Kaggle Project

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Overview

data preprocessing

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Modeling

Result

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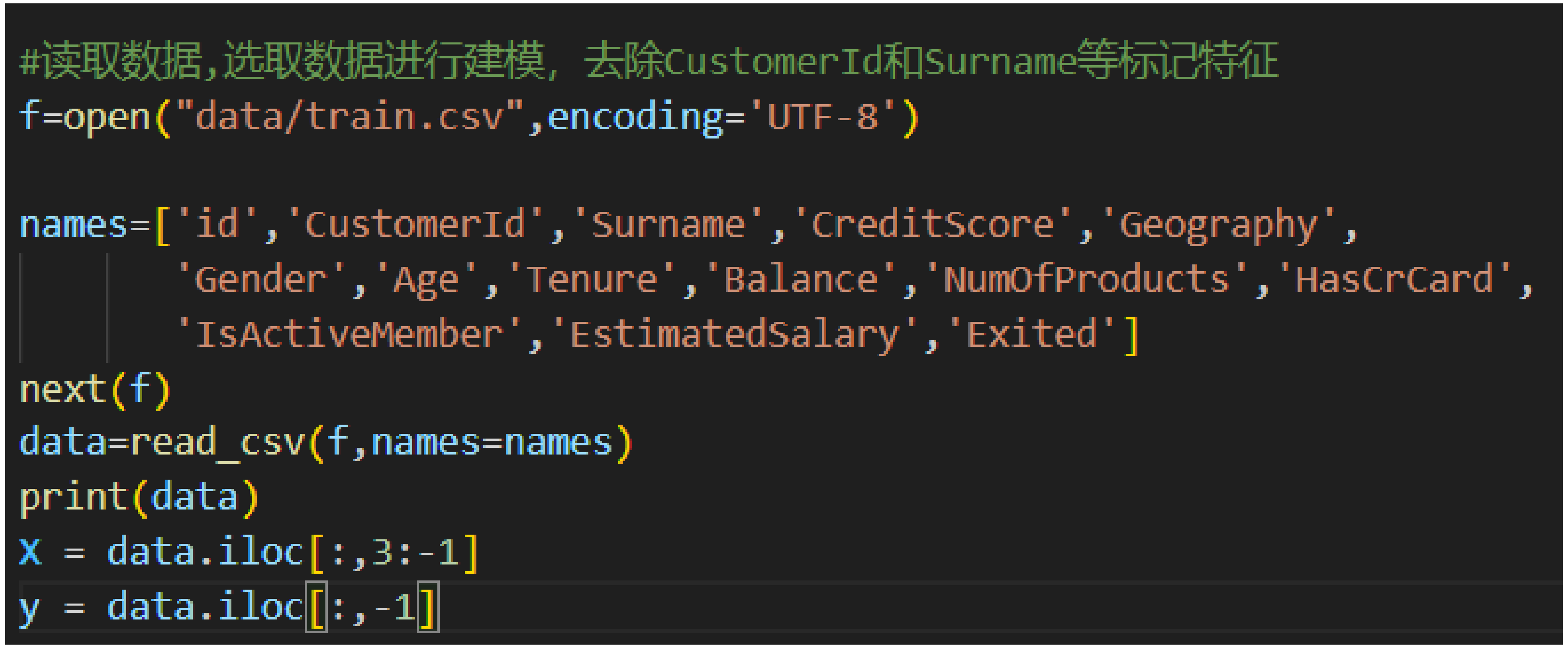
Result

Import data, select data for modeling, and exclude meaningless mark data such as CustomerId and Surname



```
#读取数据,选取数据进行建模，去除CustomerId和Surname等标记特征
f=open("data/train.csv",encoding='UTF-8')

names=['id','CustomerId','Surname','CreditScore','Geography',
       'Gender','Age','Tenure','Balance','NumOfProducts','HasCrCard',
       'IsActiveMember','EstimatedSalary','Exited']
next(f)
data=read_csv(f,names=names)
print(data)
X = data.iloc[:,3:-1]
y = data.iloc[:,-1]
```

