**---------------------------- ----------------EXERCISE#1-----------------------------------------**

import pandas as pd

import numpy as np

df = pd.DataFrame([['Red','L',15.1,'Class1'],['Green','XL',20,'Class2']

,['Blue','S',12.34,'Class2'],['Red','M',13,'Class1']]

,columns=['Color','Size','Price','Classlabel'])

print(df)

size\_maping={'S':1,'M':2,'L':3,'XL':4}

df['Size']=df['Size'].map(size\_maping)

print(df)

##

class\_maping={label:idx for idx,label in enumerate(np.unique(df['Classlabel']))}

df['Classlabel']=df['Classlabel'].map(class\_maping)

print(class\_maping)

print(df)

##

inv\_size\_mapping = {v: k for k, v in size\_maping.items()}

df['Size']=df['Size'].map(inv\_size\_mapping)

print(df)

**---------------------------- ----------------EXERCISE#2-----------------------------------------**

import pandas as pd

import numpy as np

df = pd.DataFrame([['Red','L',15.1,'Class1'],['Green','XL',20,'Class2']

,['Blue','S',12.34,'Class2'],['Red','M',13,'Class1']]

,columns=['Color','Size','Price','Classlabel'])

print(df)

##

from sklearn.preprocessing import LabelEncoder

le=LabelEncoder()

y=le.fit\_transform(df['Classlabel'].values)

print(y)

c=le.inverse\_transform(y)

print(c)

##

x=df[['Color','Size','Price','Classlabel']].values

print(x)

x[:,0]=le.fit\_transform(x[:,0])

x[:,1]=le.fit\_transform(x[:,1])

x[:,3]=le.fit\_transform(x[:,3])

print(x)

#### OneHotEncoder

from sklearn.preprocessing import LabelEncoder, OneHotEncoder

le=LabelEncoder()

y=le.fit\_transform(df['Classlabel',’color’,’size’].values)

ohe=OneHotEncoder(categorical\_feature=[0])

x=ohe.fit\_transform(y).toarray()

print(x)

--------------------------- ----------------EXERCISE#3-----------------------------------------

import pandas as pd

df = pd.DataFrame({'country': ['russia', 'germany', 'australia','korea','germany']})

print(df)

p=pd.get\_dummies(df,prefix=['country'], drop\_first=True)

print(p)

--------------------------- ----------------EXERCISE#4-----------------------------------------

import pandas as pd

# df now has two columns: name and country

df = pd.DataFrame({

'name': ['josef','michael','john','bawool','klaus'],

'country': ['russia', 'germany', 'australia','korea','germany']

})

print(df)

# use pd.concat to join the new columns with your original dataframe

df = pd.concat([df,pd.get\_dummies(df['country'], prefix='country')],axis=1)

# now drop the original 'country' column (you don't need it anymore)

df.drop(['country'],axis=1, inplace=True)

print(df)