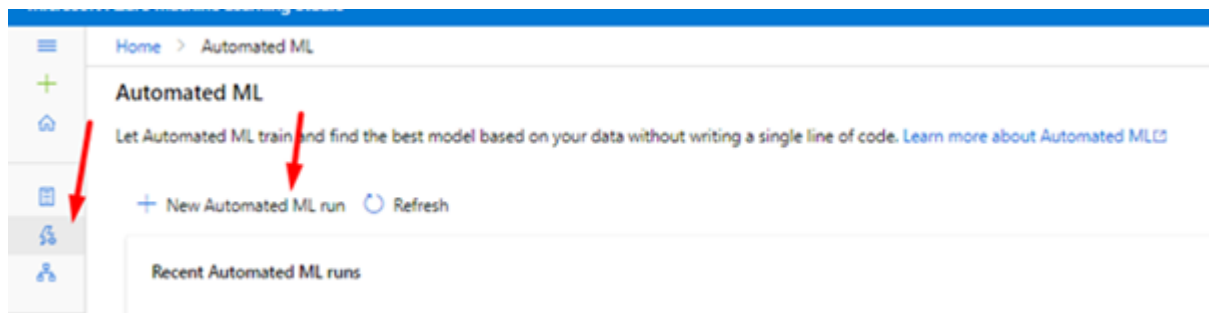


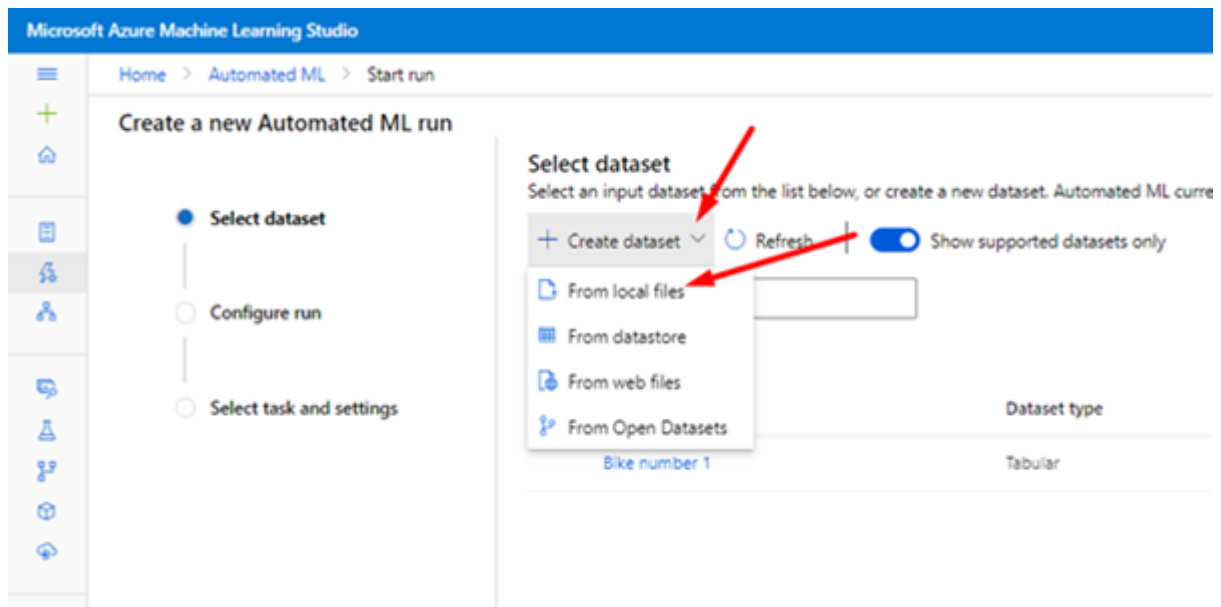
# Azure Machine learning practice 1:

## Time series forecasting:

1. At first, need to sign in the ml.azure.com and must select a workspace.
2. Then need to select Automated ML and then must select New Automated ML run



3. select create dataset + local files



4. Need to set a unique name + next

Create dataset from local files

Basic info

Datastore and file selection

Settings and preview

Schema

Confirm details

Basic info

Name \*  
Bike numbers 2

Dataset type \* ⓘ  
Tabular

Description  
Dataset description

Back

Next

5. Select upload + upload file + next

Create dataset from local files

Basic info

Datastore and file selection

Settings and preview

Schema

Confirm details

Datastore and file selection

> Create new datastore

Select files for your dataset \*  
These files will be uploaded to your selected datastore and made available in your workspace. Supported file types include: delimited (i.e. csv, tsv), Parquet, JSON Lines, and plain text.

