

SimpleImputer, OneHotEncoder, OrdinalEncoder, LabelEncoder:

- A SimpleImputer is a tool from the scikit-learn library in Python that helps with handling missing data in a dataset. Its job is to impute, or fill in, missing values with either a constant value or a value derived from the statistics of the non-missing values in the same column.

For example, you might use SimpleImputer to replace missing numerical values with the mean or median of the existing values in that column. It's a handy tool for data preprocessing, ensuring that your dataset is ready for analysis or machine learning models.

- LabelEncoder is used for encoding labels (classes) into numerical format, and it assigns a unique integer to each label.
- OrdinalEncoder is used when the categorical features have an inherent order or ranking. For example, "low," "medium," and "high" could be encoded as 0, 1, and 2.
- OneHotEncoder is used for converting categorical variables into a binary matrix (1s and 0s). Each category is represented by a column, and for each instance, the column corresponding to its category has a 1, while others have 0s.