**Expeiment-11**

**AIM:**

To implement the following Transform method

k-Means Discretization Transform

Data Set: sonar.csv

**SOFWARE**:

Python IDE

**THEORY:**

K-means discretization is a method used to transform continuous data into discrete intervals or bins. It leverages the K-means clustering algorithm, which is primarily used for clustering data points into groups based on their similarity.

**CODE:**

# visualize a k-means ordinal discretization transform of the sonar dataset

from pandas import read\_csv

from pandas import DataFrame

from pandas.plotting import scatter\_matrix

from sklearn.preprocessing import KBinsDiscretizer

from matplotlib import pyplot

# load dataset

url = "https://raw.githubusercontent.com/jbrownlee/Datasets/master/sonar.csv"

dataset = read\_csv(url, header=None)

# retrieve just the numeric input values

data = dataset.values[:, :-1]

# perform a k-means discretization transform of the dataset

trans = KBinsDiscretizer(n\_bins=3, encode='ordinal', strategy='kmeans')

data = trans.fit\_transform(data)

# convert the array back to a dataframe

dataset = DataFrame(data)

# histograms of the variables

dataset.hist()

pyplot.show()

**RESULT :** k-Means Discretization Transform was implemented on Data Set: sonar.csv