20K45A0228

# Azure Microsoft Machine Learning Studio

## Automatic price prediction Model

- In this project, we tried to create a model which automatically predicts the price of automobile based on the data sets that are already available in Azure Microsoft Machine Learning Studio.

## Workflow:

1. Import the Data

2. Identify the columns that has more missing values

3. Missing Values Treatment

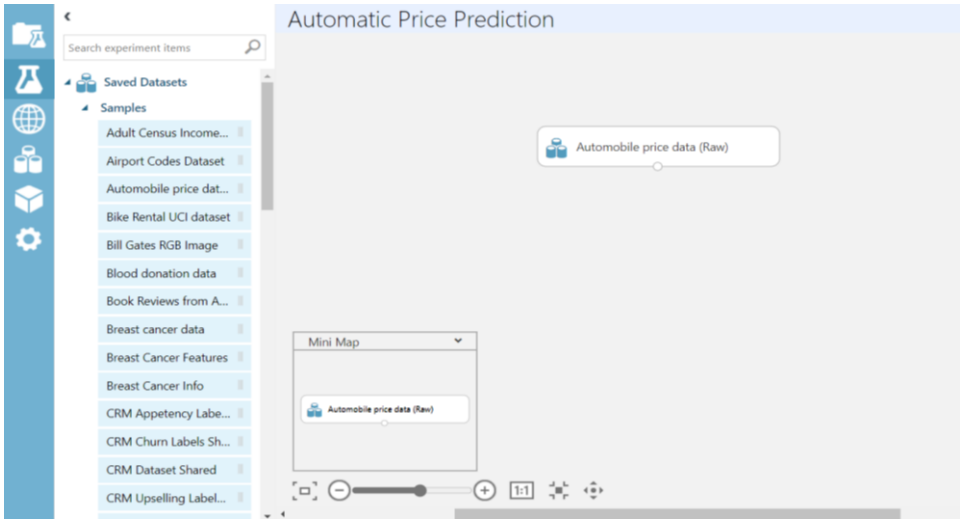
4. Split the data

5. Train the model

6. Test the model

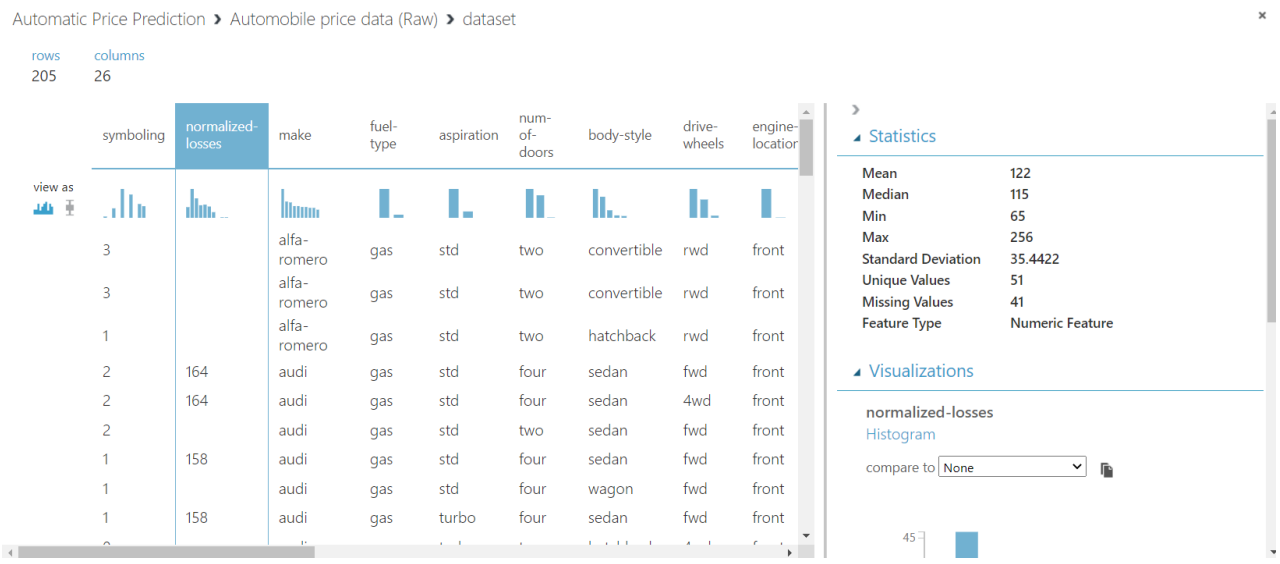
7. Evaluate of the model

## 1. Import the data



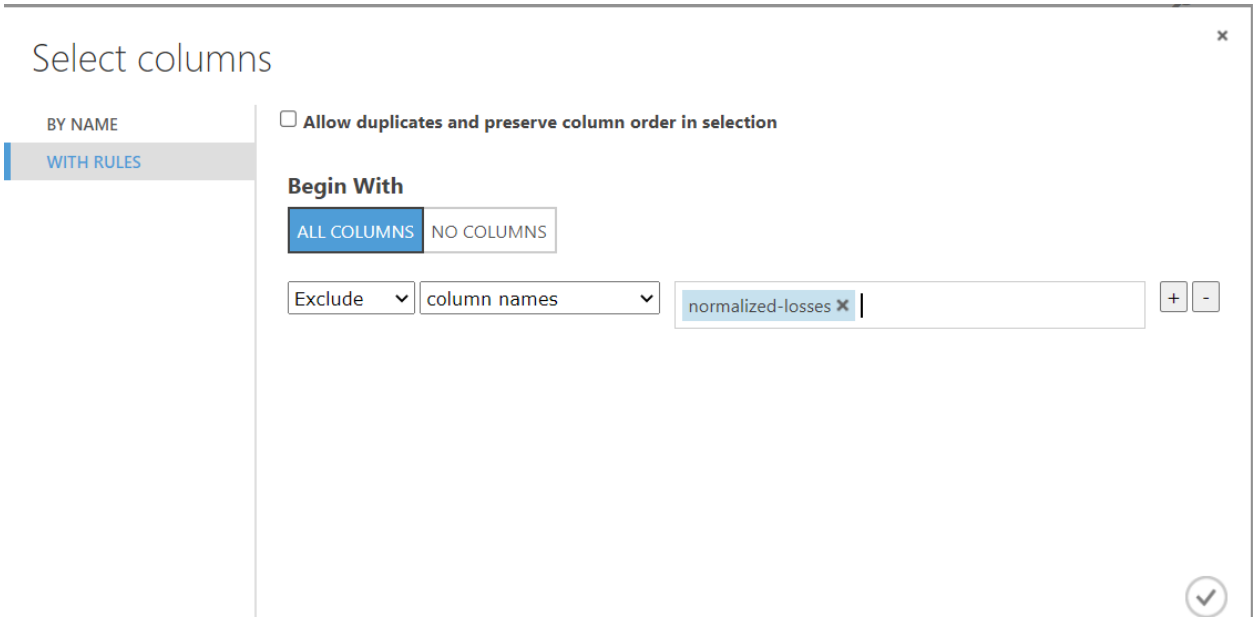
## 2. Identify the columns that has more missing values

