

# Constant

Predict the most frequent class or mean value from the training set.

## Inputs

- Data: input dataset
- Preprocessor: preprocessing method(s)

## Outputs

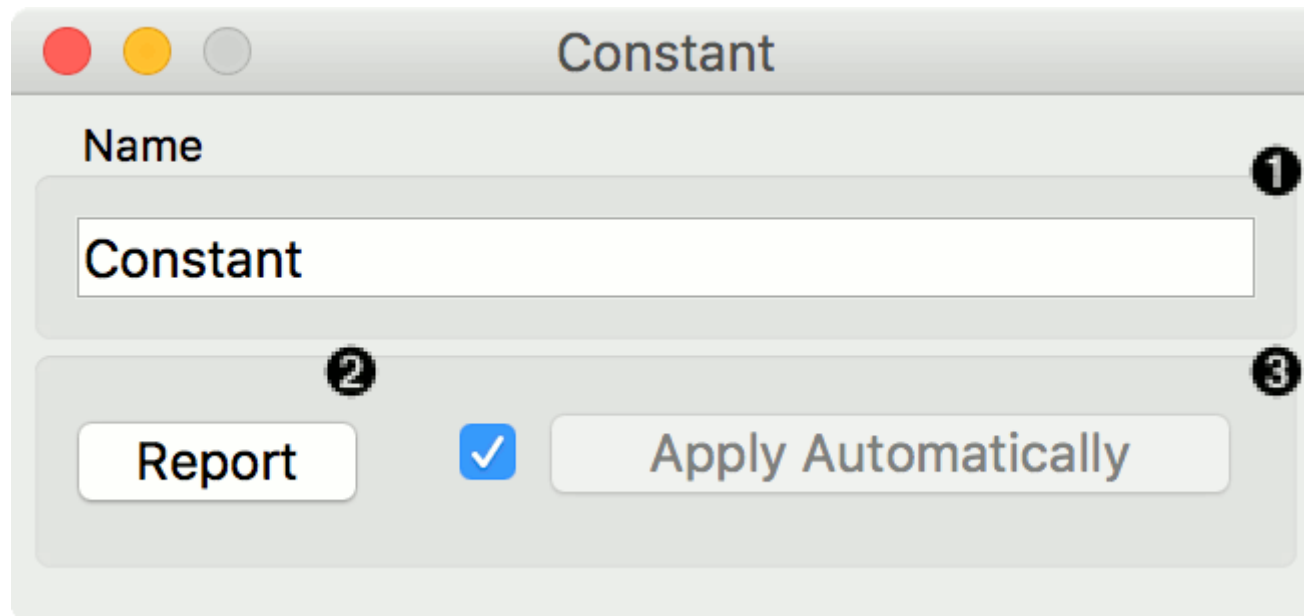
- Learner: majority/mean learning algorithm
- Model: trained model

This learner produces a model that always predicts the **majority** for classification tasks and **mean value** for regression tasks.

For classification, when predicting the class value with **Predictions**, the widget will return relative frequencies of the classes in the training set. When there are two or more majority classes, the classifier chooses the predicted class randomly, but always returns the same class for a particular example.

For regression, it *learns* the mean of the class variable and returns a predictor with the same mean value.

The widget is typically used as a baseline for other models.



This widget provides the user with two options:

1. The name under which it will appear in other widgets. Default name is “Constant”.
2. Produce a report.

If you change the widget’s name, you need to click *Apply*. Alternatively, tick the box on the left side and changes will be communicated automatically.

## Examples

In a typical classification example, we would use this widget to compare the scores of other learning algorithms (such as kNN) with the default scores. Use *iris* dataset and connect it to **Test & Score**. Then connect **Constant** and **kNN** to **Test & Score** and observe how well **kNN** performs against a constant baseline.

The screenshot displays the Orange Data Mining software interface. At the top, the title bar reads "constant". The main workspace shows a workflow with three widgets: "File", "Constant", and "kNN", all connected to a "Test & Score" widget. A "Constant" widget configuration dialog is open, showing the name "Constant" and the "Report" button checked. Below it, a "Test & Score" widget configuration dialog is open, showing the "Sampling" section with "Cross validation" selected, "Number of folds" set to 10, "Stratified" checked, "Repeat train/test" set to 10, and "Training set size" set to 66%. The "Evaluation Results" section shows a table with the following data:

Method	AUC	CA	F1	Precision	Recall
Constant	0.500	0.333	0.167	0.111	0.333
kNN	0.989	0.973	0.973	0.974	0.973

The "Target Class" section shows "(Average over classes)" selected. A "Report" button is at the bottom of the configuration dialog.

For regression, we use **Constant** to construct a predictor in **Predictions**. We used the *housing* dataset. In **Predictions**, you can see that *Mean Learner* returns one (mean) value for all instances.

The image shows the Orange Data Mining software interface. A workflow is visible with three widgets: 'File', 'Constant', and 'Predictions'. The 'Constant' widget is highlighted, and its configuration window is open. The configuration window shows the name 'Constant' and options for 'Report' and 'Apply Automatically'. The 'Predictions' widget is also open, showing a table of 13 instances with columns: Constant, MEDV, CRIM, ZN, and INDUS.

**Constant Widget Configuration:**

- Name: Constant
- Report: ☒
- Apply Automatically: ☒

**Predictions Widget Data View:**

	Constant	MEDV	CRIM	ZN	INDUS
1	22.533	24.000	0.006	18.000	2.310
2	22.533	21.600	0.027	0.000	7.070
3	22.533	34.700	0.027	0.000	7.070
4	22.533	33.400	0.032	0.000	2.180
5	22.533	36.200	0.069	0.000	2.180
6	22.533	28.700	0.030	0.000	2.180
7	22.533	22.900	0.088	12.500	7.870
8	22.533	27.100	0.145	12.500	7.870
9	22.533	16.500	0.211	12.500	7.870
10	22.533	18.900	0.170	12.500	7.870
11	22.533	15.000	0.225	12.500	7.870
12	22.533	18.900	0.117	12.500	7.870
13	22.533	21.700	0.094	12.500	7.870