Mod-1 Project:

Housing Sales Data 2014/2015 – Kings County, WA, USA

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Overview of Properties in Dataset

Total Number of properties in Kings County:	902,107
Total Number of properties in DataSet:	21,418
Percentage Number of Properties in Sample:	2.4 %
Age Range of Properties:	116 - 1 yrs
Median Years to Renovation:	54 yrs
Nu. of Properties Over Median Age, Not Renovated:	7244
Extrapolated to Kings County:	302,610
Nu. of Properties in Bad Condition in Sample:	199
Percentage Bad Condition:	0.92%
Extrapolated Number of Properties in Bad Condition:	8313
Properties < Grade 7 & > Median Renovation Age:	2007
Extrapolated to Kings County:	83,840
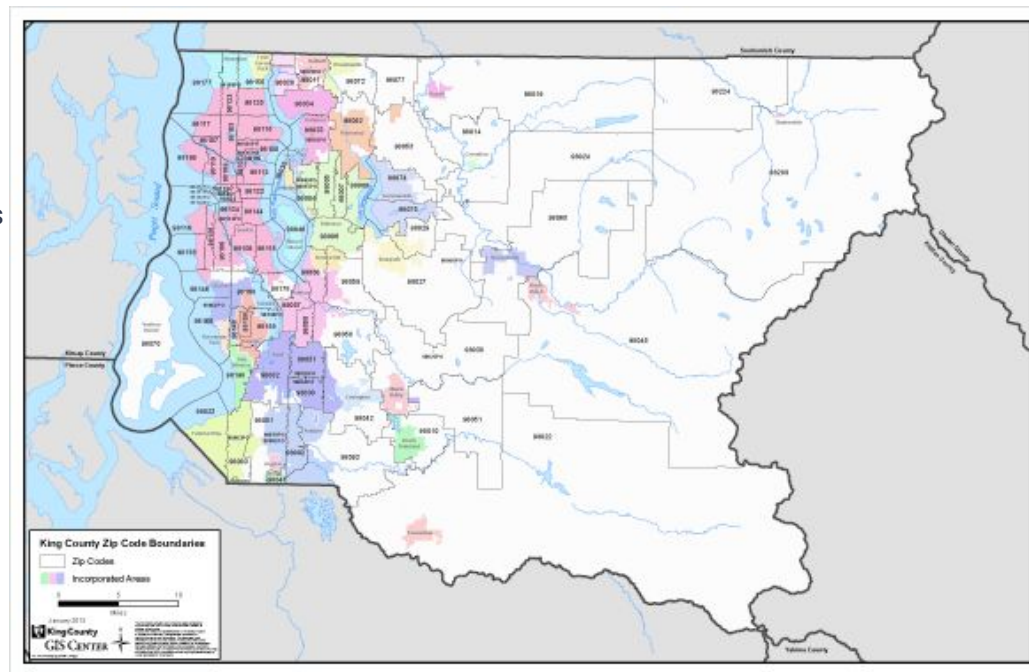
Criteria – 1

Filter Selection:

➔ Building Grade   < 7
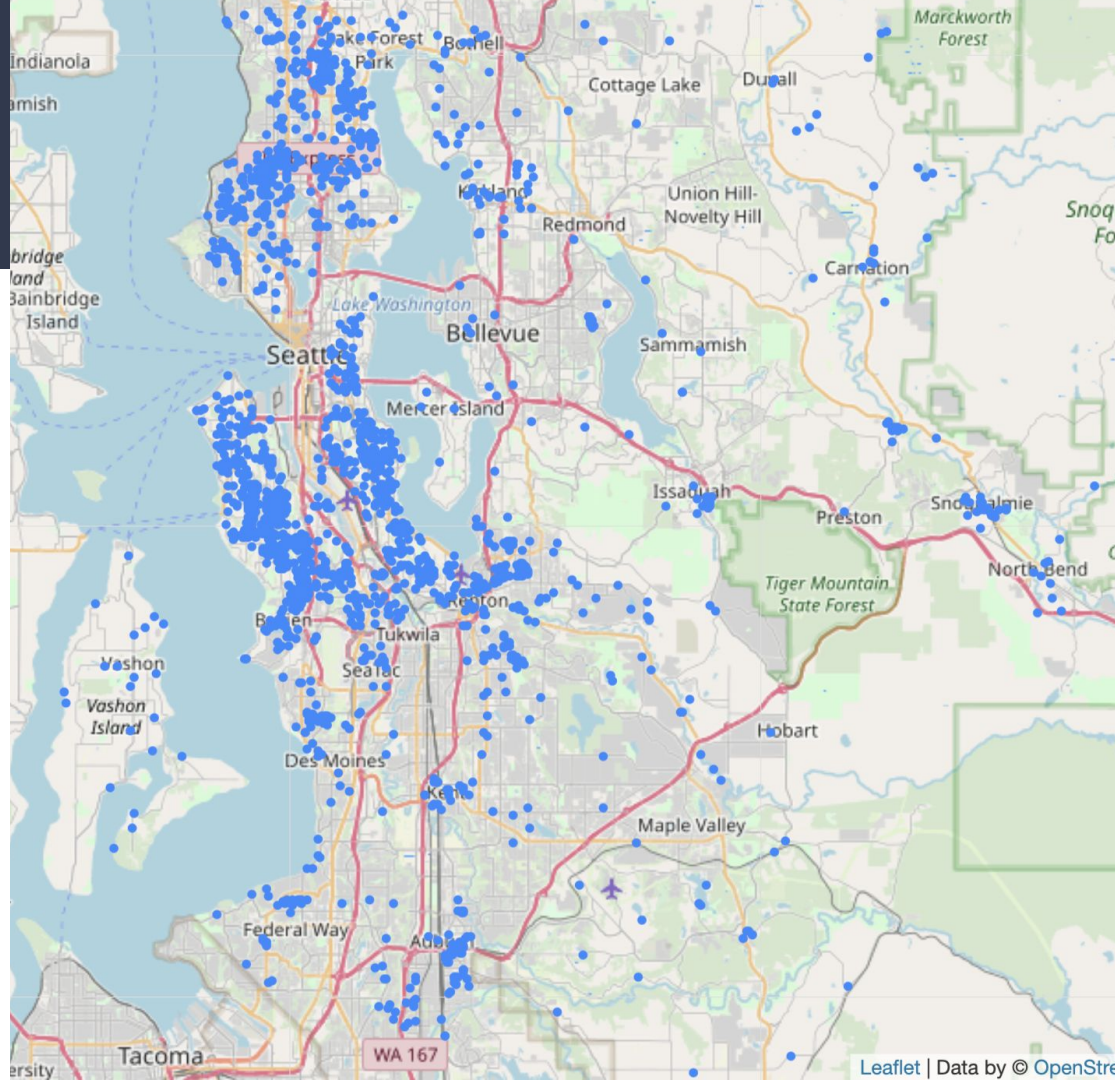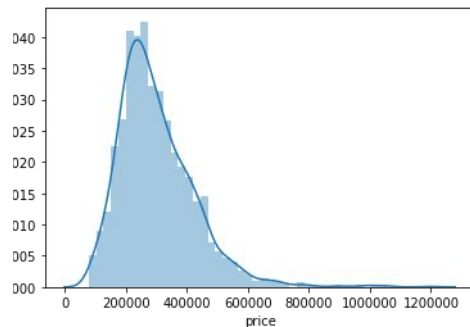
➔ Building Age   > 53 yr

Total Properties meet criteria:
➔   2007

Extrapolated to Kings County:
➔   83,840

Price of Properties Breakdown:

➔	mean	$ 301,124.10
➔	std	$ 12,562.32
➔	min	$ 78,000.00
➔	25%	$ 214,000.00
➔	50%	$ 276,500.00
➔	75%	$ 368,000.00
➔	max	$ 1,200,000.00

Criteria – 2

Filter Selection:

➔   Building Condition < 3

➔   Age > 53 yr

Total Properties meet criteria:
➔   148

Extrapolated to Kings County:
➔   6183

Price of Properties Breakdown:

mean	$	323,024.60
std	$	272,366.20
min	$	78,000.00
25%	$	175,000.00
50%	$	257,500.00
75%	$	400,000.00
max	$	2,560,000.00
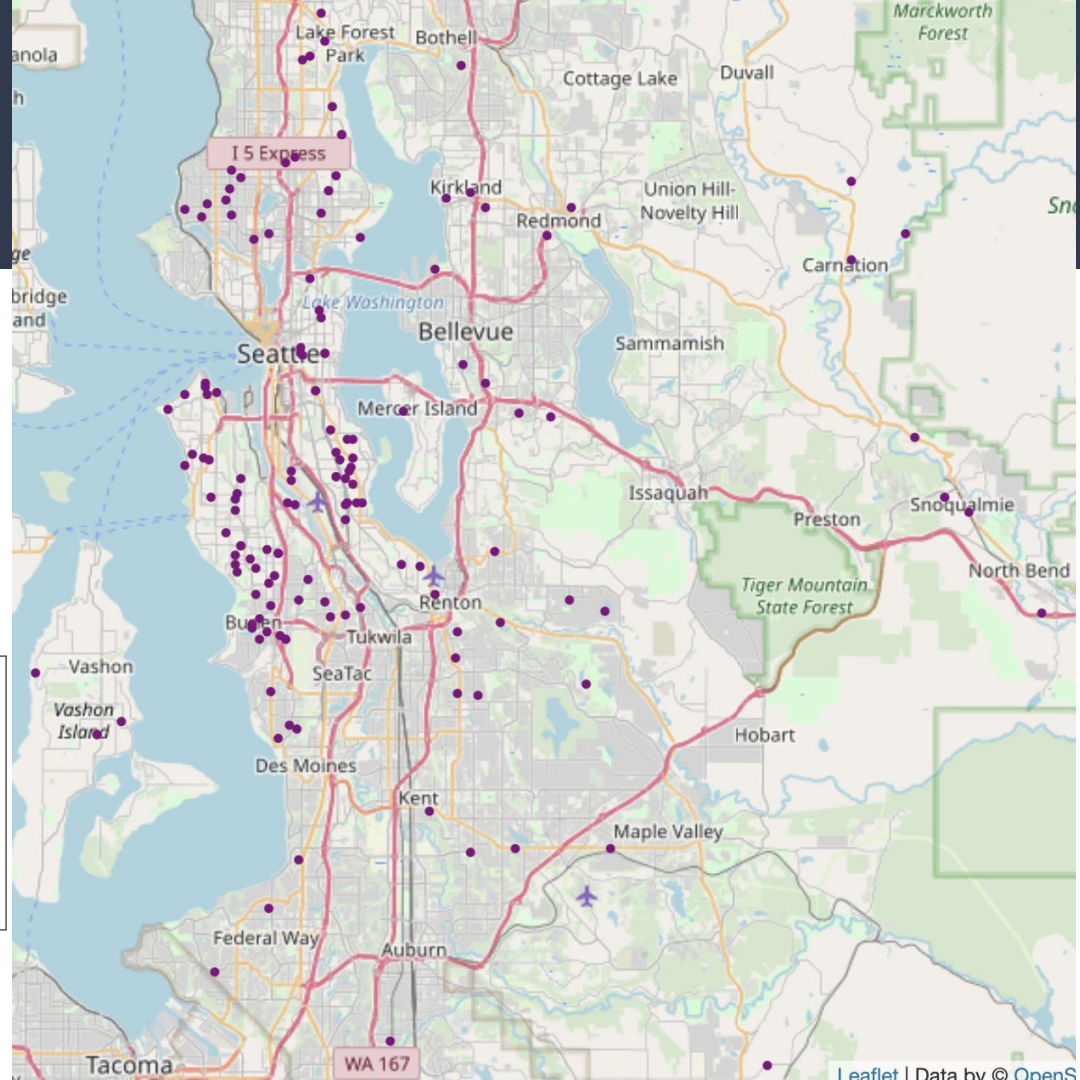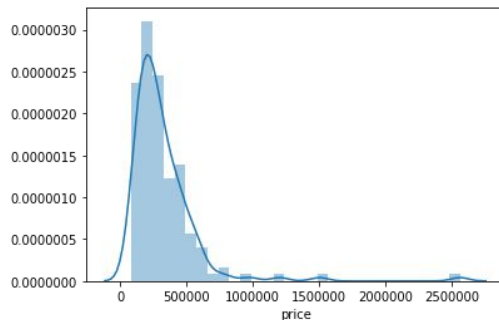
Criteria – 3

