

Assignment-1 Report

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Social Media Analytics

CS G519

in

Master of Engineering (Software Systems)

by

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Present the results in a table with the datasets as rows and the statistics as columns.

Statistics	Number of Edges (M)	Number of nodes(N)	Average Clustering Coefficient(C)	Average path lengths(d)
Karate Club Network	34	78	0.57	2.4081
Dolphin Social Network	62	159	0.25	3.3569
Jazz musicians network	199	2743	0.61	2.235

Comparison of 3 methods on all the datasets

1. Karate Club Network

Statistics	Number of Clusters	Modularity Score	Runtime
Girvan-Newman EBC	2	0.3599	0.12
Modularity Maximization	3	0.38	0.00499
Spectral Clustering using Graph Laplacian	2	0.2339	0.013

2. Dolphin Social Network

Statistics	Number of Clusters	Modularity Score	Runtime
Girvan-Newman EBC	2	0.3787	0.26
Modularity Maximization	4	0.49	0.16
Spectral Clustering using Graph Laplacian	4	0.44	0.72

3. Jazz Musicians Network

Statistics	Number of Clusters	Modularity Score	Runtime
Girvan-Newman EBC	2	0.0036	10.50
Modularity Maximization	4	0.43	0.18
Spectral Clustering using Graph Laplacian	4	0.42	0.25

Algorithm which performs the best w.r.t. both efficiency and quality is :Modularity Maximization is best in terms of overall efficiency while girvan-newman is the slowest algorithm.

Quality-

Lovain method for community detection is used by Gephi tool, finding community using girvan-newman.

Github Link:

https://github.com/saurabhdivekar/SMA_A1