Upload 1 files selected. Total size 0.05067 MiB. 1/1 files uploaded

File name	Size (MiB)	Upload %	Status
bike-no.csv	0.05067	100	✓

Upload path  
UI Files will be uploaded to '\$(Upload path)/09-26-2021\_032813\_UTC'

☐ Skip data validation ⓘ

Back

Next

Parsing dataset info...

6. At the schema section we stop an instant, casual, and registered section + next

## Create dataset from local files

Basic info

Datastore and file selection

Settings and preview

**Schema**

Confirm details

Schema

Column types are auto-detected based on the first 200 rows of the data. Please make any necessary adjustment aligning with the specified column type will fail conversion and would be either null-filled or replaced with error

Search

Include	Column name	Properties	Type
<input checked="" type="checkbox"/>	atemp	Not applicable to selected type	Decimal (dot)
<input checked="" type="checkbox"/>	hum	Not applicable to selected type	Decimal (dot)
<input checked="" type="checkbox"/>	windspeed	Not applicable to selected type	Decimal (dot)
<input type="checkbox"/>	casual	Not applicable to selected type	Integer
<input type="checkbox"/>	registered	Not applicable to selected type	Integer
<input checked="" type="checkbox"/>	cnt	Not applicable to selected type	Integer

Back

Next

7. select create

## Create dataset from local files

Basic info

Datastore and file selection

Settings and preview

Schema

**Confirm details**

Basic info

Name  
Bike numbers 2

Dataset type  
Tabular

File settings

File format  
Delimited

Delimiter  
Comma

Encoding  
UTF-8

Column headers  
All files have same headers

Skip rows

Datastore and

Datastore  
workspaceblot

Selected files (1)  
bike-no.csv

Path  
UI/09-26-2021

Back

Create

8. select Dataset Bike numbers 2 + next.

Home > Automated ML > Start run

### Create a new Automated ML run

- ☒ Select dataset
- ☐ Configure run
- ☐ Select task and settings

**Select dataset**  
Select an input dataset from the list below, or create a new dataset. Automated ML currently only supports tabular data for authoring runs.

+ Create dataset | Refresh | ☒ Show supported datasets only

Search

Showing 1-2 of 2 datasets

Dataset name	Dataset type	Created on	Modified on
<input checked="" type="radio"/> Bike numbers 2	Tabular	Sep 26, 2021 9:51 PM	Sep 26, 2021 9:51 PM
<input type="radio"/> Bike number 1	Tabular	Sep 22, 2021 11:49 AM	Sep 22, 2021 11:49 AM

Back Next

9. Select the name of Existing experiment + Target column we select cnt(integer) + select compute cluster + next.

### Create a new Automated ML run

- ☒ Select dataset
- ☒ Configure run
- ☐ Select task and settings

**Configure run**  
Select from existing experiments or create a new experiment, then select the target column and training compute. [Learn more](#)

Dataset  
Bike numbers 2 ([View dataset](#))

Experiment name \*

☒ Select existing ☐ Create new

Existing experiment  
bikeshare

Target column \* ⓘ  
cnt (integer)

Select compute cluster \* ⓘ  
shipon

[Create a new compute](#) [Refresh compute](#)

Back Next

10. Select additional configuration settings then select “Extreme Random Tree” at the Blocked algorithms + on the season and trend.

**Select task type**

Time series forecasting  
To predict values based on time

The time series forecasting method requires some additional information.

Time column \*

Time series identifier(s)

Frequency \* ☒ Autodetect

Forecast horizon \* ☒ Autodetect

☐ Enable deep learning

[View additional configuration settings](#) [View featurization settings](#)

[Back](#) [Finish](#)

**Primary metric:**

☒ Explain best model  
Best model explanation is not currently available for some AutoML forecasting experiments. [Learn more.](#)

**Blocked algorithms**  
☒ ExtremeRandomTrees [A list of algorithms that Automated ML will not use during tr](#)

**Additional forecasting settings**

**Forecast target lags**  
☒ Autodetect

**Target rolling window size**  
☒ Autodetect

**Season and trend**  
☒ On

**Country or region for holidays**

11. Put 1 for training job time (hours), number of cross-validation 5, and number of cross-validation 1 + save

**Exit criterion**

Training job time (hours)

Metric score threshold

**Validation**

Validation type

Number of cross validations \*

**Concurrency**

Max concurrent iterations


[Save](#) [Cancel](#)

12. After that we get the experiment model, and we can navigate through the Details and Metrics tabs to see the features, metrics, and performance charts of the selected models.

