Assignment 1 Submission

SOCIAL MEDIA ANALYTICS

CS G519

Under the supervision of

Dr Poonam Goyal

Professor

Department of Computer Science & Information Systems

by

Akalankam Sai Teja (2020H1030142P)

Ansa Ahmed (2020H1120303P)

Birla Institute of Technology and Science

Pilani, Pilani Campus, Rajasthan (India)

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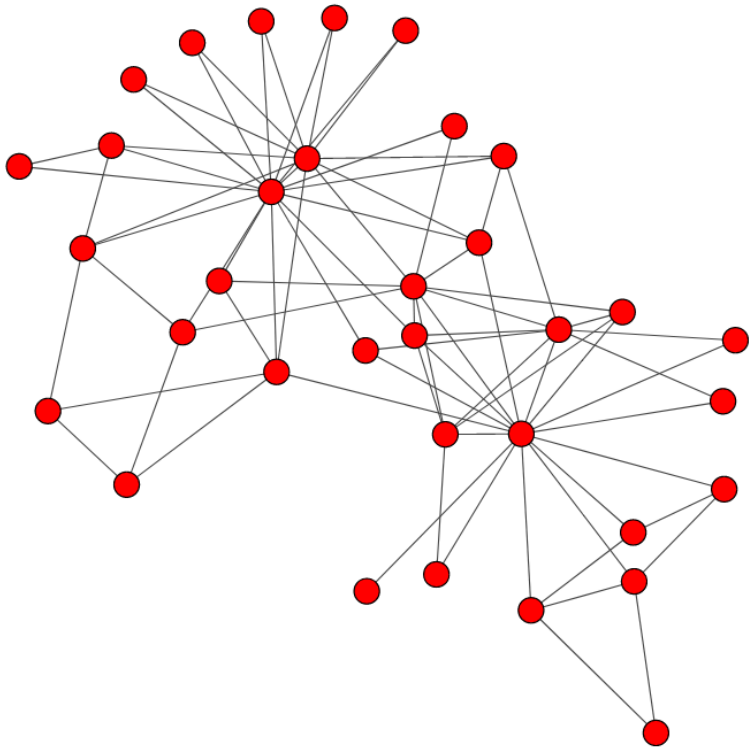
I. Visualization of the networks

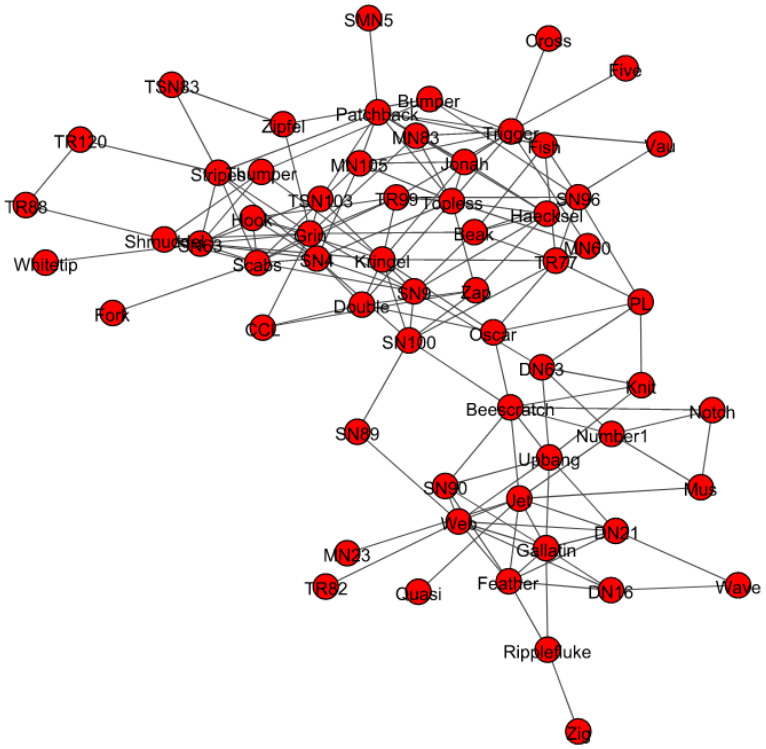
A. Karate Club Network

Out[8]:



