Role: implemented Agglomerative Hierarchical Clustering Algorithm and half of the report

Dataset link : https://www.kaggle.com/hellbuoy/pca-kmeanshierarchical-clustering?select=data-dictionary.csv

Dataset description:-

Our dataset is about Humanitarian aid to country based on Socio-Economic factors.

Those are columns

Child_mort: Death of children under 5 years of age per 1000 live births.

Exports: Exports of goods and services. Given as %age of the Total GDP.

Health: Total health spending as %age of Total GDP.

Imports: Imports of goods and services. Given as %age of the Total GDP.
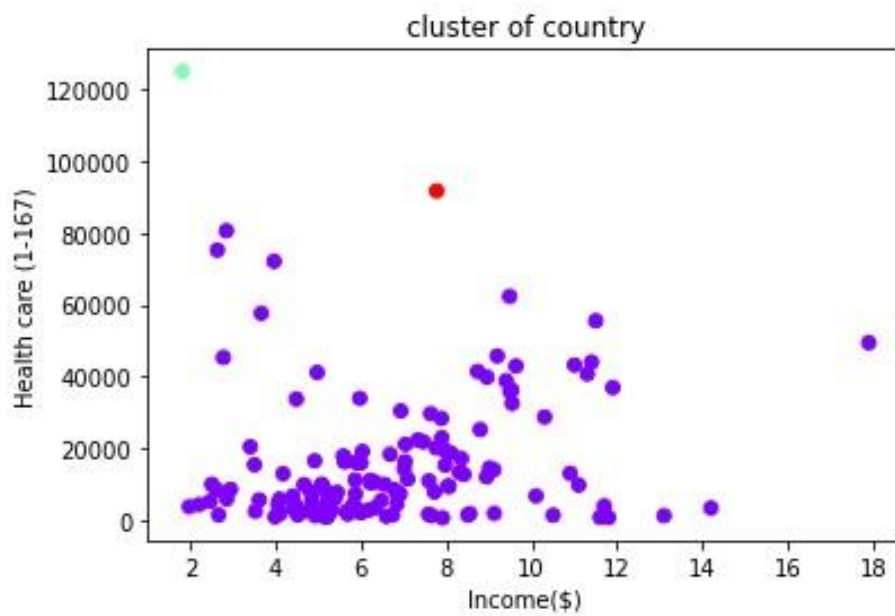
Income: Net income per person.

We used only income and health in the algorithm.