Refresh Cancel Delete

Details Data guardrails Models Outputs + logs Child runs Snapshot

Properties

Status  Completed

Created  
Sep 26, 2021 11:01 PM

Started  
Sep 26, 2021 11:01 PM

Duration  
56m 17.97s

Compute duration  
56m 17.97s

Compute target  
shipon

Run ID  
AutoML\_faada644-7e86-400e-9767-92d73bab663

Script name  
---

Created by  
Winnor Hat

Input datasets  
Input name: training\_data, Dataset: Bike numbers 2: Version 1

Output datasets  
None

Arguments  
None

See all properties

Raw JSON

Best model summary

Algorithm name  
[VotingEnsemble](#)

Ensemble details  
[View ensemble details](#)

Normalized root mean squared error  
0.13065 [View all other metrics](#)

Sampling  
100.00 %

Registered models  
No registration yet

Deploy status  
No deployment yet

Run summary

Task type

## Deploy the model:

# For deploy we have selected the models and then select the best algorithm name.

Refresh Cancel Delete

Details Data guardrails Models Outputs + logs Child runs Snapshot

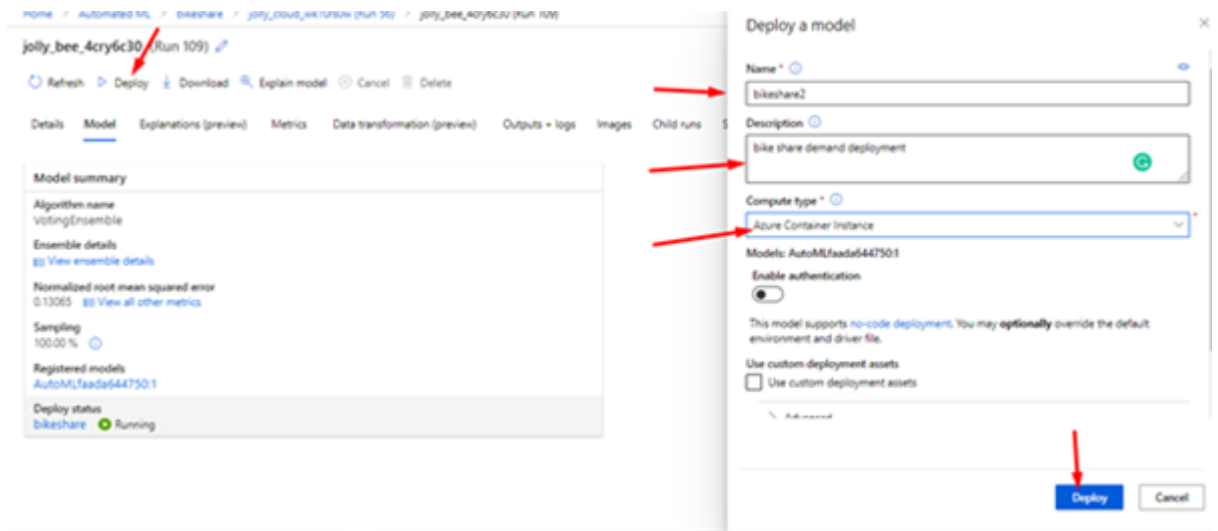
Refresh Deploy Download Explain model Edit columns Reset view

