Clusters Mixing Degree

This project is published for "Cluster fusion-fission dynamics in the Singapore stock exchange",

by Boon Kin Teh and Siew Ann Cheong. Please refer to the paper for more details, and cite the paper if you are using this code to calculate the mixing degree between clusters, thank you.

Additional details can be found in Boon Kin Teh dissertation, “Macroscopic & Mesoscopic dynamics of Financial Market”.

# Code: AdjustedRandIndex

**Calculate the adjusted Rand Index measured between clusters.**

**Inputs:**

1) CL\_1: Nx1 cell list as Cluster list, each cell represents a cluster with at least one elements.

2) CL\_2: Nx1 cell list as Cluster list, each cell represents a cluster with at least one elements.

**Outputs:**

ARI = AdjustedRandIndex(CL\_1,CL\_2)  
1) ARI: Is a 1x1 double, represents the adjusted Rand Index measured between clusters CL\_1 and CL\_2, the global mixing degree hence is 1-ARI.

# Code: DegreeOfMixing

**Calculate the Degree of Mixing between clusters.**

**Inputs:**

1) CL\_1: Nx1 cell list as Cluster list, each cell represents a cluster with at least one elements.

2) CL\_2: Nx1 cell list as Cluster list, each cell represents a cluster with at least one elements.

3) k1: an integer represent first k number of clusters are interest for CL\_1.

4) k2: an integer represent first k number of clusters are interest for CL\_2.

**Outputs:**

[DoM,LocalMixingDegree] = DegreeOfMixing(CL\_1,CL\_2,k1,k2)  
1) ARI: Is a 1x1 double, represents the global Degree of Mixing measured between first k1 clusters of CL\_1 with first k2 clusters of CL\_2.  
2) LocalMixingDegree: Is 1xk2 double array, indicates the local degree of mixing measured for first k2 clusters in CL\_2.