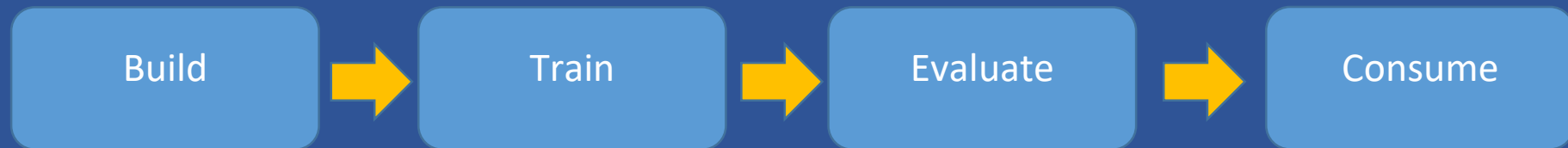


Create AutoML of Diamond prediction

What in this session?

1. Install ML.NET Model Builder
2. Create new .NET CORE console project and add Machine Learning job
3. Pick a Scenario / Price Prediction
4. Set Data File
5. Train 60 seconds
6. Understand Train result
7. Understand evaluation result
8. Generate Code
9. Examine Code

Work Flow



Install ML.NET Model Builder

<https://marketplace.visualstudio.com/items?itemName=MLNET.07>



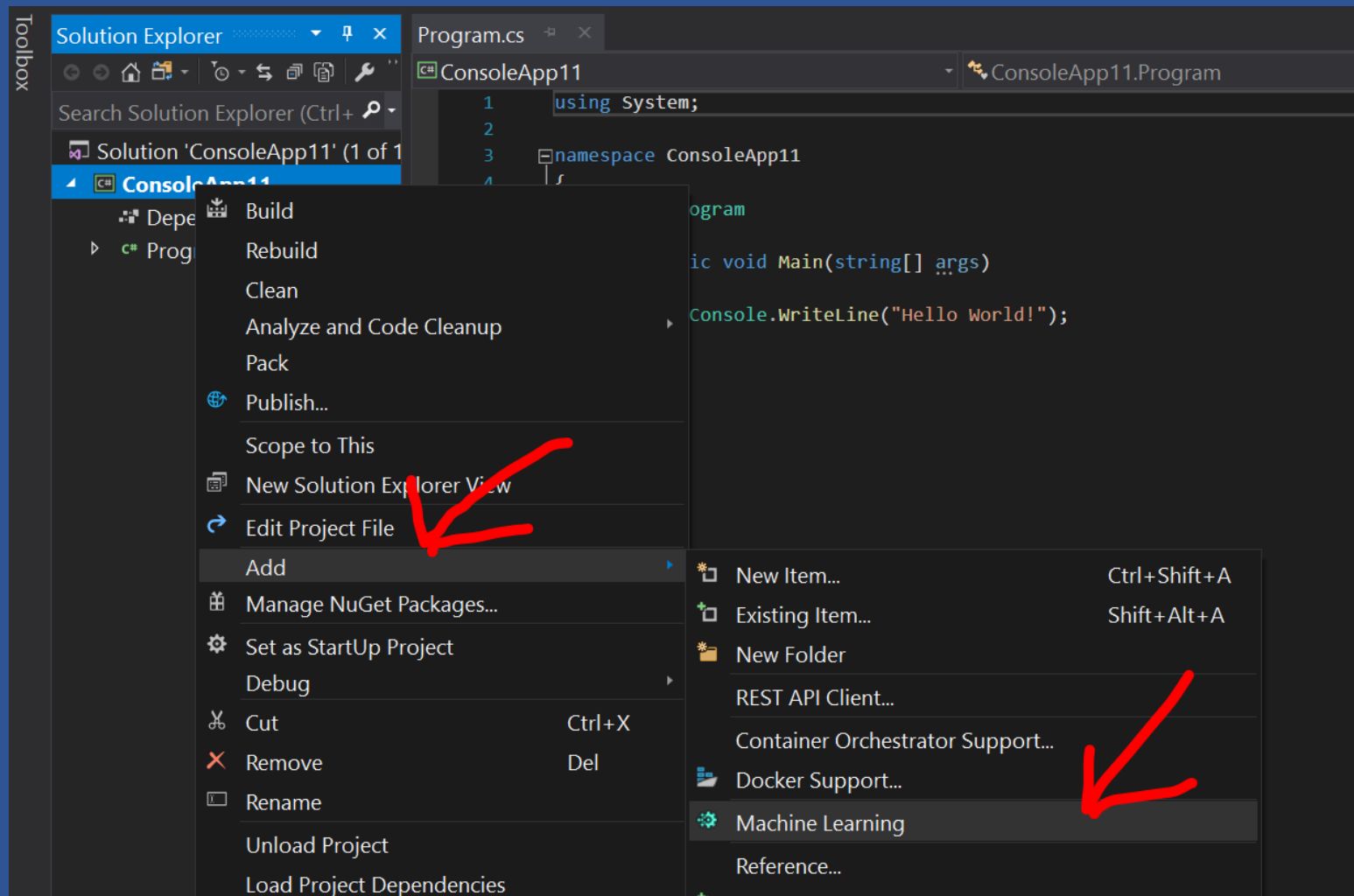
ML.NET Model Builder (Preview)