Figure 1: Import data

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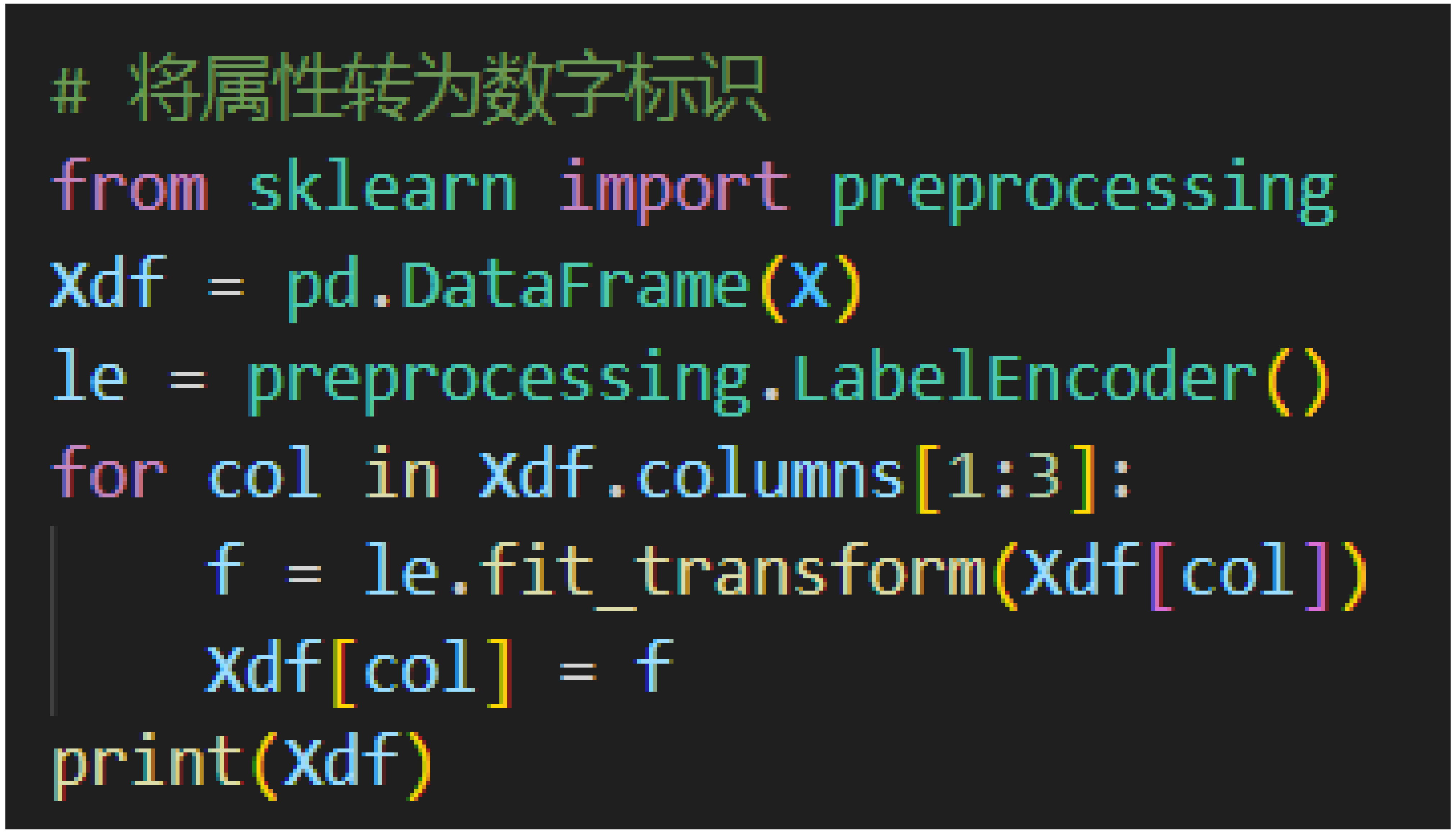
There are "Geography" and "Gender" which are text, we need to convert them into numbers



```
# 将属性转为数字标识
from sklearn import preprocessing
Xdf = pd.DataFrame(X)
le = preprocessing.LabelEncoder()
for col in Xdf.columns[1:3]:
    f = le.fit_transform(Xdf[col])
    Xdf[col] = f
print(Xdf)
```

