Lab 11 - Clean Humanized Code (No Extra Comments)

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import pandas as pd
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.naive_bayes import BernoulliNB, GaussianNB, MultinomialNB
from sklearn.ensemble import RandomForestClassifier
from sklearn.tree import DecisionTreeClassifier
from sklearn.neighbors import KNeighborsClassifier
from sklearn import metrics
from sklearn.metrics import accuracy_score
import matplotlib.pyplot as plt

fake = pd.read_csv("Fake.csv")
true = pd.read_csv("True.csv")

fake["label"] = 0
true["label"] = 1

data = pd.concat([fake, true]).reset_index(drop=True)

for col in data.columns:
    if data[col].isnull().sum() > 0:
        data[col] = data[col].fillna(data[col].mode()[0])

if "date" in data.columns:
    data = data.drop("date", axis=1)

cat = data.select_dtypes(include="object").columns
data[cat] = data[cat].apply(lambda x: pd.factorize(x)[0])

X = data.iloc[:, :-1]
Y = data.iloc[:, -1]

X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=.3, shuffle=False)

BernNB = BernoulliNB()
BernNB.fit(X_train,Y_train)
Y_bpred = BernNB.predict(X_test)
b_accuracy = metrics.accuracy_score(Y_test, Y_bpred)

RF = RandomForestClassifier()
RF.fit(X_train,Y_train)
Y_rpred = RF.predict(X_test)
r_accuracy = accuracy_score(Y_test, Y_rpred)

GausNB = GaussianNB()
GausNB.fit(X_train,Y_train)
Y_gpred = GausNB.predict(X_test)
g_accuracy = accuracy_score(Y_test, Y_gpred)

Dtree = DecisionTreeClassifier()
Dtree.fit(X_train,Y_train)
Y_dpred = Dtree.predict(X_test)
d_accuracy = accuracy_score(Y_test, Y_dpred)

MultiNB = MultinomialNB()
MultiNB.fit(X_train,Y_train)
Y_mpred = MultiNB.predict(X_test)
m_accuracy = accuracy_score(Y_test, Y_mpred)

KNN = KNeighborsClassifier()
KNN.fit(X_train,Y_train)
Y_kpred = KNN.predict(X_test)
k_accuracy = accuracy_score(Y_test, Y_kpred)

print(b_accuracy, r_accuracy, g_accuracy, d_accuracy, m_accuracy, k_accuracy)
```