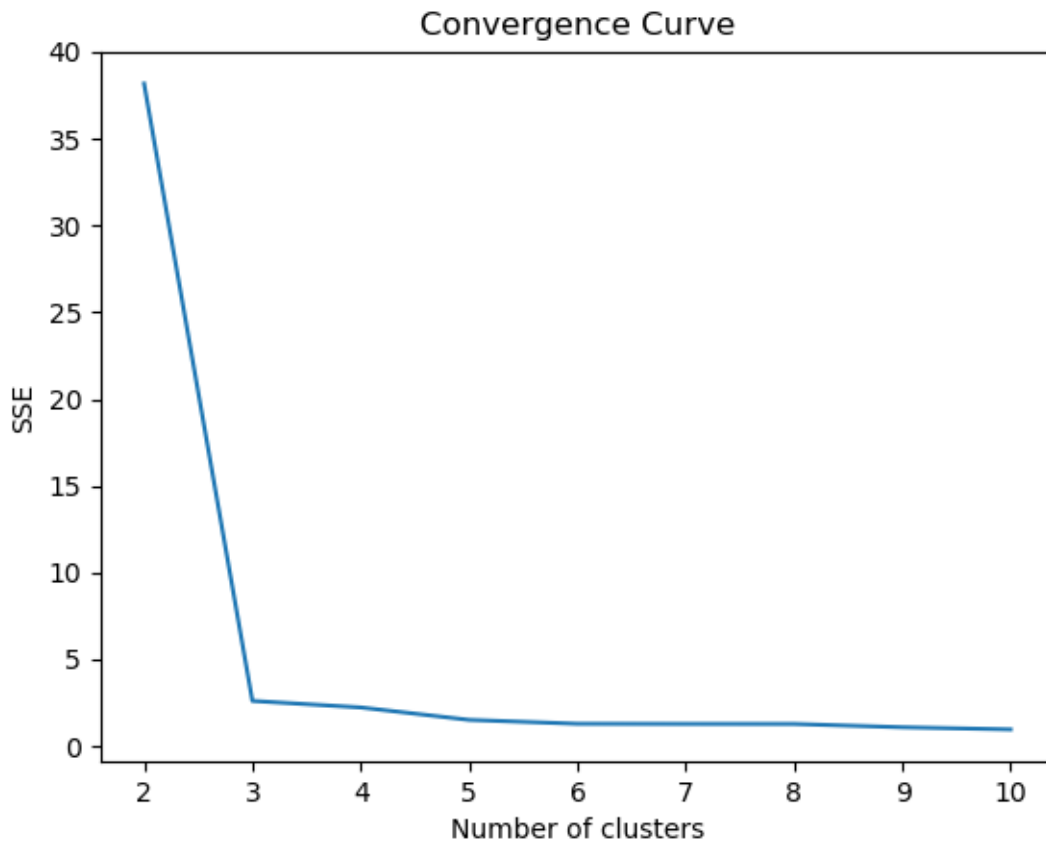# Bo Zhang   01063214

1.1. SSE against K figure for K-means clustering

Algorithm:

1) Load data from "A.txt".

