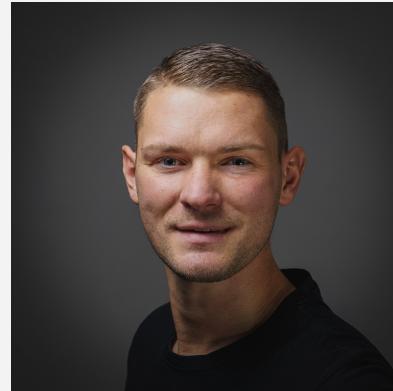
## THE TEAM



Mr.



Johannes



Pfohl

# THANKS

Does anyone have any questions?

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