Figure 2: Convert text data

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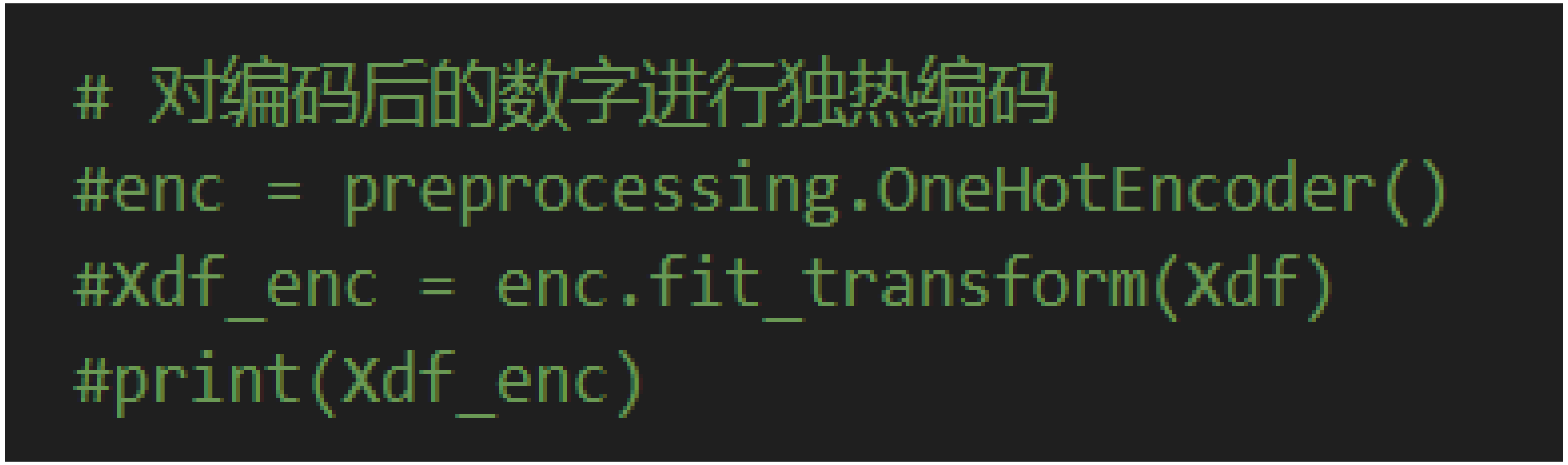
May need to convert the "number" into one-hot-code, or the machine may misunderstand that the numbers have size meaning. (But I have trouble converting them because the computer is out of memory?)