Search

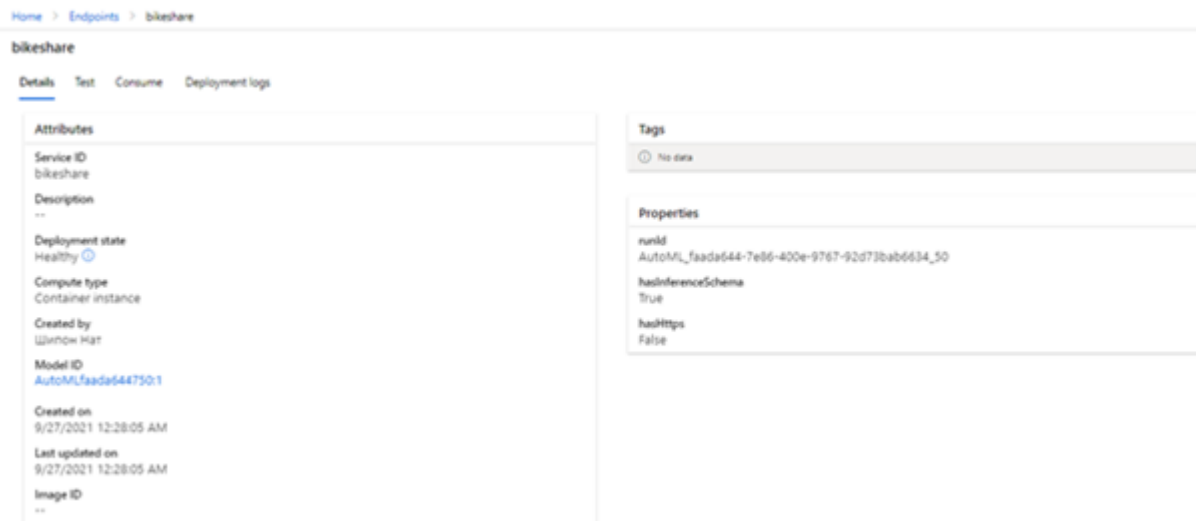
Showing 1-25 of 51 models

Algorithm name	Explained	Normalized ro...	Sampling	Submitted time	Duration
<a href="#">VotingEnsemble</a>	<a href="#">View explanation</a>	0.13065	100.00 %	Sep 26, 2021 11:55 PM	1m 34s
MinMaxScaler, LightGBM		0.13366	100.00 %	Sep 26, 2021 11:31 PM	53s
StandardScalerWrapper, LightGBM		0.14212	100.00 %	Sep 26, 2021 11:08 PM	23s
Arimax		0.15311	100.00 %	Sep 26, 2021 11:08 PM	1m 2s
StandardScalerWrapper, XGBoostRegressor		0.15526	100.00 %	Sep 26, 2021 11:08 PM	23s

# Select deploy + Deploy name + put a description + select Azure container Instance in Compute type + Deploy.

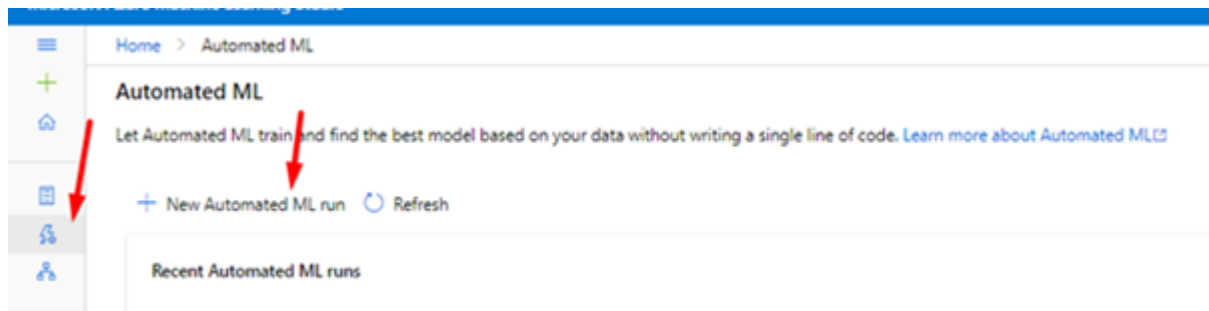


# Deploy details of bike share.



**Regression:**

# Select Automated ML + select New Automated ML run



## # Select diabetes dataset + next

**Select dataset**

Select a dataset from the list below, or create a new dataset. Automated ML currently only supports tabular data for authoring runs.

+ Create dataset ☒ Show supported datasets only [Search to filter items...](#)

Dataset name	Dataset type	Created on	Modified on
<input checked="" type="radio"/> diabetes	Tabular	Oct 8, 2020 11:50 AM	Oct 8, 2020 11:50 AM
<input type="radio"/> iris	Tabular	Aug 28, 2020 3:45 PM	Sep 3, 2020 11:52 AM

[Back](#) [Next](#) [Cancel](#)

## # Configure run page, select create new + new experiment name+ target column selects y+ select compute cluster next

**Configure run**

Configure the experiment. Select from existing experiments or define a new name, select the target column and the training compute to use. [Learn more](#)

**Dataset**  
diabetes [View dataset](#)

**Experiment name \***

☐ Select existing ☒ Create new

**New experiment name**  
diabetes-automl

**Target column \***  
Y

**Select compute cluster \***  
cpu-cluster

[Create a new compute](#) [Refresh compute](#)

## # Select Regression

**Create a new Automated ML run**

**Select task type**

Select the machine learning task type for the experiment. To fine tune the experiment, choose additional configuration or featurization settings.

☒ **Classification**  
To predict one of several categories in the target column, yes/no, blue, red, green.

