Lab 9 Assignment
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The file *Lab 9 - Real Estate Data.csv* contains real estate transaction data from 2014 - 2015. There are 21,597 tuples of data, with each attribute described in the file. The task is to determine a multi-linear regression relationship of the form,

$$x_1 + x_2 \cdot Bedrooms + x_3 \cdot Bathrooms + x_4 \cdot Floors + x_5 \cdot Waterfront$$
$$+ x_6 \cdot Condition + x_7 \cdot Grade + x_8 \cdot YearBuilt$$
$$+ x_9 \cdot LivingSpace + x_{10} \cdot LotSize = Price.$$

Set up and solve the multi-linear regression system, then report the solution.

(1) Import the data from *Lab 9 - Real Estate Data.csv*.
(2) Create the multi-linear regression system, i.e. determine A and $\boldsymbol{b}$.
(3) Solve for $\hat{\boldsymbol{x}} = (x_1, x_2, \ldots, x_{10})$, the vector which minimizes $||A\hat{\boldsymbol{x}} - \boldsymbol{b}||^2$.
(4) Report the least-squares solution $\hat{\boldsymbol{x}}$.

Use this model to predict the selling price for the real estate transaction with the following data. The predicted price you should get is \$2,608,060.01.

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Price = $5,300,000
Bedrooms = 6
Bathrooms = 6
Floors = 2
Waterfront = Yes
Condition = 4
Grade = 12
Year Built = 1991
Living Space = 4,320 sq. ft.
Lot Size = 24,619 sq. ft.
```

Lastly, determine which real estate transaction has a predicted selling price *closest* to the actual selling price and list the attribute data.

Submit a diary file (.txt format) with all MATLAB work shown. Make sure to suppress output where appropriate.