K-Fold validation

Program:

from sklearn.datasets import load\_iris

from sklearn.model\_selection import cross\_val\_score

from sklearn.neighbors import KNeighborsClassifier

from sklearn.model\_selection import KFold

data = load\_iris()

X = data.data

y = data.target

model = KNeighborsClassifier(n\_neighbors=3)

kf = KFold(n\_splits=5, shuffle=True, random\_state=42)

scores = cross\_val\_score(model, X, y, cv=kf, scoring='accuracy')

print(f"Accuracy for each fold: {scores}")

print(f"Mean accuracy: {scores.mean():.2f}")

print(f"Standard deviation of accuracy: {scores.std():.2f}")

output:

Accuracy for each fold: [0.96666667 0.96666667 0.96666667 0.96666667 1. ]

Mean accuracy: 0.97

Standard deviation of accuracy: 0.02