Practical 3

Q. Load the data from wine dataset. Check whether all attributes are standardized or not (mean is 0 and standard deviation is 1). If not, standardize the attributes. Do the same with Iris dataset.

Code

practical 3.py

```
# In[1]:

import pandas as pd
import numpy as np

# In[2]:
wd = pd.read_csv('winequalityN.csv')

# In[3]:
wd.head(5)

# In[4]:
print(f'Number of empty records: {wd.isna().sum().sum()}')

# In[5]:
wd.dropna(inplace=True)

# In[6]:
wd_des = wd.describe()

# In[7]:
for i in wd_des.columns:
  if wd_des[i]['mean']!=0 or wd_des[i]['std']!=1 :
    print('standardization needed')
    break

# In[8]:
X = wd.iloc[:,:-1].values
y = wd.iloc[:,-1].values

# In[9]:
from sklearn.compose import ColumnTransformer
from sklearn.preprocessing import OneHotEncoder
ct = ColumnTransformer(transformers = [('encoder',OneHotEncoder(),[0])],remainder
= 'passthrough')
X = np.array(ct.fit_transform(X))
```

```
# In[10]:
from sklearn.preprocessing import StandardScaler
ss = StandardScaler()
X = ss.fit_transform(X)

# In[11]:
X

# In[12]:
ir = pd.read_csv('iris.csv')


# In[13]:
ir.head(5)

# In[14]:
print(f'Number of empty records: {ir.isna().sum().sum()}')

# In[15]:
ir_des = ir.describe()

# In[16]:
for i in ir_des.columns:
  if ir_des[i]['mean']!=0 or ir_des[i]['std']!=1 :
    print('standardization needed')
    break

# In[17]:
X2 = ir.iloc[:,:-1].values
y2 = ir.iloc[:,-1].values

# In[18]:
ss = StandardScaler()
X2 = ss.fit_transform(X2)


# In[19]:
X2
```

Output