

# Home Prices Prediction

## King County Washington State

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## Description

This presentation is related to predicting home prices in King County Washington State. Since the final assignment is related to Developing Data Products CourseRA course, to keep it simple, prediction is based only on:

1. Sqft Living
2. Number of Bedrooms
3. Number of Bathrooms

This reproducible pitch and Shiny App are presented to showcase the prediction model

Access the shiny app [here](#)

Access the github repo that hosts the files [here](#)

## King County Home Prices Dataset

The dataset was provided for one of the assignments in “Machine Learning Specialization” offered by Univ of Washington, and taught by:

- Emily Fox, Amazon Professor of Machine Learning
- Carlos Guestrin, Amazon Professor of Machine Learning

## Dataset Exploration and Setup for Analysis

Before defining Shiny ui.R inputs, we clean the dataset for simple presentation

- \* Remove columns that are not needed for the current analysis
- \* Convert integer to numeric
- \* Update columns that have value '0' with mean of previous five values
- \* Sort data for sliders in ui.R

Printing first 10 rows, and few columns of dataset

	bedrooms	bathrooms	sqft_living	yr_built	zipcode
1	3	1.00	1180	1955	98178
2	3	2.25	2570	1951	98125
3	2	1.00	770	1933	98028
4	4	3.00	1960	1965	98136
5	3	2.00	1680	1987	98074
6	4	4.50	5420	2001	98053
7	3	2.25	1715	1995	98003
8	3	1.50	1060	1963	98198

## Define UI

In our ui.R file we define the following inputs

- \* `slidersqft` - Sqft of living space
- \* `sliderbed` - Number of Bed rooms
- \* `sliderbath` - Number of Bath rooms
- \* `showModel` - Radio button to select which 'lm' model to plot

In our server.R we capture the input from ui.R and

- \* Plot a model - default plot is `sqft_living + bedrooms + bathrooms`
- \* Print a table of 3 models
  - 1. price -vs- `sqft_living`
  - 2. price -vs- `sqft_living + bedrooms`
  - 3. price -vs- `sqft_living + bedrooms + bathrooms`

## Build LM model

- ▶ House Price -vs- Sqft-Living, # of Bedrooms, and #of Bathrooms
- ▶ Predict Price

Value of Predicted home sqft 2750, bedrooms 5, bathrooms 3.5 is:  
**\$663,160.9764**

# Plot Linear Regression Model

- ▶ Residuals -vs- Fitted
- ▶ Normal Q-Q
- ▶ sqrt of Standardized Residuals -vs- Fitted
- ▶ Standardized Residuals -vs- Leverage