☒ **Regression**  
To predict continuous numeric values

☐ **Time series forecasting**  
To predict values based on time

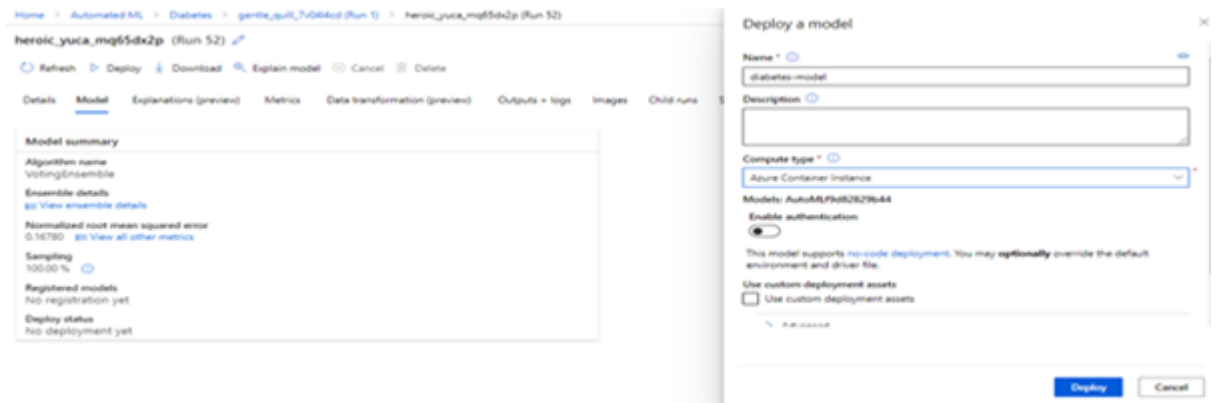
[View additional configuration settings](#) [View featurization settings](#)

[Back](#) [Finish](#)



## Deploy model:

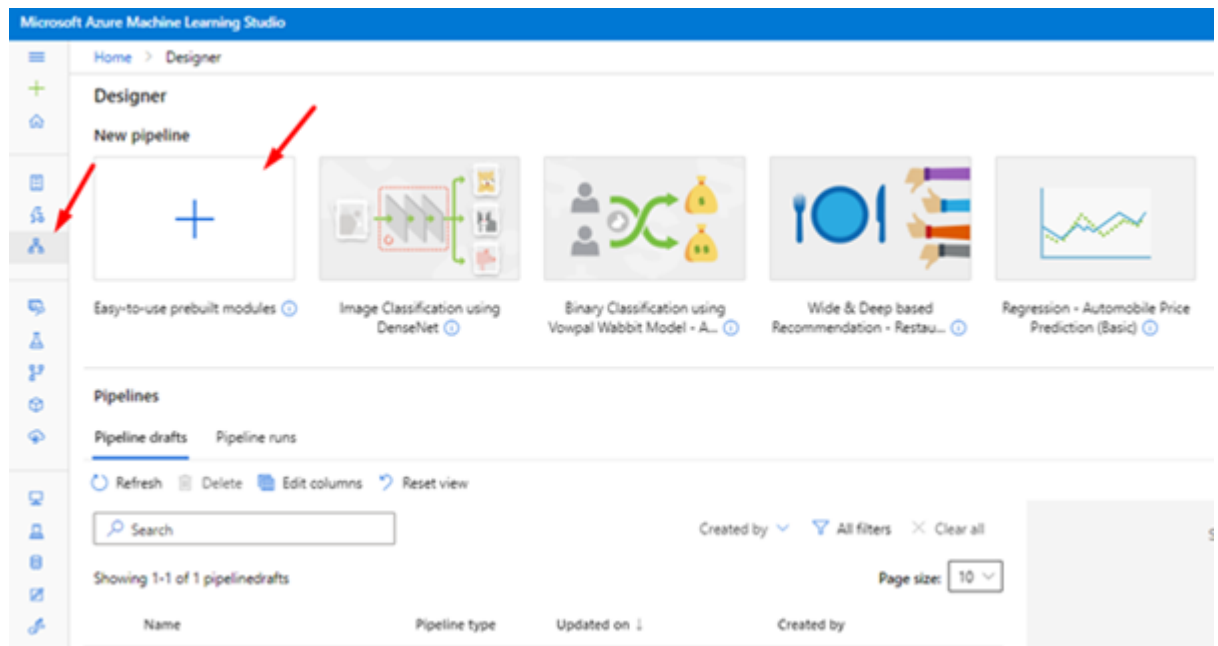
- Select the models + to select Deploy to open a Deploy a model window + Named to the deployed model + select Azure container instance + Deploy