2) For each K from 2 to 10, run K-means clustering at least 10 times and until the minimum of SSE is smaller than K-1's
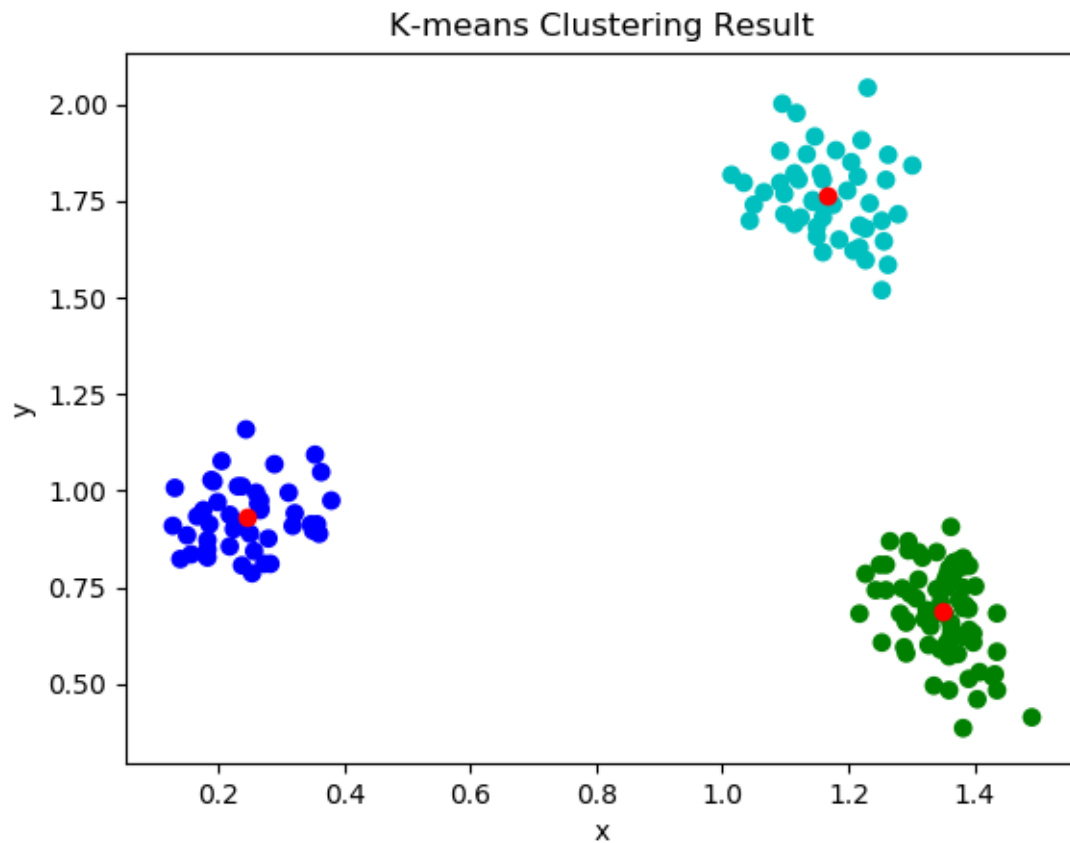
3) Plot the Convergence Curve

Result:

1.2. Clustering results for K-means clustering with K=3

Algorithm:

1) Run K-means clustering with K=3 for 10 times, and compute the SSEs.

2) Select the result with minimum SSE and plot the figure.

**Result:**

K-means Clustering Result

2.1. Clustering solutions resulted from all four ways of defining inter-cluster similarity

Algorithm:

1) Load data from "B.txt".

2) For each of the 4 types of inter-cluster distance, run hierarchical clustering for 2 clusters, and plot the result.

Result:

MIN Hierarchical Clustering Result

MAX Hierarchical Clustering Result

Group Average Hierarchical Clustering Result — Distance between Centroids Hierarchical Clustering Result
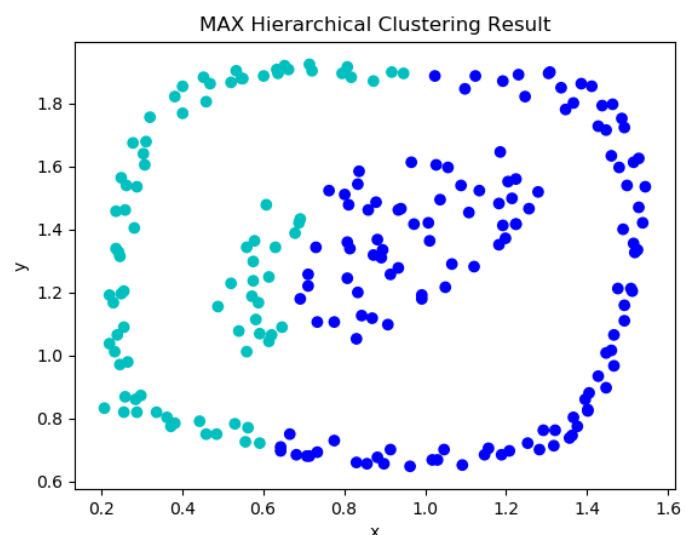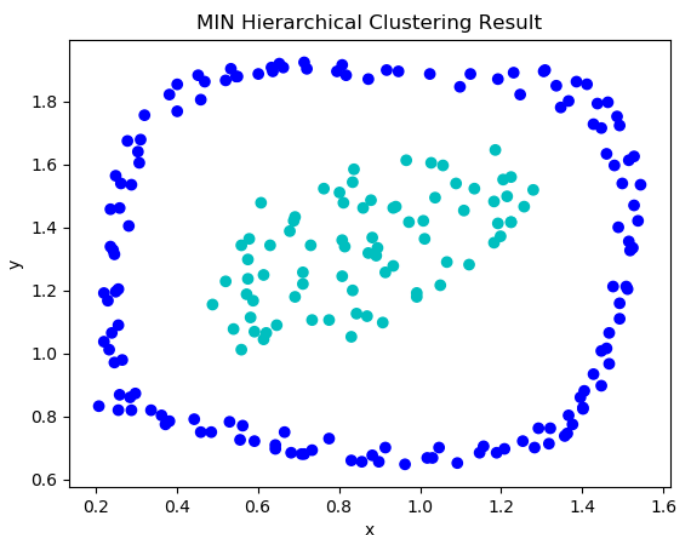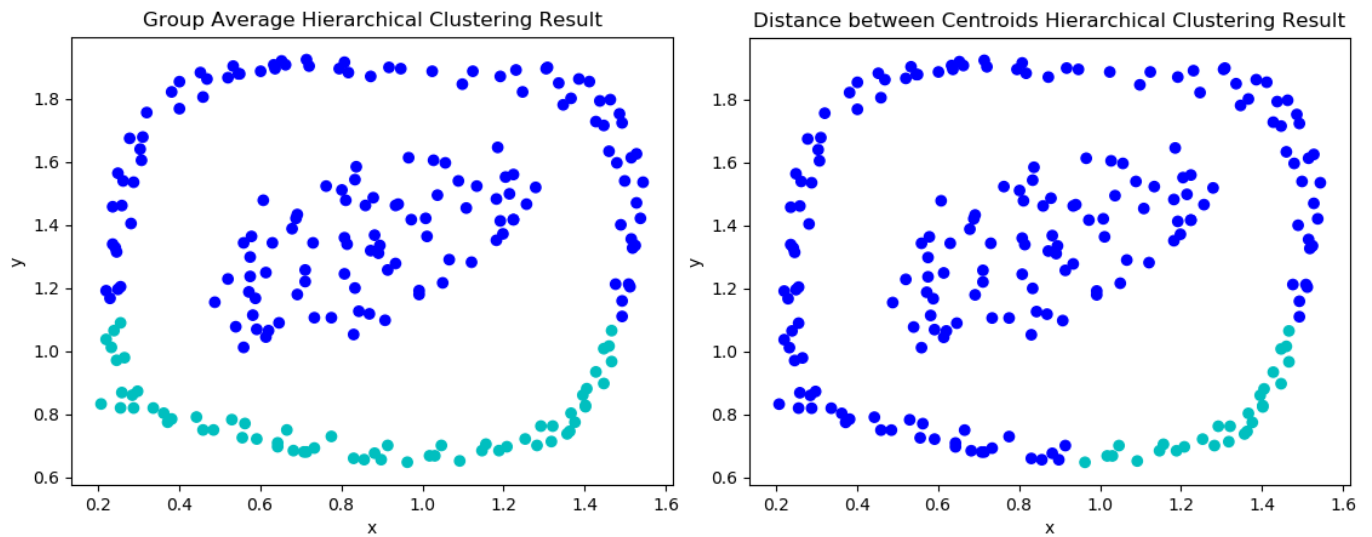
2.2. The most suitable inter-cluster similarity measure and its explanation

The MIN inter-cluster similarity measure gives the desired solution because it can handle non-elliptical shapes.