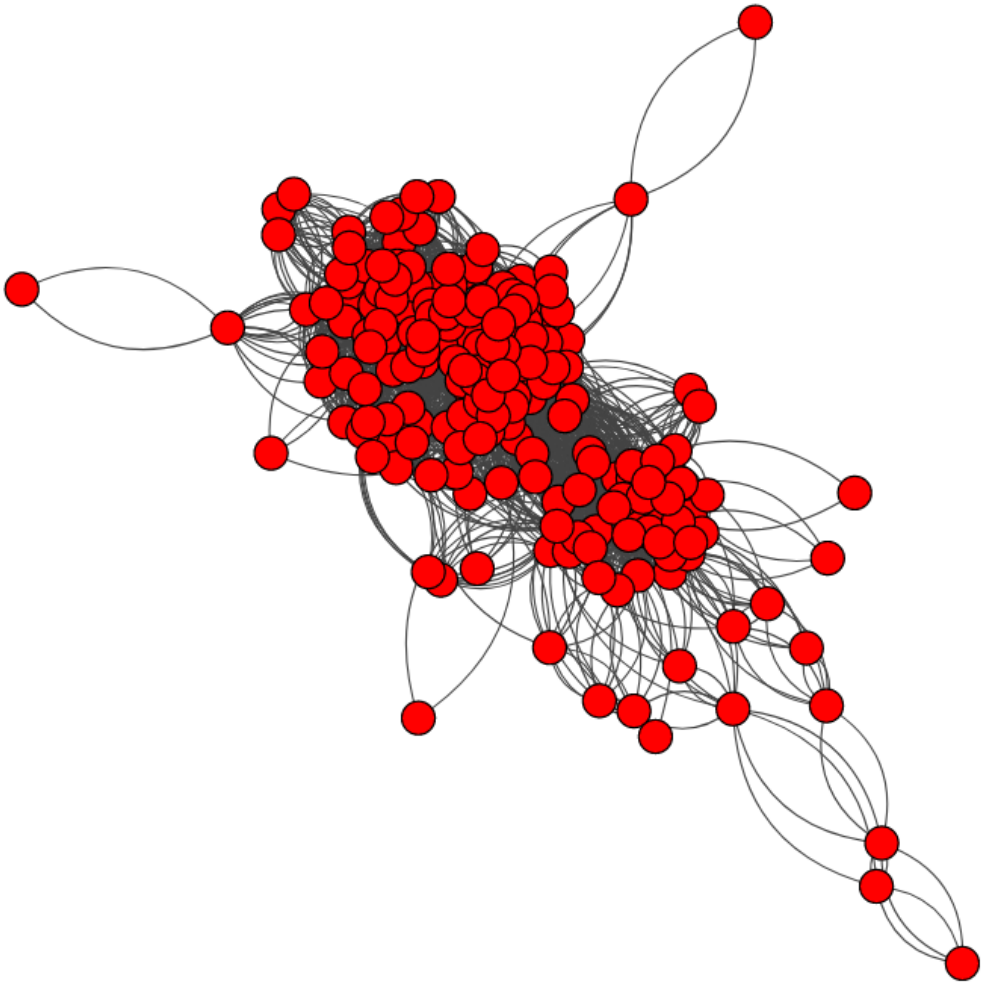
B. Dolphin Social Network

Out[53]:



C. Jazz Musicians Network

Out[11]:



II. Statistics of the networks:

Out[46]:

	Datasets	Nodes	Edges	Average Path Lengths	Average Clustering co-efficient
0	Karate	34	78	2.408200	0.570638
1	Dolphins	62	159	3.356954	0.258958
2	Jazz	199	2743	2.248008	0.613833

III. Comparison between networks:

Using betweenness and modularity we find the run time of the algorithms for different networks as:

	Number of clusters	**Modularity**	**Run time**
KARATE CLUB NETWORK	3	0.740055	• ModMax_Algo = 122.1182 ms • Betweness_Algo = 131.9680 ms
DOLPHIN SOCIAL NETWORK	4	0.827469	• Betweness_Algo = 324.2549 ms • ModMax_Algo = 332.2397ms

Using Spectral Clustering:

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Runtime for Karate 13.217399999916779 ms
Runtime for Jazz 260.6491000000233 ms
Runtime for Dolphins 42.59060000003956 ms
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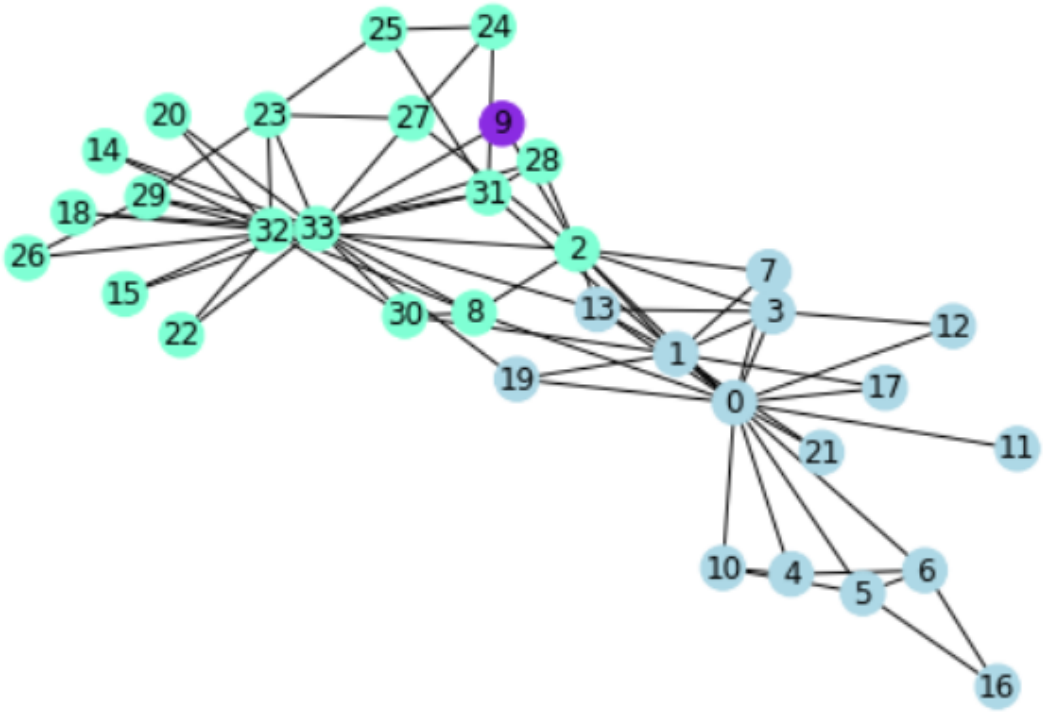
Hence we find that Spectral Clustering takes the least time to find the communities for the different networks.

Karate Club Network communities



Dolphins Social Network communities