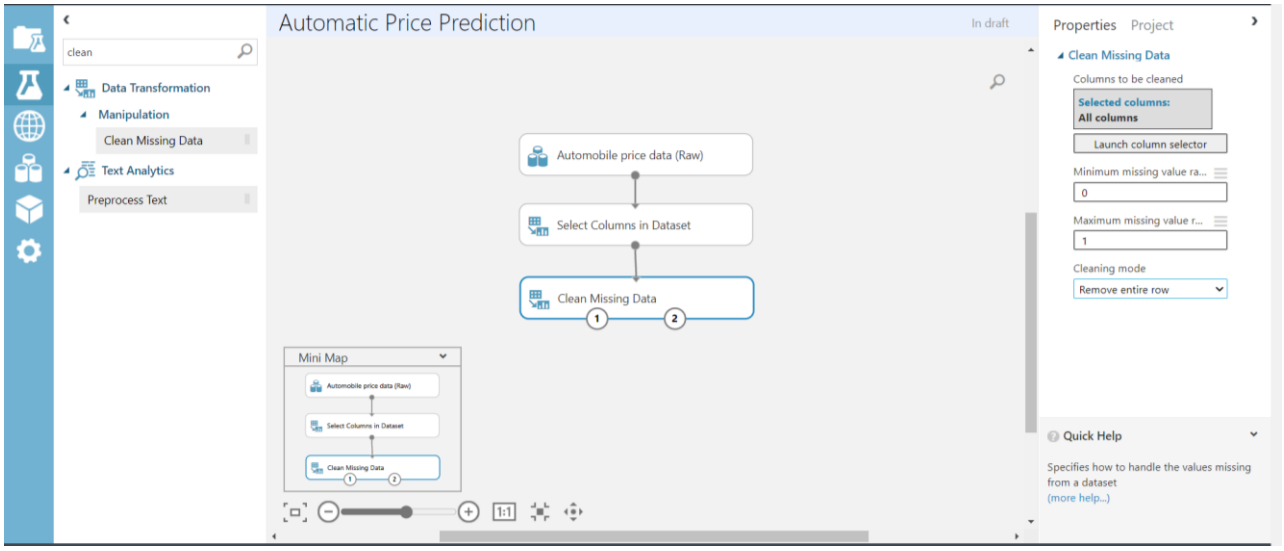
Here we observe that the column normalised-losses has more missing values.




## 3. Missing Values Treatment

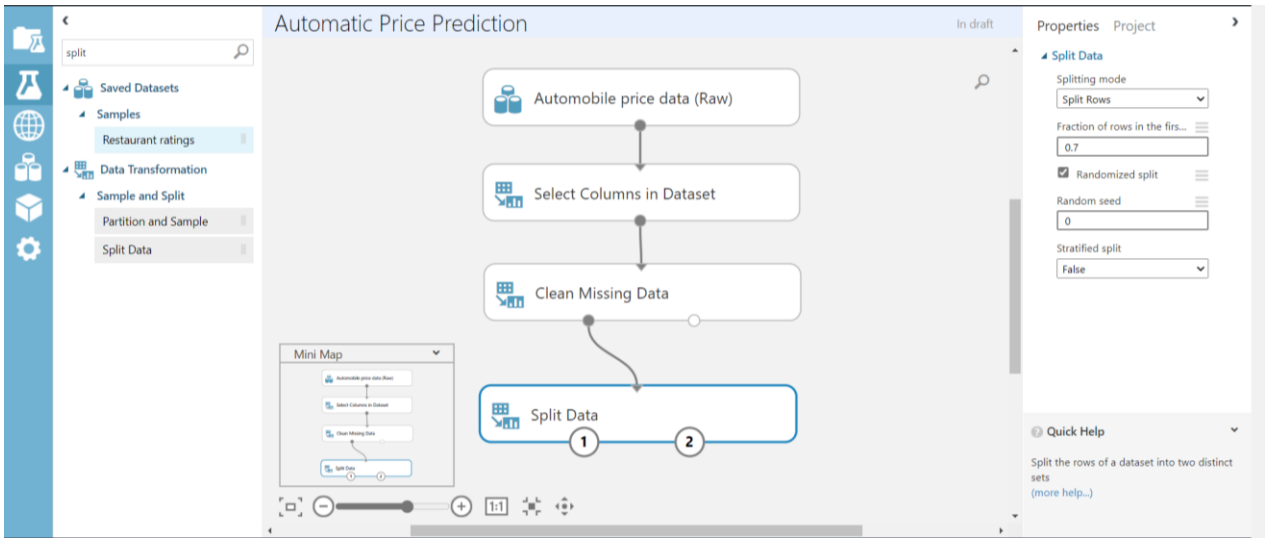
Since the column normalized-losses has more missing values we can exclude that column.





