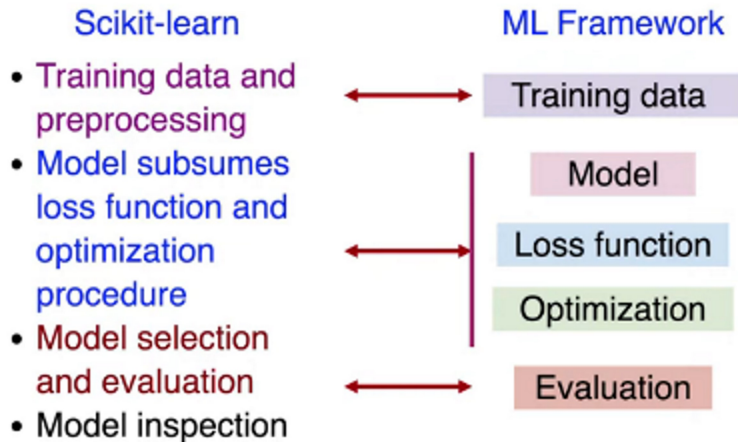


Sklearn API 2

28 January 2023 11:30 PM

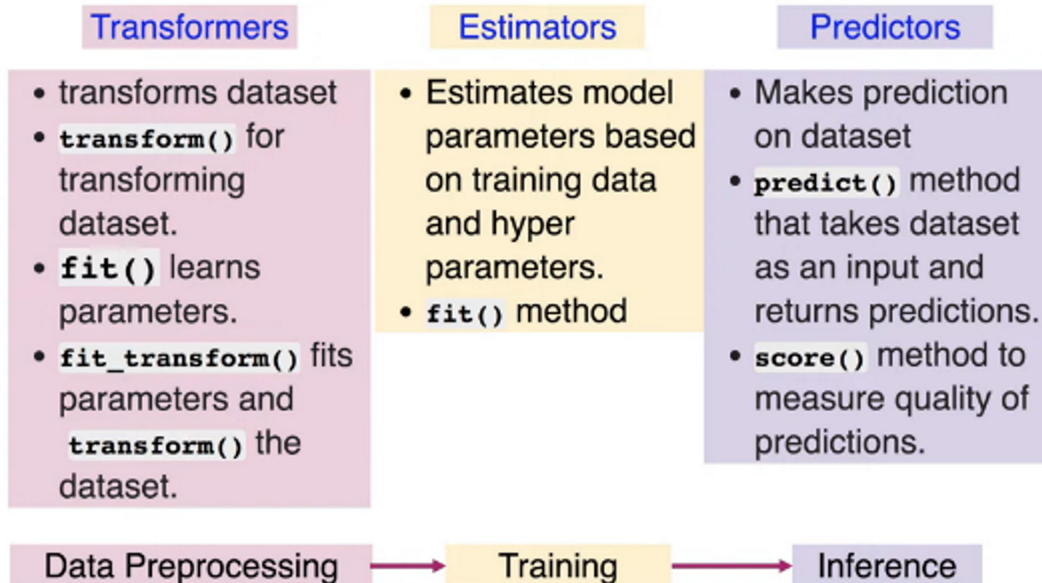
sklearn APIs are organized on the lines of our ML framework.



sklearn APIs are well designed with the following principles:

- **Consistency**: All APIs share a **simple and consistent** interface.
- **Inspection**: The **learnable parameters** as well as **hyperparameters** of all estimator's are **accessible directly** via public instance variables.
- **Nonproliferation of classes**: Datasets are represented as **Numpy arrays or Scipy sparse matrix** instead of custom designed classes.
- **Composition**: Existing building blocks are reduced as much as possible.
- **Sensible defaults** values are used for parameters that enables quick baseline building.

Types of **sklearn** objects



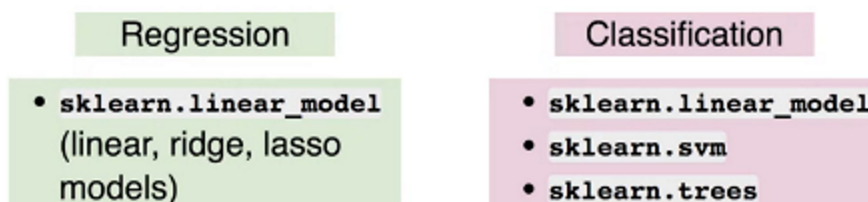
Data API

Provides functionality for **loading**, **generating** and **preprocessing** the training and test data.

Module	Functionality
<code>sklearn.datasets</code>	Loading datasets - custom as well as popular reference dataset.
<code>sklearn.preprocessing</code>	Scaling, centering, normalization and binarization methods
<code>sklearn.impute</code>	Filling missing values
<code>sklearn.feature_selection</code>	Implements feature selection algorithms
<code>sklearn.feature_extraction</code>	Implements feature extraction from raw data.

Model API

Implements **supervised** and **unsupervised** models



Model API

Implements supervised and unsupervised models

Regression

- `sklearn.linear_model`
(linear, ridge, lasso models)
- `sklearn.trees`

Classification

- `sklearn.linear_model`
- `sklearn.svm`
- `sklearn.trees`
- `sklearn.neighbors`
- `sklearn.naive_bayes`
- `sklearn.multiclass`

`sklearn.multioutput` implements multi-output classification and regression.

`sklearn.cluster` implements many popular clustering algorithms

Model selection API

`sklearn.model_selection` implements various model selection strategies like cross-validation, tuning hyper-parameters and plotting learning curves.

Model inspection API

`sklearn.model_inspection` includes tools for model inspection.