Develop a program to implement Hierarchical clustering model for the given value of N, where N is number of clusters
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import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.decomposition import PCA
from sklearn.cluster import AgglomerativeClustering
from sklearn.preprocessing import StandardScaler, normalize
#from sklearn.metrics import silhouette_score
import scipy.cluster.hierarchy as shc

# Create a Dataframe
X = pd.read_csv('credit.csv')

# Dropping the CUST_ID column from the data
X = X.drop('CUST_ID', axis = 1)

# Handling the missing values
X.fillna(method ='ffill', inplace = True)

# Scaling the data so that all the features become comparable
scaler = StandardScaler()
X_scaled = scaler.fit_transform(X)

# Normalizing the data so that the data approximately
# follows a Gaussian distribution
X_normalized = normalize(X_scaled)

# Converting the numpy array into a pandas DataFrame
X_normalized = pd.DataFrame(X_normalized)

pca = PCA(n_components = 2)
X_principal = pca.fit_transform(X_normalized)
X_principal = pd.DataFrame(X_principal)
X_principal.columns = ['P1', 'P2']

plt.figure(figsize =(8, 8))
plt.title('Visualising the data')
Dendrogram = shc.dendrogram((shc.linkage(X_principal, method ='ward')))

ac2 = AgglomerativeClustering(n_clusters = 5)
# Visualizing the clustering
plt.figure(figsize =(6, 6))
plt.scatter(X_principal['P1'], X_principal['P2'],c = ac2.fit_predict(X_principal), cmap ='rainbow')
plt.show()
```