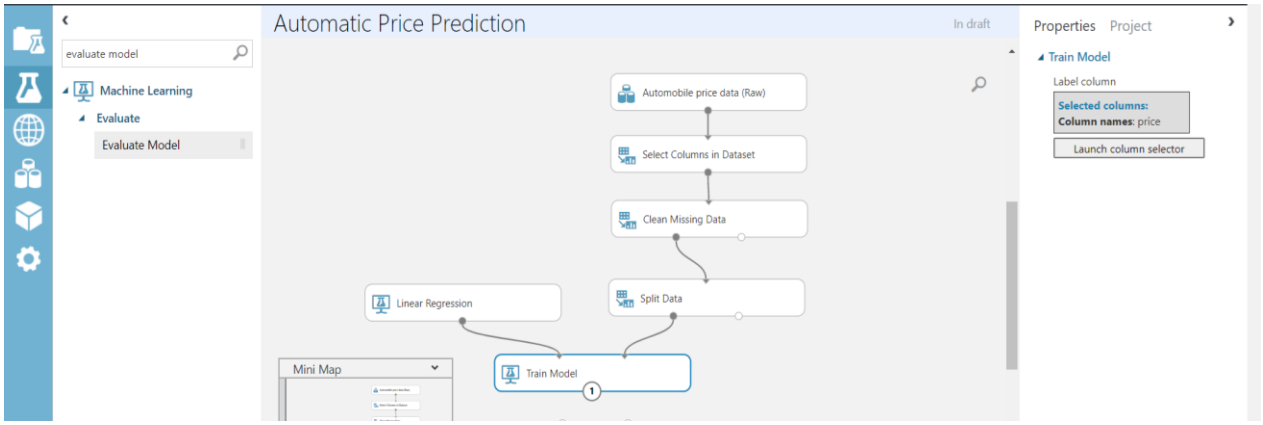

## 4. Split the data

We usually split the data for training and testing randomly. Here we used 70% of data for training and the remaining for testing.