Filter Selection:

➜ Building Condition < 3

➜ Building Grade < 7

Total Properties meet criteria:
➜ 99

Extrapolated to Kings County:
➜ 4136

Price of Properties Breakdown:

mean	$ 259,409.09
std	$ 149,877.22
min	$ 78,000.00
25%	$ 160,000.00
50%	$ 220,500.00
75%	$ 320,000.00
max	$ 975,000.00

Mean Price in each Zipcode
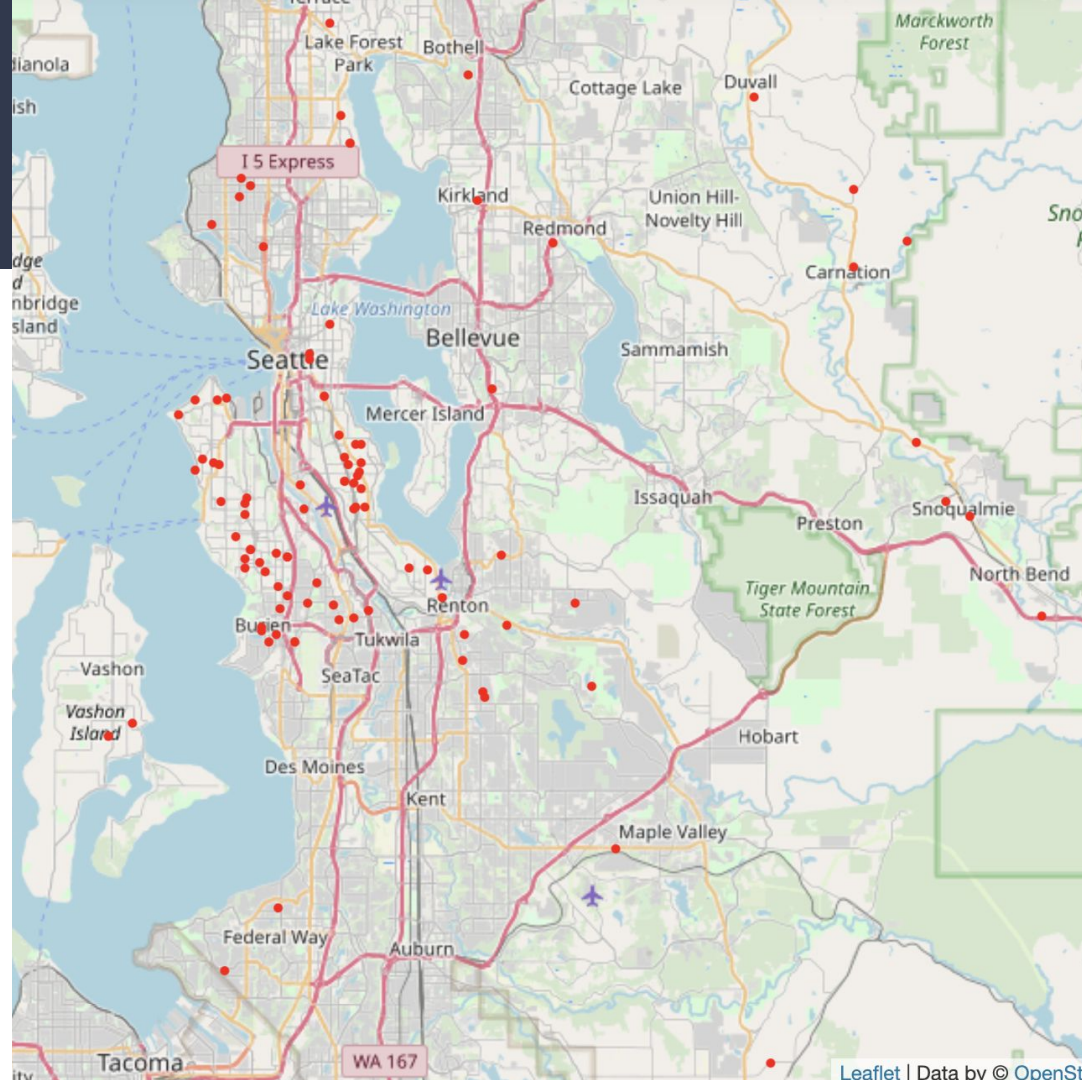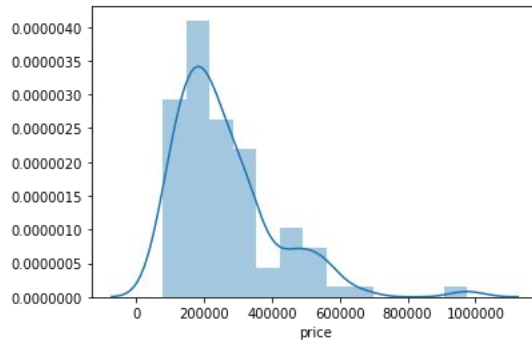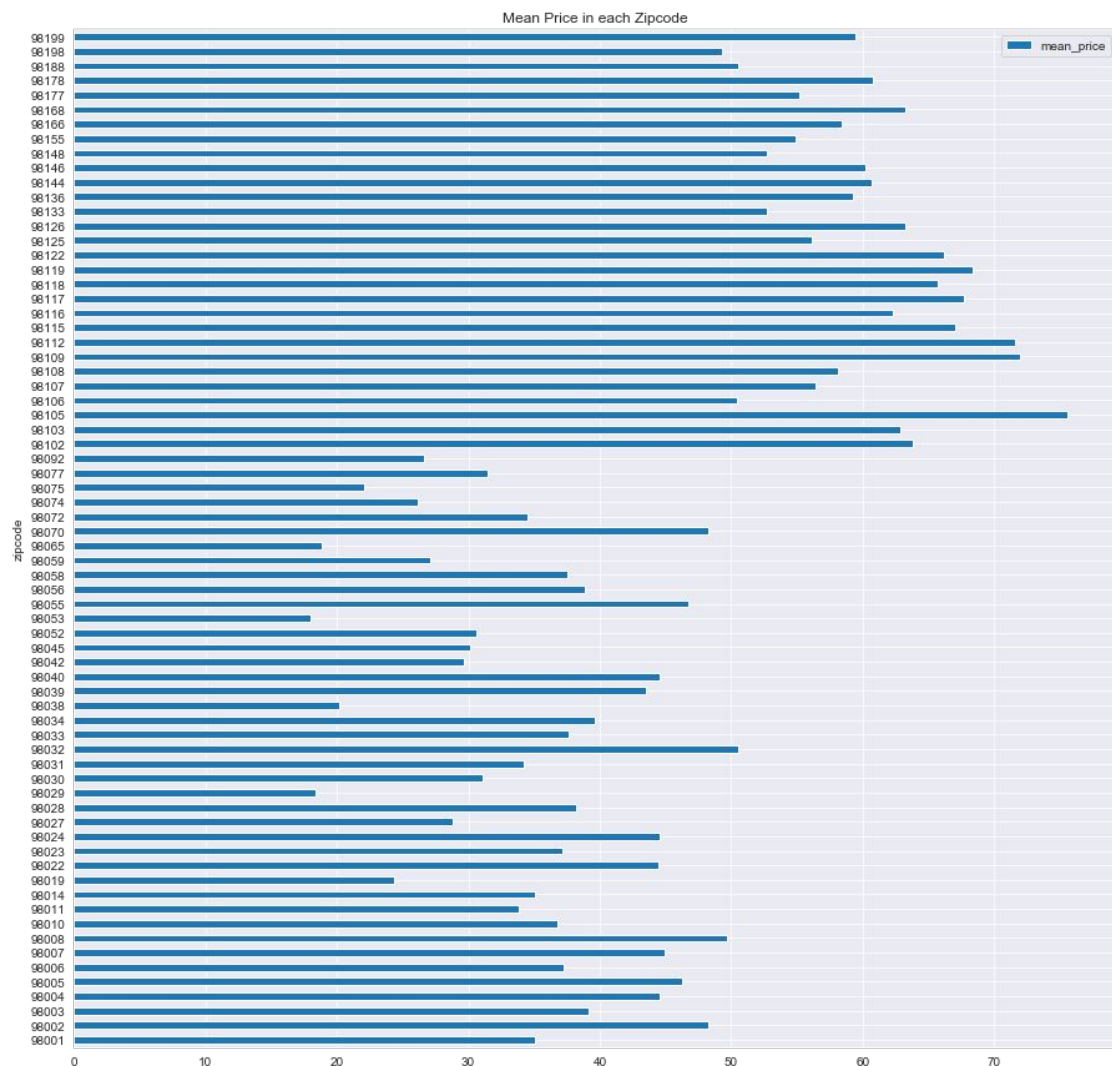
Target Zip Codes:

➔ The recommendation is to target the 25 zip codes with average building ages over the 40 year limit.

➔ No Buildings Under 25 years old have been renovated

Building Age Distribution:

Property Age as per location

Price Compared to Year Built:
Data_1 = Non-Renovated
Data_2 = Renovated

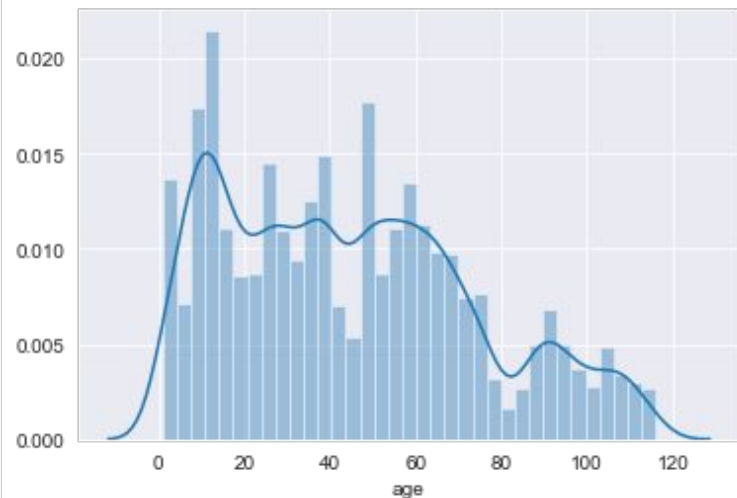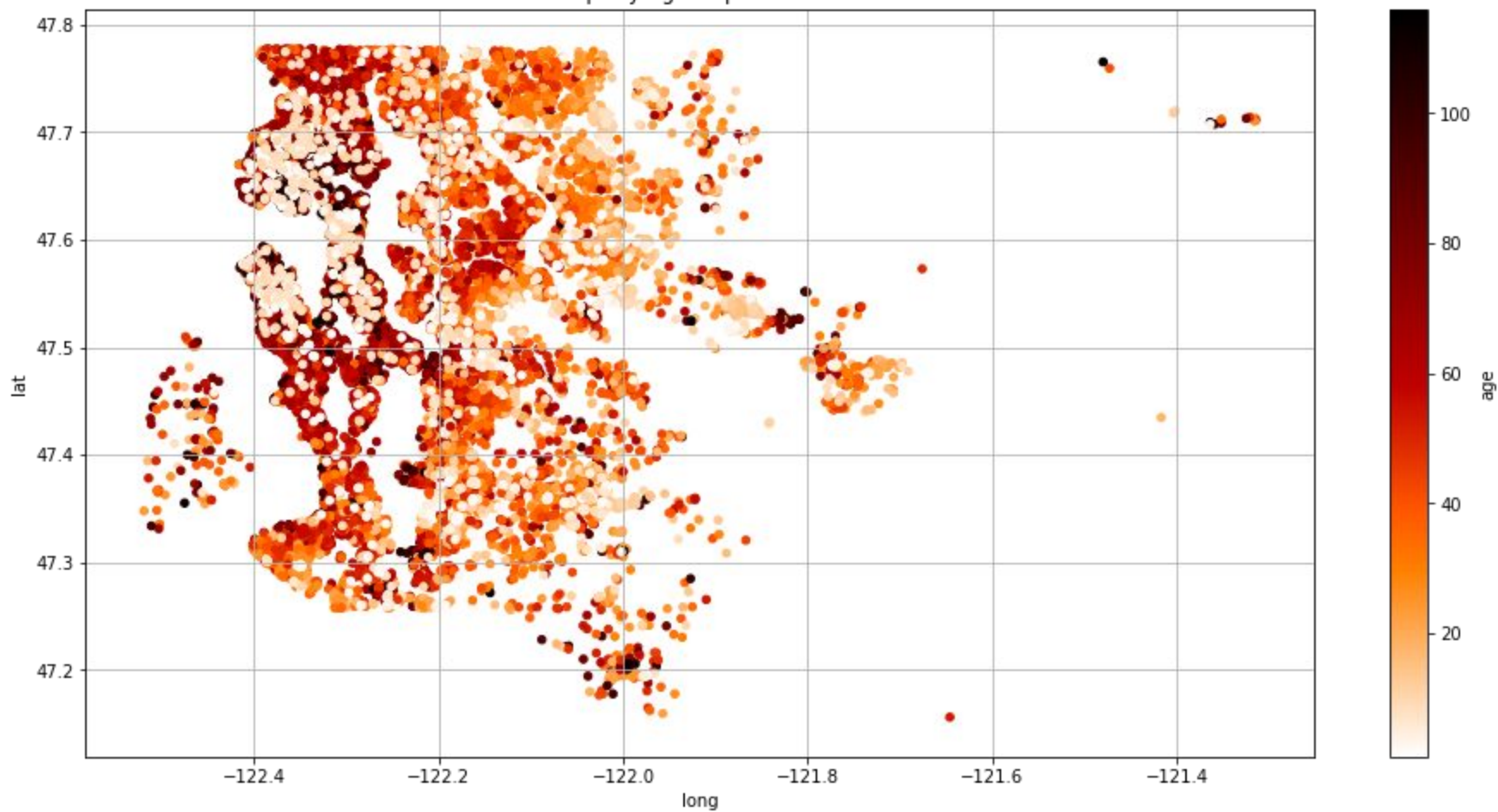Non-Renovated Regression Diagnostics
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Sample Size: 20851
Slope: -996.35
Y-Intercept: 575865.79
Correlation: -0.082
R-Squared: 0.007