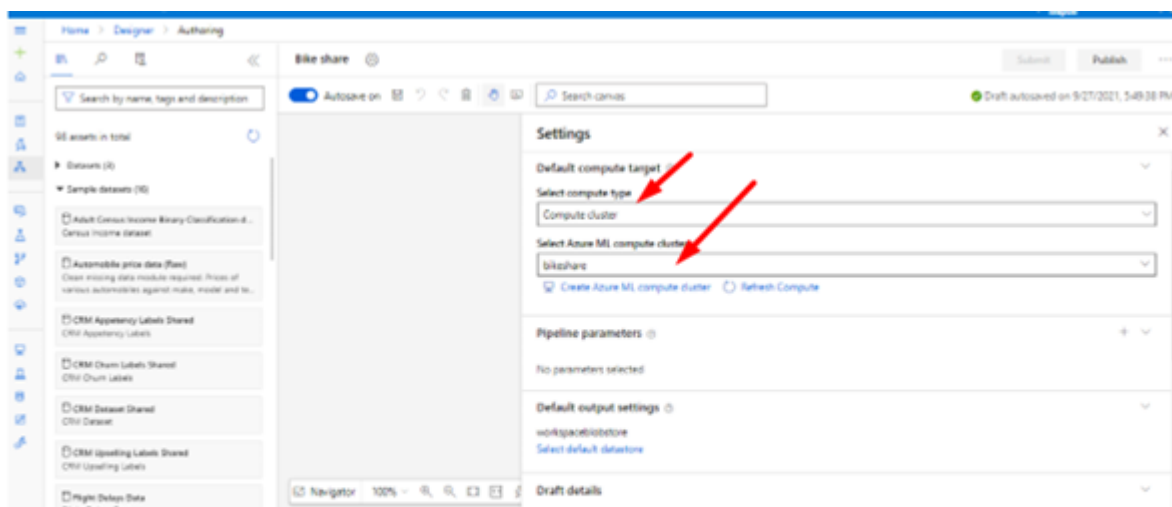
## Azure Machin learning practice 2:

### Linear regression model:

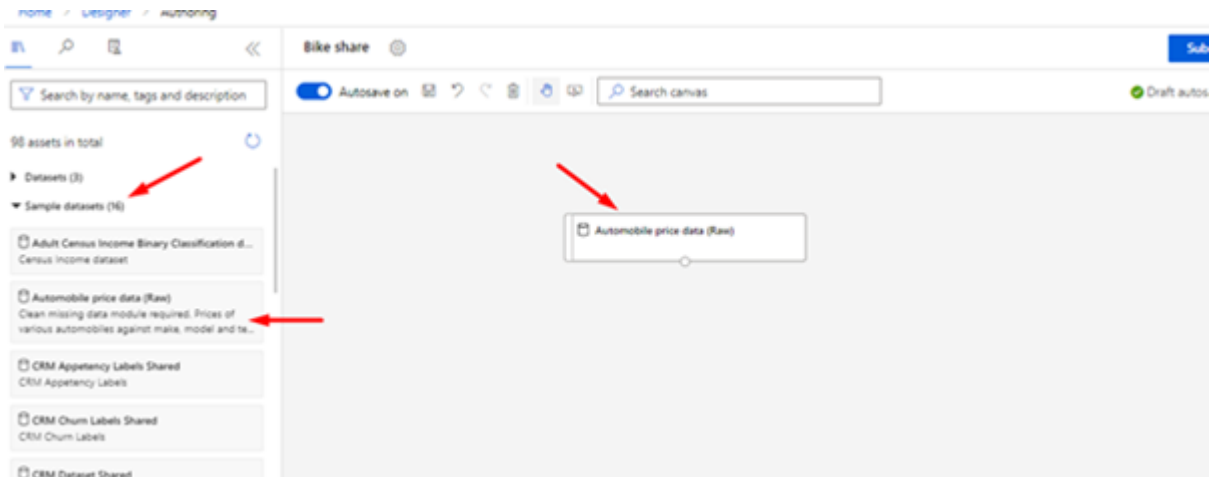
1. At first select Design and select Easy-to-use prebuilt modules.



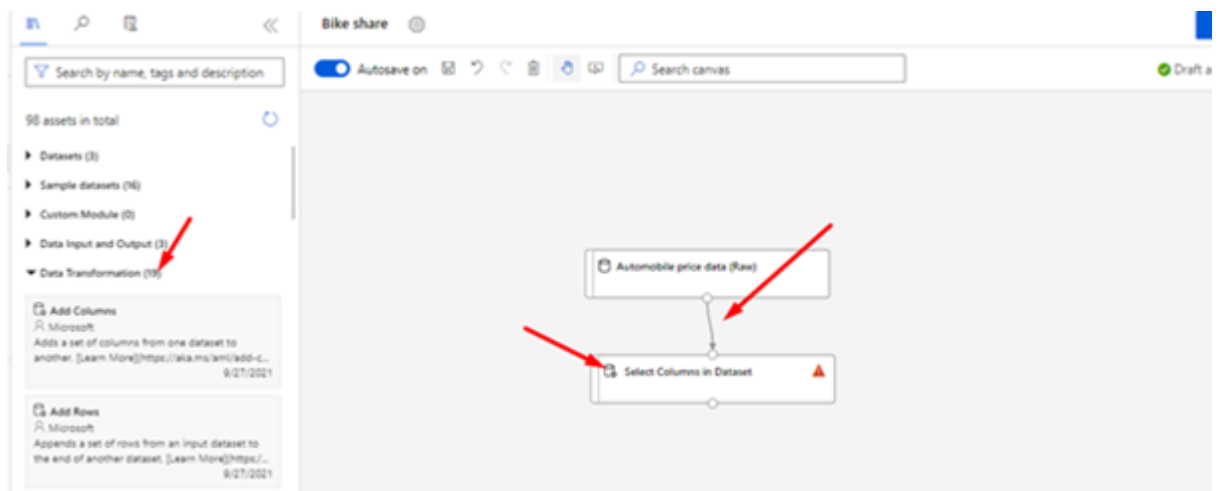
- Then at the top of the canvas, select the default pipeline name Pipeline-Created-on. Rename it to Bike share + select gear icon + in settings select computer cluster in select compute type + select Azure ML compute cluster + save.