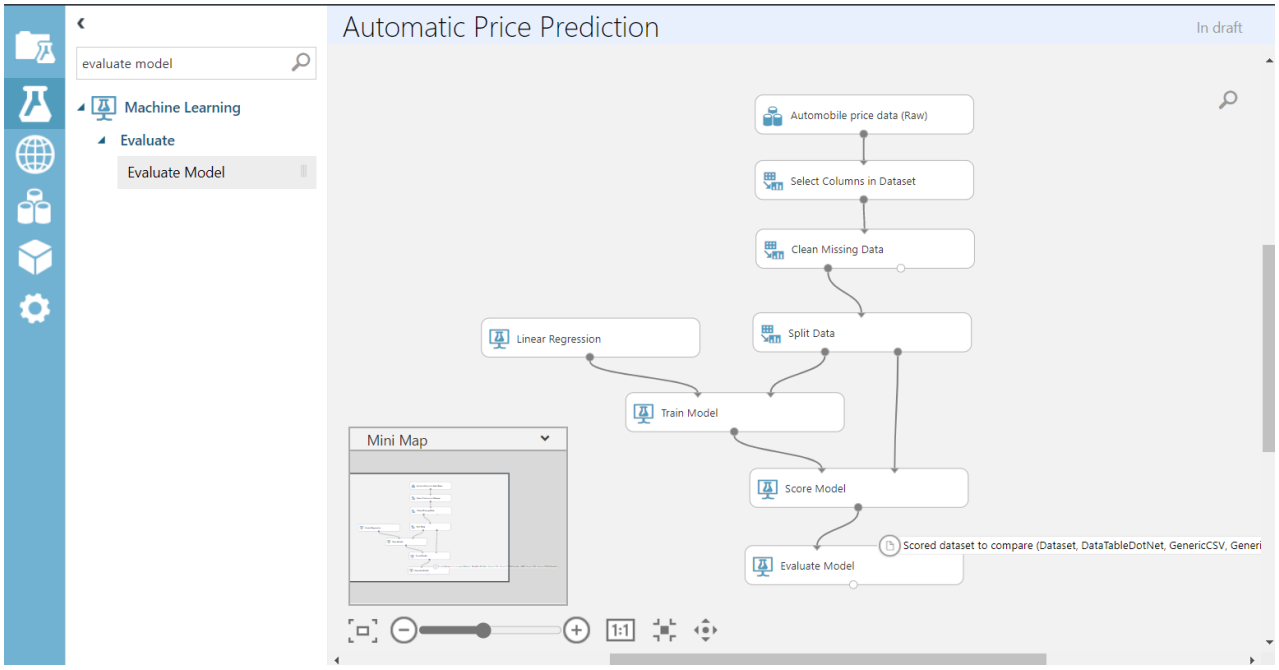


## 5. Train the Model

We used linear regression model for the analysis.

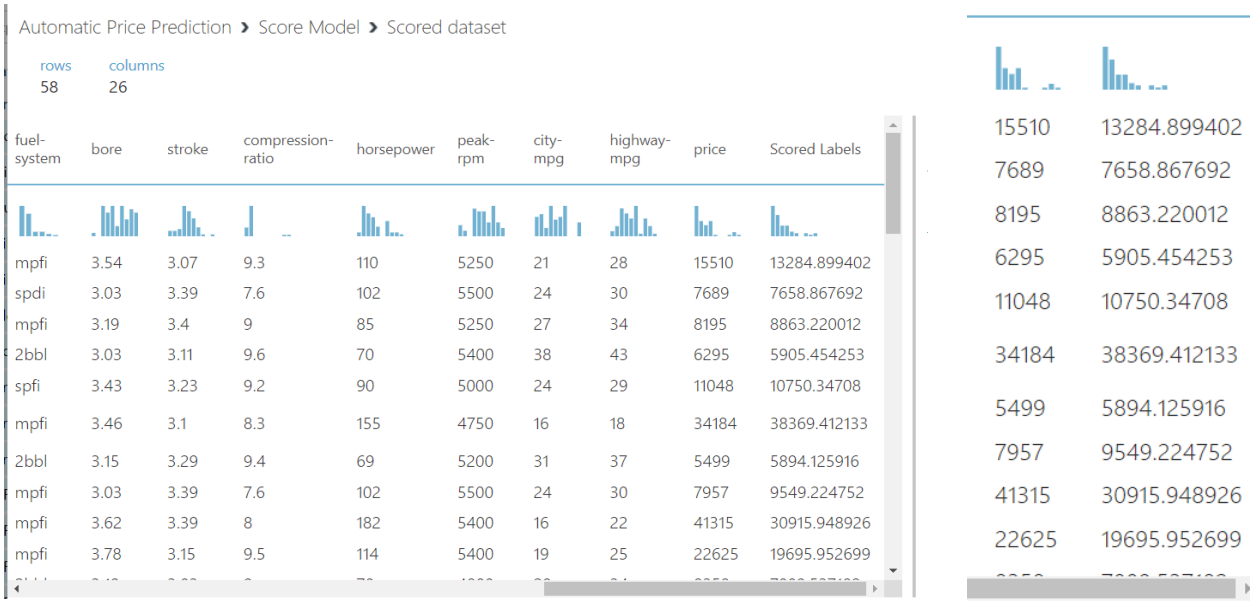



## 6. Test the model



## 7. Evaluate of the model

These are the results after evaluating the model.