Microsoft | 24,428 installs |  39,194 downloads | ★★★★★ (12) | Free

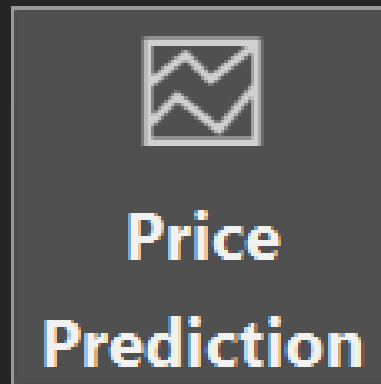
Simple UI tool to build custom machine learning models.

Download

Create new .NET CORE console project and add Machine Learning



Pick a Scenario / Price Prediction



Predict a numeric value from your data (regression), e.g. predict the price of a house.

Set Data File

Data / File / diamonds-Large-Train.csv
Label = price

Input

Choose input data source from either SQL Server or File:

File

Select a file: E:\ml\diamonds-Large-Train.csv ...

Supported file formats: csv or tsv. Maximum file size: 1 GB.

Column to Predict (Label): price

Data Preview


ID	carat	cut	color	clarity	depth	table	price (Label)	x	y	z
1	0.73	Very Good	E	VS1	61.5	57	3492	5.78	5.83	3.57
2	0.76	Ideal	F	VS2	61.6	55	2725	5.88	5.9	3.63
3	1.01	Good	G	SI2	63.8	53	4185	6.41	6.31	4.06

Train 60 seconds

Train

Specify a time to train for evaluating various models.
How long should I train for?

Input

Time to train (seconds): 

Start training

Progress

Start training to see progress and results

Status:

Best Accuracy:

Best Algorithm:

Last Algorithm:

Understand Train result

Progress

Start training to see progress and results

Status:	Done
Best Quality (RSquared):	0.9867
Best Algorithm:	FastTreeRegression
Last Algorithm:	LightGbmRegression