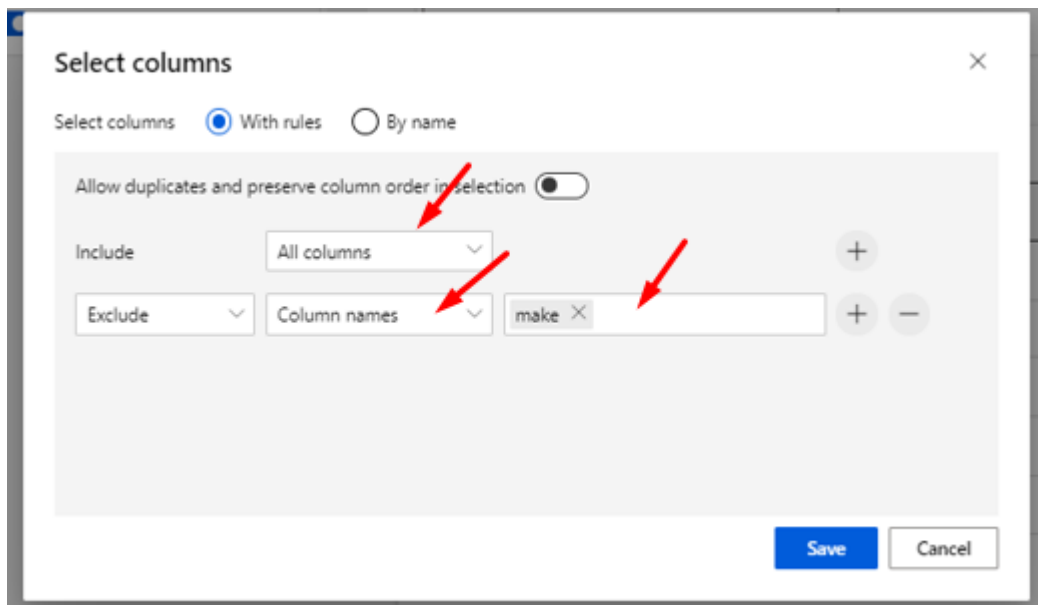
- Select Sample datasets and select the dataset Automobile price data (Raw) and drag it onto the canvas.



4. On the left of the canvas, expand the Data Transformation section and find the Select Columns in the Dataset module. Connect the Automobile price data (Raw) dataset to the Select Columns in the Dataset module.



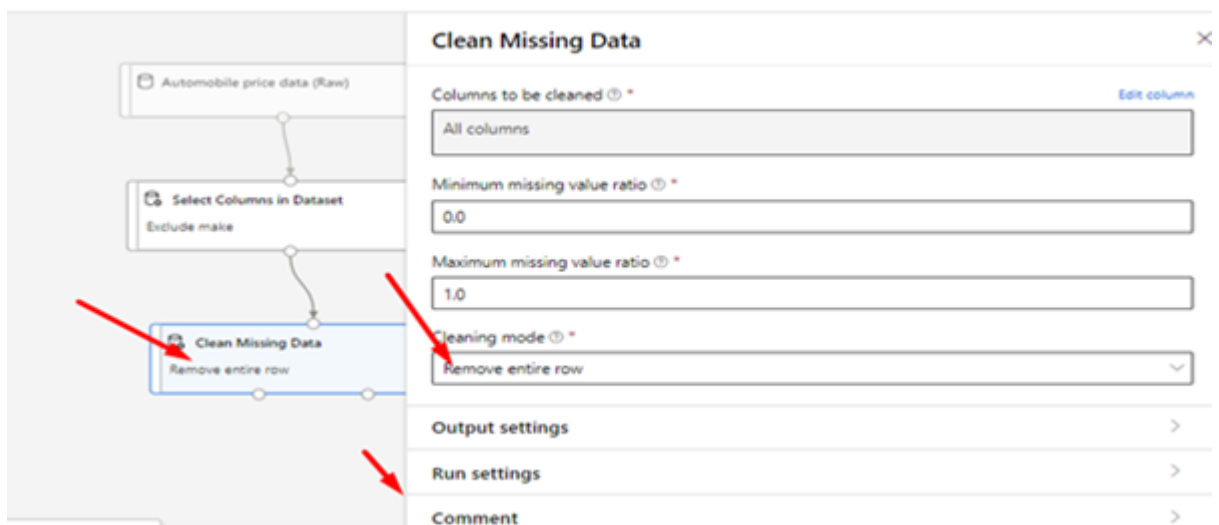
5. In the module details pane to the right of the canvas, select the Edit column. Expand the Column names drop-down next to Include and select all columns. Select the + to add a new rule. From the drop-down menus, select Exclude and Column names. Enter make in the text box. In the lower right, select Save.