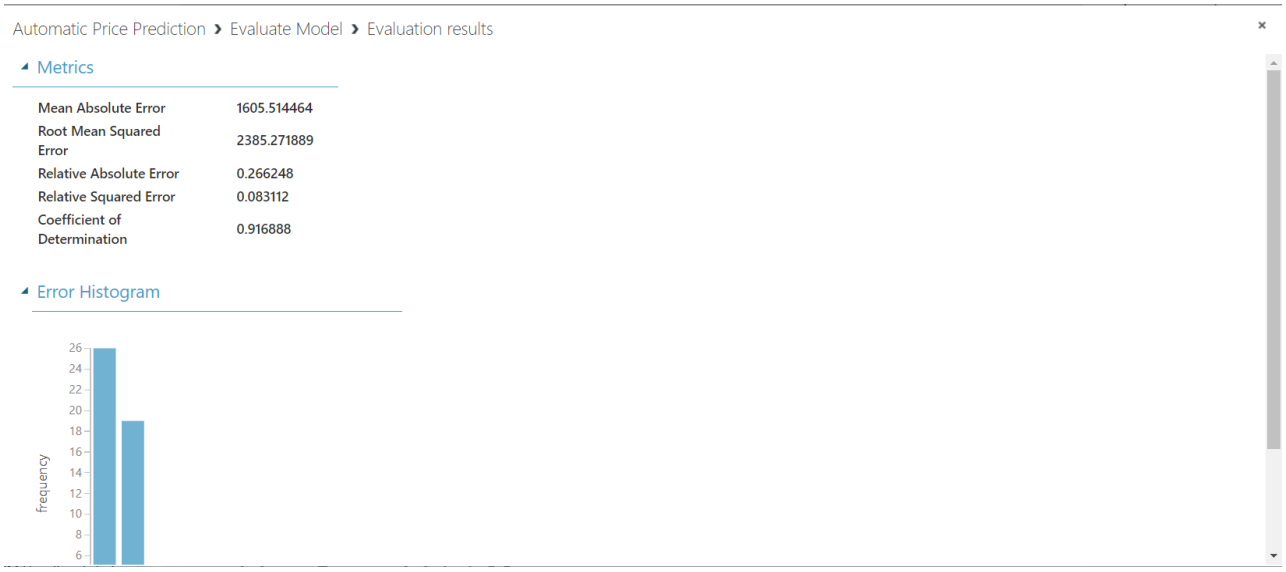


Automatic Price Prediction › Score Model › Scored dataset

rows 58 columns 26

| fuel-system | bore | stroke | compression-ratio | horsepower | peak-rpm | city-mpg | highway-mpg | price | Scored Labels |
|---|---|---|---|---|---|---|---|---|---|
| mpfi | 3.54 | 3.07 | 9.3 | 110 | 5250 | 21 | 28 | 15510 | 13284.899402 |
| spdi | 3.03 | 3.39 | 7.6 | 102 | 5500 | 24 | 30 | 7689 | 7658.867692 |
| mpfi | 3.19 | 3.4 | 9 | 85 | 5250 | 27 | 34 | 8195 | 8863.220012 |
| 2bbl | 3.03 | 3.11 | 9.6 | 70 | 5400 | 38 | 43 | 6295 | 5905.454253 |
| spfi | 3.43 | 3.23 | 9.2 | 90 | 5000 | 24 | 29 | 11048 | 10750.34708 |
| mpfi | 3.46 | 3.1 | 8.3 | 155 | 4750 | 16 | 18 | 34184 | 38369.412133 |
| 2bbl | 3.15 | 3.29 | 9.4 | 69 | 5200 | 31 | 37 | 5499 | 5894.125916 |
| mpfi | 3.03 | 3.39 | 7.6 | 102 | 5500 | 24 | 30 | 7957 | 9549.224752 |
| mpfi | 3.62 | 3.39 | 8 | 182 | 5400 | 16 | 22 | 41315 | 30915.948926 |
| mpfi | 3.78 | 3.15 | 9.5 | 114 | 5400 | 19 | 25 | 22625 | 19695.952699 |

| price | Scored Labels |
|---|---|
| 15510 | 13284.899402 |
| 7689 | 7658.867692 |
| 8195 | 8863.220012 |
| 6295 | 5905.454253 |
| 11048 | 10750.34708 |
| 34184 | 38369.412133 |
| 5499 | 5894.125916 |
| 7957 | 9549.224752 |
| 41315 | 30915.948926 |
| 22625 | 19695.952699 |



Automatic Price Prediction › Evaluate Model › Evaluation results

Metrics

| | |
|---|---|
| Mean Absolute Error | 1605.514464 |
| Root Mean Squared Error | 2385.271889 |
| Relative Absolute Error | 0.266248 |
| Relative Squared Error | 0.083112 |
| Coefficient of Determination | 0.916888 |

Error Histogram