# Import necessary libraries

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

from sklearn.cluster import DBSCAN

from sklearn.preprocessing import StandardScaler

# Load the dataset

data = pd.read\_csv('customer\_clustering\_data.csv')

# Extract features

X = data[['Annual Income (k$)', 'Spending Score (1-100)']].values

# Standardize the data

X\_scaled = StandardScaler().fit\_transform(X)

# Apply DBSCAN

dbscan = DBSCAN(eps=0.5, min\_samples=5)

y\_dbscan = dbscan.fit\_predict(X\_scaled)

# Create a scatter plot of the results

plt.figure(figsize=(10, 6))

plt.scatter(X\_scaled[:, 0], X\_scaled[:, 1], c=y\_dbscan, cmap='viridis', marker='o', s=50)

plt.title('DBSCAN Clustering on Customer Data')

plt.xlabel('Standardized Annual Income (k$)')

plt.ylabel('Standardized Spending Score (1-100)')

plt.colorbar(label='Cluster Label')

plt.grid()

plt.show()