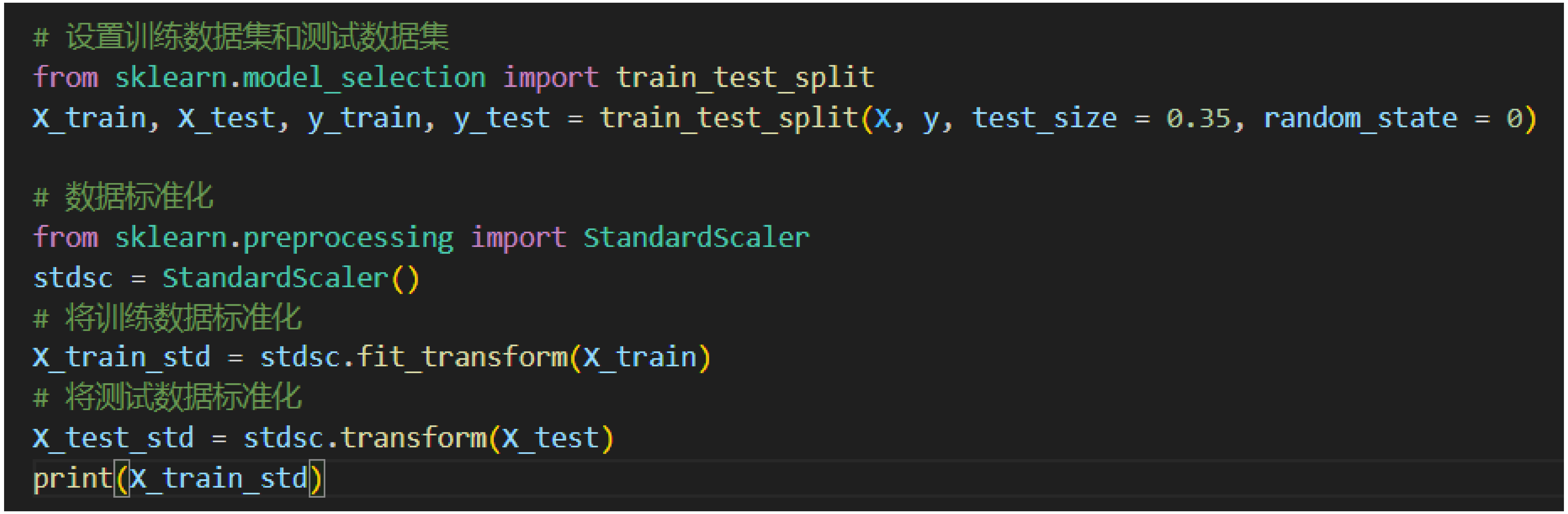


```
# 对编码后的数字进行独热编码
#enc = preprocessing.OneHotEncoder()
#Xdf_enc = enc.fit_transform(Xdf)
#print(Xdf_enc)
```

Figure 3: Trouble

data preprocessing

Divide the data set and standardize the data

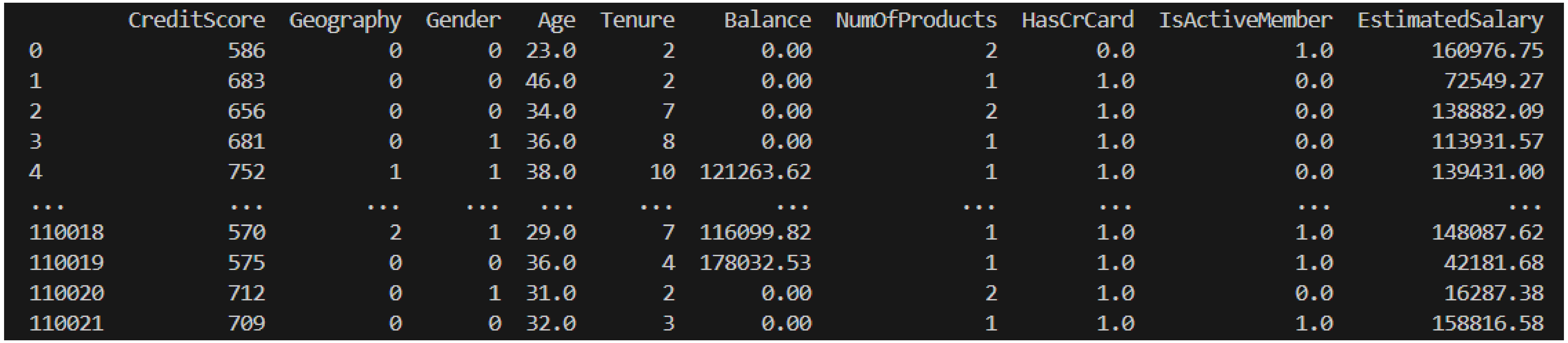


```
# 设置训练数据集和测试数据集
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.35, random_state = 0)

# 数据标准化
from sklearn.preprocessing import StandardScaler
stdsc = StandardScaler()
# 将训练数据标准化
X_train_std = stdsc.fit_transform(X_train)
# 将测试数据标准化
X_test_std = stdsc.transform(X_test)
print(X_train_std)
```

