## **Lab Assignment-4**

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# Importing the libraries

import numpy as np

import pandas as pd

# Loading the dataset as dataframe using pandas

heart\_df=pd.read\_csv('/content/sample\_data/heart failur classification dataset.csv')

heart\_df

# Dropping the unnecessary column

heart\_df.drop("Unnamed: 0", axis=1, inplace=True)

heart\_df.shape

# Handling the missing values

heart\_df.isnull().sum()

from sklearn.impute import SimpleImputer

simple\_imputer = SimpleImputer(missing\_values=np.nan, strategy='mean')

simple\_imputer.fit(heart\_df[['serum\_sodium','time']])

heart\_df[['serum\_sodium','time']]= simple\_imputer.transform(heart\_df[['serum\_sodium','time']])

heart\_df

# Encoding categorical features

heart\_df.info()

heart\_df['sex'].unique()

heart\_df['smoking'].unique()

from sklearn.preprocessing import LabelEncoder

label\_encoder = LabelEncoder()

heart\_df['smoking'] = label\_encoder.fit\_transform(heart\_df['smoking'])

heart\_df['sex'] = label\_encoder.fit\_transform(heart\_df['sex'])

heart\_df.head()

# Scaling all the values between 0-1 using MinMax Scaler

from sklearn.preprocessing import MinMaxScaler

minmax\_scaler = MinMaxScaler()

minmax\_scaler.fit(heart\_df)

heart\_df=pd.DataFrame(minmax\_scaler.transform(heart\_df))

# Splitting the dataset into features and labels

features= heart\_df.iloc[:,:-1]

features.shape

labels= heart\_df.iloc[:,12]

labels.shape