**Expeiment-9**

**AIM:**

To implement the following Encoding methods

a.Ordinal Encoding

b.One Hot Encoding

c.Dummy variable Encoding

Data Set:breast-cancer.csv

**SOFWARE**:

Python IDE

**THEORY:**

Ordinal encoding is a technique to transform categorical features into a numerical format. In ordinal encoding, labels are translated to numbers based on their ordinal relationship to one another. One hot encoding is a technique that we use to represent categorical variables as numerical values in a machine learning model. Dummy encoding also uses dummy (binary) variables. Instead of creating a number of dummy variables that is equal to the number of categories (k) in the variable, dummy encoding uses k-1 dummy variables

**CODE:**

# example of a ordinal encoding

from numpy import asarray

from sklearn.preprocessing import OrdinalEncoder

# define data

data = asarray([['red'], ['green'], ['blue']])

print(data)

# define ordinal encoding

encoder = OrdinalEncoder()

# transform data

result = encoder.fit\_transform(data)

print(result)

# example of a one hot encoding

from numpy import asarray

from sklearn.preprocessing import OneHotEncoder

# define data

data = asarray([['red'], ['green'], ['blue']])

print(data)

# define one hot encoding

encoder = OneHotEncoder(sparse=False)

# transform data

onehot = encoder.fit\_transform(data)

print(onehot)

# example of a dummy variable encoding

from numpy import asarray

from sklearn.preprocessing import OneHotEncoder

# define data

data = asarray([['red'], ['green'], ['blue']])

print(data)

# define one hot encoding

encoder = OneHotEncoder(drop='first', sparse=False)

# transform data

onehot = encoder.fit\_transform(data)

print(onehot)

**RESULT :**

Ordinal, one hot and dummy variable encoding was performed on breast cancer data set