Figure 4: Some code

data preprocessing

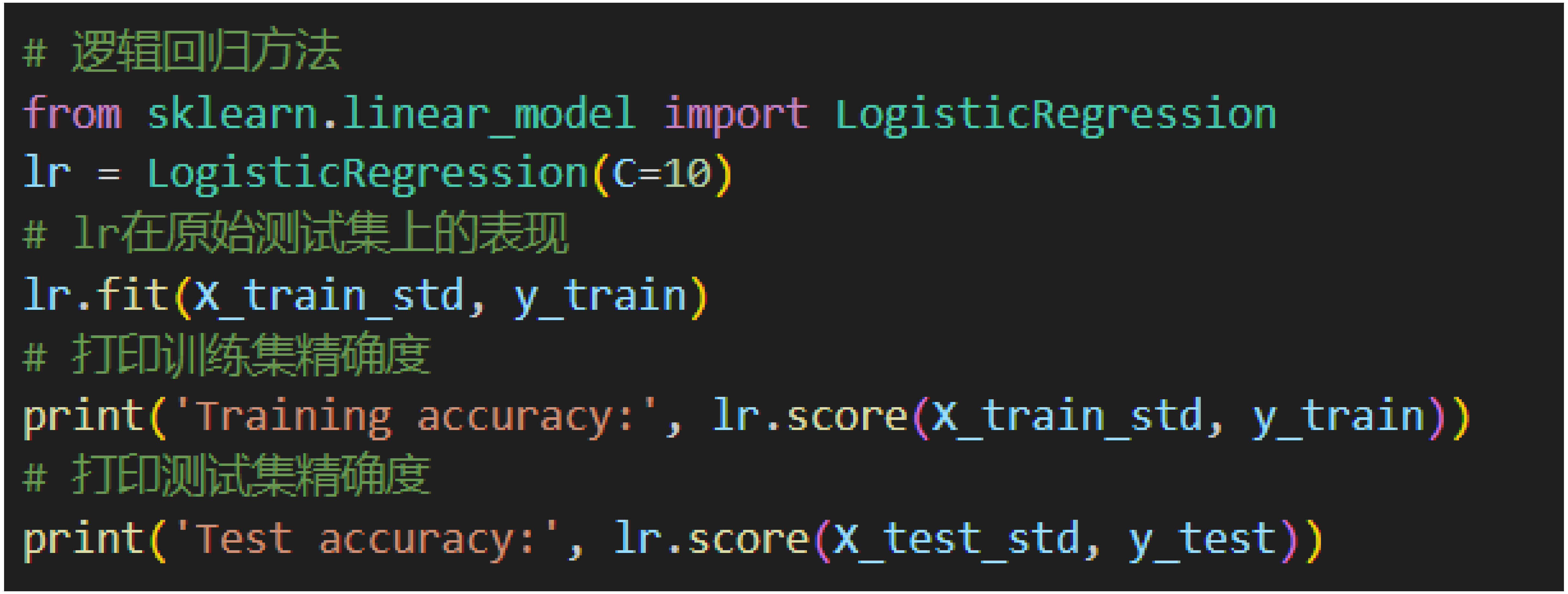


```
        CreditScore  Geography  Gender   Age  Tenure    Balance  NumOfProducts  HasCrCard  IsActiveMember  EstimatedSalary
0               586          0       0  23.0       2       0.00              2        0.0             1.0        160976.75
1               683          0       0  46.0       2       0.00              1        1.0             0.0         72549.27
2               656          0       0  34.0       7       0.00              2        1.0             0.0        138882.09
3               681          0       1  36.0       8       0.00              1        1.0             0.0        113931.57
4               752          1       1  38.0      10  121263.62              1        1.0             0.0        139431.00
...             ...        ...     ...   ...     ...        ...            ...        ...             ...              ...
110018          570          2       1  29.0       7  116099.82              1        1.0             1.0        148087.62
110019          575          0       0  36.0       4  178032.53              1        1.0             1.0         42181.68
110020          712          0       1  31.0       2       0.00              2        1.0             0.0         16287.38
110021          709          0       0  32.0       3       0.00              1        1.0             1.0        158816.58
```