We used this data to determine the relation between countries imports and exports and the income per person and how that affect on health and children deaths
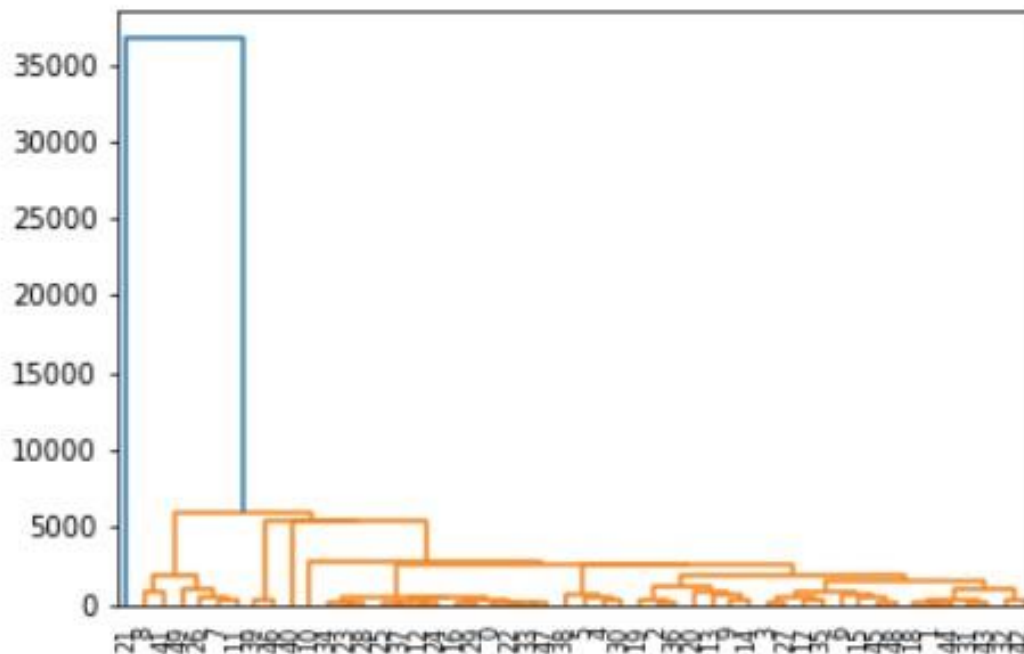
Plotted graphs :- K-Medoids
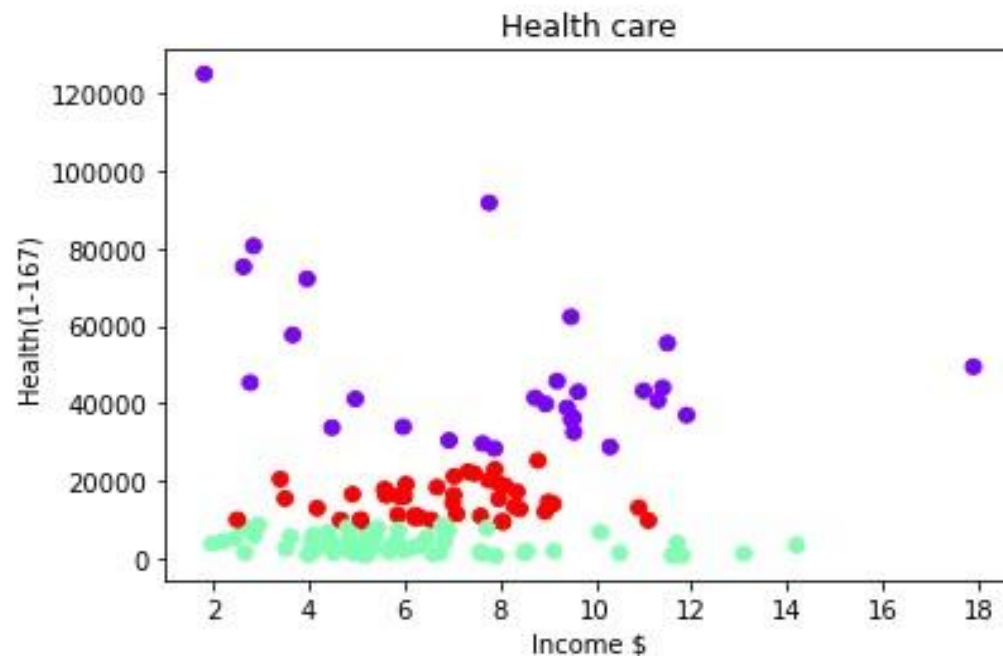
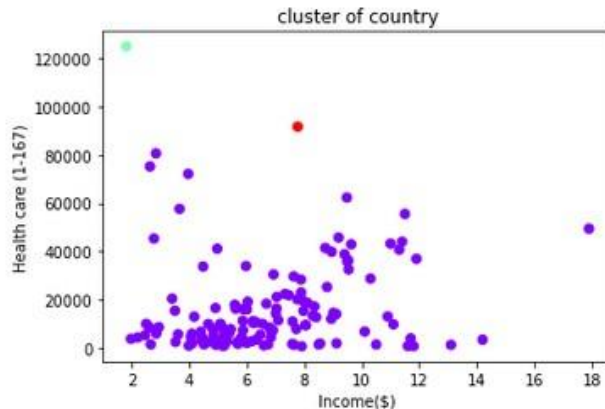Agglomerative Hierarchical Clustering

Dendrogram

Explanation:-

In both of the algorithms we are trying to compare between the person's income and health care as if the person has a good income the more he could spend money on his health care and this will reduce children deaths.

As we can see in the dendrogram hierarchical relationship between income and health and how they are similar to each other based on the vertical scale between each cluster.

In Agglomerative Hierarchical Clustering They

are divided into 3 clusters :-

- Purple one (cluster 0) have the most of the objects from (2-18) horizontal and (20000-80000) vertical
- Red one and green one (cluster 1, 2) are less similar to each other and to the other cluster .
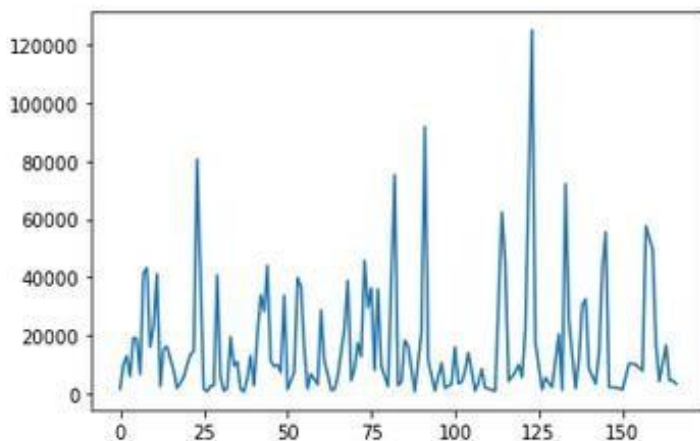

cluster of country

In K-Medoids

They are divided into 3 clusters , more similar to each other than Agglomerative Hierarchical but they have same features that people in some countries their income matches their health insurance and others does not.

```
country_data.income.plot()
```
<AxesSubplot:>


```
country_data.health.plot()
```
<AxesSubplot:>