import pandas as pd

from sklearn.datasets import load\_iris

from sklearn.preprocessing import StandardScaler

from sklearn.cluster import KMeans

import seaborn as sns

import matplotlib.pyplot as plt

# Load the Iris dataset

iris = load\_iris()

iris\_df = pd.DataFrame(iris.data, columns=iris.feature\_names)

# Standardize the data

scaler = StandardScaler()

iris\_scaled = scaler.fit\_transform(iris\_df)

# Run K-means clustering

kmeans = KMeans(n\_clusters=3, random\_state=42)

iris\_df['Cluster'] = kmeans.fit\_predict(iris\_scaled)

# Visualize the clusters

sns.pairplot(iris\_df, hue='Cluster', palette='viridis')

plt.show()

# Inspect cluster centers

print("Cluster Centers:")

print(kmeans.cluster\_centers\_)

