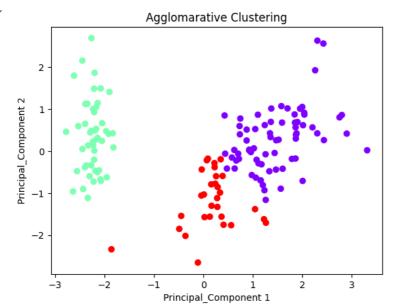
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.datasets import load_iris
from sklearn.preprocessing import StandardScaler
from sklearn.decomposition import PCA
from sklearn.cluster import AgglomerativeClustering
from scipy.cluster.hierarchy import dendrogram, linkage
iris = load_iris()
X = iris.data
y = iris.target
sc = StandardScaler()
X_scaled = sc.fit_transform(X)
pca = PCA()
X_pca = pca.fit_transform(X_scaled)
n_{clusters} = 3
agg_clustering = AgglomerativeClustering(n_clusters=n_clusters,linkage='ward')
cluster_labels = agg_clustering.fit_predict(X_pca)
linked = linkage(X_pca,'ward')
plt.figure(figsize=(12,6))
dendrogram(linked, orientation='top', distance_sort='descending')
plt.title('Dendrogram')
plt.xlabel('Cluster Size')
plt.ylabel('Distance')
plt.show()
 \rightarrow
                                                                                                                                               Dendrogram
                   25
                   20
             Distance
15
                    10
                     5
                          하"자" 하마우" 그 하마우 그 하고 있다면 되었다면 하는 이 모모 
                                                                                                                                                  Cluster Size
print('Cluster Labels:',cluster_labels)
 0\ 0\ 0\ 0\ 0\ 2\ 2\ 2\ 2\ 0\ 0\ 0\ 2\ 2\ 2\ 2\ 0\ 2\ 2\ 0\ 0\ 0\ 0\ 0\ 0\ 0\ 0\ 0\ 0
             0 0]
\verb|plt.scatter(X_pca[:,0],X_pca[:,1],c=cluster_labels,cmap='rainbow')|\\
plt.title('Agglomarative Clustering')
plt.xlabel('Principal_Component 1')
plt.ylabel('Principal_Component 2')
plt.show()
```



Start coding or $\underline{\text{generate}}$ with AI.