Understand evaluation result

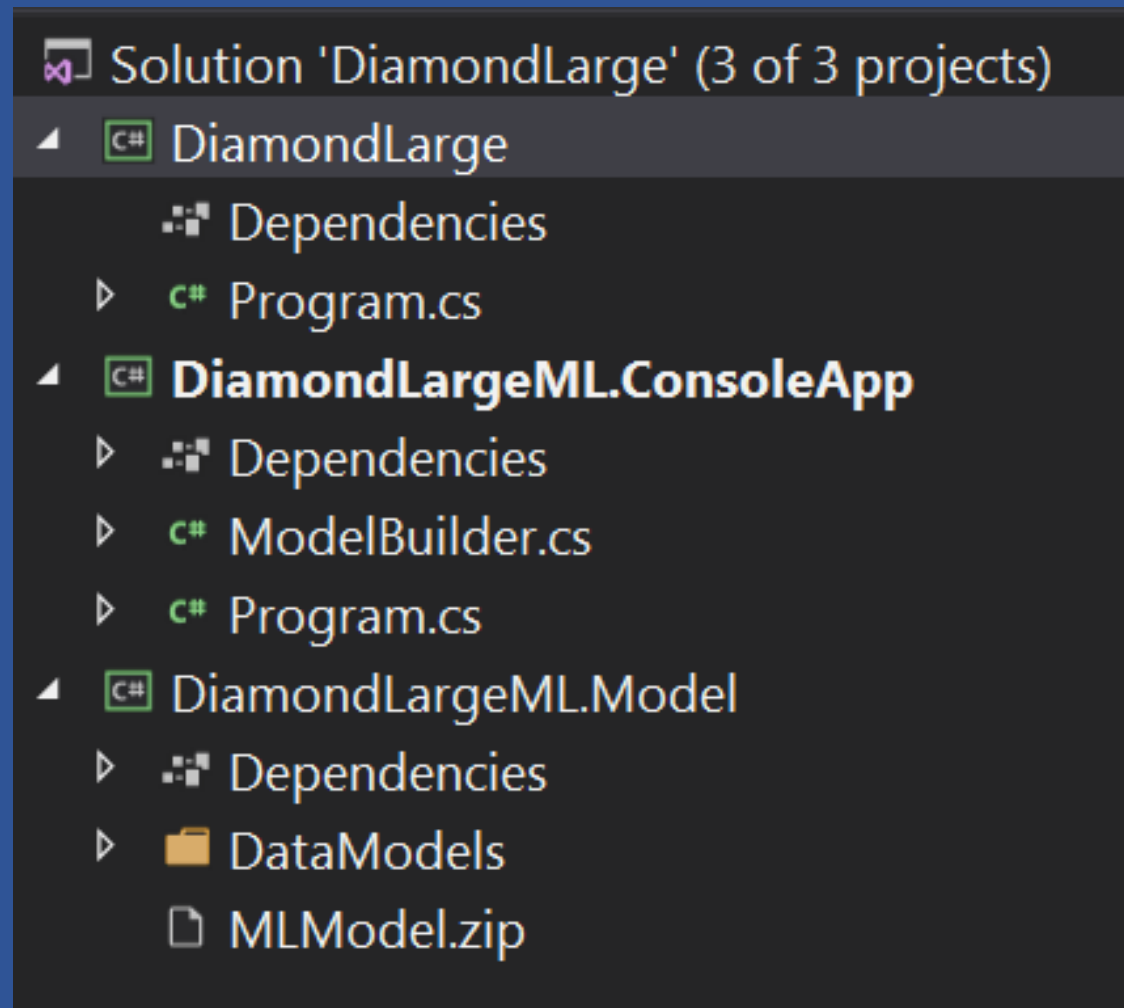
Output

ML Task: regression
Dataset: diamonds-Large-Train.csv
Column to Predict (Label): price
Best Model: FastTreeRegression
Best Model Quality (RSquared): 0.9867
Training Time: 60.79 seconds
Models Explored (Total): 69

Top 5 models explored

Rank	Trainer	RSquared	Absolute-loss	Squared-loss	RMS-loss	Duration
1	FastTreeRegression	0.9867	228.93	218072.62	466.98	2.6
2	LightGbmRegression	0.9864	242.93	223121.36	472.36	1.3
3	FastTreeRegression	0.9863	249.17	224136.38	473.43	0.7
4	FastTreeTweedieRegression	0.9859	241.03	231117.13	480.75	1.8
5	LightGbmRegression	0.9859	254.49	231287.38	480.92	0.9

Examine Code



Next Step

Write Code to build, train,
evaluate, and use ML model