

**Social Networking Analysis**  
**Assignment - 3 (Graph Partitioning Algorithms)**  
**Due: 10 October 2019**

Write programs to implement (i) Spectral bisection algorithm (based on second smallest eigen value of  $L$ ) and (ii) Modularity maximization algorithm (based on largest eigen value of  $B$ ). Compare the communities obtained as well as the the time taken by the two algorithms by running your program on the bench mark data set Karate club (available in SNAP). Tabulate your results by giving Precision, Recall and F-Measure for the two algorithms along with the time taken by the algorithm.