Price = -996.35 * Age + 575865.79

Renovated Regression Diagnostics

Sample Size: 744
Slope: -1908.09
Y-Intercept: 914955.28
Correlation: -0.082
R-Squared: 0.007

Price = -1908.09 * Age + 914955.28

Price Compared to Year Built, Split to Renovated & Non-Renovated

Price Compared to Year Built:
Data_1 = Non-Renovated
Data_2 = Renovated
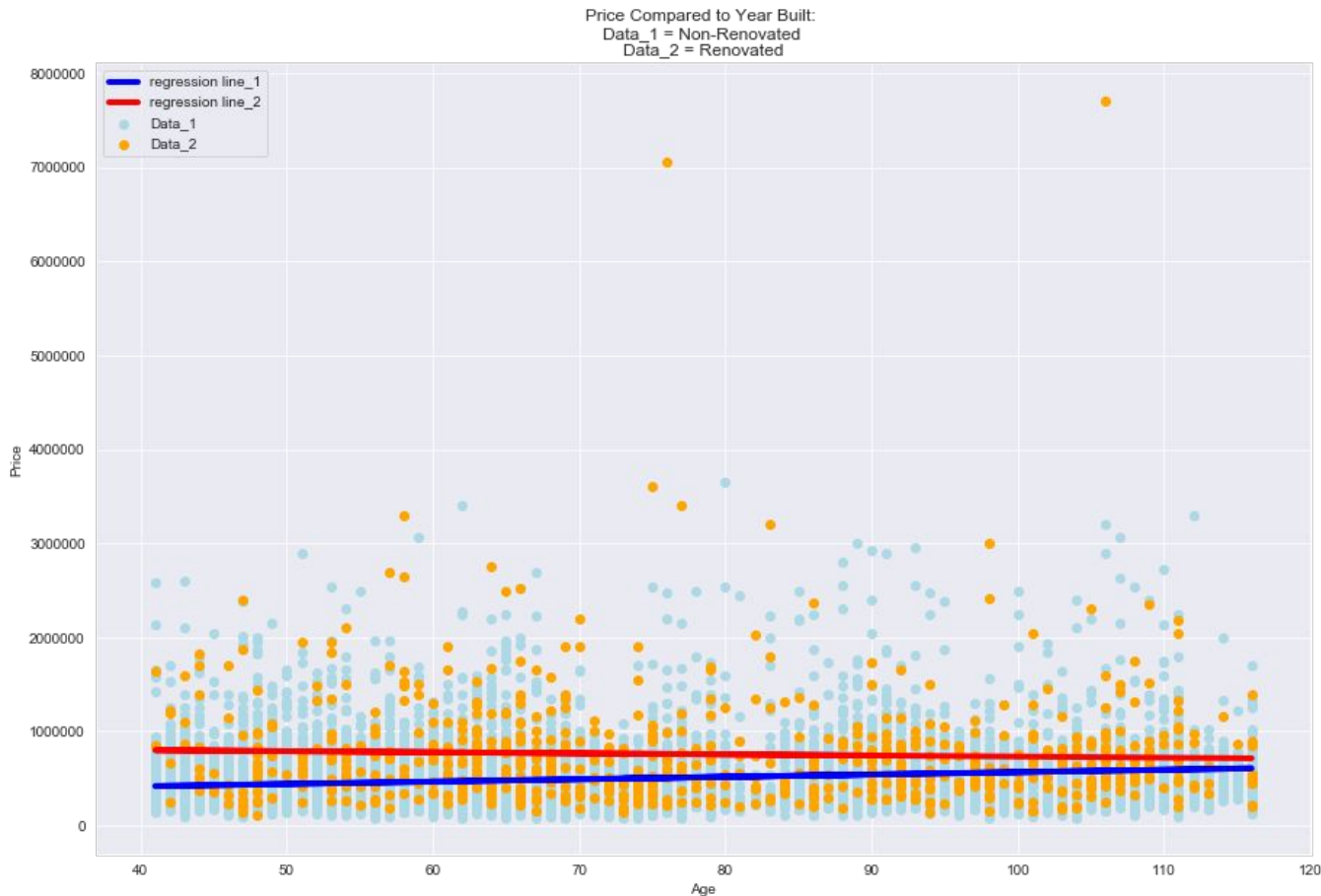
Non-Renovated Regression Diagnostics

Sample Size: 10222
Correlation: 0.16
R-Squared: 0.025

Price = 2517.33 * Age + 316629.95

Renovated Regression Diagnostics

Sample Size: 704
Correlation: 0.16
R-Squared: 0.025

Price = -1147.14 * Age + 848288.0

For Building Age = 54 years

Non-Renovated   = $ 45,2565.77
Renovated   = $ 78,6342.44
Difference   = $ 33,3776.67

Adjusted Model for Building's Over 40 Years Old.

Correlation Comparison: Improve Price

Price:

price	1.000000
sqft_living	0.701915
grade	0.667958
sqft_above	0.605378
sqft_living15	0.585247
bathrooms	0.525886
view	0.393498
sqft_basement	0.321084
bedrooms	0.315950
waterfront	0.264310
floors	0.256789
yr_renovated	0.117852
sqft_lot	0.089874
sqft_lot15	0.082852
yr_built	0.053967
condition	0.036003
age	-0.053967

Age:

age	1.000000
condition	0.361557
yr_renovated	0.202565
sqft_basement	0.130064
view	0.054464
waterfront	0.024491
sqft_lot	-0.052939
price	-0.053967
sqft_lot15	-0.070767
bedrooms	-0.160737
sqft_living	-0.318149
sqft_living15	-0.326363
sqft_above	-0.424025
grade	-0.447858
floors	-0.489186
bathrooms	-0.507193
yr_built	-1.000000

Conclusion:

The best way to improve the value of a property is to increase the living area.

Therefore, when conduction a renovation; if there is space on the property to increase the living area, this should be undertaken.

For properties; improving the condition or grade does increase price as well.

Therefore; a comparison for houses of similar living space for Condition & Grade. To an increasing living space. Both against price must be conducted.

However due to time constraints this analysis was not conducted.

Thank You For Listening

Additional References:

→ https://www.census.gov/2010census/data/
→ https://gis-kingcounty.opendata.arcgis.com/datasets/zipcodes-for-king-county-and-surrounding-area-zipcode-area?geometry=-123.429%2C47.189%2C-119.474%2C47.838