Figure 5: Processed Data

Modeling

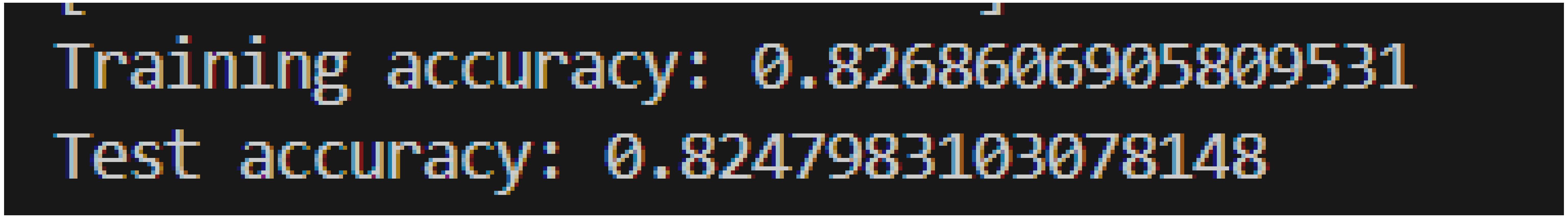
Use Logistic method



```
# 逻辑回归方法
from sklearn.linear_model import LogisticRegression
lr = LogisticRegression(C=10)
# lr在原始测试集上的表现
lr.fit(X_train_std, y_train)
# 打印训练集精确度
print('Training accuracy:', lr.score(X_train_std, y_train))
# 打印测试集精确度
print('Test accuracy:', lr.score(X_test_std, y_test))
```

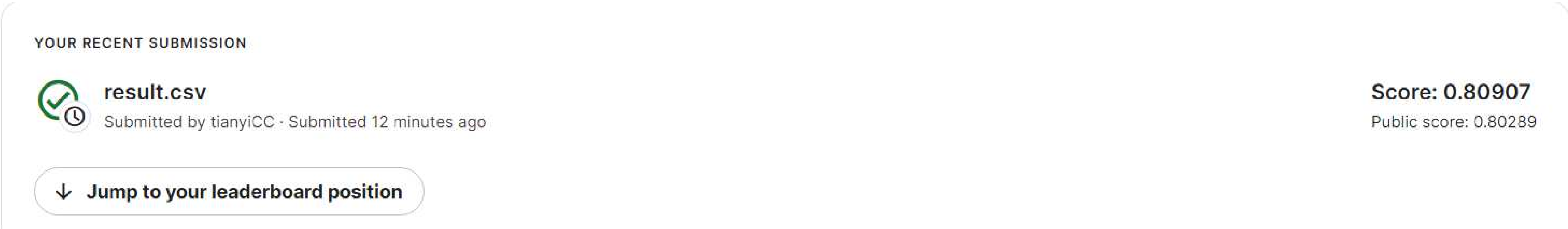
Figure 6: Some code

Result



```
Training accuracy: 0.8268606905809531
Test accuracy: 0.8247983103078148
```

Figure 7: Training result



YOUR RECENT SUBMISSION

result.csv
Submitted by tianyiCC · Submitted 12 minutes ago

Score: 0.80907
Public score: 0.80289

Figure 8: Testing result

Contact Information

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