Exercise. **Oil Prediction**: Given 2 datasets (training & unseen datasets) with the following attributes

Insulation: This is a density rating, ranging from one to ten, indicating the thickness of each home's insulation. A home with a density rating of one is poorly insulated, while a home with a density of ten has excellent insulation.

Temperature: This is the average outdoor ambient temperature at each home for the most recent year, measure in degree Fahrenheit.

Heating_Oil: This is the total number of units of heating oil purchased by the owner of each home in the most recent year.

Num_Occupants: This is the total number of occupants living in each home.

Avg_Age: This is the average age of those occupants.

Home_Size: This is a rating, on a scale of one to eight, of the home's overall size. The higher the number, the larger the home.

Pre-processing:

- Linearity check between independent and dependent variable

- Check of possible co-linear features

Fit regression model:

- Fit the regression model to predict Heating_Oil. P-value of 0.05 (also known in statistical significance level.

Use of model:

- Check the ranges of attributes between training attributes & testing attributes. Use operator Filter Examples operator with the parameters attribute_value_filter Avg_Age>= 15. 1 | Avg_Age <=72.2, on the unseen dataset

- Write the equation for predicting Heating_Oil from the predictors in the model.

- What Heating_Oil is predicted for the following attributes:
  - Insulation: 6
  - Temperature: 67
  - Avg_Age: 35.4
  - Home_Size: 5