

there's no place like a (new) home.

we've moved!

**King County, Washington** 

## **House Price Prediction** — King County, Washington.

Pengju Sun 03/22/2021

## D-R-HORTON°

America's Builder

D.R.Horton, as one of the biggest housing development companies in the US, is searching for qualities that lead to higher home sale prices in King County, Washington.



## **King County House Data**



#### **Methods**

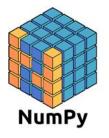










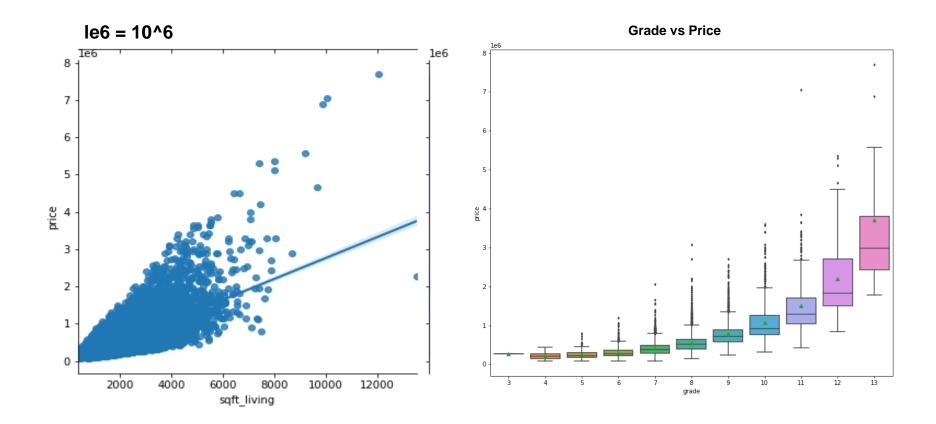


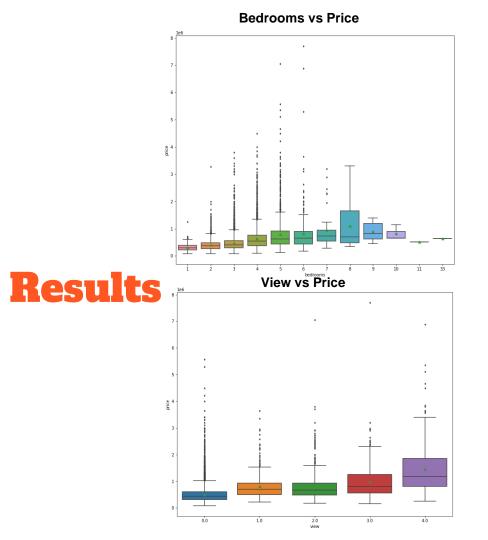
### **Results**

		0.00	0.50	0.7	0.00	0.00	0.00	0.00	0.000	0.07	0.050	0.04	0.000	0.50		0.054	0.40	0.40
price	1	0.32	0.53	0.7	0.09			0.39	0.036	0.67	-0.053	0.31	0.022	0.59	0.083	-0.054	0.12	0.18
bedrooms	0.32	1	0.53	0.59	0.034	0.18	-0.0021	0.081	0.023		-0.16	-0.012	0.14		0.032	-0.16	0.018	0.16
bathrooms	0.53			0.76	0.088		0.064		-0.13	0.67	-0.2	0.024		0.57	0.088	-0.51	0.047	0.16
sqft_living	0.7	0.59	0.76		0.17		0.1		-0.059	0.76	-0.2	0.052		0.76	0.18	-0.32	0.051	
sqft_lot	0.09	0.034	0.088	0.17	1	0.0048	0.021	0.075	-0.0088	0.11	-0.13	-0.086		0.14	0.72	-0.053	0.0051	-0.035
floors	0.26				-0.0048		0.021	0.028	-0.26	0.46	-0.06	0.049	0.13		-0.011	-0.49	0.0037	-0.25
waterfront	0.26	-0.0021	0.064	0.1	0.021	0.021	1		0.017	0.083	0.029	-0.012	-0.038	0.084	0.031	0.024	0.074	0.039
view	0.39	0.081			0.075	0.028			0.046		0.085	0.0063	-0.078		0.073	0.054	0.09	0.18
condition	0.036	0.023	-0.13	-0.059	-0.0088	-0.26	0.017	0.046	1	-0.15	0.0029	-0.015	-0.11	-0.093	-0.0031		-0.055	0.13
grade	0.67		0.67	0.76	0.11	0.46	0.083		-0.15		-0.19	0.11		0.71	0.12	-0.45	0.015	0.051
zipcode	-0.053	-0.16	-0.2	-0.2	-0.13	-0.06	0.029	0.085	0.0029	-0.19	1		-0.56	-0.28	-0.15		0.062	0.16
lat	0.31	-0.012	0.024	0.052	-0.086	0.049	-0.012	0.0063	-0.015	0.11		1	-0.14	0.049	-0.086	0.15	0.028	0.14
long	0.022	0.14				0.13	-0.038	-0.078	-0.11		-0.56	-0.14				-0.41	-0.065	-0.23
sqft_living15	0.59			0.76	0.14		0.084		-0.093	0.71	-0.28	0.049			0.18	-0.33	0.00062	0.045
sqft_lot15	0.083	0.032	0.088		0.72	-0.011	0.031	0.073	-0.0031	0.12	-0.15	-0.086			1	-0.071	0.0044	-0.042
house_age	-0.054	-0.16	-0.51	-0.32	-0.053	-0.49	0.024	0.054	0.36	-0.45	0.35	0.15	-0.41	-0.33	-0.071	1		0.16
renovated	0.12	0.018	0.047	0.051	0.0051	0.0037	0.074	0.09	-0.055	0.015	0.062	0.028	-0.0650	0.00062	20.0044			0.045
basement_present	0.18	0.16	0.16		-0.035	-0.25	0.039	0.18	0.13	0.051	0.16	0.14	-0.23	0.045	-0.042	0.16	0.045	
	price	pedrooms	bathrooms	sqft_living	sqft_lot	floors	waterfront	view	condition	grade	zipcode	lat	long	sqft_living15	sqft_lot15	house_age	renovated	basement_present

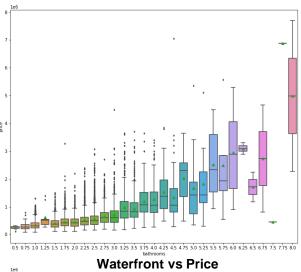
- -0.2 - -0.4

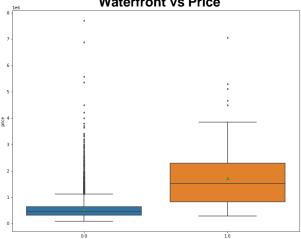
### **Results**











waterfront

#### Results

Multiple Linear Regression Model:

R2 = 0.76 MAE = 110K **Polynomial Regression Model**:

R2 = 0.79 MAE = 100K

#### Recommendation

#### The recommendations are as follows:

- Increase square-footage of living space.
- Increase the number of bedrooms and bathrooms as the square feet of houses increase.
- Attain the highest possible building grade
- Build and develop homes with waterfront
- Build and develop homes with good view

#### **Future Work**

- Reduce noise in the data to improve the accuracy of the models
- Investigate on the location importance of the houses.
- Investigate certain features, such as constructional/architectural values of house, to see what trends we could discern from that.

# Thank you!

For any questions or comments, please feel free to reach out! Email: <a href="mailto:pjsun2012@gmail.com">pjsun2012@gmail.com</a>

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