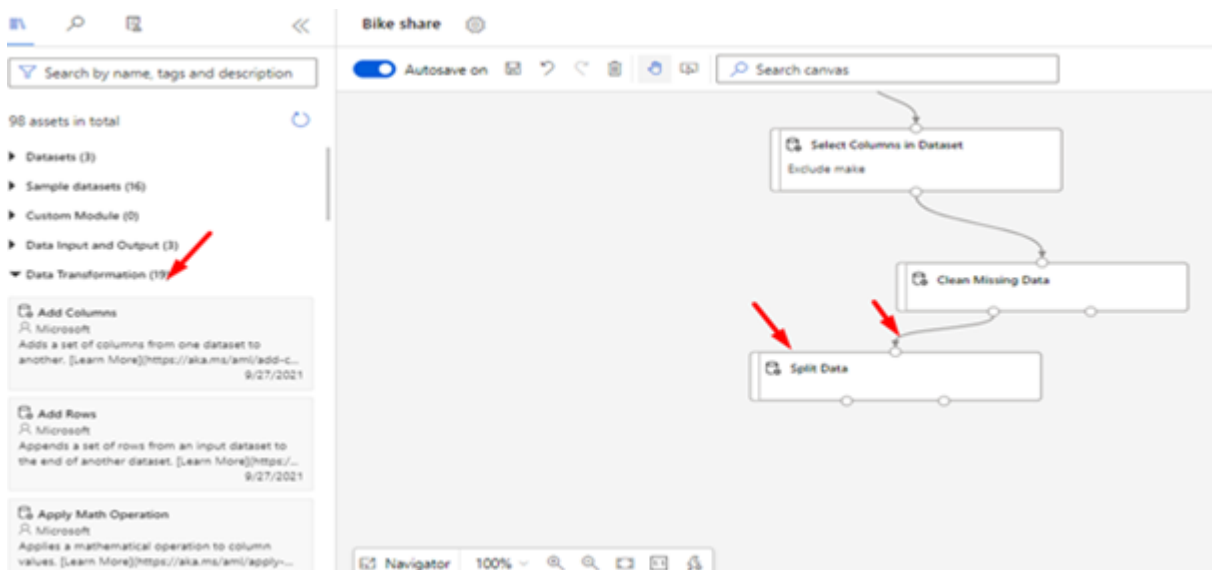
6. select data transformation from the left of the canvas and drag the clean missing data. Connect it to the Select Columns in the Dataset module.



7. Select the Clean Missing Data module. In the module details pane to the right of the canvas, select Edit Column. In the Columns to be cleaned window that appears, expand the drop-down menu next to Include. Select, All columns Select Save In the module details pane to the right of the canvas, select Remove entire row under Cleaning mode. In the module details pane to the right of the canvas, select the Comment box, and enter Remove missing value rows.



8. expand the section Data Transformation and find the Split Data module. Drag the Split Data module to the pipeline canvas. Connect the left port of the Clean Missing Data module to the Split Data module.



9. Select the Split Data module. In the module details pane to the right of the canvas, set the Fraction of rows in the first output dataset to 0.7. In the module details pane to the right of the canvas, select the Comment box, and enter Split the dataset into a training set (0.7) and test set (0.3).

10. Expand Machine Learning Algorithms. Select Linear Regression and drag it to the pipeline canvas. In the module palette, expand the section Module training, and drag the Train Model module to the canvas. Connect the output

of the Linear Regression module to the left input of the Train Model module. Connect the training data output (left port) of the Split Data module to the right input of the Train Model module.



11. Enter the score model in the search box to find the Score Model module. Drag the module to the pipeline canvas. Connect the output of the Train Model module to the left input port of the Score Model. Connect the test data output (right port) of the Split Data module to the right input port of the Score Model. And after that enter evaluation in the search box to find the Evaluate Model module. Drag the module to the pipeline canvas. Connect the output of the Score Model module to the left input of Evaluate Model.



12. Finally get the scored dataset and Evaluation result.

